sky130_fd_sc_hs_ff_1.76v_-40C.ccs Library

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

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

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

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

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

SKY130_FD_SC_HS__XNOR2x
SKY130_FD_SC_HS__XNOR3x
SKY130_FD_SC_HS__XOR2x
SKY130_FD_SC_HS__XOR3x

SKY130_FD_SC_HS__A2111OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111oi_1	11.18880
sky130_fd_sc_hs__a2111oi_2	19.18080
sky130_fd_sc_hs__a2111oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__a2111oi_1	0.00266	0.00255	0.00267	0.00279	0.00278	0.35972
sky130_fd_sc_hs__a2111oi_2	0.00504	0.00487	0.00404	0.00406	0.00406	0.63125
sky130_fd_sc_hs__a2111oi_4	0.00999	0.00975	0.00790	0.00777	0.00794	1.11768

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111oi_1	0.00000	0.01261	0.06294
sky130_fd_sc_hs__a2111oi_2	0.00000	0.02494	0.12588
sky130_fd_sc_hs__a2111oi_4	0.00000	0.04988	0.25175

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)	0.15148	1.04249	9.67049
	A2->Y (FR)	0.18155	1.09737	9.91374
	B1->Y (FR)	0.16813	1.10092	10.43360
	C1->Y (FR)	0.14547	1.10431	10.84500
	D1->Y (FR)	0.11081	1.05921	10.61060
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.14267	0.90578	9.66065
	A2->Y (FR)	0.18043	0.95278	9.80534
	B1->Y (FR)	0.15994	0.94857	10.22870
	C1->Y (FR)	0.13502	0.95661	10.79700
	D1->Y (FR)	0.08375	0.89605	10.52570
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.13702	0.76257	9.26968
	A2->Y (FR)	0.17824	0.81778	9.50841
	B1->Y (FR)	0.15826	0.81927	10.02880
	C1->Y (FR)	0.12950	0.82385	10.60660
	D1->Y (FR)	0.07830	0.77163	10.41290

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02096	0.23652	1.87001
	A2->Y (RF)	0.02352	0.22307	1.71971
	B1->Y (RF)	0.01726	0.19008	1.45176
	C1->Y (RF)	0.01751	0.18318	1.43610
	D1->Y (RF)	0.01561	0.18017	1.41824
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.01864	0.20955	1.95210
	A2->Y (RF)	0.02277	0.19317	1.72307
	B1->Y (RF)	0.02666	0.27153	2.73281
	C1->Y (RF)	0.02501	0.26039	2.70327
	D1->Y (RF)	0.01887	0.24693	2.67943
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02011	0.18453	2.00119
	A2->Y (RF)	0.02350	0.15236	1.53212
	B1->Y (RF)	0.02414	0.21013	2.37627
	C1->Y (RF)	0.02213	0.19733	2.34362
	D1->Y (RF)	0.01640	0.18836	2.39988

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00036	0.00016	0.00836
	A1	0.00839	0.00819	0.01640
	A2	0.00074	0.00061	0.00895
	A2	0.00987	0.00973	0.01808
	B1	0.00026	0.00016	0.00953
	B1	0.00716	0.00708	0.01647
	C1	0.00023	0.00028	0.01014
	C1	0.00625	0.00631	0.01617
	D1	0.00010	0.00105	0.01998
	D1	0.00529	0.00625	0.02517
sky130_fd_sc_hs__a2111oi_2	A1	-0.00004	-0.00040	0.01485
	A1	0.01504	0.01471	0.02996
	A2	0.00143	0.00104	0.01647
	A2	0.01864	0.01830	0.03367
	B1	0.00078	0.00066	0.01237
	B1	0.01241	0.01228	0.02410
	C1	0.00088	0.00091	0.01296
	C1	0.01047	0.01051	0.02254
	D1	0.00068	0.00210	0.02698
	D1	0.00832	0.00976	0.03462

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00086	-0.00159	0.02709
	A1	0.02941	0.02870	0.05753
	A2	0.00174	0.00106	0.03014
	A2	0.03634	0.03561	0.06480
	B1	0.00088	0.00071	0.02394
	B1	0.02407	0.02390	0.04725
	C1	0.00099	0.00122	0.02536
	C1	0.02009	0.02036	0.04437
	D1	0.00054	0.00365	0.05090
	D1	0.01575	0.01886	0.06615

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.01113	0.01116	0.01983
	A1	0.00331	0.00333	0.01204
	A2	0.01226	0.01220	0.01925
	A2	0.00329	0.00321	0.01032
	B1	0.00863	0.00884	0.01870
	B1	0.00181	0.00201	0.01188
	C1	0.00691	0.00732	0.01663
	C1	0.00093	0.00132	0.01066
	D1	0.00517	0.00567	0.01495
	D1	-0.00000	0.00047	0.00976

sky130_fd_sc_hs__a2111oi_2	**A1**	0.02085	0.02080	0.03680
	A1	0.00622	0.00615	0.02224
	A2	0.02302	0.02281	0.03620
	A2	0.00614	0.00590	0.01940
	B1	0.01465	0.01498	0.02685
	B1	0.00324	0.00353	0.01546
	C1	0.01102	0.01152	0.02281
	C1	0.00153	0.00198	0.01329
	D1	0.00647	0.00732	0.01847
	D1	-0.00116	-0.00035	0.01078
sky130_fd_sc_hs__a2111oi_4	**A1**	0.04073	0.04067	0.07171
	A1	0.01137	0.01123	0.04234
	A2	0.04516	0.04485	0.07280
	A2	0.01124	0.01087	0.03900
	B1	0.02863	0.02935	0.05426
	B1	0.00587	0.00655	0.03152
	C1	0.02122	0.02245	0.04602
	C1	0.00231	0.00349	0.02711
	D1	0.01282	0.01465	0.03728
	D1	-0.00239	-0.00061	0.02201

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)**	0.00153	0.00153	0.00153
	(A2 * B1 * D1 * !Y)	-0.00169	-0.00178	-0.00177
	(A2 * B1 * C1 * !D1 * !Y)	0.00153	0.00153	0.00153
	(A2 * B1 * C1 * !D1 * !Y)	-0.00169	-0.00178	-0.00177
	(A2 * B1 * !C1 * !D1 * !Y)	0.00153	0.00152	0.00153
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00169	-0.00177	-0.00177
	(A2 * !B1 * C1 * D1 * !Y)	0.00153	0.00153	0.00152
	(A2 * !B1 * C1 * D1 * !Y)	-0.00160	-0.00174	-0.00173
	(A2 * !B1 * C1 * !D1 * !Y)	0.00153	0.00153	0.00152
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00160	-0.00174	-0.00173
	(A2 * !B1 * !C1 * D1 * !Y)	0.00153	0.00153	0.00152
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00157	-0.00173	-0.00171
	(!A2 * B1 * D1 * !Y)	0.00146	0.00148	0.00146
	(!A2 * B1 * D1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A2 * B1 * C1 * !D1 * !Y)	0.00145	0.00146	0.00146
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00146	0.00147	0.00147
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * D1 * !Y)	0.00145	0.00146	0.00146
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00147	0.00149	0.00148
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00181	-0.00183	-0.00181
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00145	0.00147	0.00146
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00048	0.00048	0.00047
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00210	-0.00213	-0.00214

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00304	0.00307	0.00305
	(A2 * B1 * D1 * !Y)	-0.00339	-0.00357	-0.00355
	(A2 * B1 * C1 * !D1 * !Y)	0.00304	0.00307	0.00305
	(A2 * B1 * C1 * !D1 * !Y)	-0.00339	-0.00357	-0.00355
	(A2 * B1 * !C1 * !D1 * !Y)	0.00304	0.00307	0.00305
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00335	-0.00357	-0.00355
	(A2 * !B1 * C1 * D1 * !Y)	0.00304	0.00306	0.00305
	(A2 * !B1 * C1 * D1 * !Y)	-0.00317	-0.00346	-0.00344
	(A2 * !B1 * C1 * !D1 * !Y)	0.00305	0.00306	0.00305
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00317	-0.00346	-0.00344
	(A2 * !B1 * !C1 * D1 * !Y)	0.00306	0.00307	0.00305
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00312	-0.00341	-0.00339
	(!A2 * B1 * D1 * !Y)	0.00293	0.00295	0.00294
	(!A2 * B1 * D1 * !Y)	-0.00361	-0.00363	-0.00362
	(!A2 * B1 * C1 * !D1 * !Y)	0.00291	0.00294	0.00292
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00361	-0.00363	-0.00362
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00292	0.00295	0.00293
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00361	-0.00364	-0.00362
	(!A2 * !B1 * C1 * D1 * !Y)	0.00291	0.00294	0.00292
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00360	-0.00363	-0.00362
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00291	0.00295	0.00293
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00361	-0.00364	-0.00362
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00291	0.00296	0.00293
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00361	-0.00364	-0.00362
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00098	0.00098	0.00095
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00419	-0.00420	-0.00427

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00610	0.00616	0.00612
	(A2 * B1 * D1 * !Y)	-0.00678	-0.00715	-0.00710
	(A2 * B1 * C1 * !D1 * !Y)	0.00610	0.00616	0.00612
	(A2 * B1 * C1 * !D1 * !Y)	-0.00678	-0.00715	-0.00710
	(A2 * B1 * !C1 * !D1 * !Y)	0.00610	0.00616	0.00612
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00673	-0.00715	-0.00710
	(A2 * !B1 * C1 * D1 * !Y)	0.00612	0.00614	0.00612
	(A2 * !B1 * C1 * D1 * !Y)	-0.00641	-0.00695	-0.00690
	(A2 * !B1 * C1 * !D1 * !Y)	0.00613	0.00614	0.00612
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00640	-0.00697	-0.00691
	(A2 * !B1 * !C1 * D1 * !Y)	0.00616	0.00616	0.00612
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00628	-0.00684	-0.00680
	(!A2 * B1 * D1 * !Y)	0.00585	0.00590	0.00588
	(!A2 * B1 * D1 * !Y)	-0.00724	-0.00728	-0.00726
	(!A2 * B1 * C1 * !D1 * !Y)	0.00589	0.00593	0.00591
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00723	-0.00728	-0.00726
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00587	0.00595	0.00590
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00725	-0.00730	-0.00726
	(!A2 * !B1 * C1 * D1 * !Y)	0.00587	0.00595	0.00590
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00724	-0.00730	-0.00726
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00584	0.00590	0.00585
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00726	-0.00730	-0.00726
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00585	0.00590	0.00588
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00724	-0.00728	-0.00726
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00189	0.00188	0.00182
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00850	-0.00850	-0.00864

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)**	-0.00153	-0.00153	-0.00152
	(A2 * B1 * D1 * !Y)	0.00178	0.00178	0.00177
	(A2 * B1 * C1 * !D1 * !Y)	-0.00153	-0.00153	-0.00152
	(A2 * B1 * C1 * !D1 * !Y)	0.00178	0.00178	0.00177
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00153	-0.00152	-0.00152
	(A2 * B1 * !C1 * !D1 * !Y)	0.00178	0.00177	0.00177
	(A2 * !B1 * C1 * D1 * !Y)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * C1 * D1 * !Y)	0.00173	0.00174	0.00173
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * C1 * !D1 * !Y)	0.00172	0.00174	0.00173
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * !C1 * D1 * !Y)	0.00170	0.00173	0.00171
	(!A2 * B1 * D1 * !Y)	-0.00141	-0.00146	-0.00146
	(!A2 * B1 * D1 * !Y)	0.00181	0.00183	0.00182
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00141	-0.00146	-0.00146
	(!A2 * B1 * C1 * !D1 * !Y)	0.00181	0.00184	0.00182
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00142	-0.00146	-0.00147
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00182	0.00183	0.00182
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00141	-0.00146	-0.00146
	(!A2 * !B1 * C1 * D1 * !Y)	0.00181	0.00183	0.00182
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00141	-0.00147	-0.00147
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00182	0.00183	0.00182
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00141	-0.00147	-0.00146
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00181	0.00183	0.00182
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00214	0.00216	0.00214

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00303	-0.00305	-0.00304
	(A2 * B1 * D1 * !Y)	0.00352	0.00357	0.00355
	(A2 * B1 * C1 * !D1 * !Y)	-0.00303	-0.00305	-0.00304
	(A2 * B1 * C1 * !D1 * !Y)	0.00352	0.00357	0.00355
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00303	-0.00305	-0.00304
	(A2 * B1 * !C1 * !D1 * !Y)	0.00353	0.00357	0.00355
	(A2 * !B1 * C1 * D1 * !Y)	-0.00303	-0.00305	-0.00304
	(A2 * !B1 * C1 * D1 * !Y)	0.00342	0.00346	0.00344
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00303	-0.00305	-0.00304
	(A2 * !B1 * C1 * !D1 * !Y)	0.00342	0.00346	0.00344
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00304	-0.00305	-0.00304
	(A2 * !B1 * !C1 * D1 * !Y)	0.00339	0.00341	0.00339
	(!A2 * B1 * D1 * !Y)	-0.00279	-0.00295	-0.00294
	(!A2 * B1 * D1 * !Y)	0.00361	0.00366	0.00363
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00280	-0.00294	-0.00292
	(!A2 * B1 * C1 * !D1 * !Y)	0.00363	0.00366	0.00363
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00278	-0.00294	-0.00293
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00362	0.00365	0.00363
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00278	-0.00294	-0.00292
	(!A2 * !B1 * C1 * D1 * !Y)	0.00360	0.00366	0.00363
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00278	-0.00295	-0.00293
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00362	0.00364	0.00363
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00278	-0.00296	-0.00293
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00362	0.00364	0.00363
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00094	-0.00094	-0.00093
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00429	0.00432	0.00428

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00609	-0.00614	-0.00610
	(A2 * B1 * D1 * !Y)	0.00706	0.00717	0.00710
	(A2 * B1 * C1 * !D1 * !Y)	-0.00609	-0.00613	-0.00610
	(A2 * B1 * C1 * !D1 * !Y)	0.00708	0.00717	0.00710
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00609	-0.00614	-0.00610
	(A2 * B1 * !C1 * !D1 * !Y)	0.00706	0.00717	0.00710
	(A2 * !B1 * C1 * D1 * !Y)	-0.00611	-0.00613	-0.00610
	(A2 * !B1 * C1 * D1 * !Y)	0.00691	0.00695	0.00690
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00611	-0.00613	-0.00610
	(A2 * !B1 * C1 * !D1 * !Y)	0.00692	0.00697	0.00691
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00611	-0.00613	-0.00611
	(A2 * !B1 * !C1 * D1 * !Y)	0.00681	0.00684	0.00680
	(!A2 * B1 * D1 * !Y)	-0.00559	-0.00590	-0.00588
	(!A2 * B1 * D1 * !Y)	0.00724	0.00735	0.00728
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00558	-0.00593	-0.00591
	(!A2 * B1 * C1 * !D1 * !Y)	0.00723	0.00735	0.00728
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00561	-0.00595	-0.00590
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00729	0.00733	0.00728
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00559	-0.00595	-0.00590
	(!A2 * !B1 * C1 * D1 * !Y)	0.00726	0.00730	0.00728
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00559	-0.00590	-0.00585
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00726	0.00733	0.00728
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00558	-0.00590	-0.00588
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00726	0.00732	0.00728
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00178	-0.00180	-0.00178
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00861	0.00872	0.00865

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)**	0.00162	0.00162	0.00161
	(A1 * B1 * D1 * !Y)	-0.00171	-0.00180	-0.00179
	(A1 * B1 * C1 * !D1 * !Y)	0.00162	0.00162	0.00161
	(A1 * B1 * C1 * !D1 * !Y)	-0.00171	-0.00180	-0.00179
	(A1 * B1 * !C1 * !D1 * !Y)	0.00162	0.00162	0.00161
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00170	-0.00180	-0.00179
	(A1 * !B1 * C1 * D1 * !Y)	0.00162	0.00161	0.00161
	(A1 * !B1 * C1 * D1 * !Y)	-0.00161	-0.00175	-0.00174
	(A1 * !B1 * C1 * !D1 * !Y)	0.00162	0.00161	0.00161
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00161	-0.00175	-0.00174
	(A1 * !B1 * !C1 * D1 * !Y)	0.00162	0.00162	0.00161
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00158	-0.00173	-0.00172
	(!A1 * B1 * !Y)	0.00155	0.00156	0.00155
	(!A1 * B1 * !Y)	-0.00182	-0.00184	-0.00183
	(!A1 * !B1 * C1 * !Y)	0.00154	0.00156	0.00155
	(!A1 * !B1 * C1 * !Y)	-0.00182	-0.00183	-0.00183
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00155	0.00155	0.00155
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00182	-0.00183	-0.00183
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00155	0.00156	0.00155
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00306	0.00309	0.00306
	(A1 * B1 * D1 * !Y)	-0.00339	-0.00356	-0.00354
	(A1 * B1 * C1 * !D1 * !Y)	0.00306	0.00309	0.00306
	(A1 * B1 * C1 * !D1 * !Y)	-0.00338	-0.00356	-0.00354
	(A1 * B1 * !C1 * !D1 * !Y)	0.00306	0.00309	0.00306
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00335	-0.00356	-0.00354
	(A1 * !B1 * C1 * D1 * !Y)	0.00307	0.00308	0.00306
	(A1 * !B1 * C1 * D1 * !Y)	-0.00318	-0.00346	-0.00343
	(A1 * !B1 * C1 * !D1 * !Y)	0.00307	0.00308	0.00306
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00318	-0.00346	-0.00343
	(A1 * !B1 * !C1 * D1 * !Y)	0.00308	0.00308	0.00307
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00313	-0.00340	-0.00339
	(!A1 * B1 * !Y)	0.00293	0.00296	0.00294
	(!A1 * B1 * !Y)	-0.00360	-0.00362	-0.00360
	(!A1 * !B1 * C1 * !Y)	0.00293	0.00296	0.00294
	(!A1 * !B1 * C1 * !Y)	-0.00360	-0.00362	-0.00360
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00293	0.00297	0.00295
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00359	-0.00362	-0.00360
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00293	0.00296	0.00294
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00360	-0.00362	-0.00361

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00617	0.00620	0.00615
	(A1 * B1 * D1 * !Y)	-0.00680	-0.00712	-0.00709
	(A1 * B1 * C1 * !D1 * !Y)	0.00611	0.00620	0.00615
	(A1 * B1 * C1 * !D1 * !Y)	-0.00674	-0.00712	-0.00709
	(A1 * B1 * !C1 * !D1 * !Y)	0.00613	0.00621	0.00616
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00671	-0.00713	-0.00709
	(A1 * !B1 * C1 * D1 * !Y)	0.00613	0.00619	0.00615
	(A1 * !B1 * C1 * D1 * !Y)	-0.00638	-0.00695	-0.00689
	(A1 * !B1 * C1 * !D1 * !Y)	0.00614	0.00619	0.00615
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00638	-0.00695	-0.00689
	(A1 * !B1 * !C1 * D1 * !Y)	0.00617	0.00619	0.00616
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00627	-0.00687	-0.00680
	(!A1 * B1 * !Y)	0.00586	0.00593	0.00590
	(!A1 * B1 * !Y)	-0.00721	-0.00727	-0.00725
	(!A1 * !B1 * C1 * !Y)	0.00596	0.00601	0.00598
	(!A1 * !B1 * C1 * !Y)	-0.00724	-0.00727	-0.00725
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00594	0.00601	0.00596
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00724	-0.00729	-0.00725
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00593	0.00598	0.00595
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00724	-0.00727	-0.00725

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)**	-0.00161	-0.00162	-0.00161
	(A1 * B1 * D1 * !Y)	0.00178	0.00180	0.00179
	(A1 * B1 * C1 * !D1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * C1 * !D1 * !Y)	0.00178	0.00180	0.00179
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * !C1 * !D1 * !Y)	0.00178	0.00180	0.00179
	(A1 * !B1 * C1 * D1 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * !B1 * C1 * D1 * !Y)	0.00173	0.00175	0.00174
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00161	-0.00161	-0.00161
	(A1 * !B1 * C1 * !D1 * !Y)	0.00173	0.00175	0.00174
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * !C1 * D1 * !Y)	0.00171	0.00173	0.00172
	(!A1 * B1 * !Y)	-0.00151	-0.00156	-0.00155
	(!A1 * B1 * !Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * C1 * !Y)	-0.00151	-0.00156	-0.00155
	(!A1 * !B1 * C1 * !Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00151	-0.00155	-0.00155
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00183	0.00185	0.00183
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00148	-0.00156	-0.00155
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00188	0.00185	0.00184

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00305	-0.00307	-0.00306
	(A1 * B1 * D1 * !Y)	0.00352	0.00356	0.00354
	(A1 * B1 * C1 * !D1 * !Y)	-0.00305	-0.00307	-0.00306
	(A1 * B1 * C1 * !D1 * !Y)	0.00352	0.00356	0.00354
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00305	-0.00307	-0.00306
	(A1 * B1 * !C1 * !D1 * !Y)	0.00352	0.00356	0.00354
	(A1 * !B1 * C1 * D1 * !Y)	-0.00305	-0.00307	-0.00306
	(A1 * !B1 * C1 * D1 * !Y)	0.00342	0.00346	0.00343
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00305	-0.00307	-0.00306
	(A1 * !B1 * C1 * !D1 * !Y)	0.00342	0.00346	0.00343
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00306	-0.00307	-0.00306
	(A1 * !B1 * !C1 * D1 * !Y)	0.00338	0.00340	0.00339
	(!A1 * B1 * !Y)	-0.00283	-0.00295	-0.00294
	(!A1 * B1 * !Y)	0.00360	0.00363	0.00361
	(!A1 * !B1 * C1 * !Y)	-0.00283	-0.00295	-0.00294
	(!A1 * !B1 * C1 * !Y)	0.00360	0.00363	0.00361
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00283	-0.00295	-0.00295
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00360	0.00363	0.00361
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00275	-0.00296	-0.00294
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00370	0.00365	0.00362

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00612	-0.00615	-0.00614
	(A1 * B1 * D1 * !Y)	0.00705	0.00712	0.00709
	(A1 * B1 * C1 * !D1 * !Y)	-0.00611	-0.00615	-0.00614
	(A1 * B1 * C1 * !D1 * !Y)	0.00704	0.00712	0.00709
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00613	-0.00616	-0.00614
	(A1 * B1 * !C1 * !D1 * !Y)	0.00706	0.00713	0.00709
	(A1 * !B1 * C1 * D1 * !Y)	-0.00613	-0.00617	-0.00614
	(A1 * !B1 * C1 * D1 * !Y)	0.00690	0.00695	0.00689
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00614	-0.00617	-0.00614
	(A1 * !B1 * C1 * !D1 * !Y)	0.00690	0.00695	0.00689
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00615	-0.00618	-0.00615
	(A1 * !B1 * !C1 * D1 * !Y)	0.00680	0.00687	0.00680
	(!A1 * B1 * !Y)	-0.00566	-0.00590	-0.00590
	(!A1 * B1 * !Y)	0.00724	0.00731	0.00727
	(!A1 * !B1 * C1 * !Y)	-0.00566	-0.00590	-0.00594
	(!A1 * !B1 * C1 * !Y)	0.00724	0.00731	0.00727
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00566	-0.00590	-0.00594
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00724	0.00731	0.00727
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00549	-0.00594	-0.00593
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00749	0.00733	0.00727

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)**	0.00160	0.00161	0.00160
	(A1 * A2 * C1 * D1 * !Y)	-0.00128	-0.00128	-0.00128
	(A1 * A2 * C1 * !D1 * !Y)	0.00159	0.00161	0.00160
	(A1 * A2 * C1 * !D1 * !Y)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * !C1 * D1 * !Y)	0.00159	0.00161	0.00159
	(A1 * A2 * !C1 * D1 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * !C1 * !D1 * !Y)	0.00159	0.00159	0.00158
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00098	-0.00098	-0.00097
	(A1 * !A2 * C1 * D1 * !Y)	0.00157	0.00158	0.00157
	(A1 * !A2 * C1 * D1 * !Y)	-0.00169	-0.00176	-0.00175
	(A1 * !A2 * C1 * !D1 * !Y)	0.00166	0.00158	0.00157
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00160	-0.00176	-0.00175
	(A1 * !A2 * !C1 * D1 * !Y)	0.00161	0.00158	0.00157
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00150	-0.00170	-0.00169
	(!A1 * C1 * D1 * !Y)	0.00157	0.00158	0.00157
	(!A1 * C1 * D1 * !Y)	-0.00169	-0.00176	-0.00175
	(!A1 * C1 * !D1 * !Y)	0.00164	0.00158	0.00157
	(!A1 * C1 * !D1 * !Y)	-0.00161	-0.00175	-0.00175
	(!A1 * !C1 * D1 * !Y)	0.00161	0.00157	0.00157
	(!A1 * !C1 * D1 * !Y)	-0.00151	-0.00170	-0.00169

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00180	0.00184	0.00180
	(A1 * A2 * C1 * D1 * !Y)	-0.00252	-0.00255	-0.00253
	(A1 * A2 * C1 * !D1 * !Y)	0.00181	0.00182	0.00180
	(A1 * A2 * C1 * !D1 * !Y)	-0.00242	-0.00245	-0.00243
	(A1 * A2 * !C1 * D1 * !Y)	0.00181	0.00182	0.00182
	(A1 * A2 * !C1 * D1 * !Y)	-0.00235	-0.00238	-0.00236
	(A1 * A2 * !C1 * !D1 * !Y)	0.00179	0.00181	0.00179
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00194	-0.00196	-0.00194
	(A1 * !A2 * C1 * D1 * !Y)	0.00180	0.00182	0.00179
	(A1 * !A2 * C1 * D1 * !Y)	-0.00337	-0.00352	-0.00351
	(A1 * !A2 * C1 * !D1 * !Y)	0.00188	0.00182	0.00179
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00327	-0.00352	-0.00351
	(A1 * !A2 * !C1 * D1 * !Y)	0.00187	0.00182	0.00179
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00309	-0.00342	-0.00339
	(!A1 * C1 * D1 * !Y)	0.00180	0.00182	0.00179
	(!A1 * C1 * D1 * !Y)	-0.00338	-0.00352	-0.00351
	(!A1 * C1 * !D1 * !Y)	0.00187	0.00182	0.00179
	(!A1 * C1 * !D1 * !Y)	-0.00328	-0.00352	-0.00351
	(!A1 * !C1 * D1 * !Y)	0.00186	0.00182	0.00179
	(!A1 * !C1 * D1 * !Y)	-0.00310	-0.00342	-0.00339

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00346	0.00349	0.00345
	(A1 * A2 * C1 * D1 * !Y)	-0.00519	-0.00522	-0.00517
	(A1 * A2 * C1 * !D1 * !Y)	0.00348	0.00350	0.00346
	(A1 * A2 * C1 * !D1 * !Y)	-0.00499	-0.00501	-0.00498
	(A1 * A2 * !C1 * D1 * !Y)	0.00349	0.00357	0.00350
	(A1 * A2 * !C1 * D1 * !Y)	-0.00479	-0.00483	-0.00479
	(A1 * A2 * !C1 * !D1 * !Y)	0.00347	0.00348	0.00345
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00408	-0.00407	-0.00405
	(A1 * !A2 * C1 * D1 * !Y)	0.00347	0.00349	0.00344
	(A1 * !A2 * C1 * D1 * !Y)	-0.00693	-0.00725	-0.00722
	(A1 * !A2 * C1 * !D1 * !Y)	0.00373	0.00349	0.00344
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00662	-0.00725	-0.00721
	(A1 * !A2 * !C1 * D1 * !Y)	0.00362	0.00351	0.00345
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00628	-0.00695	-0.00694
	(!A1 * C1 * D1 * !Y)	0.00347	0.00349	0.00344
	(!A1 * C1 * D1 * !Y)	-0.00694	-0.00725	-0.00722
	(!A1 * C1 * !D1 * !Y)	0.00369	0.00350	0.00344
	(!A1 * C1 * !D1 * !Y)	-0.00666	-0.00725	-0.00722
	(!A1 * !C1 * D1 * !Y)	0.00361	0.00351	0.00345
	(!A1 * !C1 * D1 * !Y)	-0.00631	-0.00696	-0.00695

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)**	-0.00159	-0.00159	-0.00159
	(A1 * A2 * C1 * D1 * !Y)	0.00128	0.00128	0.00128
	(A1 * A2 * C1 * !D1 * !Y)	-0.00159	-0.00159	-0.00159
	(A1 * A2 * C1 * !D1 * !Y)	0.00124	0.00124	0.00123
	(A1 * A2 * !C1 * D1 * !Y)	-0.00158	-0.00159	-0.00158
	(A1 * A2 * !C1 * D1 * !Y)	0.00117	0.00118	0.00117
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00151	-0.00152	-0.00152
	(A1 * A2 * !C1 * !D1 * !Y)	0.00103	0.00104	0.00103
	(A1 * !A2 * C1 * D1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * C1 * D1 * !Y)	0.00175	0.00177	0.00175
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00156	-0.00158	-0.00157
	(A1 * !A2 * C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * !C1 * D1 * !Y)	0.00168	0.00170	0.00169
	(!A1 * C1 * D1 * !Y)	-0.00157	-0.00158	-0.00157
	(!A1 * C1 * D1 * !Y)	0.00174	0.00177	0.00175
	(!A1 * C1 * !D1 * !Y)	-0.00157	-0.00158	-0.00157
	(!A1 * C1 * !D1 * !Y)	0.00174	0.00176	0.00175
	(!A1 * !C1 * D1 * !Y)	-0.00157	-0.00157	-0.00157
	(!A1 * !C1 * D1 * !Y)	0.00168	0.00170	0.00169

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00179	-0.00180	-0.00179
	(A1 * A2 * C1 * D1 * !Y)	0.00252	0.00255	0.00253
	(A1 * A2 * C1 * !D1 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * A2 * C1 * !D1 * !Y)	0.00242	0.00245	0.00243
	(A1 * A2 * !C1 * D1 * !Y)	-0.00180	-0.00182	-0.00181
	(A1 * A2 * !C1 * D1 * !Y)	0.00235	0.00238	0.00236
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00165	-0.00166	-0.00164
	(A1 * A2 * !C1 * !D1 * !Y)	0.00210	0.00211	0.00209
	(A1 * !A2 * C1 * D1 * !Y)	-0.00178	-0.00179	-0.00179
	(A1 * !A2 * C1 * D1 * !Y)	0.00348	0.00352	0.00351
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00178	-0.00179	-0.00179
	(A1 * !A2 * C1 * !D1 * !Y)	0.00349	0.00352	0.00351
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * !C1 * D1 * !Y)	0.00337	0.00342	0.00339
	(!A1 * C1 * D1 * !Y)	-0.00178	-0.00179	-0.00179
	(!A1 * C1 * D1 * !Y)	0.00348	0.00352	0.00351
	(!A1 * C1 * !D1 * !Y)	-0.00178	-0.00179	-0.00179
	(!A1 * C1 * !D1 * !Y)	0.00349	0.00352	0.00351
	(!A1 * !C1 * D1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A1 * !C1 * D1 * !Y)	0.00337	0.00342	0.00339

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00344	-0.00346	-0.00344
	(A1 * A2 * C1 * D1 * !Y)	0.00519	0.00522	0.00517
	(A1 * A2 * C1 * !D1 * !Y)	-0.00344	-0.00346	-0.00344
	(A1 * A2 * C1 * !D1 * !Y)	0.00499	0.00501	0.00498
	(A1 * A2 * !C1 * D1 * !Y)	-0.00348	-0.00350	-0.00348
	(A1 * A2 * !C1 * D1 * !Y)	0.00479	0.00483	0.00479
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00316	-0.00319	-0.00315
	(A1 * A2 * !C1 * !D1 * !Y)	0.00423	0.00429	0.00431
	(A1 * !A2 * C1 * D1 * !Y)	-0.00343	-0.00345	-0.00344
	(A1 * !A2 * C1 * D1 * !Y)	0.00719	0.00725	0.00722
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00343	-0.00345	-0.00343
	(A1 * !A2 * C1 * !D1 * !Y)	0.00718	0.00725	0.00721
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00345	-0.00346	-0.00344
	(A1 * !A2 * !C1 * D1 * !Y)	0.00694	0.00695	0.00694
	(!A1 * C1 * D1 * !Y)	-0.00343	-0.00345	-0.00344
	(!A1 * C1 * D1 * !Y)	0.00719	0.00725	0.00722
	(!A1 * C1 * !D1 * !Y)	-0.00343	-0.00345	-0.00343
	(!A1 * C1 * !D1 * !Y)	0.00719	0.00725	0.00722
	(!A1 * !C1 * D1 * !Y)	-0.00345	-0.00345	-0.00344
	(!A1 * !C1 * D1 * !Y)	0.00696	0.00696	0.00695

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)**	0.00173	0.00174	0.00168
	(A1 * B1 * D1 * !Y)	-0.00109	-0.00109	-0.00109
	(A1 * B1 * !D1 * !Y)	0.00167	0.00168	0.00166
	(A1 * B1 * !D1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B1 * D1 * !Y)	0.00181	0.00168	0.00167
	(A1 * A2 * !B1 * D1 * !Y)	-0.00114	-0.00118	-0.00117
	(A1 * A2 * !B1 * !D1 * !Y)	0.00168	0.00169	0.00166
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * !B1 * D1 * !Y)	0.00197	0.00167	0.00166
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00137	-0.00169	-0.00170
	(!A1 * B1 * D1 * !Y)	0.00175	0.00176	0.00170
	(!A1 * B1 * D1 * !Y)	-0.00110	-0.00110	-0.00109
	(!A1 * B1 * !D1 * !Y)	0.00168	0.00169	0.00166
	(!A1 * B1 * !D1 * !Y)	-0.00093	-0.00092	-0.00093
	(!A1 * !B1 * D1 * !Y)	0.00196	0.00167	0.00166
	(!A1 * !B1 * D1 * !Y)	-0.00137	-0.00169	-0.00170

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00177	0.00181	0.00176
	(A1 * B1 * D1 * !Y)	-0.00231	-0.00233	-0.00232
	(A1 * B1 * !D1 * !Y)	0.00173	0.00173	0.00171
	(A1 * B1 * !D1 * !Y)	-0.00202	-0.00202	-0.00201
	(A1 * A2 * !B1 * D1 * !Y)	0.00191	0.00175	0.00173
	(A1 * A2 * !B1 * D1 * !Y)	-0.00249	-0.00248	-0.00248
	(A1 * A2 * !B1 * !D1 * !Y)	0.00174	0.00174	0.00172
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00201	-0.00200	-0.00199
	(A1 * !A2 * !B1 * D1 * !Y)	0.00237	0.00173	0.00170
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00293	-0.00361	-0.00362
	(!A1 * B1 * D1 * !Y)	0.00180	0.00185	0.00178
	(!A1 * B1 * D1 * !Y)	-0.00233	-0.00234	-0.00234
	(!A1 * B1 * !D1 * !Y)	0.00173	0.00174	0.00171
	(!A1 * B1 * !D1 * !Y)	-0.00203	-0.00202	-0.00202
	(!A1 * !B1 * D1 * !Y)	0.00237	0.00173	0.00170
	(!A1 * !B1 * D1 * !Y)	-0.00293	-0.00361	-0.00362

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00352	0.00356	0.00342
	(A1 * B1 * D1 * !Y)	-0.00455	-0.00457	-0.00457
	(A1 * B1 * !D1 * !Y)	0.00338	0.00339	0.00333
	(A1 * B1 * !D1 * !Y)	-0.00395	-0.00394	-0.00394
	(A1 * A2 * !B1 * D1 * !Y)	0.00392	0.00340	0.00334
	(A1 * A2 * !B1 * D1 * !Y)	-0.00482	-0.00489	-0.00482
	(A1 * A2 * !B1 * !D1 * !Y)	0.00344	0.00345	0.00335
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00388	-0.00388	-0.00391
	(A1 * !A2 * !B1 * D1 * !Y)	0.00478	0.00338	0.00330
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00551	-0.00708	-0.00709
	(!A1 * B1 * D1 * !Y)	0.00361	0.00365	0.00346
	(!A1 * B1 * D1 * !Y)	-0.00458	-0.00459	-0.00460
	(!A1 * B1 * !D1 * !Y)	0.00342	0.00342	0.00334
	(!A1 * B1 * !D1 * !Y)	-0.00393	-0.00393	-0.00394
	(!A1 * !B1 * D1 * !Y)	0.00478	0.00338	0.00330
	(!A1 * !B1 * D1 * !Y)	-0.00552	-0.00708	-0.00709

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)**	-0.00165	-0.00166	-0.00166
	(A1 * B1 * D1 * !Y)	0.00109	0.00109	0.00109
	(A1 * B1 * !D1 * !Y)	-0.00164	-0.00166	-0.00164
	(A1 * B1 * !D1 * !Y)	0.00094	0.00095	0.00095
	(A1 * A2 * !B1 * D1 * !Y)	-0.00165	-0.00167	-0.00166
	(A1 * A2 * !B1 * D1 * !Y)	0.00116	0.00118	0.00117
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00158	-0.00160	-0.00164
	(A1 * A2 * !B1 * !D1 * !Y)	0.00097	0.00098	0.00094
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00164	-0.00166	-0.00164
	(A1 * !A2 * !B1 * D1 * !Y)	0.00169	0.00171	0.00170
	(!A1 * B1 * D1 * !Y)	-0.00166	-0.00167	-0.00166
	(!A1 * B1 * D1 * !Y)	0.00110	0.00110	0.00109
	(!A1 * B1 * !D1 * !Y)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !D1 * !Y)	0.00094	0.00095	0.00095
	(!A1 * !B1 * D1 * !Y)	-0.00165	-0.00166	-0.00165
	(!A1 * !B1 * D1 * !Y)	0.00169	0.00170	0.00170

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00172	-0.00173	-0.00173
	(A1 * B1 * D1 * !Y)	0.00231	0.00233	0.00232
	(A1 * B1 * !D1 * !Y)	-0.00169	-0.00170	-0.00168
	(A1 * B1 * !D1 * !Y)	0.00204	0.00204	0.00205
	(A1 * A2 * !B1 * D1 * !Y)	-0.00173	-0.00173	-0.00172
	(A1 * A2 * !B1 * D1 * !Y)	0.00249	0.00248	0.00248
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00159	-0.00160	-0.00166
	(A1 * A2 * !B1 * !D1 * !Y)	0.00206	0.00209	0.00205
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00170	-0.00170	-0.00170
	(A1 * !A2 * !B1 * D1 * !Y)	0.00359	0.00361	0.00362
	(!A1 * B1 * D1 * !Y)	-0.00172	-0.00173	-0.00173
	(!A1 * B1 * D1 * !Y)	0.00233	0.00234	0.00234
	(!A1 * B1 * !D1 * !Y)	-0.00168	-0.00169	-0.00167
	(!A1 * B1 * !D1 * !Y)	0.00203	0.00205	0.00207
	(!A1 * !B1 * D1 * !Y)	-0.00170	-0.00170	-0.00170
	(!A1 * !B1 * D1 * !Y)	0.00359	0.00361	0.00362

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00334	-0.00335	-0.00335
	(A1 * B1 * D1 * !Y)	0.00455	0.00457	0.00457
	(A1 * B1 * !D1 * !Y)	-0.00328	-0.00328	-0.00325
	(A1 * B1 * !D1 * !Y)	0.00402	0.00403	0.00404
	(A1 * A2 * !B1 * D1 * !Y)	-0.00334	-0.00336	-0.00334
	(A1 * A2 * !B1 * D1 * !Y)	0.00484	0.00489	0.00482
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00314	-0.00317	-0.00323
	(A1 * A2 * !B1 * !D1 * !Y)	0.00400	0.00403	0.00400
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00328	-0.00330	-0.00327
	(A1 * !A2 * !B1 * D1 * !Y)	0.00703	0.00710	0.00709
	(!A1 * B1 * D1 * !Y)	-0.00334	-0.00335	-0.00335
	(!A1 * B1 * D1 * !Y)	0.00458	0.00459	0.00460
	(!A1 * B1 * !D1 * !Y)	-0.00326	-0.00328	-0.00324
	(!A1 * B1 * !D1 * !Y)	0.00399	0.00404	0.00405
	(!A1 * !B1 * D1 * !Y)	-0.00328	-0.00330	-0.00327
	(!A1 * !B1 * D1 * !Y)	0.00703	0.00710	0.00709

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00185	0.00186	0.00184
	(A1 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * B1 * !C1 * !Y)	0.00185	0.00186	0.00184
	(A1 * B1 * !C1 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * !B1 * !C1 * !Y)	0.00185	0.00186	0.00184
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00085	-0.00085	-0.00084
	(!A1 * C1 * !Y)	0.00185	0.00186	0.00184
	(!A1 * C1 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !C1 * !Y)	0.00185	0.00186	0.00184
	(!A1 * B1 * !C1 * !Y)	-0.00085	-0.00085	-0.00084

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00208	0.00211	0.00210
	(A1 * C1 * !Y)	-0.00171	-0.00173	-0.00172
	(A1 * B1 * !C1 * !Y)	0.00208	0.00211	0.00210
	(A1 * B1 * !C1 * !Y)	-0.00171	-0.00173	-0.00172
	(A1 * A2 * !B1 * !C1 * !Y)	0.00208	0.00211	0.00210
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00170	-0.00173	-0.00172
	(!A1 * C1 * !Y)	0.00208	0.00211	0.00210
	(!A1 * C1 * !Y)	-0.00171	-0.00173	-0.00172
	(!A1 * B1 * !C1 * !Y)	0.00210	0.00211	0.00210
	(!A1 * B1 * !C1 * !Y)	-0.00173	-0.00173	-0.00172
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00418	0.00418	0.00415
	(A1 * C1 * !Y)	-0.00341	-0.00339	-0.00337
	(A1 * B1 * !C1 * !Y)	0.00413	0.00418	0.00415
	(A1 * B1 * !C1 * !Y)	-0.00335	-0.00339	-0.00336
	(A1 * A2 * !B1 * !C1 * !Y)	0.00414	0.00419	0.00415
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00336	-0.00339	-0.00336
	(!A1 * C1 * !Y)	0.00418	0.00418	0.00415
	(!A1 * C1 * !Y)	-0.00341	-0.00340	-0.00337
	(!A1 * B1 * !C1 * !Y)	0.00414	0.00418	0.00415
	(!A1 * B1 * !C1 * !Y)	-0.00335	-0.00339	-0.00337

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00180	-0.00181	-0.00184
	(A1 * C1 * !Y)	0.00089	0.00089	0.00086
	(A1 * B1 * !C1 * !Y)	-0.00174	-0.00175	-0.00183
	(A1 * B1 * !C1 * !Y)	0.00092	0.00092	0.00086
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00159	-0.00160	-0.00178
	(A1 * A2 * !B1 * !C1 * !Y)	0.00101	0.00102	0.00089
	(!A1 * C1 * !Y)	-0.00180	-0.00181	-0.00184
	(!A1 * C1 * !Y)	0.00089	0.00089	0.00086
	(!A1 * B1 * !C1 * !Y)	-0.00173	-0.00175	-0.00183
	(!A1 * B1 * !C1 * !Y)	0.00091	0.00092	0.00086
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00196	-0.00197	-0.00208
	(A1 * C1 * !Y)	0.00186	0.00186	0.00175
	(A1 * B1 * !C1 * !Y)	-0.00181	-0.00184	-0.00205
	(A1 * B1 * !C1 * !Y)	0.00189	0.00191	0.00175
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00153	-0.00156	-0.00195
	(A1 * A2 * !B1 * !C1 * !Y)	0.00209	0.00210	0.00182
	(!A1 * C1 * !Y)	-0.00195	-0.00197	-0.00208
	(!A1 * C1 * !Y)	0.00185	0.00186	0.00175
	(!A1 * B1 * !C1 * !Y)	-0.00181	-0.00184	-0.00205
	(!A1 * B1 * !C1 * !Y)	0.00190	0.00192	0.00175
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00391	-0.00393	-0.00413
	(A1 * C1 * !Y)	0.00360	0.00360	0.00343
	(A1 * B1 * !C1 * !Y)	-0.00362	-0.00366	-0.00406
	(A1 * B1 * !C1 * !Y)	0.00373	0.00375	0.00345
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00308	-0.00313	-0.00389
	(A1 * A2 * !B1 * !C1 * !Y)	0.00406	0.00408	0.00356
	(!A1 * C1 * !Y)	-0.00391	-0.00394	-0.00413
	(!A1 * C1 * !Y)	0.00360	0.00360	0.00343
	(!A1 * B1 * !C1 * !Y)	-0.00362	-0.00366	-0.00406
	(!A1 * B1 * !C1 * !Y)	0.00373	0.00375	0.00345

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2111o_1	14.38560
sky130_fd_sc_hs__a2111o_2	15.98400
sky130_fd_sc_hs__a2111o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__a2111o_1	0.00245	0.00258	0.00246	0.00251	0.00247	1.41580
sky130_fd_sc_hs__a2111o_2	0.00271	0.00282	0.00266	0.00274	0.00287	2.69357
sky130_fd_sc_hs__a2111o_4	0.00461	0.00454	0.00473	0.00475	0.00468	5.12060

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2111o_1	0.00000	0.02827	0.11347
sky130_fd_sc_hs__a2111o_2	0.00000	0.02623	0.12989
sky130_fd_sc_hs__a2111o_4	0.00000	0.07016	0.26794

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)	0.05773	0.46529	5.24484
	A2->X (RR)	0.06088	0.47033	5.23049
	B1->X (RR)	0.04956	0.44008	5.05749
	C1->X (RR)	0.04824	0.43012	4.98966
	D1->X (RR)	0.04378	0.41708	5.01916
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.05920	0.40206	5.26103
	A2->X (RR)	0.06227	0.40217	5.24973
	B1->X (RR)	0.04937	0.37333	5.08709
	C1->X (RR)	0.04735	0.36198	5.01878
	D1->X (RR)	0.04416	0.35121	5.03251
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.06543	0.34514	5.32700
	A2->X (RR)	0.06959	0.34579	5.29129
	B1->X (RR)	0.04861	0.29686	5.02710
	C1->X (RR)	0.04712	0.28759	4.94427
	D1->X (RR)	0.04263	0.27442	4.95985

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.19451	0.58430	5.17005
	A2->X (FF)	0.20989	0.61063	5.17920
	B1->X (FF)	0.19262	0.60910	5.36335
	C1->X (FF)	0.17191	0.61670	5.42747
	D1->X (FF)	0.13992	0.59438	5.41294
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.22877	0.61729	5.20212
	A2->X (FF)	0.24101	0.64183	5.23382
	B1->X (FF)	0.22404	0.63592	5.39626
	C1->X (FF)	0.20163	0.64281	5.48484
	D1->X (FF)	0.17114	0.62144	5.43430
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.24987	0.59965	5.32871
	A2->X (FF)	0.28261	0.64584	5.37520
	B1->X (FF)	0.26598	0.64568	5.60583
	C1->X (FF)	0.24161	0.65646	5.73135
	D1->X (FF)	0.18931	0.62344	5.63789

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01333	0.01430	0.04942
	A1	0.00602	0.00699	0.04243
	A2	0.01418	0.01477	0.04531
	A2	0.00601	0.00661	0.03716
	B1	0.01086	0.01224	0.04820
	B1	0.00463	0.00603	0.04197
	C1	0.00932	0.01080	0.04473
	C1	0.00387	0.00537	0.03934
	D1	0.00768	0.00984	0.05633
	D1	0.00302	0.00519	0.05166
sky130_fd_sc_hs__a2111o_2	A1	0.01686	0.01771	0.04872
	A1	0.00877	0.00963	0.04105
	A2	0.01797	0.01858	0.04554
	A2	0.00880	0.00943	0.03676
	B1	0.01403	0.01532	0.04717
	B1	0.00713	0.00848	0.04029
	C1	0.01216	0.01358	0.04376
	C1	0.00610	0.00758	0.03771
	D1	0.01059	0.01246	0.05427
	D1	0.00527	0.00721	0.04896

sky130_fd_sc_hs__a2111o_4	**A1**	0.03190	0.03362	0.09981
	A1	0.01765	0.01941	0.08644
	A2	0.03397	0.03521	0.09243
	A2	0.01763	0.01889	0.07684
	B1	0.02715	0.03015	0.09974
	B1	0.01455	0.01761	0.08718
	C1	0.02380	0.02694	0.08924
	C1	0.01294	0.01614	0.07843
	D1	0.01935	0.02371	0.10761
	D1	0.01033	0.01474	0.09864

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00416	0.00388	0.03648
	A1	0.01159	0.01132	0.04319
	A2	0.00476	0.00447	0.03420
	A2	0.01301	0.01272	0.04169
	B1	0.00404	0.00432	0.03825
	B1	0.01032	0.01059	0.04348
	C1	0.00402	0.00474	0.03707
	C1	0.00948	0.01021	0.04101
	D1	0.00404	0.00622	0.05193
	D1	0.00873	0.01079	0.05509

sky130_fd_sc_hs__a2111o_2	**A1**	0.00871	0.00696	0.03520
	A1	0.01697	0.01522	0.04192
	A2	0.00930	0.00745	0.03395
	A2	0.01858	0.01676	0.04178
	B1	0.00809	0.00723	0.03648
	B1	0.01505	0.01419	0.04197
	C1	0.00815	0.00765	0.03604
	C1	0.01423	0.01373	0.04002
	D1	0.00794	0.00877	0.04817
	D1	0.01326	0.01410	0.05345
sky130_fd_sc_hs__a2111o_4	**A1**	0.01796	0.01355	0.08029
	A1	0.03251	0.02820	0.08581
	A2	0.02021	0.01505	0.07100
	A2	0.03674	0.03158	0.08430
	B1	0.01648	0.01376	0.07880
	B1	0.02922	0.02648	0.08740
	C1	0.01666	0.01447	0.07249
	C1	0.02755	0.02541	0.07961
	D1	0.01648	0.01723	0.09623
	D1	0.02553	0.02625	0.10161

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)**	0.00159	0.00160	0.00159
	(A2 * B1 * D1 * X)	-0.00155	-0.00162	-0.00161
	(A2 * B1 * C1 * !D1 * X)	0.00159	0.00160	0.00159
	(A2 * B1 * C1 * !D1 * X)	-0.00155	-0.00162	-0.00161
	(A2 * B1 * !C1 * !D1 * X)	0.00159	0.00160	0.00159
	(A2 * B1 * !C1 * !D1 * X)	-0.00154	-0.00162	-0.00161
	(A2 * !B1 * C1 * D1 * X)	0.00159	0.00160	0.00159
	(A2 * !B1 * C1 * D1 * X)	-0.00146	-0.00159	-0.00157
	(A2 * !B1 * C1 * !D1 * X)	0.00159	0.00160	0.00159
	(A2 * !B1 * C1 * !D1 * X)	-0.00146	-0.00159	-0.00157
	(A2 * !B1 * !C1 * D1 * X)	0.00160	0.00160	0.00159
	(A2 * !B1 * !C1 * D1 * X)	-0.00143	-0.00156	-0.00155
	(!A2 * B1 * D1 * X)	0.00153	0.00154	0.00153
	(!A2 * B1 * D1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * C1 * !D1 * X)	0.00153	0.00154	0.00153
	(!A2 * B1 * C1 * !D1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !D1 * X)	0.00153	0.00154	0.00153
	(!A2 * B1 * !C1 * !D1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * C1 * D1 * X)	0.00152	0.00154	0.00152
	(!A2 * !B1 * C1 * D1 * X)	-0.00163	-0.00164	-0.00164
	(!A2 * !B1 * C1 * !D1 * X)	0.00152	0.00154	0.00152
	(!A2 * !B1 * C1 * !D1 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * !B1 * !C1 * D1 * X)	0.00152	0.00154	0.00152
	(!A2 * !B1 * !C1 * D1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00063	0.00063	0.00062
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00193	-0.00194	-0.00196

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00160	0.00161	0.00161
	(A2 * B1 * D1 * X)	-0.00173	-0.00181	-0.00180
	(A2 * B1 * C1 * !D1 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * C1 * !D1 * X)	-0.00172	-0.00181	-0.00180
	(A2 * B1 * !C1 * !D1 * X)	0.00160	0.00161	0.00161
	(A2 * B1 * !C1 * !D1 * X)	-0.00172	-0.00181	-0.00180
	(A2 * !B1 * C1 * D1 * X)	0.00160	0.00160	0.00161
	(A2 * !B1 * C1 * D1 * X)	-0.00163	-0.00176	-0.00176
	(A2 * !B1 * C1 * !D1 * X)	0.00160	0.00161	0.00161
	(A2 * !B1 * C1 * !D1 * X)	-0.00163	-0.00176	-0.00176
	(A2 * !B1 * !C1 * D1 * X)	0.00161	0.00161	0.00161
	(A2 * !B1 * !C1 * D1 * X)	-0.00160	-0.00176	-0.00174
	(!A2 * B1 * D1 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * C1 * !D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * B1 * !C1 * !D1 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * !C1 * !D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * C1 * D1 * X)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * !D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * D1 * X)	0.00156	0.00157	0.00156
	(!A2 * !B1 * !C1 * D1 * X)	-0.00184	-0.00185	-0.00184
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00051	0.00052	0.00051
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00216	-0.00219	-0.00219

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00270	0.00273	0.00271
	(A2 * B1 * D1 * X)	-0.00313	-0.00330	-0.00328
	(A2 * B1 * C1 * !D1 * X)	0.00270	0.00273	0.00271
	(A2 * B1 * C1 * !D1 * X)	-0.00313	-0.00330	-0.00328
	(A2 * B1 * !C1 * !D1 * X)	0.00270	0.00273	0.00271
	(A2 * B1 * !C1 * !D1 * X)	-0.00309	-0.00330	-0.00328
	(A2 * !B1 * C1 * D1 * X)	0.00270	0.00271	0.00271
	(A2 * !B1 * C1 * D1 * X)	-0.00293	-0.00320	-0.00318
	(A2 * !B1 * C1 * !D1 * X)	0.00270	0.00271	0.00271
	(A2 * !B1 * C1 * !D1 * X)	-0.00293	-0.00320	-0.00318
	(A2 * !B1 * !C1 * D1 * X)	0.00273	0.00272	0.00271
	(A2 * !B1 * !C1 * D1 * X)	-0.00289	-0.00315	-0.00314
	(!A2 * B1 * D1 * X)	0.00261	0.00263	0.00262
	(!A2 * B1 * D1 * X)	-0.00334	-0.00336	-0.00334
	(!A2 * B1 * C1 * !D1 * X)	0.00261	0.00263	0.00262
	(!A2 * B1 * C1 * !D1 * X)	-0.00334	-0.00336	-0.00334
	(!A2 * B1 * !C1 * !D1 * X)	0.00261	0.00263	0.00262
	(!A2 * B1 * !C1 * !D1 * X)	-0.00334	-0.00336	-0.00334
	(!A2 * !B1 * C1 * D1 * X)	0.00261	0.00264	0.00262
	(!A2 * !B1 * C1 * D1 * X)	-0.00334	-0.00337	-0.00334
	(!A2 * !B1 * C1 * !D1 * X)	0.00261	0.00263	0.00262
	(!A2 * !B1 * C1 * !D1 * X)	-0.00333	-0.00336	-0.00334
	(!A2 * !B1 * !C1 * D1 * X)	0.00261	0.00263	0.00262
	(!A2 * !B1 * !C1 * D1 * X)	-0.00333	-0.00335	-0.00334
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00089	0.00091	0.00086
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00386	-0.00391	-0.00394

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)**	-0.00158	-0.00159	-0.00158
	(A2 * B1 * D1 * X)	0.00160	0.00162	0.00161
	(A2 * B1 * C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * C1 * !D1 * X)	0.00160	0.00162	0.00161
	(A2 * B1 * !C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * !C1 * !D1 * X)	0.00160	0.00162	0.00161
	(A2 * !B1 * C1 * D1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !B1 * C1 * D1 * X)	0.00156	0.00159	0.00157
	(A2 * !B1 * C1 * !D1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !B1 * C1 * !D1 * X)	0.00156	0.00159	0.00157
	(A2 * !B1 * !C1 * D1 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !B1 * !C1 * D1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * D1 * X)	-0.00150	-0.00154	-0.00153
	(!A2 * B1 * D1 * X)	0.00164	0.00167	0.00164
	(!A2 * B1 * C1 * !D1 * X)	-0.00149	-0.00154	-0.00153
	(!A2 * B1 * C1 * !D1 * X)	0.00164	0.00167	0.00164
	(!A2 * B1 * !C1 * !D1 * X)	-0.00149	-0.00154	-0.00153
	(!A2 * B1 * !C1 * !D1 * X)	0.00164	0.00167	0.00164
	(!A2 * !B1 * C1 * D1 * X)	-0.00149	-0.00153	-0.00152
	(!A2 * !B1 * C1 * D1 * X)	0.00164	0.00164	0.00164
	(!A2 * !B1 * C1 * !D1 * X)	-0.00149	-0.00153	-0.00152
	(!A2 * !B1 * C1 * !D1 * X)	0.00164	0.00164	0.00164
	(!A2 * !B1 * !C1 * D1 * X)	-0.00149	-0.00153	-0.00152
	(!A2 * !B1 * !C1 * D1 * X)	0.00164	0.00165	0.00165
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00061	-0.00062	-0.00061
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00195	0.00199	0.00196

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00160	-0.00161	-0.00160
	(A2 * B1 * D1 * X)	0.00179	0.00181	0.00180
	(A2 * B1 * C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(A2 * B1 * C1 * !D1 * X)	0.00179	0.00181	0.00180
	(A2 * B1 * !C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(A2 * B1 * !C1 * !D1 * X)	0.00179	0.00181	0.00180
	(A2 * !B1 * C1 * D1 * X)	-0.00160	-0.00160	-0.00160
	(A2 * !B1 * C1 * D1 * X)	0.00176	0.00176	0.00176
	(A2 * !B1 * C1 * !D1 * X)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * C1 * !D1 * X)	0.00176	0.00176	0.00176
	(A2 * !B1 * !C1 * D1 * X)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * !C1 * D1 * X)	0.00174	0.00176	0.00174
	(!A2 * B1 * D1 * X)	-0.00150	-0.00154	-0.00155
	(!A2 * B1 * D1 * X)	0.00184	0.00186	0.00185
	(!A2 * B1 * C1 * !D1 * X)	-0.00149	-0.00154	-0.00155
	(!A2 * B1 * C1 * !D1 * X)	0.00184	0.00186	0.00185
	(!A2 * B1 * !C1 * !D1 * X)	-0.00149	-0.00154	-0.00155
	(!A2 * B1 * !C1 * !D1 * X)	0.00184	0.00186	0.00185
	(!A2 * !B1 * C1 * D1 * X)	-0.00149	-0.00154	-0.00155
	(!A2 * !B1 * C1 * D1 * X)	0.00184	0.00186	0.00185
	(!A2 * !B1 * C1 * !D1 * X)	-0.00149	-0.00154	-0.00155
	(!A2 * !B1 * C1 * !D1 * X)	0.00184	0.00186	0.00185
	(!A2 * !B1 * !C1 * D1 * X)	-0.00149	-0.00154	-0.00155
	(!A2 * !B1 * !C1 * D1 * X)	0.00184	0.00186	0.00185
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00050	-0.00050	-0.00050
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00220	0.00221	0.00220

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00269	-0.00271	-0.00270
	(A2 * B1 * D1 * X)	0.00326	0.00330	0.00328
	(A2 * B1 * C1 * !D1 * X)	-0.00269	-0.00271	-0.00270
	(A2 * B1 * C1 * !D1 * X)	0.00326	0.00330	0.00328
	(A2 * B1 * !C1 * !D1 * X)	-0.00269	-0.00271	-0.00270
	(A2 * B1 * !C1 * !D1 * X)	0.00325	0.00330	0.00328
	(A2 * !B1 * C1 * D1 * X)	-0.00269	-0.00271	-0.00270
	(A2 * !B1 * C1 * D1 * X)	0.00317	0.00320	0.00318
	(A2 * !B1 * C1 * !D1 * X)	-0.00269	-0.00271	-0.00270
	(A2 * !B1 * C1 * !D1 * X)	0.00317	0.00320	0.00318
	(A2 * !B1 * !C1 * D1 * X)	-0.00270	-0.00271	-0.00270
	(A2 * !B1 * !C1 * D1 * X)	0.00313	0.00315	0.00314
	(!A2 * B1 * D1 * X)	-0.00249	-0.00262	-0.00262
	(!A2 * B1 * D1 * X)	0.00334	0.00338	0.00335
	(!A2 * B1 * C1 * !D1 * X)	-0.00249	-0.00262	-0.00262
	(!A2 * B1 * C1 * !D1 * X)	0.00334	0.00338	0.00335
	(!A2 * B1 * !C1 * !D1 * X)	-0.00248	-0.00262	-0.00262
	(!A2 * B1 * !C1 * !D1 * X)	0.00334	0.00338	0.00336
	(!A2 * !B1 * C1 * D1 * X)	-0.00249	-0.00262	-0.00262
	(!A2 * !B1 * C1 * D1 * X)	0.00334	0.00338	0.00335
	(!A2 * !B1 * C1 * !D1 * X)	-0.00248	-0.00262	-0.00262
	(!A2 * !B1 * C1 * !D1 * X)	0.00334	0.00338	0.00336
	(!A2 * !B1 * !C1 * D1 * X)	-0.00248	-0.00262	-0.00262
	(!A2 * !B1 * !C1 * D1 * X)	0.00334	0.00338	0.00336
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00085	-0.00085	-0.00084
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00397	0.00398	0.00396

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)**	0.00145	0.00145	0.00145
	(A1 * B1 * D1 * X)	-0.00162	-0.00169	-0.00168
	(A1 * B1 * C1 * !D1 * X)	0.00145	0.00145	0.00145
	(A1 * B1 * C1 * !D1 * X)	-0.00162	-0.00169	-0.00168
	(A1 * B1 * !C1 * !D1 * X)	0.00145	0.00145	0.00145
	(A1 * B1 * !C1 * !D1 * X)	-0.00160	-0.00169	-0.00168
	(A1 * !B1 * C1 * D1 * X)	0.00144	0.00144	0.00145
	(A1 * !B1 * C1 * D1 * X)	-0.00151	-0.00164	-0.00163
	(A1 * !B1 * C1 * !D1 * X)	0.00145	0.00144	0.00145
	(A1 * !B1 * C1 * !D1 * X)	-0.00151	-0.00164	-0.00163
	(A1 * !B1 * !C1 * D1 * X)	0.00145	0.00145	0.00145
	(A1 * !B1 * !C1 * D1 * X)	-0.00148	-0.00162	-0.00161
	(!A1 * B1 * X)	0.00139	0.00139	0.00139
	(!A1 * B1 * X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * C1 * X)	0.00140	0.00140	0.00139
	(!A1 * !B1 * C1 * X)	-0.00172	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * D1 * X)	0.00140	0.00141	0.00140
	(!A1 * !B1 * !C1 * D1 * X)	-0.00172	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00121	0.00122	0.00122
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00188	-0.00189	-0.00188

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00161	0.00162	0.00162
	(A1 * B1 * D1 * X)	-0.00173	-0.00182	-0.00181
	(A1 * B1 * C1 * !D1 * X)	0.00161	0.00162	0.00162
	(A1 * B1 * C1 * !D1 * X)	-0.00173	-0.00182	-0.00181
	(A1 * B1 * !C1 * !D1 * X)	0.00161	0.00162	0.00162
	(A1 * B1 * !C1 * !D1 * X)	-0.00172	-0.00181	-0.00181
	(A1 * !B1 * C1 * D1 * X)	0.00161	0.00161	0.00162
	(A1 * !B1 * C1 * D1 * X)	-0.00163	-0.00177	-0.00176
	(A1 * !B1 * C1 * !D1 * X)	0.00161	0.00161	0.00162
	(A1 * !B1 * C1 * !D1 * X)	-0.00163	-0.00177	-0.00176
	(A1 * !B1 * !C1 * D1 * X)	0.00161	0.00162	0.00162
	(A1 * !B1 * !C1 * D1 * X)	-0.00159	-0.00176	-0.00174
	(!A1 * B1 * X)	0.00156	0.00159	0.00157
	(!A1 * B1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * C1 * X)	0.00154	0.00156	0.00155
	(!A1 * !B1 * C1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * D1 * X)	0.00155	0.00157	0.00156
	(!A1 * !B1 * !C1 * D1 * X)	-0.00185	-0.00186	-0.00185
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00142	0.00145	0.00143
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00196	-0.00198	-0.00197

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00277	0.00280	0.00278
	(A1 * B1 * D1 * X)	-0.00316	-0.00332	-0.00330
	(A1 * B1 * C1 * !D1 * X)	0.00278	0.00280	0.00278
	(A1 * B1 * C1 * !D1 * X)	-0.00315	-0.00332	-0.00330
	(A1 * B1 * !C1 * !D1 * X)	0.00278	0.00280	0.00278
	(A1 * B1 * !C1 * !D1 * X)	-0.00311	-0.00331	-0.00330
	(A1 * !B1 * C1 * D1 * X)	0.00278	0.00280	0.00278
	(A1 * !B1 * C1 * D1 * X)	-0.00297	-0.00321	-0.00320
	(A1 * !B1 * C1 * !D1 * X)	0.00279	0.00280	0.00278
	(A1 * !B1 * C1 * !D1 * X)	-0.00296	-0.00321	-0.00320
	(A1 * !B1 * !C1 * D1 * X)	0.00281	0.00280	0.00278
	(A1 * !B1 * !C1 * D1 * X)	-0.00292	-0.00317	-0.00316
	(!A1 * B1 * X)	0.00269	0.00270	0.00270
	(!A1 * B1 * X)	-0.00336	-0.00337	-0.00337
	(!A1 * !B1 * C1 * X)	0.00269	0.00271	0.00270
	(!A1 * !B1 * C1 * X)	-0.00336	-0.00338	-0.00337
	(!A1 * !B1 * !C1 * D1 * X)	0.00269	0.00272	0.00270
	(!A1 * !B1 * !C1 * D1 * X)	-0.00336	-0.00338	-0.00337
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00265	0.00268	0.00267
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00336	-0.00338	-0.00337

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)**	-0.00144	-0.00145	-0.00144
	(A1 * B1 * D1 * X)	0.00167	0.00169	0.00168
	(A1 * B1 * C1 * !D1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * C1 * !D1 * X)	0.00167	0.00169	0.00168
	(A1 * B1 * !C1 * !D1 * X)	-0.00144	-0.00145	-0.00144
	(A1 * B1 * !C1 * !D1 * X)	0.00167	0.00169	0.00168
	(A1 * !B1 * C1 * D1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * !B1 * C1 * D1 * X)	0.00162	0.00164	0.00163
	(A1 * !B1 * C1 * !D1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * !B1 * C1 * !D1 * X)	0.00162	0.00164	0.00163
	(A1 * !B1 * !C1 * D1 * X)	-0.00144	-0.00144	-0.00144
	(A1 * !B1 * !C1 * D1 * X)	0.00161	0.00162	0.00161
	(!A1 * B1 * X)	-0.00135	-0.00139	-0.00139
	(!A1 * B1 * X)	0.00171	0.00172	0.00172
	(!A1 * !B1 * C1 * X)	-0.00136	-0.00140	-0.00139
	(!A1 * !B1 * C1 * X)	0.00172	0.00173	0.00172
	(!A1 * !B1 * !C1 * D1 * X)	-0.00136	-0.00140	-0.00140
	(!A1 * !B1 * !C1 * D1 * X)	0.00172	0.00173	0.00172
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00114	-0.00121	-0.00122
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00196	0.00191	0.00189

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00161	-0.00162	-0.00161
	(A1 * B1 * D1 * X)	0.00181	0.00182	0.00181
	(A1 * B1 * C1 * !D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * C1 * !D1 * X)	0.00181	0.00182	0.00181
	(A1 * B1 * !C1 * !D1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * B1 * !C1 * !D1 * X)	0.00181	0.00181	0.00181
	(A1 * !B1 * C1 * D1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * !B1 * C1 * D1 * X)	0.00176	0.00177	0.00176
	(A1 * !B1 * C1 * !D1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * !B1 * C1 * !D1 * X)	0.00176	0.00177	0.00176
	(A1 * !B1 * !C1 * D1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * !C1 * D1 * X)	0.00173	0.00176	0.00174
	(!A1 * B1 * X)	-0.00151	-0.00156	-0.00156
	(!A1 * B1 * X)	0.00185	0.00186	0.00186
	(!A1 * !B1 * C1 * X)	-0.00151	-0.00156	-0.00155
	(!A1 * !B1 * C1 * X)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !C1 * D1 * X)	-0.00151	-0.00156	-0.00156
	(!A1 * !B1 * !C1 * D1 * X)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00135	-0.00143	-0.00143
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00203	0.00199	0.00198

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00277	-0.00278	-0.00277
	(A1 * B1 * D1 * X)	0.00330	0.00332	0.00330
	(A1 * B1 * C1 * !D1 * X)	-0.00277	-0.00278	-0.00277
	(A1 * B1 * C1 * !D1 * X)	0.00330	0.00332	0.00330
	(A1 * B1 * !C1 * !D1 * X)	-0.00277	-0.00278	-0.00277
	(A1 * B1 * !C1 * !D1 * X)	0.00330	0.00331	0.00330
	(A1 * !B1 * C1 * D1 * X)	-0.00276	-0.00278	-0.00277
	(A1 * !B1 * C1 * D1 * X)	0.00318	0.00321	0.00320
	(A1 * !B1 * C1 * !D1 * X)	-0.00276	-0.00278	-0.00277
	(A1 * !B1 * C1 * !D1 * X)	0.00318	0.00321	0.00320
	(A1 * !B1 * !C1 * D1 * X)	-0.00277	-0.00278	-0.00277
	(A1 * !B1 * !C1 * D1 * X)	0.00314	0.00317	0.00316
	(!A1 * B1 * X)	-0.00257	-0.00267	-0.00269
	(!A1 * B1 * X)	0.00336	0.00340	0.00338
	(!A1 * !B1 * C1 * X)	-0.00257	-0.00267	-0.00269
	(!A1 * !B1 * C1 * X)	0.00336	0.00340	0.00338
	(!A1 * !B1 * !C1 * D1 * X)	-0.00256	-0.00267	-0.00268
	(!A1 * !B1 * !C1 * D1 * X)	0.00336	0.00340	0.00338
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00246	-0.00266	-0.00267
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00350	0.00341	0.00338

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)**	0.00149	0.00151	0.00148
	(A1 * A2 * C1 * D1 * X)	-0.00114	-0.00115	-0.00115
	(A1 * A2 * C1 * !D1 * X)	0.00153	0.00152	0.00148
	(A1 * A2 * C1 * !D1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !C1 * D1 * X)	0.00147	0.00148	0.00148
	(A1 * A2 * !C1 * D1 * X)	-0.00105	-0.00107	-0.00106
	(A1 * A2 * !C1 * !D1 * X)	0.00147	0.00149	0.00148
	(A1 * A2 * !C1 * !D1 * X)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * C1 * D1 * X)	0.00148	0.00149	0.00147
	(A1 * !A2 * C1 * D1 * X)	-0.00153	-0.00157	-0.00158
	(A1 * !A2 * C1 * !D1 * X)	0.00160	0.00150	0.00147
	(A1 * !A2 * C1 * !D1 * X)	-0.00141	-0.00158	-0.00158
	(A1 * !A2 * !C1 * D1 * X)	0.00154	0.00150	0.00147
	(A1 * !A2 * !C1 * D1 * X)	-0.00135	-0.00152	-0.00153
	(!A1 * C1 * D1 * X)	0.00148	0.00147	0.00147
	(!A1 * C1 * D1 * X)	-0.00153	-0.00157	-0.00157
	(!A1 * C1 * !D1 * X)	0.00161	0.00149	0.00147
	(!A1 * C1 * !D1 * X)	-0.00140	-0.00158	-0.00158
	(!A1 * !C1 * D1 * X)	0.00155	0.00150	0.00147
	(!A1 * !C1 * D1 * X)	-0.00134	-0.00152	-0.00152

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00157	0.00157	0.00156
	(A1 * A2 * C1 * D1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * A2 * C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A1 * A2 * C1 * !D1 * X)	-0.00124	-0.00124	-0.00123
	(A1 * A2 * !C1 * D1 * X)	0.00156	0.00157	0.00156
	(A1 * A2 * !C1 * D1 * X)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * !C1 * !D1 * X)	0.00156	0.00157	0.00156
	(A1 * A2 * !C1 * !D1 * X)	-0.00098	-0.00098	-0.00097
	(A1 * !A2 * C1 * D1 * X)	0.00155	0.00156	0.00156
	(A1 * !A2 * C1 * D1 * X)	-0.00169	-0.00176	-0.00175
	(A1 * !A2 * C1 * !D1 * X)	0.00163	0.00156	0.00156
	(A1 * !A2 * C1 * !D1 * X)	-0.00161	-0.00175	-0.00175
	(A1 * !A2 * !C1 * D1 * X)	0.00159	0.00156	0.00156
	(A1 * !A2 * !C1 * D1 * X)	-0.00151	-0.00170	-0.00169
	(!A1 * C1 * D1 * X)	0.00156	0.00157	0.00156
	(!A1 * C1 * D1 * X)	-0.00169	-0.00176	-0.00175
	(!A1 * C1 * !D1 * X)	0.00164	0.00157	0.00156
	(!A1 * C1 * !D1 * X)	-0.00160	-0.00176	-0.00175
	(!A1 * !C1 * D1 * X)	0.00159	0.00156	0.00156
	(!A1 * !C1 * D1 * X)	-0.00150	-0.00170	-0.00169

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00290	0.00293	0.00290
	(A1 * A2 * C1 * D1 * X)	-0.00234	-0.00237	-0.00236
	(A1 * A2 * C1 * !D1 * X)	0.00291	0.00293	0.00290
	(A1 * A2 * C1 * !D1 * X)	-0.00229	-0.00229	-0.00228
	(A1 * A2 * !C1 * D1 * X)	0.00291	0.00297	0.00291
	(A1 * A2 * !C1 * D1 * X)	-0.00222	-0.00224	-0.00222
	(A1 * A2 * !C1 * !D1 * X)	0.00289	0.00292	0.00290
	(A1 * A2 * !C1 * !D1 * X)	-0.00184	-0.00186	-0.00184
	(A1 * !A2 * C1 * D1 * X)	0.00289	0.00293	0.00289
	(A1 * !A2 * C1 * D1 * X)	-0.00311	-0.00326	-0.00326
	(A1 * !A2 * C1 * !D1 * X)	0.00302	0.00293	0.00289
	(A1 * !A2 * C1 * !D1 * X)	-0.00297	-0.00326	-0.00326
	(A1 * !A2 * !C1 * D1 * X)	0.00299	0.00294	0.00290
	(A1 * !A2 * !C1 * D1 * X)	-0.00283	-0.00316	-0.00315
	(!A1 * C1 * D1 * X)	0.00289	0.00293	0.00289
	(!A1 * C1 * D1 * X)	-0.00312	-0.00327	-0.00326
	(!A1 * C1 * !D1 * X)	0.00301	0.00293	0.00289
	(!A1 * C1 * !D1 * X)	-0.00298	-0.00326	-0.00326
	(!A1 * !C1 * D1 * X)	0.00298	0.00294	0.00290
	(!A1 * !C1 * D1 * X)	-0.00284	-0.00317	-0.00315

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)**	-0.00147	-0.00148	-0.00148
	(A1 * A2 * C1 * D1 * X)	0.00114	0.00115	0.00115
	(A1 * A2 * C1 * !D1 * X)	-0.00147	-0.00147	-0.00148
	(A1 * A2 * C1 * !D1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * !C1 * D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * A2 * !C1 * D1 * X)	0.00105	0.00107	0.00106
	(A1 * A2 * !C1 * !D1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * A2 * !C1 * !D1 * X)	0.00094	0.00095	0.00094
	(A1 * !A2 * C1 * D1 * X)	-0.00147	-0.00147	-0.00147
	(A1 * !A2 * C1 * D1 * X)	0.00157	0.00157	0.00158
	(A1 * !A2 * C1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * C1 * !D1 * X)	0.00157	0.00158	0.00158
	(A1 * !A2 * !C1 * D1 * X)	-0.00146	-0.00147	-0.00147
	(A1 * !A2 * !C1 * D1 * X)	0.00151	0.00152	0.00153
	(!A1 * C1 * D1 * X)	-0.00147	-0.00147	-0.00147
	(!A1 * C1 * D1 * X)	0.00157	0.00159	0.00157
	(!A1 * C1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(!A1 * C1 * !D1 * X)	0.00157	0.00158	0.00158
	(!A1 * !C1 * D1 * X)	-0.00146	-0.00147	-0.00147
	(!A1 * !C1 * D1 * X)	0.00151	0.00152	0.00152

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00155	-0.00156	-0.00155
	(A1 * A2 * C1 * D1 * X)	0.00127	0.00128	0.00128
	(A1 * A2 * C1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * A2 * C1 * !D1 * X)	0.00124	0.00124	0.00123
	(A1 * A2 * !C1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * A2 * !C1 * D1 * X)	0.00117	0.00118	0.00117
	(A1 * A2 * !C1 * !D1 * X)	-0.00148	-0.00149	-0.00149
	(A1 * A2 * !C1 * !D1 * X)	0.00104	0.00104	0.00103
	(A1 * !A2 * C1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * C1 * D1 * X)	0.00174	0.00177	0.00175
	(A1 * !A2 * C1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * C1 * !D1 * X)	0.00174	0.00177	0.00175
	(A1 * !A2 * !C1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !C1 * D1 * X)	0.00168	0.00170	0.00169
	(!A1 * C1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * C1 * D1 * X)	0.00174	0.00177	0.00175
	(!A1 * C1 * !D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * C1 * !D1 * X)	0.00174	0.00176	0.00175
	(!A1 * !C1 * D1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * !C1 * D1 * X)	0.00168	0.00170	0.00169

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00288	-0.00290	-0.00289
	(A1 * A2 * C1 * D1 * X)	0.00234	0.00237	0.00236
	(A1 * A2 * C1 * !D1 * X)	-0.00289	-0.00290	-0.00289
	(A1 * A2 * C1 * !D1 * X)	0.00229	0.00229	0.00228
	(A1 * A2 * !C1 * D1 * X)	-0.00290	-0.00292	-0.00290
	(A1 * A2 * !C1 * D1 * X)	0.00222	0.00224	0.00222
	(A1 * A2 * !C1 * !D1 * X)	-0.00276	-0.00277	-0.00275
	(A1 * A2 * !C1 * !D1 * X)	0.00198	0.00200	0.00198
	(A1 * !A2 * C1 * D1 * X)	-0.00289	-0.00289	-0.00289
	(A1 * !A2 * C1 * D1 * X)	0.00325	0.00326	0.00326
	(A1 * !A2 * C1 * !D1 * X)	-0.00289	-0.00289	-0.00289
	(A1 * !A2 * C1 * !D1 * X)	0.00325	0.00326	0.00326
	(A1 * !A2 * !C1 * D1 * X)	-0.00288	-0.00290	-0.00288
	(A1 * !A2 * !C1 * D1 * X)	0.00314	0.00316	0.00315
	(!A1 * C1 * D1 * X)	-0.00289	-0.00289	-0.00289
	(!A1 * C1 * D1 * X)	0.00325	0.00327	0.00326
	(!A1 * C1 * !D1 * X)	-0.00289	-0.00289	-0.00289
	(!A1 * C1 * !D1 * X)	0.00325	0.00326	0.00326
	(!A1 * !C1 * D1 * X)	-0.00288	-0.00290	-0.00288
	(!A1 * !C1 * D1 * X)	0.00314	0.00317	0.00315

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)**	0.00157	0.00159	0.00152
	(A1 * B1 * D1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * B1 * !D1 * X)	0.00149	0.00151	0.00148
	(A1 * B1 * !D1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * !B1 * D1 * X)	0.00164	0.00151	0.00149
	(A1 * A2 * !B1 * D1 * X)	-0.00104	-0.00109	-0.00108
	(A1 * A2 * !B1 * !D1 * X)	0.00150	0.00152	0.00149
	(A1 * A2 * !B1 * !D1 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A2 * !B1 * D1 * X)	0.00180	0.00150	0.00148
	(A1 * !A2 * !B1 * D1 * X)	-0.00123	-0.00154	-0.00156
	(!A1 * B1 * D1 * X)	0.00159	0.00161	0.00153
	(!A1 * B1 * D1 * X)	-0.00100	-0.00101	-0.00100
	(!A1 * B1 * !D1 * X)	0.00150	0.00152	0.00149
	(!A1 * B1 * !D1 * X)	-0.00085	-0.00087	-0.00087
	(!A1 * !B1 * D1 * X)	0.00181	0.00150	0.00148
	(!A1 * !B1 * D1 * X)	-0.00123	-0.00154	-0.00156

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00161	0.00162	0.00157
	(A1 * B1 * D1 * X)	-0.00119	-0.00119	-0.00118
	(A1 * B1 * !D1 * X)	0.00156	0.00157	0.00155
	(A1 * B1 * !D1 * X)	-0.00103	-0.00103	-0.00102
	(A1 * A2 * !B1 * D1 * X)	0.00169	0.00155	0.00155
	(A1 * A2 * !B1 * D1 * X)	-0.00123	-0.00124	-0.00125
	(A1 * A2 * !B1 * !D1 * X)	0.00157	0.00158	0.00155
	(A1 * A2 * !B1 * !D1 * X)	-0.00101	-0.00101	-0.00101
	(A1 * !A2 * !B1 * D1 * X)	0.00186	0.00156	0.00155
	(A1 * !A2 * !B1 * D1 * X)	-0.00148	-0.00181	-0.00182
	(!A1 * B1 * D1 * X)	0.00163	0.00164	0.00158
	(!A1 * B1 * D1 * X)	-0.00119	-0.00121	-0.00120
	(!A1 * B1 * !D1 * X)	0.00157	0.00157	0.00155
	(!A1 * B1 * !D1 * X)	-0.00104	-0.00104	-0.00104
	(!A1 * !B1 * D1 * X)	0.00186	0.00156	0.00155
	(!A1 * !B1 * D1 * X)	-0.00148	-0.00181	-0.00182

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00289	0.00295	0.00288
	(A1 * B1 * D1 * X)	-0.00217	-0.00219	-0.00218
	(A1 * B1 * !D1 * X)	0.00282	0.00286	0.00283
	(A1 * B1 * !D1 * X)	-0.00189	-0.00191	-0.00191
	(A1 * A2 * !B1 * D1 * X)	0.00303	0.00286	0.00284
	(A1 * A2 * !B1 * D1 * X)	-0.00233	-0.00236	-0.00232
	(A1 * A2 * !B1 * !D1 * X)	0.00285	0.00288	0.00284
	(A1 * A2 * !B1 * !D1 * X)	-0.00187	-0.00189	-0.00189
	(A1 * !A2 * !B1 * D1 * X)	0.00350	0.00286	0.00282
	(A1 * !A2 * !B1 * D1 * X)	-0.00262	-0.00335	-0.00336
	(!A1 * B1 * D1 * X)	0.00293	0.00301	0.00290
	(!A1 * B1 * D1 * X)	-0.00219	-0.00221	-0.00220
	(!A1 * B1 * !D1 * X)	0.00284	0.00287	0.00283
	(!A1 * B1 * !D1 * X)	-0.00189	-0.00191	-0.00191
	(!A1 * !B1 * D1 * X)	0.00350	0.00286	0.00282
	(!A1 * !B1 * D1 * X)	-0.00262	-0.00335	-0.00336

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)**	-0.00148	-0.00149	-0.00148
	(A1 * B1 * D1 * X)	0.00100	0.00101	0.00100
	(A1 * B1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * B1 * !D1 * X)	0.00088	0.00089	0.00089
	(A1 * A2 * !B1 * D1 * X)	-0.00148	-0.00149	-0.00148
	(A1 * A2 * !B1 * D1 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * !B1 * !D1 * X)	-0.00143	-0.00144	-0.00147
	(A1 * A2 * !B1 * !D1 * X)	0.00090	0.00091	0.00088
	(A1 * !A2 * !B1 * D1 * X)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * !B1 * D1 * X)	0.00156	0.00157	0.00156
	(!A1 * B1 * D1 * X)	-0.00148	-0.00149	-0.00148
	(!A1 * B1 * D1 * X)	0.00100	0.00101	0.00100
	(!A1 * B1 * !D1 * X)	-0.00147	-0.00148	-0.00147
	(!A1 * B1 * !D1 * X)	0.00088	0.00089	0.00089
	(!A1 * !B1 * D1 * X)	-0.00148	-0.00148	-0.00147
	(!A1 * !B1 * D1 * X)	0.00156	0.00157	0.00156

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00154	-0.00155	-0.00154
	(A1 * B1 * D1 * X)	0.00119	0.00119	0.00118
	(A1 * B1 * !D1 * X)	-0.00154	-0.00154	-0.00153
	(A1 * B1 * !D1 * X)	0.00104	0.00105	0.00105
	(A1 * A2 * !B1 * D1 * X)	-0.00153	-0.00154	-0.00154
	(A1 * A2 * !B1 * D1 * X)	0.00124	0.00124	0.00125
	(A1 * A2 * !B1 * !D1 * X)	-0.00147	-0.00148	-0.00153
	(A1 * A2 * !B1 * !D1 * X)	0.00107	0.00107	0.00103
	(A1 * !A2 * !B1 * D1 * X)	-0.00153	-0.00154	-0.00153
	(A1 * !A2 * !B1 * D1 * X)	0.00180	0.00182	0.00182
	(!A1 * B1 * D1 * X)	-0.00153	-0.00155	-0.00154
	(!A1 * B1 * D1 * X)	0.00119	0.00121	0.00120
	(!A1 * B1 * !D1 * X)	-0.00154	-0.00154	-0.00153
	(!A1 * B1 * !D1 * X)	0.00106	0.00106	0.00106
	(!A1 * !B1 * D1 * X)	-0.00153	-0.00154	-0.00153
	(!A1 * !B1 * D1 * X)	0.00180	0.00182	0.00182

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00283	-0.00284	-0.00284
	(A1 * B1 * D1 * X)	0.00217	0.00219	0.00218
	(A1 * B1 * !D1 * X)	-0.00281	-0.00282	-0.00279
	(A1 * B1 * !D1 * X)	0.00193	0.00194	0.00195
	(A1 * A2 * !B1 * D1 * X)	-0.00284	-0.00285	-0.00283
	(A1 * A2 * !B1 * D1 * X)	0.00233	0.00236	0.00232
	(A1 * A2 * !B1 * !D1 * X)	-0.00274	-0.00275	-0.00277
	(A1 * A2 * !B1 * !D1 * X)	0.00196	0.00197	0.00195
	(A1 * !A2 * !B1 * D1 * X)	-0.00280	-0.00281	-0.00280
	(A1 * !A2 * !B1 * D1 * X)	0.00334	0.00336	0.00336
	(!A1 * B1 * D1 * X)	-0.00283	-0.00285	-0.00284
	(!A1 * B1 * D1 * X)	0.00219	0.00221	0.00220
	(!A1 * B1 * !D1 * X)	-0.00281	-0.00282	-0.00278
	(!A1 * B1 * !D1 * X)	0.00194	0.00195	0.00196
	(!A1 * !B1 * D1 * X)	-0.00280	-0.00281	-0.00280
	(!A1 * !B1 * D1 * X)	0.00334	0.00336	0.00336

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00159	0.00160	0.00159
	(A1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A1 * B1 * !C1 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A1 * A2 * !B1 * !C1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * C1 * X)	0.00159	0.00160	0.00159
	(!A1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(!A1 * B1 * !C1 * X)	-0.00081	-0.00081	-0.00081

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00190	0.00191	0.00189
	(A1 * C1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * B1 * !C1 * X)	0.00190	0.00191	0.00189
	(A1 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C1 * X)	0.00190	0.00191	0.00189
	(A1 * A2 * !B1 * !C1 * X)	-0.00088	-0.00088	-0.00087
	(!A1 * C1 * X)	0.00190	0.00191	0.00189
	(!A1 * C1 * X)	-0.00088	-0.00088	-0.00087
	(!A1 * B1 * !C1 * X)	0.00190	0.00191	0.00189
	(!A1 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00087
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00308	0.00312	0.00310
	(A1 * C1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * B1 * !C1 * X)	0.00308	0.00312	0.00310
	(A1 * B1 * !C1 * X)	-0.00164	-0.00166	-0.00165
	(A1 * A2 * !B1 * !C1 * X)	0.00308	0.00312	0.00310
	(A1 * A2 * !B1 * !C1 * X)	-0.00164	-0.00166	-0.00165
	(!A1 * C1 * X)	0.00308	0.00312	0.00310
	(!A1 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * B1 * !C1 * X)	0.00308	0.00312	0.00310
	(!A1 * B1 * !C1 * X)	-0.00164	-0.00166	-0.00165

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00155	-0.00156	-0.00158
	(A1 * C1 * X)	0.00085	0.00085	0.00082
	(A1 * B1 * !C1 * X)	-0.00150	-0.00151	-0.00158
	(A1 * B1 * !C1 * X)	0.00087	0.00087	0.00082
	(A1 * A2 * !B1 * !C1 * X)	-0.00137	-0.00138	-0.00154
	(A1 * A2 * !B1 * !C1 * X)	0.00096	0.00096	0.00085
	(!A1 * C1 * X)	-0.00155	-0.00156	-0.00158
	(!A1 * C1 * X)	0.00085	0.00085	0.00082
	(!A1 * B1 * !C1 * X)	-0.00150	-0.00151	-0.00158
	(!A1 * B1 * !C1 * X)	0.00087	0.00087	0.00082
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00185	-0.00186	-0.00189
	(A1 * C1 * X)	0.00091	0.00091	0.00088
	(A1 * B1 * !C1 * X)	-0.00179	-0.00180	-0.00188
	(A1 * B1 * !C1 * X)	0.00095	0.00095	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00164	-0.00165	-0.00183
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00104	0.00092
	(!A1 * C1 * X)	-0.00185	-0.00186	-0.00189
	(!A1 * C1 * X)	0.00091	0.00091	0.00088
	(!A1 * B1 * !C1 * X)	-0.00179	-0.00180	-0.00188
	(!A1 * B1 * !C1 * X)	0.00095	0.00095	0.00088
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00294	-0.00297	-0.00308
	(A1 * C1 * X)	0.00176	0.00177	0.00168
	(A1 * B1 * !C1 * X)	-0.00283	-0.00285	-0.00305
	(A1 * B1 * !C1 * X)	0.00181	0.00182	0.00168
	(A1 * A2 * !B1 * !C1 * X)	-0.00257	-0.00260	-0.00296
	(A1 * A2 * !B1 * !C1 * X)	0.00198	0.00200	0.00174
	(!A1 * C1 * X)	-0.00294	-0.00297	-0.00308
	(!A1 * C1 * X)	0.00176	0.00178	0.00168
	(!A1 * B1 * !C1 * X)	-0.00283	-0.00285	-0.00305
	(!A1 * B1 * !C1 * X)	0.00181	0.00182	0.00168

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211oi_1	9.59040
sky130_fd_sc_hs__a211oi_2	15.98400
sky130_fd_sc_hs__a211oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__a211oi_1	0.00270	0.00255	0.00270	0.00275	0.47293
sky130_fd_sc_hs__a211oi_2	0.00493	0.00517	0.00411	0.00390	0.87662
sky130_fd_sc_hs__a211oi_4	0.00992	0.00993	0.00782	0.00795	1.49766

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211oi_1	0.00000	0.01991	0.06294
sky130_fd_sc_hs__a211oi_2	0.00000	0.03945	0.12588
sky130_fd_sc_hs__a211oi_4	0.00000	0.07890	0.25175

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)	0.09985	0.92811	9.86901
	A2->Y (FR)	0.12099	0.97367	10.12190
	B1->Y (FR)	0.10708	0.99668	10.76820
	C1->Y (FR)	0.08343	0.96298	10.63010
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.08996	0.80462	10.02790
	A2->Y (FR)	0.11660	0.82970	10.03770
	B1->Y (FR)	0.07419	0.83264	10.76430
	C1->Y (FR)	0.03997	0.79290	10.60300
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.08711	0.67489	9.49776
	A2->Y (FR)	0.11769	0.71817	9.74365
	B1->Y (FR)	0.09843	0.74259	10.49870
	C1->Y (FR)	0.06466	0.71060	10.42370

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02001	0.25695	2.45826
	A2->Y (RF)	0.02258	0.24407	2.28874
	B1->Y (RF)	0.01618	0.20647	1.96965
	C1->Y (RF)	0.01428	0.20107	1.97007
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.01822	0.23220	2.69954
	A2->Y (RF)	0.02267	0.21760	2.44803
	B1->Y (RF)	0.02408	0.29483	3.58211
	C1->Y (RF)	0.01716	0.27303	3.44561
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.01893	0.19932	2.66258
	A2->Y (RF)	0.02250	0.16616	2.11960
	B1->Y (RF)	0.02369	0.24628	3.41794
	C1->Y (RF)	0.01686	0.23092	3.38789

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00028	0.00014	0.00852
	A1	0.00701	0.00688	0.01526
	A2	0.00064	0.00055	0.00897
	A2	0.00842	0.00834	0.01675
	B1	0.00016	0.00030	0.01043
	B1	0.00580	0.00593	0.01609
	C1	-0.00007	0.00101	0.02066
	C1	0.00479	0.00587	0.02554
sky130_fd_sc_hs__a211oi_2	A1	-0.00044	-0.00061	0.01478
	A1	0.01240	0.01223	0.02769
	A2	0.00118	0.00088	0.01628
	A2	0.01637	0.01608	0.03151
	B1	0.00049	0.00061	0.01268
	B1	0.00990	0.01002	0.02208
	C1	0.00030	0.00188	0.02724
	C1	0.00765	0.00924	0.03461
sky130_fd_sc_hs__a211oi_4	A1	-0.00119	-0.00160	0.02783
	A1	0.02429	0.02393	0.05347
	A2	0.00136	0.00085	0.03085
	A2	0.03145	0.03099	0.06092
	B1	0.00068	0.00103	0.02523
	B1	0.01896	0.01932	0.04373
	C1	0.00030	0.00370	0.05189
	C1	0.01466	0.01807	0.06639

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00886	0.00900	0.01694
	A1	0.00227	0.00238	0.01035
	A2	0.00992	0.00993	0.01626
	A2	0.00223	0.00222	0.00859
	B1	0.00632	0.00667	0.01566
	B1	0.00072	0.00105	0.01005
	C1	0.00465	0.00512	0.01370
	C1	-0.00021	0.00025	0.00885
sky130_fd_sc_hs__a211oi_2	A1	0.01648	0.01674	0.03127
	A1	0.00390	0.00414	0.01857
	A2	0.01891	0.01886	0.03083
	A2	0.00388	0.00380	0.01574
	B1	0.01093	0.01114	0.02221
	B1	0.00162	0.00183	0.01256
	C1	0.00624	0.00701	0.01755
	C1	-0.00109	-0.00033	0.01018
sky130_fd_sc_hs__a211oi_4	A1	0.03259	0.03302	0.06160
	A1	0.00768	0.00801	0.03656
	A2	0.03732	0.03732	0.06248
	A2	0.00756	0.00746	0.03275
	B1	0.02032	0.02135	0.04278
	B1	0.00224	0.00319	0.02426
	C1	0.01167	0.01329	0.03405
	C1	-0.00265	-0.00107	0.01944

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)**	0.00153	0.00154	0.00153
	(A2 * B1 * C1 * !Y)	-0.00170	-0.00178	-0.00177
	(A2 * B1 * !C1 * !Y)	0.00153	0.00154	0.00153
	(A2 * B1 * !C1 * !Y)	-0.00168	-0.00178	-0.00177
	(A2 * !B1 * C1 * !Y)	0.00155	0.00153	0.00153
	(A2 * !B1 * C1 * !Y)	-0.00158	-0.00174	-0.00173
	(!A2 * B1 * C1 * !Y)	0.00147	0.00148	0.00147
	(!A2 * B1 * C1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * B1 * !C1 * !Y)	0.00145	0.00146	0.00146
	(!A2 * B1 * !C1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A2 * !B1 * C1 * !Y)	0.00148	0.00149	0.00148
	(!A2 * !B1 * C1 * !Y)	-0.00181	-0.00181	-0.00181
	(!A2 * !B1 * !C1 * Y)	0.00045	0.00045	0.00044
	(!A2 * !B1 * !C1 * Y)	-0.00212	-0.00212	-0.00215
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00314	0.00315	0.00313
	(A2 * B1 * C1 * !Y)	-0.00335	-0.00351	-0.00349
	(A2 * B1 * !C1 * !Y)	0.00315	0.00315	0.00313
	(A2 * B1 * !C1 * !Y)	-0.00334	-0.00351	-0.00349
	(A2 * !B1 * C1 * !Y)	0.00315	0.00314	0.00313
	(A2 * !B1 * C1 * !Y)	-0.00315	-0.00342	-0.00340
	(!A2 * B1 * C1 * !Y)	0.00299	0.00302	0.00300
	(!A2 * B1 * C1 * !Y)	-0.00354	-0.00357	-0.00356
	(!A2 * B1 * !C1 * !Y)	0.00299	0.00302	0.00301
	(!A2 * B1 * !C1 * !Y)	-0.00354	-0.00357	-0.00356
	(!A2 * !B1 * C1 * !Y)	0.00300	0.00303	0.00301
	(!A2 * !B1 * C1 * !Y)	-0.00355	-0.00357	-0.00355
	(!A2 * !B1 * !C1 * Y)	0.00109	0.00109	0.00105
	(!A2 * !B1 * !C1 * Y)	-0.00412	-0.00413	-0.00419

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00607	0.00612	0.00608
	(A2 * B1 * C1 * !Y)	-0.00676	-0.00714	-0.00709
	(A2 * B1 * !C1 * !Y)	0.00610	0.00612	0.00609
	(A2 * B1 * !C1 * !Y)	-0.00671	-0.00713	-0.00709
	(A2 * !B1 * C1 * !Y)	0.00615	0.00612	0.00609
	(A2 * !B1 * C1 * !Y)	-0.00634	-0.00695	-0.00690
	(!A2 * B1 * C1 * !Y)	0.00593	0.00593	0.00594
	(!A2 * B1 * C1 * !Y)	-0.00725	-0.00724	-0.00725
	(!A2 * B1 * !C1 * !Y)	0.00589	0.00595	0.00590
	(!A2 * B1 * !C1 * !Y)	-0.00724	-0.00729	-0.00725
	(!A2 * !B1 * C1 * !Y)	0.00579	0.00587	0.00582
	(!A2 * !B1 * C1 * !Y)	-0.00723	-0.00729	-0.00725
	(!A2 * !B1 * !C1 * Y)	0.00187	0.00188	0.00181
	(!A2 * !B1 * !C1 * Y)	-0.00847	-0.00850	-0.00861

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)**	-0.00153	-0.00154	-0.00153
	(A2 * B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(A2 * B1 * !C1 * !Y)	-0.00153	-0.00153	-0.00153
	(A2 * B1 * !C1 * !Y)	0.00176	0.00178	0.00177
	(A2 * !B1 * C1 * !Y)	-0.00153	-0.00153	-0.00153
	(A2 * !B1 * C1 * !Y)	0.00172	0.00174	0.00173
	(!A2 * B1 * C1 * !Y)	-0.00142	-0.00148	-0.00147
	(!A2 * B1 * C1 * !Y)	0.00181	0.00184	0.00181
	(!A2 * B1 * !C1 * !Y)	-0.00142	-0.00146	-0.00146
	(!A2 * B1 * !C1 * !Y)	0.00181	0.00181	0.00181
	(!A2 * !B1 * C1 * !Y)	-0.00142	-0.00146	-0.00148
	(!A2 * !B1 * C1 * !Y)	0.00181	0.00181	0.00182
	(!A2 * !B1 * !C1 * Y)	-0.00044	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * Y)	0.00216	0.00217	0.00215
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00312	-0.00314	-0.00313
	(A2 * B1 * C1 * !Y)	0.00347	0.00352	0.00349
	(A2 * B1 * !C1 * !Y)	-0.00312	-0.00314	-0.00312
	(A2 * B1 * !C1 * !Y)	0.00347	0.00351	0.00349
	(A2 * !B1 * C1 * !Y)	-0.00313	-0.00314	-0.00313
	(A2 * !B1 * C1 * !Y)	0.00340	0.00342	0.00340
	(!A2 * B1 * C1 * !Y)	-0.00287	-0.00302	-0.00300
	(!A2 * B1 * C1 * !Y)	0.00354	0.00360	0.00357
	(!A2 * B1 * !C1 * !Y)	-0.00288	-0.00302	-0.00301
	(!A2 * B1 * !C1 * !Y)	0.00357	0.00358	0.00357
	(!A2 * !B1 * C1 * !Y)	-0.00287	-0.00302	-0.00301
	(!A2 * !B1 * C1 * !Y)	0.00355	0.00359	0.00357
	(!A2 * !B1 * !C1 * Y)	-0.00103	-0.00104	-0.00103
	(!A2 * !B1 * !C1 * Y)	0.00420	0.00427	0.00420

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00606	-0.00610	-0.00607
	(A2 * B1 * C1 * !Y)	0.00705	0.00715	0.00709
	(A2 * B1 * !C1 * !Y)	-0.00606	-0.00610	-0.00607
	(A2 * B1 * !C1 * !Y)	0.00706	0.00715	0.00709
	(A2 * !B1 * C1 * !Y)	-0.00608	-0.00610	-0.00607
	(A2 * !B1 * C1 * !Y)	0.00690	0.00695	0.00690
	(!A2 * B1 * C1 * !Y)	-0.00557	-0.00592	-0.00589
	(!A2 * B1 * C1 * !Y)	0.00727	0.00734	0.00727
	(!A2 * B1 * !C1 * !Y)	-0.00555	-0.00595	-0.00589
	(!A2 * B1 * !C1 * !Y)	0.00724	0.00732	0.00727
	(!A2 * !B1 * C1 * !Y)	-0.00554	-0.00587	-0.00582
	(!A2 * !B1 * C1 * !Y)	0.00724	0.00730	0.00727
	(!A2 * !B1 * !C1 * Y)	-0.00177	-0.00181	-0.00177
	(!A2 * !B1 * !C1 * Y)	0.00859	0.00876	0.00862

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)	0.00155	0.00156	0.00155
	(A1 * B1 * C1 * !Y)	-0.00171	-0.00180	-0.00179
	(A1 * B1 * !C1 * !Y)	0.00155	0.00156	0.00155
	(A1 * B1 * !C1 * !Y)	-0.00170	-0.00180	-0.00179
	(A1 * !B1 * C1 * !Y)	0.00157	0.00156	0.00155
	(A1 * !B1 * C1 * !Y)	-0.00160	-0.00175	-0.00174
	(!A1 * B1 * !Y)	0.00148	0.00149	0.00148
	(!A1 * B1 * !Y)	-0.00182	-0.00183	-0.00183
	(!A1 * !B1 * C1 * !Y)	0.00151	0.00152	0.00151
	(!A1 * !B1 * C1 * !Y)	-0.00183	-0.00183	-0.00182
	(!A1 * !B1 * !C1 * Y)	0.00148	0.00149	0.00148
	(!A1 * !B1 * !C1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00321	0.00322	0.00321
	(A1 * B1 * C1 * !Y)	-0.00346	-0.00363	-0.00361
	(A1 * B1 * !C1 * !Y)	0.00323	0.00322	0.00321
	(A1 * B1 * !C1 * !Y)	-0.00343	-0.00362	-0.00361
	(A1 * !B1 * C1 * !Y)	0.00326	0.00322	0.00321
	(A1 * !B1 * C1 * !Y)	-0.00327	-0.00353	-0.00351
	(!A1 * B1 * !Y)	0.00313	0.00315	0.00313
	(!A1 * B1 * !Y)	-0.00369	-0.00370	-0.00369
	(!A1 * !B1 * C1 * !Y)	0.00311	0.00312	0.00311
	(!A1 * !B1 * C1 * !Y)	-0.00369	-0.00370	-0.00369
	(!A1 * !B1 * !C1 * Y)	0.00287	0.00290	0.00288
	(!A1 * !B1 * !C1 * Y)	-0.00392	-0.00395	-0.00394
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00623	0.00630	0.00625
	(A1 * B1 * C1 * !Y)	-0.00682	-0.00719	-0.00717
	(A1 * B1 * !C1 * !Y)	0.00626	0.00631	0.00625
	(A1 * B1 * !C1 * !Y)	-0.00677	-0.00719	-0.00717
	(A1 * !B1 * C1 * !Y)	0.00631	0.00631	0.00626
	(A1 * !B1 * C1 * !Y)	-0.00641	-0.00702	-0.00697
	(!A1 * B1 * !Y)	0.00596	0.00596	0.00600
	(!A1 * B1 * !Y)	-0.00730	-0.00730	-0.00733
	(!A1 * !B1 * C1 * !Y)	0.00603	0.00612	0.00606
	(!A1 * !B1 * C1 * !Y)	-0.00731	-0.00737	-0.00733
	(!A1 * !B1 * !C1 * Y)	0.00601	0.00606	0.00603
	(!A1 * !B1 * !C1 * Y)	-0.00731	-0.00735	-0.00733

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)**	-0.00155	-0.00155	-0.00155
	(A1 * B1 * C1 * !Y)	0.00179	0.00180	0.00179
	(A1 * B1 * !C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * B1 * !C1 * !Y)	0.00179	0.00180	0.00179
	(A1 * !B1 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * !B1 * C1 * !Y)	0.00174	0.00175	0.00174
	(!A1 * B1 * !Y)	-0.00145	-0.00149	-0.00148
	(!A1 * B1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * !B1 * C1 * !Y)	-0.00145	-0.00149	-0.00150
	(!A1 * !B1 * C1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * !B1 * !C1 * Y)	-0.00141	-0.00148	-0.00148
	(!A1 * !B1 * !C1 * Y)	0.00189	0.00184	0.00183
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00319	-0.00321	-0.00320
	(A1 * B1 * C1 * !Y)	0.00358	0.00363	0.00361
	(A1 * B1 * !C1 * !Y)	-0.00319	-0.00321	-0.00320
	(A1 * B1 * !C1 * !Y)	0.00358	0.00362	0.00361
	(A1 * !B1 * C1 * !Y)	-0.00320	-0.00322	-0.00321
	(A1 * !B1 * C1 * !Y)	0.00350	0.00353	0.00351
	(!A1 * B1 * !Y)	-0.00298	-0.00310	-0.00312
	(!A1 * B1 * !Y)	0.00369	0.00372	0.00370
	(!A1 * !B1 * C1 * !Y)	-0.00298	-0.00310	-0.00311
	(!A1 * !B1 * C1 * !Y)	0.00369	0.00372	0.00370
	(!A1 * !B1 * !C1 * Y)	-0.00268	-0.00289	-0.00287
	(!A1 * !B1 * !C1 * Y)	0.00401	0.00397	0.00395

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00621	-0.00624	-0.00624
	(A1 * B1 * C1 * !Y)	0.00712	0.00719	0.00717
	(A1 * B1 * !C1 * !Y)	-0.00624	-0.00625	-0.00624
	(A1 * B1 * !C1 * !Y)	0.00716	0.00719	0.00717
	(A1 * !B1 * C1 * !Y)	-0.00624	-0.00627	-0.00624
	(A1 * !B1 * C1 * !Y)	0.00697	0.00702	0.00697
	(!A1 * B1 * !Y)	-0.00576	-0.00596	-0.00600
	(!A1 * B1 * !Y)	0.00734	0.00736	0.00735
	(!A1 * !B1 * C1 * !Y)	-0.00576	-0.00598	-0.00602
	(!A1 * !B1 * C1 * !Y)	0.00734	0.00739	0.00735
	(!A1 * !B1 * !C1 * Y)	-0.00557	-0.00602	-0.00602
	(!A1 * !B1 * !C1 * Y)	0.00762	0.00742	0.00735

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)	0.00174	0.00170	0.00164
	(A1 * A2 * C1 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * A2 * !C1 * !Y)	0.00165	0.00165	0.00163
	(A1 * A2 * !C1 * !Y)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * C1 * !Y)	0.00191	0.00164	0.00162
	(A1 * !A2 * C1 * !Y)	-0.00143	-0.00174	-0.00175
	(!A1 * C1 * !Y)	0.00190	0.00163	0.00162
	(!A1 * C1 * !Y)	-0.00144	-0.00174	-0.00175
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00206	0.00204	0.00197
	(A1 * A2 * C1 * !Y)	-0.00232	-0.00235	-0.00233
	(A1 * A2 * !C1 * !Y)	0.00193	0.00193	0.00191
	(A1 * A2 * !C1 * !Y)	-0.00189	-0.00189	-0.00189
	(A1 * !A2 * C1 * !Y)	0.00249	0.00192	0.00189
	(A1 * !A2 * C1 * !Y)	-0.00279	-0.00346	-0.00345
	(!A1 * C1 * !Y)	0.00249	0.00192	0.00189
	(!A1 * C1 * !Y)	-0.00278	-0.00346	-0.00345
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00382	0.00371	0.00352
	(A1 * A2 * C1 * !Y)	-0.00484	-0.00487	-0.00483
	(A1 * A2 * !C1 * !Y)	0.00349	0.00350	0.00343
	(A1 * A2 * !C1 * !Y)	-0.00395	-0.00395	-0.00395
	(A1 * !A2 * C1 * !Y)	0.00473	0.00347	0.00340
	(A1 * !A2 * C1 * !Y)	-0.00572	-0.00717	-0.00715
	(!A1 * C1 * !Y)	0.00468	0.00347	0.00340
	(!A1 * C1 * !Y)	-0.00574	-0.00717	-0.00715

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)	-0.00162	-0.00163	-0.00162
	(A1 * A2 * C1 * !Y)	0.00121	0.00122	0.00121
	(A1 * A2 * !C1 * !Y)	-0.00160	-0.00161	-0.00161
	(A1 * A2 * !C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * !A2 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * C1 * !Y)	0.00173	0.00175	0.00175
	(!A1 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(!A1 * C1 * !Y)	0.00174	0.00175	0.00175
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00192	-0.00194	-0.00193
	(A1 * A2 * C1 * !Y)	0.00232	0.00235	0.00233
	(A1 * A2 * !C1 * !Y)	-0.00185	-0.00186	-0.00185
	(A1 * A2 * !C1 * !Y)	0.00192	0.00194	0.00196
	(A1 * !A2 * C1 * !Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * C1 * !Y)	0.00342	0.00346	0.00345
	(!A1 * C1 * !Y)	-0.00188	-0.00189	-0.00188
	(!A1 * C1 * !Y)	0.00343	0.00346	0.00345
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00344	-0.00345	-0.00343
	(A1 * A2 * C1 * !Y)	0.00484	0.00487	0.00483
	(A1 * A2 * !C1 * !Y)	-0.00332	-0.00334	-0.00332
	(A1 * A2 * !C1 * !Y)	0.00403	0.00407	0.00408
	(A1 * !A2 * C1 * !Y)	-0.00338	-0.00340	-0.00338
	(A1 * !A2 * C1 * !Y)	0.00710	0.00717	0.00715
	(!A1 * C1 * !Y)	-0.00338	-0.00340	-0.00338
	(!A1 * C1 * !Y)	0.00711	0.00717	0.00715

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00192	0.00193	0.00191
	(A1 * B1 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * !B1 * !Y)	0.00192	0.00193	0.00191
	(A1 * A2 * !B1 * !Y)	-0.00085	-0.00085	-0.00084
	(!A1 * B1 * !Y)	0.00192	0.00193	0.00191
	(!A1 * B1 * !Y)	-0.00085	-0.00085	-0.00084
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00203	0.00204	0.00202
	(A1 * B1 * !Y)	-0.00174	-0.00174	-0.00173
	(A1 * A2 * !B1 * !Y)	0.00203	0.00204	0.00202
	(A1 * A2 * !B1 * !Y)	-0.00174	-0.00174	-0.00172
	(!A1 * B1 * !Y)	0.00203	0.00204	0.00202
	(!A1 * B1 * !Y)	-0.00175	-0.00175	-0.00173
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00406	0.00411	0.00408
	(A1 * B1 * !Y)	-0.00345	-0.00350	-0.00348
	(A1 * A2 * !B1 * !Y)	0.00407	0.00411	0.00408
	(A1 * A2 * !B1 * !Y)	-0.00345	-0.00349	-0.00347
	(!A1 * B1 * !Y)	0.00410	0.00412	0.00408
	(!A1 * B1 * !Y)	-0.00352	-0.00352	-0.00349

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00187	-0.00187	-0.00191
	(A1 * B1 * !Y)	0.00089	0.00089	0.00086
	(A1 * A2 * !B1 * !Y)	-0.00175	-0.00176	-0.00188
	(A1 * A2 * !B1 * !Y)	0.00095	0.00096	0.00087
	(!A1 * B1 * !Y)	-0.00186	-0.00187	-0.00191
	(!A1 * B1 * !Y)	0.00088	0.00089	0.00086
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00188	-0.00189	-0.00201
	(A1 * B1 * !Y)	0.00186	0.00186	0.00176
	(A1 * A2 * !B1 * !Y)	-0.00168	-0.00170	-0.00196
	(A1 * A2 * !B1 * !Y)	0.00196	0.00197	0.00178
	(!A1 * B1 * !Y)	-0.00187	-0.00189	-0.00201
	(!A1 * B1 * !Y)	0.00186	0.00187	0.00177
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00381	-0.00386	-0.00406
	(A1 * B1 * !Y)	0.00369	0.00372	0.00354
	(A1 * A2 * !B1 * !Y)	-0.00340	-0.00344	-0.00395
	(A1 * A2 * !B1 * !Y)	0.00394	0.00395	0.00358
	(!A1 * B1 * !Y)	-0.00382	-0.00386	-0.00406
	(!A1 * B1 * !Y)	0.00371	0.00373	0.00355

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a211o_1	12.78720
sky130_fd_sc_hs__a211o_2	12.78720
sky130_fd_sc_hs__a211o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__a211o_1	0.00252	0.00237	0.00256	0.00253	1.42235
sky130_fd_sc_hs__a211o_2	0.00275	0.00273	0.00271	0.00261	2.67047
sky130_fd_sc_hs__a211o_4	0.00466	0.00479	0.00507	0.00457	5.19247

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a211o_1	0.00000	0.04719	0.11347
sky130_fd_sc_hs__a211o_2	0.00000	0.05931	0.12889
sky130_fd_sc_hs__a211o_4	0.00000	0.11960	0.26389

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)	0.05335	0.44434	5.23357
	A2->X (RR)	0.05607	0.44858	5.20206
	B1->X (RR)	0.04682	0.42477	5.06007
	C1->X (RR)	0.04361	0.41411	5.10367
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.05369	0.37697	5.16317
	A2->X (RR)	0.05671	0.37728	5.14012
	B1->X (RR)	0.04636	0.35688	5.00339
	C1->X (RR)	0.04348	0.34769	5.02472
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.05673	0.31293	5.31100
	A2->X (RR)	0.06091	0.31801	5.29335
	B1->X (RR)	0.04458	0.27958	5.07766
	C1->X (RR)	0.04380	0.27893	5.17088

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.13292	0.51087	4.94615
	A2->X (FF)	0.15310	0.54149	5.01247
	B1->X (FF)	0.13726	0.55698	5.30106
	C1->X (FF)	0.11419	0.54143	5.29437
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.17021	0.54556	5.00435
	A2->X (FF)	0.19587	0.58123	5.08816
	B1->X (FF)	0.17980	0.60335	5.34618
	C1->X (FF)	0.15435	0.58769	5.31785
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.16054	0.49297	5.12075
	A2->X (FF)	0.17186	0.51652	5.12632
	B1->X (FF)	0.15764	0.53568	5.28901
	C1->X (FF)	0.13192	0.51849	5.31503

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.01144	0.01242	0.04956
	A1	0.00534	0.00635	0.04349
	A2	0.01232	0.01285	0.04511
	A2	0.00531	0.00586	0.03812
	B1	0.00927	0.01108	0.05154
	B1	0.00399	0.00583	0.04628
	C1	0.00774	0.01034	0.06488
	C1	0.00322	0.00584	0.06038
sky130_fd_sc_hs__a211o_2	A1	0.01419	0.01503	0.04849
	A1	0.00757	0.00849	0.04188
	A2	0.01535	0.01580	0.04499
	A2	0.00754	0.00807	0.03719
	B1	0.01200	0.01367	0.05020
	B1	0.00626	0.00802	0.04448
	C1	0.01038	0.01270	0.06309
	C1	0.00542	0.00780	0.05814
sky130_fd_sc_hs__a211o_4	A1	0.02652	0.02919	0.10509
	A1	0.01452	0.01729	0.09399
	A2	0.02883	0.03084	0.09716
	A2	0.01457	0.01658	0.08378
	B1	0.02200	0.02552	0.10311
	B1	0.01164	0.01525	0.09277
	C1	0.01803	0.02308	0.12761
	C1	0.00976	0.01485	0.11932

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00381	0.00401	0.03329
	A1	0.00997	0.01017	0.03942
	A2	0.00423	0.00459	0.03273
	A2	0.01128	0.01149	0.03905
	B1	0.00337	0.00454	0.04359
	B1	0.00866	0.00978	0.04762
	C1	0.00328	0.00629	0.06008
	C1	0.00778	0.01074	0.06322
sky130_fd_sc_hs__a211o_2	A1	0.00735	0.00664	0.03500
	A1	0.01405	0.01332	0.03952
	A2	0.00811	0.00700	0.03418
	A2	0.01594	0.01482	0.04063
	B1	0.00689	0.00738	0.04140
	B1	0.01264	0.01303	0.04590
	C1	0.00680	0.00864	0.05719
	C1	0.01177	0.01359	0.06174
sky130_fd_sc_hs__a211o_4	A1	0.01434	0.01304	0.08177
	A1	0.02648	0.02507	0.09391
	A2	0.01492	0.01355	0.07964
	A2	0.02924	0.02763	0.09064
	B1	0.01316	0.01428	0.08053
	B1	0.02355	0.02434	0.09013
	C1	0.01324	0.01718	0.11965
	C1	0.02152	0.02520	0.12491

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)**	0.00138	0.00138	0.00137
	(A2 * B1 * C1 * X)	-0.00160	-0.00168	-0.00166
	(A2 * B1 * !C1 * X)	0.00139	0.00138	0.00137
	(A2 * B1 * !C1 * X)	-0.00157	-0.00167	-0.00166
	(A2 * !B1 * C1 * X)	0.00140	0.00137	0.00137
	(A2 * !B1 * C1 * X)	-0.00147	-0.00163	-0.00162
	(!A2 * B1 * C1 * X)	0.00131	0.00132	0.00131
	(!A2 * B1 * C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !C1 * X)	0.00131	0.00133	0.00132
	(!A2 * B1 * !C1 * X)	-0.00170	-0.00172	-0.00170
	(!A2 * !B1 * C1 * X)	0.00131	0.00132	0.00132
	(!A2 * !B1 * C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00038	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00204	-0.00207	-0.00207
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00167	0.00167	0.00166
	(A2 * B1 * C1 * X)	-0.00151	-0.00159	-0.00159
	(A2 * B1 * !C1 * X)	0.00167	0.00167	0.00166
	(A2 * B1 * !C1 * X)	-0.00150	-0.00160	-0.00159
	(A2 * !B1 * C1 * X)	0.00169	0.00166	0.00166
	(A2 * !B1 * C1 * X)	-0.00141	-0.00156	-0.00155
	(!A2 * B1 * C1 * X)	0.00158	0.00160	0.00158
	(!A2 * B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * B1 * !C1 * X)	0.00158	0.00160	0.00158
	(!A2 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * C1 * X)	0.00158	0.00160	0.00158
	(!A2 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * !X)	0.00047	0.00047	0.00046
	(!A2 * !B1 * !C1 * !X)	-0.00205	-0.00206	-0.00207

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00269	0.00269	0.00267
	(A2 * B1 * C1 * X)	-0.00316	-0.00332	-0.00331
	(A2 * B1 * !C1 * X)	0.00269	0.00269	0.00267
	(A2 * B1 * !C1 * X)	-0.00313	-0.00332	-0.00331
	(A2 * !B1 * C1 * X)	0.00272	0.00268	0.00267
	(A2 * !B1 * C1 * X)	-0.00297	-0.00323	-0.00323
	(!A2 * B1 * C1 * X)	0.00259	0.00259	0.00260
	(!A2 * B1 * C1 * X)	-0.00338	-0.00338	-0.00338
	(!A2 * B1 * !C1 * X)	0.00259	0.00261	0.00260
	(!A2 * B1 * !C1 * X)	-0.00337	-0.00337	-0.00338
	(!A2 * !B1 * C1 * X)	0.00257	0.00258	0.00257
	(!A2 * !B1 * C1 * X)	-0.00339	-0.00338	-0.00338
	(!A2 * !B1 * !C1 * !X)	0.00075	0.00077	0.00074
	(!A2 * !B1 * !C1 * !X)	-0.00398	-0.00403	-0.00404

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)**	-0.00137	-0.00137	-0.00137
	(A2 * B1 * C1 * X)	0.00166	0.00168	0.00166
	(A2 * B1 * !C1 * X)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * !C1 * X)	0.00166	0.00167	0.00166
	(A2 * !B1 * C1 * X)	-0.00136	-0.00137	-0.00136
	(A2 * !B1 * C1 * X)	0.00161	0.00163	0.00162
	(!A2 * B1 * C1 * X)	-0.00128	-0.00132	-0.00131
	(!A2 * B1 * C1 * X)	0.00171	0.00173	0.00171
	(!A2 * B1 * !C1 * X)	-0.00128	-0.00132	-0.00132
	(!A2 * B1 * !C1 * X)	0.00171	0.00172	0.00171
	(!A2 * !B1 * C1 * X)	-0.00128	-0.00132	-0.00132
	(!A2 * !B1 * C1 * X)	0.00171	0.00172	0.00171
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00207	0.00209	0.00208
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00166	-0.00166	-0.00166
	(A2 * B1 * C1 * X)	0.00159	0.00159	0.00159
	(A2 * B1 * !C1 * X)	-0.00166	-0.00167	-0.00166
	(A2 * B1 * !C1 * X)	0.00159	0.00160	0.00159
	(A2 * !B1 * C1 * X)	-0.00165	-0.00166	-0.00165
	(A2 * !B1 * C1 * X)	0.00154	0.00156	0.00155
	(!A2 * B1 * C1 * X)	-0.00155	-0.00159	-0.00158
	(!A2 * B1 * C1 * X)	0.00163	0.00163	0.00162
	(!A2 * B1 * !C1 * X)	-0.00155	-0.00159	-0.00158
	(!A2 * B1 * !C1 * X)	0.00163	0.00163	0.00162
	(!A2 * !B1 * C1 * X)	-0.00154	-0.00159	-0.00158
	(!A2 * !B1 * C1 * X)	0.00163	0.00164	0.00163
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * !X)	0.00208	0.00209	0.00207

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00266	-0.00268	-0.00267
	(A2 * B1 * C1 * X)	0.00329	0.00332	0.00331
	(A2 * B1 * !C1 * X)	-0.00266	-0.00268	-0.00267
	(A2 * B1 * !C1 * X)	0.00328	0.00332	0.00331
	(A2 * !B1 * C1 * X)	-0.00265	-0.00267	-0.00266
	(A2 * !B1 * C1 * X)	0.00320	0.00323	0.00323
	(!A2 * B1 * C1 * X)	-0.00247	-0.00257	-0.00258
	(!A2 * B1 * C1 * X)	0.00339	0.00342	0.00339
	(!A2 * B1 * !C1 * X)	-0.00246	-0.00255	-0.00258
	(!A2 * B1 * !C1 * X)	0.00338	0.00337	0.00340
	(!A2 * !B1 * C1 * X)	-0.00246	-0.00255	-0.00257
	(!A2 * !B1 * C1 * X)	0.00339	0.00338	0.00340
	(!A2 * !B1 * !C1 * !X)	-0.00071	-0.00072	-0.00072
	(!A2 * !B1 * !C1 * !X)	0.00404	0.00408	0.00406

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)**	0.00141	0.00140	0.00140
	(A1 * B1 * C1 * X)	-0.00158	-0.00165	-0.00164
	(A1 * B1 * !C1 * X)	0.00142	0.00140	0.00140
	(A1 * B1 * !C1 * X)	-0.00156	-0.00165	-0.00164
	(A1 * !B1 * C1 * X)	0.00142	0.00141	0.00140
	(A1 * !B1 * C1 * X)	-0.00146	-0.00161	-0.00161
	(!A1 * B1 * X)	0.00134	0.00135	0.00134
	(!A1 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1 * C1 * X)	0.00135	0.00135	0.00134
	(!A1 * !B1 * C1 * X)	-0.00168	-0.00169	-0.00168
	(!A1 * !B1 * !C1 * !X)	0.00121	0.00122	0.00122
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00179	0.00179	0.00178
	(A1 * B1 * C1 * X)	-0.00153	-0.00161	-0.00160
	(A1 * B1 * !C1 * X)	0.00179	0.00179	0.00178
	(A1 * B1 * !C1 * X)	-0.00151	-0.00161	-0.00160
	(A1 * !B1 * C1 * X)	0.00181	0.00178	0.00178
	(A1 * !B1 * C1 * X)	-0.00143	-0.00157	-0.00156
	(!A1 * B1 * X)	0.00173	0.00173	0.00173
	(!A1 * B1 * X)	-0.00162	-0.00163	-0.00163
	(!A1 * !B1 * C1 * X)	0.00170	0.00172	0.00171
	(!A1 * !B1 * C1 * X)	-0.00162	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00146	0.00147	0.00147
	(!A1 * !B1 * !C1 * !X)	-0.00188	-0.00189	-0.00189
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00320	0.00325	0.00320
	(A1 * B1 * C1 * X)	-0.00305	-0.00322	-0.00320
	(A1 * B1 * !C1 * X)	0.00321	0.00325	0.00321
	(A1 * B1 * !C1 * X)	-0.00303	-0.00321	-0.00320
	(A1 * !B1 * C1 * X)	0.00324	0.00325	0.00320
	(A1 * !B1 * C1 * X)	-0.00287	-0.00316	-0.00313
	(!A1 * B1 * X)	0.00309	0.00312	0.00309
	(!A1 * B1 * X)	-0.00325	-0.00328	-0.00326
	(!A1 * !B1 * C1 * X)	0.00313	0.00314	0.00313
	(!A1 * !B1 * C1 * X)	-0.00326	-0.00326	-0.00326
	(!A1 * !B1 * !C1 * !X)	0.00306	0.00310	0.00306
	(!A1 * !B1 * !C1 * !X)	-0.00332	-0.00335	-0.00332

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)**	-0.00139	-0.00140	-0.00140
	(A1 * B1 * C1 * X)	0.00163	0.00166	0.00164
	(A1 * B1 * !C1 * X)	-0.00139	-0.00140	-0.00140
	(A1 * B1 * !C1 * X)	0.00163	0.00166	0.00164
	(A1 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00139
	(A1 * !B1 * C1 * X)	0.00160	0.00161	0.00161
	(!A1 * B1 * X)	-0.00131	-0.00135	-0.00134
	(!A1 * B1 * X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * C1 * X)	-0.00131	-0.00135	-0.00134
	(!A1 * !B1 * C1 * X)	0.00169	0.00170	0.00169
	(!A1 * !B1 * !C1 * !X)	-0.00115	-0.00122	-0.00122
	(!A1 * !B1 * !C1 * !X)	0.00187	0.00183	0.00182
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00178	-0.00178	-0.00178
	(A1 * B1 * C1 * X)	0.00160	0.00161	0.00160
	(A1 * B1 * !C1 * X)	-0.00178	-0.00178	-0.00178
	(A1 * B1 * !C1 * X)	0.00160	0.00161	0.00160
	(A1 * !B1 * C1 * X)	-0.00177	-0.00178	-0.00177
	(A1 * !B1 * C1 * X)	0.00156	0.00157	0.00156
	(!A1 * B1 * X)	-0.00166	-0.00171	-0.00172
	(!A1 * B1 * X)	0.00162	0.00164	0.00164
	(!A1 * !B1 * C1 * X)	-0.00167	-0.00171	-0.00171
	(!A1 * !B1 * C1 * X)	0.00164	0.00164	0.00164
	(!A1 * !B1 * !C1 * !X)	-0.00138	-0.00146	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00195	0.00191	0.00189

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00320	-0.00321	-0.00320
	(A1 * B1 * C1 * X)	0.00319	0.00322	0.00320
	(A1 * B1 * !C1 * X)	-0.00320	-0.00321	-0.00320
	(A1 * B1 * !C1 * X)	0.00319	0.00321	0.00320
	(A1 * !B1 * C1 * X)	-0.00320	-0.00321	-0.00319
	(A1 * !B1 * C1 * X)	0.00312	0.00316	0.00313
	(!A1 * B1 * X)	-0.00301	-0.00312	-0.00309
	(!A1 * B1 * X)	0.00325	0.00328	0.00327
	(!A1 * !B1 * C1 * X)	-0.00301	-0.00314	-0.00311
	(!A1 * !B1 * C1 * X)	0.00326	0.00328	0.00327
	(!A1 * !B1 * !C1 * !X)	-0.00288	-0.00307	-0.00304
	(!A1 * !B1 * !C1 * !X)	0.00343	0.00335	0.00334

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)	0.00178	0.00171	0.00166
	(A1 * A2 * C1 * X)	-0.00109	-0.00111	-0.00110
	(A1 * A2 * !C1 * X)	0.00165	0.00167	0.00164
	(A1 * A2 * !C1 * X)	-0.00086	-0.00087	-0.00088
	(A1 * !A2 * C1 * X)	0.00193	0.00166	0.00163
	(A1 * !A2 * C1 * X)	-0.00128	-0.00159	-0.00158
	(!A1 * C1 * X)	0.00192	0.00166	0.00163
	(!A1 * C1 * X)	-0.00129	-0.00159	-0.00158
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00183	0.00178	0.00173
	(A1 * A2 * C1 * X)	-0.00110	-0.00110	-0.00110
	(A1 * A2 * !C1 * X)	0.00170	0.00171	0.00168
	(A1 * A2 * !C1 * X)	-0.00087	-0.00087	-0.00088
	(A1 * !A2 * C1 * X)	0.00196	0.00168	0.00167
	(A1 * !A2 * C1 * X)	-0.00126	-0.00157	-0.00158
	(!A1 * C1 * X)	0.00195	0.00169	0.00167
	(!A1 * C1 * X)	-0.00128	-0.00157	-0.00158
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00325	0.00317	0.00306
	(A1 * A2 * C1 * X)	-0.00231	-0.00231	-0.00230
	(A1 * A2 * !C1 * X)	0.00302	0.00305	0.00300
	(A1 * A2 * !C1 * X)	-0.00184	-0.00186	-0.00187
	(A1 * !A2 * C1 * X)	0.00357	0.00300	0.00298
	(A1 * !A2 * C1 * X)	-0.00266	-0.00328	-0.00330
	(!A1 * C1 * X)	0.00358	0.00304	0.00298
	(!A1 * C1 * X)	-0.00264	-0.00331	-0.00330

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)	-0.00163	-0.00164	-0.00163
	(A1 * A2 * C1 * X)	0.00109	0.00111	0.00110
	(A1 * A2 * !C1 * X)	-0.00161	-0.00161	-0.00162
	(A1 * A2 * !C1 * X)	0.00091	0.00091	0.00090
	(A1 * !A2 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A2 * C1 * X)	0.00157	0.00159	0.00159
	(!A1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * C1 * X)	0.00157	0.00159	0.00159
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00169	-0.00169	-0.00169
	(A1 * A2 * C1 * X)	0.00110	0.00110	0.00110
	(A1 * A2 * !C1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * A2 * !C1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * C1 * X)	-0.00165	-0.00166	-0.00166
	(A1 * !A2 * C1 * X)	0.00157	0.00158	0.00158
	(!A1 * C1 * X)	-0.00165	-0.00167	-0.00166
	(!A1 * C1 * X)	0.00157	0.00160	0.00158
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00300	-0.00301	-0.00300
	(A1 * A2 * C1 * X)	0.00231	0.00231	0.00230
	(A1 * A2 * !C1 * X)	-0.00295	-0.00298	-0.00296
	(A1 * A2 * !C1 * X)	0.00190	0.00193	0.00193
	(A1 * !A2 * C1 * X)	-0.00297	-0.00298	-0.00296
	(A1 * !A2 * C1 * X)	0.00330	0.00332	0.00330
	(!A1 * C1 * X)	-0.00297	-0.00298	-0.00296
	(!A1 * C1 * X)	0.00330	0.00332	0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00177	0.00179	0.00178
	(A1 * B1 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B1 * X)	0.00177	0.00180	0.00178
	(A1 * A2 * !B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00177	0.00179	0.00178
	(!A1 * B1 * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00179	0.00179	0.00178
	(A1 * B1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * X)	0.00179	0.00179	0.00178
	(A1 * A2 * !B1 * X)	-0.00084	-0.00084	-0.00083
	(!A1 * B1 * X)	0.00179	0.00179	0.00178
	(!A1 * B1 * X)	-0.00085	-0.00084	-0.00084
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00289	0.00292	0.00290
	(A1 * B1 * X)	-0.00160	-0.00162	-0.00161
	(A1 * A2 * !B1 * X)	0.00289	0.00293	0.00290
	(A1 * A2 * !B1 * X)	-0.00159	-0.00161	-0.00160
	(!A1 * B1 * X)	0.00289	0.00292	0.00290
	(!A1 * B1 * X)	-0.00161	-0.00164	-0.00162

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00174	-0.00175	-0.00177
	(A1 * B1 * X)	0.00083	0.00084	0.00081
	(A1 * A2 * !B1 * X)	-0.00163	-0.00164	-0.00175
	(A1 * A2 * !B1 * X)	0.00090	0.00090	0.00083
	(!A1 * B1 * X)	-0.00174	-0.00175	-0.00177
	(!A1 * B1 * X)	0.00083	0.00084	0.00081
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00174	-0.00175	-0.00178
	(A1 * B1 * X)	0.00087	0.00087	0.00084
	(A1 * A2 * !B1 * X)	-0.00164	-0.00165	-0.00176
	(A1 * A2 * !B1 * X)	0.00094	0.00094	0.00086
	(!A1 * B1 * X)	-0.00174	-0.00175	-0.00177
	(!A1 * B1 * X)	0.00088	0.00088	0.00085
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00280	-0.00282	-0.00289
	(A1 * B1 * X)	0.00170	0.00171	0.00163
	(A1 * A2 * !B1 * X)	-0.00260	-0.00262	-0.00284
	(A1 * A2 * !B1 * X)	0.00181	0.00182	0.00165
	(!A1 * B1 * X)	-0.00280	-0.00282	-0.00289
	(!A1 * B1 * X)	0.00172	0.00172	0.00165

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21boi_1	11.18880
sky130_fd_sc_hs__a21boi_2	14.38560
sky130_fd_sc_hs__a21boi_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__a21boi_1	0.00265	0.00256	0.00249	0.69101
sky130_fd_sc_hs__a21boi_2	0.00501	0.00485	0.00242	1.32599
sky130_fd_sc_hs__a21boi_4	0.00994	0.00988	0.00354	2.35415

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21boi_1	0.00000	0.26626	0.51545
sky130_fd_sc_hs__a21boi_2	0.00000	0.11728	0.20019
sky130_fd_sc_hs__a21boi_4	0.00000	0.59217	1.11862

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)	0.05581	0.82381	10.20980
	A2->Y (FR)	0.07113	0.86568	10.54770
	B1_N->Y (RR)	0.06998	0.59025	5.82660
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.05142	0.72242	10.49520
	A2->Y (FR)	0.06681	0.73409	10.45960
	B1_N->Y (RR)	0.06592	0.46370	5.67271
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.05213	0.62632	10.33450
	A2->Y (FR)	0.06637	0.62992	10.10180
	B1_N->Y (RR)	0.06041	0.41905	6.17373

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.01851	0.29640	3.49372
	A2->Y (RF)	0.02095	0.27997	3.23881
	B1_N->Y (FF)	0.04954	0.34114	3.20606
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.01751	0.26958	3.86448
	A2->Y (RF)	0.02118	0.24933	3.49896
	B1_N->Y (FF)	0.05273	0.34253	3.31200
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.01865	0.23309	3.94691
	A2->Y (RF)	0.02205	0.19524	3.24238
	B1_N->Y (FF)	0.05542	0.31681	2.95950

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00081	0.00088	0.00880
	A1	0.00492	0.00499	0.01294
	A2	0.00133	0.00141	0.00934
	A2	0.00644	0.00653	0.01454
	B1_N	0.00695	0.01008	0.08135
	B1_N	0.00501	0.00811	0.07955
sky130_fd_sc_hs__a21boi_2	A1	0.00174	0.00194	0.01645
	A1	0.00969	0.00993	0.02439
	A2	0.00337	0.00346	0.01836
	A2	0.01336	0.01348	0.02838
	B1_N	0.00953	0.01286	0.09000
	B1_N	0.01024	0.01347	0.09068
sky130_fd_sc_hs__a21boi_4	A1	0.00364	0.00411	0.03120
	A1	0.01980	0.02032	0.04751
	A2	0.00616	0.00639	0.03445
	A2	0.02649	0.02679	0.05493
	B1_N	0.01669	0.02125	0.14407
	B1_N	0.01977	0.02417	0.14819

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00546	0.00572	0.01258
	A1	0.00140	0.00163	0.00834
	A2	0.00650	0.00656	0.01208
	A2	0.00139	0.00145	0.00676
	B1_N	0.00437	0.00851	0.07177
	B1_N	0.00683	0.01093	0.07423
sky130_fd_sc_hs__a21boi_2	A1	0.00990	0.01030	0.02236
	A1	0.00205	0.00239	0.01450
	A2	0.01200	0.01215	0.02234
	A2	0.00200	0.00207	0.01200
	B1_N	0.00852	0.01307	0.07740
	B1_N	0.00921	0.01374	0.07808
sky130_fd_sc_hs__a21boi_4	A1	0.01934	0.02024	0.04468
	A1	0.00340	0.00422	0.02745
	A2	0.02389	0.02424	0.04565
	A2	0.00355	0.00379	0.02467
	B1_N	0.01758	0.02478	0.13374
	B1_N	0.01690	0.02407	0.13302

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)	0.00171	0.00160	0.00157
	(A2 * !B1_N * !Y)	-0.00168	-0.00186	-0.00186
	(!A2 * B1_N * Y)	0.00059	0.00058	0.00057
	(!A2 * B1_N * Y)	-0.00212	-0.00211	-0.00214
	(!A2 * !B1_N * !Y)	0.00150	0.00151	0.00151
	(!A2 * !B1_N * !Y)	-0.00187	-0.00188	-0.00188
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00340	0.00314	0.00310
	(A2 * !B1_N * !Y)	-0.00320	-0.00358	-0.00358
	(!A2 * B1_N * Y)	0.00103	0.00104	0.00100
	(!A2 * B1_N * Y)	-0.00421	-0.00423	-0.00429
	(!A2 * !B1_N * !Y)	0.00299	0.00303	0.00300
	(!A2 * !B1_N * !Y)	-0.00361	-0.00364	-0.00362
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00682	0.00618	0.00612
	(A2 * !B1_N * !Y)	-0.00641	-0.00722	-0.00721
	(!A2 * B1_N * Y)	0.00193	0.00192	0.00186
	(!A2 * B1_N * Y)	-0.00853	-0.00851	-0.00865
	(!A2 * !B1_N * !Y)	0.00585	0.00588	0.00586
	(!A2 * !B1_N * !Y)	-0.00727	-0.00732	-0.00730

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)	-0.00157	-0.00158	-0.00157
	(A2 * !B1_N * !Y)	0.00184	0.00186	0.00186
	(!A2 * B1_N * Y)	-0.00056	-0.00056	-0.00056
	(!A2 * B1_N * Y)	0.00216	0.00217	0.00215
	(!A2 * !B1_N * !Y)	-0.00146	-0.00151	-0.00151
	(!A2 * !B1_N * !Y)	0.00187	0.00189	0.00188
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00309	-0.00311	-0.00310
	(A2 * !B1_N * !Y)	0.00356	0.00359	0.00358
	(!A2 * B1_N * Y)	-0.00097	-0.00099	-0.00098
	(!A2 * B1_N * Y)	0.00427	0.00434	0.00430
	(!A2 * !B1_N * !Y)	-0.00284	-0.00302	-0.00300
	(!A2 * !B1_N * !Y)	0.00361	0.00366	0.00363
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00608	-0.00612	-0.00609
	(A2 * !B1_N * !Y)	0.00717	0.00727	0.00721
	(!A2 * B1_N * Y)	-0.00180	-0.00184	-0.00181
	(!A2 * B1_N * Y)	0.00864	0.00881	0.00868
	(!A2 * !B1_N * !Y)	-0.00560	-0.00588	-0.00586
	(!A2 * !B1_N * !Y)	0.00727	0.00737	0.00732

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)	0.00180	0.00165	0.00164
	(A1 * !B1_N * !Y)	-0.00160	-0.00179	-0.00179
	(!A1 * B1_N * Y)	0.00157	0.00158	0.00157
	(!A1 * B1_N * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * !B1_N * !Y)	0.00157	0.00158	0.00157
	(!A1 * !B1_N * !Y)	-0.00181	-0.00181	-0.00181
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00335	0.00308	0.00305
	(A1 * !B1_N * !Y)	-0.00323	-0.00357	-0.00357
	(!A1 * B1_N * Y)	0.00295	0.00298	0.00296
	(!A1 * B1_N * Y)	-0.00360	-0.00362	-0.00361
	(!A1 * !B1_N * !Y)	0.00295	0.00298	0.00297
	(!A1 * !B1_N * !Y)	-0.00360	-0.00362	-0.00361
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00688	0.00625	0.00618
	(A1 * !B1_N * !Y)	-0.00630	-0.00718	-0.00717
	(!A1 * B1_N * Y)	0.00571	0.00576	0.00574
	(!A1 * B1_N * Y)	-0.00751	-0.00755	-0.00753
	(!A1 * !B1_N * !Y)	0.00599	0.00606	0.00601
	(!A1 * !B1_N * !Y)	-0.00723	-0.00729	-0.00725

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)	-0.00163	-0.00165	-0.00164
	(A1 * !B1_N * !Y)	0.00177	0.00180	0.00179
	(!A1 * B1_N * Y)	-0.00150	-0.00158	-0.00157
	(!A1 * B1_N * Y)	0.00187	0.00184	0.00183
	(!A1 * !B1_N * !Y)	-0.00154	-0.00158	-0.00157
	(!A1 * !B1_N * !Y)	0.00182	0.00183	0.00182
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00303	-0.00305	-0.00304
	(A1 * !B1_N * !Y)	0.00354	0.00358	0.00357
	(!A1 * B1_N * Y)	-0.00275	-0.00294	-0.00295
	(!A1 * B1_N * Y)	0.00370	0.00365	0.00362
	(!A1 * !B1_N * !Y)	-0.00281	-0.00293	-0.00295
	(!A1 * !B1_N * !Y)	0.00360	0.00364	0.00362
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00617	-0.00618	-0.00616
	(A1 * !B1_N * !Y)	0.00717	0.00721	0.00717
	(!A1 * B1_N * Y)	-0.00530	-0.00567	-0.00570
	(!A1 * B1_N * Y)	0.00774	0.00763	0.00757
	(!A1 * !B1_N * !Y)	-0.00573	-0.00596	-0.00599
	(!A1 * !B1_N * !Y)	0.00725	0.00732	0.00728

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)	0.00474	0.00789	0.07916
	(A1 * A2 * !Y)	0.00075	0.00389	0.07518
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00545	0.00865	0.08541
	(A1 * A2 * !Y)	0.00160	0.00477	0.08155
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00833	0.01254	0.13438
	(A1 * A2 * !Y)	0.00265	0.00685	0.12871

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)	0.00083	0.00532	0.07627
	(A1 * A2 * !Y)	0.00482	0.00931	0.08025
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00277	0.00680	0.08304
	(A1 * A2 * !Y)	0.00661	0.01064	0.08689
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00608	0.01289	0.13545
	(A1 * A2 * !Y)	0.01168	0.01853	0.14107

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21bo_1	12.78720
sky130_fd_sc_hs__a21bo_2	12.78720
sky130_fd_sc_hs__a21bo_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__a21bo_1	0.00248	0.00238	0.00210	1.27052
sky130_fd_sc_hs__a21bo_2	0.00264	0.00249	0.00220	2.32063
sky130_fd_sc_hs__a21bo_4	0.00457	0.00486	0.00253	4.34150

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21bo_1	0.00000	0.31355	0.54682
sky130_fd_sc_hs__a21bo_2	0.00000	0.33718	0.59947
sky130_fd_sc_hs__a21bo_4	0.00000	0.26032	0.37231

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)	0.05428	0.45873	5.34267
	A2->X (RR)	0.05694	0.46470	5.31186
	B1_N->X (FR)	0.08017	0.66514	8.39111
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.05118	0.37590	5.10348
	A2->X (RR)	0.05390	0.37654	5.07143
	B1_N->X (FR)	0.08697	0.58500	8.14851
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.05296	0.30650	5.14922
	A2->X (RR)	0.05777	0.31382	5.13139
	B1_N->X (FR)	0.09748	0.54145	8.30881

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.08806	0.45628	4.79886
	A2->X (FF)	0.10178	0.48034	4.82357
	B1_N->X (RF)	0.10061	0.25096	1.55842
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.10902	0.46644	4.62793
	A2->X (FF)	0.12505	0.49469	4.68182
	B1_N->X (RF)	0.12843	0.26046	1.28724
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.10515	0.42564	4.63378
	A2->X (FF)	0.11507	0.44811	4.64424
	B1_N->X (RF)	0.11681	0.21904	1.12444

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00846	0.01029	0.05356
	A1	0.00453	0.00636	0.04982
	A2	0.00944	0.01081	0.04866
	A2	0.00454	0.00590	0.04395
	B1_N	0.00680	0.01108	0.08582
	B1_N	0.00963	0.01391	0.09091
sky130_fd_sc_hs__a21bo_2	A1	0.01100	0.01269	0.05239
	A1	0.00689	0.00863	0.04830
	A2	0.01192	0.01328	0.04823
	A2	0.00686	0.00825	0.04317
	B1_N	0.00957	0.01360	0.08788
	B1_N	0.01259	0.01660	0.09116
sky130_fd_sc_hs__a21bo_4	A1	0.02025	0.02403	0.10974
	A1	0.01312	0.01703	0.10264
	A2	0.02279	0.02567	0.10084
	A2	0.01313	0.01606	0.09119
	B1_N	0.01718	0.02199	0.11102
	B1_N	0.02038	0.02523	0.11425

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00455	0.00555	0.04698
	A1	0.00852	0.00946	0.05071
	A2	0.00471	0.00574	0.04266
	A2	0.00961	0.01058	0.04751
	B1_N	0.00984	0.01282	0.08489
	B1_N	0.00701	0.00998	0.08201
sky130_fd_sc_hs__a21bo_2	A1	0.00720	0.00800	0.04507
	A1	0.01134	0.01195	0.04866
	A2	0.00797	0.00845	0.04365
	A2	0.01301	0.01349	0.04750
	B1_N	0.01426	0.01648	0.08121
	B1_N	0.01224	0.01442	0.07918
sky130_fd_sc_hs__a21bo_4	A1	0.01442	0.01571	0.09584
	A1	0.02158	0.02286	0.10251
	A2	0.01497	0.01624	0.08895
	A2	0.02456	0.02571	0.09835
	B1_N	0.02401	0.02670	0.10370
	B1_N	0.02262	0.02527	0.10212

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)	0.00159	0.00138	0.00137
	(A2 * !B1_N * X)	-0.00155	-0.00177	-0.00178
	(!A2 * B1_N * !X)	0.00048	0.00049	0.00048
	(!A2 * B1_N * !X)	-0.00201	-0.00204	-0.00205
	(!A2 * !B1_N * X)	0.00131	0.00131	0.00132
	(!A2 * !B1_N * X)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00180	0.00163	0.00161
	(A2 * !B1_N * X)	-0.00151	-0.00174	-0.00174
	(!A2 * B1_N * !X)	0.00061	0.00060	0.00059
	(!A2 * B1_N * !X)	-0.00201	-0.00201	-0.00204
	(!A2 * !B1_N * X)	0.00154	0.00157	0.00155
	(!A2 * !B1_N * X)	-0.00175	-0.00177	-0.00176
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00296	0.00264	0.00261
	(A2 * !B1_N * X)	-0.00290	-0.00330	-0.00331
	(!A2 * B1_N * !X)	0.00077	0.00077	0.00074
	(!A2 * B1_N * !X)	-0.00391	-0.00393	-0.00396
	(!A2 * !B1_N * X)	0.00253	0.00255	0.00254
	(!A2 * !B1_N * X)	-0.00334	-0.00336	-0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A2 * !B1_N * X)	-0.00136	-0.00137	-0.00136
	(A2 * !B1_N * X)	0.00177	0.00179	0.00178
	(!A2 * B1_N * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * B1_N * !X)	0.00207	0.00208	0.00206
	(!A2 * !B1_N * X)	-0.00128	-0.00131	-0.00132
	(!A2 * !B1_N * X)	0.00181	0.00180	0.00181
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00161	-0.00161	-0.00160
	(A2 * !B1_N * X)	0.00174	0.00175	0.00174
	(!A2 * B1_N * !X)	-0.00058	-0.00058	-0.00057
	(!A2 * B1_N * !X)	0.00205	0.00206	0.00205
	(!A2 * !B1_N * X)	-0.00150	-0.00155	-0.00155
	(!A2 * !B1_N * X)	0.00177	0.00178	0.00176
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00259	-0.00261	-0.00260
	(A2 * !B1_N * X)	0.00328	0.00333	0.00331
	(!A2 * B1_N * !X)	-0.00072	-0.00073	-0.00072
	(!A2 * B1_N * !X)	0.00396	0.00400	0.00397
	(!A2 * !B1_N * X)	-0.00238	-0.00249	-0.00252
	(!A2 * !B1_N * X)	0.00334	0.00336	0.00336

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)	0.00176	0.00162	0.00160
	(A1 * !B1_N * X)	-0.00144	-0.00162	-0.00163
	(!A1 * B1_N * !X)	0.00154	0.00156	0.00154
	(!A1 * B1_N * !X)	-0.00163	-0.00165	-0.00164
	(!A1 * !B1_N * X)	0.00153	0.00155	0.00154
	(!A1 * !B1_N * X)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00178	0.00159	0.00157
	(A1 * !B1_N * X)	-0.00146	-0.00169	-0.00169
	(!A1 * B1_N * !X)	0.00152	0.00154	0.00152
	(!A1 * B1_N * !X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1_N * X)	0.00150	0.00152	0.00150
	(!A1 * !B1_N * X)	-0.00171	-0.00173	-0.00171
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00348	0.00327	0.00322
	(A1 * !B1_N * X)	-0.00295	-0.00330	-0.00329
	(!A1 * B1_N * !X)	0.00310	0.00313	0.00311
	(!A1 * B1_N * !X)	-0.00331	-0.00332	-0.00332
	(!A1 * !B1_N * X)	0.00310	0.00315	0.00311
	(!A1 * !B1_N * X)	-0.00331	-0.00334	-0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	(A1 * !B1_N * X)	-0.00159	-0.00160	-0.00159
	(A1 * !B1_N * X)	0.00161	0.00164	0.00163
	(!A1 * B1_N * !X)	-0.00145	-0.00154	-0.00154
	(!A1 * B1_N * !X)	0.00172	0.00167	0.00165
	(!A1 * !B1_N * X)	-0.00150	-0.00153	-0.00154
	(!A1 * !B1_N * X)	0.00164	0.00165	0.00165
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00156	-0.00157	-0.00156
	(A1 * !B1_N * X)	0.00168	0.00170	0.00169
	(!A1 * B1_N * !X)	-0.00142	-0.00150	-0.00151
	(!A1 * B1_N * !X)	0.00176	0.00174	0.00173
	(!A1 * !B1_N * X)	-0.00146	-0.00151	-0.00150
	(!A1 * !B1_N * X)	0.00171	0.00173	0.00172
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00321	-0.00322	-0.00321
	(A1 * !B1_N * X)	0.00327	0.00330	0.00329
	(!A1 * B1_N * !X)	-0.00293	-0.00313	-0.00311
	(!A1 * B1_N * !X)	0.00344	0.00334	0.00333
	(!A1 * !B1_N * X)	-0.00301	-0.00314	-0.00311
	(!A1 * !B1_N * X)	0.00331	0.00334	0.00333

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)	0.00393	0.00710	0.07616
	(A1 * A2 * X)	0.00056	0.00372	0.07279
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00446	0.00744	0.07675
	(A1 * A2 * X)	0.00093	0.00389	0.07322
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00592	0.00924	0.08328
	(A1 * A2 * X)	0.00187	0.00518	0.07924

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)	0.00109	0.00546	0.07424
	(A1 * A2 * X)	0.00445	0.00882	0.07759
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00134	0.00563	0.07466
	(A1 * A2 * X)	0.00486	0.00916	0.07818
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00224	0.00619	0.07979
	(A1 * A2 * X)	0.00626	0.01024	0.08381

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21oi_1	6.39360
sky130_fd_sc_hs__a21oi_2	12.78720
sky130_fd_sc_hs__a21oi_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__a21oi_1	0.00275	0.00257	0.00268	0.67885
sky130_fd_sc_hs__a21oi_2	0.00497	0.00517	0.00395	1.15997
sky130_fd_sc_hs__a21oi_4	0.01012	0.00986	0.00778	2.19820

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21oi_1	0.00000	0.03002	0.06294
sky130_fd_sc_hs__a21oi_2	0.00000	0.05966	0.12588
sky130_fd_sc_hs__a21oi_4	0.00000	0.11932	0.25175

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)	0.05585	0.81894	10.11160
	A2->Y (FR)	0.07006	0.85967	10.43620
	B1->Y (FR)	0.05443	0.85597	10.64690
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.05502	0.74431	10.45150
	A2->Y (FR)	0.07240	0.74710	10.24050
	B1->Y (FR)	0.03036	0.72752	10.53040
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.05086	0.63247	10.24820
	A2->Y (FR)	0.06649	0.63266	10.00220
	B1->Y (FR)	0.02746	0.62282	10.39050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.01858	0.29315	3.42709
	A2->Y (RF)	0.02065	0.27786	3.19281
	B1->Y (RF)	0.01245	0.23039	2.73164
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.01806	0.25756	3.51133
	A2->Y (RF)	0.02277	0.23787	3.14839
	B1->Y (RF)	0.01584	0.30715	4.31340
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.01758	0.22461	3.71914
	A2->Y (RF)	0.02062	0.18660	3.03223
	B1->Y (RF)	0.01616	0.27308	4.62350

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00039	-0.00032	0.00769
	A1	0.00509	0.00515	0.01322
	A2	-0.00001	0.00007	0.00819
	A2	0.00647	0.00656	0.01471
	B1	-0.00068	0.00057	0.02095
	B1	0.00375	0.00501	0.02544
sky130_fd_sc_hs__a21oi_2	A1	-0.00079	-0.00063	0.01401
	A1	0.00941	0.00957	0.02422
	A2	0.00057	0.00062	0.01539
	A2	0.01325	0.01333	0.02811
	B1	-0.00019	0.00236	0.02790
	B1	0.00661	0.00918	0.03482
sky130_fd_sc_hs__a21oi_4	A1	-0.00235	-0.00179	0.02766
	A1	0.01855	0.01918	0.04876
	A2	0.00045	0.00088	0.03188
	A2	0.02578	0.02625	0.05723
	B1	-0.00066	0.00313	0.04976
	B1	0.01294	0.01678	0.06375

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00670	0.00694	0.01393
	A1	0.00130	0.00151	0.00827
	A2	0.00775	0.00783	0.01326
	A2	0.00129	0.00135	0.00664
	B1	0.00417	0.00463	0.01252
	B1	-0.00026	0.00019	0.00807
sky130_fd_sc_hs__a21oi_2	A1	0.01210	0.01249	0.02557
	A1	0.00202	0.00236	0.01501
	A2	0.01479	0.01487	0.02543
	A2	0.00208	0.00211	0.01265
	B1	0.00529	0.00601	0.01682
	B1	-0.00152	-0.00085	0.00936
sky130_fd_sc_hs__a21oi_4	A1	0.02426	0.02496	0.04951
	A1	0.00360	0.00422	0.02763
	A2	0.02864	0.02891	0.05023
	A2	0.00339	0.00359	0.02473
	B1	0.01095	0.01242	0.03278
	B1	-0.00266	-0.00121	0.01720

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00175	0.00161	0.00160
	(A2 * B1 * !Y)	-0.00156	-0.00177	-0.00177
	(!A2 * B1 * !Y)	0.00152	0.00153	0.00153
	(!A2 * B1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A2 * !B1 * Y)	0.00046	0.00046	0.00045
	(!A2 * !B1 * Y)	-0.00218	-0.00217	-0.00220
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00354	0.00320	0.00318
	(A2 * B1 * !Y)	-0.00301	-0.00346	-0.00346
	(!A2 * B1 * !Y)	0.00299	0.00301	0.00300
	(!A2 * B1 * !Y)	-0.00354	-0.00355	-0.00354
	(!A2 * !B1 * Y)	0.00099	0.00099	0.00095
	(!A2 * !B1 * Y)	-0.00414	-0.00415	-0.00422
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00714	0.00644	0.00640
	(A2 * B1 * !Y)	-0.00600	-0.00691	-0.00691
	(!A2 * B1 * !Y)	0.00612	0.00616	0.00613
	(!A2 * B1 * !Y)	-0.00704	-0.00707	-0.00704
	(!A2 * !B1 * Y)	0.00188	0.00188	0.00181
	(!A2 * !B1 * Y)	-0.00857	-0.00860	-0.00871

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00159	-0.00160	-0.00160
	(A2 * B1 * !Y)	0.00176	0.00177	0.00177
	(!A2 * B1 * !Y)	-0.00148	-0.00153	-0.00153
	(!A2 * B1 * !Y)	0.00180	0.00182	0.00181
	(!A2 * !B1 * Y)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * Y)	0.00220	0.00224	0.00220
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00318	-0.00319	-0.00317
	(A2 * B1 * !Y)	0.00346	0.00348	0.00346
	(!A2 * B1 * !Y)	-0.00282	-0.00301	-0.00300
	(!A2 * B1 * !Y)	0.00357	0.00356	0.00355
	(!A2 * !B1 * Y)	-0.00093	-0.00095	-0.00093
	(!A2 * !B1 * Y)	0.00421	0.00429	0.00423
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00640	-0.00643	-0.00639
	(A2 * B1 * !Y)	0.00691	0.00696	0.00691
	(!A2 * B1 * !Y)	-0.00587	-0.00616	-0.00613
	(!A2 * B1 * !Y)	0.00706	0.00710	0.00706
	(!A2 * !B1 * Y)	-0.00177	-0.00180	-0.00177
	(!A2 * !B1 * Y)	0.00869	0.00886	0.00872

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00176	0.00162	0.00161
	(A1 * B1 * !Y)	-0.00157	-0.00177	-0.00177
	(!A1 * B1 * !Y)	0.00153	0.00154	0.00154
	(!A1 * B1 * !Y)	-0.00180	-0.00181	-0.00181
	(!A1 * !B1 * Y)	0.00154	0.00155	0.00154
	(!A1 * !B1 * Y)	-0.00181	-0.00181	-0.00181
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00366	0.00331	0.00329
	(A1 * B1 * !Y)	-0.00302	-0.00347	-0.00347
	(!A1 * B1 * !Y)	0.00310	0.00316	0.00312
	(!A1 * B1 * !Y)	-0.00354	-0.00358	-0.00355
	(!A1 * !B1 * Y)	0.00300	0.00304	0.00301
	(!A1 * !B1 * Y)	-0.00368	-0.00370	-0.00368
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00695	0.00632	0.00624
	(A1 * B1 * !Y)	-0.00619	-0.00713	-0.00712
	(!A1 * B1 * !Y)	0.00593	0.00599	0.00597
	(!A1 * B1 * !Y)	-0.00723	-0.00728	-0.00727
	(!A1 * !B1 * Y)	0.00593	0.00599	0.00596
	(!A1 * !B1 * Y)	-0.00730	-0.00734	-0.00732

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00160	-0.00161	-0.00160
	(A1 * B1 * !Y)	0.00176	0.00178	0.00177
	(!A1 * B1 * !Y)	-0.00150	-0.00154	-0.00154
	(!A1 * B1 * !Y)	0.00181	0.00182	0.00181
	(!A1 * !B1 * Y)	-0.00147	-0.00154	-0.00154
	(!A1 * !B1 * Y)	0.00187	0.00182	0.00181
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00329	-0.00330	-0.00329
	(A1 * B1 * !Y)	0.00347	0.00349	0.00347
	(!A1 * B1 * !Y)	-0.00297	-0.00313	-0.00312
	(!A1 * B1 * !Y)	0.00356	0.00358	0.00356
	(!A1 * !B1 * Y)	-0.00278	-0.00300	-0.00301
	(!A1 * !B1 * Y)	0.00378	0.00372	0.00368
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00623	-0.00624	-0.00622
	(A1 * B1 * !Y)	0.00711	0.00714	0.00712
	(!A1 * B1 * !Y)	-0.00572	-0.00596	-0.00597
	(!A1 * B1 * !Y)	0.00726	0.00733	0.00729
	(!A1 * !B1 * Y)	-0.00550	-0.00595	-0.00595
	(!A1 * !B1 * Y)	0.00756	0.00740	0.00734

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00188	0.00189	0.00187
	(A1 * A2 * !Y)	-0.00087	-0.00086	-0.00086
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00207	0.00210	0.00208
	(A1 * A2 * !Y)	-0.00177	-0.00179	-0.00178
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00400	0.00404	0.00402
	(A1 * A2 * !Y)	-0.00341	-0.00344	-0.00341

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00177	-0.00179	-0.00186
	(A1 * A2 * !Y)	0.00093	0.00094	0.00088
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00189	-0.00190	-0.00206
	(A1 * A2 * !Y)	0.00193	0.00194	0.00181
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00365	-0.00369	-0.00398
	(A1 * A2 * !Y)	0.00371	0.00372	0.00348

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a21o_1	11.18880
sky130_fd_sc_hs__a21o_2	11.18880
sky130_fd_sc_hs__a21o_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__a21o_1	0.00231	0.00237	0.00238	1.43211
sky130_fd_sc_hs__a21o_2	0.00258	0.00248	0.00262	2.72087
sky130_fd_sc_hs__a21o_4	0.00468	0.00446	0.00478	5.17789

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a21o_1	0.00000	0.07731	0.11347
sky130_fd_sc_hs__a21o_2	0.00000	0.10094	0.12788
sky130_fd_sc_hs__a21o_4	0.00000	0.20308	0.25985

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)	0.05055	0.43496	5.34722
	A2->X (RR)	0.05384	0.44176	5.31566
	B1->X (RR)	0.03959	0.40656	5.25393
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.04904	0.35887	5.21810
	A2->X (RR)	0.05176	0.36015	5.18553
	B1->X (RR)	0.03865	0.33153	5.11420
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.05738	0.31126	5.39111
	A2->X (RR)	0.06122	0.31365	5.35098
	B1->X (RR)	0.04022	0.27009	5.22211

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.08397	0.46299	5.09784
	A2->X (FF)	0.09921	0.48879	5.12949
	B1->X (FF)	0.08231	0.48508	5.02182
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.10105	0.46058	4.88536
	A2->X (FF)	0.11660	0.48814	4.93918
	B1->X (FF)	0.10135	0.49198	4.93042
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.10585	0.44246	5.07853
	A2->X (FF)	0.12156	0.47045	5.12422
	B1->X (FF)	0.10304	0.47140	5.17326

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00921	0.01100	0.05407
	A1	0.00452	0.00634	0.04961
	A2	0.01042	0.01169	0.04945
	A2	0.00451	0.00581	0.04378
	B1	0.00674	0.00962	0.07398
	B1	0.00292	0.00581	0.07040
sky130_fd_sc_hs__a21o_2	A1	0.01206	0.01377	0.05463
	A1	0.00693	0.00870	0.04951
	A2	0.01317	0.01452	0.05070
	A2	0.00690	0.00831	0.04444
	B1	0.00960	0.01226	0.07580
	B1	0.00538	0.00812	0.07159
sky130_fd_sc_hs__a21o_4	A1	0.02316	0.02645	0.10813
	A1	0.01335	0.01676	0.09923
	A2	0.02502	0.02748	0.09949
	A2	0.01331	0.01582	0.08866
	B1	0.01790	0.02374	0.15110
	B1	0.00988	0.01579	0.14394

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00334	0.00443	0.04586
	A1	0.00806	0.00905	0.05033
	A2	0.00345	0.00448	0.04167
	A2	0.00934	0.01032	0.04720
	B1	0.00313	0.00663	0.05838
	B1	0.00694	0.01028	0.06136
sky130_fd_sc_hs__a21o_2	A1	0.00604	0.00744	0.04813
	A1	0.01121	0.01199	0.05013
	A2	0.00658	0.00719	0.04395
	A2	0.01285	0.01344	0.04875
	B1	0.00558	0.00889	0.06561
	B1	0.00979	0.01310	0.06880
sky130_fd_sc_hs__a21o_4	A1	0.01245	0.01355	0.08980
	A1	0.02235	0.02343	0.09968
	A2	0.01411	0.01575	0.08468
	A2	0.02580	0.02654	0.09590
	B1	0.01136	0.01770	0.13450
	B1	0.01938	0.02569	0.14080

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00148	0.00130	0.00130
	(A2 * B1 * X)	-0.00142	-0.00164	-0.00164
	(!A2 * B1 * X)	0.00123	0.00124	0.00124
	(!A2 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A2 * !B1 * !X)	0.00041	0.00041	0.00040
	(!A2 * !B1 * !X)	-0.00190	-0.00191	-0.00193
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00171	0.00154	0.00153
	(A2 * B1 * X)	-0.00143	-0.00166	-0.00166
	(!A2 * B1 * X)	0.00147	0.00147	0.00147
	(!A2 * B1 * X)	-0.00170	-0.00170	-0.00169
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00049
	(!A2 * !B1 * !X)	-0.00197	-0.00198	-0.00200
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00317	0.00282	0.00279
	(A2 * B1 * X)	-0.00279	-0.00327	-0.00327
	(!A2 * B1 * X)	0.00267	0.00269	0.00268
	(!A2 * B1 * X)	-0.00333	-0.00335	-0.00334
	(!A2 * !B1 * !X)	0.00090	0.00091	0.00087
	(!A2 * !B1 * !X)	-0.00393	-0.00396	-0.00401

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A2 * B1 * X)	0.00162	0.00165	0.00164
	(!A2 * B1 * X)	-0.00120	-0.00124	-0.00124
	(!A2 * B1 * X)	0.00168	0.00168	0.00168
	(!A2 * !B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A2 * !B1 * !X)	0.00193	0.00195	0.00193
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * X)	0.00165	0.00166	0.00166
	(!A2 * B1 * X)	-0.00142	-0.00147	-0.00147
	(!A2 * B1 * X)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(!A2 * !B1 * !X)	0.00201	0.00202	0.00200
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00277	-0.00279	-0.00277
	(A2 * B1 * X)	0.00326	0.00329	0.00327
	(!A2 * B1 * X)	-0.00256	-0.00269	-0.00268
	(!A2 * B1 * X)	0.00333	0.00338	0.00335
	(!A2 * !B1 * !X)	-0.00086	-0.00086	-0.00085
	(!A2 * !B1 * !X)	0.00404	0.00406	0.00403

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00179	0.00165	0.00162
	(A1 * B1 * X)	-0.00142	-0.00161	-0.00161
	(!A1 * B1 * X)	0.00156	0.00158	0.00157
	(!A1 * B1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !X)	0.00158	0.00158	0.00158
	(!A1 * !B1 * !X)	-0.00164	-0.00165	-0.00164
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00179	0.00163	0.00161
	(A1 * B1 * X)	-0.00144	-0.00166	-0.00165
	(!A1 * B1 * X)	0.00157	0.00158	0.00157
	(!A1 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * !B1 * !X)	0.00155	0.00157	0.00155
	(!A1 * !B1 * !X)	-0.00168	-0.00170	-0.00169
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00310	0.00277	0.00274
	(A1 * B1 * X)	-0.00281	-0.00327	-0.00327
	(!A1 * B1 * X)	0.00261	0.00264	0.00262
	(!A1 * B1 * X)	-0.00332	-0.00334	-0.00333
	(!A1 * !B1 * !X)	0.00261	0.00263	0.00262
	(!A1 * !B1 * !X)	-0.00332	-0.00334	-0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00161	-0.00163	-0.00162
	(A1 * B1 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * X)	-0.00153	-0.00158	-0.00157
	(!A1 * B1 * X)	0.00164	0.00166	0.00165
	(!A1 * !B1 * !X)	-0.00149	-0.00157	-0.00157
	(!A1 * !B1 * !X)	0.00170	0.00166	0.00165
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * X)	0.00165	0.00166	0.00165
	(!A1 * B1 * X)	-0.00151	-0.00157	-0.00156
	(!A1 * B1 * X)	0.00170	0.00171	0.00170
	(!A1 * !B1 * !X)	-0.00148	-0.00157	-0.00155
	(!A1 * !B1 * !X)	0.00174	0.00171	0.00170
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00271	-0.00273	-0.00272
	(A1 * B1 * X)	0.00324	0.00328	0.00327
	(!A1 * B1 * X)	-0.00252	-0.00263	-0.00262
	(!A1 * B1 * X)	0.00332	0.00336	0.00334
	(!A1 * !B1 * !X)	-0.00243	-0.00262	-0.00262
	(!A1 * !B1 * !X)	0.00345	0.00337	0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00155	0.00156	0.00155
	(A1 * A2 * X)	-0.00082	-0.00083	-0.00082
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00183	0.00184	0.00183
	(A1 * A2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00320	0.00324	0.00321
	(A1 * A2 * X)	-0.00168	-0.00170	-0.00169

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00146	-0.00147	-0.00154
	(A1 * A2 * X)	0.00090	0.00090	0.00084
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00173	-0.00174	-0.00182
	(A1 * A2 * X)	0.00089	0.00089	0.00083
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00302	-0.00304	-0.00319
	(A1 * A2 * X)	0.00184	0.00185	0.00173

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221oi_1	12.78720
sky130_fd_sc_hs__a221oi_2	19.18080
sky130_fd_sc_hs__a221oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__a221oi_1	0.00264	0.00259	0.00269	0.00278	0.00278	0.44494
sky130_fd_sc_hs__a221oi_2	0.00561	0.00502	0.00550	0.00498	0.00509	0.73401
sky130_fd_sc_hs__a221oi_4	0.01027	0.01020	0.01018	0.00987	0.01008	1.26352

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221oi_1	0.00000	0.02671	0.06294
sky130_fd_sc_hs__a221oi_2	0.00000	0.05341	0.12588
sky130_fd_sc_hs__a221oi_4	0.00000	0.10682	0.25175

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)	0.14799	1.00516	9.97719
	A2->Y (FR)	0.16678	1.02858	10.02910
	B1->Y (FR)	0.12744	1.00867	10.54640
	B2->Y (FR)	0.14889	1.03975	10.67240
	C1->Y (FR)	0.11219	1.00403	10.64270
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.13886	0.83440	9.34582
	A2->Y (FR)	0.17924	0.91834	9.95429
	B1->Y (FR)	0.12602	0.87419	10.30190
	B2->Y (FR)	0.15646	0.92824	10.59270
	C1->Y (FR)	0.11241	0.89394	10.66490
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.15832	0.77075	9.51055
	A2->Y (FR)	0.19115	0.81503	9.69776
	B1->Y (FR)	0.13125	0.76839	10.07870
	B2->Y (FR)	0.16684	0.82768	10.43510
	C1->Y (FR)	0.12164	0.80370	10.69690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.02130	0.26046	2.33462
	A2->Y (RF)	0.02376	0.24646	2.16767
	B1->Y (RF)	0.02339	0.25860	2.39998
	B2->Y (RF)	0.02648	0.24654	2.24234
	C1->Y (RF)	0.01508	0.19716	1.84791
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.01923	0.21339	2.14464
	A2->Y (RF)	0.02345	0.20681	2.02177
	B1->Y (RF)	0.01942	0.19730	2.10642
	B2->Y (RF)	0.02411	0.19629	1.99304
	C1->Y (RF)	0.01339	0.14835	1.63193
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02149	0.19578	2.24822
	A2->Y (RF)	0.02482	0.16247	1.75767
	B1->Y (RF)	0.02617	0.18775	2.25998
	B2->Y (RF)	0.02939	0.15618	1.75660
	C1->Y (RF)	0.01211	0.09995	1.34233

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00095	0.00075	0.00917
	A1	0.00873	0.00855	0.01705
	A2	0.00123	0.00109	0.00959
	A2	0.01015	0.01004	0.01860
	B1	0.00095	0.00090	0.01018
	B1	0.00676	0.00670	0.01604
	B2	0.00135	0.00131	0.01040
	B2	0.00826	0.00824	0.01732
	C1	0.00067	0.00178	0.02327
	C1	0.00558	0.00671	0.02824
sky130_fd_sc_hs__a221oi_2	A1	0.00034	-0.00000	0.01770
	A1	0.01633	0.01601	0.03369
	A2	0.00181	0.00142	0.01831
	A2	0.01940	0.01902	0.03594
	B1	0.00042	0.00039	0.01892
	B1	0.01224	0.01224	0.03090
	B2	0.00156	0.00152	0.02009
	B2	0.01510	0.01507	0.03374
	C1	-0.00003	0.00271	0.04373
	C1	0.00955	0.01229	0.05340

sky130_fd_sc_hs__a221oi_4	**A1**	0.00001	-0.00079	0.03059
	A1	0.03150	0.03073	0.06205
	A2	0.00230	0.00158	0.03335
	A2	0.03807	0.03737	0.06928
	B1	-0.00009	-0.00016	0.03209
	B1	0.02382	0.02376	0.05615
	B2	0.00238	0.00229	0.03425
	B2	0.03060	0.03054	0.06269
	C1	-0.00108	0.00405	0.08038
	C1	0.01779	0.02288	0.09939

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.01133	0.01140	0.01968
	A1	0.00376	0.00381	0.01212
	A2	0.01249	0.01246	0.01907
	A2	0.00373	0.00366	0.01034
	B1	0.00719	0.00743	0.01544
	B1	0.00145	0.00170	0.00970
	B2	0.00834	0.00840	0.01482
	B2	0.00144	0.00149	0.00791
	C1	0.00461	0.00510	0.01435
	C1	-0.00030	0.00017	0.00943

sky130_fd_sc_hs__a221oi_2	**A1**	0.02134	0.02151	0.03855
	A1	0.00574	0.00588	0.02300
	A2	0.02331	0.02321	0.03638
	A2	0.00600	0.00584	0.01913
	B1	0.01373	0.01420	0.03085
	B1	0.00202	0.00244	0.01912
	B2	0.01566	0.01588	0.02904
	B2	0.00214	0.00229	0.01551
	C1	0.00832	0.00949	0.02848
	C1	-0.00125	-0.00014	0.01888
sky130_fd_sc_hs__a221oi_4	**A1**	0.04285	0.04285	0.07363
	A1	0.01220	0.01214	0.04309
	A2	0.04722	0.04691	0.07442
	A2	0.01207	0.01166	0.03932
	B1	0.02741	0.02833	0.05890
	B1	0.00387	0.00473	0.03544
	B2	0.03202	0.03243	0.05966
	B2	0.00393	0.00423	0.03154
	C1	0.01727	0.01969	0.05797
	C1	-0.00158	0.00077	0.03907

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)**	0.00152	0.00152	0.00152
	(A2 * B1 * B2 * C1 * !Y)	-0.00168	-0.00176	-0.00175
	(A2 * B1 * B2 * !C1 * !Y)	0.00152	0.00152	0.00152
	(A2 * B1 * B2 * !C1 * !Y)	-0.00167	-0.00176	-0.00175
	(A2 * B1 * !B2 * C1 * !Y)	0.00152	0.00153	0.00152
	(A2 * B1 * !B2 * C1 * !Y)	-0.00159	-0.00173	-0.00171
	(A2 * !B1 * C1 * !Y)	0.00152	0.00153	0.00152
	(A2 * !B1 * C1 * !Y)	-0.00159	-0.00173	-0.00171
	(!A2 * B1 * B2 * C1 * !Y)	0.00147	0.00147	0.00147
	(!A2 * B1 * B2 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * B2 * !C1 * !Y)	0.00148	0.00148	0.00148
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00179	-0.00180	-0.00179
	(!A2 * B1 * !B2 * C1 * !Y)	0.00144	0.00145	0.00145
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00179	-0.00179	-0.00179
	(!A2 * B1 * !B2 * !C1 * Y)	0.00046	0.00047	0.00046
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00207	-0.00209	-0.00210
	(!A2 * !B1 * C1 * !Y)	0.00146	0.00147	0.00147
	(!A2 * !B1 * C1 * !Y)	-0.00178	-0.00180	-0.00179
	(!A2 * !B1 * !C1 * Y)	0.00046	0.00047	0.00046
	(!A2 * !B1 * !C1 * Y)	-0.00207	-0.00209	-0.00210

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00322	0.00325	0.00322
	(A2 * B1 * B2 * C1 * !Y)	-0.00354	-0.00374	-0.00372
	(A2 * B1 * B2 * !C1 * !Y)	0.00323	0.00324	0.00322
	(A2 * B1 * B2 * !C1 * !Y)	-0.00352	-0.00373	-0.00372
	(A2 * B1 * !B2 * C1 * !Y)	0.00326	0.00324	0.00323
	(A2 * B1 * !B2 * C1 * !Y)	-0.00339	-0.00365	-0.00363
	(A2 * !B1 * C1 * !Y)	0.00326	0.00324	0.00323
	(A2 * !B1 * C1 * !Y)	-0.00339	-0.00365	-0.00364
	(!A2 * B1 * B2 * C1 * !Y)	0.00312	0.00316	0.00314
	(!A2 * B1 * B2 * C1 * !Y)	-0.00381	-0.00384	-0.00382
	(!A2 * B1 * B2 * !C1 * !Y)	0.00310	0.00312	0.00311
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00381	-0.00383	-0.00382
	(!A2 * B1 * !B2 * C1 * !Y)	0.00310	0.00313	0.00312
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00381	-0.00383	-0.00382
	(!A2 * B1 * !B2 * !C1 * Y)	0.00105	0.00106	0.00102
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00453	-0.00455	-0.00461
	(!A2 * !B1 * C1 * !Y)	0.00315	0.00318	0.00317
	(!A2 * !B1 * C1 * !Y)	-0.00380	-0.00383	-0.00382
	(!A2 * !B1 * !C1 * Y)	0.00105	0.00106	0.00102
	(!A2 * !B1 * !C1 * Y)	-0.00453	-0.00456	-0.00461

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00623	0.00628	0.00622
	(A2 * B1 * B2 * C1 * !Y)	-0.00682	-0.00715	-0.00713
	(A2 * B1 * B2 * !C1 * !Y)	0.00626	0.00629	0.00622
	(A2 * B1 * B2 * !C1 * !Y)	-0.00668	-0.00715	-0.00711
	(A2 * B1 * !B2 * C1 * !Y)	0.00627	0.00629	0.00621
	(A2 * B1 * !B2 * C1 * !Y)	-0.00638	-0.00699	-0.00694
	(A2 * !B1 * C1 * !Y)	0.00628	0.00629	0.00621
	(A2 * !B1 * C1 * !Y)	-0.00636	-0.00699	-0.00694
	(!A2 * B1 * B2 * C1 * !Y)	0.00603	0.00610	0.00605
	(!A2 * B1 * B2 * C1 * !Y)	-0.00725	-0.00730	-0.00726
	(!A2 * B1 * B2 * !C1 * !Y)	0.00594	0.00600	0.00597
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00722	-0.00727	-0.00724
	(!A2 * B1 * !B2 * C1 * !Y)	0.00605	0.00613	0.00607
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00735	-0.00739	-0.00734
	(!A2 * B1 * !B2 * !C1 * Y)	0.00189	0.00189	0.00182
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00872	-0.00876	-0.00885
	(!A2 * !B1 * C1 * !Y)	0.00599	0.00601	0.00602
	(!A2 * !B1 * C1 * !Y)	-0.00732	-0.00734	-0.00734
	(!A2 * !B1 * !C1 * Y)	0.00190	0.00190	0.00183
	(!A2 * !B1 * !C1 * Y)	-0.00872	-0.00876	-0.00885

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)**	-0.00151	-0.00152	-0.00151
	(A2 * B1 * B2 * C1 * !Y)	0.00175	0.00176	0.00175
	(A2 * B1 * B2 * !C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * B2 * !C1 * !Y)	0.00175	0.00176	0.00175
	(A2 * B1 * !B2 * C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * !B2 * C1 * !Y)	0.00171	0.00173	0.00171
	(A2 * !B1 * C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A2 * !B1 * C1 * !Y)	0.00170	0.00173	0.00171
	(!A2 * B1 * B2 * C1 * !Y)	-0.00140	-0.00146	-0.00146
	(!A2 * B1 * B2 * C1 * !Y)	0.00179	0.00181	0.00180
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00141	-0.00145	-0.00146
	(!A2 * B1 * B2 * !C1 * !Y)	0.00180	0.00180	0.00180
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00141	-0.00145	-0.00145
	(!A2 * B1 * !B2 * C1 * !Y)	0.00180	0.00179	0.00180
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00045	-0.00045	-0.00045
	(!A2 * B1 * !B2 * !C1 * Y)	0.00211	0.00212	0.00210
	(!A2 * !B1 * C1 * !Y)	-0.00140	-0.00145	-0.00146
	(!A2 * !B1 * C1 * !Y)	0.00178	0.00180	0.00180
	(!A2 * !B1 * !C1 * Y)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * !C1 * Y)	0.00211	0.00212	0.00210

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00322	-0.00322	-0.00322
	(A2 * B1 * B2 * C1 * !Y)	0.00372	0.00374	0.00372
	(A2 * B1 * B2 * !C1 * !Y)	-0.00322	-0.00322	-0.00322
	(A2 * B1 * B2 * !C1 * !Y)	0.00372	0.00373	0.00372
	(A2 * B1 * !B2 * C1 * !Y)	-0.00322	-0.00323	-0.00322
	(A2 * B1 * !B2 * C1 * !Y)	0.00362	0.00365	0.00363
	(A2 * !B1 * C1 * !Y)	-0.00322	-0.00323	-0.00322
	(A2 * !B1 * C1 * !Y)	0.00363	0.00365	0.00364
	(!A2 * B1 * B2 * C1 * !Y)	-0.00300	-0.00313	-0.00314
	(!A2 * B1 * B2 * C1 * !Y)	0.00381	0.00384	0.00383
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00300	-0.00312	-0.00311
	(!A2 * B1 * B2 * !C1 * !Y)	0.00383	0.00386	0.00383
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00300	-0.00313	-0.00312
	(!A2 * B1 * !B2 * C1 * !Y)	0.00384	0.00386	0.00383
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00101	-0.00102	-0.00100
	(!A2 * B1 * !B2 * !C1 * Y)	0.00462	0.00469	0.00462
	(!A2 * !B1 * C1 * !Y)	-0.00298	-0.00315	-0.00314
	(!A2 * !B1 * C1 * !Y)	0.00380	0.00386	0.00383
	(!A2 * !B1 * !C1 * Y)	-0.00101	-0.00101	-0.00100
	(!A2 * !B1 * !C1 * Y)	0.00462	0.00466	0.00462

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00619	-0.00622	-0.00621
	(A2 * B1 * B2 * C1 * !Y)	0.00709	0.00715	0.00713
	(A2 * B1 * B2 * !C1 * !Y)	-0.00618	-0.00623	-0.00621
	(A2 * B1 * B2 * !C1 * !Y)	0.00706	0.00715	0.00711
	(A2 * B1 * !B2 * C1 * !Y)	-0.00618	-0.00623	-0.00620
	(A2 * B1 * !B2 * C1 * !Y)	0.00690	0.00699	0.00694
	(A2 * !B1 * C1 * !Y)	-0.00621	-0.00623	-0.00620
	(A2 * !B1 * C1 * !Y)	0.00695	0.00699	0.00694
	(!A2 * B1 * B2 * C1 * !Y)	-0.00572	-0.00606	-0.00603
	(!A2 * B1 * B2 * C1 * !Y)	0.00725	0.00735	0.00728
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00572	-0.00600	-0.00597
	(!A2 * B1 * B2 * !C1 * !Y)	0.00724	0.00729	0.00726
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00573	-0.00607	-0.00602
	(!A2 * B1 * !B2 * C1 * !Y)	0.00737	0.00739	0.00737
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00178	-0.00182	-0.00178
	(!A2 * B1 * !B2 * !C1 * Y)	0.00883	0.00900	0.00886
	(!A2 * !B1 * C1 * !Y)	-0.00571	-0.00601	-0.00602
	(!A2 * !B1 * C1 * !Y)	0.00734	0.00739	0.00737
	(!A2 * !B1 * !C1 * Y)	-0.00178	-0.00183	-0.00179
	(!A2 * !B1 * !C1 * Y)	0.00882	0.00900	0.00886

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)**	0.00161	0.00162	0.00162
	(A1 * B1 * B2 * C1 * !Y)	-0.00171	-0.00180	-0.00179
	(A1 * B1 * B2 * !C1 * !Y)	0.00162	0.00162	0.00162
	(A1 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00180	-0.00179
	(A1 * B1 * !B2 * C1 * !Y)	0.00163	0.00163	0.00162
	(A1 * B1 * !B2 * C1 * !Y)	-0.00162	-0.00175	-0.00175
	(A1 * !B1 * C1 * !Y)	0.00163	0.00163	0.00162
	(A1 * !B1 * C1 * !Y)	-0.00162	-0.00175	-0.00175
	(!A1 * B1 * B2 * !Y)	0.00154	0.00156	0.00155
	(!A1 * B1 * B2 * !Y)	-0.00182	-0.00184	-0.00183
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00154	0.00156	0.00155
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00182	-0.00184	-0.00183
	(!A1 * B1 * !B2 * !C1 * Y)	0.00156	0.00157	0.00155
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !B1 * !C1 * Y)	0.00156	0.00157	0.00155
	(!A1 * !B1 * !C1 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00307	0.00310	0.00307
	(A1 * B1 * B2 * C1 * !Y)	-0.00325	-0.00346	-0.00344
	(A1 * B1 * B2 * !C1 * !Y)	0.00308	0.00310	0.00307
	(A1 * B1 * B2 * !C1 * !Y)	-0.00323	-0.00345	-0.00344
	(A1 * B1 * !B2 * C1 * !Y)	0.00309	0.00311	0.00307
	(A1 * B1 * !B2 * C1 * !Y)	-0.00309	-0.00338	-0.00335
	(A1 * !B1 * C1 * !Y)	0.00310	0.00311	0.00307
	(A1 * !B1 * C1 * !Y)	-0.00309	-0.00338	-0.00335
	(!A1 * B1 * B2 * !Y)	0.00296	0.00298	0.00297
	(!A1 * B1 * B2 * !Y)	-0.00351	-0.00353	-0.00352
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00296	0.00298	0.00297
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00351	-0.00352	-0.00352
	(!A1 * B1 * !B2 * !C1 * Y)	0.00280	0.00284	0.00281
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00365	-0.00368	-0.00366
	(!A1 * !B1 * !C1 * Y)	0.00280	0.00284	0.00281
	(!A1 * !B1 * !C1 * Y)	-0.00365	-0.00368	-0.00366

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00627	0.00636	0.00628
	(A1 * B1 * B2 * C1 * !Y)	-0.00682	-0.00717	-0.00716
	(A1 * B1 * B2 * !C1 * !Y)	0.00631	0.00636	0.00629
	(A1 * B1 * B2 * !C1 * !Y)	-0.00669	-0.00712	-0.00714
	(A1 * B1 * !B2 * C1 * !Y)	0.00632	0.00637	0.00628
	(A1 * B1 * !B2 * C1 * !Y)	-0.00640	-0.00703	-0.00698
	(A1 * !B1 * C1 * !Y)	0.00633	0.00637	0.00628
	(A1 * !B1 * C1 * !Y)	-0.00640	-0.00703	-0.00698
	(!A1 * B1 * B2 * !Y)	0.00612	0.00621	0.00614
	(!A1 * B1 * B2 * !Y)	-0.00728	-0.00735	-0.00730
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00604	0.00614	0.00607
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00737	-0.00745	-0.00739
	(!A1 * B1 * !B2 * !C1 * Y)	0.00572	0.00580	0.00573
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00777	-0.00783	-0.00778
	(!A1 * !B1 * !C1 * Y)	0.00569	0.00578	0.00572
	(!A1 * !B1 * !C1 * Y)	-0.00776	-0.00782	-0.00778

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)**	-0.00160	-0.00162	-0.00161
	(A1 * B1 * B2 * C1 * !Y)	0.00177	0.00180	0.00179
	(A1 * B1 * B2 * !C1 * !Y)	-0.00160	-0.00162	-0.00161
	(A1 * B1 * B2 * !C1 * !Y)	0.00177	0.00180	0.00179
	(A1 * B1 * !B2 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * !B2 * C1 * !Y)	0.00173	0.00175	0.00175
	(A1 * !B1 * C1 * !Y)	-0.00161	-0.00162	-0.00161
	(A1 * !B1 * C1 * !Y)	0.00173	0.00175	0.00175
	(!A1 * B1 * B2 * !Y)	-0.00151	-0.00156	-0.00155
	(!A1 * B1 * B2 * !Y)	0.00184	0.00184	0.00183
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00151	-0.00156	-0.00155
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00184	0.00184	0.00184
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00148	-0.00156	-0.00155
	(!A1 * B1 * !B2 * !C1 * Y)	0.00189	0.00184	0.00183
	(!A1 * !B1 * !C1 * Y)	-0.00148	-0.00156	-0.00155
	(!A1 * !B1 * !C1 * Y)	0.00189	0.00184	0.00183

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00306	-0.00307	-0.00306
	(A1 * B1 * B2 * C1 * !Y)	0.00344	0.00346	0.00344
	(A1 * B1 * B2 * !C1 * !Y)	-0.00306	-0.00307	-0.00306
	(A1 * B1 * B2 * !C1 * !Y)	0.00344	0.00345	0.00344
	(A1 * B1 * !B2 * C1 * !Y)	-0.00306	-0.00308	-0.00306
	(A1 * B1 * !B2 * C1 * !Y)	0.00335	0.00338	0.00335
	(A1 * !B1 * C1 * !Y)	-0.00306	-0.00308	-0.00306
	(A1 * !B1 * C1 * !Y)	0.00335	0.00338	0.00335
	(!A1 * B1 * B2 * !Y)	-0.00285	-0.00296	-0.00297
	(!A1 * B1 * B2 * !Y)	0.00351	0.00353	0.00353
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00285	-0.00296	-0.00297
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00351	0.00352	0.00353
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00265	-0.00284	-0.00281
	(!A1 * B1 * !B2 * !C1 * Y)	0.00374	0.00370	0.00367
	(!A1 * !B1 * !C1 * Y)	-0.00265	-0.00284	-0.00281
	(!A1 * !B1 * !C1 * Y)	0.00374	0.00370	0.00367

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00626	-0.00628	-0.00627
	(A1 * B1 * B2 * C1 * !Y)	0.00713	0.00717	0.00716
	(A1 * B1 * B2 * !C1 * !Y)	-0.00626	-0.00627	-0.00627
	(A1 * B1 * B2 * !C1 * !Y)	0.00710	0.00712	0.00714
	(A1 * B1 * !B2 * C1 * !Y)	-0.00625	-0.00629	-0.00627
	(A1 * B1 * !B2 * C1 * !Y)	0.00694	0.00703	0.00698
	(A1 * !B1 * C1 * !Y)	-0.00627	-0.00629	-0.00627
	(A1 * !B1 * C1 * !Y)	0.00699	0.00703	0.00698
	(!A1 * B1 * B2 * !Y)	-0.00584	-0.00607	-0.00610
	(!A1 * B1 * B2 * !Y)	0.00728	0.00735	0.00731
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00583	-0.00606	-0.00607
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00739	0.00745	0.00742
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00531	-0.00572	-0.00570
	(!A1 * B1 * !B2 * !C1 * Y)	0.00797	0.00786	0.00780
	(!A1 * !B1 * !C1 * Y)	-0.00531	-0.00572	-0.00570
	(!A1 * !B1 * !C1 * Y)	0.00797	0.00786	0.00780

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)**	0.00158	0.00159	0.00157
	(A1 * A2 * B2 * C1 * !Y)	-0.00128	-0.00130	-0.00129
	(A1 * A2 * B2 * !C1 * !Y)	0.00156	0.00157	0.00156
	(A1 * A2 * B2 * !C1 * !Y)	-0.00100	-0.00100	-0.00100
	(A1 * A2 * !B2 * C1 * !Y)	0.00151	0.00154	0.00151
	(A1 * A2 * !B2 * C1 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	0.00151	0.00152	0.00151
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00100	-0.00099	-0.00099
	(A1 * !A2 * B2 * C1 * !Y)	0.00171	0.00156	0.00155
	(A1 * !A2 * B2 * C1 * !Y)	-0.00155	-0.00177	-0.00177
	(A1 * !A2 * !B2 * C1 * !Y)	0.00150	0.00152	0.00150
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00181	-0.00181	-0.00180
	(A1 * !A2 * !B2 * !C1 * Y)	0.00046	0.00046	0.00045
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00213	-0.00214	-0.00216
	(!A1 * B2 * C1 * !Y)	0.00170	0.00156	0.00155
	(!A1 * B2 * C1 * !Y)	-0.00156	-0.00177	-0.00177
	(!A1 * !B2 * C1 * !Y)	0.00149	0.00151	0.00150
	(!A1 * !B2 * C1 * !Y)	-0.00180	-0.00180	-0.00180
	(!A1 * !B2 * !C1 * Y)	0.00046	0.00046	0.00045
	(!A1 * !B2 * !C1 * Y)	-0.00213	-0.00214	-0.00216

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00321	0.00324	0.00318
	(A1 * A2 * B2 * C1 * !Y)	-0.00261	-0.00262	-0.00260
	(A1 * A2 * B2 * !C1 * !Y)	0.00315	0.00318	0.00315
	(A1 * A2 * B2 * !C1 * !Y)	-0.00206	-0.00208	-0.00208
	(A1 * A2 * !B2 * C1 * !Y)	0.00303	0.00306	0.00304
	(A1 * A2 * !B2 * C1 * !Y)	-0.00243	-0.00245	-0.00244
	(A1 * A2 * !B2 * !C1 * !Y)	0.00303	0.00305	0.00302
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00205	-0.00207	-0.00207
	(A1 * !A2 * B2 * C1 * !Y)	0.00359	0.00319	0.00314
	(A1 * !A2 * B2 * C1 * !Y)	-0.00314	-0.00370	-0.00368
	(A1 * !A2 * !B2 * C1 * !Y)	0.00300	0.00303	0.00301
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00373	-0.00377	-0.00375
	(A1 * !A2 * !B2 * !C1 * Y)	0.00095	0.00095	0.00091
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00446	-0.00449	-0.00452
	(!A1 * B2 * C1 * !Y)	0.00358	0.00319	0.00314
	(!A1 * B2 * C1 * !Y)	-0.00315	-0.00371	-0.00369
	(!A1 * !B2 * C1 * !Y)	0.00305	0.00309	0.00306
	(!A1 * !B2 * C1 * !Y)	-0.00374	-0.00377	-0.00375
	(!A1 * !B2 * !C1 * Y)	0.00095	0.00095	0.00091
	(!A1 * !B2 * !C1 * Y)	-0.00446	-0.00449	-0.00452

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00643	0.00638	0.00625
	(A1 * A2 * B2 * C1 * !Y)	-0.00495	-0.00496	-0.00493
	(A1 * A2 * B2 * !C1 * !Y)	0.00625	0.00631	0.00621
	(A1 * A2 * B2 * !C1 * !Y)	-0.00386	-0.00389	-0.00390
	(A1 * A2 * !B2 * C1 * !Y)	0.00600	0.00606	0.00601
	(A1 * A2 * !B2 * C1 * !Y)	-0.00463	-0.00467	-0.00465
	(A1 * A2 * !B2 * !C1 * !Y)	0.00599	0.00601	0.00595
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00387	-0.00388	-0.00389
	(A1 * !A2 * B2 * C1 * !Y)	0.00723	0.00628	0.00618
	(A1 * !A2 * B2 * C1 * !Y)	-0.00580	-0.00709	-0.00704
	(A1 * !A2 * !B2 * C1 * !Y)	0.00591	0.00594	0.00592
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00728	-0.00729	-0.00727
	(A1 * !A2 * !B2 * !C1 * Y)	0.00185	0.00188	0.00180
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00855	-0.00864	-0.00873
	(!A1 * B2 * C1 * !Y)	0.00719	0.00628	0.00618
	(!A1 * B2 * C1 * !Y)	-0.00583	-0.00709	-0.00705
	(!A1 * !B2 * C1 * !Y)	0.00588	0.00596	0.00592
	(!A1 * !B2 * C1 * !Y)	-0.00724	-0.00731	-0.00727
	(!A1 * !B2 * !C1 * Y)	0.00186	0.00189	0.00181
	(!A1 * !B2 * !C1 * Y)	-0.00855	-0.00864	-0.00872

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)**	-0.00156	-0.00157	-0.00156
	(A1 * A2 * B2 * C1 * !Y)	0.00128	0.00130	0.00129
	(A1 * A2 * B2 * !C1 * !Y)	-0.00150	-0.00151	-0.00151
	(A1 * A2 * B2 * !C1 * !Y)	0.00104	0.00105	0.00104
	(A1 * A2 * !B2 * C1 * !Y)	-0.00145	-0.00149	-0.00151
	(A1 * A2 * !B2 * C1 * !Y)	0.00120	0.00121	0.00121
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00145	-0.00148	-0.00150
	(A1 * A2 * !B2 * !C1 * !Y)	0.00100	0.00099	0.00099
	(A1 * !A2 * B2 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(A1 * !A2 * B2 * C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00144	-0.00148	-0.00150
	(A1 * !A2 * !B2 * C1 * !Y)	0.00181	0.00181	0.00181
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * !C1 * Y)	0.00216	0.00219	0.00216
	(!A1 * B2 * C1 * !Y)	-0.00155	-0.00155	-0.00155
	(!A1 * B2 * C1 * !Y)	0.00177	0.00177	0.00177
	(!A1 * !B2 * C1 * !Y)	-0.00143	-0.00148	-0.00150
	(!A1 * !B2 * C1 * !Y)	0.00180	0.00180	0.00181
	(!A1 * !B2 * !C1 * Y)	-0.00044	-0.00045	-0.00044
	(!A1 * !B2 * !C1 * Y)	0.00216	0.00219	0.00216

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00316	-0.00317	-0.00315
	(A1 * A2 * B2 * C1 * !Y)	0.00261	0.00262	0.00260
	(A1 * A2 * B2 * !C1 * !Y)	-0.00307	-0.00309	-0.00307
	(A1 * A2 * B2 * !C1 * !Y)	0.00212	0.00214	0.00215
	(A1 * A2 * !B2 * C1 * !Y)	-0.00293	-0.00304	-0.00304
	(A1 * A2 * !B2 * C1 * !Y)	0.00243	0.00245	0.00244
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00291	-0.00305	-0.00302
	(A1 * A2 * !B2 * !C1 * !Y)	0.00208	0.00208	0.00207
	(A1 * !A2 * B2 * C1 * !Y)	-0.00313	-0.00314	-0.00313
	(A1 * !A2 * B2 * C1 * !Y)	0.00368	0.00370	0.00368
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00288	-0.00303	-0.00301
	(A1 * !A2 * !B2 * C1 * !Y)	0.00373	0.00379	0.00376
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00089	-0.00092	-0.00089
	(A1 * !A2 * !B2 * !C1 * Y)	0.00451	0.00459	0.00452
	(!A1 * B2 * C1 * !Y)	-0.00313	-0.00314	-0.00313
	(!A1 * B2 * C1 * !Y)	0.00368	0.00371	0.00369
	(!A1 * !B2 * C1 * !Y)	-0.00289	-0.00304	-0.00303
	(!A1 * !B2 * C1 * !Y)	0.00374	0.00379	0.00376
	(!A1 * !B2 * !C1 * Y)	-0.00089	-0.00092	-0.00090
	(!A1 * !B2 * !C1 * Y)	0.00451	0.00459	0.00452

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00621	-0.00622	-0.00620
	(A1 * A2 * B2 * C1 * !Y)	0.00495	0.00496	0.00493
	(A1 * A2 * B2 * !C1 * !Y)	-0.00612	-0.00612	-0.00607
	(A1 * A2 * B2 * !C1 * !Y)	0.00408	0.00408	0.00405
	(A1 * A2 * !B2 * C1 * !Y)	-0.00567	-0.00600	-0.00601
	(A1 * A2 * !B2 * C1 * !Y)	0.00463	0.00467	0.00465
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00568	-0.00601	-0.00595
	(A1 * A2 * !B2 * !C1 * !Y)	0.00391	0.00390	0.00389
	(A1 * !A2 * B2 * C1 * !Y)	-0.00615	-0.00619	-0.00615
	(A1 * !A2 * B2 * C1 * !Y)	0.00701	0.00709	0.00704
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00566	-0.00594	-0.00592
	(A1 * !A2 * !B2 * C1 * !Y)	0.00730	0.00732	0.00729
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00176	-0.00180	-0.00176
	(A1 * !A2 * !B2 * !C1 * Y)	0.00871	0.00885	0.00873
	(!A1 * B2 * C1 * !Y)	-0.00616	-0.00619	-0.00615
	(!A1 * B2 * C1 * !Y)	0.00704	0.00709	0.00705
	(!A1 * !B2 * C1 * !Y)	-0.00563	-0.00596	-0.00592
	(!A1 * !B2 * C1 * !Y)	0.00727	0.00731	0.00729
	(!A1 * !B2 * !C1 * Y)	-0.00177	-0.00181	-0.00177
	(!A1 * !B2 * !C1 * Y)	0.00871	0.00886	0.00873

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)**	0.00163	0.00164	0.00162
	(A1 * A2 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00133
	(A1 * A2 * B1 * !C1 * !Y)	0.00162	0.00162	0.00161
	(A1 * A2 * B1 * !C1 * !Y)	-0.00105	-0.00105	-0.00104
	(A1 * A2 * !B1 * C1 * !Y)	0.00156	0.00156	0.00156
	(A1 * A2 * !B1 * C1 * !Y)	-0.00124	-0.00126	-0.00125
	(A1 * A2 * !B1 * !C1 * !Y)	0.00154	0.00157	0.00154
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00103	-0.00104	-0.00104
	(A1 * !A2 * B1 * C1 * !Y)	0.00179	0.00161	0.00160
	(A1 * !A2 * B1 * C1 * !Y)	-0.00158	-0.00183	-0.00183
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00152	0.00153	0.00153
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * !B1 * !C1 * Y)	0.00141	0.00143	0.00142
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00197	-0.00199	-0.00198
	(!A1 * B1 * C1 * !Y)	0.00179	0.00161	0.00160
	(!A1 * B1 * C1 * !Y)	-0.00158	-0.00183	-0.00183
	(!A1 * !B1 * !C1 * Y)	0.00141	0.00143	0.00142
	(!A1 * !B1 * !C1 * Y)	-0.00197	-0.00198	-0.00198

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00310	0.00314	0.00308
	(A1 * A2 * B1 * C1 * !Y)	-0.00243	-0.00243	-0.00243
	(A1 * A2 * B1 * !C1 * !Y)	0.00305	0.00309	0.00306
	(A1 * A2 * B1 * !C1 * !Y)	-0.00188	-0.00190	-0.00189
	(A1 * A2 * !B1 * C1 * !Y)	0.00294	0.00299	0.00295
	(A1 * A2 * !B1 * C1 * !Y)	-0.00227	-0.00230	-0.00228
	(A1 * A2 * !B1 * !C1 * !Y)	0.00292	0.00296	0.00293
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00187	-0.00189	-0.00188
	(A1 * !A2 * B1 * C1 * !Y)	0.00340	0.00310	0.00305
	(A1 * !A2 * B1 * C1 * !Y)	-0.00297	-0.00346	-0.00343
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00291	0.00295	0.00292
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00348	-0.00352	-0.00350
	(A1 * !A2 * !B1 * !C1 * Y)	0.00280	0.00282	0.00281
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00359	-0.00361	-0.00360
	(!A1 * B1 * C1 * !Y)	0.00340	0.00310	0.00305
	(!A1 * B1 * C1 * !Y)	-0.00298	-0.00346	-0.00344
	(!A1 * !B1 * !C1 * Y)	0.00280	0.00282	0.00281
	(!A1 * !B1 * !C1 * Y)	-0.00359	-0.00361	-0.00360

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00642	0.00641	0.00626
	(A1 * A2 * B1 * C1 * !Y)	-0.00495	-0.00492	-0.00493
	(A1 * A2 * B1 * !C1 * !Y)	0.00626	0.00632	0.00622
	(A1 * A2 * B1 * !C1 * !Y)	-0.00387	-0.00390	-0.00390
	(A1 * A2 * !B1 * C1 * !Y)	0.00596	0.00599	0.00595
	(A1 * A2 * !B1 * C1 * !Y)	-0.00464	-0.00467	-0.00465
	(A1 * A2 * !B1 * !C1 * !Y)	0.00604	0.00612	0.00601
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00386	-0.00390	-0.00389
	(A1 * !A2 * B1 * C1 * !Y)	0.00724	0.00623	0.00619
	(A1 * !A2 * B1 * C1 * !Y)	-0.00575	-0.00707	-0.00704
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00596	0.00603	0.00599
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00724	-0.00729	-0.00727
	(A1 * !A2 * !B1 * !C1 * Y)	0.00595	0.00599	0.00598
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00725	-0.00728	-0.00727
	(!A1 * B1 * C1 * !Y)	0.00723	0.00621	0.00619
	(!A1 * B1 * C1 * !Y)	-0.00578	-0.00707	-0.00704
	(!A1 * !B1 * !C1 * Y)	0.00595	0.00604	0.00598
	(!A1 * !B1 * !C1 * Y)	-0.00725	-0.00732	-0.00727

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)**	-0.00161	-0.00162	-0.00161
	(A1 * A2 * B1 * C1 * !Y)	0.00133	0.00134	0.00133
	(A1 * A2 * B1 * !C1 * !Y)	-0.00157	-0.00157	-0.00156
	(A1 * A2 * B1 * !C1 * !Y)	0.00109	0.00109	0.00109
	(A1 * A2 * !B1 * C1 * !Y)	-0.00150	-0.00155	-0.00156
	(A1 * A2 * !B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00149	-0.00154	-0.00154
	(A1 * A2 * !B1 * !C1 * !Y)	0.00104	0.00104	0.00104
	(A1 * !A2 * B1 * C1 * !Y)	-0.00159	-0.00160	-0.00160
	(A1 * !A2 * B1 * C1 * !Y)	0.00182	0.00184	0.00183
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00148	-0.00152	-0.00153
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00186	0.00186	0.00187
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00133	-0.00143	-0.00142
	(A1 * !A2 * !B1 * !C1 * Y)	0.00203	0.00199	0.00198
	(!A1 * B1 * C1 * !Y)	-0.00159	-0.00160	-0.00160
	(!A1 * B1 * C1 * !Y)	0.00182	0.00184	0.00183
	(!A1 * !B1 * !C1 * Y)	-0.00133	-0.00143	-0.00142
	(!A1 * !B1 * !C1 * Y)	0.00203	0.00199	0.00198

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00307	-0.00307	-0.00306
	(A1 * A2 * B1 * C1 * !Y)	0.00243	0.00243	0.00243
	(A1 * A2 * B1 * !C1 * !Y)	-0.00296	-0.00297	-0.00297
	(A1 * A2 * B1 * !C1 * !Y)	0.00195	0.00196	0.00197
	(A1 * A2 * !B1 * C1 * !Y)	-0.00284	-0.00298	-0.00295
	(A1 * A2 * !B1 * C1 * !Y)	0.00227	0.00230	0.00228
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00283	-0.00293	-0.00293
	(A1 * A2 * !B1 * !C1 * !Y)	0.00188	0.00189	0.00188
	(A1 * !A2 * B1 * C1 * !Y)	-0.00304	-0.00306	-0.00304
	(A1 * !A2 * B1 * C1 * !Y)	0.00342	0.00346	0.00343
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00281	-0.00294	-0.00292
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00349	0.00354	0.00351
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00263	-0.00282	-0.00281
	(A1 * !A2 * !B1 * !C1 * Y)	0.00371	0.00362	0.00361
	(!A1 * B1 * C1 * !Y)	-0.00304	-0.00306	-0.00304
	(!A1 * B1 * C1 * !Y)	0.00342	0.00346	0.00344
	(!A1 * !B1 * !C1 * Y)	-0.00263	-0.00282	-0.00281
	(!A1 * !B1 * !C1 * Y)	0.00371	0.00362	0.00361

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00622	-0.00620	-0.00621
	(A1 * A2 * B1 * C1 * !Y)	0.00495	0.00492	0.00493
	(A1 * A2 * B1 * !C1 * !Y)	-0.00612	-0.00614	-0.00608
	(A1 * A2 * B1 * !C1 * !Y)	0.00409	0.00411	0.00405
	(A1 * A2 * !B1 * C1 * !Y)	-0.00572	-0.00595	-0.00595
	(A1 * A2 * !B1 * C1 * !Y)	0.00464	0.00467	0.00465
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00572	-0.00595	-0.00599
	(A1 * A2 * !B1 * !C1 * !Y)	0.00390	0.00392	0.00390
	(A1 * !A2 * B1 * C1 * !Y)	-0.00616	-0.00620	-0.00616
	(A1 * !A2 * B1 * C1 * !Y)	0.00700	0.00707	0.00704
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00569	-0.00596	-0.00596
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00726	0.00734	0.00729
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00550	-0.00599	-0.00595
	(A1 * !A2 * !B1 * !C1 * Y)	0.00752	0.00732	0.00729
	(!A1 * B1 * C1 * !Y)	-0.00616	-0.00620	-0.00616
	(!A1 * B1 * C1 * !Y)	0.00700	0.00707	0.00704
	(!A1 * !B1 * !C1 * Y)	-0.00550	-0.00601	-0.00596
	(!A1 * !B1 * !C1 * Y)	0.00752	0.00732	0.00729

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)	0.00187	0.00187	0.00186
	(A1 * B1 * B2 * !Y)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * B1 * !B2 * !Y)	0.00187	0.00187	0.00186
	(A1 * A2 * B1 * !B2 * !Y)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * !B1 * !Y)	0.00187	0.00187	0.00186
	(A1 * A2 * !B1 * !Y)	-0.00095	-0.00095	-0.00094
	(!A1 * B1 * B2 * !Y)	0.00187	0.00187	0.00186
	(!A1 * B1 * B2 * !Y)	-0.00096	-0.00095	-0.00095
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00347	0.00351	0.00348
	(A1 * B1 * B2 * !Y)	-0.00171	-0.00173	-0.00171
	(A1 * A2 * B1 * !B2 * !Y)	0.00347	0.00351	0.00348
	(A1 * A2 * B1 * !B2 * !Y)	-0.00171	-0.00172	-0.00171
	(A1 * A2 * !B1 * !Y)	0.00347	0.00351	0.00348
	(A1 * A2 * !B1 * !Y)	-0.00170	-0.00172	-0.00171
	(!A1 * B1 * B2 * !Y)	0.00347	0.00351	0.00348
	(!A1 * B1 * B2 * !Y)	-0.00171	-0.00173	-0.00172
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00687	0.00694	0.00688
	(A1 * B1 * B2 * !Y)	-0.00344	-0.00347	-0.00344
	(A1 * A2 * B1 * !B2 * !Y)	0.00689	0.00695	0.00688
	(A1 * A2 * B1 * !B2 * !Y)	-0.00345	-0.00346	-0.00343
	(A1 * A2 * !B1 * !Y)	0.00689	0.00695	0.00688
	(A1 * A2 * !B1 * !Y)	-0.00345	-0.00347	-0.00343
	(!A1 * B1 * B2 * !Y)	0.00689	0.00696	0.00688
	(!A1 * B1 * B2 * !Y)	-0.00347	-0.00349	-0.00345

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)	-0.00175	-0.00177	-0.00185
	(A1 * B1 * B2 * !Y)	0.00103	0.00103	0.00096
	(A1 * A2 * B1 * !B2 * !Y)	-0.00161	-0.00162	-0.00181
	(A1 * A2 * B1 * !B2 * !Y)	0.00112	0.00113	0.00099
	(A1 * A2 * !B1 * !Y)	-0.00161	-0.00162	-0.00181
	(A1 * A2 * !B1 * !Y)	0.00112	0.00113	0.00099
	(!A1 * B1 * B2 * !Y)	-0.00175	-0.00177	-0.00185
	(!A1 * B1 * B2 * !Y)	0.00103	0.00104	0.00097
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00328	-0.00330	-0.00346
	(A1 * B1 * B2 * !Y)	0.00187	0.00188	0.00175
	(A1 * A2 * B1 * !B2 * !Y)	-0.00303	-0.00305	-0.00340
	(A1 * A2 * B1 * !B2 * !Y)	0.00202	0.00203	0.00179
	(A1 * A2 * !B1 * !Y)	-0.00304	-0.00306	-0.00340
	(A1 * A2 * !B1 * !Y)	0.00202	0.00202	0.00179
	(!A1 * B1 * B2 * !Y)	-0.00328	-0.00330	-0.00346
	(!A1 * B1 * B2 * !Y)	0.00188	0.00189	0.00176
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00653	-0.00655	-0.00684
	(A1 * B1 * B2 * !Y)	0.00370	0.00369	0.00350
	(A1 * A2 * B1 * !B2 * !Y)	-0.00604	-0.00606	-0.00672
	(A1 * A2 * B1 * !B2 * !Y)	0.00406	0.00405	0.00362
	(A1 * A2 * !B1 * !Y)	-0.00604	-0.00606	-0.00672
	(A1 * A2 * !B1 * !Y)	0.00406	0.00405	0.00362
	(!A1 * B1 * B2 * !Y)	-0.00653	-0.00655	-0.00684
	(!A1 * B1 * B2 * !Y)	0.00372	0.00371	0.00352

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a221o_1	14.38560
sky130_fd_sc_hs__a221o_2	14.38560
sky130_fd_sc_hs__a221o_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__a221o_1	0.00250	0.00259	0.00248	0.00249	0.00245	1.46500
sky130_fd_sc_hs__a221o_2	0.00261	0.00268	0.00268	0.00270	0.00260	2.68975
sky130_fd_sc_hs__a221o_4	0.00461	0.00460	0.00475	0.00486	0.00470	3.99601

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.06512	0.11347
sky130_fd_sc_hs__a221o_2	0.00000	0.08293	0.12889
sky130_fd_sc_hs__a221o_4	0.00000	0.16709	0.26389

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)	0.05875	0.46771	5.38910
	A2->X (RR)	0.06191	0.46905	5.32077
	B1->X (RR)	0.05695	0.45297	5.22331
	B2->X (RR)	0.06006	0.45656	5.21596
	C1->X (RR)	0.04555	0.42558	5.17844
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.06096	0.40382	5.31468
	A2->X (RR)	0.06416	0.40178	5.25888
	B1->X (RR)	0.05954	0.39225	5.17320
	B2->X (RR)	0.06241	0.39149	5.16443
	C1->X (RR)	0.04695	0.36300	5.10162
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.07777	0.38234	5.14611
	A2->X (RR)	0.08155	0.35982	4.94356
	B1->X (RR)	0.06807	0.34178	4.87534
	B2->X (RR)	0.07310	0.33169	4.78848
	C1->X (RR)	0.04451	0.28370	4.66865

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.16855	0.56158	5.07780
	A2->X (FF)	0.18308	0.58366	5.11751
	B1->X (FF)	0.15401	0.57368	5.32933
	B2->X (FF)	0.16537	0.59839	5.34545
	C1->X (FF)	0.12841	0.57447	5.38418
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.20895	0.59812	5.13692
	A2->X (FF)	0.22411	0.62180	5.20125
	B1->X (FF)	0.20067	0.62112	5.41782
	B2->X (FF)	0.20756	0.64176	5.45773
	C1->X (FF)	0.16155	0.60944	5.45756
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.22080	0.55119	4.52108
	A2->X (FF)	0.23985	0.58487	4.66347
	B1->X (FF)	0.20719	0.57799	4.87903
	B2->X (FF)	0.22302	0.61023	4.94845
	C1->X (FF)	0.17490	0.58151	4.92590

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01353	0.01445	0.05252
	A1	0.00627	0.00721	0.04551
	A2	0.01462	0.01494	0.04087
	A2	0.00631	0.00663	0.03278
	B1	0.01006	0.01145	0.04588
	B1	0.00456	0.00596	0.04055
	B2	0.01108	0.01202	0.04174
	B2	0.00464	0.00561	0.03562
	C1	0.00779	0.01041	0.06355
	C1	0.00305	0.00569	0.05900
sky130_fd_sc_hs__a221o_2	A1	0.01643	0.01700	0.05101
	A1	0.00880	0.00939	0.04386
	A2	0.01763	0.01774	0.04101
	A2	0.00881	0.00895	0.03259
	B1	0.01313	0.01449	0.04597
	B1	0.00708	0.00847	0.03993
	B2	0.01425	0.01529	0.04292
	B2	0.00723	0.00832	0.03590
	C1	0.01067	0.01293	0.06234
	C1	0.00559	0.00794	0.05728

sky130_fd_sc_hs__a221o_4	**A1**	0.03270	0.03454	0.10440
	A1	0.01880	0.02071	0.09052
	A2	0.03469	0.03563	0.08763
	A2	0.01883	0.01995	0.07184
	B1	0.02534	0.02784	0.08869
	B1	0.01486	0.01737	0.07823
	B2	0.02764	0.02959	0.08400
	B2	0.01495	0.01690	0.07157
	C1	0.01941	0.02414	0.11955
	C1	0.01087	0.01567	0.11153

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00398	0.00407	0.03527
	A1	0.01134	0.01143	0.04206
	A2	0.00418	0.00397	0.03248
	A2	0.01258	0.01236	0.04014
	B1	0.00396	0.00456	0.04087
	B1	0.00950	0.01006	0.04506
	B2	0.00431	0.00485	0.03814
	B2	0.01073	0.01127	0.04309
	C1	0.00353	0.00633	0.06340
	C1	0.00825	0.01105	0.06689

sky130_fd_sc_hs__a221o_2	**A1**	0.00803	0.00739	0.03483
	A1	0.01578	0.01512	0.04096
	A2	0.00839	0.00721	0.03340
	A2	0.01728	0.01624	0.04127
	B1	0.00796	0.00766	0.03885
	B1	0.01406	0.01373	0.04478
	B2	0.00843	0.00803	0.03779
	B2	0.01543	0.01504	0.04449
	C1	0.00726	0.00969	0.06153
	C1	0.01233	0.01458	0.06623
sky130_fd_sc_hs__a221o_4	**A1**	0.01503	0.01319	0.06859
	A1	0.02918	0.02734	0.08249
	A2	0.01647	0.01405	0.07035
	A2	0.03245	0.03002	0.08431
	B1	0.01513	0.01382	0.07538
	B1	0.02570	0.02437	0.08422
	B2	0.01607	0.01472	0.07377
	B2	0.02873	0.02736	0.08455
	C1	0.01376	0.01769	0.11401
	C1	0.02226	0.02613	0.12092

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)**	0.00139	0.00138	0.00138
	(A2 * B1 * B2 * C1 * X)	-0.00160	-0.00167	-0.00167
	(A2 * B1 * B2 * !C1 * X)	0.00140	0.00140	0.00138
	(A2 * B1 * B2 * !C1 * X)	-0.00159	-0.00169	-0.00167
	(A2 * B1 * !B2 * C1 * X)	0.00140	0.00139	0.00138
	(A2 * B1 * !B2 * C1 * X)	-0.00152	-0.00165	-0.00164
	(A2 * !B1 * C1 * X)	0.00140	0.00139	0.00138
	(A2 * !B1 * C1 * X)	-0.00152	-0.00165	-0.00164
	(!A2 * B1 * B2 * C1 * X)	0.00131	0.00133	0.00132
	(!A2 * B1 * B2 * C1 * X)	-0.00171	-0.00172	-0.00172
	(!A2 * B1 * B2 * !C1 * X)	0.00133	0.00133	0.00133
	(!A2 * B1 * B2 * !C1 * X)	-0.00171	-0.00172	-0.00172
	(!A2 * B1 * !B2 * C1 * X)	0.00132	0.00134	0.00133
	(!A2 * B1 * !B2 * C1 * X)	-0.00171	-0.00172	-0.00172
	(!A2 * B1 * !B2 * !C1 * !X)	0.00042	0.00043	0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00200	-0.00202	-0.00203
	(!A2 * !B1 * C1 * X)	0.00132	0.00133	0.00133
	(!A2 * !B1 * C1 * X)	-0.00171	-0.00172	-0.00172
	(!A2 * !B1 * !C1 * !X)	0.00042	0.00043	0.00042
	(!A2 * !B1 * !C1 * !X)	-0.00200	-0.00202	-0.00203

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00155	0.00155	0.00156
	(A2 * B1 * B2 * C1 * X)	-0.00157	-0.00166	-0.00166
	(A2 * B1 * B2 * !C1 * X)	0.00157	0.00155	0.00156
	(A2 * B1 * B2 * !C1 * X)	-0.00157	-0.00166	-0.00166
	(A2 * B1 * !B2 * C1 * X)	0.00157	0.00157	0.00156
	(A2 * B1 * !B2 * C1 * X)	-0.00150	-0.00164	-0.00162
	(A2 * !B1 * C1 * X)	0.00158	0.00157	0.00156
	(A2 * !B1 * C1 * X)	-0.00150	-0.00163	-0.00162
	(!A2 * B1 * B2 * C1 * X)	0.00148	0.00149	0.00149
	(!A2 * B1 * B2 * C1 * X)	-0.00169	-0.00171	-0.00170
	(!A2 * B1 * B2 * !C1 * X)	0.00150	0.00151	0.00151
	(!A2 * B1 * B2 * !C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !B2 * C1 * X)	0.00148	0.00149	0.00149
	(!A2 * B1 * !B2 * C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * B1 * !B2 * !C1 * !X)	0.00046	0.00047	0.00046
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00202	-0.00204	-0.00205
	(!A2 * !B1 * C1 * X)	0.00150	0.00152	0.00151
	(!A2 * !B1 * C1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * !B1 * !C1 * !X)	0.00046	0.00047	0.00046
	(!A2 * !B1 * !C1 * !X)	-0.00202	-0.00204	-0.00205

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00312	0.00312	0.00309
	(A2 * B1 * B2 * C1 * X)	-0.00311	-0.00327	-0.00325
	(A2 * B1 * B2 * !C1 * X)	0.00312	0.00312	0.00309
	(A2 * B1 * B2 * !C1 * X)	-0.00309	-0.00326	-0.00325
	(A2 * B1 * !B2 * C1 * X)	0.00312	0.00312	0.00309
	(A2 * B1 * !B2 * C1 * X)	-0.00301	-0.00320	-0.00319
	(A2 * !B1 * C1 * X)	0.00312	0.00312	0.00309
	(A2 * !B1 * C1 * X)	-0.00301	-0.00320	-0.00319
	(!A2 * B1 * B2 * C1 * X)	0.00295	0.00298	0.00296
	(!A2 * B1 * B2 * C1 * X)	-0.00332	-0.00335	-0.00333
	(!A2 * B1 * B2 * !C1 * X)	0.00297	0.00299	0.00297
	(!A2 * B1 * B2 * !C1 * X)	-0.00333	-0.00335	-0.00333
	(!A2 * B1 * !B2 * C1 * X)	0.00295	0.00299	0.00297
	(!A2 * B1 * !B2 * C1 * X)	-0.00331	-0.00335	-0.00333
	(!A2 * B1 * !B2 * !C1 * !X)	0.00134	0.00135	0.00131
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00374	-0.00376	-0.00382
	(!A2 * !B1 * C1 * X)	0.00296	0.00299	0.00297
	(!A2 * !B1 * C1 * X)	-0.00333	-0.00335	-0.00333
	(!A2 * !B1 * !C1 * !X)	0.00134	0.00135	0.00131
	(!A2 * !B1 * !C1 * !X)	-0.00374	-0.00377	-0.00382

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)**	-0.00138	-0.00138	-0.00138
	(A2 * B1 * B2 * C1 * X)	0.00167	0.00167	0.00167
	(A2 * B1 * B2 * !C1 * X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * B2 * !C1 * X)	0.00167	0.00169	0.00167
	(A2 * B1 * !B2 * C1 * X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !B2 * C1 * X)	0.00164	0.00165	0.00164
	(A2 * !B1 * C1 * X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * C1 * X)	0.00164	0.00165	0.00164
	(!A2 * B1 * B2 * C1 * X)	-0.00129	-0.00133	-0.00132
	(!A2 * B1 * B2 * C1 * X)	0.00171	0.00173	0.00172
	(!A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * B2 * !C1 * X)	0.00172	0.00173	0.00172
	(!A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * !B2 * C1 * X)	0.00173	0.00174	0.00172
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * B1 * !B2 * !C1 * !X)	0.00205	0.00205	0.00204
	(!A2 * !B1 * C1 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * !B1 * C1 * X)	0.00173	0.00174	0.00172
	(!A2 * !B1 * !C1 * !X)	-0.00041	-0.00041	-0.00041
	(!A2 * !B1 * !C1 * !X)	0.00205	0.00205	0.00204

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00155	-0.00155	-0.00156
	(A2 * B1 * B2 * C1 * X)	0.00166	0.00166	0.00166
	(A2 * B1 * B2 * !C1 * X)	-0.00156	-0.00155	-0.00156
	(A2 * B1 * B2 * !C1 * X)	0.00166	0.00167	0.00166
	(A2 * B1 * !B2 * C1 * X)	-0.00156	-0.00156	-0.00156
	(A2 * B1 * !B2 * C1 * X)	0.00163	0.00164	0.00162
	(A2 * !B1 * C1 * X)	-0.00156	-0.00156	-0.00156
	(A2 * !B1 * C1 * X)	0.00163	0.00163	0.00162
	(!A2 * B1 * B2 * C1 * X)	-0.00145	-0.00149	-0.00149
	(!A2 * B1 * B2 * C1 * X)	0.00171	0.00171	0.00171
	(!A2 * B1 * B2 * !C1 * X)	-0.00145	-0.00149	-0.00150
	(!A2 * B1 * B2 * !C1 * X)	0.00171	0.00172	0.00171
	(!A2 * B1 * !B2 * C1 * X)	-0.00145	-0.00149	-0.00149
	(!A2 * B1 * !B2 * C1 * X)	0.00171	0.00172	0.00171
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * B1 * !B2 * !C1 * !X)	0.00206	0.00207	0.00206
	(!A2 * !B1 * C1 * X)	-0.00145	-0.00149	-0.00150
	(!A2 * !B1 * C1 * X)	0.00171	0.00172	0.00171
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * !C1 * !X)	0.00206	0.00207	0.00206

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00308	-0.00310	-0.00309
	(A2 * B1 * B2 * C1 * X)	0.00323	0.00327	0.00325
	(A2 * B1 * B2 * !C1 * X)	-0.00308	-0.00310	-0.00309
	(A2 * B1 * B2 * !C1 * X)	0.00323	0.00327	0.00325
	(A2 * B1 * !B2 * C1 * X)	-0.00307	-0.00309	-0.00308
	(A2 * B1 * !B2 * C1 * X)	0.00318	0.00320	0.00319
	(A2 * !B1 * C1 * X)	-0.00307	-0.00309	-0.00308
	(A2 * !B1 * C1 * X)	0.00318	0.00320	0.00319
	(!A2 * B1 * B2 * C1 * X)	-0.00283	-0.00298	-0.00296
	(!A2 * B1 * B2 * C1 * X)	0.00333	0.00336	0.00334
	(!A2 * B1 * B2 * !C1 * X)	-0.00282	-0.00297	-0.00297
	(!A2 * B1 * B2 * !C1 * X)	0.00333	0.00335	0.00334
	(!A2 * B1 * !B2 * C1 * X)	-0.00283	-0.00299	-0.00297
	(!A2 * B1 * !B2 * C1 * X)	0.00333	0.00336	0.00334
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00129	-0.00132	-0.00129
	(!A2 * B1 * !B2 * !C1 * !X)	0.00381	0.00389	0.00383
	(!A2 * !B1 * C1 * X)	-0.00283	-0.00297	-0.00297
	(!A2 * !B1 * C1 * X)	0.00333	0.00335	0.00334
	(!A2 * !B1 * !C1 * !X)	-0.00129	-0.00132	-0.00129
	(!A2 * !B1 * !C1 * !X)	0.00381	0.00389	0.00383

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)**	0.00160	0.00161	0.00160
	(A1 * B1 * B2 * C1 * X)	-0.00154	-0.00163	-0.00162
	(A1 * B1 * B2 * !C1 * X)	0.00161	0.00161	0.00160
	(A1 * B1 * B2 * !C1 * X)	-0.00153	-0.00163	-0.00162
	(A1 * B1 * !B2 * C1 * X)	0.00162	0.00161	0.00161
	(A1 * B1 * !B2 * C1 * X)	-0.00147	-0.00159	-0.00159
	(A1 * !B1 * C1 * X)	0.00162	0.00161	0.00161
	(A1 * !B1 * C1 * X)	-0.00147	-0.00159	-0.00159
	(!A1 * B1 * B2 * X)	0.00154	0.00154	0.00154
	(!A1 * B1 * B2 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00130	0.00132	0.00131
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00189	-0.00190	-0.00189
	(!A1 * !B1 * !C1 * !X)	0.00130	0.00132	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00174	0.00177	0.00174
	(A1 * B1 * B2 * C1 * X)	-0.00153	-0.00162	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00175	0.00177	0.00174
	(A1 * B1 * B2 * !C1 * X)	-0.00151	-0.00162	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00175	0.00175	0.00174
	(A1 * B1 * !B2 * C1 * X)	-0.00146	-0.00158	-0.00157
	(A1 * !B1 * C1 * X)	0.00175	0.00175	0.00174
	(A1 * !B1 * C1 * X)	-0.00146	-0.00158	-0.00157
	(!A1 * B1 * B2 * X)	0.00167	0.00168	0.00167
	(!A1 * B1 * B2 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00167	0.00168	0.00167
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * !B2 * !C1 * !X)	0.00144	0.00145	0.00144
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00187	-0.00188	-0.00187
	(!A1 * !B1 * !C1 * !X)	0.00144	0.00144	0.00144
	(!A1 * !B1 * !C1 * !X)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00307	0.00309	0.00305
	(A1 * B1 * B2 * C1 * X)	-0.00306	-0.00323	-0.00322
	(A1 * B1 * B2 * !C1 * X)	0.00307	0.00309	0.00305
	(A1 * B1 * B2 * !C1 * X)	-0.00305	-0.00323	-0.00322
	(A1 * B1 * !B2 * C1 * X)	0.00307	0.00308	0.00305
	(A1 * B1 * !B2 * C1 * X)	-0.00296	-0.00317	-0.00316
	(A1 * !B1 * C1 * X)	0.00307	0.00309	0.00305
	(A1 * !B1 * C1 * X)	-0.00296	-0.00317	-0.00316
	(!A1 * B1 * B2 * X)	0.00293	0.00296	0.00293
	(!A1 * B1 * B2 * X)	-0.00330	-0.00332	-0.00330
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00293	0.00296	0.00293
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00330	-0.00332	-0.00330
	(!A1 * B1 * !B2 * !C1 * !X)	0.00285	0.00287	0.00285
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00338	-0.00339	-0.00338
	(!A1 * !B1 * !C1 * !X)	0.00285	0.00287	0.00285
	(!A1 * !B1 * !C1 * !X)	-0.00338	-0.00339	-0.00338

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

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

sky130_fd_sc_hs__a221o_1	**(A1 * B1 * B2 * C1 * X)**	-0.00160	-0.00161	-0.00160
	(A1 * B1 * B2 * C1 * X)	0.00162	0.00163	0.00162
	(A1 * B1 * B2 * !C1 * X)	-0.00160	-0.00161	-0.00160
	(A1 * B1 * B2 * !C1 * X)	0.00162	0.00163	0.00162
	(A1 * B1 * !B2 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * B1 * !B2 * C1 * X)	0.00158	0.00159	0.00159
	(A1 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !B1 * C1 * X)	0.00158	0.00159	0.00159
	(!A1 * B1 * B2 * X)	-0.00152	-0.00154	-0.00154
	(!A1 * B1 * B2 * X)	0.00167	0.00167	0.00166
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00152	-0.00155	-0.00154
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00167	0.00167	0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00124	-0.00131	-0.00131
	(!A1 * B1 * !B2 * !C1 * !X)	0.00196	0.00193	0.00190
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00131	-0.00131
	(!A1 * !B1 * !C1 * !X)	0.00196	0.00193	0.00190

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00174	-0.00175	-0.00174
	(A1 * B1 * B2 * C1 * X)	0.00160	0.00162	0.00160
	(A1 * B1 * B2 * !C1 * X)	-0.00174	-0.00175	-0.00174
	(A1 * B1 * B2 * !C1 * X)	0.00160	0.00162	0.00160
	(A1 * B1 * !B2 * C1 * X)	-0.00173	-0.00174	-0.00174
	(A1 * B1 * !B2 * C1 * X)	0.00156	0.00158	0.00157
	(A1 * !B1 * C1 * X)	-0.00173	-0.00174	-0.00174
	(A1 * !B1 * C1 * X)	0.00156	0.00158	0.00157
	(!A1 * B1 * B2 * X)	-0.00163	-0.00168	-0.00167
	(!A1 * B1 * B2 * X)	0.00164	0.00166	0.00165
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00163	-0.00168	-0.00167
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00164	0.00166	0.00165
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00137	-0.00144	-0.00144
	(!A1 * B1 * !B2 * !C1 * !X)	0.00194	0.00189	0.00188
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00144	-0.00144
	(!A1 * !B1 * !C1 * !X)	0.00194	0.00189	0.00188

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00304	-0.00306	-0.00305
	(A1 * B1 * B2 * C1 * X)	0.00320	0.00323	0.00322
	(A1 * B1 * B2 * !C1 * X)	-0.00304	-0.00305	-0.00305
	(A1 * B1 * B2 * !C1 * X)	0.00320	0.00323	0.00322
	(A1 * B1 * !B2 * C1 * X)	-0.00303	-0.00305	-0.00304
	(A1 * B1 * !B2 * C1 * X)	0.00315	0.00317	0.00316
	(A1 * !B1 * C1 * X)	-0.00303	-0.00305	-0.00304
	(A1 * !B1 * C1 * X)	0.00315	0.00317	0.00316
	(!A1 * B1 * B2 * X)	-0.00284	-0.00296	-0.00293
	(!A1 * B1 * B2 * X)	0.00331	0.00334	0.00331
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00283	-0.00296	-0.00293
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00331	0.00334	0.00331
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00271	-0.00287	-0.00285
	(!A1 * B1 * !B2 * !C1 * !X)	0.00347	0.00342	0.00339
	(!A1 * !B1 * !C1 * !X)	-0.00271	-0.00287	-0.00285
	(!A1 * !B1 * !C1 * !X)	0.00347	0.00342	0.00339

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)**	0.00142	0.00144	0.00141
	(A1 * A2 * B2 * C1 * X)	-0.00119	-0.00120	-0.00119
	(A1 * A2 * B2 * !C1 * X)	0.00140	0.00141	0.00140
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * !B2 * C1 * X)	0.00136	0.00136	0.00136
	(A1 * A2 * !B2 * C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * A2 * !B2 * !C1 * X)	0.00136	0.00137	0.00136
	(A1 * A2 * !B2 * !C1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * B2 * C1 * X)	0.00159	0.00140	0.00139
	(A1 * !A2 * B2 * C1 * X)	-0.00141	-0.00167	-0.00167
	(A1 * !A2 * !B2 * C1 * X)	0.00132	0.00133	0.00133
	(A1 * !A2 * !B2 * C1 * X)	-0.00170	-0.00170	-0.00170
	(A1 * !A2 * !B2 * !C1 * !X)	0.00040	0.00040	0.00039
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00202	-0.00203	-0.00204
	(!A1 * B2 * C1 * X)	0.00161	0.00140	0.00139
	(!A1 * B2 * C1 * X)	-0.00143	-0.00167	-0.00167
	(!A1 * !B2 * C1 * X)	0.00133	0.00133	0.00133
	(!A1 * !B2 * C1 * X)	-0.00170	-0.00170	-0.00170
	(!A1 * !B2 * !C1 * !X)	0.00040	0.00040	0.00039
	(!A1 * !B2 * !C1 * !X)	-0.00202	-0.00203	-0.00204

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00170	0.00172	0.00169
	(A1 * A2 * B2 * C1 * X)	-0.00122	-0.00122	-0.00121
	(A1 * A2 * B2 * !C1 * X)	0.00166	0.00168	0.00167
	(A1 * A2 * B2 * !C1 * X)	-0.00096	-0.00098	-0.00097
	(A1 * A2 * !B2 * C1 * X)	0.00160	0.00162	0.00161
	(A1 * A2 * !B2 * C1 * X)	-0.00113	-0.00113	-0.00114
	(A1 * A2 * !B2 * !C1 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !B2 * !C1 * X)	-0.00096	-0.00097	-0.00097
	(A1 * !A2 * B2 * C1 * X)	0.00187	0.00167	0.00166
	(A1 * !A2 * B2 * C1 * X)	-0.00143	-0.00169	-0.00169
	(A1 * !A2 * !B2 * C1 * X)	0.00160	0.00161	0.00161
	(A1 * !A2 * !B2 * C1 * X)	-0.00172	-0.00172	-0.00172
	(A1 * !A2 * !B2 * !C1 * !X)	0.00048	0.00048	0.00047
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00215
	(!A1 * B2 * C1 * X)	0.00187	0.00167	0.00166
	(!A1 * B2 * C1 * X)	-0.00143	-0.00169	-0.00169
	(!A1 * !B2 * C1 * X)	0.00161	0.00161	0.00161
	(!A1 * !B2 * C1 * X)	-0.00172	-0.00172	-0.00172
	(!A1 * !B2 * !C1 * !X)	0.00048	0.00048	0.00047
	(!A1 * !B2 * !C1 * !X)	-0.00213	-0.00214	-0.00215

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00306	0.00308	0.00303
	(A1 * A2 * B2 * C1 * X)	-0.00249	-0.00249	-0.00248
	(A1 * A2 * B2 * !C1 * X)	0.00299	0.00302	0.00299
	(A1 * A2 * B2 * !C1 * X)	-0.00194	-0.00197	-0.00196
	(A1 * A2 * !B2 * C1 * X)	0.00290	0.00295	0.00291
	(A1 * A2 * !B2 * C1 * X)	-0.00232	-0.00235	-0.00233
	(A1 * A2 * !B2 * !C1 * X)	0.00289	0.00294	0.00288
	(A1 * A2 * !B2 * !C1 * X)	-0.00195	-0.00197	-0.00196
	(A1 * !A2 * B2 * C1 * X)	0.00342	0.00301	0.00296
	(A1 * !A2 * B2 * C1 * X)	-0.00281	-0.00338	-0.00337
	(A1 * !A2 * !B2 * C1 * X)	0.00289	0.00292	0.00290
	(A1 * !A2 * !B2 * C1 * X)	-0.00340	-0.00343	-0.00341
	(A1 * !A2 * !B2 * !C1 * !X)	0.00104	0.00106	0.00102
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00404	-0.00408	-0.00413
	(!A1 * B2 * C1 * X)	0.00343	0.00301	0.00296
	(!A1 * B2 * C1 * X)	-0.00281	-0.00338	-0.00337
	(!A1 * !B2 * C1 * X)	0.00288	0.00291	0.00290
	(!A1 * !B2 * C1 * X)	-0.00340	-0.00343	-0.00341
	(!A1 * !B2 * !C1 * !X)	0.00104	0.00106	0.00102
	(!A1 * !B2 * !C1 * !X)	-0.00404	-0.00408	-0.00413

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)**	-0.00140	-0.00141	-0.00140
	(A1 * A2 * B2 * C1 * X)	0.00119	0.00120	0.00119
	(A1 * A2 * B2 * !C1 * X)	-0.00136	-0.00136	-0.00136
	(A1 * A2 * B2 * !C1 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !B2 * C1 * X)	-0.00130	-0.00134	-0.00136
	(A1 * A2 * !B2 * C1 * X)	0.00111	0.00112	0.00112
	(A1 * A2 * !B2 * !C1 * X)	-0.00130	-0.00134	-0.00135
	(A1 * A2 * !B2 * !C1 * X)	0.00096	0.00095	0.00095
	(A1 * !A2 * B2 * C1 * X)	-0.00139	-0.00139	-0.00138
	(A1 * !A2 * B2 * C1 * X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !B2 * C1 * X)	-0.00130	-0.00133	-0.00133
	(A1 * !A2 * !B2 * C1 * X)	0.00170	0.00170	0.00170
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(A1 * !A2 * !B2 * !C1 * !X)	0.00205	0.00206	0.00205
	(!A1 * B2 * C1 * X)	-0.00139	-0.00139	-0.00138
	(!A1 * B2 * C1 * X)	0.00167	0.00168	0.00167
	(!A1 * !B2 * C1 * X)	-0.00130	-0.00133	-0.00133
	(!A1 * !B2 * C1 * X)	0.00170	0.00171	0.00170
	(!A1 * !B2 * !C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !B2 * !C1 * !X)	0.00205	0.00206	0.00205

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00167	-0.00168	-0.00167
	(A1 * A2 * B2 * C1 * X)	0.00122	0.00122	0.00121
	(A1 * A2 * B2 * !C1 * X)	-0.00163	-0.00164	-0.00163
	(A1 * A2 * B2 * !C1 * X)	0.00100	0.00101	0.00101
	(A1 * A2 * !B2 * C1 * X)	-0.00156	-0.00160	-0.00161
	(A1 * A2 * !B2 * C1 * X)	0.00113	0.00113	0.00114
	(A1 * A2 * !B2 * !C1 * X)	-0.00156	-0.00160	-0.00161
	(A1 * A2 * !B2 * !C1 * X)	0.00098	0.00097	0.00097
	(A1 * !A2 * B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * X)	0.00168	0.00170	0.00169
	(A1 * !A2 * !B2 * C1 * X)	-0.00154	-0.00159	-0.00160
	(A1 * !A2 * !B2 * C1 * X)	0.00173	0.00173	0.00172
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * !B2 * !C1 * !X)	0.00216	0.00217	0.00216
	(!A1 * B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(!A1 * B2 * C1 * X)	0.00168	0.00170	0.00169
	(!A1 * !B2 * C1 * X)	-0.00154	-0.00159	-0.00160
	(!A1 * !B2 * C1 * X)	0.00173	0.00173	0.00172
	(!A1 * !B2 * !C1 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !B2 * !C1 * !X)	0.00216	0.00217	0.00216

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00301	-0.00301	-0.00300
	(A1 * A2 * B2 * C1 * X)	0.00249	0.00249	0.00248
	(A1 * A2 * B2 * !C1 * X)	-0.00293	-0.00294	-0.00291
	(A1 * A2 * B2 * !C1 * X)	0.00200	0.00202	0.00204
	(A1 * A2 * !B2 * C1 * X)	-0.00278	-0.00293	-0.00291
	(A1 * A2 * !B2 * C1 * X)	0.00232	0.00235	0.00233
	(A1 * A2 * !B2 * !C1 * X)	-0.00276	-0.00292	-0.00288
	(A1 * A2 * !B2 * !C1 * X)	0.00197	0.00197	0.00196
	(A1 * !A2 * B2 * C1 * X)	-0.00294	-0.00296	-0.00294
	(A1 * !A2 * B2 * C1 * X)	0.00335	0.00338	0.00337
	(A1 * !A2 * !B2 * C1 * X)	-0.00274	-0.00289	-0.00288
	(A1 * !A2 * !B2 * C1 * X)	0.00340	0.00345	0.00342
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00099	-0.00101	-0.00099
	(A1 * !A2 * !B2 * !C1 * !X)	0.00412	0.00416	0.00414
	(!A1 * B2 * C1 * X)	-0.00294	-0.00296	-0.00294
	(!A1 * B2 * C1 * X)	0.00335	0.00338	0.00337
	(!A1 * !B2 * C1 * X)	-0.00274	-0.00289	-0.00288
	(!A1 * !B2 * C1 * X)	0.00340	0.00345	0.00342
	(!A1 * !B2 * !C1 * !X)	-0.00099	-0.00101	-0.00099
	(!A1 * !B2 * !C1 * !X)	0.00412	0.00416	0.00414

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)**	0.00148	0.00149	0.00146
	(A1 * A2 * B1 * C1 * X)	-0.00116	-0.00118	-0.00117
	(A1 * A2 * B1 * !C1 * X)	0.00146	0.00146	0.00145
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B1 * C1 * X)	0.00141	0.00143	0.00141
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * A2 * !B1 * !C1 * X)	0.00142	0.00143	0.00141
	(A1 * A2 * !B1 * !C1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * B1 * C1 * X)	0.00167	0.00145	0.00144
	(A1 * !A2 * B1 * C1 * X)	-0.00136	-0.00163	-0.00164
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00140	0.00141	0.00140
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00166	-0.00167	-0.00166
	(A1 * !A2 * !B1 * !C1 * !X)	0.00124	0.00126	0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00179	-0.00181	-0.00180
	(!A1 * B1 * C1 * X)	0.00167	0.00145	0.00144
	(!A1 * B1 * C1 * X)	-0.00136	-0.00163	-0.00164
	(!A1 * !B1 * !C1 * !X)	0.00124	0.00126	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00180	-0.00181	-0.00180

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00174	0.00176	0.00173
	(A1 * A2 * B1 * C1 * X)	-0.00111	-0.00113	-0.00112
	(A1 * A2 * B1 * !C1 * X)	0.00172	0.00173	0.00171
	(A1 * A2 * B1 * !C1 * X)	-0.00088	-0.00088	-0.00088
	(A1 * A2 * !B1 * C1 * X)	0.00166	0.00170	0.00167
	(A1 * A2 * !B1 * C1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * A2 * !B1 * !C1 * X)	0.00166	0.00167	0.00165
	(A1 * A2 * !B1 * !C1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * C1 * X)	0.00191	0.00171	0.00170
	(A1 * !A2 * B1 * C1 * X)	-0.00132	-0.00156	-0.00158
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00164	0.00164	0.00164
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A1 * B1 * C1 * X)	0.00191	0.00171	0.00170
	(!A1 * B1 * C1 * X)	-0.00132	-0.00157	-0.00158
	(!A1 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A1 * !B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00338	0.00338	0.00334
	(A1 * A2 * B1 * C1 * X)	-0.00236	-0.00239	-0.00237
	(A1 * A2 * B1 * !C1 * X)	0.00331	0.00332	0.00331
	(A1 * A2 * B1 * !C1 * X)	-0.00183	-0.00185	-0.00185
	(A1 * A2 * !B1 * C1 * X)	0.00322	0.00324	0.00322
	(A1 * A2 * !B1 * C1 * X)	-0.00221	-0.00224	-0.00222
	(A1 * A2 * !B1 * !C1 * X)	0.00322	0.00326	0.00322
	(A1 * A2 * !B1 * !C1 * X)	-0.00183	-0.00185	-0.00185
	(A1 * !A2 * B1 * C1 * X)	0.00371	0.00329	0.00328
	(A1 * !A2 * B1 * C1 * X)	-0.00276	-0.00323	-0.00325
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00319	0.00321	0.00319
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00329	-0.00330	-0.00330
	(A1 * !A2 * !B1 * !C1 * !X)	0.00313	0.00316	0.00313
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00337	-0.00340	-0.00338
	(!A1 * B1 * C1 * X)	0.00371	0.00329	0.00328
	(!A1 * B1 * C1 * X)	-0.00275	-0.00324	-0.00325
	(!A1 * !B1 * !C1 * !X)	0.00313	0.00316	0.00313
	(!A1 * !B1 * !C1 * !X)	-0.00337	-0.00340	-0.00338

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)**	-0.00145	-0.00146	-0.00145
	(A1 * A2 * B1 * C1 * X)	0.00116	0.00118	0.00117
	(A1 * A2 * B1 * !C1 * X)	-0.00141	-0.00142	-0.00141
	(A1 * A2 * B1 * !C1 * X)	0.00095	0.00096	0.00096
	(A1 * A2 * !B1 * C1 * X)	-0.00136	-0.00140	-0.00140
	(A1 * A2 * !B1 * C1 * X)	0.00110	0.00111	0.00110
	(A1 * A2 * !B1 * !C1 * X)	-0.00136	-0.00139	-0.00140
	(A1 * A2 * !B1 * !C1 * X)	0.00093	0.00093	0.00093
	(A1 * !A2 * B1 * C1 * X)	-0.00144	-0.00144	-0.00143
	(A1 * !A2 * B1 * C1 * X)	0.00163	0.00164	0.00164
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00135	-0.00138	-0.00139
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00125	-0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	0.00187	0.00182	0.00180
	(!A1 * B1 * C1 * X)	-0.00143	-0.00144	-0.00143
	(!A1 * B1 * C1 * X)	0.00163	0.00164	0.00164
	(!A1 * !B1 * !C1 * !X)	-0.00117	-0.00125	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00187	0.00182	0.00180

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00171	-0.00173	-0.00172
	(A1 * A2 * B1 * C1 * X)	0.00111	0.00113	0.00112
	(A1 * A2 * B1 * !C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A2 * B1 * !C1 * X)	0.00090	0.00091	0.00091
	(A1 * A2 * !B1 * C1 * X)	-0.00162	-0.00167	-0.00166
	(A1 * A2 * !B1 * C1 * X)	0.00106	0.00106	0.00105
	(A1 * A2 * !B1 * !C1 * X)	-0.00159	-0.00165	-0.00165
	(A1 * A2 * !B1 * !C1 * X)	0.00087	0.00088	0.00088
	(A1 * !A2 * B1 * C1 * X)	-0.00170	-0.00169	-0.00170
	(A1 * !A2 * B1 * C1 * X)	0.00157	0.00156	0.00158
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00160	-0.00164	-0.00164
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00161	0.00161	0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00133	-0.00142	-0.00143
	(A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00183	0.00182
	(!A1 * B1 * C1 * X)	-0.00170	-0.00170	-0.00170
	(!A1 * B1 * C1 * X)	0.00157	0.00157	0.00158
	(!A1 * !B1 * !C1 * !X)	-0.00133	-0.00142	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00186	0.00183	0.00182

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00332	-0.00334	-0.00332
	(A1 * A2 * B1 * C1 * X)	0.00236	0.00239	0.00237
	(A1 * A2 * B1 * !C1 * X)	-0.00323	-0.00325	-0.00323
	(A1 * A2 * B1 * !C1 * X)	0.00190	0.00192	0.00193
	(A1 * A2 * !B1 * C1 * X)	-0.00314	-0.00324	-0.00322
	(A1 * A2 * !B1 * C1 * X)	0.00221	0.00224	0.00222
	(A1 * A2 * !B1 * !C1 * X)	-0.00312	-0.00325	-0.00322
	(A1 * A2 * !B1 * !C1 * X)	0.00184	0.00186	0.00185
	(A1 * !A2 * B1 * C1 * X)	-0.00326	-0.00327	-0.00326
	(A1 * !A2 * B1 * C1 * X)	0.00323	0.00325	0.00325
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00310	-0.00319	-0.00319
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00329	0.00332	0.00331
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00297	-0.00314	-0.00311
	(A1 * !A2 * !B1 * !C1 * !X)	0.00345	0.00340	0.00339
	(!A1 * B1 * C1 * X)	-0.00326	-0.00327	-0.00326
	(!A1 * B1 * C1 * X)	0.00323	0.00325	0.00325
	(!A1 * !B1 * !C1 * !X)	-0.00297	-0.00314	-0.00311
	(!A1 * !B1 * !C1 * !X)	0.00345	0.00340	0.00339

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)	0.00174	0.00176	0.00175
	(A1 * B1 * B2 * X)	-0.00080	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * X)	0.00174	0.00176	0.00175
	(A1 * A2 * B1 * !B2 * X)	-0.00080	-0.00081	-0.00081
	(A1 * A2 * !B1 * X)	0.00174	0.00176	0.00175
	(A1 * A2 * !B1 * X)	-0.00080	-0.00081	-0.00081
	(!A1 * B1 * B2 * X)	0.00174	0.00176	0.00175
	(!A1 * B1 * B2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00182	0.00183	0.00182
	(A1 * B1 * B2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * B1 * !B2 * X)	0.00182	0.00183	0.00182
	(A1 * A2 * B1 * !B2 * X)	-0.00081	-0.00081	-0.00081
	(A1 * A2 * !B1 * X)	0.00182	0.00183	0.00182
	(A1 * A2 * !B1 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * B2 * X)	0.00182	0.00183	0.00182
	(!A1 * B1 * B2 * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00308	0.00312	0.00310
	(A1 * B1 * B2 * X)	-0.00171	-0.00174	-0.00172
	(A1 * A2 * B1 * !B2 * X)	0.00308	0.00312	0.00310
	(A1 * A2 * B1 * !B2 * X)	-0.00171	-0.00173	-0.00172
	(A1 * A2 * !B1 * X)	0.00309	0.00312	0.00310
	(A1 * A2 * !B1 * X)	-0.00171	-0.00173	-0.00172
	(!A1 * B1 * B2 * X)	0.00308	0.00312	0.00309
	(!A1 * B1 * B2 * X)	-0.00174	-0.00177	-0.00175

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)	-0.00165	-0.00166	-0.00174
	(A1 * B1 * B2 * X)	0.00088	0.00089	0.00083
	(A1 * A2 * B1 * !B2 * X)	-0.00154	-0.00155	-0.00171
	(A1 * A2 * B1 * !B2 * X)	0.00095	0.00096	0.00084
	(A1 * A2 * !B1 * X)	-0.00154	-0.00155	-0.00171
	(A1 * A2 * !B1 * X)	0.00095	0.00096	0.00084
	(!A1 * B1 * B2 * X)	-0.00165	-0.00166	-0.00174
	(!A1 * B1 * B2 * X)	0.00089	0.00089	0.00083
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00173	-0.00174	-0.00181
	(A1 * B1 * B2 * X)	0.00088	0.00088	0.00082
	(A1 * A2 * B1 * !B2 * X)	-0.00162	-0.00163	-0.00178
	(A1 * A2 * B1 * !B2 * X)	0.00095	0.00095	0.00084
	(A1 * A2 * !B1 * X)	-0.00162	-0.00163	-0.00178
	(A1 * A2 * !B1 * X)	0.00095	0.00096	0.00084
	(!A1 * B1 * B2 * X)	-0.00173	-0.00174	-0.00181
	(!A1 * B1 * B2 * X)	0.00089	0.00089	0.00083
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00289	-0.00291	-0.00307
	(A1 * B1 * B2 * X)	0.00189	0.00190	0.00176
	(A1 * A2 * B1 * !B2 * X)	-0.00264	-0.00267	-0.00301
	(A1 * A2 * B1 * !B2 * X)	0.00205	0.00207	0.00180
	(A1 * A2 * !B1 * X)	-0.00264	-0.00267	-0.00301
	(A1 * A2 * !B1 * X)	0.00205	0.00207	0.00180
	(!A1 * B1 * B2 * X)	-0.00288	-0.00290	-0.00307
	(!A1 * B1 * B2 * X)	0.00192	0.00193	0.00179

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222oi_1	14.38560
sky130_fd_sc_hs__a222oi_2	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	Y
sky130_fd_sc_hs__a222oi_1	0.00254	0.00238	0.00247	0.00250	0.00250	0.00259	0.40052
sky130_fd_sc_hs__a222oi_2	0.00509	0.00448	0.00502	0.00460	0.00455	0.00517	0.68108

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.05441	0.22493
sky130_fd_sc_hs__a222oi_2	0.00000	0.10882	0.44986

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)	0.18411	1.05097	9.82941
	A2->Y (FR)	0.20189	1.07404	9.87570
	B1->Y (FR)	0.16227	1.05556	10.42550
	B2->Y (FR)	0.18303	1.08665	10.53920
	C1->Y (FR)	0.12386	1.02507	10.46110
	C2->Y (FR)	0.14269	1.04487	10.48480
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.18144	0.89421	9.43387
	A2->Y (FR)	0.20788	0.93533	9.62615
	B1->Y (FR)	0.15632	0.88751	9.93147
	B2->Y (FR)	0.18916	0.96081	10.46120
	C1->Y (FR)	0.11579	0.89290	10.38700
	C2->Y (FR)	0.14222	0.91671	10.39990

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.03068	0.27086	2.21833
	A2->Y (RF)	0.03357	0.26450	2.14077
	B1->Y (RF)	0.02789	0.25247	2.14838
	B2->Y (RF)	0.03097	0.24650	2.06991
	C1->Y (RF)	0.02057	0.23643	2.12637
	C2->Y (RF)	0.02337	0.23097	2.04788
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.02987	0.22813	2.09192
	A2->Y (RF)	0.03315	0.22442	2.02944
	B1->Y (RF)	0.02773	0.21167	2.06784
	B2->Y (RF)	0.03144	0.21068	2.02033
	C1->Y (RF)	0.01732	0.17486	1.83843
	C2->Y (RF)	0.02097	0.17368	1.78226

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00074	0.00056	0.01010
	A1	0.00901	0.00882	0.01841
	A2	0.00101	0.00091	0.01057
	A2	0.01019	0.01010	0.01976
	B1	0.00076	0.00073	0.01159
	B1	0.00712	0.00698	0.01799
	B2	0.00105	0.00106	0.01181
	B2	0.00841	0.00841	0.01920
	C1	0.00062	0.00165	0.02312
	C1	0.00537	0.00641	0.02787
	C2	0.00097	0.00222	0.02400
	C2	0.00668	0.00795	0.02926
sky130_fd_sc_hs__a222oi_2	A1	0.00050	0.00019	0.01964
	A1	0.01701	0.01667	0.03632
	A2	0.00150	0.00122	0.02084
	A2	0.01936	0.01909	0.03869
	B1	0.00055	0.00058	0.02227
	B1	0.01340	0.01341	0.03518
	B2	0.00141	0.00139	0.02197
	B2	0.01573	0.01570	0.03633
	C1	0.00035	0.00272	0.04352
	C1	0.00939	0.01161	0.05264
	C2	0.00111	0.00377	0.04464
	C2	0.01250	0.01492	0.05611

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.01299	0.01322	0.02409
	A1	0.00492	0.00516	0.01604
	A2	0.01392	0.01396	0.02228
	A2	0.00488	0.00492	0.01330
	B1	0.00904	0.00941	0.02020
	B1	0.00275	0.00310	0.01393
	B2	0.01009	0.01027	0.01851
	B2	0.00277	0.00291	0.01119
	C1	0.00547	0.00603	0.01637
	C1	0.00072	0.00126	0.01160
	C2	0.00646	0.00675	0.01500
	C2	0.00071	0.00097	0.00923
sky130_fd_sc_hs__a222oi_2	A1	0.02447	0.02492	0.04745
	A1	0.00832	0.00875	0.03135
	A2	0.02591	0.02605	0.04338
	A2	0.00836	0.00849	0.02588
	B1	0.01716	0.01795	0.03987
	B1	0.00446	0.00522	0.02715
	B2	0.01904	0.01940	0.03568
	B2	0.00479	0.00508	0.02142
	C1	0.00964	0.01087	0.03222
	C1	0.00061	0.00180	0.02317
	C2	0.01203	0.01270	0.03003
	C2	0.00056	0.00119	0.01851

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)**	0.00138	0.00138	0.00137
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00159	-0.00167	-0.00166
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00139	0.00138	0.00137
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00158	-0.00167	-0.00166
	(A2 * B1 * B2 * !C1 * !Y)	0.00139	0.00138	0.00137
	(A2 * B1 * B2 * !C1 * !Y)	-0.00158	-0.00167	-0.00166
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00140	0.00138	0.00137
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00151	-0.00164	-0.00163
	(A2 * !B1 * C1 * C2 * !Y)	0.00140	0.00138	0.00137
	(A2 * !B1 * C1 * C2 * !Y)	-0.00151	-0.00163	-0.00163
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00131	0.00131	0.00131
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00171	-0.00171	-0.00171
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00130	0.00131	0.00131
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00170	-0.00171	-0.00171
	(!A2 * B1 * B2 * !C1 * !Y)	0.00130	0.00131	0.00131
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00170	-0.00171	-0.00171
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00131	0.00132	0.00131
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00170	-0.00171	-0.00171
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00045	0.00045	0.00044
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00197	-0.00199	-0.00199
	(!A2 * B1 * !B2 * !C1 * Y)	0.00045	0.00045	0.00044
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00197	-0.00199	-0.00199
	(!A2 * !B1 * C1 * C2 * !Y)	0.00130	0.00132	0.00131
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00170	-0.00171	-0.00171
	(!A2 * !B1 * C1 * !C2 * Y)	0.00045	0.00045	0.00044
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00197	-0.00199	-0.00199
	(!A2 * !B1 * !C1 * Y)	0.00045	0.00045	0.00044
	(!A2 * !B1 * !C1 * Y)	-0.00197	-0.00199	-0.00199

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00284	0.00286	0.00284
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00319	-0.00339	-0.00337
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00285	0.00286	0.00284
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00316	-0.00336	-0.00337
	(A2 * B1 * B2 * !C1 * !Y)	0.00285	0.00286	0.00284
	(A2 * B1 * B2 * !C1 * !Y)	-0.00316	-0.00337	-0.00337
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00290	0.00286	0.00284
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00303	-0.00331	-0.00330
	(A2 * !B1 * C1 * C2 * !Y)	0.00290	0.00286	0.00284
	(A2 * !B1 * C1 * C2 * !Y)	-0.00302	-0.00330	-0.00330
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00277	0.00280	0.00277
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00346	-0.00349	-0.00347
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00272	0.00274	0.00273
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00347	-0.00348	-0.00347
	(!A2 * B1 * B2 * !C1 * !Y)	0.00272	0.00274	0.00273
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00347	-0.00348	-0.00347
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00271	0.00275	0.00273
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00345	-0.00349	-0.00346
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00088	0.00089	0.00087
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00412	-0.00415	-0.00419
	(!A2 * B1 * !B2 * !C1 * Y)	0.00088	0.00089	0.00087
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00412	-0.00415	-0.00419
	(!A2 * !B1 * C1 * C2 * !Y)	0.00271	0.00275	0.00273
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00344	-0.00349	-0.00347
	(!A2 * !B1 * C1 * !C2 * Y)	0.00088	0.00089	0.00087
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00412	-0.00415	-0.00419
	(!A2 * !B1 * !C1 * Y)	0.00088	0.00089	0.00087
	(!A2 * !B1 * !C1 * Y)	-0.00412	-0.00415	-0.00419

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00167	0.00167	0.00166
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00167	0.00167	0.00166
	(A2 * B1 * B2 * !C1 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * B2 * !C1 * !Y)	0.00167	0.00167	0.00166
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00164	0.00164	0.00163
	(A2 * !B1 * C1 * C2 * !Y)	-0.00137	-0.00137	-0.00137
	(A2 * !B1 * C1 * C2 * !Y)	0.00164	0.00163	0.00163
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00128	-0.00131	-0.00131
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00172	0.00172	0.00171
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00127	-0.00131	-0.00131
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00171	0.00172	0.00171
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00127	-0.00131	-0.00131
	(!A2 * B1 * B2 * !C1 * !Y)	0.00171	0.00172	0.00171
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00131	-0.00131
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00171	0.00171	0.00171
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00044	-0.00044	-0.00043
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00199	0.00201	0.00199
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00044	-0.00044	-0.00043
	(!A2 * B1 * !B2 * !C1 * Y)	0.00199	0.00201	0.00199
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00131	-0.00131
	(!A2 * !B1 * C1 * C2 * !Y)	0.00171	0.00171	0.00171
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * C1 * !C2 * Y)	0.00199	0.00201	0.00199
	(!A2 * !B1 * !C1 * Y)	-0.00043	-0.00044	-0.00043
	(!A2 * !B1 * !C1 * Y)	0.00199	0.00201	0.00199

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00284	-0.00284	-0.00283
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00338	0.00339	0.00337
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00284	-0.00283	-0.00283
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00338	0.00336	0.00337
	(A2 * B1 * B2 * !C1 * !Y)	-0.00284	-0.00284	-0.00283
	(A2 * B1 * B2 * !C1 * !Y)	0.00338	0.00337	0.00337
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00284	-0.00284	-0.00283
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00330	0.00331	0.00330
	(A2 * !B1 * C1 * C2 * !Y)	-0.00283	-0.00284	-0.00283
	(A2 * !B1 * C1 * C2 * !Y)	0.00328	0.00330	0.00330
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00263	-0.00273	-0.00275
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00346	0.00349	0.00348
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00264	-0.00274	-0.00273
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00348	0.00351	0.00348
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00264	-0.00274	-0.00273
	(!A2 * B1 * B2 * !C1 * !Y)	0.00348	0.00351	0.00348
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00263	-0.00274	-0.00273
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00347	0.00350	0.00348
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00085	-0.00086	-0.00085
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00420	0.00423	0.00420
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00086	-0.00086	-0.00085
	(!A2 * B1 * !B2 * !C1 * Y)	0.00420	0.00423	0.00420
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00263	-0.00274	-0.00273
	(!A2 * !B1 * C1 * C2 * !Y)	0.00347	0.00350	0.00348
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00085	-0.00086	-0.00085
	(!A2 * !B1 * C1 * !C2 * Y)	0.00420	0.00423	0.00420
	(!A2 * !B1 * !C1 * Y)	-0.00085	-0.00086	-0.00085
	(!A2 * !B1 * !C1 * Y)	0.00420	0.00423	0.00420

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)	0.00143	0.00143	0.00142
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00158	-0.00167	-0.00166
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00143	0.00143	0.00142
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00157	-0.00166	-0.00166
	(A1 * B1 * B2 * !C1 * !Y)	0.00143	0.00143	0.00142
	(A1 * B1 * B2 * !C1 * !Y)	-0.00157	-0.00166	-0.00166
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00145	0.00143	0.00142
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00151	-0.00163	-0.00163
	(A1 * !B1 * C1 * C2 * !Y)	0.00145	0.00143	0.00142
	(A1 * !B1 * C1 * C2 * !Y)	-0.00151	-0.00163	-0.00163
	(!A1 * B1 * B2 * !Y)	0.00136	0.00139	0.00137
	(!A1 * B1 * B2 * !Y)	-0.00170	-0.00172	-0.00170
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00136	0.00139	0.00137
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00170	-0.00171	-0.00170
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00136	0.00138	0.00137
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * B1 * !B2 * !C1 * Y)	0.00136	0.00138	0.00137
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * C1 * !C2 * Y)	0.00137	0.00139	0.00137
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !B1 * !C1 * Y)	0.00136	0.00138	0.00137
	(!A1 * !B1 * !C1 * Y)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00267	0.00268	0.00267
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00297	-0.00314	-0.00313
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00268	0.00268	0.00267
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00295	-0.00313	-0.00313
	(A1 * B1 * B2 * !C1 * !Y)	0.00268	0.00268	0.00267
	(A1 * B1 * B2 * !C1 * !Y)	-0.00295	-0.00313	-0.00313
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00272	0.00269	0.00267
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00285	-0.00308	-0.00306
	(A1 * !B1 * C1 * C2 * !Y)	0.00272	0.00269	0.00267
	(A1 * !B1 * C1 * C2 * !Y)	-0.00284	-0.00308	-0.00306
	(!A1 * B1 * B2 * !Y)	0.00255	0.00259	0.00257
	(!A1 * B1 * B2 * !Y)	-0.00319	-0.00322	-0.00320
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00256	0.00258	0.00257
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00319	-0.00320	-0.00319
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00246	0.00249	0.00248
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00328	-0.00330	-0.00329
	(!A1 * B1 * !B2 * !C1 * Y)	0.00246	0.00249	0.00248
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00328	-0.00330	-0.00329
	(!A1 * !B1 * C1 * !C2 * Y)	0.00246	0.00249	0.00248
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00328	-0.00330	-0.00329
	(!A1 * !B1 * !C1 * Y)	0.00246	0.00249	0.00248
	(!A1 * !B1 * !C1 * Y)	-0.00328	-0.00330	-0.00329

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

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

sky130_fd_sc_hs__a222oi_1	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00142	-0.00143	-0.00142
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00165	0.00167	0.00166
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00142	-0.00143	-0.00142
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00165	0.00166	0.00166
	(A1 * B1 * B2 * !C1 * !Y)	-0.00142	-0.00143	-0.00142
	(A1 * B1 * B2 * !C1 * !Y)	0.00165	0.00166	0.00166
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00142	-0.00142	-0.00142
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00162	0.00163	0.00163
	(A1 * !B1 * C1 * C2 * !Y)	-0.00142	-0.00142	-0.00142
	(A1 * !B1 * C1 * C2 * !Y)	0.00162	0.00163	0.00163
	(!A1 * B1 * B2 * !Y)	-0.00133	-0.00139	-0.00137
	(!A1 * B1 * B2 * !Y)	0.00171	0.00172	0.00171
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00133	-0.00139	-0.00137
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00171	0.00172	0.00171
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00130	-0.00138	-0.00137
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00177	0.00172	0.00171
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00130	-0.00138	-0.00137
	(!A1 * B1 * !B2 * !C1 * Y)	0.00177	0.00172	0.00171
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00130	-0.00139	-0.00137
	(!A1 * !B1 * C1 * !C2 * Y)	0.00177	0.00172	0.00171
	(!A1 * !B1 * !C1 * Y)	-0.00130	-0.00138	-0.00137
	(!A1 * !B1 * !C1 * Y)	0.00177	0.00172	0.00171

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00266	-0.00267	-0.00266
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00313	0.00314	0.00313
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00266	-0.00267	-0.00266
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00313	0.00313	0.00313
	(A1 * B1 * B2 * !C1 * !Y)	-0.00266	-0.00267	-0.00266
	(A1 * B1 * B2 * !C1 * !Y)	0.00313	0.00313	0.00313
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00265	-0.00267	-0.00266
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00305	0.00308	0.00306
	(A1 * !B1 * C1 * C2 * !Y)	-0.00265	-0.00267	-0.00266
	(A1 * !B1 * C1 * C2 * !Y)	0.00305	0.00308	0.00306
	(!A1 * B1 * B2 * !Y)	-0.00247	-0.00257	-0.00257
	(!A1 * B1 * B2 * !Y)	0.00319	0.00322	0.00321
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00247	-0.00256	-0.00257
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00320	0.00323	0.00321
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00230	-0.00249	-0.00248
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00341	0.00332	0.00330
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00230	-0.00249	-0.00248
	(!A1 * B1 * !B2 * !C1 * Y)	0.00341	0.00332	0.00330
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00230	-0.00249	-0.00248
	(!A1 * !B1 * C1 * !C2 * Y)	0.00341	0.00332	0.00330
	(!A1 * !B1 * !C1 * Y)	-0.00230	-0.00249	-0.00248
	(!A1 * !B1 * !C1 * Y)	0.00341	0.00332	0.00329

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)**	0.00139	0.00140	0.00139
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00117	-0.00118	-0.00117
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00137	0.00138	0.00137
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * B2 * !C1 * !Y)	0.00137	0.00138	0.00137
	(A1 * A2 * B2 * !C1 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00132	0.00135	0.00133
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * !B2 * !C1 * !Y)	0.00132	0.00133	0.00132
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00157	0.00137	0.00136
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00139	-0.00163	-0.00164
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00131
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00167	-0.00167	-0.00167
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00042	0.00042	0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00195	-0.00196	-0.00198
	(A1 * !A2 * !B2 * !C1 * Y)	0.00042	0.00042	0.00041
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00195	-0.00196	-0.00198
	(!A1 * B2 * C1 * C2 * !Y)	0.00156	0.00137	0.00136
	(!A1 * B2 * C1 * C2 * !Y)	-0.00140	-0.00163	-0.00164
	(!A1 * !B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00131
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00166	-0.00167	-0.00167
	(!A1 * !B2 * C1 * !C2 * Y)	0.00042	0.00042	0.00041
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00195	-0.00196	-0.00198
	(!A1 * !B2 * !C1 * Y)	0.00042	0.00042	0.00041
	(!A1 * !B2 * !C1 * Y)	-0.00195	-0.00196	-0.00198

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00287	0.00292	0.00287
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00238	-0.00238	-0.00237
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00284	0.00287	0.00285
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00194	-0.00196	-0.00195
	(A1 * A2 * B2 * !C1 * !Y)	0.00284	0.00287	0.00285
	(A1 * A2 * B2 * !C1 * !Y)	-0.00194	-0.00196	-0.00195
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00276	0.00276	0.00277
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00224	-0.00225	-0.00225
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00274	0.00276	0.00274
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00194	-0.00195	-0.00195
	(A1 * A2 * !B2 * !C1 * !Y)	0.00274	0.00276	0.00274
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00194	-0.00195	-0.00195
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00329	0.00284	0.00283
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00283	-0.00338	-0.00339
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00273	0.00274	0.00273
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00345	-0.00346	-0.00345
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00086	0.00086	0.00084
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00415	-0.00417	-0.00420
	(A1 * !A2 * !B2 * !C1 * Y)	0.00086	0.00086	0.00084
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00415	-0.00417	-0.00420
	(!A1 * B2 * C1 * C2 * !Y)	0.00327	0.00284	0.00283
	(!A1 * B2 * C1 * C2 * !Y)	-0.00285	-0.00338	-0.00340
	(!A1 * !B2 * C1 * C2 * !Y)	0.00271	0.00275	0.00273
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00343	-0.00346	-0.00345
	(!A1 * !B2 * C1 * !C2 * Y)	0.00086	0.00086	0.00084
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00415	-0.00417	-0.00420
	(!A1 * !B2 * !C1 * Y)	0.00086	0.00086	0.00084
	(!A1 * !B2 * !C1 * Y)	-0.00415	-0.00417	-0.00420

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)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00117	0.00118	0.00117
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00131	-0.00132	-0.00133
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * B2 * !C1 * !Y)	-0.00131	-0.00132	-0.00133
	(A1 * A2 * B2 * !C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00129	-0.00133	-0.00133
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00128	-0.00132	-0.00131
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00093	0.00094	0.00094
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00128	-0.00132	-0.00132
	(A1 * A2 * !B2 * !C1 * !Y)	0.00093	0.00095	0.00094
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00136	-0.00136	-0.00135
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00126	-0.00131	-0.00131
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00167	0.00169	0.00168
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00198	0.00199	0.00198
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00040
	(A1 * !A2 * !B2 * !C1 * Y)	0.00198	0.00199	0.00198
	(!A1 * B2 * C1 * C2 * !Y)	-0.00136	-0.00136	-0.00135
	(!A1 * B2 * C1 * C2 * !Y)	0.00164	0.00165	0.00164
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00126	-0.00131	-0.00131
	(!A1 * !B2 * C1 * C2 * !Y)	0.00167	0.00170	0.00168
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * C1 * !C2 * Y)	0.00197	0.00199	0.00198
	(!A1 * !B2 * !C1 * Y)	-0.00040	-0.00041	-0.00040
	(!A1 * !B2 * !C1 * Y)	0.00197	0.00199	0.00198

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00286	-0.00286	-0.00286
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00238	0.00238	0.00237
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00275	-0.00277	-0.00276
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00202	0.00205	0.00204
	(A1 * A2 * B2 * !C1 * !Y)	-0.00275	-0.00277	-0.00276
	(A1 * A2 * B2 * !C1 * !Y)	0.00203	0.00205	0.00204
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00266	-0.00276	-0.00277
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00224	0.00225	0.00225
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00265	-0.00276	-0.00274
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00196	0.00196	0.00195
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00265	-0.00276	-0.00274
	(A1 * A2 * !B2 * !C1 * !Y)	0.00196	0.00196	0.00195
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00282	-0.00282	-0.00281
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00339	0.00340	0.00339
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00262	-0.00273	-0.00273
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00346	0.00346	0.00346
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00082	-0.00084	-0.00082
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00419	0.00426	0.00420
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00082	-0.00084	-0.00082
	(A1 * !A2 * !B2 * !C1 * Y)	0.00419	0.00426	0.00420
	(!A1 * B2 * C1 * C2 * !Y)	-0.00281	-0.00282	-0.00281
	(!A1 * B2 * C1 * C2 * !Y)	0.00338	0.00340	0.00340
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00262	-0.00273	-0.00273
	(!A1 * !B2 * C1 * C2 * !Y)	0.00346	0.00346	0.00346
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00082	-0.00084	-0.00082
	(!A1 * !B2 * C1 * !C2 * Y)	0.00418	0.00426	0.00420
	(!A1 * !B2 * !C1 * Y)	-0.00082	-0.00084	-0.00082
	(!A1 * !B2 * !C1 * Y)	0.00418	0.00426	0.00420

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)	0.00151	0.00153	0.00151
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00118	-0.00118	-0.00117
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00151	0.00151	0.00149
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * B1 * !C1 * !Y)	0.00151	0.00151	0.00149
	(A1 * A2 * B1 * !C1 * !Y)	-0.00095	-0.00095	-0.00094
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00145	0.00146	0.00145
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00144	0.00146	0.00145
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * A2 * !B1 * !C1 * !Y)	0.00145	0.00146	0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00170	0.00150	0.00149
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00138	-0.00164	-0.00165
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00167	-0.00168	-0.00167
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00126	0.00128	0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00184	-0.00185	-0.00184
	(A1 * !A2 * !B1 * !C1 * Y)	0.00126	0.00128	0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * B1 * C1 * C2 * !Y)	0.00170	0.00150	0.00149
	(!A1 * B1 * C1 * C2 * !Y)	-0.00138	-0.00164	-0.00165
	(!A1 * !B1 * C1 * !C2 * Y)	0.00127	0.00128	0.00127
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * Y)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * Y)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	0.00280	0.00285	0.00280
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00218
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00277	0.00280	0.00277
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00174	-0.00176	-0.00175
	(A1 * A2 * B1 * !C1 * !Y)	0.00277	0.00280	0.00277
	(A1 * A2 * B1 * !C1 * !Y)	-0.00174	-0.00176	-0.00175
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00267	0.00270	0.00268
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00206	-0.00209	-0.00207
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00267	0.00269	0.00267
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00174	-0.00175	-0.00175
	(A1 * A2 * !B1 * !C1 * !Y)	0.00267	0.00269	0.00267
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00174	-0.00175	-0.00175
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00328	0.00281	0.00276
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00254	-0.00314	-0.00314
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00268	0.00269	0.00268
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00319	-0.00320	-0.00319
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00255	0.00259	0.00256
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00331	-0.00334	-0.00332
	(A1 * !A2 * !B1 * !C1 * Y)	0.00255	0.00259	0.00256
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00331	-0.00334	-0.00332
	(!A1 * B1 * C1 * C2 * !Y)	0.00327	0.00281	0.00276
	(!A1 * B1 * C1 * C2 * !Y)	-0.00255	-0.00314	-0.00314
	(!A1 * !B1 * C1 * !C2 * Y)	0.00255	0.00259	0.00256
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00331	-0.00334	-0.00332
	(!A1 * !B1 * !C1 * Y)	0.00255	0.00259	0.00256
	(!A1 * !B1 * !C1 * Y)	-0.00331	-0.00334	-0.00332

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)	-0.00151	-0.00151	-0.00150
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00118	0.00118	0.00117
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00143	-0.00144	-0.00145
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * B1 * !C1 * !Y)	-0.00143	-0.00144	-0.00145
	(A1 * A2 * B1 * !C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00142	-0.00146	-0.00145
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00141	-0.00146	-0.00145
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00094	0.00094	0.00094
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00141	-0.00146	-0.00145
	(A1 * A2 * !B1 * !C1 * !Y)	0.00094	0.00094	0.00094
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00148	-0.00149	-0.00147
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00165	0.00166	0.00165
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00139	-0.00143	-0.00143
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00168	0.00170	0.00168
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00119	-0.00126	-0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00191	0.00185	0.00185
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00119	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	0.00191	0.00185	0.00185
	(!A1 * B1 * C1 * C2 * !Y)	-0.00148	-0.00149	-0.00147
	(!A1 * B1 * C1 * C2 * !Y)	0.00165	0.00166	0.00165
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00119	-0.00126	-0.00127
	(!A1 * !B1 * C1 * !C2 * Y)	0.00191	0.00185	0.00185
	(!A1 * !B1 * !C1 * Y)	-0.00119	-0.00126	-0.00127
	(!A1 * !B1 * !C1 * Y)	0.00191	0.00185	0.00185

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B1 * C1 * C2 * !Y)**	-0.00279	-0.00279	-0.00279
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00218	0.00219	0.00218
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00267	-0.00268	-0.00268
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00182	0.00184	0.00184
	(A1 * A2 * B1 * !C1 * !Y)	-0.00267	-0.00268	-0.00268
	(A1 * A2 * B1 * !C1 * !Y)	0.00183	0.00184	0.00184
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00259	-0.00268	-0.00268
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00206	0.00209	0.00207
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00258	-0.00267	-0.00267
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00175	0.00176	0.00175
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00258	-0.00267	-0.00267
	(A1 * A2 * !B1 * !C1 * !Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00274	-0.00275	-0.00274
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00312	0.00314	0.00314
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00256	-0.00264	-0.00266
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00319	0.00322	0.00321
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00234	-0.00255	-0.00254
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00345	0.00335	0.00333
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00234	-0.00255	-0.00254
	(A1 * !A2 * !B1 * !C1 * Y)	0.00345	0.00335	0.00333
	(!A1 * B1 * C1 * C2 * !Y)	-0.00274	-0.00275	-0.00274
	(!A1 * B1 * C1 * C2 * !Y)	0.00312	0.00314	0.00314
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00234	-0.00255	-0.00254
	(!A1 * !B1 * C1 * !C2 * Y)	0.00345	0.00335	0.00333
	(!A1 * !B1 * !C1 * Y)	-0.00234	-0.00255	-0.00254
	(!A1 * !B1 * !C1 * Y)	0.00345	0.00335	0.00333

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)	0.00164	0.00165	0.00164
	(A1 * B1 * B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * B1 * B2 * !C2 * !Y)	0.00160	0.00161	0.00160
	(A1 * B1 * B2 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00164	0.00165	0.00164
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * C2 * !Y)	0.00164	0.00165	0.00164
	(A1 * A2 * !B1 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(A1 * A2 * !B1 * !C2 * !Y)	0.00159	0.00162	0.00160
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00082	-0.00082	-0.00082
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00047	0.00048	0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00201	-0.00202	-0.00203
	(A1 * !A2 * !B1 * !C2 * Y)	0.00047	0.00048	0.00046
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00201	-0.00202	-0.00203
	(!A1 * B1 * B2 * C2 * !Y)	0.00164	0.00165	0.00164
	(!A1 * B1 * B2 * C2 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * B2 * !C2 * !Y)	0.00157	0.00159	0.00158
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * B1 * !B2 * !C2 * Y)	0.00047	0.00048	0.00046
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00201	-0.00202	-0.00203
	(!A1 * !B1 * !C2 * Y)	0.00047	0.00048	0.00046
	(!A1 * !B1 * !C2 * Y)	-0.00201	-0.00202	-0.00203

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00288	0.00291	0.00289
	(A1 * B1 * B2 * C2 * !Y)	-0.00159	-0.00161	-0.00160
	(A1 * B1 * B2 * !C2 * !Y)	0.00276	0.00279	0.00278
	(A1 * B1 * B2 * !C2 * !Y)	-0.00158	-0.00160	-0.00159
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00288	0.00291	0.00289
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00159	-0.00161	-0.00159
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00278	0.00278	0.00279
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00158	-0.00159	-0.00159
	(A1 * A2 * !B1 * C2 * !Y)	0.00288	0.00291	0.00289
	(A1 * A2 * !B1 * C2 * !Y)	-0.00159	-0.00161	-0.00159
	(A1 * A2 * !B1 * !C2 * !Y)	0.00278	0.00283	0.00279
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00158	-0.00160	-0.00159
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00083	0.00084	0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00372	-0.00375	-0.00378
	(A1 * !A2 * !B1 * !C2 * Y)	0.00083	0.00084	0.00081
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00372	-0.00375	-0.00378
	(!A1 * B1 * B2 * C2 * !Y)	0.00288	0.00291	0.00289
	(!A1 * B1 * B2 * C2 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1 * B1 * B2 * !C2 * !Y)	0.00278	0.00283	0.00279
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00158	-0.00160	-0.00160
	(!A1 * B1 * !B2 * !C2 * Y)	0.00083	0.00084	0.00081
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00372	-0.00375	-0.00378
	(!A1 * !B1 * !C2 * Y)	0.00083	0.00084	0.00081
	(!A1 * !B1 * !C2 * Y)	-0.00372	-0.00375	-0.00378

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)**	-0.00154	-0.00155	-0.00163
	(A1 * B1 * B2 * C2 * !Y)	0.00091	0.00091	0.00084
	(A1 * B1 * B2 * !C2 * !Y)	-0.00155	-0.00160	-0.00159
	(A1 * B1 * B2 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00139	-0.00140	-0.00159
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00101	0.00101	0.00087
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00154	-0.00159	-0.00158
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * A2 * !B1 * C2 * !Y)	-0.00138	-0.00140	-0.00159
	(A1 * A2 * !B1 * C2 * !Y)	0.00101	0.00101	0.00087
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00154	-0.00160	-0.00159
	(A1 * A2 * !B1 * !C2 * !Y)	0.00082	0.00082	0.00082
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00203	0.00206	0.00203
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * !B1 * !C2 * Y)	0.00203	0.00206	0.00203
	(!A1 * B1 * B2 * C2 * !Y)	-0.00153	-0.00155	-0.00163
	(!A1 * B1 * B2 * C2 * !Y)	0.00090	0.00091	0.00084
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00154	-0.00159	-0.00158
	(!A1 * B1 * B2 * !C2 * !Y)	0.00082	0.00083	0.00082
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * B1 * !B2 * !C2 * Y)	0.00203	0.00206	0.00203
	(!A1 * !B1 * !C2 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * !B1 * !C2 * Y)	0.00203	0.00206	0.00203

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00269	-0.00272	-0.00287
	(A1 * B1 * B2 * C2 * !Y)	0.00175	0.00177	0.00163
	(A1 * B1 * B2 * !C2 * !Y)	-0.00269	-0.00279	-0.00278
	(A1 * B1 * B2 * !C2 * !Y)	0.00158	0.00160	0.00159
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00244	-0.00247	-0.00280
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00191	0.00193	0.00168
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00270	-0.00278	-0.00279
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00160	0.00160	0.00159
	(A1 * A2 * !B1 * C2 * !Y)	-0.00244	-0.00247	-0.00280
	(A1 * A2 * !B1 * C2 * !Y)	0.00191	0.00193	0.00168
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00269	-0.00283	-0.00279
	(A1 * A2 * !B1 * !C2 * !Y)	0.00159	0.00160	0.00159
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00376	0.00382	0.00378
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * !B1 * !C2 * Y)	0.00376	0.00383	0.00378
	(!A1 * B1 * B2 * C2 * !Y)	-0.00269	-0.00271	-0.00287
	(!A1 * B1 * B2 * C2 * !Y)	0.00176	0.00177	0.00164
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00269	-0.00279	-0.00279
	(!A1 * B1 * B2 * !C2 * !Y)	0.00159	0.00160	0.00160
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00079	-0.00081	-0.00079
	(!A1 * B1 * !B2 * !C2 * Y)	0.00376	0.00383	0.00378
	(!A1 * !B1 * !C2 * Y)	-0.00079	-0.00081	-0.00079
	(!A1 * !B1 * !C2 * Y)	0.00376	0.00383	0.00378

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)**	0.00170	0.00172	0.00171
	(A1 * B1 * B2 * C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * B1 * B2 * !C1 * !Y)	0.00166	0.00167	0.00166
	(A1 * B1 * B2 * !C1 * !Y)	-0.00084	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00084	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00171	0.00172	0.00171
	(A1 * A2 * !B1 * C1 * !Y)	-0.00084	-0.00084	-0.00084
	(A1 * A2 * !B1 * !C1 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00084	-0.00083	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(A1 * !A2 * !B1 * !C1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188
	(!A1 * B1 * B2 * C1 * !Y)	0.00171	0.00172	0.00171
	(!A1 * B1 * B2 * C1 * !Y)	-0.00085	-0.00084	-0.00084
	(!A1 * B1 * B2 * !C1 * !Y)	0.00166	0.00167	0.00166
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * !B2 * !C1 * Y)	0.00130	0.00130	0.00130
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00189	-0.00188	-0.00188
	(!A1 * !B1 * !C1 * Y)	0.00128	0.00129	0.00129
	(!A1 * !B1 * !C1 * Y)	-0.00188	-0.00189	-0.00188

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00340	0.00344	0.00342
	(A1 * B1 * B2 * C1 * !Y)	-0.00165	-0.00168	-0.00166
	(A1 * B1 * B2 * !C1 * !Y)	0.00331	0.00334	0.00332
	(A1 * B1 * B2 * !C1 * !Y)	-0.00166	-0.00166	-0.00166
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00340	0.00345	0.00342
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00165	-0.00168	-0.00166
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00331	0.00335	0.00332
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * A2 * !B1 * C1 * !Y)	0.00340	0.00345	0.00342
	(A1 * A2 * !B1 * C1 * !Y)	-0.00165	-0.00168	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00331	0.00335	0.00332
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00165	-0.00166	-0.00166
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00261	0.00261	0.00260
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00377	-0.00377	-0.00377
	(A1 * !A2 * !B1 * !C1 * Y)	0.00257	0.00260	0.00258
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00376	-0.00379	-0.00377
	(!A1 * B1 * B2 * C1 * !Y)	0.00340	0.00345	0.00342
	(!A1 * B1 * B2 * C1 * !Y)	-0.00166	-0.00168	-0.00167
	(!A1 * B1 * B2 * !C1 * !Y)	0.00331	0.00335	0.00332
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00165	-0.00167	-0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	0.00257	0.00259	0.00258
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00376	-0.00378	-0.00377
	(!A1 * !B1 * !C1 * Y)	0.00257	0.00261	0.00258
	(!A1 * !B1 * !C1 * Y)	-0.00376	-0.00377	-0.00377

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)**	-0.00160	-0.00161	-0.00169
	(A1 * B1 * B2 * C1 * !Y)	0.00092	0.00093	0.00086
	(A1 * B1 * B2 * !C1 * !Y)	-0.00162	-0.00165	-0.00166
	(A1 * B1 * B2 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00145	-0.00147	-0.00165
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00102	0.00103	0.00089
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00162	-0.00165	-0.00166
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * !Y)	-0.00146	-0.00147	-0.00165
	(A1 * A2 * !B1 * C1 * !Y)	0.00103	0.00103	0.00089
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00162	-0.00165	-0.00166
	(A1 * A2 * !B1 * !C1 * !Y)	0.00084	0.00083	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00122	-0.00130	-0.00129
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00195	0.00190	0.00189
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00122	-0.00130	-0.00129
	(A1 * !A2 * !B1 * !C1 * Y)	0.00195	0.00190	0.00189
	(!A1 * B1 * B2 * C1 * !Y)	-0.00160	-0.00161	-0.00169
	(!A1 * B1 * B2 * C1 * !Y)	0.00093	0.00093	0.00086
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00162	-0.00165	-0.00166
	(!A1 * B1 * B2 * !C1 * !Y)	0.00084	0.00084	0.00084
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00122	-0.00129	-0.00130
	(!A1 * B1 * !B2 * !C1 * Y)	0.00195	0.00191	0.00189
	(!A1 * !B1 * !C1 * Y)	-0.00122	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * Y)	0.00195	0.00191	0.00189

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00321	-0.00324	-0.00340
	(A1 * B1 * B2 * C1 * !Y)	0.00182	0.00183	0.00170
	(A1 * B1 * B2 * !C1 * !Y)	-0.00325	-0.00332	-0.00332
	(A1 * B1 * B2 * !C1 * !Y)	0.00167	0.00166	0.00166
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00296	-0.00299	-0.00333
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00198	0.00199	0.00175
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00325	-0.00332	-0.00332
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00167	0.00166	0.00166
	(A1 * A2 * !B1 * C1 * !Y)	-0.00296	-0.00299	-0.00333
	(A1 * A2 * !B1 * C1 * !Y)	0.00198	0.00199	0.00175
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00325	-0.00332	-0.00332
	(A1 * A2 * !B1 * !C1 * !Y)	0.00167	0.00166	0.00166
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00245	-0.00259	-0.00259
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00387	0.00381	0.00378
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00245	-0.00260	-0.00258
	(A1 * !A2 * !B1 * !C1 * Y)	0.00387	0.00382	0.00378
	(!A1 * B1 * B2 * C1 * !Y)	-0.00321	-0.00324	-0.00340
	(!A1 * B1 * B2 * C1 * !Y)	0.00183	0.00184	0.00171
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00325	-0.00332	-0.00332
	(!A1 * B1 * B2 * !C1 * !Y)	0.00167	0.00167	0.00166
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00245	-0.00259	-0.00258
	(!A1 * B1 * !B2 * !C1 * Y)	0.00387	0.00381	0.00378
	(!A1 * !B1 * !C1 * Y)	-0.00245	-0.00257	-0.00258
	(!A1 * !B1 * !C1 * Y)	0.00387	0.00377	0.00378

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a222o_1	15.98400
sky130_fd_sc_hs__a222o_2	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A1	A2	B1	B2	C1	C2	X
sky130_fd_sc_hs__a222o_1	0.00244	0.00249	0.00253	0.00243	0.00251	0.00257	1.43190
sky130_fd_sc_hs__a222o_2	0.00248	0.00234	0.00247	0.00242	0.00248	0.00263	2.35526

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.08154	0.22593
sky130_fd_sc_hs__a222o_2	0.00000	0.10868	0.22694

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)	0.06704	0.49518	5.41947
	A2->X (RR)	0.07034	0.49480	5.35753
	B1->X (RR)	0.06359	0.47836	5.24578
	B2->X (RR)	0.06685	0.47891	5.23275
	C1->X (RR)	0.05686	0.45687	5.25048
	C2->X (RR)	0.05972	0.45830	5.23361
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.08111	0.46316	5.31688
	A2->X (RR)	0.08709	0.44984	5.32049
	B1->X (RR)	0.07224	0.43138	5.19845
	B2->X (RR)	0.07571	0.43011	5.21064
	C1->X (RR)	0.06390	0.41101	5.21310
	C2->X (RR)	0.06721	0.40998	5.17821

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.20761	0.63006	5.22319
	A2->X (FF)	0.22094	0.64956	5.25645
	B1->X (FF)	0.19220	0.64086	5.53662
	B2->X (FF)	0.20031	0.66116	5.56487
	C1->X (FF)	0.14164	0.60862	5.51832
	C2->X (FF)	0.15179	0.62677	5.51480
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.24773	0.64136	5.04159
	A2->X (FF)	0.24757	0.65529	5.07054
	B1->X (FF)	0.23050	0.66107	5.25640
	B2->X (FF)	0.21950	0.65102	5.24637
	C1->X (FF)	0.16968	0.61230	5.06860
	C2->X (FF)	0.18798	0.64099	5.14764

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01585	0.01623	0.05293
	A1	0.00756	0.00795	0.04496
	A2	0.01688	0.01670	0.04167
	A2	0.00757	0.00740	0.03261
	B1	0.01241	0.01367	0.04890
	B1	0.00574	0.00700	0.04243
	B2	0.01329	0.01416	0.04447
	B2	0.00584	0.00672	0.03721
	C1	0.00812	0.01029	0.06042
	C1	0.00311	0.00531	0.05564
	C2	0.00903	0.01072	0.05741
	C2	0.00317	0.00488	0.05177
sky130_fd_sc_hs__a222o_2	A1	0.01864	0.01971	0.04576
	A1	0.01061	0.01169	0.03818
	A2	0.01953	0.02019	0.05291
	A2	0.01052	0.01135	0.04499
	B1	0.01466	0.01617	0.04726
	B1	0.00833	0.00986	0.04095
	B2	0.01553	0.01662	0.04415
	B2	0.00830	0.00939	0.03692
	C1	0.01089	0.01245	0.05508
	C1	0.00619	0.00779	0.05039
	C2	0.01189	0.01294	0.05100
	C2	0.00615	0.00724	0.04527

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00440	0.00436	0.03268
	A1	0.01283	0.01280	0.03953
	A2	0.00464	0.00429	0.03092
	A2	0.01404	0.01373	0.03923
	B1	0.00433	0.00460	0.04028
	B1	0.01107	0.01133	0.04701
	B2	0.00471	0.00507	0.03778
	B2	0.01217	0.01253	0.04522
	C1	0.00419	0.00660	0.06000
	C1	0.00918	0.01159	0.06419
	C2	0.00458	0.00705	0.05859
	C2	0.01039	0.01283	0.06348
sky130_fd_sc_hs__a222o_2	A1	0.00729	0.00622	0.03817
	A1	0.01544	0.01438	0.04554
	A2	0.00847	0.00791	0.04073
	A2	0.01763	0.01707	0.04896
	B1	0.00722	0.00731	0.04147
	B1	0.01361	0.01356	0.04759
	B2	0.00768	0.00776	0.04113
	B2	0.01493	0.01489	0.04655
	C1	0.00704	0.00908	0.05226
	C1	0.01173	0.01358	0.05513
	C2	0.00755	0.00920	0.05385
	C2	0.01323	0.01486	0.05670

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)**	0.00138	0.00139	0.00138
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00157	-0.00166	-0.00164
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00138	0.00139	0.00138
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00155	-0.00165	-0.00164
	(A2 * B1 * B2 * !C1 * X)	0.00138	0.00139	0.00138
	(A2 * B1 * B2 * !C1 * X)	-0.00155	-0.00165	-0.00164
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00140	0.00139	0.00138
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00150	-0.00162	-0.00161
	(A2 * !B1 * C1 * C2 * X)	0.00140	0.00139	0.00138
	(A2 * !B1 * C1 * C2 * X)	-0.00150	-0.00162	-0.00161
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00133	0.00133	0.00133
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00169	-0.00169	-0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00133	0.00134	0.00133
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00168	-0.00168	-0.00168
	(!A2 * B1 * B2 * !C1 * X)	0.00133	0.00134	0.00133
	(!A2 * B1 * B2 * !C1 * X)	-0.00168	-0.00168	-0.00168
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00133	0.00134	0.00133
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00168	-0.00169	-0.00168
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00044	0.00044	0.00043
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00197	-0.00199	-0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	0.00044	0.00044	0.00043
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00197	-0.00199	-0.00200
	(!A2 * !B1 * C1 * C2 * X)	0.00132	0.00133	0.00133
	(!A2 * !B1 * C1 * C2 * X)	-0.00167	-0.00169	-0.00168
	(!A2 * !B1 * C1 * !C2 * !X)	0.00044	0.00044	0.00043
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00197	-0.00199	-0.00200
	(!A2 * !B1 * !C1 * !X)	0.00044	0.00044	0.00043
	(!A2 * !B1 * !C1 * !X)	-0.00197	-0.00199	-0.00200

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00149	0.00148	0.00148
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00158	-0.00163	-0.00163
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00150	0.00148	0.00149
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00156	-0.00163	-0.00163
	(A2 * B1 * B2 * !C1 * X)	0.00150	0.00148	0.00149
	(A2 * B1 * B2 * !C1 * X)	-0.00156	-0.00163	-0.00163
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00150	0.00148	0.00149
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00147	-0.00160	-0.00160
	(A2 * !B1 * C1 * C2 * X)	0.00152	0.00148	0.00149
	(A2 * !B1 * C1 * C2 * X)	-0.00148	-0.00160	-0.00160
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00144	0.00145	0.00144
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00166	-0.00166	-0.00166
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00146	0.00146	0.00146
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00166	-0.00166	-0.00165
	(!A2 * B1 * B2 * !C1 * X)	0.00145	0.00145	0.00144
	(!A2 * B1 * B2 * !C1 * X)	-0.00165	-0.00166	-0.00165
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00145	0.00145	0.00145
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00051	0.00051	0.00048
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00202	-0.00204	-0.00207
	(!A2 * B1 * !B2 * !C1 * !X)	0.00051	0.00051	0.00048
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00202	-0.00204	-0.00207
	(!A2 * !B1 * C1 * C2 * X)	0.00144	0.00145	0.00144
	(!A2 * !B1 * C1 * C2 * X)	-0.00167	-0.00167	-0.00167
	(!A2 * !B1 * C1 * !C2 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00201	-0.00204	-0.00207
	(!A2 * !B1 * !C1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !C1 * !X)	-0.00201	-0.00204	-0.00207

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A2 * B1 * B2 * C1 * C2 * X)	-0.00137	-0.00138	-0.00138
	(A2 * B1 * B2 * C1 * C2 * X)	0.00163	0.00166	0.00164
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00137	-0.00138	-0.00138
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00163	0.00166	0.00164
	(A2 * B1 * B2 * !C1 * X)	-0.00137	-0.00138	-0.00138
	(A2 * B1 * B2 * !C1 * X)	0.00163	0.00166	0.00164
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00138	-0.00139	-0.00138
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00160	0.00163	0.00161
	(A2 * !B1 * C1 * C2 * X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * C1 * C2 * X)	0.00160	0.00163	0.00161
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00169	0.00170	0.00169
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00129	-0.00132	-0.00133
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00169	0.00168	0.00169
	(!A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00132	-0.00133
	(!A2 * B1 * B2 * !C1 * X)	0.00168	0.00168	0.00169
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00169	0.00170	0.00169
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00200	0.00201	0.00200
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * B1 * !B2 * !C1 * !X)	0.00200	0.00201	0.00200
	(!A2 * !B1 * C1 * C2 * X)	-0.00129	-0.00133	-0.00133
	(!A2 * !B1 * C1 * C2 * X)	0.00169	0.00170	0.00169
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * C1 * !C2 * !X)	0.00200	0.00201	0.00200
	(!A2 * !B1 * !C1 * !X)	-0.00043	-0.00042	-0.00042
	(!A2 * !B1 * !C1 * !X)	0.00200	0.00201	0.00200

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00148	-0.00148	-0.00148
	(A2 * B1 * B2 * C1 * C2 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00148	-0.00148	-0.00148
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * B2 * !C1 * X)	-0.00148	-0.00148	-0.00148
	(A2 * B1 * B2 * !C1 * X)	0.00163	0.00164	0.00163
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00148	-0.00148	-0.00148
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00159	0.00160	0.00160
	(A2 * !B1 * C1 * C2 * X)	-0.00148	-0.00148	-0.00148
	(A2 * !B1 * C1 * C2 * X)	0.00159	0.00160	0.00160
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00139	-0.00145	-0.00144
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00166	0.00167	0.00166
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00138	-0.00144	-0.00145
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00166	0.00167	0.00166
	(!A2 * B1 * B2 * !C1 * X)	-0.00138	-0.00144	-0.00144
	(!A2 * B1 * B2 * !C1 * X)	0.00165	0.00167	0.00166
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00137	-0.00144	-0.00144
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00167	0.00169	0.00168
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00208	0.00209	0.00208
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * B1 * !B2 * !C1 * !X)	0.00208	0.00209	0.00208
	(!A2 * !B1 * C1 * C2 * X)	-0.00137	-0.00144	-0.00144
	(!A2 * !B1 * C1 * C2 * X)	0.00167	0.00169	0.00168
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * C1 * !C2 * !X)	0.00208	0.00209	0.00208
	(!A2 * !B1 * !C1 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * !C1 * !X)	0.00208	0.00209	0.00208

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)	0.00154	0.00155	0.00154
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00151	-0.00160	-0.00159
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00155	0.00155	0.00154
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00150	-0.00160	-0.00159
	(A1 * B1 * B2 * !C1 * X)	0.00155	0.00155	0.00154
	(A1 * B1 * B2 * !C1 * X)	-0.00150	-0.00160	-0.00159
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00157	0.00156	0.00155
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00146	-0.00157	-0.00156
	(A1 * !B1 * C1 * C2 * X)	0.00157	0.00156	0.00155
	(A1 * !B1 * C1 * C2 * X)	-0.00146	-0.00157	-0.00156
	(!A1 * B1 * B2 * X)	0.00149	0.00151	0.00149
	(!A1 * B1 * B2 * X)	-0.00161	-0.00163	-0.00162
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00149	0.00151	0.00150
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00161	-0.00163	-0.00162
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * C1 * !C2 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00184	-0.00185	-0.00184

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00144	0.00145	0.00145
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00157	-0.00165	-0.00164
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00145	0.00145	0.00145
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00156	-0.00164	-0.00164
	(A1 * B1 * B2 * !C1 * X)	0.00145	0.00145	0.00145
	(A1 * B1 * B2 * !C1 * X)	-0.00156	-0.00164	-0.00164
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00147	0.00146	0.00145
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00148	-0.00161	-0.00160
	(A1 * !B1 * C1 * C2 * X)	0.00147	0.00146	0.00145
	(A1 * !B1 * C1 * C2 * X)	-0.00149	-0.00161	-0.00160
	(!A1 * B1 * B2 * X)	0.00139	0.00140	0.00140
	(!A1 * B1 * B2 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00140	0.00141	0.00140
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00165	-0.00166	-0.00166
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00139	0.00140	0.00139
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00166	-0.00167	-0.00167
	(!A1 * B1 * !B2 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00166	-0.00167	-0.00167
	(!A1 * !B1 * C1 * !C2 * !X)	0.00139	0.00140	0.00139
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00166	-0.00167	-0.00167
	(!A1 * !B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A1 * !B1 * !C1 * !X)	-0.00166	-0.00167	-0.00167

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00154	-0.00155	-0.00154
	(A1 * B1 * B2 * C1 * C2 * X)	0.00158	0.00160	0.00159
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00154	-0.00155	-0.00154
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00158	0.00160	0.00159
	(A1 * B1 * B2 * !C1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * B1 * B2 * !C1 * X)	0.00158	0.00160	0.00159
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00154	-0.00155	-0.00154
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00155	0.00157	0.00156
	(A1 * !B1 * C1 * C2 * X)	-0.00154	-0.00155	-0.00154
	(A1 * !B1 * C1 * C2 * X)	0.00155	0.00157	0.00156
	(!A1 * B1 * B2 * X)	-0.00146	-0.00149	-0.00149
	(!A1 * B1 * B2 * X)	0.00163	0.00163	0.00163
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00146	-0.00149	-0.00150
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00163	0.00163	0.00163
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00119	-0.00126	-0.00127
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00191	0.00186	0.00185
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00191	0.00187	0.00185
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00127	-0.00127
	(!A1 * !B1 * C1 * !C2 * !X)	0.00191	0.00187	0.00185
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00191	0.00187	0.00185

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00144	-0.00145	-0.00144
	(A1 * B1 * B2 * C1 * C2 * X)	0.00164	0.00165	0.00164
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00145	-0.00145	-0.00144
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00164	0.00165	0.00164
	(A1 * B1 * B2 * !C1 * X)	-0.00145	-0.00145	-0.00144
	(A1 * B1 * B2 * !C1 * X)	0.00164	0.00165	0.00164
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00144	-0.00145	-0.00145
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00159	0.00161	0.00160
	(A1 * !B1 * C1 * C2 * X)	-0.00144	-0.00145	-0.00145
	(A1 * !B1 * C1 * C2 * X)	0.00159	0.00161	0.00160
	(!A1 * B1 * B2 * X)	-0.00134	-0.00140	-0.00140
	(!A1 * B1 * B2 * X)	0.00165	0.00167	0.00166
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00134	-0.00140	-0.00140
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00165	0.00167	0.00167
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00170	0.00169	0.00167
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * B1 * !B2 * !C1 * !X)	0.00170	0.00169	0.00167
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * !B1 * C1 * !C2 * !X)	0.00170	0.00168	0.00167
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00140	-0.00139
	(!A1 * !B1 * !C1 * !X)	0.00170	0.00168	0.00167

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)**	0.00144	0.00147	0.00145
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00120	-0.00121	-0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00144	0.00145	0.00144
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * B2 * !C1 * X)	0.00144	0.00145	0.00144
	(A1 * A2 * B2 * !C1 * X)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00139	0.00139	0.00139
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00117	-0.00117	-0.00116
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00099	-0.00099	-0.00099
	(A1 * A2 * !B2 * !C1 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * !B2 * !C1 * X)	-0.00099	-0.00099	-0.00099
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00159	0.00144	0.00143
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00148	-0.00170	-0.00171
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00137	0.00137	0.00137
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00173	-0.00174	-0.00174
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00046	0.00046	0.00045
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00206	-0.00207	-0.00208
	(A1 * !A2 * !B2 * !C1 * !X)	0.00046	0.00046	0.00045
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00208
	(!A1 * B2 * C1 * C2 * X)	0.00159	0.00144	0.00143
	(!A1 * B2 * C1 * C2 * X)	-0.00148	-0.00170	-0.00171
	(!A1 * !B2 * C1 * C2 * X)	0.00139	0.00140	0.00139
	(!A1 * !B2 * C1 * C2 * X)	-0.00174	-0.00175	-0.00174
	(!A1 * !B2 * C1 * !C2 * !X)	0.00046	0.00046	0.00045
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00206	-0.00207	-0.00208
	(!A1 * !B2 * !C1 * !X)	0.00046	0.00046	0.00045
	(!A1 * !B2 * !C1 * !X)	-0.00206	-0.00207	-0.00208

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00141	0.00143	0.00141
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00112	-0.00114	-0.00113
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00139	0.00140	0.00139
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B2 * !C1 * X)	0.00139	0.00140	0.00139
	(A1 * A2 * B2 * !C1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00135	0.00136	0.00136
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B2 * !C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B2 * !C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00163	0.00140	0.00138
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00131	-0.00159	-0.00160
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00163	-0.00164	-0.00164
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00043	0.00043	0.00042
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00191	-0.00192	-0.00194
	(A1 * !A2 * !B2 * !C1 * !X)	0.00043	0.00043	0.00042
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00191	-0.00192	-0.00194
	(!A1 * B2 * C1 * C2 * X)	0.00162	0.00140	0.00138
	(!A1 * B2 * C1 * C2 * X)	-0.00133	-0.00158	-0.00160
	(!A1 * !B2 * C1 * C2 * X)	0.00133	0.00133	0.00134
	(!A1 * !B2 * C1 * C2 * X)	-0.00163	-0.00163	-0.00164
	(!A1 * !B2 * C1 * !C2 * !X)	0.00044	0.00045	0.00044
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00191	-0.00192	-0.00193
	(!A1 * !B2 * !C1 * !X)	0.00044	0.00045	0.00044
	(!A1 * !B2 * !C1 * !X)	-0.00191	-0.00192	-0.00193

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)	-0.00144	-0.00145	-0.00144
	(A1 * A2 * B2 * C1 * C2 * X)	0.00120	0.00121	0.00121
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00104	0.00104	0.00105
	(A1 * A2 * B2 * !C1 * X)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B2 * !C1 * X)	0.00104	0.00104	0.00105
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00136	-0.00139	-0.00139
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00117	0.00117	0.00116
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00134	-0.00138	-0.00138
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00099	0.00099	0.00099
	(A1 * A2 * !B2 * !C1 * X)	-0.00134	-0.00139	-0.00138
	(A1 * A2 * !B2 * !C1 * X)	0.00099	0.00100	0.00099
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00142	-0.00143	-0.00142
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00169	0.00171	0.00171
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00133	-0.00137	-0.00137
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00174	0.00176	0.00175
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00044	-0.00044	-0.00044
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00209	0.00210	0.00208
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(A1 * !A2 * !B2 * !C1 * !X)	0.00209	0.00210	0.00208
	(!A1 * B2 * C1 * C2 * X)	-0.00142	-0.00143	-0.00142
	(!A1 * B2 * C1 * C2 * X)	0.00169	0.00171	0.00171
	(!A1 * !B2 * C1 * C2 * X)	-0.00133	-0.00138	-0.00138
	(!A1 * !B2 * C1 * C2 * X)	0.00174	0.00177	0.00175
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !B2 * C1 * !C2 * !X)	0.00209	0.00210	0.00208
	(!A1 * !B2 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !B2 * !C1 * !X)	0.00209	0.00210	0.00208

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00140	-0.00141	-0.00140
	(A1 * A2 * B2 * C1 * C2 * X)	0.00112	0.00114	0.00113
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00134	-0.00135	-0.00135
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00096	0.00097	0.00095
	(A1 * A2 * B2 * !C1 * X)	-0.00134	-0.00135	-0.00135
	(A1 * A2 * B2 * !C1 * X)	0.00096	0.00097	0.00095
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00131	-0.00135	-0.00135
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00108	0.00108	0.00107
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00130	-0.00134	-0.00133
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * !B2 * !C1 * X)	-0.00130	-0.00134	-0.00133
	(A1 * A2 * !B2 * !C1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00159	0.00160	0.00160
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00128	-0.00132	-0.00132
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00164	0.00165	0.00164
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00042	-0.00042	-0.00041
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00194	0.00195	0.00194
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00042	-0.00042	-0.00042
	(A1 * !A2 * !B2 * !C1 * !X)	0.00194	0.00195	0.00194
	(!A1 * B2 * C1 * C2 * X)	-0.00138	-0.00138	-0.00138
	(!A1 * B2 * C1 * C2 * X)	0.00159	0.00160	0.00160
	(!A1 * !B2 * C1 * C2 * X)	-0.00128	-0.00132	-0.00133
	(!A1 * !B2 * C1 * C2 * X)	0.00165	0.00164	0.00164
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !B2 * C1 * !C2 * !X)	0.00194	0.00195	0.00194
	(!A1 * !B2 * !C1 * !X)	-0.00043	-0.00043	-0.00043
	(!A1 * !B2 * !C1 * !X)	0.00194	0.00195	0.00194

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)	0.00140	0.00141	0.00139
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00114	-0.00115	-0.00115
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00139	0.00140	0.00138
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * B1 * !C1 * X)	0.00139	0.00140	0.00138
	(A1 * A2 * B1 * !C1 * X)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00133	0.00135	0.00133
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00111	-0.00111	-0.00110
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00092	-0.00093	-0.00093
	(A1 * A2 * !B1 * !C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * !C1 * X)	-0.00092	-0.00093	-0.00093
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00154	0.00139	0.00138
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00140	-0.00161	-0.00162
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00133	0.00133	0.00133
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00166	-0.00166	-0.00165
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00127	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00172	-0.00172	-0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	0.00127	0.00127	0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00172	-0.00172	-0.00171
	(!A1 * B1 * C1 * C2 * X)	0.00154	0.00139	0.00138
	(!A1 * B1 * C1 * C2 * X)	-0.00140	-0.00161	-0.00162
	(!A1 * !B1 * C1 * !C2 * !X)	0.00127	0.00127	0.00126
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00172	-0.00172	-0.00171
	(!A1 * !B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !B1 * !C1 * !X)	-0.00172	-0.00172	-0.00171

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	0.00142	0.00145	0.00143
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00113	-0.00114	-0.00113
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00142	0.00142	0.00141
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * B1 * !C1 * X)	0.00142	0.00142	0.00141
	(A1 * A2 * B1 * !C1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00137	0.00138	0.00138
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00108	-0.00108	-0.00107
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00135	0.00138	0.00135
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00090	-0.00091	-0.00091
	(A1 * A2 * !B1 * !C1 * X)	0.00135	0.00138	0.00135
	(A1 * A2 * !B1 * !C1 * X)	-0.00090	-0.00091	-0.00091
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00161	0.00141	0.00140
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00133	-0.00158	-0.00160
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00134	0.00134	0.00134
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00163	-0.00164	-0.00163
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00129	0.00132	0.00130
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00163	-0.00165	-0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00132	0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * B1 * C1 * C2 * X)	0.00163	0.00141	0.00140
	(!A1 * B1 * C1 * C2 * X)	-0.00131	-0.00159	-0.00160
	(!A1 * !B1 * C1 * !C2 * !X)	0.00134	0.00134	0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * !B1 * !C1 * !X)	0.00134	0.00136	0.00134
	(!A1 * !B1 * !C1 * !X)	-0.00163	-0.00164	-0.00163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	(A1 * A2 * B1 * C1 * C2 * X)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * B1 * C1 * C2 * X)	0.00114	0.00115	0.00115
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00097	0.00098	0.00098
	(A1 * A2 * B1 * !C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B1 * !C1 * X)	0.00097	0.00098	0.00098
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00130	-0.00135	-0.00133
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00111	0.00111	0.00110
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00130	-0.00134	-0.00133
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00093	0.00093	0.00093
	(A1 * A2 * !B1 * !C1 * X)	-0.00130	-0.00134	-0.00133
	(A1 * A2 * !B1 * !C1 * X)	0.00093	0.00093	0.00093
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00138	-0.00138	-0.00137
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00163	0.00163	0.00162
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00129	-0.00132	-0.00133
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00166	0.00168	0.00166
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00126	-0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00178	0.00173	0.00172
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	0.00178	0.00173	0.00172
	(!A1 * B1 * C1 * C2 * X)	-0.00138	-0.00138	-0.00137
	(!A1 * B1 * C1 * C2 * X)	0.00163	0.00163	0.00162
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00119	-0.00126	-0.00126
	(!A1 * !B1 * C1 * !C2 * !X)	0.00178	0.00173	0.00172
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00126	-0.00126
	(!A1 * !B1 * !C1 * !X)	0.00178	0.00173	0.00172

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00141	-0.00142	-0.00142
	(A1 * A2 * B1 * C1 * C2 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00135	-0.00136	-0.00136
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00097	0.00097	0.00096
	(A1 * A2 * B1 * !C1 * X)	-0.00135	-0.00136	-0.00136
	(A1 * A2 * B1 * !C1 * X)	0.00097	0.00097	0.00096
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00133	-0.00137	-0.00137
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00108	0.00108	0.00107
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00132	-0.00135	-0.00135
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00091	0.00091	0.00091
	(A1 * A2 * !B1 * !C1 * X)	-0.00132	-0.00135	-0.00135
	(A1 * A2 * !B1 * !C1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00139	-0.00140	-0.00139
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00159	0.00161	0.00160
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00130	-0.00134	-0.00134
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00163	0.00165	0.00164
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00122	-0.00132	-0.00130
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00170	0.00165	0.00164
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00122	-0.00132	-0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	0.00170	0.00165	0.00164
	(!A1 * B1 * C1 * C2 * X)	-0.00139	-0.00140	-0.00139
	(!A1 * B1 * C1 * C2 * X)	0.00158	0.00160	0.00160
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00127	-0.00134	-0.00134
	(!A1 * !B1 * C1 * !C2 * !X)	0.00171	0.00165	0.00164
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00134	-0.00134
	(!A1 * !B1 * !C1 * !X)	0.00171	0.00165	0.00164

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)	0.00166	0.00167	0.00166
	(A1 * B1 * B2 * C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * B1 * B2 * !C2 * X)	0.00161	0.00163	0.00161
	(A1 * B1 * B2 * !C2 * X)	-0.00087	-0.00087	-0.00087
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00166	0.00167	0.00166
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00160	0.00161	0.00160
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * C2 * X)	0.00166	0.00167	0.00166
	(A1 * A2 * !B1 * C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * A2 * !B1 * !C2 * X)	0.00160	0.00161	0.00160
	(A1 * A2 * !B1 * !C2 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00049	0.00049	0.00048
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00209	-0.00209	-0.00211
	(A1 * !A2 * !B1 * !C2 * !X)	0.00049	0.00049	0.00048
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00209	-0.00209	-0.00211
	(!A1 * B1 * B2 * C2 * X)	0.00166	0.00167	0.00166
	(!A1 * B1 * B2 * C2 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * B2 * !C2 * X)	0.00160	0.00162	0.00160
	(!A1 * B1 * B2 * !C2 * X)	-0.00087	-0.00088	-0.00087
	(!A1 * B1 * !B2 * !C2 * !X)	0.00049	0.00049	0.00048
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00209	-0.00209	-0.00211
	(!A1 * !B1 * !C2 * !X)	0.00049	0.00049	0.00048
	(!A1 * !B1 * !C2 * !X)	-0.00209	-0.00209	-0.00211

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00162	0.00163	0.00162
	(A1 * B1 * B2 * C2 * X)	-0.00082	-0.00082	-0.00081
	(A1 * B1 * B2 * !C2 * X)	0.00156	0.00157	0.00156
	(A1 * B1 * B2 * !C2 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00082	-0.00082	-0.00081
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00157	0.00158	0.00158
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00081	-0.00082	-0.00081
	(A1 * A2 * !B1 * C2 * X)	0.00162	0.00163	0.00162
	(A1 * A2 * !B1 * C2 * X)	-0.00082	-0.00082	-0.00081
	(A1 * A2 * !B1 * !C2 * X)	0.00157	0.00158	0.00158
	(A1 * A2 * !B1 * !C2 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00048	0.00048	0.00047
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00198	-0.00198	-0.00200
	(A1 * !A2 * !B1 * !C2 * !X)	0.00048	0.00048	0.00047
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00198	-0.00199	-0.00200
	(!A1 * B1 * B2 * C2 * X)	0.00162	0.00163	0.00162
	(!A1 * B1 * B2 * C2 * X)	-0.00082	-0.00082	-0.00081
	(!A1 * B1 * B2 * !C2 * X)	0.00156	0.00157	0.00156
	(!A1 * B1 * B2 * !C2 * X)	-0.00081	-0.00081	-0.00081
	(!A1 * B1 * !B2 * !C2 * !X)	0.00048	0.00048	0.00047
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00198	-0.00199	-0.00200
	(!A1 * !B1 * !C2 * !X)	0.00048	0.00048	0.00047
	(!A1 * !B1 * !C2 * !X)	-0.00198	-0.00198	-0.00200

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)**	-0.00153	-0.00154	-0.00165
	(A1 * B1 * B2 * C2 * X)	0.00099	0.00099	0.00090
	(A1 * B1 * B2 * !C2 * X)	-0.00157	-0.00161	-0.00161
	(A1 * B1 * B2 * !C2 * X)	0.00087	0.00087	0.00087
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00141	-0.00142	-0.00162
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00107	0.00106	0.00092
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00157	-0.00161	-0.00160
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00087	0.00088	0.00087
	(A1 * A2 * !B1 * C2 * X)	-0.00141	-0.00142	-0.00162
	(A1 * A2 * !B1 * C2 * X)	0.00107	0.00106	0.00092
	(A1 * A2 * !B1 * !C2 * X)	-0.00157	-0.00161	-0.00160
	(A1 * A2 * !B1 * !C2 * X)	0.00087	0.00088	0.00087
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00211	0.00213	0.00211
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(A1 * !A2 * !B1 * !C2 * !X)	0.00211	0.00213	0.00211
	(!A1 * B1 * B2 * C2 * X)	-0.00153	-0.00154	-0.00165
	(!A1 * B1 * B2 * C2 * X)	0.00099	0.00099	0.00090
	(!A1 * B1 * B2 * !C2 * X)	-0.00157	-0.00162	-0.00160
	(!A1 * B1 * B2 * !C2 * X)	0.00087	0.00088	0.00087
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * B1 * !B2 * !C2 * !X)	0.00211	0.00213	0.00211
	(!A1 * !B1 * !C2 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !B1 * !C2 * !X)	0.00211	0.00213	0.00211

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00152	-0.00153	-0.00161
	(A1 * B1 * B2 * C2 * X)	0.00090	0.00090	0.00083
	(A1 * B1 * B2 * !C2 * X)	-0.00153	-0.00157	-0.00156
	(A1 * B1 * B2 * !C2 * X)	0.00081	0.00082	0.00081
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00139	-0.00140	-0.00157
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00100	0.00100	0.00086
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00153	-0.00158	-0.00157
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00082	0.00082	0.00081
	(A1 * A2 * !B1 * C2 * X)	-0.00139	-0.00140	-0.00157
	(A1 * A2 * !B1 * C2 * X)	0.00100	0.00100	0.00086
	(A1 * A2 * !B1 * !C2 * X)	-0.00153	-0.00158	-0.00157
	(A1 * A2 * !B1 * !C2 * X)	0.00082	0.00082	0.00081
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00201	0.00202	0.00201
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00046	-0.00047	-0.00046
	(A1 * !A2 * !B1 * !C2 * !X)	0.00201	0.00201	0.00201
	(!A1 * B1 * B2 * C2 * X)	-0.00152	-0.00153	-0.00161
	(!A1 * B1 * B2 * C2 * X)	0.00090	0.00090	0.00083
	(!A1 * B1 * B2 * !C2 * X)	-0.00153	-0.00156	-0.00156
	(!A1 * B1 * B2 * !C2 * X)	0.00082	0.00081	0.00081
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * B1 * !B2 * !C2 * !X)	0.00201	0.00201	0.00201
	(!A1 * !B1 * !C2 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !B1 * !C2 * !X)	0.00201	0.00201	0.00201

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)**	0.00167	0.00167	0.00166
	(A1 * B1 * B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * B2 * !C1 * X)	0.00160	0.00162	0.00161
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00167	0.00167	0.00166
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00160	0.00162	0.00161
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * A2 * !B1 * C1 * X)	0.00167	0.00167	0.00166
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00160	0.00162	0.00161
	(A1 * A2 * !B1 * !C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00129	0.00131	0.00129
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00185	-0.00184
	(A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00131	0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00183	-0.00185	-0.00184
	(!A1 * B1 * B2 * C1 * X)	0.00167	0.00167	0.00166
	(!A1 * B1 * B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(!A1 * B1 * B2 * !C1 * X)	0.00160	0.00162	0.00161
	(!A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00129	0.00131	0.00129
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00185	-0.00184
	(!A1 * !B1 * !C1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !B1 * !C1 * !X)	-0.00183	-0.00185	-0.00184

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00172	0.00173	0.00171
	(A1 * B1 * B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * B1 * B2 * !C1 * X)	0.00166	0.00168	0.00166
	(A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00083	-0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00172	0.00173	0.00171
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00166	0.00168	0.00166
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * A2 * !B1 * C1 * X)	0.00172	0.00173	0.00171
	(A1 * A2 * !B1 * C1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * !C1 * X)	0.00166	0.00168	0.00166
	(A1 * A2 * !B1 * !C1 * X)	-0.00083	-0.00084	-0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00126	0.00127	0.00127
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00191	-0.00192	-0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	0.00126	0.00128	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00191	-0.00192	-0.00192
	(!A1 * B1 * B2 * C1 * X)	0.00172	0.00173	0.00171
	(!A1 * B1 * B2 * C1 * X)	-0.00084	-0.00084	-0.00084
	(!A1 * B1 * B2 * !C1 * X)	0.00166	0.00168	0.00166
	(!A1 * B1 * B2 * !C1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00129	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00192	-0.00193	-0.00192
	(!A1 * !B1 * !C1 * !X)	0.00126	0.00127	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00191	-0.00192	-0.00192

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)**	-0.00153	-0.00154	-0.00165
	(A1 * B1 * B2 * C1 * X)	0.00095	0.00095	0.00086
	(A1 * B1 * B2 * !C1 * X)	-0.00158	-0.00161	-0.00161
	(A1 * B1 * B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00140	-0.00142	-0.00161
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00103	0.00103	0.00088
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00158	-0.00161	-0.00161
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * A2 * !B1 * C1 * X)	-0.00140	-0.00142	-0.00161
	(A1 * A2 * !B1 * C1 * X)	0.00103	0.00103	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00158	-0.00161	-0.00161
	(A1 * A2 * !B1 * !C1 * X)	0.00083	0.00083	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00129	-0.00129
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00190	0.00185	0.00184
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00122	-0.00129	-0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	0.00190	0.00185	0.00184
	(!A1 * B1 * B2 * C1 * X)	-0.00153	-0.00154	-0.00165
	(!A1 * B1 * B2 * C1 * X)	0.00095	0.00095	0.00086
	(!A1 * B1 * B2 * !C1 * X)	-0.00158	-0.00161	-0.00161
	(!A1 * B1 * B2 * !C1 * X)	0.00084	0.00083	0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00129	-0.00129
	(!A1 * B1 * !B2 * !C1 * !X)	0.00190	0.00185	0.00184
	(!A1 * !B1 * !C1 * !X)	-0.00122	-0.00129	-0.00129
	(!A1 * !B1 * !C1 * !X)	0.00190	0.00185	0.00184

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00161	-0.00162	-0.00170
	(A1 * B1 * B2 * C1 * X)	0.00092	0.00092	0.00085
	(A1 * B1 * B2 * !C1 * X)	-0.00163	-0.00166	-0.00166
	(A1 * B1 * B2 * !C1 * X)	0.00084	0.00083	0.00083
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00148	-0.00149	-0.00167
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00102	0.00102	0.00088
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00163	-0.00166	-0.00166
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00084	0.00084	0.00083
	(A1 * A2 * !B1 * C1 * X)	-0.00148	-0.00149	-0.00167
	(A1 * A2 * !B1 * C1 * X)	0.00102	0.00102	0.00088
	(A1 * A2 * !B1 * !C1 * X)	-0.00163	-0.00166	-0.00166
	(A1 * A2 * !B1 * !C1 * X)	0.00084	0.00084	0.00083
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00198	0.00194	0.00192
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00198	0.00194	0.00192
	(!A1 * B1 * B2 * C1 * X)	-0.00161	-0.00162	-0.00170
	(!A1 * B1 * B2 * C1 * X)	0.00093	0.00092	0.00085
	(!A1 * B1 * B2 * !C1 * X)	-0.00163	-0.00166	-0.00166
	(!A1 * B1 * B2 * !C1 * X)	0.00084	0.00084	0.00083
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00198	0.00194	0.00192
	(!A1 * !B1 * !C1 * !X)	-0.00119	-0.00127	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00198	0.00194	0.00192

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22oi_1	9.59040
sky130_fd_sc_hs__a22oi_2	15.98400
sky130_fd_sc_hs__a22oi_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__a22oi_1	0.00262	0.00260	0.00272	0.00274	0.66909
sky130_fd_sc_hs__a22oi_2	0.00576	0.00502	0.00549	0.00498	1.17055
sky130_fd_sc_hs__a22oi_4	0.01003	0.00988	0.01014	0.00997	2.13122

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22oi_1	0.00000	0.03332	0.12588
sky130_fd_sc_hs__a22oi_2	0.00000	0.06664	0.25175
sky130_fd_sc_hs__a22oi_4	0.00000	0.13329	0.50351

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)	0.07807	0.86502	10.36630
	A2->Y (FR)	0.09195	0.88415	10.43270
	B1->Y (FR)	0.05675	0.84686	10.47810
	B2->Y (FR)	0.07110	0.87424	10.64620
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.08292	0.74369	10.06830
	A2->Y (FR)	0.10056	0.77673	10.32610
	B1->Y (FR)	0.05867	0.73994	10.36670
	B2->Y (FR)	0.07808	0.77678	10.70100
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.07748	0.63730	9.83055
	A2->Y (FR)	0.09811	0.66968	10.09220
	B1->Y (FR)	0.05519	0.64175	10.19220
	B2->Y (FR)	0.07661	0.68138	10.57500

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.02306	0.30202	3.42481
	A2->Y (RF)	0.02609	0.28476	3.16703
	B1->Y (RF)	0.01688	0.29548	3.48231
	B2->Y (RF)	0.01990	0.28132	3.26114
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.02402	0.25258	3.30493
	A2->Y (RF)	0.02711	0.24407	3.12965
	B1->Y (RF)	0.01584	0.23421	3.29093
	B2->Y (RF)	0.02052	0.23014	3.10662
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.02501	0.23241	3.61951
	A2->Y (RF)	0.02822	0.19696	2.98256
	B1->Y (RF)	0.01625	0.21688	3.62905
	B2->Y (RF)	0.01973	0.17984	2.94697

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00031	-0.00031	0.00817
	A1	0.00614	0.00615	0.01468
	A2	0.00017	0.00017	0.00876
	A2	0.00778	0.00763	0.01641
	B1	-0.00041	0.00066	0.01926
	B1	0.00409	0.00517	0.02382
	B2	-0.00008	0.00087	0.01900
	B2	0.00558	0.00656	0.02480
sky130_fd_sc_hs__a22oi_2	A1	-0.00018	-0.00016	0.01703
	A1	0.01342	0.01332	0.03072
	A2	0.00106	0.00105	0.01859
	A2	0.01614	0.01612	0.03378
	B1	-0.00056	0.00281	0.03949
	B1	0.00885	0.01223	0.04905
	B2	0.00108	0.00438	0.03925
	B2	0.01220	0.01529	0.05052
sky130_fd_sc_hs__a22oi_4	A1	-0.00201	-0.00180	0.03071
	A1	0.02359	0.02386	0.05661
	A2	0.00057	0.00070	0.03394
	A2	0.03058	0.03073	0.06404
	B1	-0.00250	0.00245	0.06692
	B1	0.01511	0.02001	0.08501
	B2	0.00031	0.00465	0.06951
	B2	0.02221	0.02635	0.09162

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00880	0.00899	0.01617
	A1	0.00244	0.00265	0.00973
	A2	0.00996	0.01004	0.01564
	A2	0.00239	0.00243	0.00807
	B1	0.00431	0.00472	0.01188
	B1	-0.00018	0.00020	0.00711
	B2	0.00557	0.00579	0.01139
	B2	-0.00014	0.00004	0.00547
sky130_fd_sc_hs__a22oi_2	A1	0.01775	0.01815	0.03273
	A1	0.00433	0.00474	0.01892
	A2	0.01937	0.01953	0.03077
	A2	0.00439	0.00449	0.01560
	B1	0.00922	0.01014	0.02511
	B1	-0.00015	0.00070	0.01531
	B2	0.01119	0.01163	0.02324
	B2	-0.00003	0.00038	0.01184
sky130_fd_sc_hs__a22oi_4	A1	0.03350	0.03450	0.06133
	A1	0.00826	0.00921	0.03531
	A2	0.03799	0.03835	0.06128
	A2	0.00815	0.00838	0.03107
	B1	0.01676	0.01869	0.04510
	B1	-0.00082	0.00103	0.02646
	B2	0.02156	0.02253	0.04468
	B2	-0.00058	0.00027	0.02226

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)	0.00163	0.00153	0.00152
	(A2 * B1 * B2 * !Y)	-0.00159	-0.00176	-0.00175
	(!A2 * B1 * B2 * !Y)	0.00147	0.00149	0.00148
	(!A2 * B1 * B2 * !Y)	-0.00178	-0.00180	-0.00179
	(!A2 * B1 * !B2 * Y)	0.00049	0.00050	0.00048
	(!A2 * B1 * !B2 * Y)	-0.00206	-0.00209	-0.00210
	(!A2 * !B1 * Y)	0.00050	0.00050	0.00048
	(!A2 * !B1 * Y)	-0.00207	-0.00207	-0.00210
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00371	0.00337	0.00332
	(A2 * B1 * B2 * !Y)	-0.00324	-0.00375	-0.00375
	(!A2 * B1 * B2 * !Y)	0.00317	0.00321	0.00318
	(!A2 * B1 * B2 * !Y)	-0.00384	-0.00387	-0.00385
	(!A2 * B1 * !B2 * Y)	0.00100	0.00100	0.00097
	(!A2 * B1 * !B2 * Y)	-0.00468	-0.00470	-0.00474
	(!A2 * !B1 * Y)	0.00100	0.00100	0.00097
	(!A2 * !B1 * Y)	-0.00469	-0.00470	-0.00474
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00677	0.00624	0.00616
	(A2 * B1 * B2 * !Y)	-0.00620	-0.00711	-0.00710
	(!A2 * B1 * B2 * !Y)	0.00587	0.00592	0.00589
	(!A2 * B1 * B2 * !Y)	-0.00727	-0.00729	-0.00726
	(!A2 * B1 * !B2 * Y)	0.00189	0.00189	0.00182
	(!A2 * B1 * !B2 * Y)	-0.00852	-0.00856	-0.00866
	(!A2 * !B1 * Y)	0.00189	0.00189	0.00183
	(!A2 * !B1 * Y)	-0.00852	-0.00855	-0.00866

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)	-0.00152	-0.00152	-0.00152
	(A2 * B1 * B2 * !Y)	0.00175	0.00176	0.00175
	(!A2 * B1 * B2 * !Y)	-0.00141	-0.00146	-0.00147
	(!A2 * B1 * B2 * !Y)	0.00180	0.00180	0.00180
	(!A2 * B1 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(!A2 * B1 * !B2 * Y)	0.00210	0.00212	0.00210
	(!A2 * !B1 * Y)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * Y)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00331	-0.00333	-0.00331
	(A2 * B1 * B2 * !Y)	0.00373	0.00378	0.00375
	(!A2 * B1 * B2 * !Y)	-0.00308	-0.00321	-0.00318
	(!A2 * B1 * B2 * !Y)	0.00387	0.00390	0.00386
	(!A2 * B1 * !B2 * Y)	-0.00096	-0.00097	-0.00095
	(!A2 * B1 * !B2 * Y)	0.00475	0.00482	0.00475
	(!A2 * !B1 * Y)	-0.00096	-0.00097	-0.00095
	(!A2 * !B1 * Y)	0.00475	0.00482	0.00474
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00615	-0.00615	-0.00614
	(A2 * B1 * B2 * !Y)	0.00710	0.00712	0.00710
	(!A2 * B1 * B2 * !Y)	-0.00562	-0.00592	-0.00589
	(!A2 * B1 * B2 * !Y)	0.00729	0.00732	0.00729
	(!A2 * B1 * !B2 * Y)	-0.00179	-0.00182	-0.00178
	(!A2 * B1 * !B2 * Y)	0.00868	0.00881	0.00868
	(!A2 * !B1 * Y)	-0.00180	-0.00182	-0.00179
	(!A2 * !B1 * Y)	0.00868	0.00881	0.00868

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	(A1 * B1 * B2 * !Y)	0.00173	0.00162	0.00161
	(A1 * B1 * B2 * !Y)	-0.00164	-0.00183	-0.00182
	(!A1 * B1 * B2 * !Y)	0.00154	0.00156	0.00154
	(!A1 * B1 * B2 * !Y)	-0.00186	-0.00187	-0.00186
	(!A1 * B1 * !B2 * Y)	0.00153	0.00155	0.00154
	(!A1 * B1 * !B2 * Y)	-0.00186	-0.00187	-0.00187
	(!A1 * !B1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !B1 * Y)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00328	0.00308	0.00305
	(A1 * B1 * B2 * !Y)	-0.00309	-0.00346	-0.00346
	(!A1 * B1 * B2 * !Y)	0.00292	0.00295	0.00292
	(!A1 * B1 * B2 * !Y)	-0.00353	-0.00355	-0.00353
	(!A1 * B1 * !B2 * Y)	0.00279	0.00284	0.00280
	(!A1 * B1 * !B2 * Y)	-0.00362	-0.00366	-0.00363
	(!A1 * !B1 * Y)	0.00280	0.00283	0.00280
	(!A1 * !B1 * Y)	-0.00363	-0.00366	-0.00363
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00680	0.00627	0.00620
	(A1 * B1 * B2 * !Y)	-0.00626	-0.00713	-0.00712
	(!A1 * B1 * B2 * !Y)	0.00589	0.00594	0.00593
	(!A1 * B1 * B2 * !Y)	-0.00726	-0.00729	-0.00729
	(!A1 * B1 * !B2 * Y)	0.00596	0.00600	0.00597
	(!A1 * B1 * !B2 * Y)	-0.00728	-0.00731	-0.00729
	(!A1 * !B1 * Y)	0.00596	0.00600	0.00597
	(!A1 * !B1 * Y)	-0.00728	-0.00731	-0.00729

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)	-0.00161	-0.00161	-0.00160
	(A1 * B1 * B2 * !Y)	0.00183	0.00183	0.00182
	(!A1 * B1 * B2 * !Y)	-0.00151	-0.00155	-0.00154
	(!A1 * B1 * B2 * !Y)	0.00187	0.00188	0.00187
	(!A1 * B1 * !B2 * Y)	-0.00148	-0.00155	-0.00154
	(!A1 * B1 * !B2 * Y)	0.00191	0.00189	0.00187
	(!A1 * !B1 * Y)	-0.00148	-0.00157	-0.00155
	(!A1 * !B1 * Y)	0.00191	0.00189	0.00187
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00304	-0.00305	-0.00304
	(A1 * B1 * B2 * !Y)	0.00345	0.00347	0.00346
	(!A1 * B1 * B2 * !Y)	-0.00281	-0.00291	-0.00292
	(!A1 * B1 * B2 * !Y)	0.00353	0.00356	0.00354
	(!A1 * B1 * !B2 * Y)	-0.00262	-0.00284	-0.00280
	(!A1 * B1 * !B2 * Y)	0.00375	0.00367	0.00364
	(!A1 * !B1 * Y)	-0.00262	-0.00283	-0.00280
	(!A1 * !B1 * Y)	0.00375	0.00367	0.00364
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00617	-0.00621	-0.00618
	(A1 * B1 * B2 * !Y)	0.00709	0.00717	0.00712
	(!A1 * B1 * B2 * !Y)	-0.00567	-0.00591	-0.00593
	(!A1 * B1 * B2 * !Y)	0.00729	0.00736	0.00732
	(!A1 * B1 * !B2 * Y)	-0.00548	-0.00595	-0.00595
	(!A1 * B1 * !B2 * Y)	0.00756	0.00738	0.00731
	(!A1 * !B1 * Y)	-0.00549	-0.00594	-0.00595
	(!A1 * !B1 * Y)	0.00756	0.00738	0.00731

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)	0.00173	0.00176	0.00174
	(A1 * A2 * B2 * !Y)	-0.00087	-0.00088	-0.00088
	(A1 * A2 * !B2 * !Y)	0.00170	0.00171	0.00170
	(A1 * A2 * !B2 * !Y)	-0.00087	-0.00087	-0.00087
	(A1 * !A2 * !B2 * Y)	0.00045	0.00045	0.00044
	(A1 * !A2 * !B2 * Y)	-0.00217	-0.00218	-0.00219
	(!A1 * !B2 * Y)	0.00045	0.00045	0.00044
	(!A1 * !B2 * Y)	-0.00217	-0.00218	-0.00219
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00371	0.00376	0.00373
	(A1 * A2 * B2 * !Y)	-0.00169	-0.00171	-0.00170
	(A1 * A2 * !B2 * !Y)	0.00363	0.00365	0.00364
	(A1 * A2 * !B2 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !B2 * Y)	0.00107	0.00108	0.00104
	(A1 * !A2 * !B2 * Y)	-0.00433	-0.00435	-0.00439
	(!A1 * !B2 * Y)	0.00107	0.00108	0.00104
	(!A1 * !B2 * Y)	-0.00433	-0.00435	-0.00439
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00689	0.00698	0.00692
	(A1 * A2 * B2 * !Y)	-0.00342	-0.00346	-0.00343
	(A1 * A2 * !B2 * !Y)	0.00665	0.00673	0.00668
	(A1 * A2 * !B2 * !Y)	-0.00340	-0.00343	-0.00342
	(A1 * !A2 * !B2 * Y)	0.00186	0.00188	0.00181
	(A1 * !A2 * !B2 * Y)	-0.00854	-0.00862	-0.00870
	(!A1 * !B2 * Y)	0.00186	0.00189	0.00181
	(!A1 * !B2 * Y)	-0.00853	-0.00862	-0.00870

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)	-0.00160	-0.00162	-0.00173
	(A1 * A2 * B2 * !Y)	0.00099	0.00099	0.00090
	(A1 * A2 * !B2 * !Y)	-0.00163	-0.00168	-0.00169
	(A1 * A2 * !B2 * !Y)	0.00088	0.00087	0.00087
	(A1 * !A2 * !B2 * Y)	-0.00044	-0.00044	-0.00043
	(A1 * !A2 * !B2 * Y)	0.00220	0.00223	0.00219
	(!A1 * !B2 * Y)	-0.00044	-0.00044	-0.00043
	(!A1 * !B2 * Y)	0.00220	0.00223	0.00219
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00348	-0.00351	-0.00371
	(A1 * A2 * B2 * !Y)	0.00189	0.00190	0.00174
	(A1 * A2 * !B2 * !Y)	-0.00347	-0.00364	-0.00362
	(A1 * A2 * !B2 * !Y)	0.00169	0.00170	0.00169
	(A1 * !A2 * !B2 * Y)	-0.00103	-0.00104	-0.00102
	(A1 * !A2 * !B2 * Y)	0.00439	0.00445	0.00439
	(!A1 * !B2 * Y)	-0.00103	-0.00104	-0.00102
	(!A1 * !B2 * Y)	0.00439	0.00445	0.00439
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00645	-0.00647	-0.00686
	(A1 * A2 * B2 * !Y)	0.00382	0.00381	0.00351
	(A1 * A2 * !B2 * !Y)	-0.00638	-0.00673	-0.00668
	(A1 * A2 * !B2 * !Y)	0.00341	0.00343	0.00342
	(A1 * !A2 * !B2 * Y)	-0.00176	-0.00176	-0.00176
	(A1 * !A2 * !B2 * Y)	0.00867	0.00868	0.00871
	(!A1 * !B2 * Y)	-0.00177	-0.00181	-0.00177
	(!A1 * !B2 * Y)	0.00867	0.00884	0.00871

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)	0.00191	0.00192	0.00190
	(A1 * A2 * B1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !B1 * !Y)	0.00185	0.00188	0.00186
	(A1 * A2 * !B1 * !Y)	-0.00088	-0.00089	-0.00088
	(A1 * !A2 * !B1 * Y)	0.00155	0.00155	0.00155
	(A1 * !A2 * !B1 * Y)	-0.00193	-0.00193	-0.00193
	(!A1 * !B1 * Y)	0.00154	0.00157	0.00155
	(!A1 * !B1 * Y)	-0.00192	-0.00194	-0.00193
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00328	0.00332	0.00330
	(A1 * A2 * B1 * !Y)	-0.00170	-0.00172	-0.00171
	(A1 * A2 * !B1 * !Y)	0.00316	0.00323	0.00318
	(A1 * A2 * !B1 * !Y)	-0.00169	-0.00170	-0.00170
	(A1 * !A2 * !B1 * Y)	0.00278	0.00282	0.00279
	(A1 * !A2 * !B1 * Y)	-0.00360	-0.00362	-0.00360
	(!A1 * !B1 * Y)	0.00279	0.00282	0.00279
	(!A1 * !B1 * Y)	-0.00360	-0.00362	-0.00360
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00689	0.00698	0.00691
	(A1 * A2 * B1 * !Y)	-0.00343	-0.00347	-0.00343
	(A1 * A2 * !B1 * !Y)	0.00668	0.00676	0.00670
	(A1 * A2 * !B1 * !Y)	-0.00342	-0.00344	-0.00343
	(A1 * !A2 * !B1 * Y)	0.00596	0.00597	0.00596
	(A1 * !A2 * !B1 * Y)	-0.00725	-0.00726	-0.00725
	(!A1 * !B1 * Y)	0.00592	0.00603	0.00596
	(!A1 * !B1 * Y)	-0.00722	-0.00729	-0.00725

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)	-0.00176	-0.00178	-0.00189
	(A1 * A2 * B1 * !Y)	0.00100	0.00100	0.00091
	(A1 * A2 * !B1 * !Y)	-0.00179	-0.00184	-0.00185
	(A1 * A2 * !B1 * !Y)	0.00088	0.00089	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00147	-0.00155	-0.00155
	(A1 * !A2 * !B1 * Y)	0.00198	0.00196	0.00194
	(!A1 * !B1 * Y)	-0.00147	-0.00157	-0.00155
	(!A1 * !B1 * Y)	0.00198	0.00195	0.00194
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00304	-0.00307	-0.00327
	(A1 * A2 * B1 * !Y)	0.00190	0.00191	0.00175
	(A1 * A2 * !B1 * !Y)	-0.00305	-0.00317	-0.00318
	(A1 * A2 * !B1 * !Y)	0.00169	0.00170	0.00170
	(A1 * !A2 * !B1 * Y)	-0.00262	-0.00281	-0.00279
	(A1 * !A2 * !B1 * Y)	0.00370	0.00363	0.00361
	(!A1 * !B1 * Y)	-0.00262	-0.00282	-0.00279
	(!A1 * !B1 * Y)	0.00370	0.00362	0.00361
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00644	-0.00649	-0.00686
	(A1 * A2 * B1 * !Y)	0.00383	0.00382	0.00352
	(A1 * A2 * !B1 * !Y)	-0.00642	-0.00666	-0.00669
	(A1 * A2 * !B1 * !Y)	0.00342	0.00344	0.00343
	(A1 * !A2 * !B1 * Y)	-0.00549	-0.00592	-0.00593
	(A1 * !A2 * !B1 * Y)	0.00748	0.00732	0.00727
	(!A1 * !B1 * Y)	-0.00549	-0.00593	-0.00593
	(!A1 * !B1 * Y)	0.00748	0.00736	0.00727

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a22o_1	11.18880
sky130_fd_sc_hs__a22o_2	12.78720
sky130_fd_sc_hs__a22o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__a22o_1	0.00258	0.00237	0.00252	0.00259	1.41482
sky130_fd_sc_hs__a22o_2	0.00269	0.00247	0.00264	0.00258	2.65410
sky130_fd_sc_hs__a22o_4	0.00456	0.00481	0.00457	0.00503	5.48958

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.09438	0.22593
sky130_fd_sc_hs__a22o_2	0.00000	0.12957	0.22694
sky130_fd_sc_hs__a22o_4	0.00000	0.26044	0.45387

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)	0.06176	0.47649	5.47780
	A2->X (RR)	0.06547	0.47153	5.47596
	B1->X (RR)	0.05160	0.44877	5.51241
	B2->X (RR)	0.05484	0.45224	5.49731
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.06231	0.40357	5.35100
	A2->X (RR)	0.06613	0.39330	5.32052
	B1->X (RR)	0.05217	0.37456	5.33237
	B2->X (RR)	0.05499	0.37450	5.31698
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.05948	0.31757	5.46524
	A2->X (RR)	0.06381	0.32083	5.43640
	B1->X (RR)	0.05162	0.29563	5.41368
	B2->X (RR)	0.05493	0.29901	5.43236

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.10521	0.49005	5.03237
	A2->X (FF)	0.11347	0.51450	5.09615
	B1->X (FF)	0.09017	0.49415	5.16098
	B2->X (FF)	0.08245	0.48578	5.12765
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.12631	0.49566	4.89678
	A2->X (FF)	0.13551	0.52381	4.97901
	B1->X (FF)	0.11274	0.50914	5.00445
	B2->X (FF)	0.11736	0.51908	4.99826
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.12321	0.47405	5.28322
	A2->X (FF)	0.13092	0.49243	5.30119
	B1->X (FF)	0.11002	0.48919	5.27721
	B2->X (FF)	0.10324	0.47682	5.26998

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.01116	0.01252	0.04584
	A1	0.00520	0.00657	0.04017
	A2	0.01231	0.01343	0.05262
	A2	0.00521	0.00633	0.04580
	B1	0.00733	0.00992	0.06599
	B1	0.00321	0.00581	0.06216
	B2	0.00829	0.01034	0.06299
	B2	0.00315	0.00521	0.05814
sky130_fd_sc_hs__a22o_2	A1	0.01380	0.01512	0.04573
	A1	0.00764	0.00897	0.04002
	A2	0.01492	0.01604	0.05255
	A2	0.00756	0.00872	0.04565
	B1	0.00986	0.01218	0.06470
	B1	0.00550	0.00789	0.06080
	B2	0.01087	0.01278	0.06271
	B2	0.00549	0.00739	0.05770
sky130_fd_sc_hs__a22o_4	A1	0.02706	0.03040	0.11862
	A1	0.01554	0.01898	0.10833
	A2	0.02947	0.03200	0.10929
	A2	0.01560	0.01816	0.09664
	B1	0.01933	0.02412	0.13641
	B1	0.01153	0.01640	0.12981
	B2	0.02136	0.02510	0.13716
	B2	0.01121	0.01501	0.12824

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00310	0.00368	0.04453
	A1	0.00911	0.00967	0.04967
	A2	0.00375	0.00469	0.04473
	A2	0.01082	0.01171	0.05065
	B1	0.00310	0.00640	0.06875
	B1	0.00722	0.01038	0.07200
	B2	0.00337	0.00659	0.06589
	B2	0.00847	0.01157	0.07008
sky130_fd_sc_hs__a22o_2	A1	0.00587	0.00652	0.04263
	A1	0.01208	0.01258	0.04881
	A2	0.00704	0.00775	0.04397
	A2	0.01436	0.01507	0.05127
	B1	0.00577	0.00884	0.06727
	B1	0.01011	0.01317	0.07153
	B2	0.00625	0.00962	0.06572
	B2	0.01159	0.01495	0.07099
sky130_fd_sc_hs__a22o_4	A1	0.01192	0.01324	0.09935
	A1	0.02354	0.02484	0.10745
	A2	0.01225	0.01385	0.09322
	A2	0.02616	0.02747	0.10320
	B1	0.01191	0.01699	0.11461
	B1	0.01973	0.02468	0.12240
	B2	0.01261	0.01818	0.12431
	B2	0.02268	0.02797	0.13371

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)	0.00176	0.00163	0.00162
	(A2 * B1 * B2 * X)	-0.00138	-0.00158	-0.00158
	(!A2 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * B2 * X)	-0.00160	-0.00161	-0.00161
	(!A2 * B1 * !B2 * !X)	0.00049	0.00050	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00208	-0.00209	-0.00213
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00209	-0.00209	-0.00213
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00191	0.00178	0.00177
	(A2 * B1 * B2 * X)	-0.00137	-0.00156	-0.00156
	(!A2 * B1 * B2 * X)	0.00173	0.00173	0.00173
	(!A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00159
	(!A2 * B1 * !B2 * !X)	0.00054	0.00054	0.00051
	(!A2 * B1 * !B2 * !X)	-0.00208	-0.00210	-0.00214
	(!A2 * !B1 * !X)	0.00054	0.00054	0.00051
	(!A2 * !B1 * !X)	-0.00209	-0.00209	-0.00214
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00296	0.00264	0.00262
	(A2 * B1 * B2 * X)	-0.00283	-0.00327	-0.00328
	(!A2 * B1 * B2 * X)	0.00252	0.00256	0.00254
	(!A2 * B1 * B2 * X)	-0.00333	-0.00338	-0.00335
	(!A2 * B1 * !B2 * !X)	0.00075	0.00077	0.00074
	(!A2 * B1 * !B2 * !X)	-0.00389	-0.00394	-0.00395
	(!A2 * !B1 * !X)	0.00075	0.00077	0.00074
	(!A2 * !B1 * !X)	-0.00389	-0.00394	-0.00395

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)	-0.00161	-0.00162	-0.00161
	(A2 * B1 * B2 * X)	0.00157	0.00159	0.00158
	(!A2 * B1 * B2 * X)	-0.00148	-0.00156	-0.00156
	(!A2 * B1 * B2 * X)	0.00161	0.00162	0.00161
	(!A2 * B1 * !B2 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * B1 * !B2 * !X)	0.00213	0.00217	0.00213
	(!A2 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00212	0.00217	0.00213
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00176	-0.00177	-0.00175
	(A2 * B1 * B2 * X)	0.00156	0.00157	0.00156
	(!A2 * B1 * B2 * X)	-0.00163	-0.00171	-0.00172
	(!A2 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A2 * B1 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(!A2 * B1 * !B2 * !X)	0.00215	0.00218	0.00215
	(!A2 * !B1 * !X)	-0.00050	-0.00051	-0.00050
	(!A2 * !B1 * !X)	0.00215	0.00218	0.00215
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00261	-0.00262	-0.00260
	(A2 * B1 * B2 * X)	0.00328	0.00330	0.00328
	(!A2 * B1 * B2 * X)	-0.00240	-0.00252	-0.00251
	(!A2 * B1 * B2 * X)	0.00335	0.00340	0.00337
	(!A2 * B1 * !B2 * !X)	-0.00071	-0.00072	-0.00072
	(!A2 * B1 * !B2 * !X)	0.00395	0.00400	0.00397
	(!A2 * !B1 * !X)	-0.00071	-0.00072	-0.00072
	(!A2 * !B1 * !X)	0.00395	0.00399	0.00397

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)	0.00174	0.00161	0.00159
	(A1 * B1 * B2 * X)	-0.00138	-0.00158	-0.00158
	(!A1 * B1 * B2 * X)	0.00154	0.00156	0.00155
	(!A1 * B1 * B2 * X)	-0.00160	-0.00162	-0.00161
	(!A1 * B1 * !B2 * !X)	0.00153	0.00154	0.00154
	(!A1 * B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * !X)	0.00154	0.00156	0.00154
	(!A1 * !B1 * !X)	-0.00161	-0.00162	-0.00161
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00176	0.00163	0.00162
	(A1 * B1 * B2 * X)	-0.00144	-0.00164	-0.00164
	(!A1 * B1 * B2 * X)	0.00155	0.00157	0.00156
	(!A1 * B1 * B2 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * B1 * !B2 * !X)	0.00156	0.00157	0.00156
	(!A1 * B1 * !B2 * !X)	-0.00167	-0.00167	-0.00167
	(!A1 * !B1 * !X)	0.00155	0.00157	0.00156
	(!A1 * !B1 * !X)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00347	0.00325	0.00319
	(A1 * B1 * B2 * X)	-0.00281	-0.00321	-0.00322
	(!A1 * B1 * B2 * X)	0.00306	0.00311	0.00307
	(!A1 * B1 * B2 * X)	-0.00327	-0.00330	-0.00328
	(!A1 * B1 * !B2 * !X)	0.00304	0.00306	0.00304
	(!A1 * B1 * !B2 * !X)	-0.00334	-0.00336	-0.00335
	(!A1 * !B1 * !X)	0.00304	0.00307	0.00304
	(!A1 * !B1 * !X)	-0.00334	-0.00337	-0.00335

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)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * B2 * X)	0.00157	0.00159	0.00158
	(!A1 * B1 * B2 * X)	-0.00147	-0.00155	-0.00154
	(!A1 * B1 * B2 * X)	0.00161	0.00163	0.00162
	(!A1 * B1 * !B2 * !X)	-0.00144	-0.00154	-0.00153
	(!A1 * B1 * !B2 * !X)	0.00165	0.00163	0.00162
	(!A1 * !B1 * !X)	-0.00144	-0.00155	-0.00153
	(!A1 * !B1 * !X)	0.00165	0.00163	0.00162
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * B1 * B2 * X)	0.00164	0.00165	0.00164
	(!A1 * B1 * B2 * X)	-0.00150	-0.00157	-0.00156
	(!A1 * B1 * B2 * X)	0.00166	0.00169	0.00167
	(!A1 * B1 * !B2 * !X)	-0.00147	-0.00157	-0.00156
	(!A1 * B1 * !B2 * !X)	0.00169	0.00169	0.00168
	(!A1 * !B1 * !X)	-0.00147	-0.00157	-0.00156
	(!A1 * !B1 * !X)	0.00169	0.00169	0.00168
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00318	-0.00318	-0.00317
	(A1 * B1 * B2 * X)	0.00321	0.00323	0.00322
	(!A1 * B1 * B2 * X)	-0.00299	-0.00311	-0.00307
	(!A1 * B1 * B2 * X)	0.00328	0.00331	0.00330
	(!A1 * B1 * !B2 * !X)	-0.00286	-0.00305	-0.00302
	(!A1 * B1 * !B2 * !X)	0.00345	0.00337	0.00336
	(!A1 * !B1 * !X)	-0.00286	-0.00305	-0.00302
	(!A1 * !B1 * !X)	0.00345	0.00337	0.00336

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)	0.00154	0.00156	0.00155
	(A1 * A2 * B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * A2 * !B2 * X)	0.00151	0.00152	0.00151
	(A1 * A2 * !B2 * X)	-0.00080	-0.00081	-0.00080
	(A1 * !A2 * !B2 * !X)	0.00043	0.00043	0.00042
	(A1 * !A2 * !B2 * !X)	-0.00192	-0.00193	-0.00194
	(!A1 * !B2 * !X)	0.00045	0.00045	0.00044
	(!A1 * !B2 * !X)	-0.00192	-0.00193	-0.00194
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00172	0.00173	0.00172
	(A1 * A2 * B2 * X)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * !B2 * X)	0.00165	0.00166	0.00166
	(A1 * A2 * !B2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !B2 * !X)	0.00046	0.00046	0.00045
	(A1 * !A2 * !B2 * !X)	-0.00196	-0.00197	-0.00199
	(!A1 * !B2 * !X)	0.00047	0.00047	0.00046
	(!A1 * !B2 * !X)	-0.00196	-0.00196	-0.00199
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00286	0.00289	0.00287
	(A1 * A2 * B2 * X)	-0.00156	-0.00158	-0.00157
	(A1 * A2 * !B2 * X)	0.00280	0.00280	0.00281
	(A1 * A2 * !B2 * X)	-0.00156	-0.00156	-0.00157
	(A1 * !A2 * !B2 * !X)	0.00079	0.00080	0.00077
	(A1 * !A2 * !B2 * !X)	-0.00372	-0.00374	-0.00378
	(!A1 * !B2 * !X)	0.00079	0.00080	0.00077
	(!A1 * !B2 * !X)	-0.00372	-0.00374	-0.00378

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)	-0.00145	-0.00146	-0.00154
	(A1 * A2 * B2 * X)	0.00089	0.00089	0.00082
	(A1 * A2 * !B2 * X)	-0.00145	-0.00150	-0.00150
	(A1 * A2 * !B2 * X)	0.00080	0.00081	0.00080
	(A1 * !A2 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * !X)	0.00195	0.00197	0.00195
	(!A1 * !B2 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !B2 * !X)	0.00194	0.00197	0.00194
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00162	-0.00162	-0.00171
	(A1 * A2 * B2 * X)	0.00088	0.00088	0.00081
	(A1 * A2 * !B2 * X)	-0.00161	-0.00166	-0.00166
	(A1 * A2 * !B2 * X)	0.00079	0.00079	0.00079
	(A1 * !A2 * !B2 * !X)	-0.00044	-0.00045	-0.00044
	(A1 * !A2 * !B2 * !X)	0.00199	0.00200	0.00199
	(!A1 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !B2 * !X)	0.00199	0.00200	0.00199
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00265	-0.00267	-0.00285
	(A1 * A2 * B2 * X)	0.00173	0.00174	0.00161
	(A1 * A2 * !B2 * X)	-0.00267	-0.00280	-0.00279
	(A1 * A2 * !B2 * X)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B2 * !X)	-0.00075	-0.00076	-0.00075
	(A1 * !A2 * !B2 * !X)	0.00377	0.00381	0.00378
	(!A1 * !B2 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !B2 * !X)	0.00377	0.00380	0.00378

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)	0.00162	0.00163	0.00162
	(A1 * A2 * B1 * X)	-0.00089	-0.00088	-0.00088
	(A1 * A2 * !B1 * X)	0.00158	0.00159	0.00158
	(A1 * A2 * !B1 * X)	-0.00087	-0.00088	-0.00087
	(A1 * !A2 * !B1 * !X)	0.00134	0.00136	0.00135
	(A1 * !A2 * !B1 * !X)	-0.00171	-0.00172	-0.00171
	(!A1 * !B1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !B1 * !X)	-0.00170	-0.00171	-0.00170
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00169	0.00169	0.00168
	(A1 * A2 * B1 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * X)	0.00161	0.00163	0.00161
	(A1 * A2 * !B1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * !B1 * !X)	0.00146	0.00148	0.00146
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00164	-0.00163
	(!A1 * !B1 * !X)	0.00151	0.00153	0.00151
	(!A1 * !B1 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00314	0.00316	0.00313
	(A1 * A2 * B1 * X)	-0.00175	-0.00175	-0.00174
	(A1 * A2 * !B1 * X)	0.00305	0.00309	0.00305
	(A1 * A2 * !B1 * X)	-0.00172	-0.00174	-0.00173
	(A1 * !A2 * !B1 * !X)	0.00243	0.00246	0.00244
	(A1 * !A2 * !B1 * !X)	-0.00373	-0.00375	-0.00373
	(!A1 * !B1 * !X)	0.00243	0.00245	0.00244
	(!A1 * !B1 * !X)	-0.00373	-0.00374	-0.00373

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	(A1 * A2 * B1 * X)	-0.00151	-0.00153	-0.00161
	(A1 * A2 * B1 * X)	0.00095	0.00096	0.00090
	(A1 * A2 * !B1 * X)	-0.00152	-0.00156	-0.00157
	(A1 * A2 * !B1 * X)	0.00087	0.00088	0.00088
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00133	-0.00134
	(A1 * !A2 * !B1 * !X)	0.00179	0.00174	0.00172
	(!A1 * !B1 * !X)	-0.00134	-0.00142	-0.00143
	(!A1 * !B1 * !X)	0.00177	0.00172	0.00171
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00158	-0.00159	-0.00167
	(A1 * A2 * B1 * X)	0.00092	0.00092	0.00085
	(A1 * A2 * !B1 * X)	-0.00157	-0.00162	-0.00161
	(A1 * A2 * !B1 * X)	0.00082	0.00083	0.00083
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00146	-0.00146
	(A1 * !A2 * !B1 * !X)	0.00169	0.00165	0.00164
	(!A1 * !B1 * !X)	-0.00142	-0.00151	-0.00151
	(!A1 * !B1 * !X)	0.00169	0.00165	0.00164
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00292	-0.00294	-0.00311
	(A1 * A2 * B1 * X)	0.00192	0.00191	0.00178
	(A1 * A2 * !B1 * X)	-0.00296	-0.00304	-0.00305
	(A1 * A2 * !B1 * X)	0.00174	0.00174	0.00173
	(A1 * !A2 * !B1 * !X)	-0.00231	-0.00246	-0.00244
	(A1 * !A2 * !B1 * !X)	0.00385	0.00377	0.00375
	(!A1 * !B1 * !X)	-0.00231	-0.00245	-0.00244
	(!A1 * !B1 * !X)	0.00385	0.00377	0.00375

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2oi_1	11.18880
sky130_fd_sc_hs__a2bb2oi_2	17.58240
sky130_fd_sc_hs__a2bb2oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__a2bb2oi_1	0.00223	0.00242	0.00256	0.00275	0.63621
sky130_fd_sc_hs__a2bb2oi_2	0.00244	0.00254	0.00498	0.00502	1.28645
sky130_fd_sc_hs__a2bb2oi_4	0.00380	0.00400	0.00989	0.01010	2.31079

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.06043	0.15633
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.08210	0.20019
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.16267	0.40038

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)	0.08058	0.63227	5.62969
	A2_N->Y (RR)	0.07620	0.61353	5.63821
	B1->Y (FR)	0.07605	0.88499	10.50810
	B2->Y (FR)	0.05847	0.82677	10.03620
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.07285	0.48436	5.46864
	A2_N->Y (RR)	0.06927	0.47250	5.49445
	B1->Y (FR)	0.06928	0.74423	10.50070
	B2->Y (FR)	0.05098	0.71455	10.30460
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.08914	0.46049	5.89107
	A2_N->Y (RR)	0.08130	0.43787	5.89263
	B1->Y (FR)	0.06936	0.64305	10.29750
	B2->Y (FR)	0.04968	0.60965	9.96490

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)	0.07876	0.38543	3.39385
	A2_N->Y (FF)	0.07001	0.38028	3.29858
	B1->Y (RF)	0.02083	0.27005	3.01625
	B2->Y (RF)	0.01838	0.28550	3.25524
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.09866	0.41354	3.69517
	A2_N->Y (FF)	0.08897	0.41250	3.51279
	B1->Y (RF)	0.02182	0.24912	3.44908
	B2->Y (RF)	0.01760	0.26886	3.81145
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.10028	0.38378	3.15562
	A2_N->Y (FF)	0.08472	0.37669	3.32776
	B1->Y (RF)	0.02120	0.19375	3.19687
	B2->Y (RF)	0.01778	0.22943	3.86194

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	0.00844	0.01004	0.04902
	A1_N	0.00589	0.00740	0.04657
	A2_N	0.00693	0.00921	0.06268
	A2_N	0.00509	0.00732	0.06100
	B1	0.00145	0.00151	0.00969
	B1	0.00652	0.00660	0.01476
	B2	0.00085	0.00092	0.00907
	B2	0.00504	0.00510	0.01344
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01169	0.01383	0.06006
	A1_N	0.01132	0.01329	0.05971
	A2_N	0.00995	0.01233	0.07201
	A2_N	0.01040	0.01270	0.07224
	B1	0.00336	0.00343	0.01809
	B1	0.01350	0.01361	0.02823
	B2	0.00175	0.00195	0.01672
	B2	0.00969	0.00991	0.02472
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.02130	0.02320	0.08537
	A1_N	0.02188	0.02370	0.08681
	A2_N	0.01767	0.02141	0.11217
	A2_N	0.01987	0.02336	0.11431
	B1	0.00612	0.00642	0.03622
	B1	0.02660	0.02695	0.05687
	B2	0.00338	0.00392	0.03291
	B2	0.01955	0.02011	0.04914

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00497	0.00631	0.04360
	A1_N	0.00807	0.00940	0.04671
	A2_N	0.00492	0.00781	0.05494
	A2_N	0.00725	0.01011	0.05730
	B1	0.00631	0.00639	0.01199
	B1	0.00124	0.00129	0.00678
	B2	0.00539	0.00567	0.01269
	B2	0.00125	0.00148	0.00848
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00863	0.01009	0.05276
	A1_N	0.01056	0.01191	0.05452
	A2_N	0.00885	0.01182	0.05925
	A2_N	0.00983	0.01266	0.06013
	B1	0.01214	0.01223	0.02288
	B1	0.00197	0.00201	0.01188
	B2	0.00986	0.01025	0.02284
	B2	0.00202	0.00234	0.01453
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01839	0.02017	0.06556
	A1_N	0.02034	0.02192	0.06735
	A2_N	0.01322	0.01774	0.10616
	A2_N	0.01834	0.02284	0.11124
	B1	0.02397	0.02429	0.04524
	B1	0.00345	0.00369	0.02418
	B2	0.01944	0.02028	0.04474
	B2	0.00352	0.00427	0.02794

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)	0.00148	0.00128	0.00125
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00143	-0.00165	-0.00166
	(!A2_N * B1 * B2 * !Y)	0.00599	0.00736	0.04559
	(!A2_N * B1 * B2 * !Y)	0.00137	0.00273	0.04096
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00187	0.00168	0.00164
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00138	-0.00161	-0.00161
	(!A2_N * B1 * B2 * !Y)	0.00753	0.00922	0.05418
	(!A2_N * B1 * B2 * !Y)	0.00248	0.00415	0.04915
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00222	0.00175	0.00172
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00273	-0.00326	-0.00329
	(!A2_N * B1 * B2 * !Y)	0.01304	0.01450	0.07748
	(!A2_N * B1 * B2 * !Y)	0.00483	0.00627	0.06932

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)	-0.00124	-0.00125	-0.00124
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00165	0.00167	0.00167
	(!A2_N * B1 * B2 * !Y)	0.00156	0.00278	0.04044
	(!A2_N * B1 * B2 * !Y)	0.00617	0.00742	0.04506
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00163	-0.00164	-0.00163
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00160	0.00162	0.00161
	(!A2_N * B1 * B2 * !Y)	0.00275	0.00391	0.04726
	(!A2_N * B1 * B2 * !Y)	0.00775	0.00893	0.05228
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00170	-0.00171	-0.00170
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00327	0.00330	0.00329
	(!A2_N * B1 * B2 * !Y)	0.00646	0.00782	0.06959
	(!A2_N * B1 * B2 * !Y)	0.01459	0.01596	0.07774

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)	0.00148	0.00149	0.00148
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1_N * B1 * B2 * !Y)	0.00455	0.00678	0.06020
	(!A1_N * B1 * B2 * !Y)	0.00066	0.00286	0.05629
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00165	0.00166	0.00165
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00083	-0.00083	-0.00082
	(!A1_N * B1 * B2 * !Y)	0.00591	0.00821	0.06788
	(!A1_N * B1 * B2 * !Y)	0.00176	0.00406	0.06374
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00235	0.00237	0.00235
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00168	-0.00169	-0.00168
	(!A1_N * B1 * B2 * !Y)	0.00942	0.01231	0.10104
	(!A1_N * B1 * B2 * !Y)	0.00259	0.00547	0.09423

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)	-0.00143	-0.00144	-0.00147
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00085	0.00086	0.00084
	(!A1_N * B1 * B2 * !Y)	0.00148	0.00433	0.05754
	(!A1_N * B1 * B2 * !Y)	0.00536	0.00822	0.06142
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00161	-0.00162	-0.00164
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00086	0.00086	0.00083
	(!A1_N * B1 * B2 * !Y)	0.00294	0.00570	0.06438
	(!A1_N * B1 * B2 * !Y)	0.00705	0.00982	0.06851
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00222	-0.00223	-0.00234
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00180	0.00180	0.00171
	(!A1_N * B1 * B2 * !Y)	0.00591	0.01031	0.09923
	(!A1_N * B1 * B2 * !Y)	0.01268	0.01709	0.10599

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)	0.00156	0.00156	0.00155
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00180	-0.00180	-0.00180
	(!A1_N * !A2_N * B2 * !Y)	0.00178	0.00163	0.00162
	(!A1_N * !A2_N * B2 * !Y)	-0.00157	-0.00177	-0.00177
	(!A1_N * !A2_N * !B2 * !Y)	0.00155	0.00157	0.00155
	(!A1_N * !A2_N * !B2 * !Y)	-0.00179	-0.00181	-0.00180
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00296	0.00300	0.00297
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00363	-0.00366	-0.00364
	(!A1_N * !A2_N * B2 * !Y)	0.00343	0.00315	0.00312
	(!A1_N * !A2_N * B2 * !Y)	-0.00321	-0.00360	-0.00360
	(!A1_N * !A2_N * !B2 * !Y)	0.00297	0.00299	0.00298
	(!A1_N * !A2_N * !B2 * !Y)	-0.00363	-0.00365	-0.00364
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00597	0.00603	0.00600
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00729	-0.00732	-0.00730
	(!A1_N * !A2_N * B2 * !Y)	0.00691	0.00631	0.00623
	(!A1_N * !A2_N * B2 * !Y)	-0.00632	-0.00720	-0.00720
	(!A1_N * !A2_N * !B2 * !Y)	0.00600	0.00603	0.00601
	(!A1_N * !A2_N * !B2 * !Y)	-0.00729	-0.00731	-0.00730

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)	-0.00149	-0.00156	-0.00155
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00185	0.00181	0.00180
	(!A1_N * !A2_N * B2 * !Y)	-0.00161	-0.00162	-0.00161
	(!A1_N * !A2_N * B2 * !Y)	0.00176	0.00179	0.00177
	(!A1_N * !A2_N * !B2 * !Y)	-0.00150	-0.00157	-0.00155
	(!A1_N * !A2_N * !B2 * !Y)	0.00179	0.00181	0.00180
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00278	-0.00300	-0.00297
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00376	0.00369	0.00365
	(!A1_N * !A2_N * B2 * !Y)	-0.00311	-0.00312	-0.00311
	(!A1_N * !A2_N * B2 * !Y)	0.00359	0.00361	0.00360
	(!A1_N * !A2_N * !B2 * !Y)	-0.00286	-0.00298	-0.00298
	(!A1_N * !A2_N * !B2 * !Y)	0.00364	0.00367	0.00365
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00553	-0.00598	-0.00598
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00760	0.00739	0.00733
	(!A1_N * !A2_N * B2 * !Y)	-0.00620	-0.00624	-0.00621
	(!A1_N * !A2_N * B2 * !Y)	0.00715	0.00722	0.00720
	(!A1_N * !A2_N * !B2 * !Y)	-0.00573	-0.00594	-0.00599
	(!A1_N * !A2_N * !B2 * !Y)	0.00732	0.00734	0.00732

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)	0.00063	0.00063	0.00061
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00216	-0.00216	-0.00218
	(!A1_N * !A2_N * B1 * !Y)	0.00177	0.00162	0.00161
	(!A1_N * !A2_N * B1 * !Y)	-0.00170	-0.00190	-0.00190
	(!A1_N * !A2_N * !B1 * !Y)	0.00154	0.00156	0.00155
	(!A1_N * !A2_N * !B1 * !Y)	-0.00192	-0.00193	-0.00193
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00102	0.00103	0.00099
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00420	-0.00421	-0.00428
	(!A1_N * !A2_N * B1 * !Y)	0.00340	0.00314	0.00310
	(!A1_N * !A2_N * B1 * !Y)	-0.00319	-0.00357	-0.00356
	(!A1_N * !A2_N * !B1 * !Y)	0.00299	0.00302	0.00300
	(!A1_N * !A2_N * !B1 * !Y)	-0.00360	-0.00362	-0.00361
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00193	0.00193	0.00186
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00861	-0.00861	-0.00873
	(!A1_N * !A2_N * B1 * !Y)	0.00691	0.00625	0.00619
	(!A1_N * !A2_N * B1 * !Y)	-0.00637	-0.00724	-0.00723
	(!A1_N * !A2_N * !B1 * !Y)	0.00594	0.00599	0.00597
	(!A1_N * !A2_N * !B1 * !Y)	-0.00731	-0.00735	-0.00733

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)	-0.00061	-0.00062	-0.00060
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00219	0.00222	0.00218
	(!A1_N * !A2_N * B1 * !Y)	-0.00160	-0.00161	-0.00160
	(!A1_N * !A2_N * B1 * !Y)	0.00189	0.00192	0.00190
	(!A1_N * !A2_N * !B1 * !Y)	-0.00149	-0.00154	-0.00155
	(!A1_N * !A2_N * !B1 * !Y)	0.00192	0.00194	0.00193
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00098	-0.00099	-0.00097
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00429	0.00435	0.00429
	(!A1_N * !A2_N * B1 * !Y)	-0.00309	-0.00311	-0.00310
	(!A1_N * !A2_N * B1 * !Y)	0.00354	0.00358	0.00356
	(!A1_N * !A2_N * !B1 * !Y)	-0.00283	-0.00302	-0.00300
	(!A1_N * !A2_N * !B1 * !Y)	0.00360	0.00365	0.00362
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00181	-0.00186	-0.00182
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00869	0.00889	0.00875
	(!A1_N * !A2_N * B1 * !Y)	-0.00616	-0.00620	-0.00617
	(!A1_N * !A2_N * B1 * !Y)	0.00718	0.00728	0.00723
	(!A1_N * !A2_N * !B1 * !Y)	-0.00563	-0.00599	-0.00597
	(!A1_N * !A2_N * !B1 * !Y)	0.00731	0.00742	0.00736

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a2bb2o_1	14.38560
sky130_fd_sc_hs__a2bb2o_2	15.98400
sky130_fd_sc_hs__a2bb2o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__a2bb2o_1	0.00220	0.00228	0.00241	0.00233	1.39818
sky130_fd_sc_hs__a2bb2o_2	0.00232	0.00238	0.00252	0.00271	2.33829
sky130_fd_sc_hs__a2bb2o_4	0.00251	0.00267	0.00456	0.00459	5.17555

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.11219	0.18769
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.14714	0.24035
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.23897	0.31974

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)	0.11386	0.69557	8.53885
	A2_N->X (FR)	0.10411	0.68900	8.50727
	B1->X (RR)	0.05636	0.45052	5.32292
	B2->X (RR)	0.05298	0.44441	5.35700
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.11907	0.62118	8.34409
	A2_N->X (FR)	0.10898	0.61552	8.33517
	B1->X (RR)	0.05522	0.37924	5.09618
	B2->X (RR)	0.05292	0.37862	5.12716
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.14671	0.59381	8.75066
	A2_N->X (FR)	0.13807	0.58978	8.70284
	B1->X (RR)	0.06356	0.31919	5.39996
	B2->X (RR)	0.05941	0.31719	5.44852

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)	0.10800	0.27166	1.37079
	A2_N->X (RF)	0.10253	0.25667	1.31913
	B1->X (FF)	0.10325	0.48482	4.91615
	B2->X (FF)	0.08749	0.45772	4.88454
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.12741	0.26438	1.10669
	A2_N->X (RF)	0.12162	0.24471	0.98606
	B1->X (FF)	0.12236	0.48941	4.64452
	B2->X (FF)	0.10774	0.46371	4.59713
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.12604	0.24188	1.45105
	A2_N->X (RF)	0.11907	0.22659	1.34392
	B1->X (FF)	0.12581	0.47491	5.10260
	B2->X (FF)	0.10851	0.44522	5.05072

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	0.00744	0.00893	0.04815
	A1_N	0.01126	0.01276	0.05196
	A2_N	0.00737	0.01046	0.06812
	A2_N	0.01038	0.01347	0.07113
	B1	0.00964	0.01086	0.04845
	B1	0.00455	0.00579	0.04358
	B2	0.00852	0.01026	0.05320
	B2	0.00457	0.00633	0.04946
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00990	0.01179	0.05090
	A1_N	0.01409	0.01604	0.05509
	A2_N	0.00994	0.01336	0.07225
	A2_N	0.01320	0.01665	0.07645
	B1	0.01240	0.01380	0.04955
	B1	0.00728	0.00872	0.04444
	B2	0.01146	0.01316	0.05366
	B2	0.00730	0.00906	0.04953
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01858	0.02046	0.06104
	A1_N	0.02053	0.02263	0.06527
	A2_N	0.01846	0.02188	0.08149
	A2_N	0.01951	0.02322	0.08467
	B1	0.02293	0.02543	0.09735
	B1	0.01337	0.01587	0.08865
	B2	0.02087	0.02427	0.10635
	B2	0.01336	0.01682	0.10005

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.01165	0.01310	0.05375
	A1_N	0.00934	0.01068	0.04943
	A2_N	0.00996	0.01235	0.06761
	A2_N	0.00840	0.01068	0.06490
	B1	0.00473	0.00573	0.04246
	B1	0.00979	0.01072	0.04751
	B2	0.00447	0.00549	0.04671
	B2	0.00844	0.00939	0.05047
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01453	0.01610	0.05762
	A1_N	0.01231	0.01335	0.05262
	A2_N	0.01375	0.01576	0.06916
	A2_N	0.01148	0.01348	0.06685
	B1	0.00788	0.00846	0.04463
	B1	0.01298	0.01349	0.04833
	B2	0.00725	0.00825	0.04624
	B2	0.01143	0.01209	0.04972
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.02437	0.02673	0.08215
	A1_N	0.02013	0.02247	0.07725
	A2_N	0.02463	0.02690	0.08873
	A2_N	0.02314	0.02539	0.08697
	B1	0.01691	0.01841	0.09011
	B1	0.02642	0.02699	0.09609
	B2	0.01530	0.01670	0.09262
	B2	0.02284	0.02398	0.09999

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)	0.00157	0.00136	0.00134
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00133	-0.00155	-0.00156
	(!A2_N * B1 * B2 * X)	0.00579	0.00715	0.04519
	(!A2_N * B1 * B2 * X)	0.00134	0.00270	0.04074
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00163	0.00141	0.00139
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00141	-0.00164	-0.00166
	(!A2_N * B1 * B2 * X)	0.00594	0.00725	0.04462
	(!A2_N * B1 * B2 * X)	0.00124	0.00255	0.03994
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00177	0.00157	0.00155
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00154	-0.00176	-0.00177
	(!A2_N * B1 * B2 * X)	0.00762	0.00921	0.05176
	(!A2_N * B1 * B2 * X)	0.00241	0.00397	0.04655

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)	-0.00133	-0.00134	-0.00133
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00155	0.00157	0.00157
	(!A2_N * B1 * B2 * X)	0.00154	0.00276	0.04021
	(!A2_N * B1 * B2 * X)	0.00597	0.00722	0.04466
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00137	-0.00139	-0.00138
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00164	0.00167	0.00166
	(!A2_N * B1 * B2 * X)	0.00143	0.00262	0.03940
	(!A2_N * B1 * B2 * X)	0.00609	0.00731	0.04408
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00154	-0.00154	-0.00154
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00175	0.00176	0.00177
	(!A2_N * B1 * B2 * X)	0.00128	0.00233	0.04370
	(!A2_N * B1 * B2 * X)	0.00647	0.00753	0.04888

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)	0.00147	0.00148	0.00147
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1_N * B1 * B2 * X)	0.00425	0.00651	0.05913
	(!A1_N * B1 * B2 * X)	0.00057	0.00283	0.05545
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00149	0.00150	0.00149
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1_N * B1 * B2 * X)	0.00435	0.00659	0.05914
	(!A1_N * B1 * B2 * X)	0.00056	0.00279	0.05535
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00174	0.00175	0.00174
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00087	-0.00087	-0.00087
	(!A1_N * B1 * B2 * X)	0.00600	0.00845	0.06525
	(!A1_N * B1 * B2 * X)	0.00162	0.00405	0.06088

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)	-0.00143	-0.00144	-0.00147
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00082	0.00082	0.00079
	(!A1_N * B1 * B2 * X)	0.00150	0.00429	0.05669
	(!A1_N * B1 * B2 * X)	0.00516	0.00797	0.06035
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00145	-0.00145	-0.00148
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00082	0.00082	0.00079
	(!A1_N * B1 * B2 * X)	0.00143	0.00425	0.05653
	(!A1_N * B1 * B2 * X)	0.00520	0.00802	0.06031
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00169	-0.00170	-0.00173
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00091	0.00091	0.00088
	(!A1_N * B1 * B2 * X)	0.00123	0.00384	0.06010
	(!A1_N * B1 * B2 * X)	0.00557	0.00820	0.06444

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)	0.00164	0.00166	0.00164
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00164	-0.00166	-0.00165
	(!A1_N * !A2_N * B2 * X)	0.00185	0.00171	0.00168
	(!A1_N * !A2_N * B2 * X)	-0.00146	-0.00163	-0.00163
	(!A1_N * !A2_N * !B2 * X)	0.00164	0.00165	0.00164
	(!A1_N * !A2_N * !B2 * X)	-0.00164	-0.00165	-0.00165
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00155	0.00157	0.00156
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00167	-0.00169	-0.00168
	(!A1_N * !A2_N * B2 * X)	0.00180	0.00164	0.00163
	(!A1_N * !A2_N * B2 * X)	-0.00146	-0.00165	-0.00166
	(!A1_N * !A2_N * !B2 * X)	0.00155	0.00158	0.00155
	(!A1_N * !A2_N * !B2 * X)	-0.00168	-0.00169	-0.00168
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00267	0.00271	0.00268
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00336	-0.00339	-0.00337
	(!A1_N * !A2_N * B2 * X)	0.00318	0.00282	0.00278
	(!A1_N * !A2_N * B2 * X)	-0.00286	-0.00332	-0.00333
	(!A1_N * !A2_N * !B2 * X)	0.00268	0.00270	0.00269
	(!A1_N * !A2_N * !B2 * X)	-0.00335	-0.00337	-0.00336

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)	-0.00155	-0.00164	-0.00164
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00170	0.00167	0.00165
	(!A1_N * !A2_N * B2 * X)	-0.00168	-0.00169	-0.00168
	(!A1_N * !A2_N * B2 * X)	0.00162	0.00165	0.00163
	(!A1_N * !A2_N * !B2 * X)	-0.00159	-0.00164	-0.00164
	(!A1_N * !A2_N * !B2 * X)	0.00164	0.00167	0.00165
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00148	-0.00156	-0.00156
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00174	0.00169	0.00169
	(!A1_N * !A2_N * B2 * X)	-0.00163	-0.00163	-0.00162
	(!A1_N * !A2_N * B2 * X)	0.00165	0.00167	0.00166
	(!A1_N * !A2_N * !B2 * X)	-0.00152	-0.00156	-0.00155
	(!A1_N * !A2_N * !B2 * X)	0.00169	0.00169	0.00169
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00245	-0.00265	-0.00267
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00350	0.00341	0.00338
	(!A1_N * !A2_N * B2 * X)	-0.00277	-0.00277	-0.00276
	(!A1_N * !A2_N * B2 * X)	0.00332	0.00333	0.00333
	(!A1_N * !A2_N * !B2 * X)	-0.00255	-0.00266	-0.00267
	(!A1_N * !A2_N * !B2 * X)	0.00336	0.00340	0.00338

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)	0.00058	0.00058	0.00057
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00189	-0.00190	-0.00192
	(!A1_N * !A2_N * B1 * X)	0.00149	0.00131	0.00131
	(!A1_N * !A2_N * B1 * X)	-0.00159	-0.00178	-0.00179
	(!A1_N * !A2_N * !B1 * X)	0.00125	0.00126	0.00126
	(!A1_N * !A2_N * !B1 * X)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00056	0.00057	0.00055
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00206	-0.00208	-0.00209
	(!A1_N * !A2_N * B1 * X)	0.00180	0.00161	0.00160
	(!A1_N * !A2_N * B1 * X)	-0.00154	-0.00177	-0.00177
	(!A1_N * !A2_N * !B1 * X)	0.00152	0.00154	0.00153
	(!A1_N * !A2_N * !B1 * X)	-0.00179	-0.00180	-0.00180
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00094	0.00095	0.00092
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00382	-0.00385	-0.00391
	(!A1_N * !A2_N * B1 * X)	0.00316	0.00282	0.00278
	(!A1_N * !A2_N * B1 * X)	-0.00287	-0.00332	-0.00333
	(!A1_N * !A2_N * !B1 * X)	0.00268	0.00271	0.00269
	(!A1_N * !A2_N * !B1 * X)	-0.00335	-0.00338	-0.00336

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)	-0.00056	-0.00056	-0.00056
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00193	0.00194	0.00192
	(!A1_N * !A2_N * B1 * X)	-0.00130	-0.00131	-0.00130
	(!A1_N * !A2_N * B1 * X)	0.00178	0.00180	0.00179
	(!A1_N * !A2_N * !B1 * X)	-0.00122	-0.00126	-0.00126
	(!A1_N * !A2_N * !B1 * X)	0.00181	0.00182	0.00181
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00055	-0.00055	-0.00054
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00210	0.00211	0.00210
	(!A1_N * !A2_N * B1 * X)	-0.00159	-0.00160	-0.00159
	(!A1_N * !A2_N * B1 * X)	0.00176	0.00178	0.00177
	(!A1_N * !A2_N * !B1 * X)	-0.00148	-0.00153	-0.00153
	(!A1_N * !A2_N * !B1 * X)	0.00179	0.00181	0.00180
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00393	0.00395	0.00392
	(!A1_N * !A2_N * B1 * X)	-0.00277	-0.00277	-0.00276
	(!A1_N * !A2_N * B1 * X)	0.00332	0.00334	0.00333
	(!A1_N * !A2_N * !B1 * X)	-0.00253	-0.00268	-0.00267
	(!A1_N * !A2_N * !B1 * X)	0.00335	0.00340	0.00337

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311oi_1	11.18880
sky130_fd_sc_hs__a311oi_2	19.18080
sky130_fd_sc_hs__a311oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__a311oi_1	0.00275	0.00280	0.00271	0.00288	0.00273	0.45378
sky130_fd_sc_hs__a311oi_2	0.00520	0.00499	0.00481	0.00411	0.00401	0.83599
sky130_fd_sc_hs__a311oi_4	0.01004	0.00973	0.00975	0.00769	0.00782	1.45242

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311oi_1	0.00000	0.02188	0.06294
sky130_fd_sc_hs__a311oi_2	0.00000	0.04332	0.12588
sky130_fd_sc_hs__a311oi_4	0.00000	0.08665	0.25175

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)	0.11223	0.94752	9.85250
	A2->Y (FR)	0.14078	1.00864	10.20070
	A3->Y (FR)	0.15267	1.00101	9.97849
	B1->Y (FR)	0.12189	1.02670	10.86770
	C1->Y (FR)	0.09469	0.99130	10.70800
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.09598	0.79910	9.71742
	A2->Y (FR)	0.11966	0.82826	9.81680
	A3->Y (FR)	0.14283	0.85401	9.84176
	B1->Y (FR)	0.12233	0.87730	10.60620
	C1->Y (FR)	0.08857	0.83605	10.45490
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.09079	0.66869	9.22337
	A2->Y (FR)	0.11872	0.70627	9.43379
	A3->Y (FR)	0.14667	0.74620	9.62359
	B1->Y (FR)	0.12432	0.77175	10.48770
	C1->Y (FR)	0.09010	0.73872	10.39500

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.02737	0.30989	2.97170
	A2->Y (RF)	0.03225	0.30067	2.82560
	A3->Y (RF)	0.03444	0.26880	2.41782
	B1->Y (RF)	0.01795	0.20966	1.89739
	C1->Y (RF)	0.01564	0.20450	1.90199
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.02588	0.30952	3.58253
	A2->Y (RF)	0.03049	0.26572	2.96265
	A3->Y (RF)	0.03424	0.23520	2.48013
	B1->Y (RF)	0.02350	0.28363	3.32307
	C1->Y (RF)	0.01740	0.26806	3.29758
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.02651	0.26974	3.56276
	A2->Y (RF)	0.03187	0.22829	2.90386
	A3->Y (RF)	0.03516	0.18671	2.22885
	B1->Y (RF)	0.02121	0.22149	2.98677
	C1->Y (RF)	0.01666	0.22900	3.30429

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00045	0.00025	0.00793
	A1	0.00770	0.00751	0.01519
	A2	0.00104	0.00081	0.00851
	A2	0.00936	0.00915	0.01686
	A3	0.00128	0.00113	0.00915
	A3	0.01070	0.01055	0.01857
	B1	0.00023	0.00035	0.01073
	B1	0.00642	0.00654	0.01694
	C1	0.00011	0.00118	0.02149
	C1	0.00539	0.00646	0.02675
sky130_fd_sc_hs__a311oi_2	A1	-0.00013	-0.00047	0.01343
	A1	0.01321	0.01285	0.02677
	A2	0.00105	0.00069	0.01491
	A2	0.01636	0.01600	0.03018
	A3	0.00241	0.00208	0.01635
	A3	0.01965	0.01931	0.03353
	B1	0.00062	0.00079	0.01347
	B1	0.00993	0.01010	0.02281
	C1	0.00043	0.00211	0.02871
	C1	0.00768	0.00934	0.03612

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00087	-0.00148	0.02507
	A1	0.02513	0.02451	0.05133
	A2	0.00156	0.00075	0.02814
	A2	0.03166	0.03088	0.05835
	A3	0.00386	0.00321	0.03144
	A3	0.03822	0.03765	0.06582
	B1	0.00065	0.00117	0.02774
	B1	0.01864	0.01919	0.04576
	C1	0.00033	0.00380	0.05352
	C1	0.01446	0.01796	0.06774

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00950	0.00958	0.01666
	A1	0.00239	0.00244	0.00949
	A2	0.01060	0.01054	0.01610
	A2	0.00236	0.00227	0.00781
	A3	0.01169	0.01162	0.01758
	A3	0.00231	0.00222	0.00818
	B1	0.00701	0.00734	0.01666
	B1	0.00086	0.00117	0.01052
	C1	0.00518	0.00563	0.01453
	C1	-0.00009	0.00035	0.00925

sky130_fd_sc_hs__a311oi_2	**A1**	0.01771	0.01777	0.02992
	A1	0.00469	0.00474	0.01680
	A2	0.01979	0.01965	0.03038
	A2	0.00474	0.00459	0.01522
	A3	0.02186	0.02174	0.03317
	A3	0.00471	0.00452	0.01604
	B1	0.01062	0.01088	0.02241
	B1	0.00141	0.00162	0.01314
	C1	0.00602	0.00682	0.01784
	C1	-0.00122	-0.00046	0.01054
sky130_fd_sc_hs__a311oi_4	**A1**	0.03410	0.03417	0.05784
	A1	0.00870	0.00876	0.03256
	A2	0.03834	0.03811	0.05949
	A2	0.00870	0.00838	0.02949
	A3	0.04284	0.04254	0.06668
	A3	0.00859	0.00825	0.03237
	B1	0.02006	0.02120	0.04466
	B1	0.00221	0.00331	0.02668
	C1	0.01160	0.01325	0.03482
	C1	-0.00254	-0.00095	0.02028

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)**	0.00163	0.00162	0.00161
	(A2 * A3 * B1 * C1 * !Y)	-0.00164	-0.00172	-0.00173
	(A2 * A3 * B1 * !C1 * !Y)	0.00163	0.00162	0.00161
	(A2 * A3 * B1 * !C1 * !Y)	-0.00163	-0.00174	-0.00173
	(A2 * A3 * !B1 * C1 * !Y)	0.00163	0.00161	0.00161
	(A2 * A3 * !B1 * C1 * !Y)	-0.00154	-0.00170	-0.00169
	(A2 * !A3 * B1 * C1 * !Y)	0.00156	0.00157	0.00156
	(A2 * !A3 * B1 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(A2 * !A3 * B1 * !C1 * !Y)	0.00155	0.00156	0.00155
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00177	-0.00177	-0.00177
	(A2 * !A3 * !B1 * C1 * !Y)	0.00155	0.00156	0.00155
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00177	-0.00178	-0.00177
	(A2 * !A3 * !B1 * !C1 * Y)	0.00045	0.00045	0.00043
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00212	-0.00212	-0.00219
	(!A2 * B1 * C1 * !Y)	0.00156	0.00158	0.00156
	(!A2 * B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A2 * B1 * !C1 * !Y)	0.00156	0.00158	0.00156
	(!A2 * B1 * !C1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A2 * !B1 * C1 * !Y)	0.00157	0.00159	0.00158
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00178	-0.00177
	(!A2 * !B1 * !C1 * Y)	0.00047	0.00047	0.00046
	(!A2 * !B1 * !C1 * Y)	-0.00215	-0.00217	-0.00219

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00314	0.00319	0.00315
	(A2 * A3 * B1 * C1 * !Y)	-0.00343	-0.00361	-0.00360
	(A2 * A3 * B1 * !C1 * !Y)	0.00314	0.00319	0.00315
	(A2 * A3 * B1 * !C1 * !Y)	-0.00342	-0.00362	-0.00360
	(A2 * A3 * !B1 * C1 * !Y)	0.00317	0.00315	0.00315
	(A2 * A3 * !B1 * C1 * !Y)	-0.00326	-0.00354	-0.00352
	(A2 * !A3 * B1 * C1 * !Y)	0.00303	0.00304	0.00303
	(A2 * !A3 * B1 * C1 * !Y)	-0.00371	-0.00371	-0.00370
	(A2 * !A3 * B1 * !C1 * !Y)	0.00303	0.00304	0.00303
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00370	-0.00371	-0.00370
	(A2 * !A3 * !B1 * C1 * !Y)	0.00303	0.00305	0.00303
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00370	-0.00371	-0.00370
	(A2 * !A3 * !B1 * !C1 * Y)	0.00101	0.00101	0.00095
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00426	-0.00426	-0.00440
	(!A2 * B1 * C1 * !Y)	0.00304	0.00309	0.00306
	(!A2 * B1 * C1 * !Y)	-0.00369	-0.00372	-0.00370
	(!A2 * B1 * !C1 * !Y)	0.00303	0.00305	0.00303
	(!A2 * B1 * !C1 * !Y)	-0.00371	-0.00372	-0.00370
	(!A2 * !B1 * C1 * !Y)	0.00307	0.00309	0.00308
	(!A2 * !B1 * C1 * !Y)	-0.00371	-0.00371	-0.00370
	(!A2 * !B1 * !C1 * Y)	0.00101	0.00101	0.00098
	(!A2 * !B1 * !C1 * Y)	-0.00435	-0.00435	-0.00442

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00615	0.00621	0.00616
	(A2 * A3 * B1 * C1 * !Y)	-0.00681	-0.00718	-0.00715
	(A2 * A3 * B1 * !C1 * !Y)	0.00615	0.00621	0.00616
	(A2 * A3 * B1 * !C1 * !Y)	-0.00676	-0.00719	-0.00715
	(A2 * A3 * !B1 * C1 * !Y)	0.00620	0.00622	0.00617
	(A2 * A3 * !B1 * C1 * !Y)	-0.00642	-0.00704	-0.00698
	(A2 * !A3 * B1 * C1 * !Y)	0.00584	0.00589	0.00585
	(A2 * !A3 * B1 * C1 * !Y)	-0.00731	-0.00736	-0.00732
	(A2 * !A3 * B1 * !C1 * !Y)	0.00582	0.00587	0.00583
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00731	-0.00735	-0.00732
	(A2 * !A3 * !B1 * C1 * !Y)	0.00579	0.00583	0.00581
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00730	-0.00735	-0.00732
	(A2 * !A3 * !B1 * !C1 * Y)	0.00190	0.00190	0.00178
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00841	-0.00846	-0.00868
	(!A2 * B1 * C1 * !Y)	0.00589	0.00594	0.00592
	(!A2 * B1 * C1 * !Y)	-0.00730	-0.00734	-0.00732
	(!A2 * B1 * !C1 * !Y)	0.00588	0.00595	0.00591
	(!A2 * B1 * !C1 * !Y)	-0.00730	-0.00736	-0.00732
	(!A2 * !B1 * C1 * !Y)	0.00588	0.00595	0.00591
	(!A2 * !B1 * C1 * !Y)	-0.00729	-0.00736	-0.00732
	(!A2 * !B1 * !C1 * Y)	0.00193	0.00193	0.00187
	(!A2 * !B1 * !C1 * Y)	-0.00860	-0.00864	-0.00872

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)**	-0.00162	-0.00161	-0.00161
	(A2 * A3 * B1 * C1 * !Y)	0.00173	0.00172	0.00173
	(A2 * A3 * B1 * !C1 * !Y)	-0.00162	-0.00162	-0.00161
	(A2 * A3 * B1 * !C1 * !Y)	0.00173	0.00174	0.00173
	(A2 * A3 * !B1 * C1 * !Y)	-0.00160	-0.00161	-0.00161
	(A2 * A3 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(A2 * !A3 * B1 * C1 * !Y)	-0.00141	-0.00153	-0.00154
	(A2 * !A3 * B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00140	-0.00153	-0.00154
	(A2 * !A3 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00138	-0.00153	-0.00154
	(A2 * !A3 * !B1 * C1 * !Y)	0.00177	0.00179	0.00177
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00044	-0.00044	-0.00043
	(A2 * !A3 * !B1 * !C1 * Y)	0.00219	0.00221	0.00219
	(!A2 * B1 * C1 * !Y)	-0.00150	-0.00156	-0.00156
	(!A2 * B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(!A2 * B1 * !C1 * !Y)	-0.00150	-0.00155	-0.00156
	(!A2 * B1 * !C1 * !Y)	0.00177	0.00178	0.00177
	(!A2 * !B1 * C1 * !Y)	-0.00150	-0.00155	-0.00156
	(!A2 * !B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(!A2 * !B1 * !C1 * Y)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !C1 * Y)	0.00219	0.00222	0.00219

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00314	-0.00315	-0.00314
	(A2 * A3 * B1 * C1 * !Y)	0.00359	0.00361	0.00360
	(A2 * A3 * B1 * !C1 * !Y)	-0.00314	-0.00315	-0.00314
	(A2 * A3 * B1 * !C1 * !Y)	0.00361	0.00362	0.00360
	(A2 * A3 * !B1 * C1 * !Y)	-0.00314	-0.00315	-0.00314
	(A2 * A3 * !B1 * C1 * !Y)	0.00350	0.00354	0.00352
	(A2 * !A3 * B1 * C1 * !Y)	-0.00274	-0.00300	-0.00302
	(A2 * !A3 * B1 * C1 * !Y)	0.00372	0.00374	0.00371
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00268	-0.00302	-0.00302
	(A2 * !A3 * B1 * !C1 * !Y)	0.00370	0.00374	0.00371
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00265	-0.00303	-0.00302
	(A2 * !A3 * !B1 * C1 * !Y)	0.00370	0.00374	0.00371
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00093	-0.00095	-0.00094
	(A2 * !A3 * !B1 * !C1 * Y)	0.00440	0.00447	0.00443
	(!A2 * B1 * C1 * !Y)	-0.00291	-0.00305	-0.00305
	(!A2 * B1 * C1 * !Y)	0.00370	0.00374	0.00371
	(!A2 * B1 * !C1 * !Y)	-0.00292	-0.00305	-0.00303
	(!A2 * B1 * !C1 * !Y)	0.00372	0.00375	0.00371
	(!A2 * !B1 * C1 * !Y)	-0.00292	-0.00307	-0.00305
	(!A2 * !B1 * C1 * !Y)	0.00372	0.00375	0.00371
	(!A2 * !B1 * !C1 * Y)	-0.00096	-0.00098	-0.00096
	(!A2 * !B1 * !C1 * Y)	0.00440	0.00450	0.00443

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00612	-0.00616	-0.00614
	(A2 * A3 * B1 * C1 * !Y)	0.00710	0.00718	0.00715
	(A2 * A3 * B1 * !C1 * !Y)	-0.00615	-0.00616	-0.00614
	(A2 * A3 * B1 * !C1 * !Y)	0.00715	0.00719	0.00715
	(A2 * A3 * !B1 * C1 * !Y)	-0.00616	-0.00618	-0.00615
	(A2 * A3 * !B1 * C1 * !Y)	0.00698	0.00704	0.00698
	(A2 * !A3 * B1 * C1 * !Y)	-0.00518	-0.00589	-0.00585
	(A2 * !A3 * B1 * C1 * !Y)	0.00731	0.00741	0.00734
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00511	-0.00585	-0.00583
	(A2 * !A3 * B1 * !C1 * !Y)	0.00731	0.00737	0.00734
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00497	-0.00583	-0.00581
	(A2 * !A3 * !B1 * C1 * !Y)	0.00730	0.00737	0.00734
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00178	-0.00180	-0.00177
	(A2 * !A3 * !B1 * !C1 * Y)	0.00869	0.00881	0.00872
	(!A2 * B1 * C1 * !Y)	-0.00569	-0.00594	-0.00592
	(!A2 * B1 * C1 * !Y)	0.00732	0.00741	0.00734
	(!A2 * B1 * !C1 * !Y)	-0.00568	-0.00595	-0.00591
	(!A2 * B1 * !C1 * !Y)	0.00731	0.00741	0.00734
	(!A2 * !B1 * C1 * !Y)	-0.00565	-0.00595	-0.00591
	(!A2 * !B1 * C1 * !Y)	0.00729	0.00737	0.00734
	(!A2 * !B1 * !C1 * Y)	-0.00183	-0.00186	-0.00183
	(!A2 * !B1 * !C1 * Y)	0.00870	0.00887	0.00873

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)**	0.00170	0.00169	0.00168
	(A1 * A3 * B1 * C1 * !Y)	-0.00164	-0.00173	-0.00173
	(A1 * A3 * B1 * !C1 * !Y)	0.00170	0.00169	0.00168
	(A1 * A3 * B1 * !C1 * !Y)	-0.00163	-0.00173	-0.00173
	(A1 * A3 * !B1 * C1 * !Y)	0.00170	0.00168	0.00168
	(A1 * A3 * !B1 * C1 * !Y)	-0.00155	-0.00170	-0.00169
	(A1 * !A3 * B1 * C1 * !Y)	0.00163	0.00164	0.00164
	(A1 * !A3 * B1 * C1 * !Y)	-0.00177	-0.00177	-0.00177
	(A1 * !A3 * B1 * !C1 * !Y)	0.00162	0.00164	0.00163
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00176	-0.00177	-0.00177
	(A1 * !A3 * !B1 * C1 * !Y)	0.00162	0.00164	0.00163
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00177
	(A1 * !A3 * !B1 * !C1 * Y)	0.00056	0.00057	0.00056
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00197	-0.00199	-0.00197
	(!A1 * A3 * B1 * !Y)	0.00162	0.00164	0.00164
	(!A1 * A3 * B1 * !Y)	-0.00176	-0.00177	-0.00177
	(!A1 * A3 * !B1 * C1 * !Y)	0.00162	0.00164	0.00164
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00176	-0.00177	-0.00177
	(!A1 * A3 * !B1 * !C1 * Y)	0.00141	0.00144	0.00142
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00197	-0.00199	-0.00198
	(!A1 * !A3 * B1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !A3 * B1 * !Y)	-0.00177	-0.00178	-0.00177
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00093	0.00094	0.00093
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00198	-0.00199	-0.00198

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00309	0.00310	0.00310
	(A1 * A3 * B1 * C1 * !Y)	-0.00339	-0.00357	-0.00356
	(A1 * A3 * B1 * !C1 * !Y)	0.00310	0.00310	0.00310
	(A1 * A3 * B1 * !C1 * !Y)	-0.00338	-0.00358	-0.00356
	(A1 * A3 * !B1 * C1 * !Y)	0.00313	0.00310	0.00310
	(A1 * A3 * !B1 * C1 * !Y)	-0.00322	-0.00349	-0.00348
	(A1 * !A3 * B1 * C1 * !Y)	0.00300	0.00301	0.00300
	(A1 * !A3 * B1 * C1 * !Y)	-0.00367	-0.00367	-0.00366
	(A1 * !A3 * B1 * !C1 * !Y)	0.00300	0.00301	0.00300
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00366	-0.00367	-0.00366
	(A1 * !A3 * !B1 * C1 * !Y)	0.00300	0.00301	0.00301
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00366	-0.00367	-0.00366
	(A1 * !A3 * !B1 * !C1 * Y)	0.00127	0.00127	0.00127
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00368	-0.00369	-0.00367
	(!A1 * A3 * B1 * !Y)	0.00299	0.00301	0.00299
	(!A1 * A3 * B1 * !Y)	-0.00365	-0.00367	-0.00366
	(!A1 * A3 * !B1 * C1 * !Y)	0.00299	0.00301	0.00300
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00365	-0.00367	-0.00366
	(!A1 * A3 * !B1 * !C1 * Y)	0.00298	0.00299	0.00299
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00367	-0.00367	-0.00367
	(!A1 * !A3 * B1 * !Y)	0.00164	0.00164	0.00164
	(!A1 * !A3 * B1 * !Y)	-0.00365	-0.00366	-0.00366
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00165	0.00164	0.00164
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00365	-0.00365	-0.00366
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00147	0.00149	0.00147
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00371	-0.00373	-0.00370

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00616	0.00619	0.00618
	(A1 * A3 * B1 * C1 * !Y)	-0.00674	-0.00712	-0.00708
	(A1 * A3 * B1 * !C1 * !Y)	0.00618	0.00620	0.00618
	(A1 * A3 * B1 * !C1 * !Y)	-0.00672	-0.00711	-0.00708
	(A1 * A3 * !B1 * C1 * !Y)	0.00625	0.00621	0.00618
	(A1 * A3 * !B1 * C1 * !Y)	-0.00642	-0.00696	-0.00691
	(A1 * !A3 * B1 * C1 * !Y)	0.00584	0.00588	0.00586
	(A1 * !A3 * B1 * C1 * !Y)	-0.00725	-0.00728	-0.00726
	(A1 * !A3 * B1 * !C1 * !Y)	0.00583	0.00587	0.00586
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00725	-0.00728	-0.00726
	(A1 * !A3 * !B1 * C1 * !Y)	0.00585	0.00585	0.00588
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00724	-0.00724	-0.00726
	(A1 * !A3 * !B1 * !C1 * Y)	0.00242	0.00242	0.00243
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00728	-0.00730	-0.00727
	(!A1 * A3 * B1 * !Y)	0.00594	0.00601	0.00597
	(!A1 * A3 * B1 * !Y)	-0.00724	-0.00730	-0.00726
	(!A1 * A3 * !B1 * C1 * !Y)	0.00602	0.00608	0.00605
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00724	-0.00728	-0.00726
	(!A1 * A3 * !B1 * !C1 * Y)	0.00600	0.00603	0.00601
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00727	-0.00728	-0.00726
	(!A1 * !A3 * B1 * !Y)	0.00312	0.00312	0.00312
	(!A1 * !A3 * B1 * !Y)	-0.00724	-0.00726	-0.00727
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00313	0.00312	0.00312
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00725	-0.00726	-0.00726
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00281	0.00280	0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00734	-0.00730	-0.00732

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)**	-0.00169	-0.00169	-0.00168
	(A1 * A3 * B1 * C1 * !Y)	0.00173	0.00173	0.00173
	(A1 * A3 * B1 * !C1 * !Y)	-0.00169	-0.00169	-0.00168
	(A1 * A3 * B1 * !C1 * !Y)	0.00173	0.00173	0.00173
	(A1 * A3 * !B1 * C1 * !Y)	-0.00167	-0.00168	-0.00168
	(A1 * A3 * !B1 * C1 * !Y)	0.00168	0.00170	0.00169
	(A1 * !A3 * B1 * C1 * !Y)	-0.00156	-0.00161	-0.00162
	(A1 * !A3 * B1 * C1 * !Y)	0.00177	0.00177	0.00177
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00156	-0.00161	-0.00162
	(A1 * !A3 * B1 * !C1 * !Y)	0.00176	0.00177	0.00177
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00157	-0.00163	-0.00162
	(A1 * !A3 * !B1 * C1 * !Y)	0.00178	0.00179	0.00177
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00054	-0.00055	-0.00055
	(A1 * !A3 * !B1 * !C1 * Y)	0.00202	0.00203	0.00199
	(!A1 * A3 * B1 * !Y)	-0.00157	-0.00162	-0.00163
	(!A1 * A3 * B1 * !Y)	0.00176	0.00178	0.00177
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00156	-0.00162	-0.00163
	(!A1 * A3 * !B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00131	-0.00142	-0.00142
	(!A1 * A3 * !B1 * !C1 * Y)	0.00204	0.00200	0.00198
	(!A1 * !A3 * B1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A3 * B1 * !Y)	0.00178	0.00179	0.00177
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00178	0.00179	0.00177
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00065	-0.00065	-0.00065
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00206	0.00207	0.00200

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00308	-0.00310	-0.00309
	(A1 * A3 * B1 * C1 * !Y)	0.00354	0.00357	0.00356
	(A1 * A3 * B1 * !C1 * !Y)	-0.00308	-0.00310	-0.00309
	(A1 * A3 * B1 * !C1 * !Y)	0.00354	0.00358	0.00356
	(A1 * A3 * !B1 * C1 * !Y)	-0.00309	-0.00310	-0.00310
	(A1 * A3 * !B1 * C1 * !Y)	0.00346	0.00349	0.00348
	(A1 * !A3 * B1 * C1 * !Y)	-0.00284	-0.00298	-0.00299
	(A1 * !A3 * B1 * C1 * !Y)	0.00367	0.00370	0.00367
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00283	-0.00301	-0.00299
	(A1 * !A3 * B1 * !C1 * !Y)	0.00366	0.00369	0.00367
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00283	-0.00301	-0.00299
	(A1 * !A3 * !B1 * C1 * !Y)	0.00366	0.00370	0.00367
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00120	-0.00122	-0.00123
	(A1 * !A3 * !B1 * !C1 * Y)	0.00374	0.00379	0.00370
	(!A1 * A3 * B1 * !Y)	-0.00286	-0.00301	-0.00299
	(!A1 * A3 * B1 * !Y)	0.00365	0.00370	0.00367
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00286	-0.00301	-0.00300
	(!A1 * A3 * !B1 * C1 * !Y)	0.00365	0.00370	0.00367
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00273	-0.00299	-0.00299
	(!A1 * A3 * !B1 * !C1 * Y)	0.00382	0.00371	0.00368
	(!A1 * !A3 * B1 * !Y)	-0.00164	-0.00164	-0.00164
	(!A1 * !A3 * B1 * !Y)	0.00365	0.00370	0.00367
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00165	-0.00164	-0.00164
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00365	0.00370	0.00368
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00147	-0.00149	-0.00147
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00384	0.00389	0.00375

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00615	-0.00618	-0.00616
	(A1 * A3 * B1 * C1 * !Y)	0.00705	0.00712	0.00708
	(A1 * A3 * B1 * !C1 * !Y)	-0.00615	-0.00618	-0.00616
	(A1 * A3 * B1 * !C1 * !Y)	0.00705	0.00711	0.00708
	(A1 * A3 * !B1 * C1 * !Y)	-0.00617	-0.00619	-0.00617
	(A1 * A3 * !B1 * C1 * !Y)	0.00691	0.00696	0.00691
	(A1 * !A3 * B1 * C1 * !Y)	-0.00561	-0.00588	-0.00586
	(A1 * !A3 * B1 * C1 * !Y)	0.00726	0.00733	0.00728
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00561	-0.00587	-0.00586
	(A1 * !A3 * B1 * !C1 * !Y)	0.00726	0.00732	0.00728
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00560	-0.00585	-0.00588
	(A1 * !A3 * !B1 * C1 * !Y)	0.00726	0.00732	0.00728
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00231	-0.00234	-0.00236
	(A1 * !A3 * !B1 * !C1 * Y)	0.00741	0.00751	0.00733
	(!A1 * A3 * B1 * !Y)	-0.00569	-0.00601	-0.00597
	(!A1 * A3 * B1 * !Y)	0.00724	0.00735	0.00728
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00569	-0.00602	-0.00598
	(!A1 * A3 * !B1 * C1 * !Y)	0.00725	0.00735	0.00728
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00535	-0.00601	-0.00598
	(!A1 * A3 * !B1 * !C1 * Y)	0.00768	0.00735	0.00728
	(!A1 * !A3 * B1 * !Y)	-0.00312	-0.00312	-0.00312
	(!A1 * !A3 * B1 * !Y)	0.00724	0.00735	0.00729
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00313	-0.00312	-0.00312
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00725	0.00735	0.00729
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00281	-0.00280	-0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00760	0.00770	0.00742

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)**	0.00180	0.00179	0.00178
	(A1 * A2 * B1 * C1 * !Y)	-0.00166	-0.00175	-0.00174
	(A1 * A2 * B1 * !C1 * !Y)	0.00180	0.00179	0.00178
	(A1 * A2 * B1 * !C1 * !Y)	-0.00165	-0.00175	-0.00174
	(A1 * A2 * !B1 * C1 * !Y)	0.00181	0.00178	0.00178
	(A1 * A2 * !B1 * C1 * !Y)	-0.00158	-0.00171	-0.00170
	(A1 * !A2 * !B1 * !C1 * Y)	0.00154	0.00155	0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00193	-0.00194	-0.00194
	(!A2 * B1 * !Y)	0.00170	0.00171	0.00171
	(!A2 * B1 * !Y)	-0.00177	-0.00178	-0.00178
	(!A2 * !B1 * C1 * !Y)	0.00170	0.00170	0.00171
	(!A2 * !B1 * C1 * !Y)	-0.00177	-0.00177	-0.00178
	(!A1 * A2 * B1 * !Y)	0.00169	0.00170	0.00169
	(!A1 * A2 * B1 * !Y)	-0.00177	-0.00178	-0.00178
	(!A1 * A2 * !B1 * C1 * !Y)	0.00172	0.00174	0.00172
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00177	-0.00179	-0.00178
	(!A1 * A2 * !B1 * !C1 * Y)	0.00153	0.00154	0.00153
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00193	-0.00194	-0.00194

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00304	0.00305	0.00304
	(A1 * A2 * B1 * C1 * !Y)	-0.00333	-0.00349	-0.00349
	(A1 * A2 * B1 * !C1 * !Y)	0.00305	0.00305	0.00304
	(A1 * A2 * B1 * !C1 * !Y)	-0.00332	-0.00348	-0.00349
	(A1 * A2 * !B1 * C1 * !Y)	0.00305	0.00305	0.00304
	(A1 * A2 * !B1 * C1 * !Y)	-0.00315	-0.00341	-0.00340
	(A1 * !A2 * !B1 * !C1 * Y)	0.00294	0.00296	0.00295
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00356	-0.00358	-0.00357
	(!A2 * B1 * !Y)	0.00294	0.00297	0.00295
	(!A2 * B1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A2 * !B1 * C1 * !Y)	0.00290	0.00293	0.00292
	(!A2 * !B1 * C1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A1 * A2 * B1 * !Y)	0.00289	0.00292	0.00290
	(!A1 * A2 * B1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A1 * A2 * !B1 * C1 * !Y)	0.00289	0.00292	0.00290
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00356	-0.00358	-0.00357
	(!A1 * A2 * !B1 * !C1 * Y)	0.00289	0.00292	0.00290
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00356	-0.00359	-0.00357
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00293	0.00296	0.00295
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00356	-0.00358	-0.00357

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00614	0.00618	0.00616
	(A1 * A2 * B1 * C1 * !Y)	-0.00671	-0.00705	-0.00705
	(A1 * A2 * B1 * !C1 * !Y)	0.00615	0.00618	0.00616
	(A1 * A2 * B1 * !C1 * !Y)	-0.00668	-0.00704	-0.00705
	(A1 * A2 * !B1 * C1 * !Y)	0.00620	0.00619	0.00616
	(A1 * A2 * !B1 * C1 * !Y)	-0.00638	-0.00693	-0.00688
	(A1 * !A2 * !B1 * !C1 * Y)	0.00591	0.00596	0.00594
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00720	-0.00725	-0.00723
	(!A2 * B1 * !Y)	0.00587	0.00589	0.00587
	(!A2 * B1 * !Y)	-0.00722	-0.00724	-0.00723
	(!A2 * !B1 * C1 * !Y)	0.00592	0.00597	0.00594
	(!A2 * !B1 * C1 * !Y)	-0.00720	-0.00724	-0.00722
	(!A1 * A2 * B1 * !Y)	0.00586	0.00591	0.00588
	(!A1 * A2 * B1 * !Y)	-0.00721	-0.00724	-0.00722
	(!A1 * A2 * !B1 * C1 * !Y)	0.00586	0.00593	0.00589
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00720	-0.00725	-0.00722
	(!A1 * A2 * !B1 * !C1 * Y)	0.00579	0.00585	0.00582
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00721	-0.00725	-0.00723
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00591	0.00597	0.00594
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00721	-0.00725	-0.00723

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)**	-0.00179	-0.00179	-0.00178
	(A1 * A2 * B1 * C1 * !Y)	0.00174	0.00175	0.00174
	(A1 * A2 * B1 * !C1 * !Y)	-0.00179	-0.00179	-0.00178
	(A1 * A2 * B1 * !C1 * !Y)	0.00174	0.00175	0.00174
	(A1 * A2 * !B1 * C1 * !Y)	-0.00178	-0.00178	-0.00178
	(A1 * A2 * !B1 * C1 * !Y)	0.00169	0.00171	0.00170
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00149	-0.00155	-0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	0.00193	0.00196	0.00195
	(!A2 * B1 * !Y)	-0.00167	-0.00171	-0.00171
	(!A2 * B1 * !Y)	0.00177	0.00179	0.00178
	(!A2 * !B1 * C1 * !Y)	-0.00166	-0.00170	-0.00171
	(!A2 * !B1 * C1 * !Y)	0.00177	0.00179	0.00178
	(!A1 * A2 * B1 * !Y)	-0.00161	-0.00170	-0.00169
	(!A1 * A2 * B1 * !Y)	0.00178	0.00179	0.00178
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00160	-0.00173	-0.00171
	(!A1 * A2 * !B1 * C1 * !Y)	0.00178	0.00180	0.00178
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00144	-0.00154	-0.00153
	(!A1 * A2 * !B1 * !C1 * Y)	0.00194	0.00196	0.00195
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00150	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00193	0.00196	0.00195

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00302	-0.00303	-0.00303
	(A1 * A2 * B1 * C1 * !Y)	0.00347	0.00349	0.00349
	(A1 * A2 * B1 * !C1 * !Y)	-0.00302	-0.00303	-0.00303
	(A1 * A2 * B1 * !C1 * !Y)	0.00347	0.00348	0.00349
	(A1 * A2 * !B1 * C1 * !Y)	-0.00303	-0.00304	-0.00303
	(A1 * A2 * !B1 * C1 * !Y)	0.00339	0.00341	0.00340
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00277	-0.00292	-0.00293
	(A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00361	0.00358
	(!A2 * B1 * !Y)	-0.00280	-0.00292	-0.00294
	(!A2 * B1 * !Y)	0.00356	0.00360	0.00358
	(!A2 * !B1 * C1 * !Y)	-0.00279	-0.00292	-0.00292
	(!A2 * !B1 * C1 * !Y)	0.00356	0.00360	0.00358
	(!A1 * A2 * B1 * !Y)	-0.00266	-0.00288	-0.00290
	(!A1 * A2 * B1 * !Y)	0.00358	0.00360	0.00358
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00266	-0.00287	-0.00290
	(!A1 * A2 * !B1 * C1 * !Y)	0.00358	0.00360	0.00358
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00265	-0.00288	-0.00290
	(!A1 * A2 * !B1 * !C1 * Y)	0.00359	0.00362	0.00358
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00278	-0.00291	-0.00293
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00357	0.00361	0.00358

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00613	-0.00614	-0.00614
	(A1 * A2 * B1 * C1 * !Y)	0.00702	0.00705	0.00705
	(A1 * A2 * B1 * !C1 * !Y)	-0.00613	-0.00614	-0.00614
	(A1 * A2 * B1 * !C1 * !Y)	0.00703	0.00704	0.00705
	(A1 * A2 * !B1 * C1 * !Y)	-0.00615	-0.00617	-0.00615
	(A1 * A2 * !B1 * C1 * !Y)	0.00689	0.00693	0.00688
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00557	-0.00592	-0.00592
	(A1 * !A2 * !B1 * !C1 * Y)	0.00722	0.00731	0.00725
	(!A2 * B1 * !Y)	-0.00563	-0.00588	-0.00587
	(!A2 * B1 * !Y)	0.00722	0.00728	0.00725
	(!A2 * !B1 * C1 * !Y)	-0.00563	-0.00588	-0.00592
	(!A2 * !B1 * C1 * !Y)	0.00722	0.00728	0.00725
	(!A1 * A2 * B1 * !Y)	-0.00536	-0.00581	-0.00586
	(!A1 * A2 * B1 * !Y)	0.00725	0.00729	0.00725
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00536	-0.00580	-0.00586
	(!A1 * A2 * !B1 * C1 * !Y)	0.00726	0.00729	0.00725
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00534	-0.00581	-0.00582
	(!A1 * A2 * !B1 * !C1 * Y)	0.00727	0.00728	0.00725
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00560	-0.00593	-0.00592
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00722	0.00731	0.00725

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)**	0.00188	0.00182	0.00177
	(A1 * A2 * A3 * C1 * !Y)	-0.00121	-0.00120	-0.00120
	(A1 * A2 * A3 * !C1 * !Y)	0.00175	0.00175	0.00173
	(A1 * A2 * A3 * !C1 * !Y)	-0.00094	-0.00094	-0.00094
	(A1 * A2 * !A3 * C1 * !Y)	0.00200	0.00172	0.00171
	(A1 * A2 * !A3 * C1 * !Y)	-0.00141	-0.00173	-0.00173
	(A1 * !A2 * C1 * !Y)	0.00200	0.00172	0.00171
	(A1 * !A2 * C1 * !Y)	-0.00141	-0.00172	-0.00173
	(!A1 * C1 * !Y)	0.00198	0.00172	0.00171
	(!A1 * C1 * !Y)	-0.00143	-0.00172	-0.00173
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00196	0.00186	0.00178
	(A1 * A2 * A3 * C1 * !Y)	-0.00250	-0.00254	-0.00251
	(A1 * A2 * A3 * !C1 * !Y)	0.00178	0.00179	0.00175
	(A1 * A2 * A3 * !C1 * !Y)	-0.00198	-0.00199	-0.00200
	(A1 * A2 * !A3 * C1 * !Y)	0.00235	0.00176	0.00173
	(A1 * A2 * !A3 * C1 * !Y)	-0.00290	-0.00359	-0.00359
	(A1 * !A2 * C1 * !Y)	0.00235	0.00177	0.00173
	(A1 * !A2 * C1 * !Y)	-0.00291	-0.00359	-0.00359
	(!A1 * C1 * !Y)	0.00234	0.00177	0.00173
	(!A1 * C1 * !Y)	-0.00291	-0.00359	-0.00359
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00386	0.00362	0.00344
	(A1 * A2 * A3 * C1 * !Y)	-0.00489	-0.00490	-0.00488
	(A1 * A2 * A3 * !C1 * !Y)	0.00342	0.00343	0.00335
	(A1 * A2 * A3 * !C1 * !Y)	-0.00388	-0.00388	-0.00389
	(A1 * A2 * !A3 * C1 * !Y)	0.00464	0.00339	0.00332
	(A1 * A2 * !A3 * C1 * !Y)	-0.00563	-0.00707	-0.00707
	(A1 * !A2 * C1 * !Y)	0.00462	0.00339	0.00332
	(A1 * !A2 * C1 * !Y)	-0.00566	-0.00708	-0.00708
	(!A1 * C1 * !Y)	0.00459	0.00339	0.00332
	(!A1 * C1 * !Y)	-0.00572	-0.00712	-0.00708

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)	-0.00174	-0.00174	-0.00174
	(A1 * A2 * A3 * C1 * !Y)	0.00121	0.00120	0.00120
	(A1 * A2 * A3 * !C1 * !Y)	-0.00169	-0.00171	-0.00171
	(A1 * A2 * A3 * !C1 * !Y)	0.00097	0.00098	0.00097
	(A1 * A2 * !A3 * C1 * !Y)	-0.00170	-0.00171	-0.00170
	(A1 * A2 * !A3 * C1 * !Y)	0.00172	0.00174	0.00173
	(A1 * !A2 * C1 * !Y)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * C1 * !Y)	0.00172	0.00174	0.00173
	(!A1 * C1 * !Y)	-0.00170	-0.00171	-0.00170
	(!A1 * C1 * !Y)	0.00172	0.00174	0.00173
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00175	-0.00177	-0.00175
	(A1 * A2 * A3 * C1 * !Y)	0.00250	0.00254	0.00251
	(A1 * A2 * A3 * !C1 * !Y)	-0.00168	-0.00169	-0.00169
	(A1 * A2 * A3 * !C1 * !Y)	0.00206	0.00206	0.00207
	(A1 * A2 * !A3 * C1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * !A3 * C1 * !Y)	0.00357	0.00359	0.00359
	(A1 * !A2 * C1 * !Y)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * C1 * !Y)	0.00357	0.00359	0.00359
	(!A1 * C1 * !Y)	-0.00172	-0.00173	-0.00172
	(!A1 * C1 * !Y)	0.00357	0.00359	0.00359

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00337	-0.00337	-0.00337
	(A1 * A2 * A3 * C1 * !Y)	0.00489	0.00490	0.00488
	(A1 * A2 * A3 * !C1 * !Y)	-0.00320	-0.00323	-0.00324
	(A1 * A2 * A3 * !C1 * !Y)	0.00399	0.00404	0.00403
	(A1 * A2 * !A3 * C1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * A2 * !A3 * C1 * !Y)	0.00703	0.00707	0.00707
	(A1 * !A2 * C1 * !Y)	-0.00330	-0.00332	-0.00330
	(A1 * !A2 * C1 * !Y)	0.00704	0.00708	0.00708
	(!A1 * C1 * !Y)	-0.00330	-0.00333	-0.00330
	(!A1 * C1 * !Y)	0.00704	0.00712	0.00708

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)	0.00180	0.00183	0.00181
	(A1 * A2 * B1 * !Y)	-0.00088	-0.00090	-0.00089
	(A1 * A2 * A3 * !B1 * !Y)	0.00180	0.00183	0.00181
	(A1 * A2 * A3 * !B1 * !Y)	-0.00088	-0.00089	-0.00089
	(A1 * !A2 * B1 * !Y)	0.00182	0.00183	0.00181
	(A1 * !A2 * B1 * !Y)	-0.00090	-0.00090	-0.00089
	(!A1 * B1 * !Y)	0.00180	0.00183	0.00181
	(!A1 * B1 * !Y)	-0.00089	-0.00090	-0.00089
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00203	0.00205	0.00204
	(A1 * A2 * B1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * A2 * A3 * !B1 * !Y)	0.00203	0.00205	0.00204
	(A1 * A2 * A3 * !B1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * !A2 * B1 * !Y)	0.00203	0.00205	0.00204
	(A1 * !A2 * B1 * !Y)	-0.00172	-0.00175	-0.00173
	(!A1 * B1 * !Y)	0.00203	0.00205	0.00204
	(!A1 * B1 * !Y)	-0.00173	-0.00175	-0.00173
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00407	0.00408	0.00405
	(A1 * A2 * B1 * !Y)	-0.00346	-0.00345	-0.00343
	(A1 * A2 * A3 * !B1 * !Y)	0.00404	0.00409	0.00405
	(A1 * A2 * A3 * !B1 * !Y)	-0.00341	-0.00345	-0.00342
	(A1 * !A2 * B1 * !Y)	0.00403	0.00408	0.00405
	(A1 * !A2 * B1 * !Y)	-0.00341	-0.00346	-0.00343
	(!A1 * B1 * !Y)	0.00403	0.00408	0.00405
	(!A1 * B1 * !Y)	-0.00341	-0.00346	-0.00344

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)	-0.00176	-0.00178	-0.00181
	(A1 * A2 * B1 * !Y)	0.00093	0.00094	0.00090
	(A1 * A2 * A3 * !B1 * !Y)	-0.00164	-0.00166	-0.00178
	(A1 * A2 * A3 * !B1 * !Y)	0.00101	0.00101	0.00092
	(A1 * !A2 * B1 * !Y)	-0.00176	-0.00178	-0.00181
	(A1 * !A2 * B1 * !Y)	0.00093	0.00094	0.00090
	(!A1 * B1 * !Y)	-0.00176	-0.00178	-0.00181
	(!A1 * B1 * !Y)	0.00093	0.00094	0.00090
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00188	-0.00191	-0.00203
	(A1 * A2 * B1 * !Y)	0.00185	0.00187	0.00176
	(A1 * A2 * A3 * !B1 * !Y)	-0.00162	-0.00164	-0.00195
	(A1 * A2 * A3 * !B1 * !Y)	0.00201	0.00203	0.00180
	(A1 * !A2 * B1 * !Y)	-0.00189	-0.00191	-0.00203
	(A1 * !A2 * B1 * !Y)	0.00186	0.00187	0.00177
	(!A1 * B1 * !Y)	-0.00189	-0.00191	-0.00203
	(!A1 * B1 * !Y)	0.00186	0.00187	0.00177
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00378	-0.00382	-0.00403
	(A1 * A2 * B1 * !Y)	0.00364	0.00367	0.00349
	(A1 * A2 * A3 * !B1 * !Y)	-0.00327	-0.00330	-0.00389
	(A1 * A2 * A3 * !B1 * !Y)	0.00396	0.00398	0.00355
	(A1 * !A2 * B1 * !Y)	-0.00378	-0.00382	-0.00403
	(A1 * !A2 * B1 * !Y)	0.00365	0.00367	0.00350
	(!A1 * B1 * !Y)	-0.00379	-0.00383	-0.00403
	(!A1 * B1 * !Y)	0.00366	0.00368	0.00349

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a311o_1	12.78720
sky130_fd_sc_hs__a311o_2	14.38560
sky130_fd_sc_hs__a311o_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__a311o_1	0.00252	0.00238	0.00239	0.00248	0.00256	1.42810
sky130_fd_sc_hs__a311o_2	0.00260	0.00259	0.00275	0.00279	0.00264	2.36617
sky130_fd_sc_hs__a311o_4	0.00475	0.00441	0.00468	0.00456	0.00456	3.91226

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a311o_1	0.00000	0.05270	0.11347
sky130_fd_sc_hs__a311o_2	0.00000	0.06673	0.12889
sky130_fd_sc_hs__a311o_4	0.00000	0.13450	0.26389

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)	0.06346	0.47186	5.40785
	A2->X (RR)	0.06769	0.47893	5.39604
	A3->X (RR)	0.07071	0.47046	5.28630
	B1->X (RR)	0.04786	0.43707	5.10716
	C1->X (RR)	0.04479	0.42737	5.14485
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.06922	0.42599	5.31859
	A2->X (RR)	0.07363	0.42905	5.30523
	A3->X (RR)	0.07691	0.41814	5.16096
	B1->X (RR)	0.05121	0.38622	5.00004
	C1->X (RR)	0.04820	0.37742	5.00519
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.08918	0.39648	5.17427
	A2->X (RR)	0.09674	0.40565	5.17234
	A3->X (RR)	0.09947	0.36566	4.87995
	B1->X (RR)	0.04890	0.29672	4.58381
	C1->X (RR)	0.04549	0.28596	4.59829

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.13381	0.51899	4.94726
	A2->X (FF)	0.15402	0.54945	5.03725
	A3->X (FF)	0.16855	0.57122	5.11551
	B1->X (FF)	0.15163	0.58912	5.46883
	C1->X (FF)	0.12952	0.57349	5.45363
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.17670	0.54494	4.65157
	A2->X (FF)	0.20379	0.58226	4.75231
	A3->X (FF)	0.22132	0.60694	4.82431
	B1->X (FF)	0.20408	0.62982	5.11058
	C1->X (FF)	0.17806	0.61351	5.07618
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.19263	0.50812	4.36178
	A2->X (FF)	0.21790	0.54351	4.41756
	A3->X (FF)	0.23865	0.57785	4.58651
	B1->X (FF)	0.22010	0.60804	4.88909
	C1->X (FF)	0.18197	0.58642	4.92850

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.01150	0.01210	0.04636
	A1	0.00520	0.00580	0.04038
	A2	0.01224	0.01235	0.04202
	A2	0.00519	0.00529	0.03518
	A3	0.01322	0.01307	0.03674
	A3	0.00516	0.00502	0.02891
	B1	0.00903	0.01085	0.05026
	B1	0.00380	0.00564	0.04504
	C1	0.00767	0.01023	0.06329
	C1	0.00304	0.00560	0.05866
sky130_fd_sc_hs__a311o_2	A1	0.01483	0.01538	0.04685
	A1	0.00807	0.00864	0.04053
	A2	0.01586	0.01602	0.04343
	A2	0.00806	0.00825	0.03606
	A3	0.01712	0.01706	0.03325
	A3	0.00806	0.00802	0.02420
	B1	0.01256	0.01420	0.04653
	B1	0.00662	0.00833	0.04986
	C1	0.01091	0.01310	0.05783
	C1	0.00578	0.00804	0.05271

sky130_fd_sc_hs__a311o_4	**A1**	0.02946	0.03089	0.09508
	A1	0.01756	0.01909	0.08320
	A2	0.03119	0.03190	0.08839
	A2	0.01745	0.01819	0.07466
	A3	0.03351	0.03396	0.08260
	A3	0.01761	0.01815	0.06676
	B1	0.02367	0.02650	0.09367
	B1	0.01378	0.01665	0.08413
	C1	0.01937	0.02403	0.11573
	C1	0.01111	0.01584	0.10768

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00337	0.00354	0.02899
	A1	0.00975	0.00990	0.03440
	A2	0.00409	0.00418	0.02910
	A2	0.01120	0.01128	0.03545
	A3	0.00444	0.00425	0.02906
	A3	0.01249	0.01228	0.03619
	B1	0.00317	0.00433	0.04348
	B1	0.00841	0.00953	0.04871
	C1	0.00293	0.00600	0.06082
	C1	0.00756	0.01053	0.06441

sky130_fd_sc_hs__a311o_2	**A1**	0.00770	0.00681	0.03215
	A1	0.01454	0.01364	0.03754
	A2	0.00867	0.00740	0.03245
	A2	0.01650	0.01522	0.03922
	A3	0.00897	0.00691	0.02942
	A3	0.01796	0.01591	0.03802
	B1	0.00681	0.00737	0.04079
	B1	0.01276	0.01318	0.04666
	C1	0.00673	0.00869	0.05736
	C1	0.01185	0.01377	0.06236
sky130_fd_sc_hs__a311o_4	**A1**	0.01639	0.01372	0.06622
	A1	0.02848	0.02578	0.07827
	A2	0.01915	0.01578	0.06670
	A2	0.03295	0.02956	0.07940
	A3	0.01983	0.01516	0.06706
	A3	0.03568	0.03152	0.08175
	B1	0.01464	0.01483	0.07492
	B1	0.02930	0.02802	0.08345
	C1	0.01454	0.01770	0.10997
	C1	0.02277	0.02551	0.11712

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)**	0.00154	0.00154	0.00153
	(A2 * A3 * B1 * C1 * X)	-0.00152	-0.00160	-0.00159
	(A2 * A3 * B1 * !C1 * X)	0.00154	0.00154	0.00153
	(A2 * A3 * B1 * !C1 * X)	-0.00151	-0.00160	-0.00159
	(A2 * A3 * !B1 * C1 * X)	0.00155	0.00154	0.00153
	(A2 * A3 * !B1 * C1 * X)	-0.00142	-0.00157	-0.00155
	(A2 * !A3 * B1 * C1 * X)	0.00145	0.00146	0.00145
	(A2 * !A3 * B1 * C1 * X)	-0.00162	-0.00163	-0.00163
	(A2 * !A3 * B1 * !C1 * X)	0.00145	0.00146	0.00145
	(A2 * !A3 * B1 * !C1 * X)	-0.00162	-0.00163	-0.00163
	(A2 * !A3 * !B1 * C1 * X)	0.00144	0.00145	0.00144
	(A2 * !A3 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00163
	(A2 * !A3 * !B1 * !C1 * !X)	0.00057	0.00057	0.00055
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00189	-0.00190	-0.00194
	(!A2 * B1 * C1 * X)	0.00146	0.00148	0.00147
	(!A2 * B1 * C1 * X)	-0.00162	-0.00164	-0.00163
	(!A2 * B1 * !C1 * X)	0.00146	0.00148	0.00147
	(!A2 * B1 * !C1 * X)	-0.00162	-0.00164	-0.00163
	(!A2 * !B1 * C1 * X)	0.00146	0.00148	0.00147
	(!A2 * !B1 * C1 * X)	-0.00162	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * !X)	0.00058	0.00058	0.00057
	(!A2 * !B1 * !C1 * !X)	-0.00192	-0.00193	-0.00194

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00161	0.00160	0.00160
	(A2 * A3 * B1 * C1 * X)	-0.00150	-0.00158	-0.00157
	(A2 * A3 * B1 * !C1 * X)	0.00161	0.00160	0.00160
	(A2 * A3 * B1 * !C1 * X)	-0.00149	-0.00158	-0.00158
	(A2 * A3 * !B1 * C1 * X)	0.00162	0.00160	0.00160
	(A2 * A3 * !B1 * C1 * X)	-0.00140	-0.00155	-0.00154
	(A2 * !A3 * B1 * C1 * X)	0.00153	0.00154	0.00153
	(A2 * !A3 * B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * B1 * !C1 * X)	0.00153	0.00155	0.00154
	(A2 * !A3 * B1 * !C1 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * !B1 * !C1 * !X)	0.00046	0.00047	0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00194	-0.00196	-0.00201
	(!A2 * B1 * C1 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * !C1 * X)	0.00155	0.00157	0.00156
	(!A2 * B1 * !C1 * X)	-0.00160	-0.00162	-0.00161
	(!A2 * !B1 * C1 * X)	0.00154	0.00154	0.00154
	(!A2 * !B1 * C1 * X)	-0.00161	-0.00161	-0.00161
	(!A2 * !B1 * !C1 * !X)	0.00048	0.00049	0.00047
	(!A2 * !B1 * !C1 * !X)	-0.00197	-0.00200	-0.00201

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00279	0.00279	0.00277
	(A2 * A3 * B1 * C1 * X)	-0.00315	-0.00331	-0.00330
	(A2 * A3 * B1 * !C1 * X)	0.00279	0.00279	0.00278
	(A2 * A3 * B1 * !C1 * X)	-0.00314	-0.00331	-0.00330
	(A2 * A3 * !B1 * C1 * X)	0.00282	0.00279	0.00277
	(A2 * A3 * !B1 * C1 * X)	-0.00301	-0.00324	-0.00323
	(A2 * !A3 * B1 * C1 * X)	0.00266	0.00266	0.00266
	(A2 * !A3 * B1 * C1 * X)	-0.00338	-0.00339	-0.00338
	(A2 * !A3 * B1 * !C1 * X)	0.00266	0.00266	0.00266
	(A2 * !A3 * B1 * !C1 * X)	-0.00338	-0.00339	-0.00338
	(A2 * !A3 * !B1 * C1 * X)	0.00266	0.00266	0.00266
	(A2 * !A3 * !B1 * C1 * X)	-0.00338	-0.00339	-0.00338
	(A2 * !A3 * !B1 * !C1 * !X)	0.00090	0.00089	0.00083
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00387	-0.00387	-0.00399
	(!A2 * B1 * C1 * X)	0.00270	0.00271	0.00271
	(!A2 * B1 * C1 * X)	-0.00337	-0.00339	-0.00338
	(!A2 * B1 * !C1 * X)	0.00270	0.00272	0.00271
	(!A2 * B1 * !C1 * X)	-0.00337	-0.00340	-0.00338
	(!A2 * !B1 * C1 * X)	0.00270	0.00272	0.00271
	(!A2 * !B1 * C1 * X)	-0.00338	-0.00339	-0.00338
	(!A2 * !B1 * !C1 * !X)	0.00099	0.00098	0.00093
	(!A2 * !B1 * !C1 * !X)	-0.00392	-0.00393	-0.00400

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)**	-0.00152	-0.00153	-0.00153
	(A2 * A3 * B1 * C1 * X)	0.00158	0.00160	0.00159
	(A2 * A3 * B1 * !C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * A3 * B1 * !C1 * X)	0.00158	0.00160	0.00159
	(A2 * A3 * !B1 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * A3 * !B1 * C1 * X)	0.00154	0.00157	0.00155
	(A2 * !A3 * B1 * C1 * X)	-0.00135	-0.00146	-0.00145
	(A2 * !A3 * B1 * C1 * X)	0.00162	0.00165	0.00163
	(A2 * !A3 * B1 * !C1 * X)	-0.00134	-0.00146	-0.00145
	(A2 * !A3 * B1 * !C1 * X)	0.00162	0.00165	0.00163
	(A2 * !A3 * !B1 * C1 * X)	-0.00133	-0.00145	-0.00144
	(A2 * !A3 * !B1 * C1 * X)	0.00162	0.00164	0.00163
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00055
	(A2 * !A3 * !B1 * !C1 * !X)	0.00194	0.00197	0.00195
	(!A2 * B1 * C1 * X)	-0.00143	-0.00148	-0.00147
	(!A2 * B1 * C1 * X)	0.00163	0.00165	0.00163
	(!A2 * B1 * !C1 * X)	-0.00143	-0.00148	-0.00147
	(!A2 * B1 * !C1 * X)	0.00162	0.00165	0.00163
	(!A2 * !B1 * C1 * X)	-0.00143	-0.00147	-0.00147
	(!A2 * !B1 * C1 * X)	0.00162	0.00163	0.00163
	(!A2 * !B1 * !C1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !B1 * !C1 * !X)	0.00194	0.00198	0.00195

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00159	-0.00160	-0.00160
	(A2 * A3 * B1 * C1 * X)	0.00156	0.00158	0.00157
	(A2 * A3 * B1 * !C1 * X)	-0.00159	-0.00160	-0.00160
	(A2 * A3 * B1 * !C1 * X)	0.00156	0.00158	0.00158
	(A2 * A3 * !B1 * C1 * X)	-0.00159	-0.00160	-0.00159
	(A2 * A3 * !B1 * C1 * X)	0.00154	0.00155	0.00154
	(A2 * !A3 * B1 * C1 * X)	-0.00140	-0.00154	-0.00153
	(A2 * !A3 * B1 * C1 * X)	0.00161	0.00163	0.00162
	(A2 * !A3 * B1 * !C1 * X)	-0.00139	-0.00153	-0.00153
	(A2 * !A3 * B1 * !C1 * X)	0.00161	0.00163	0.00162
	(A2 * !A3 * !B1 * C1 * X)	-0.00138	-0.00152	-0.00153
	(A2 * !A3 * !B1 * C1 * X)	0.00161	0.00162	0.00162
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00045	-0.00045	-0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	0.00202	0.00203	0.00202
	(!A2 * B1 * C1 * X)	-0.00148	-0.00154	-0.00155
	(!A2 * B1 * C1 * X)	0.00161	0.00162	0.00162
	(!A2 * B1 * !C1 * X)	-0.00148	-0.00154	-0.00155
	(!A2 * B1 * !C1 * X)	0.00160	0.00163	0.00162
	(!A2 * !B1 * C1 * X)	-0.00148	-0.00154	-0.00154
	(!A2 * !B1 * C1 * X)	0.00161	0.00163	0.00162
	(!A2 * !B1 * !C1 * !X)	-0.00046	-0.00046	-0.00046
	(!A2 * !B1 * !C1 * !X)	0.00202	0.00203	0.00202

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00278	-0.00278	-0.00277
	(A2 * A3 * B1 * C1 * X)	0.00330	0.00331	0.00330
	(A2 * A3 * B1 * !C1 * X)	-0.00278	-0.00278	-0.00277
	(A2 * A3 * B1 * !C1 * X)	0.00330	0.00331	0.00330
	(A2 * A3 * !B1 * C1 * X)	-0.00275	-0.00277	-0.00276
	(A2 * A3 * !B1 * C1 * X)	0.00320	0.00324	0.00323
	(A2 * !A3 * B1 * C1 * X)	-0.00234	-0.00264	-0.00265
	(A2 * !A3 * B1 * C1 * X)	0.00338	0.00342	0.00339
	(A2 * !A3 * B1 * !C1 * X)	-0.00232	-0.00265	-0.00265
	(A2 * !A3 * B1 * !C1 * X)	0.00338	0.00342	0.00339
	(A2 * !A3 * !B1 * C1 * X)	-0.00232	-0.00265	-0.00265
	(A2 * !A3 * !B1 * C1 * X)	0.00338	0.00342	0.00340
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00084	-0.00085	-0.00083
	(A2 * !A3 * !B1 * !C1 * !X)	0.00400	0.00404	0.00401
	(!A2 * B1 * C1 * X)	-0.00254	-0.00269	-0.00269
	(!A2 * B1 * C1 * X)	0.00337	0.00342	0.00339
	(!A2 * B1 * !C1 * X)	-0.00255	-0.00269	-0.00269
	(!A2 * B1 * !C1 * X)	0.00340	0.00343	0.00339
	(!A2 * !B1 * C1 * X)	-0.00255	-0.00269	-0.00269
	(!A2 * !B1 * C1 * X)	0.00340	0.00343	0.00340
	(!A2 * !B1 * !C1 * !X)	-0.00091	-0.00092	-0.00091
	(!A2 * !B1 * !C1 * !X)	0.00400	0.00404	0.00401

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)**	0.00134	0.00132	0.00132
	(A1 * A3 * B1 * C1 * X)	-0.00156	-0.00164	-0.00163
	(A1 * A3 * B1 * !C1 * X)	0.00134	0.00132	0.00133
	(A1 * A3 * B1 * !C1 * X)	-0.00155	-0.00163	-0.00163
	(A1 * A3 * !B1 * C1 * X)	0.00135	0.00133	0.00132
	(A1 * A3 * !B1 * C1 * X)	-0.00146	-0.00160	-0.00159
	(A1 * !A3 * B1 * C1 * X)	0.00127	0.00128	0.00128
	(A1 * !A3 * B1 * C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * B1 * !C1 * X)	0.00127	0.00128	0.00128
	(A1 * !A3 * B1 * !C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * !B1 * C1 * X)	0.00126	0.00127	0.00127
	(A1 * !A3 * !B1 * C1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * !A3 * !B1 * !C1 * !X)	0.00047	0.00048	0.00047
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00175	-0.00177	-0.00175
	(!A1 * A3 * B1 * X)	0.00127	0.00128	0.00127
	(!A1 * A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !B1 * C1 * X)	0.00128	0.00128	0.00128
	(!A1 * A3 * !B1 * C1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !B1 * !C1 * !X)	0.00120	0.00120	0.00120
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00175	-0.00175	-0.00175
	(!A1 * !A3 * B1 * X)	0.00069	0.00070	0.00069
	(!A1 * !A3 * B1 * X)	-0.00167	-0.00169	-0.00167
	(!A1 * !A3 * !B1 * C1 * X)	0.00069	0.00070	0.00069
	(!A1 * !A3 * !B1 * C1 * X)	-0.00167	-0.00169	-0.00167
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00055	0.00056	0.00055
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00160	0.00159	0.00159
	(A1 * A3 * B1 * C1 * X)	-0.00150	-0.00158	-0.00157
	(A1 * A3 * B1 * !C1 * X)	0.00160	0.00159	0.00159
	(A1 * A3 * B1 * !C1 * X)	-0.00149	-0.00158	-0.00158
	(A1 * A3 * !B1 * C1 * X)	0.00161	0.00158	0.00158
	(A1 * A3 * !B1 * C1 * X)	-0.00141	-0.00155	-0.00154
	(A1 * !A3 * B1 * C1 * X)	0.00153	0.00155	0.00154
	(A1 * !A3 * B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * B1 * !C1 * X)	0.00153	0.00154	0.00154
	(A1 * !A3 * B1 * !C1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * !B1 * C1 * X)	0.00153	0.00154	0.00154
	(A1 * !A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * !B1 * !C1 * !X)	0.00056	0.00057	0.00057
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00171	-0.00174	-0.00172
	(!A1 * A3 * B1 * X)	0.00153	0.00156	0.00154
	(!A1 * A3 * B1 * X)	-0.00160	-0.00162	-0.00161
	(!A1 * A3 * !B1 * C1 * X)	0.00154	0.00155	0.00155
	(!A1 * A3 * !B1 * C1 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * A3 * !B1 * !C1 * !X)	0.00143	0.00145	0.00143
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * B1 * X)	0.00084	0.00085	0.00084
	(!A1 * !A3 * B1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A3 * !B1 * C1 * X)	0.00084	0.00085	0.00084
	(!A1 * !A3 * !B1 * C1 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00173	-0.00175	-0.00173

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00267	0.00267	0.00266
	(A1 * A3 * B1 * C1 * X)	-0.00312	-0.00328	-0.00326
	(A1 * A3 * B1 * !C1 * X)	0.00267	0.00267	0.00266
	(A1 * A3 * B1 * !C1 * X)	-0.00311	-0.00327	-0.00326
	(A1 * A3 * !B1 * C1 * X)	0.00268	0.00266	0.00266
	(A1 * A3 * !B1 * C1 * X)	-0.00299	-0.00322	-0.00320
	(A1 * !A3 * B1 * C1 * X)	0.00254	0.00256	0.00255
	(A1 * !A3 * B1 * C1 * X)	-0.00332	-0.00334	-0.00333
	(A1 * !A3 * B1 * !C1 * X)	0.00254	0.00257	0.00256
	(A1 * !A3 * B1 * !C1 * X)	-0.00332	-0.00334	-0.00332
	(A1 * !A3 * !B1 * C1 * X)	0.00254	0.00258	0.00256
	(A1 * !A3 * !B1 * C1 * X)	-0.00331	-0.00334	-0.00332
	(A1 * !A3 * !B1 * !C1 * !X)	0.00111	0.00113	0.00113
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00333	-0.00336	-0.00332
	(!A1 * A3 * B1 * X)	0.00256	0.00257	0.00256
	(!A1 * A3 * B1 * X)	-0.00331	-0.00334	-0.00333
	(!A1 * A3 * !B1 * C1 * X)	0.00256	0.00257	0.00256
	(!A1 * A3 * !B1 * C1 * X)	-0.00331	-0.00333	-0.00332
	(!A1 * A3 * !B1 * !C1 * !X)	0.00254	0.00256	0.00255
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00331	-0.00333	-0.00332
	(!A1 * !A3 * B1 * X)	0.00149	0.00150	0.00149
	(!A1 * !A3 * B1 * X)	-0.00331	-0.00334	-0.00333
	(!A1 * !A3 * !B1 * C1 * X)	0.00149	0.00150	0.00149
	(!A1 * !A3 * !B1 * C1 * X)	-0.00331	-0.00333	-0.00332
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00133	0.00134	0.00132
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00335	-0.00338	-0.00335

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)**	-0.00132	-0.00132	-0.00132
	(A1 * A3 * B1 * C1 * X)	0.00163	0.00164	0.00163
	(A1 * A3 * B1 * !C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * A3 * B1 * !C1 * X)	0.00163	0.00164	0.00163
	(A1 * A3 * !B1 * C1 * X)	-0.00132	-0.00132	-0.00132
	(A1 * A3 * !B1 * C1 * X)	0.00159	0.00160	0.00159
	(A1 * !A3 * B1 * C1 * X)	-0.00122	-0.00127	-0.00128
	(A1 * !A3 * B1 * C1 * X)	0.00167	0.00169	0.00168
	(A1 * !A3 * B1 * !C1 * X)	-0.00123	-0.00127	-0.00128
	(A1 * !A3 * B1 * !C1 * X)	0.00168	0.00168	0.00168
	(A1 * !A3 * !B1 * C1 * X)	-0.00123	-0.00127	-0.00127
	(A1 * !A3 * !B1 * C1 * X)	0.00168	0.00170	0.00168
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00045	-0.00046	-0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	0.00178	0.00180	0.00176
	(!A1 * A3 * B1 * X)	-0.00123	-0.00128	-0.00127
	(!A1 * A3 * B1 * X)	0.00167	0.00169	0.00168
	(!A1 * A3 * !B1 * C1 * X)	-0.00123	-0.00127	-0.00128
	(!A1 * A3 * !B1 * C1 * X)	0.00167	0.00170	0.00168
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00109	-0.00120	-0.00120
	(!A1 * A3 * !B1 * !C1 * !X)	0.00183	0.00177	0.00176
	(!A1 * !A3 * B1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A3 * B1 * X)	0.00169	0.00169	0.00168
	(!A1 * !A3 * !B1 * C1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A3 * !B1 * C1 * X)	0.00169	0.00169	0.00168
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00055	-0.00056	-0.00055
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00184	0.00184	0.00178

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00158	-0.00159	-0.00159
	(A1 * A3 * B1 * C1 * X)	0.00156	0.00158	0.00157
	(A1 * A3 * B1 * !C1 * X)	-0.00158	-0.00159	-0.00159
	(A1 * A3 * B1 * !C1 * X)	0.00156	0.00158	0.00158
	(A1 * A3 * !B1 * C1 * X)	-0.00158	-0.00158	-0.00158
	(A1 * A3 * !B1 * C1 * X)	0.00155	0.00155	0.00154
	(A1 * !A3 * B1 * C1 * X)	-0.00147	-0.00152	-0.00153
	(A1 * !A3 * B1 * C1 * X)	0.00161	0.00163	0.00162
	(A1 * !A3 * B1 * !C1 * X)	-0.00147	-0.00152	-0.00153
	(A1 * !A3 * B1 * !C1 * X)	0.00161	0.00163	0.00162
	(A1 * !A3 * !B1 * C1 * X)	-0.00146	-0.00152	-0.00153
	(A1 * !A3 * !B1 * C1 * X)	0.00161	0.00163	0.00162
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00055	-0.00055	-0.00055
	(A1 * !A3 * !B1 * !C1 * !X)	0.00177	0.00177	0.00174
	(!A1 * A3 * B1 * X)	-0.00147	-0.00152	-0.00154
	(!A1 * A3 * B1 * X)	0.00161	0.00162	0.00162
	(!A1 * A3 * !B1 * C1 * X)	-0.00147	-0.00152	-0.00153
	(!A1 * A3 * !B1 * C1 * X)	0.00161	0.00162	0.00162
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00131	-0.00143	-0.00142
	(!A1 * A3 * !B1 * !C1 * !X)	0.00179	0.00174	0.00173
	(!A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * B1 * X)	0.00162	0.00163	0.00162
	(!A1 * !A3 * !B1 * C1 * X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A3 * !B1 * C1 * X)	0.00162	0.00163	0.00162
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00181	0.00182	0.00176

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00265	-0.00266	-0.00265
	(A1 * A3 * B1 * C1 * X)	0.00324	0.00328	0.00326
	(A1 * A3 * B1 * !C1 * X)	-0.00265	-0.00266	-0.00265
	(A1 * A3 * B1 * !C1 * X)	0.00324	0.00327	0.00326
	(A1 * A3 * !B1 * C1 * X)	-0.00264	-0.00266	-0.00265
	(A1 * A3 * !B1 * C1 * X)	0.00319	0.00322	0.00320
	(A1 * !A3 * B1 * C1 * X)	-0.00245	-0.00256	-0.00255
	(A1 * !A3 * B1 * C1 * X)	0.00334	0.00336	0.00333
	(A1 * !A3 * B1 * !C1 * X)	-0.00245	-0.00256	-0.00256
	(A1 * !A3 * B1 * !C1 * X)	0.00334	0.00336	0.00334
	(A1 * !A3 * !B1 * C1 * X)	-0.00245	-0.00258	-0.00256
	(A1 * !A3 * !B1 * C1 * X)	0.00334	0.00335	0.00334
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00105	-0.00106	-0.00109
	(A1 * !A3 * !B1 * !C1 * !X)	0.00342	0.00346	0.00337
	(!A1 * A3 * B1 * X)	-0.00242	-0.00257	-0.00256
	(!A1 * A3 * B1 * X)	0.00331	0.00336	0.00333
	(!A1 * A3 * !B1 * C1 * X)	-0.00242	-0.00257	-0.00256
	(!A1 * A3 * !B1 * C1 * X)	0.00331	0.00337	0.00334
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00225	-0.00256	-0.00255
	(!A1 * A3 * !B1 * !C1 * !X)	0.00353	0.00337	0.00334
	(!A1 * !A3 * B1 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * !A3 * B1 * X)	0.00331	0.00337	0.00334
	(!A1 * !A3 * !B1 * C1 * X)	-0.00149	-0.00150	-0.00149
	(!A1 * !A3 * !B1 * C1 * X)	0.00331	0.00337	0.00334
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00132
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00344	0.00350	0.00338

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)**	0.00147	0.00146	0.00146
	(A1 * A2 * B1 * C1 * X)	-0.00153	-0.00161	-0.00160
	(A1 * A2 * B1 * !C1 * X)	0.00146	0.00146	0.00146
	(A1 * A2 * B1 * !C1 * X)	-0.00151	-0.00161	-0.00160
	(A1 * A2 * !B1 * C1 * X)	0.00147	0.00146	0.00146
	(A1 * A2 * !B1 * C1 * X)	-0.00144	-0.00158	-0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00123	0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00183
	(!A2 * B1 * X)	0.00140	0.00141	0.00141
	(!A2 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A2 * !B1 * C1 * X)	0.00140	0.00142	0.00141
	(!A2 * !B1 * C1 * X)	-0.00163	-0.00164	-0.00164
	(!A1 * A2 * B1 * X)	0.00140	0.00140	0.00139
	(!A1 * A2 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * A2 * !B1 * C1 * X)	0.00140	0.00140	0.00139
	(!A1 * A2 * !B1 * C1 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * A2 * !B1 * !C1 * !X)	0.00120	0.00121	0.00120
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00121	0.00123	0.00122
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00183

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00183	0.00182	0.00181
	(A1 * A2 * B1 * C1 * X)	-0.00149	-0.00155	-0.00156
	(A1 * A2 * B1 * !C1 * X)	0.00183	0.00182	0.00181
	(A1 * A2 * B1 * !C1 * X)	-0.00148	-0.00157	-0.00156
	(A1 * A2 * !B1 * C1 * X)	0.00184	0.00181	0.00181
	(A1 * A2 * !B1 * C1 * X)	-0.00140	-0.00154	-0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00143	0.00143
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00192	-0.00192	-0.00191
	(!A2 * B1 * X)	0.00173	0.00175	0.00174
	(!A2 * B1 * X)	-0.00159	-0.00161	-0.00160
	(!A2 * !B1 * C1 * X)	0.00173	0.00175	0.00174
	(!A2 * !B1 * C1 * X)	-0.00159	-0.00161	-0.00160
	(!A1 * A2 * B1 * X)	0.00172	0.00173	0.00172
	(!A1 * A2 * B1 * X)	-0.00160	-0.00160	-0.00160
	(!A1 * A2 * !B1 * C1 * X)	0.00172	0.00173	0.00172
	(!A1 * A2 * !B1 * C1 * X)	-0.00160	-0.00160	-0.00160
	(!A1 * A2 * !B1 * !C1 * !X)	0.00140	0.00141	0.00139
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00192	-0.00192	-0.00191
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00145	0.00143
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00191	-0.00192	-0.00191

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00305	0.00306	0.00304
	(A1 * A2 * B1 * C1 * X)	-0.00300	-0.00317	-0.00315
	(A1 * A2 * B1 * !C1 * X)	0.00305	0.00306	0.00304
	(A1 * A2 * B1 * !C1 * X)	-0.00300	-0.00316	-0.00315
	(A1 * A2 * !B1 * C1 * X)	0.00306	0.00305	0.00304
	(A1 * A2 * !B1 * C1 * X)	-0.00287	-0.00311	-0.00309
	(A1 * !A2 * !B1 * !C1 * !X)	0.00258	0.00262	0.00260
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00353	-0.00356	-0.00355
	(!A2 * B1 * X)	0.00292	0.00295	0.00293
	(!A2 * B1 * X)	-0.00321	-0.00323	-0.00322
	(!A2 * !B1 * C1 * X)	0.00292	0.00295	0.00294
	(!A2 * !B1 * C1 * X)	-0.00321	-0.00323	-0.00322
	(!A1 * A2 * B1 * X)	0.00291	0.00295	0.00293
	(!A1 * A2 * B1 * X)	-0.00321	-0.00324	-0.00322
	(!A1 * A2 * !B1 * C1 * X)	0.00292	0.00296	0.00294
	(!A1 * A2 * !B1 * C1 * X)	-0.00321	-0.00323	-0.00322
	(!A1 * A2 * !B1 * !C1 * !X)	0.00260	0.00262	0.00261
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00353	-0.00355	-0.00354
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00258	0.00262	0.00260
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00353	-0.00356	-0.00355

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)**	-0.00146	-0.00146	-0.00146
	(A1 * A2 * B1 * C1 * X)	0.00160	0.00161	0.00160
	(A1 * A2 * B1 * !C1 * X)	-0.00146	-0.00146	-0.00146
	(A1 * A2 * B1 * !C1 * X)	0.00160	0.00161	0.00160
	(A1 * A2 * !B1 * C1 * X)	-0.00145	-0.00145	-0.00145
	(A1 * A2 * !B1 * C1 * X)	0.00157	0.00158	0.00157
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00122	-0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	0.00183	0.00184	0.00183
	(!A2 * B1 * X)	-0.00137	-0.00141	-0.00141
	(!A2 * B1 * X)	0.00165	0.00165	0.00164
	(!A2 * !B1 * C1 * X)	-0.00137	-0.00141	-0.00141
	(!A2 * !B1 * C1 * X)	0.00165	0.00165	0.00164
	(!A1 * A2 * B1 * X)	-0.00130	-0.00140	-0.00139
	(!A1 * A2 * B1 * X)	0.00164	0.00166	0.00164
	(!A1 * A2 * !B1 * C1 * X)	-0.00130	-0.00140	-0.00139
	(!A1 * A2 * !B1 * C1 * X)	0.00164	0.00166	0.00164
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00111	-0.00121	-0.00120
	(!A1 * A2 * !B1 * !C1 * !X)	0.00183	0.00184	0.00183
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00118	-0.00122	-0.00122
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00184	0.00184	0.00183

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00181	-0.00181	-0.00181
	(A1 * A2 * B1 * C1 * X)	0.00157	0.00155	0.00156
	(A1 * A2 * B1 * !C1 * X)	-0.00181	-0.00182	-0.00181
	(A1 * A2 * B1 * !C1 * X)	0.00157	0.00158	0.00156
	(A1 * A2 * !B1 * C1 * X)	-0.00180	-0.00181	-0.00181
	(A1 * A2 * !B1 * C1 * X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00143	-0.00143
	(A1 * !A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(!A2 * B1 * X)	-0.00169	-0.00175	-0.00174
	(!A2 * B1 * X)	0.00159	0.00161	0.00160
	(!A2 * !B1 * C1 * X)	-0.00169	-0.00175	-0.00174
	(!A2 * !B1 * C1 * X)	0.00159	0.00161	0.00161
	(!A1 * A2 * B1 * X)	-0.00163	-0.00173	-0.00172
	(!A1 * A2 * B1 * X)	0.00160	0.00162	0.00160
	(!A1 * A2 * !B1 * C1 * X)	-0.00163	-0.00173	-0.00172
	(!A1 * A2 * !B1 * C1 * X)	0.00160	0.00162	0.00161
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00132	-0.00141	-0.00139
	(!A1 * A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00192
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00143	-0.00143
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00192	0.00193	0.00192

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00303	-0.00304	-0.00304
	(A1 * A2 * B1 * C1 * X)	0.00314	0.00317	0.00315
	(A1 * A2 * B1 * !C1 * X)	-0.00304	-0.00304	-0.00304
	(A1 * A2 * B1 * !C1 * X)	0.00315	0.00316	0.00315
	(A1 * A2 * !B1 * C1 * X)	-0.00303	-0.00304	-0.00303
	(A1 * A2 * !B1 * C1 * X)	0.00309	0.00311	0.00309
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00250	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !C1 * !X)	0.00355	0.00359	0.00356
	(!A2 * B1 * X)	-0.00285	-0.00294	-0.00293
	(!A2 * B1 * X)	0.00322	0.00325	0.00323
	(!A2 * !B1 * C1 * X)	-0.00284	-0.00294	-0.00294
	(!A2 * !B1 * C1 * X)	0.00322	0.00325	0.00323
	(!A1 * A2 * B1 * X)	-0.00276	-0.00291	-0.00293
	(!A1 * A2 * B1 * X)	0.00323	0.00324	0.00323
	(!A1 * A2 * !B1 * C1 * X)	-0.00276	-0.00291	-0.00292
	(!A1 * A2 * !B1 * C1 * X)	0.00323	0.00325	0.00323
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00244	-0.00258	-0.00260
	(!A1 * A2 * !B1 * !C1 * !X)	0.00356	0.00357	0.00356
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00250	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00355	0.00359	0.00356

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)**	0.00166	0.00158	0.00153
	(A1 * A2 * A3 * C1 * X)	-0.00110	-0.00111	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00151	0.00153	0.00150
	(A1 * A2 * A3 * !C1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00178	0.00151	0.00149
	(A1 * A2 * !A3 * C1 * X)	-0.00128	-0.00159	-0.00159
	(A1 * !A2 * C1 * X)	0.00179	0.00151	0.00149
	(A1 * !A2 * C1 * X)	-0.00128	-0.00159	-0.00159
	(!A1 * C1 * X)	0.00177	0.00152	0.00149
	(!A1 * C1 * X)	-0.00129	-0.00159	-0.00159
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00190	0.00184	0.00178
	(A1 * A2 * A3 * C1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * A2 * A3 * !C1 * X)	0.00175	0.00177	0.00174
	(A1 * A2 * A3 * !C1 * X)	-0.00086	-0.00087	-0.00087
	(A1 * A2 * !A3 * C1 * X)	0.00201	0.00173	0.00172
	(A1 * A2 * !A3 * C1 * X)	-0.00127	-0.00157	-0.00158
	(A1 * !A2 * C1 * X)	0.00201	0.00173	0.00172
	(A1 * !A2 * C1 * X)	-0.00127	-0.00157	-0.00158
	(!A1 * C1 * X)	0.00200	0.00174	0.00172
	(!A1 * C1 * X)	-0.00128	-0.00157	-0.00158
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00301	0.00291	0.00282
	(A1 * A2 * A3 * C1 * X)	-0.00239	-0.00242	-0.00241
	(A1 * A2 * A3 * !C1 * X)	0.00280	0.00283	0.00278
	(A1 * A2 * A3 * !C1 * X)	-0.00188	-0.00191	-0.00191
	(A1 * A2 * !A3 * C1 * X)	0.00340	0.00281	0.00276
	(A1 * A2 * !A3 * C1 * X)	-0.00261	-0.00331	-0.00331
	(A1 * !A2 * C1 * X)	0.00340	0.00281	0.00276
	(A1 * !A2 * C1 * X)	-0.00261	-0.00331	-0.00331
	(!A1 * C1 * X)	0.00339	0.00281	0.00276
	(!A1 * C1 * X)	-0.00261	-0.00331	-0.00331

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)	-0.00150	-0.00150	-0.00150
	(A1 * A2 * A3 * C1 * X)	0.00110	0.00111	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00147	-0.00147	-0.00148
	(A1 * A2 * A3 * !C1 * X)	0.00091	0.00091	0.00090
	(A1 * A2 * !A3 * C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * A2 * !A3 * C1 * X)	0.00157	0.00159	0.00159
	(A1 * !A2 * C1 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * C1 * X)	0.00157	0.00159	0.00159
	(!A1 * C1 * X)	-0.00148	-0.00148	-0.00147
	(!A1 * C1 * X)	0.00158	0.00159	0.00159
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00175	-0.00175	-0.00175
	(A1 * A2 * A3 * C1 * X)	0.00111	0.00111	0.00111
	(A1 * A2 * A3 * !C1 * X)	-0.00171	-0.00172	-0.00172
	(A1 * A2 * A3 * !C1 * X)	0.00091	0.00091	0.00090
	(A1 * A2 * !A3 * C1 * X)	-0.00171	-0.00171	-0.00171
	(A1 * A2 * !A3 * C1 * X)	0.00157	0.00158	0.00158
	(A1 * !A2 * C1 * X)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * C1 * X)	0.00157	0.00158	0.00158
	(!A1 * C1 * X)	-0.00171	-0.00171	-0.00171
	(!A1 * C1 * X)	0.00157	0.00158	0.00158

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00277	-0.00279	-0.00278
	(A1 * A2 * A3 * C1 * X)	0.00239	0.00242	0.00241
	(A1 * A2 * A3 * !C1 * X)	-0.00272	-0.00274	-0.00273
	(A1 * A2 * A3 * !C1 * X)	0.00196	0.00198	0.00198
	(A1 * A2 * !A3 * C1 * X)	-0.00275	-0.00275	-0.00274
	(A1 * A2 * !A3 * C1 * X)	0.00330	0.00331	0.00331
	(A1 * !A2 * C1 * X)	-0.00275	-0.00275	-0.00274
	(A1 * !A2 * C1 * X)	0.00330	0.00331	0.00331
	(!A1 * C1 * X)	-0.00275	-0.00275	-0.00274
	(!A1 * C1 * X)	0.00330	0.00331	0.00331

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)	0.00181	0.00183	0.00181
	(A1 * A2 * B1 * X)	-0.00079	-0.00081	-0.00080
	(A1 * A2 * A3 * !B1 * X)	0.00181	0.00183	0.00181
	(A1 * A2 * A3 * !B1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B1 * X)	0.00181	0.00183	0.00181
	(A1 * !A2 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * B1 * X)	0.00181	0.00183	0.00181
	(!A1 * B1 * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00177	0.00179	0.00178
	(A1 * A2 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * A3 * !B1 * X)	0.00177	0.00179	0.00178
	(A1 * A2 * A3 * !B1 * X)	-0.00084	-0.00086	-0.00085
	(A1 * !A2 * B1 * X)	0.00177	0.00179	0.00178
	(A1 * !A2 * B1 * X)	-0.00085	-0.00086	-0.00085
	(!A1 * B1 * X)	0.00177	0.00179	0.00178
	(!A1 * B1 * X)	-0.00085	-0.00086	-0.00085
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00293	0.00296	0.00294
	(A1 * A2 * B1 * X)	-0.00182	-0.00184	-0.00183
	(A1 * A2 * A3 * !B1 * X)	0.00293	0.00297	0.00294
	(A1 * A2 * A3 * !B1 * X)	-0.00182	-0.00184	-0.00182
	(A1 * !A2 * B1 * X)	0.00293	0.00296	0.00294
	(A1 * !A2 * B1 * X)	-0.00182	-0.00184	-0.00183
	(!A1 * B1 * X)	0.00293	0.00296	0.00294
	(!A1 * B1 * X)	-0.00182	-0.00184	-0.00183

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)	-0.00177	-0.00177	-0.00181
	(A1 * A2 * B1 * X)	0.00083	0.00083	0.00081
	(A1 * A2 * A3 * !B1 * X)	-0.00166	-0.00166	-0.00178
	(A1 * A2 * A3 * !B1 * X)	0.00090	0.00090	0.00082
	(A1 * !A2 * B1 * X)	-0.00177	-0.00177	-0.00181
	(A1 * !A2 * B1 * X)	0.00083	0.00083	0.00081
	(!A1 * B1 * X)	-0.00177	-0.00177	-0.00181
	(!A1 * B1 * X)	0.00083	0.00083	0.00081
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00173	-0.00174	-0.00177
	(A1 * A2 * B1 * X)	0.00088	0.00089	0.00086
	(A1 * A2 * A3 * !B1 * X)	-0.00162	-0.00164	-0.00175
	(A1 * A2 * A3 * !B1 * X)	0.00095	0.00096	0.00088
	(A1 * !A2 * B1 * X)	-0.00173	-0.00174	-0.00177
	(A1 * !A2 * B1 * X)	0.00088	0.00089	0.00086
	(!A1 * B1 * X)	-0.00173	-0.00174	-0.00177
	(!A1 * B1 * X)	0.00088	0.00089	0.00086
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00280	-0.00283	-0.00293
	(A1 * A2 * B1 * X)	0.00194	0.00196	0.00186
	(A1 * A2 * A3 * !B1 * X)	-0.00257	-0.00260	-0.00287
	(A1 * A2 * A3 * !B1 * X)	0.00209	0.00211	0.00189
	(A1 * !A2 * B1 * X)	-0.00280	-0.00283	-0.00293
	(A1 * !A2 * B1 * X)	0.00194	0.00196	0.00186
	(!A1 * B1 * X)	-0.00280	-0.00283	-0.00293
	(!A1 * B1 * X)	0.00194	0.00196	0.00186

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31oi_1	9.59040
sky130_fd_sc_hs__a31oi_2	14.38560
sky130_fd_sc_hs__a31oi_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__a31oi_1	0.00270	0.00278	0.00267	0.00274	0.69568
sky130_fd_sc_hs__a31oi_2	0.00514	0.00500	0.00534	0.00405	1.31665
sky130_fd_sc_hs__a31oi_4	0.01042	0.00985	0.00983	0.00817	2.11376

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31oi_1	0.00000	0.03227	0.06294
sky130_fd_sc_hs__a31oi_2	0.00000	0.06410	0.12588
sky130_fd_sc_hs__a31oi_4	0.00000	0.12819	0.25175

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)	0.06173	0.83221	10.27050
	A2->Y (FR)	0.07913	0.87231	10.56050
	A3->Y (FR)	0.08785	0.87333	10.44760
	B1->Y (FR)	0.05907	0.86308	10.74580
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.05612	0.72601	10.45000
	A2->Y (FR)	0.06824	0.73376	10.39690
	A3->Y (FR)	0.07850	0.72922	10.14320
	B1->Y (FR)	0.04547	0.72552	10.60270
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.05741	0.62749	9.92967
	A2->Y (FR)	0.07315	0.63173	9.77075
	A3->Y (FR)	0.09098	0.66057	9.96938
	B1->Y (FR)	0.06692	0.66473	10.39890

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.02455	0.35667	4.22362
	A2->Y (RF)	0.02942	0.34351	3.98937
	A3->Y (RF)	0.03149	0.30796	3.47486
	B1->Y (RF)	0.01394	0.24101	2.80350
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.02475	0.34891	4.95440
	A2->Y (RF)	0.02777	0.28692	3.99422
	A3->Y (RF)	0.03118	0.26149	3.53839
	B1->Y (RF)	0.01695	0.33900	4.93269
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.02692	0.31019	4.95857
	A2->Y (RF)	0.03207	0.25941	4.05177
	A3->Y (RF)	0.03514	0.21347	3.24938
	B1->Y (RF)	0.01561	0.24672	4.06917

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	-0.00007	-0.00008	0.00705
	A1	0.00567	0.00566	0.01284
	A2	0.00054	0.00046	0.00764
	A2	0.00741	0.00735	0.01461
	A3	0.00081	0.00079	0.00808
	A3	0.00878	0.00878	0.01605
	B1	-0.00052	0.00071	0.02133
	B1	0.00426	0.00549	0.02617
sky130_fd_sc_hs__a31oi_2	A1	-0.00014	-0.00013	0.01265
	A1	0.01066	0.01069	0.02347
	A2	0.00093	0.00092	0.01449
	A2	0.01371	0.01375	0.02733
	A3	0.00193	0.00188	0.01568
	A3	0.01699	0.01697	0.03084
	B1	0.00042	0.00287	0.02787
	B1	0.00716	0.00967	0.03484
sky130_fd_sc_hs__a31oi_4	A1	-0.00173	-0.00162	0.02312
	A1	0.02042	0.02055	0.04543
	A2	0.00139	0.00120	0.02815
	A2	0.02759	0.02746	0.05432
	A3	0.00365	0.00358	0.03052
	A3	0.03414	0.03408	0.06117
	B1	-0.00053	0.00357	0.05513
	B1	0.01373	0.01789	0.06977

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00736	0.00756	0.01371
	A1	0.00167	0.00182	0.00782
	A2	0.00851	0.00855	0.01316
	A2	0.00166	0.00164	0.00632
	A3	0.00958	0.00956	0.01473
	A3	0.00157	0.00155	0.00651
	B1	0.00473	0.00520	0.01330
	B1	-0.00004	0.00039	0.00843
sky130_fd_sc_hs__a31oi_2	A1	0.01344	0.01371	0.02486
	A1	0.00282	0.00300	0.01317
	A2	0.01549	0.01551	0.02542
	A2	0.00275	0.00277	0.01192
	A3	0.01797	0.01793	0.02816
	A3	0.00280	0.00271	0.01257
	B1	0.00536	0.00604	0.01560
	B1	-0.00141	-0.00079	0.00883
sky130_fd_sc_hs__a31oi_4	A1	0.02725	0.02785	0.04820
	A1	0.00539	0.00598	0.02514
	A2	0.03127	0.03114	0.04901
	A2	0.00518	0.00499	0.02264
	A3	0.03579	0.03562	0.05578
	A3	0.00509	0.00486	0.02481
	B1	0.01147	0.01304	0.03502
	B1	-0.00281	-0.00132	0.01948

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)**	0.00169	0.00160	0.00159
	(A2 * A3 * B1 * !Y)	-0.00157	-0.00174	-0.00173
	(A2 * !A3 * B1 * !Y)	0.00149	0.00150	0.00149
	(A2 * !A3 * B1 * !Y)	-0.00177	-0.00177	-0.00177
	(A2 * !A3 * !B1 * Y)	0.00047	0.00047	0.00045
	(A2 * !A3 * !B1 * Y)	-0.00208	-0.00209	-0.00215
	(!A2 * B1 * !Y)	0.00152	0.00154	0.00153
	(!A2 * B1 * !Y)	-0.00176	-0.00177	-0.00177
	(!A2 * !B1 * Y)	0.00049	0.00049	0.00047
	(!A2 * !B1 * Y)	-0.00212	-0.00212	-0.00215
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00337	0.00322	0.00320
	(A2 * A3 * B1 * !Y)	-0.00322	-0.00355	-0.00355
	(A2 * !A3 * B1 * !Y)	0.00304	0.00305	0.00304
	(A2 * !A3 * B1 * !Y)	-0.00362	-0.00362	-0.00361
	(A2 * !A3 * !B1 * Y)	0.00092	0.00093	0.00087
	(A2 * !A3 * !B1 * Y)	-0.00428	-0.00431	-0.00443
	(!A2 * B1 * !Y)	0.00305	0.00309	0.00307
	(!A2 * B1 * !Y)	-0.00360	-0.00364	-0.00361
	(!A2 * !B1 * Y)	0.00091	0.00091	0.00088
	(!A2 * !B1 * Y)	-0.00438	-0.00441	-0.00446
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00705	0.00670	0.00661
	(A2 * A3 * B1 * !Y)	-0.00627	-0.00699	-0.00698
	(A2 * !A3 * B1 * !Y)	0.00624	0.00630	0.00626
	(A2 * !A3 * B1 * !Y)	-0.00710	-0.00715	-0.00712
	(A2 * !A3 * !B1 * Y)	0.00196	0.00197	0.00183
	(A2 * !A3 * !B1 * Y)	-0.00858	-0.00864	-0.00887
	(!A2 * B1 * !Y)	0.00633	0.00640	0.00636
	(!A2 * B1 * !Y)	-0.00710	-0.00715	-0.00712
	(!A2 * !B1 * Y)	0.00204	0.00204	0.00196
	(!A2 * !B1 * Y)	-0.00877	-0.00882	-0.00890

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)	-0.00159	-0.00159	-0.00158
	(A2 * A3 * B1 * !Y)	0.00173	0.00174	0.00173
	(A2 * !A3 * B1 * !Y)	-0.00137	-0.00150	-0.00149
	(A2 * !A3 * B1 * !Y)	0.00177	0.00178	0.00177
	(A2 * !A3 * !B1 * Y)	-0.00046	-0.00046	-0.00045
	(A2 * !A3 * !B1 * Y)	0.00216	0.00217	0.00215
	(!A2 * B1 * !Y)	-0.00148	-0.00153	-0.00153
	(!A2 * B1 * !Y)	0.00177	0.00178	0.00177
	(!A2 * !B1 * Y)	-0.00047	-0.00047	-0.00046
	(!A2 * !B1 * Y)	0.00216	0.00219	0.00215
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00319	-0.00320	-0.00319
	(A2 * A3 * B1 * !Y)	0.00354	0.00356	0.00355
	(A2 * !A3 * B1 * !Y)	-0.00270	-0.00303	-0.00304
	(A2 * !A3 * B1 * !Y)	0.00362	0.00364	0.00362
	(A2 * !A3 * !B1 * Y)	-0.00086	-0.00086	-0.00084
	(A2 * !A3 * !B1 * Y)	0.00446	0.00450	0.00446
	(!A2 * B1 * !Y)	-0.00292	-0.00309	-0.00307
	(!A2 * B1 * !Y)	0.00360	0.00366	0.00362
	(!A2 * !B1 * Y)	-0.00087	-0.00088	-0.00087
	(!A2 * !B1 * Y)	0.00447	0.00453	0.00446

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00661	-0.00661	-0.00660
	(A2 * A3 * B1 * !Y)	0.00698	0.00699	0.00698
	(A2 * !A3 * B1 * !Y)	-0.00553	-0.00630	-0.00626
	(A2 * !A3 * B1 * !Y)	0.00710	0.00717	0.00714
	(A2 * !A3 * !B1 * Y)	-0.00185	-0.00188	-0.00183
	(A2 * !A3 * !B1 * Y)	0.00887	0.00901	0.00891
	(!A2 * B1 * !Y)	-0.00610	-0.00640	-0.00636
	(!A2 * B1 * !Y)	0.00711	0.00718	0.00714
	(!A2 * !B1 * Y)	-0.00192	-0.00196	-0.00192
	(!A2 * !B1 * Y)	0.00888	0.00907	0.00892

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)**	0.00179	0.00170	0.00169
	(A1 * A3 * B1 * !Y)	-0.00157	-0.00174	-0.00173
	(A1 * !A3 * B1 * !Y)	0.00161	0.00163	0.00162
	(A1 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00177
	(A1 * !A3 * !B1 * Y)	0.00057	0.00057	0.00058
	(A1 * !A3 * !B1 * Y)	-0.00197	-0.00198	-0.00197
	(!A1 * A3 * B1 * !Y)	0.00163	0.00164	0.00164
	(!A1 * A3 * B1 * !Y)	-0.00176	-0.00177	-0.00177
	(!A1 * A3 * !B1 * Y)	0.00142	0.00143	0.00143
	(!A1 * A3 * !B1 * Y)	-0.00197	-0.00197	-0.00197
	(!A1 * !A3 * B1 * !Y)	0.00096	0.00096	0.00095
	(!A1 * !A3 * B1 * !Y)	-0.00177	-0.00177	-0.00177
	(!A1 * !A3 * !B1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * Y)	-0.00199	-0.00199	-0.00198

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00312	0.00297	0.00296
	(A1 * A3 * B1 * !Y)	-0.00327	-0.00358	-0.00356
	(A1 * !A3 * B1 * !Y)	0.00284	0.00286	0.00284
	(A1 * !A3 * B1 * !Y)	-0.00364	-0.00365	-0.00364
	(A1 * !A3 * !B1 * Y)	0.00113	0.00114	0.00113
	(A1 * !A3 * !B1 * Y)	-0.00365	-0.00367	-0.00366
	(!A1 * A3 * B1 * !Y)	0.00286	0.00289	0.00287
	(!A1 * A3 * B1 * !Y)	-0.00363	-0.00366	-0.00364
	(!A1 * A3 * !B1 * Y)	0.00282	0.00284	0.00283
	(!A1 * A3 * !B1 * Y)	-0.00365	-0.00366	-0.00365
	(!A1 * !A3 * B1 * !Y)	0.00150	0.00151	0.00150
	(!A1 * !A3 * B1 * !Y)	-0.00364	-0.00364	-0.00364
	(!A1 * !A3 * !B1 * Y)	0.00132	0.00133	0.00131
	(!A1 * !A3 * !B1 * Y)	-0.00369	-0.00372	-0.00369
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00671	0.00633	0.00628
	(A1 * A3 * B1 * !Y)	-0.00643	-0.00716	-0.00713
	(A1 * !A3 * B1 * !Y)	0.00592	0.00596	0.00594
	(A1 * !A3 * B1 * !Y)	-0.00728	-0.00732	-0.00730
	(A1 * !A3 * !B1 * Y)	0.00247	0.00249	0.00250
	(A1 * !A3 * !B1 * Y)	-0.00737	-0.00740	-0.00737
	(!A1 * A3 * B1 * !Y)	0.00613	0.00616	0.00614
	(!A1 * A3 * B1 * !Y)	-0.00727	-0.00732	-0.00730
	(!A1 * A3 * !B1 * Y)	0.00603	0.00606	0.00604
	(!A1 * A3 * !B1 * Y)	-0.00736	-0.00738	-0.00736
	(!A1 * !A3 * B1 * !Y)	0.00332	0.00334	0.00332
	(!A1 * !A3 * B1 * !Y)	-0.00730	-0.00733	-0.00731
	(!A1 * !A3 * !B1 * Y)	0.00292	0.00292	0.00291
	(!A1 * !A3 * !B1 * Y)	-0.00744	-0.00744	-0.00743

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)	-0.00169	-0.00170	-0.00169
	(A1 * A3 * B1 * !Y)	0.00173	0.00174	0.00173
	(A1 * !A3 * B1 * !Y)	-0.00157	-0.00162	-0.00162
	(A1 * !A3 * B1 * !Y)	0.00176	0.00177	0.00177
	(A1 * !A3 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(A1 * !A3 * !B1 * Y)	0.00202	0.00203	0.00199
	(!A1 * A3 * B1 * !Y)	-0.00158	-0.00163	-0.00164
	(!A1 * A3 * B1 * !Y)	0.00177	0.00178	0.00177
	(!A1 * A3 * !B1 * Y)	-0.00132	-0.00143	-0.00143
	(!A1 * A3 * !B1 * Y)	0.00204	0.00199	0.00198
	(!A1 * !A3 * B1 * !Y)	-0.00096	-0.00096	-0.00095
	(!A1 * !A3 * B1 * !Y)	0.00178	0.00179	0.00177
	(!A1 * !A3 * !B1 * Y)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * Y)	0.00206	0.00207	0.00200
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00294	-0.00296	-0.00295
	(A1 * A3 * B1 * !Y)	0.00354	0.00359	0.00356
	(A1 * !A3 * B1 * !Y)	-0.00270	-0.00286	-0.00284
	(A1 * !A3 * B1 * !Y)	0.00364	0.00367	0.00365
	(A1 * !A3 * !B1 * Y)	-0.00107	-0.00109	-0.00110
	(A1 * !A3 * !B1 * Y)	0.00372	0.00377	0.00369
	(!A1 * A3 * B1 * !Y)	-0.00270	-0.00284	-0.00285
	(!A1 * A3 * B1 * !Y)	0.00363	0.00367	0.00365
	(!A1 * A3 * !B1 * Y)	-0.00260	-0.00283	-0.00283
	(!A1 * A3 * !B1 * Y)	0.00376	0.00369	0.00366
	(!A1 * !A3 * B1 * !Y)	-0.00150	-0.00151	-0.00150
	(!A1 * !A3 * B1 * !Y)	0.00366	0.00368	0.00365
	(!A1 * !A3 * !B1 * Y)	-0.00132	-0.00133	-0.00131
	(!A1 * !A3 * !B1 * Y)	0.00383	0.00386	0.00373

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00627	-0.00628	-0.00626
	(A1 * A3 * B1 * !Y)	0.00713	0.00716	0.00713
	(A1 * !A3 * B1 * !Y)	-0.00568	-0.00596	-0.00594
	(A1 * !A3 * B1 * !Y)	0.00730	0.00734	0.00732
	(A1 * !A3 * !B1 * Y)	-0.00236	-0.00240	-0.00243
	(A1 * !A3 * !B1 * Y)	0.00752	0.00762	0.00744
	(!A1 * A3 * B1 * !Y)	-0.00576	-0.00612	-0.00608
	(!A1 * A3 * B1 * !Y)	0.00727	0.00739	0.00732
	(!A1 * A3 * !B1 * Y)	-0.00539	-0.00606	-0.00603
	(!A1 * A3 * !B1 * Y)	0.00773	0.00744	0.00738
	(!A1 * !A3 * B1 * !Y)	-0.00332	-0.00334	-0.00332
	(!A1 * !A3 * B1 * !Y)	0.00730	0.00739	0.00733
	(!A1 * !A3 * !B1 * Y)	-0.00292	-0.00292	-0.00291
	(!A1 * !A3 * !B1 * Y)	0.00767	0.00777	0.00751

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)**	0.00184	0.00176	0.00175
	(A1 * A2 * B1 * !Y)	-0.00164	-0.00180	-0.00179
	(A1 * !A2 * !B1 * Y)	0.00156	0.00157	0.00157
	(A1 * !A2 * !B1 * Y)	-0.00194	-0.00195	-0.00195
	(!A2 * B1 * !Y)	0.00168	0.00171	0.00169
	(!A2 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * B1 * !Y)	0.00166	0.00168	0.00167
	(!A1 * A2 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * !B1 * Y)	0.00152	0.00154	0.00152
	(!A1 * A2 * !B1 * Y)	-0.00194	-0.00196	-0.00195
	(!A1 * !A2 * !B1 * Y)	0.00156	0.00157	0.00157
	(!A1 * !A2 * !B1 * Y)	-0.00194	-0.00195	-0.00195

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00345	0.00328	0.00327
	(A1 * A2 * B1 * !Y)	-0.00324	-0.00353	-0.00352
	(A1 * !A2 * !B1 * Y)	0.00308	0.00310	0.00309
	(A1 * !A2 * !B1 * Y)	-0.00360	-0.00362	-0.00361
	(!A2 * B1 * !Y)	0.00312	0.00315	0.00313
	(!A2 * B1 * !Y)	-0.00359	-0.00361	-0.00360
	(!A1 * A2 * B1 * !Y)	0.00307	0.00309	0.00308
	(!A1 * A2 * B1 * !Y)	-0.00359	-0.00360	-0.00360
	(!A1 * A2 * !B1 * Y)	0.00310	0.00312	0.00310
	(!A1 * A2 * !B1 * Y)	-0.00360	-0.00361	-0.00360
	(!A1 * !A2 * !B1 * Y)	0.00311	0.00312	0.00311
	(!A1 * !A2 * !B1 * Y)	-0.00360	-0.00362	-0.00361
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00661	0.00628	0.00623
	(A1 * A2 * B1 * !Y)	-0.00645	-0.00714	-0.00711
	(A1 * !A2 * !B1 * Y)	0.00597	0.00598	0.00599
	(A1 * !A2 * !B1 * Y)	-0.00726	-0.00726	-0.00727
	(!A2 * B1 * !Y)	0.00593	0.00596	0.00593
	(!A2 * B1 * !Y)	-0.00726	-0.00728	-0.00727
	(!A1 * A2 * B1 * !Y)	0.00584	0.00589	0.00586
	(!A1 * A2 * B1 * !Y)	-0.00725	-0.00728	-0.00727
	(!A1 * A2 * !B1 * Y)	0.00588	0.00591	0.00590
	(!A1 * A2 * !B1 * Y)	-0.00726	-0.00728	-0.00727
	(!A1 * !A2 * !B1 * Y)	0.00598	0.00603	0.00600
	(!A1 * !A2 * !B1 * Y)	-0.00726	-0.00729	-0.00727

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)**	-0.00175	-0.00176	-0.00175
	(A1 * A2 * B1 * !Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * !B1 * Y)	-0.00151	-0.00157	-0.00157
	(A1 * !A2 * !B1 * Y)	0.00196	0.00197	0.00195
	(!A2 * B1 * !Y)	-0.00165	-0.00169	-0.00169
	(!A2 * B1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * A2 * B1 * !Y)	-0.00158	-0.00168	-0.00167
	(!A1 * A2 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A1 * A2 * !B1 * Y)	-0.00145	-0.00154	-0.00152
	(!A1 * A2 * !B1 * Y)	0.00195	0.00197	0.00195
	(!A1 * !A2 * !B1 * Y)	-0.00152	-0.00157	-0.00157
	(!A1 * !A2 * !B1 * Y)	0.00196	0.00197	0.00195
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00325	-0.00327	-0.00326
	(A1 * A2 * B1 * !Y)	0.00351	0.00355	0.00352
	(A1 * !A2 * !B1 * Y)	-0.00294	-0.00307	-0.00308
	(A1 * !A2 * !B1 * Y)	0.00360	0.00364	0.00361
	(!A2 * B1 * !Y)	-0.00303	-0.00315	-0.00313
	(!A2 * B1 * !Y)	0.00359	0.00362	0.00361
	(!A1 * A2 * B1 * !Y)	-0.00287	-0.00309	-0.00308
	(!A1 * A2 * B1 * !Y)	0.00361	0.00364	0.00361
	(!A1 * A2 * !B1 * Y)	-0.00286	-0.00310	-0.00310
	(!A1 * A2 * !B1 * Y)	0.00363	0.00363	0.00361
	(!A1 * !A2 * !B1 * Y)	-0.00296	-0.00307	-0.00309
	(!A1 * !A2 * !B1 * Y)	0.00360	0.00362	0.00362

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00621	-0.00625	-0.00622
	(A1 * A2 * B1 * !Y)	0.00708	0.00716	0.00711
	(A1 * !A2 * !B1 * Y)	-0.00563	-0.00596	-0.00597
	(A1 * !A2 * !B1 * Y)	0.00727	0.00735	0.00729
	(!A2 * B1 * !Y)	-0.00568	-0.00593	-0.00593
	(!A2 * B1 * !Y)	0.00726	0.00734	0.00729
	(!A1 * A2 * B1 * !Y)	-0.00543	-0.00587	-0.00586
	(!A1 * A2 * B1 * !Y)	0.00730	0.00733	0.00729
	(!A1 * A2 * !B1 * Y)	-0.00541	-0.00589	-0.00590
	(!A1 * A2 * !B1 * Y)	0.00731	0.00732	0.00730
	(!A1 * !A2 * !B1 * Y)	-0.00565	-0.00597	-0.00597
	(!A1 * !A2 * !B1 * Y)	0.00727	0.00735	0.00729

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)**	0.00193	0.00194	0.00193
	(A1 * A2 * A3 * !Y)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00205	0.00206	0.00205
	(A1 * A2 * A3 * !Y)	-0.00170	-0.00170	-0.00168
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00425	0.00430	0.00426
	(A1 * A2 * A3 * !Y)	-0.00345	-0.00349	-0.00345

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)	-0.00181	-0.00183	-0.00191
	(A1 * A2 * A3 * !Y)	0.00094	0.00094	0.00087
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00180	-0.00181	-0.00202
	(A1 * A2 * A3 * !Y)	0.00189	0.00189	0.00173
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00378	-0.00381	-0.00421
	(A1 * A2 * A3 * !Y)	0.00384	0.00384	0.00354

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a31o_1	11.18880
sky130_fd_sc_hs__a31o_2	12.78720
sky130_fd_sc_hs__a31o_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__a31o_1	0.00242	0.00240	0.00240	0.00261	1.42714
sky130_fd_sc_hs__a31o_2	0.00269	0.00260	0.00262	0.00253	2.73604
sky130_fd_sc_hs__a31o_4	0.00476	0.00462	0.00460	0.00474	5.36865

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a31o_1	0.00000	0.08541	0.11347
sky130_fd_sc_hs__a31o_2	0.00000	0.11291	0.12788
sky130_fd_sc_hs__a31o_4	0.00000	0.22702	0.25985

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)	0.05811	0.45349	5.43858
	A2->X (RR)	0.06238	0.46128	5.41514
	A3->X (RR)	0.06503	0.45401	5.29515
	B1->X (RR)	0.04321	0.42473	5.25686
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.05980	0.38662	5.36707
	A2->X (RR)	0.06380	0.38977	5.34342
	A3->X (RR)	0.06638	0.38046	5.24760
	B1->X (RR)	0.04164	0.34821	5.16275
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.07083	0.34603	5.56530
	A2->X (RR)	0.07541	0.34087	5.48107
	A3->X (RR)	0.07883	0.32871	5.38607
	B1->X (RR)	0.04133	0.28049	5.24887

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.08641	0.45775	4.77981
	A2->X (FF)	0.10140	0.48427	4.84085
	A3->X (FF)	0.10994	0.49917	4.91093
	B1->X (FF)	0.09332	0.49959	5.14963
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.11234	0.48024	4.83141
	A2->X (FF)	0.13115	0.51044	4.90837
	A3->X (FF)	0.13606	0.51910	4.95082
	B1->X (FF)	0.11816	0.52597	5.12169
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.11201	0.44885	5.00894
	A2->X (FF)	0.12628	0.47525	5.07942
	A3->X (FF)	0.13999	0.49947	5.17309
	B1->X (FF)	0.11724	0.49929	5.31616

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00947	0.01074	0.05093
	A1	0.00436	0.00564	0.04613
	A2	0.01036	0.01112	0.04622
	A2	0.00436	0.00513	0.04053
	A3	0.01134	0.01182	0.04003
	A3	0.00434	0.00483	0.03326
	B1	0.00737	0.01061	0.07634
	B1	0.00292	0.00617	0.07211
sky130_fd_sc_hs__a31o_2	A1	0.01256	0.01366	0.05044
	A1	0.00700	0.00815	0.04538
	A2	0.01355	0.01424	0.04664
	A2	0.00700	0.00774	0.04057
	A3	0.01465	0.01516	0.04178
	A3	0.00697	0.00754	0.03451
	B1	0.01001	0.01276	0.07409
	B1	0.00543	0.00833	0.07020
sky130_fd_sc_hs__a31o_4	A1	0.02455	0.02696	0.10402
	A1	0.01429	0.01676	0.09500
	A2	0.02643	0.02821	0.09657
	A2	0.01427	0.01608	0.08565
	A3	0.02848	0.03003	0.09964
	A3	0.01424	0.01583	0.08634
	B1	0.01784	0.02428	0.16003
	B1	0.00982	0.01632	0.15294

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00328	0.00410	0.03647
	A1	0.00843	0.00924	0.04162
	A2	0.00381	0.00465	0.03551
	A2	0.00980	0.01058	0.04077
	A3	0.00401	0.00461	0.03432
	A3	0.01097	0.01155	0.04124
	B1	0.00263	0.00676	0.07461
	B1	0.00708	0.01110	0.07852
sky130_fd_sc_hs__a31o_2	A1	0.00628	0.00683	0.03811
	A1	0.01187	0.01232	0.04241
	A2	0.00713	0.00743	0.03672
	A2	0.01365	0.01385	0.04302
	A3	0.00749	0.00742	0.03894
	A3	0.01508	0.01500	0.04434
	B1	0.00555	0.00891	0.07361
	B1	0.01011	0.01343	0.07678
sky130_fd_sc_hs__a31o_4	A1	0.01306	0.01357	0.08850
	A1	0.02344	0.02386	0.09571
	A2	0.01446	0.01564	0.08486
	A2	0.02663	0.02677	0.09348
	A3	0.01598	0.01570	0.08320
	A3	0.03011	0.02978	0.09723
	B1	0.01166	0.01840	0.15194
	B1	0.01966	0.02625	0.15824

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)**	0.00150	0.00136	0.00134
	(A2 * A3 * B1 * X)	-0.00144	-0.00164	-0.00163
	(A2 * !A3 * B1 * X)	0.00126	0.00126	0.00126
	(A2 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * !A3 * !B1 * !X)	0.00037	0.00038	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00194	-0.00195	-0.00200
	(!A2 * B1 * X)	0.00129	0.00129	0.00129
	(!A2 * B1 * X)	-0.00168	-0.00168	-0.00167
	(!A2 * !B1 * !X)	0.00039	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00197	-0.00199	-0.00200
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00182	0.00168	0.00167
	(A2 * A3 * B1 * X)	-0.00138	-0.00158	-0.00157
	(A2 * !A3 * B1 * X)	0.00159	0.00159	0.00158
	(A2 * !A3 * B1 * X)	-0.00161	-0.00161	-0.00161
	(A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00201	-0.00202	-0.00207
	(!A2 * B1 * X)	0.00160	0.00163	0.00161
	(!A2 * B1 * X)	-0.00160	-0.00162	-0.00161
	(!A2 * !B1 * !X)	0.00050	0.00050	0.00049
	(!A2 * !B1 * !X)	-0.00204	-0.00204	-0.00207
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00311	0.00288	0.00286
	(A2 * A3 * B1 * X)	-0.00289	-0.00329	-0.00328
	(A2 * !A3 * B1 * X)	0.00274	0.00275	0.00274
	(A2 * !A3 * B1 * X)	-0.00337	-0.00337	-0.00336
	(A2 * !A3 * !B1 * !X)	0.00090	0.00091	0.00085
	(A2 * !A3 * !B1 * !X)	-0.00393	-0.00395	-0.00407
	(!A2 * B1 * X)	0.00275	0.00277	0.00276
	(!A2 * B1 * X)	-0.00335	-0.00337	-0.00336
	(!A2 * !B1 * !X)	0.00091	0.00092	0.00089
	(!A2 * !B1 * !X)	-0.00401	-0.00403	-0.00408

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	(A2 * A3 * B1 * X)	-0.00133	-0.00134	-0.00133
	(A2 * A3 * B1 * X)	0.00163	0.00164	0.00163
	(A2 * !A3 * B1 * X)	-0.00115	-0.00126	-0.00126
	(A2 * !A3 * B1 * X)	0.00167	0.00170	0.00168
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00200	0.00202	0.00201
	(!A2 * B1 * X)	-0.00124	-0.00129	-0.00129
	(!A2 * B1 * X)	0.00168	0.00169	0.00168
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00200	0.00202	0.00201
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A2 * A3 * B1 * X)	0.00156	0.00158	0.00157
	(A2 * !A3 * B1 * X)	-0.00146	-0.00159	-0.00158
	(A2 * !A3 * B1 * X)	0.00161	0.00163	0.00161
	(A2 * !A3 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(A2 * !A3 * !B1 * !X)	0.00207	0.00209	0.00207
	(!A2 * B1 * X)	-0.00156	-0.00162	-0.00161
	(!A2 * B1 * X)	0.00162	0.00162	0.00161
	(!A2 * !B1 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * !X)	0.00207	0.00209	0.00208

sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	-0.00285	-0.00286	-0.00285
	(A2 * A3 * B1 * X)	0.00328	0.00330	0.00328
	(A2 * !A3 * B1 * X)	-0.00249	-0.00272	-0.00274
	(A2 * !A3 * B1 * X)	0.00337	0.00341	0.00338
	(A2 * !A3 * !B1 * !X)	-0.00085	-0.00086	-0.00084
	(A2 * !A3 * !B1 * !X)	0.00410	0.00413	0.00409
	(!A2 * B1 * X)	-0.00264	-0.00276	-0.00276
	(!A2 * B1 * X)	0.00335	0.00339	0.00338
	(!A2 * !B1 * !X)	-0.00088	-0.00088	-0.00087
	(!A2 * !B1 * !X)	0.00410	0.00413	0.00409

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)**	0.00147	0.00134	0.00132
	(A1 * A3 * B1 * X)	-0.00143	-0.00164	-0.00163
	(A1 * !A3 * B1 * X)	0.00125	0.00126	0.00125
	(A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00046	0.00047	0.00047
	(A1 * !A3 * !B1 * !X)	-0.00172	-0.00174	-0.00173
	(!A1 * A3 * B1 * X)	0.00126	0.00128	0.00127
	(!A1 * A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * A3 * !B1 * !X)	0.00120	0.00121	0.00121
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00173	-0.00173
	(!A1 * !A3 * B1 * X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00054	0.00055	0.00054
	(!A1 * !A3 * !B1 * !X)	-0.00173	-0.00175	-0.00174

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00175	0.00162	0.00161
	(A1 * A3 * B1 * X)	-0.00138	-0.00158	-0.00157
	(A1 * !A3 * B1 * X)	0.00154	0.00155	0.00155
	(A1 * !A3 * B1 * X)	-0.00160	-0.00161	-0.00161
	(A1 * !A3 * !B1 * !X)	0.00057	0.00058	0.00058
	(A1 * !A3 * !B1 * !X)	-0.00173	-0.00175	-0.00173
	(!A1 * A3 * B1 * X)	0.00155	0.00157	0.00156
	(!A1 * A3 * B1 * X)	-0.00160	-0.00162	-0.00161
	(!A1 * A3 * !B1 * !X)	0.00142	0.00143	0.00143
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * B1 * X)	0.00088	0.00089	0.00088
	(!A1 * !A3 * B1 * X)	-0.00160	-0.00161	-0.00161
	(!A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !X)	-0.00174	-0.00175	-0.00175
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00309	0.00285	0.00282
	(A1 * A3 * B1 * X)	-0.00291	-0.00332	-0.00331
	(A1 * !A3 * B1 * X)	0.00272	0.00274	0.00273
	(A1 * !A3 * B1 * X)	-0.00338	-0.00341	-0.00340
	(A1 * !A3 * !B1 * !X)	0.00118	0.00120	0.00119
	(A1 * !A3 * !B1 * !X)	-0.00341	-0.00345	-0.00342
	(!A1 * A3 * B1 * X)	0.00272	0.00274	0.00273
	(!A1 * A3 * B1 * X)	-0.00339	-0.00341	-0.00340
	(!A1 * A3 * !B1 * !X)	0.00275	0.00277	0.00275
	(!A1 * A3 * !B1 * !X)	-0.00340	-0.00341	-0.00340
	(!A1 * !A3 * B1 * X)	0.00154	0.00156	0.00155
	(!A1 * !A3 * B1 * X)	-0.00339	-0.00343	-0.00340
	(!A1 * !A3 * !B1 * !X)	0.00138	0.00140	0.00138
	(!A1 * !A3 * !B1 * !X)	-0.00345	-0.00348	-0.00345

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)	-0.00131	-0.00132	-0.00131
	(A1 * A3 * B1 * X)	0.00163	0.00164	0.00163
	(A1 * !A3 * B1 * X)	-0.00121	-0.00126	-0.00125
	(A1 * !A3 * B1 * X)	0.00166	0.00168	0.00167
	(A1 * !A3 * !B1 * !X)	-0.00045	-0.00045	-0.00046
	(A1 * !A3 * !B1 * !X)	0.00176	0.00178	0.00174
	(!A1 * A3 * B1 * X)	-0.00122	-0.00126	-0.00127
	(!A1 * A3 * B1 * X)	0.00167	0.00168	0.00167
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00121	-0.00121
	(!A1 * A3 * !B1 * !X)	0.00180	0.00175	0.00174
	(!A1 * !A3 * B1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * X)	0.00167	0.00169	0.00167
	(!A1 * !A3 * !B1 * !X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * !B1 * !X)	0.00180	0.00182	0.00176
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00161	-0.00161	-0.00161
	(A1 * A3 * B1 * X)	0.00157	0.00158	0.00157
	(A1 * !A3 * B1 * X)	-0.00149	-0.00154	-0.00155
	(A1 * !A3 * B1 * X)	0.00160	0.00162	0.00161
	(A1 * !A3 * !B1 * !X)	-0.00056	-0.00056	-0.00057
	(A1 * !A3 * !B1 * !X)	0.00177	0.00179	0.00175
	(!A1 * A3 * B1 * X)	-0.00150	-0.00155	-0.00156
	(!A1 * A3 * B1 * X)	0.00161	0.00162	0.00161
	(!A1 * A3 * !B1 * !X)	-0.00133	-0.00143	-0.00143
	(!A1 * A3 * !B1 * !X)	0.00179	0.00175	0.00174
	(!A1 * !A3 * B1 * X)	-0.00088	-0.00089	-0.00088
	(!A1 * !A3 * B1 * X)	0.00161	0.00163	0.00161
	(!A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !X)	0.00181	0.00183	0.00177

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00282	-0.00283	-0.00281
	(A1 * A3 * B1 * X)	0.00331	0.00333	0.00331
	(A1 * !A3 * B1 * X)	-0.00255	-0.00272	-0.00271
	(A1 * !A3 * B1 * X)	0.00338	0.00344	0.00341
	(A1 * !A3 * !B1 * !X)	-0.00114	-0.00115	-0.00116
	(A1 * !A3 * !B1 * !X)	0.00352	0.00353	0.00345
	(!A1 * A3 * B1 * X)	-0.00261	-0.00274	-0.00273
	(!A1 * A3 * B1 * X)	0.00339	0.00344	0.00341
	(!A1 * A3 * !B1 * !X)	-0.00248	-0.00273	-0.00273
	(!A1 * A3 * !B1 * !X)	0.00358	0.00344	0.00341
	(!A1 * !A3 * B1 * X)	-0.00154	-0.00156	-0.00155
	(!A1 * !A3 * B1 * X)	0.00339	0.00344	0.00341
	(!A1 * !A3 * !B1 * !X)	-0.00138	-0.00140	-0.00138
	(!A1 * !A3 * !B1 * !X)	0.00358	0.00362	0.00350

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)**	0.00156	0.00146	0.00145
	(A1 * A2 * B1 * X)	-0.00143	-0.00161	-0.00160
	(A1 * !A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00181
	(!A2 * B1 * X)	0.00139	0.00140	0.00139
	(!A2 * B1 * X)	-0.00163	-0.00165	-0.00164
	(!A1 * A2 * B1 * X)	0.00138	0.00138	0.00137
	(!A1 * A2 * B1 * X)	-0.00164	-0.00164	-0.00164
	(!A1 * A2 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * A2 * !B1 * !X)	-0.00181	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * !X)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * !X)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00184	0.00174	0.00173
	(A1 * A2 * B1 * X)	-0.00139	-0.00156	-0.00155
	(A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00182
	(!A2 * B1 * X)	0.00165	0.00166	0.00166
	(!A2 * B1 * X)	-0.00158	-0.00159	-0.00158
	(!A1 * A2 * B1 * X)	0.00165	0.00165	0.00164
	(!A1 * A2 * B1 * X)	-0.00158	-0.00159	-0.00158
	(!A1 * A2 * !B1 * !X)	0.00140	0.00141	0.00140
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00182	-0.00182
	(!A1 * !A2 * !B1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !A2 * !B1 * !X)	-0.00181	-0.00182	-0.00182
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00305	0.00282	0.00280
	(A1 * A2 * B1 * X)	-0.00293	-0.00333	-0.00332
	(A1 * !A2 * !B1 * !X)	0.00263	0.00266	0.00265
	(A1 * !A2 * !B1 * !X)	-0.00340	-0.00342	-0.00341
	(!A2 * B1 * X)	0.00270	0.00272	0.00270
	(!A2 * B1 * X)	-0.00340	-0.00342	-0.00341
	(!A1 * A2 * B1 * X)	0.00264	0.00264	0.00263
	(!A1 * A2 * B1 * X)	-0.00342	-0.00342	-0.00341
	(!A1 * A2 * !B1 * !X)	0.00267	0.00268	0.00266
	(!A1 * A2 * !B1 * !X)	-0.00342	-0.00343	-0.00341
	(!A1 * !A2 * !B1 * !X)	0.00265	0.00268	0.00266
	(!A1 * !A2 * !B1 * !X)	-0.00341	-0.00342	-0.00341

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

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

sky130_fd_sc_hs__a31o_1	**(A1 * A2 * B1 * X)**	-0.00144	-0.00145	-0.00144
	(A1 * A2 * B1 * X)	0.00160	0.00162	0.00160
	(A1 * !A2 * !B1 * !X)	-0.00118	-0.00122	-0.00123
	(A1 * !A2 * !B1 * !X)	0.00182	0.00182	0.00181
	(!A2 * B1 * X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * X)	0.00165	0.00165	0.00165
	(!A1 * A2 * B1 * X)	-0.00130	-0.00138	-0.00137
	(!A1 * A2 * B1 * X)	0.00164	0.00166	0.00165
	(!A1 * A2 * !B1 * !X)	-0.00113	-0.00120	-0.00119
	(!A1 * A2 * !B1 * !X)	0.00181	0.00183	0.00181
	(!A1 * !A2 * !B1 * !X)	-0.00119	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * !X)	0.00182	0.00181	0.00181
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00172	-0.00173	-0.00172
	(A1 * A2 * B1 * X)	0.00154	0.00156	0.00155
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00143	-0.00143
	(A1 * !A2 * !B1 * !X)	0.00183	0.00184	0.00182
	(!A2 * B1 * X)	-0.00162	-0.00166	-0.00166
	(!A2 * B1 * X)	0.00159	0.00160	0.00159
	(!A1 * A2 * B1 * X)	-0.00156	-0.00165	-0.00164
	(!A1 * A2 * B1 * X)	0.00158	0.00160	0.00159
	(!A1 * A2 * !B1 * !X)	-0.00132	-0.00141	-0.00140
	(!A1 * A2 * !B1 * !X)	0.00182	0.00183	0.00182
	(!A1 * !A2 * !B1 * !X)	-0.00138	-0.00143	-0.00143
	(!A1 * !A2 * !B1 * !X)	0.00183	0.00183	0.00182

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00278	-0.00280	-0.00278
	(A1 * A2 * B1 * X)	0.00330	0.00334	0.00332
	(A1 * !A2 * !B1 * !X)	-0.00253	-0.00266	-0.00265
	(A1 * !A2 * !B1 * !X)	0.00342	0.00344	0.00343
	(!A2 * B1 * X)	-0.00256	-0.00267	-0.00269
	(!A2 * B1 * X)	0.00341	0.00344	0.00342
	(!A1 * A2 * B1 * X)	-0.00246	-0.00264	-0.00263
	(!A1 * A2 * B1 * X)	0.00343	0.00345	0.00342
	(!A1 * A2 * !B1 * !X)	-0.00245	-0.00267	-0.00265
	(!A1 * A2 * !B1 * !X)	0.00344	0.00345	0.00343
	(!A1 * !A2 * !B1 * !X)	-0.00255	-0.00266	-0.00266
	(!A1 * !A2 * !B1 * !X)	0.00342	0.00344	0.00343

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)**	0.00192	0.00195	0.00193
	(A1 * A2 * A3 * X)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00181	0.00183	0.00181
	(A1 * A2 * A3 * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00318	0.00320	0.00317
	(A1 * A2 * A3 * X)	-0.00173	-0.00172	-0.00171

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)**	-0.00183	-0.00184	-0.00192
	(A1 * A2 * A3 * X)	0.00088	0.00088	0.00082
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	-0.00172	-0.00173	-0.00180
	(A1 * A2 * A3 * X)	0.00086	0.00086	0.00080
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	-0.00291	-0.00295	-0.00314
	(A1 * A2 * A3 * X)	0.00189	0.00191	0.00175

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32oi_1	11.18880
sky130_fd_sc_hs__a32oi_2	20.77920
sky130_fd_sc_hs__a32oi_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__a32oi_1	0.00275	0.00275	0.00248	0.00281	0.00259	0.68483
sky130_fd_sc_hs__a32oi_2	0.00517	0.00503	0.00493	0.00522	0.00508	1.23977
sky130_fd_sc_hs__a32oi_4	0.01023	0.00991	0.00986	0.01043	0.01006	1.92757

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32oi_1	0.00000	0.03458	0.12588
sky130_fd_sc_hs__a32oi_2	0.00000	0.06916	0.25175
sky130_fd_sc_hs__a32oi_4	0.00000	0.13831	0.50351

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)	0.08744	0.87994	10.50530
	A2->Y (FR)	0.08625	0.87918	10.50480
	A3->Y (FR)	0.09635	0.88509	10.43450
	B1->Y (FR)	0.06217	0.86565	10.71460
	B2->Y (FR)	0.05951	0.86504	10.71770
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.07891	0.72673	9.95312
	A2->Y (FR)	0.10257	0.77715	10.42240
	A3->Y (FR)	0.11219	0.78055	10.28890
	B1->Y (FR)	0.05424	0.73612	10.49770
	B2->Y (FR)	0.07304	0.76273	10.64780
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.09294	0.66393	9.80680
	A2->Y (FR)	0.11099	0.67660	9.74075
	A3->Y (FR)	0.12599	0.69274	9.73737
	B1->Y (FR)	0.07662	0.66092	9.96389
	B2->Y (FR)	0.10090	0.70429	10.31960

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.03124	0.36223	4.14959
	A2->Y (RF)	0.03517	0.35010	3.95049
	A3->Y (RF)	0.03734	0.31176	3.40952
	B1->Y (RF)	0.01792	0.29556	3.45984
	B2->Y (RF)	0.02031	0.27923	3.22089
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.03387	0.35110	4.73462
	A2->Y (RF)	0.04069	0.33699	4.42924
	A3->Y (RF)	0.04271	0.26511	3.34856
	B1->Y (RF)	0.01606	0.26185	3.70083
	B2->Y (RF)	0.02044	0.24091	3.31751
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.03483	0.29769	4.37970
	A2->Y (RF)	0.04100	0.27444	3.92358
	A3->Y (RF)	0.04299	0.20474	2.82855
	B1->Y (RF)	0.01691	0.20966	3.35529
	B2->Y (RF)	0.02048	0.17299	2.68956

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00021	0.00012	0.00812
	A1	0.00703	0.00675	0.01497
	A2	0.00064	0.00054	0.00852
	A2	0.00853	0.00822	0.01641
	A3	0.00120	0.00117	0.00941
	A3	0.00997	0.00969	0.01821
	B1	0.00005	0.00113	0.02092
	B1	0.00482	0.00590	0.02569
	B2	0.00048	0.00157	0.02115
	B2	0.00625	0.00733	0.02698
sky130_fd_sc_hs__a32oi_2	A1	-0.00094	-0.00099	0.01296
	A1	0.01238	0.01234	0.02635
	A2	0.00104	0.00071	0.01432
	A2	0.01648	0.01618	0.02981
	A3	0.00167	0.00164	0.01600
	A3	0.01923	0.01920	0.03364
	B1	-0.00127	0.00110	0.03568
	B1	0.00771	0.01011	0.04485
	B2	0.00044	0.00254	0.03760
	B2	0.01164	0.01374	0.04890

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00165	-0.00187	0.02663
	A1	0.02501	0.02482	0.05365
	A2	0.00133	0.00072	0.03032
	A2	0.03219	0.03159	0.06146
	A3	0.00280	0.00275	0.03388
	A3	0.03801	0.03796	0.06895
	B1	-0.00244	0.00254	0.06957
	B1	0.01593	0.02091	0.08898
	B2	0.00055	0.00497	0.07154
	B2	0.02314	0.02764	0.09246

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00963	0.00978	0.01632
	A1	0.00293	0.00307	0.00962
	A2	0.01074	0.01079	0.01584
	A2	0.00292	0.00291	0.00803
	A3	0.01165	0.01169	0.01725
	A3	0.00287	0.00286	0.00832
	B1	0.00478	0.00521	0.01279
	B1	0.00001	0.00040	0.00777
	B2	0.00581	0.00600	0.01206
	B2	0.00000	0.00018	0.00602

sky130_fd_sc_hs__a32oi_2	**A1**	0.01870	0.01904	0.03086
	A1	0.00561	0.00585	0.01737
	A2	0.02099	0.02094	0.02967
	A2	0.00562	0.00550	0.01434
	A3	0.02317	0.02317	0.03392
	A3	0.00558	0.00550	0.01611
	B1	0.00865	0.00955	0.02350
	B1	-0.00033	0.00049	0.01393
	B2	0.01108	0.01146	0.02258
	B2	-0.00028	0.00008	0.01096
sky130_fd_sc_hs__a32oi_4	**A1**	0.03663	0.03699	0.05990
	A1	0.01035	0.01067	0.03286
	A2	0.04089	0.04064	0.05991
	A2	0.01023	0.00996	0.02855
	A3	0.04526	0.04515	0.06828
	A3	0.00999	0.00980	0.03254
	B1	0.01762	0.01930	0.04696
	B1	-0.00071	0.00088	0.02796
	B2	0.02236	0.02323	0.04678
	B2	-0.00045	0.00031	0.02357

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)**	0.00172	0.00166	0.00165
	(A2 * A3 * B1 * B2 * !Y)	-0.00159	-0.00174	-0.00173
	(A2 * !A3 * B1 * B2 * !Y)	0.00157	0.00158	0.00157
	(A2 * !A3 * B1 * B2 * !Y)	-0.00177	-0.00177	-0.00177
	(A2 * !A3 * B1 * !B2 * Y)	0.00050	0.00050	0.00048
	(A2 * !A3 * B1 * !B2 * Y)	-0.00211	-0.00214	-0.00218
	(A2 * !A3 * !B1 * Y)	0.00050	0.00050	0.00048
	(A2 * !A3 * !B1 * Y)	-0.00212	-0.00214	-0.00218
	(!A2 * B1 * B2 * !Y)	0.00158	0.00160	0.00159
	(!A2 * B1 * B2 * !Y)	-0.00176	-0.00176	-0.00177
	(!A2 * B1 * !B2 * Y)	0.00049	0.00050	0.00048
	(!A2 * B1 * !B2 * Y)	-0.00215	-0.00218	-0.00218
	(!A2 * !B1 * Y)	0.00049	0.00050	0.00048
	(!A2 * !B1 * Y)	-0.00216	-0.00218	-0.00218
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00340	0.00328	0.00327
	(A2 * A3 * B1 * B2 * !Y)	-0.00319	-0.00346	-0.00346
	(A2 * !A3 * B1 * B2 * !Y)	0.00310	0.00312	0.00311
	(A2 * !A3 * B1 * B2 * !Y)	-0.00353	-0.00354	-0.00353
	(A2 * !A3 * B1 * !B2 * Y)	0.00103	0.00104	0.00097
	(A2 * !A3 * B1 * !B2 * Y)	-0.00415	-0.00419	-0.00432
	(A2 * !A3 * !B1 * Y)	0.00104	0.00104	0.00097
	(A2 * !A3 * !B1 * Y)	-0.00415	-0.00419	-0.00432
	(!A2 * B1 * B2 * !Y)	0.00314	0.00316	0.00315
	(!A2 * B1 * B2 * !Y)	-0.00352	-0.00354	-0.00352
	(!A2 * B1 * !B2 * Y)	0.00108	0.00108	0.00104
	(!A2 * B1 * !B2 * Y)	-0.00423	-0.00427	-0.00433
	(!A2 * !B1 * Y)	0.00108	0.00109	0.00104
	(!A2 * !B1 * Y)	-0.00424	-0.00427	-0.00433

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00687	0.00651	0.00645
	(A2 * A3 * B1 * B2 * !Y)	-0.00621	-0.00690	-0.00691
	(A2 * !A3 * B1 * B2 * !Y)	0.00610	0.00618	0.00614
	(A2 * !A3 * B1 * B2 * !Y)	-0.00703	-0.00710	-0.00707
	(A2 * !A3 * B1 * !B2 * Y)	0.00185	0.00186	0.00174
	(A2 * !A3 * B1 * !B2 * Y)	-0.00847	-0.00851	-0.00874
	(A2 * !A3 * !B1 * Y)	0.00186	0.00186	0.00174
	(A2 * !A3 * !B1 * Y)	-0.00847	-0.00850	-0.00874
	(!A2 * B1 * B2 * !Y)	0.00615	0.00623	0.00619
	(!A2 * B1 * B2 * !Y)	-0.00703	-0.00710	-0.00707
	(!A2 * B1 * !B2 * Y)	0.00193	0.00193	0.00186
	(!A2 * B1 * !B2 * Y)	-0.00865	-0.00868	-0.00878
	(!A2 * !B1 * Y)	0.00194	0.00194	0.00187
	(!A2 * !B1 * Y)	-0.00865	-0.00868	-0.00878

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)**	-0.00164	-0.00165	-0.00165
	(A2 * A3 * B1 * B2 * !Y)	0.00172	0.00174	0.00173
	(A2 * !A3 * B1 * B2 * !Y)	-0.00141	-0.00157	-0.00157
	(A2 * !A3 * B1 * B2 * !Y)	0.00177	0.00180	0.00177
	(A2 * !A3 * B1 * !B2 * Y)	-0.00047	-0.00047	-0.00047
	(A2 * !A3 * B1 * !B2 * Y)	0.00219	0.00221	0.00219
	(A2 * !A3 * !B1 * Y)	-0.00047	-0.00047	-0.00047
	(A2 * !A3 * !B1 * Y)	0.00218	0.00221	0.00219
	(!A2 * B1 * B2 * !Y)	-0.00154	-0.00158	-0.00159
	(!A2 * B1 * B2 * !Y)	0.00177	0.00176	0.00177
	(!A2 * B1 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(!A2 * B1 * !B2 * Y)	0.00219	0.00222	0.00219
	(!A2 * !B1 * Y)	-0.00048	-0.00048	-0.00047
	(!A2 * !B1 * Y)	0.00219	0.00222	0.00219
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00325	-0.00327	-0.00326
	(A2 * A3 * B1 * B2 * !Y)	0.00344	0.00349	0.00346
	(A2 * !A3 * B1 * B2 * !Y)	-0.00268	-0.00312	-0.00311
	(A2 * !A3 * B1 * B2 * !Y)	0.00353	0.00356	0.00354
	(A2 * !A3 * B1 * !B2 * Y)	-0.00098	-0.00100	-0.00097
	(A2 * !A3 * B1 * !B2 * Y)	0.00432	0.00438	0.00434
	(A2 * !A3 * !B1 * Y)	-0.00099	-0.00100	-0.00097
	(A2 * !A3 * !B1 * Y)	0.00432	0.00438	0.00434
	(!A2 * B1 * B2 * !Y)	-0.00300	-0.00316	-0.00315
	(!A2 * B1 * B2 * !Y)	0.00353	0.00356	0.00354
	(!A2 * B1 * !B2 * Y)	-0.00102	-0.00104	-0.00102
	(!A2 * B1 * !B2 * Y)	0.00432	0.00441	0.00434
	(!A2 * !B1 * Y)	-0.00103	-0.00104	-0.00102
	(!A2 * !B1 * Y)	0.00434	0.00440	0.00434

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00644	-0.00643	-0.00643
	(A2 * A3 * B1 * B2 * !Y)	0.00691	0.00690	0.00691
	(A2 * !A3 * B1 * B2 * !Y)	-0.00523	-0.00618	-0.00614
	(A2 * !A3 * B1 * B2 * !Y)	0.00707	0.00715	0.00710
	(A2 * !A3 * B1 * !B2 * Y)	-0.00176	-0.00179	-0.00174
	(A2 * !A3 * B1 * !B2 * Y)	0.00875	0.00887	0.00879
	(A2 * !A3 * !B1 * Y)	-0.00177	-0.00179	-0.00174
	(A2 * !A3 * !B1 * Y)	0.00875	0.00887	0.00879
	(!A2 * B1 * B2 * !Y)	-0.00594	-0.00623	-0.00619
	(!A2 * B1 * B2 * !Y)	0.00707	0.00713	0.00710
	(!A2 * B1 * !B2 * Y)	-0.00182	-0.00186	-0.00182
	(!A2 * B1 * !B2 * Y)	0.00876	0.00893	0.00880
	(!A2 * !B1 * Y)	-0.00182	-0.00186	-0.00183
	(!A2 * !B1 * Y)	0.00876	0.00893	0.00880

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)**	0.00177	0.00171	0.00170
	(A1 * A3 * B1 * B2 * !Y)	-0.00160	-0.00173	-0.00173
	(A1 * !A3 * B1 * B2 * !Y)	0.00165	0.00165	0.00165
	(A1 * !A3 * B1 * B2 * !Y)	-0.00177	-0.00177	-0.00177
	(A1 * !A3 * B1 * !B2 * Y)	0.00068	0.00069	0.00068
	(A1 * !A3 * B1 * !B2 * Y)	-0.00186	-0.00189	-0.00187
	(A1 * !A3 * !B1 * Y)	0.00068	0.00069	0.00068
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00189	-0.00187
	(!A1 * A3 * B1 * B2 * !Y)	0.00162	0.00164	0.00163
	(!A1 * A3 * B1 * B2 * !Y)	-0.00177	-0.00177	-0.00177
	(!A1 * A3 * B1 * !B2 * Y)	0.00152	0.00154	0.00153
	(!A1 * A3 * B1 * !B2 * Y)	-0.00187	-0.00189	-0.00187
	(!A1 * A3 * !B1 * Y)	0.00152	0.00152	0.00153
	(!A1 * A3 * !B1 * Y)	-0.00187	-0.00187	-0.00187
	(!A1 * !A3 * B1 * B2 * !Y)	0.00094	0.00095	0.00094
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00177	-0.00178	-0.00177
	(!A1 * !A3 * B1 * !B2 * Y)	0.00078	0.00078	0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00188	-0.00188	-0.00188
	(!A1 * !A3 * !B1 * Y)	0.00078	0.00078	0.00077
	(!A1 * !A3 * !B1 * Y)	-0.00188	-0.00188	-0.00188

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00333	0.00315	0.00313
	(A1 * A3 * B1 * B2 * !Y)	-0.00323	-0.00359	-0.00358
	(A1 * !A3 * B1 * B2 * !Y)	0.00299	0.00301	0.00300
	(A1 * !A3 * B1 * B2 * !Y)	-0.00366	-0.00368	-0.00367
	(A1 * !A3 * B1 * !B2 * Y)	0.00125	0.00127	0.00127
	(A1 * !A3 * B1 * !B2 * Y)	-0.00372	-0.00374	-0.00372
	(A1 * !A3 * !B1 * Y)	0.00126	0.00127	0.00128
	(A1 * !A3 * !B1 * Y)	-0.00372	-0.00374	-0.00372
	(!A1 * A3 * B1 * B2 * !Y)	0.00302	0.00305	0.00303
	(!A1 * A3 * B1 * B2 * !Y)	-0.00366	-0.00369	-0.00367
	(!A1 * A3 * B1 * !B2 * Y)	0.00300	0.00302	0.00301
	(!A1 * A3 * B1 * !B2 * Y)	-0.00371	-0.00373	-0.00372
	(!A1 * A3 * !B1 * Y)	0.00300	0.00303	0.00301
	(!A1 * A3 * !B1 * Y)	-0.00371	-0.00373	-0.00372
	(!A1 * !A3 * B1 * B2 * !Y)	0.00172	0.00173	0.00172
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00370	-0.00370	-0.00369
	(!A1 * !A3 * B1 * !B2 * Y)	0.00149	0.00149	0.00149
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00376	-0.00375	-0.00375
	(!A1 * !A3 * !B1 * Y)	0.00150	0.00149	0.00150
	(!A1 * !A3 * !B1 * Y)	-0.00376	-0.00375	-0.00375

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00675	0.00635	0.00629
	(A1 * A3 * B1 * B2 * !Y)	-0.00637	-0.00713	-0.00712
	(A1 * !A3 * B1 * B2 * !Y)	0.00595	0.00597	0.00596
	(A1 * !A3 * B1 * B2 * !Y)	-0.00729	-0.00731	-0.00728
	(A1 * !A3 * B1 * !B2 * Y)	0.00240	0.00241	0.00242
	(A1 * !A3 * B1 * !B2 * Y)	-0.00738	-0.00739	-0.00737
	(A1 * !A3 * !B1 * Y)	0.00240	0.00241	0.00242
	(A1 * !A3 * !B1 * Y)	-0.00738	-0.00739	-0.00737
	(!A1 * A3 * B1 * B2 * !Y)	0.00613	0.00617	0.00614
	(!A1 * A3 * B1 * B2 * !Y)	-0.00728	-0.00730	-0.00728
	(!A1 * A3 * B1 * !B2 * Y)	0.00606	0.00610	0.00607
	(!A1 * A3 * B1 * !B2 * Y)	-0.00736	-0.00737	-0.00735
	(!A1 * A3 * !B1 * Y)	0.00606	0.00610	0.00607
	(!A1 * A3 * !B1 * Y)	-0.00736	-0.00737	-0.00735
	(!A1 * !A3 * B1 * B2 * !Y)	0.00323	0.00323	0.00322
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00728	-0.00730	-0.00728
	(!A1 * !A3 * B1 * !B2 * Y)	0.00280	0.00280	0.00279
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00744	-0.00744	-0.00743
	(!A1 * !A3 * !B1 * Y)	0.00281	0.00281	0.00280
	(!A1 * !A3 * !B1 * Y)	-0.00744	-0.00744	-0.00743

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)**	-0.00169	-0.00170	-0.00170
	(A1 * A3 * B1 * B2 * !Y)	0.00172	0.00173	0.00173
	(A1 * !A3 * B1 * B2 * !Y)	-0.00158	-0.00165	-0.00165
	(A1 * !A3 * B1 * B2 * !Y)	0.00178	0.00179	0.00178
	(A1 * !A3 * B1 * !B2 * Y)	-0.00066	-0.00066	-0.00067
	(A1 * !A3 * B1 * !B2 * Y)	0.00190	0.00192	0.00188
	(A1 * !A3 * !B1 * Y)	-0.00066	-0.00066	-0.00067
	(A1 * !A3 * !B1 * Y)	0.00190	0.00192	0.00188
	(!A1 * A3 * B1 * B2 * !Y)	-0.00158	-0.00164	-0.00163
	(!A1 * A3 * B1 * B2 * !Y)	0.00177	0.00180	0.00178
	(!A1 * A3 * B1 * !B2 * Y)	-0.00142	-0.00153	-0.00153
	(!A1 * A3 * B1 * !B2 * Y)	0.00195	0.00191	0.00188
	(!A1 * A3 * !B1 * Y)	-0.00142	-0.00152	-0.00153
	(!A1 * A3 * !B1 * Y)	0.00195	0.00191	0.00188
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00094	-0.00095	-0.00094
	(!A1 * !A3 * B1 * B2 * !Y)	0.00178	0.00179	0.00178
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00078	-0.00078	-0.00077
	(!A1 * !A3 * B1 * !B2 * Y)	0.00197	0.00197	0.00190
	(!A1 * !A3 * !B1 * Y)	-0.00078	-0.00078	-0.00077
	(!A1 * !A3 * !B1 * Y)	0.00197	0.00197	0.00190

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00312	-0.00314	-0.00312
	(A1 * A3 * B1 * B2 * !Y)	0.00356	0.00360	0.00358
	(A1 * !A3 * B1 * B2 * !Y)	-0.00285	-0.00301	-0.00300
	(A1 * !A3 * B1 * B2 * !Y)	0.00368	0.00371	0.00369
	(A1 * !A3 * B1 * !B2 * Y)	-0.00121	-0.00121	-0.00124
	(A1 * !A3 * B1 * !B2 * Y)	0.00384	0.00386	0.00376
	(A1 * !A3 * !B1 * Y)	-0.00121	-0.00122	-0.00124
	(A1 * !A3 * !B1 * Y)	0.00384	0.00386	0.00376
	(!A1 * A3 * B1 * B2 * !Y)	-0.00287	-0.00305	-0.00303
	(!A1 * A3 * B1 * B2 * !Y)	0.00366	0.00372	0.00368
	(!A1 * A3 * B1 * !B2 * Y)	-0.00267	-0.00301	-0.00299
	(!A1 * A3 * B1 * !B2 * Y)	0.00391	0.00376	0.00373
	(!A1 * A3 * !B1 * Y)	-0.00267	-0.00301	-0.00299
	(!A1 * A3 * !B1 * Y)	0.00391	0.00376	0.00373
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00172	-0.00173	-0.00172
	(!A1 * !A3 * B1 * B2 * !Y)	0.00372	0.00373	0.00370
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00149	-0.00149	-0.00149
	(!A1 * !A3 * B1 * !B2 * Y)	0.00390	0.00391	0.00379
	(!A1 * !A3 * !B1 * Y)	-0.00150	-0.00149	-0.00150
	(!A1 * !A3 * !B1 * Y)	0.00390	0.00391	0.00379

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00627	-0.00632	-0.00626
	(A1 * A3 * B1 * B2 * !Y)	0.00711	0.00725	0.00712
	(A1 * !A3 * B1 * B2 * !Y)	-0.00571	-0.00596	-0.00596
	(A1 * !A3 * B1 * B2 * !Y)	0.00729	0.00731	0.00731
	(A1 * !A3 * B1 * !B2 * Y)	-0.00229	-0.00233	-0.00236
	(A1 * !A3 * B1 * !B2 * Y)	0.00752	0.00762	0.00743
	(A1 * !A3 * !B1 * Y)	-0.00230	-0.00233	-0.00236
	(A1 * !A3 * !B1 * Y)	0.00752	0.00762	0.00743
	(!A1 * A3 * B1 * B2 * !Y)	-0.00577	-0.00606	-0.00608
	(!A1 * A3 * B1 * B2 * !Y)	0.00728	0.00735	0.00731
	(!A1 * A3 * B1 * !B2 * Y)	-0.00531	-0.00599	-0.00601
	(!A1 * A3 * B1 * !B2 * Y)	0.00784	0.00742	0.00738
	(!A1 * A3 * !B1 * Y)	-0.00531	-0.00599	-0.00601
	(!A1 * A3 * !B1 * Y)	0.00784	0.00742	0.00738
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00323	-0.00323	-0.00322
	(!A1 * !A3 * B1 * B2 * !Y)	0.00728	0.00737	0.00731
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00280	-0.00280	-0.00279
	(!A1 * !A3 * B1 * !B2 * Y)	0.00769	0.00779	0.00752
	(!A1 * !A3 * !B1 * Y)	-0.00281	-0.00281	-0.00280
	(!A1 * !A3 * !B1 * Y)	0.00769	0.00779	0.00752

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)**	0.00166	0.00160	0.00159
	(A1 * A2 * B1 * B2 * !Y)	-0.00163	-0.00175	-0.00175
	(A1 * !A2 * B1 * !B2 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * B1 * !B2 * Y)	-0.00178	-0.00179	-0.00179
	(A1 * !A2 * !B1 * Y)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * Y)	-0.00178	-0.00179	-0.00179
	(!A2 * B1 * B2 * !Y)	0.00152	0.00154	0.00153
	(!A2 * B1 * B2 * !Y)	-0.00178	-0.00179	-0.00179
	(!A1 * A2 * B1 * B2 * !Y)	0.00150	0.00151	0.00150
	(!A1 * A2 * B1 * B2 * !Y)	-0.00179	-0.00179	-0.00179
	(!A1 * A2 * B1 * !B2 * Y)	0.00150	0.00151	0.00150
	(!A1 * A2 * B1 * !B2 * Y)	-0.00179	-0.00179	-0.00179
	(!A1 * A2 * !B1 * Y)	0.00150	0.00151	0.00150
	(!A1 * A2 * !B1 * Y)	-0.00179	-0.00179	-0.00179
	(!A1 * !A2 * B1 * !B2 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00178	-0.00179	-0.00179
	(!A1 * !A2 * !B1 * Y)	0.00153	0.00154	0.00153
	(!A1 * !A2 * !B1 * Y)	-0.00178	-0.00179	-0.00179

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00337	0.00323	0.00321
	(A1 * A2 * B1 * B2 * !Y)	-0.00322	-0.00355	-0.00354
	(A1 * !A2 * B1 * !B2 * Y)	0.00304	0.00308	0.00305
	(A1 * !A2 * B1 * !B2 * Y)	-0.00361	-0.00364	-0.00363
	(A1 * !A2 * !B1 * Y)	0.00304	0.00308	0.00305
	(A1 * !A2 * !B1 * Y)	-0.00361	-0.00364	-0.00363
	(!A2 * B1 * B2 * !Y)	0.00305	0.00309	0.00306
	(!A2 * B1 * B2 * !Y)	-0.00361	-0.00364	-0.00362
	(!A1 * A2 * B1 * B2 * !Y)	0.00305	0.00310	0.00306
	(!A1 * A2 * B1 * B2 * !Y)	-0.00361	-0.00365	-0.00362
	(!A1 * A2 * B1 * !B2 * Y)	0.00304	0.00307	0.00306
	(!A1 * A2 * B1 * !B2 * Y)	-0.00361	-0.00363	-0.00362
	(!A1 * A2 * !B1 * Y)	0.00304	0.00307	0.00306
	(!A1 * A2 * !B1 * Y)	-0.00361	-0.00363	-0.00362
	(!A1 * !A2 * B1 * !B2 * Y)	0.00304	0.00309	0.00305
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00361	-0.00365	-0.00363
	(!A1 * !A2 * !B1 * Y)	0.00304	0.00309	0.00305
	(!A1 * !A2 * !B1 * Y)	-0.00361	-0.00365	-0.00363

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00661	0.00628	0.00622
	(A1 * A2 * B1 * B2 * !Y)	-0.00647	-0.00717	-0.00715
	(A1 * !A2 * B1 * !B2 * Y)	0.00597	0.00604	0.00599
	(A1 * !A2 * B1 * !B2 * Y)	-0.00732	-0.00737	-0.00733
	(A1 * !A2 * !B1 * Y)	0.00597	0.00602	0.00599
	(A1 * !A2 * !B1 * Y)	-0.00732	-0.00735	-0.00733
	(!A2 * B1 * B2 * !Y)	0.00599	0.00603	0.00600
	(!A2 * B1 * B2 * !Y)	-0.00733	-0.00735	-0.00732
	(!A1 * A2 * B1 * B2 * !Y)	0.00594	0.00600	0.00594
	(!A1 * A2 * B1 * B2 * !Y)	-0.00730	-0.00736	-0.00732
	(!A1 * A2 * B1 * !B2 * Y)	0.00593	0.00599	0.00593
	(!A1 * A2 * B1 * !B2 * Y)	-0.00732	-0.00737	-0.00733
	(!A1 * A2 * !B1 * Y)	0.00593	0.00598	0.00593
	(!A1 * A2 * !B1 * Y)	-0.00732	-0.00737	-0.00733
	(!A1 * !A2 * B1 * !B2 * Y)	0.00598	0.00602	0.00599
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00733	-0.00735	-0.00733
	(!A1 * !A2 * !B1 * Y)	0.00598	0.00602	0.00599
	(!A1 * !A2 * !B1 * Y)	-0.00733	-0.00735	-0.00733

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)**	-0.00158	-0.00159	-0.00159
	(A1 * A2 * B1 * B2 * !Y)	0.00174	0.00175	0.00175
	(A1 * !A2 * B1 * !B2 * Y)	-0.00149	-0.00154	-0.00153
	(A1 * !A2 * B1 * !B2 * Y)	0.00179	0.00180	0.00179
	(A1 * !A2 * !B1 * Y)	-0.00149	-0.00154	-0.00153
	(A1 * !A2 * !B1 * Y)	0.00179	0.00180	0.00179
	(!A2 * B1 * B2 * !Y)	-0.00149	-0.00153	-0.00153
	(!A2 * B1 * B2 * !Y)	0.00180	0.00180	0.00179
	(!A1 * A2 * B1 * B2 * !Y)	-0.00142	-0.00151	-0.00150
	(!A1 * A2 * B1 * B2 * !Y)	0.00179	0.00181	0.00179
	(!A1 * A2 * B1 * !B2 * Y)	-0.00142	-0.00151	-0.00150
	(!A1 * A2 * B1 * !B2 * Y)	0.00179	0.00181	0.00179
	(!A1 * A2 * !B1 * Y)	-0.00142	-0.00151	-0.00150
	(!A1 * A2 * !B1 * Y)	0.00179	0.00181	0.00179
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00149	-0.00154	-0.00153
	(!A1 * !A2 * B1 * !B2 * Y)	0.00179	0.00181	0.00179
	(!A1 * !A2 * !B1 * Y)	-0.00149	-0.00154	-0.00153
	(!A1 * !A2 * !B1 * Y)	0.00179	0.00181	0.00179

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00320	-0.00321	-0.00319
	(A1 * A2 * B1 * B2 * !Y)	0.00354	0.00357	0.00354
	(A1 * !A2 * B1 * !B2 * Y)	-0.00295	-0.00308	-0.00305
	(A1 * !A2 * B1 * !B2 * Y)	0.00362	0.00366	0.00364
	(A1 * !A2 * !B1 * Y)	-0.00295	-0.00308	-0.00305
	(A1 * !A2 * !B1 * Y)	0.00362	0.00366	0.00364
	(!A2 * B1 * B2 * !Y)	-0.00296	-0.00306	-0.00306
	(!A2 * B1 * B2 * !Y)	0.00362	0.00365	0.00364
	(!A1 * A2 * B1 * B2 * !Y)	-0.00287	-0.00304	-0.00306
	(!A1 * A2 * B1 * B2 * !Y)	0.00364	0.00366	0.00364
	(!A1 * A2 * B1 * !B2 * Y)	-0.00287	-0.00303	-0.00306
	(!A1 * A2 * B1 * !B2 * Y)	0.00364	0.00365	0.00363
	(!A1 * A2 * !B1 * Y)	-0.00287	-0.00303	-0.00306
	(!A1 * A2 * !B1 * Y)	0.00364	0.00365	0.00363
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00295	-0.00309	-0.00305
	(!A1 * !A2 * B1 * !B2 * Y)	0.00362	0.00366	0.00364
	(!A1 * !A2 * !B1 * Y)	-0.00295	-0.00309	-0.00305
	(!A1 * !A2 * !B1 * Y)	0.00362	0.00366	0.00364

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00619	-0.00622	-0.00620
	(A1 * A2 * B1 * B2 * !Y)	0.00711	0.00719	0.00715
	(A1 * !A2 * B1 * !B2 * Y)	-0.00565	-0.00592	-0.00596
	(A1 * !A2 * B1 * !B2 * Y)	0.00735	0.00741	0.00735
	(A1 * !A2 * !B1 * Y)	-0.00565	-0.00592	-0.00596
	(A1 * !A2 * !B1 * Y)	0.00735	0.00741	0.00735
	(!A2 * B1 * B2 * !Y)	-0.00569	-0.00591	-0.00596
	(!A2 * B1 * B2 * !Y)	0.00734	0.00740	0.00735
	(!A1 * A2 * B1 * B2 * !Y)	-0.00545	-0.00589	-0.00591
	(!A1 * A2 * B1 * B2 * !Y)	0.00730	0.00738	0.00735
	(!A1 * A2 * B1 * !B2 * Y)	-0.00543	-0.00589	-0.00591
	(!A1 * A2 * B1 * !B2 * Y)	0.00732	0.00738	0.00736
	(!A1 * A2 * !B1 * Y)	-0.00543	-0.00589	-0.00591
	(!A1 * A2 * !B1 * Y)	0.00732	0.00738	0.00736
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00567	-0.00592	-0.00596
	(!A1 * !A2 * B1 * !B2 * Y)	0.00735	0.00741	0.00735
	(!A1 * !A2 * !B1 * Y)	-0.00567	-0.00592	-0.00596
	(!A1 * !A2 * !B1 * Y)	0.00735	0.00741	0.00735

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)**	0.00186	0.00187	0.00186
	(A1 * A2 * A3 * B2 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * A3 * !B2 * !Y)	0.00179	0.00180	0.00179
	(A1 * A2 * A3 * !B2 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * A2 * !A3 * !B2 * Y)	0.00049	0.00049	0.00048
	(A1 * A2 * !A3 * !B2 * Y)	-0.00221	-0.00222	-0.00224
	(A1 * !A2 * !B2 * Y)	0.00049	0.00049	0.00048
	(A1 * !A2 * !B2 * Y)	-0.00221	-0.00222	-0.00224
	(!A1 * !B2 * Y)	0.00049	0.00049	0.00048
	(!A1 * !B2 * Y)	-0.00221	-0.00222	-0.00224
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00352	0.00356	0.00353
	(A1 * A2 * A3 * B2 * !Y)	-0.00169	-0.00171	-0.00170
	(A1 * A2 * A3 * !B2 * !Y)	0.00340	0.00347	0.00342
	(A1 * A2 * A3 * !B2 * !Y)	-0.00169	-0.00170	-0.00169
	(A1 * A2 * !A3 * !B2 * Y)	0.00101	0.00102	0.00098
	(A1 * A2 * !A3 * !B2 * Y)	-0.00424	-0.00429	-0.00434
	(A1 * !A2 * !B2 * Y)	0.00101	0.00102	0.00098
	(A1 * !A2 * !B2 * Y)	-0.00424	-0.00429	-0.00434
	(!A1 * !B2 * Y)	0.00102	0.00103	0.00098
	(!A1 * !B2 * Y)	-0.00424	-0.00429	-0.00434
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00710	0.00719	0.00712
	(A1 * A2 * A3 * B2 * !Y)	-0.00345	-0.00348	-0.00344
	(A1 * A2 * A3 * !B2 * !Y)	0.00684	0.00691	0.00686
	(A1 * A2 * A3 * !B2 * !Y)	-0.00343	-0.00345	-0.00344
	(A1 * A2 * !A3 * !B2 * Y)	0.00192	0.00195	0.00187
	(A1 * A2 * !A3 * !B2 * Y)	-0.00866	-0.00875	-0.00883
	(A1 * !A2 * !B2 * Y)	0.00193	0.00195	0.00187
	(A1 * !A2 * !B2 * Y)	-0.00866	-0.00875	-0.00883
	(!A1 * !B2 * Y)	0.00194	0.00196	0.00188
	(!A1 * !B2 * Y)	-0.00867	-0.00875	-0.00883

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	(A1 * A2 * A3 * B2 * !Y)	-0.00169	-0.00171	-0.00184
	(A1 * A2 * A3 * B2 * !Y)	0.00098	0.00098	0.00087
	(A1 * A2 * A3 * !B2 * !Y)	-0.00174	-0.00180	-0.00179
	(A1 * A2 * A3 * !B2 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * !A3 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(A1 * A2 * !A3 * !B2 * Y)	0.00224	0.00227	0.00224
	(A1 * !A2 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(A1 * !A2 * !B2 * Y)	0.00224	0.00227	0.00224
	(!A1 * !B2 * Y)	-0.00048	-0.00048	-0.00047
	(!A1 * !B2 * Y)	0.00224	0.00227	0.00224
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00320	-0.00323	-0.00349
	(A1 * A2 * A3 * B2 * !Y)	0.00195	0.00195	0.00175
	(A1 * A2 * A3 * !B2 * !Y)	-0.00325	-0.00346	-0.00342
	(A1 * A2 * A3 * !B2 * !Y)	0.00169	0.00170	0.00169
	(A1 * A2 * !A3 * !B2 * Y)	-0.00095	-0.00098	-0.00096
	(A1 * A2 * !A3 * !B2 * Y)	0.00433	0.00441	0.00435
	(A1 * !A2 * !B2 * Y)	-0.00095	-0.00098	-0.00096
	(A1 * !A2 * !B2 * Y)	0.00433	0.00441	0.00435
	(!A1 * !B2 * Y)	-0.00096	-0.00098	-0.00096
	(!A1 * !B2 * Y)	0.00432	0.00441	0.00435

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00654	-0.00657	-0.00706
	(A1 * A2 * A3 * B2 * !Y)	0.00393	0.00391	0.00355
	(A1 * A2 * A3 * !B2 * !Y)	-0.00657	-0.00689	-0.00686
	(A1 * A2 * A3 * !B2 * !Y)	0.00343	0.00345	0.00344
	(A1 * A2 * !A3 * !B2 * Y)	-0.00182	-0.00184	-0.00182
	(A1 * A2 * !A3 * !B2 * Y)	0.00880	0.00886	0.00884
	(A1 * !A2 * !B2 * Y)	-0.00182	-0.00184	-0.00182
	(A1 * !A2 * !B2 * Y)	0.00880	0.00885	0.00884
	(!A1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
	(!A1 * !B2 * Y)	0.00880	0.00885	0.00884

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)**	0.00179	0.00180	0.00178
	(A1 * A2 * A3 * B1 * !Y)	-0.00090	-0.00090	-0.00090
	(A1 * A2 * A3 * !B1 * !Y)	0.00171	0.00172	0.00172
	(A1 * A2 * A3 * !B1 * !Y)	-0.00089	-0.00089	-0.00089
	(A1 * A2 * !A3 * !B1 * Y)	0.00154	0.00154	0.00153
	(A1 * A2 * !A3 * !B1 * Y)	-0.00186	-0.00186	-0.00186
	(A1 * !A2 * !B1 * Y)	0.00154	0.00155	0.00154
	(A1 * !A2 * !B1 * Y)	-0.00185	-0.00186	-0.00186
	(!A1 * !B1 * Y)	0.00154	0.00154	0.00153
	(!A1 * !B1 * Y)	-0.00186	-0.00186	-0.00186

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00350	0.00355	0.00352
	(A1 * A2 * A3 * B1 * !Y)	-0.00174	-0.00176	-0.00174
	(A1 * A2 * A3 * !B1 * !Y)	0.00343	0.00343	0.00343
	(A1 * A2 * A3 * !B1 * !Y)	-0.00173	-0.00174	-0.00174
	(A1 * A2 * !A3 * !B1 * Y)	0.00301	0.00306	0.00302
	(A1 * A2 * !A3 * !B1 * Y)	-0.00363	-0.00365	-0.00363
	(A1 * !A2 * !B1 * Y)	0.00301	0.00305	0.00302
	(A1 * !A2 * !B1 * Y)	-0.00363	-0.00365	-0.00363
	(!A1 * !B1 * Y)	0.00301	0.00305	0.00302
	(!A1 * !B1 * Y)	-0.00362	-0.00365	-0.00363
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00695	0.00709	0.00697
	(A1 * A2 * A3 * B1 * !Y)	-0.00347	-0.00353	-0.00347
	(A1 * A2 * A3 * !B1 * !Y)	0.00672	0.00677	0.00672
	(A1 * A2 * A3 * !B1 * !Y)	-0.00346	-0.00347	-0.00346
	(A1 * A2 * !A3 * !B1 * Y)	0.00599	0.00602	0.00603
	(A1 * A2 * !A3 * !B1 * Y)	-0.00724	-0.00726	-0.00726
	(A1 * !A2 * !B1 * Y)	0.00599	0.00602	0.00603
	(A1 * !A2 * !B1 * Y)	-0.00724	-0.00726	-0.00726
	(!A1 * !B1 * Y)	0.00599	0.00610	0.00603
	(!A1 * !B1 * Y)	-0.00724	-0.00731	-0.00726

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

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

sky130_fd_sc_hs__a32oi_1	**(A1 * A2 * A3 * B1 * !Y)**	-0.00162	-0.00164	-0.00177
	(A1 * A2 * A3 * B1 * !Y)	0.00103	0.00103	0.00093
	(A1 * A2 * A3 * !B1 * !Y)	-0.00168	-0.00172	-0.00172
	(A1 * A2 * A3 * !B1 * !Y)	0.00090	0.00090	0.00089
	(A1 * A2 * !A3 * !B1 * Y)	-0.00146	-0.00153	-0.00153
	(A1 * A2 * !A3 * !B1 * Y)	0.00191	0.00187	0.00186
	(A1 * !A2 * !B1 * Y)	-0.00146	-0.00153	-0.00154
	(A1 * !A2 * !B1 * Y)	0.00191	0.00187	0.00186
	(!A1 * !B1 * Y)	-0.00146	-0.00153	-0.00153
	(!A1 * !B1 * Y)	0.00191	0.00187	0.00186
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00319	-0.00321	-0.00348
	(A1 * A2 * A3 * B1 * !Y)	0.00200	0.00200	0.00180
	(A1 * A2 * A3 * !B1 * !Y)	-0.00327	-0.00340	-0.00341
	(A1 * A2 * A3 * !B1 * !Y)	0.00173	0.00175	0.00174
	(A1 * A2 * !A3 * !B1 * Y)	-0.00284	-0.00306	-0.00302
	(A1 * A2 * !A3 * !B1 * Y)	0.00373	0.00366	0.00364
	(A1 * !A2 * !B1 * Y)	-0.00284	-0.00305	-0.00302
	(A1 * !A2 * !B1 * Y)	0.00373	0.00366	0.00364
	(!A1 * !B1 * Y)	-0.00284	-0.00305	-0.00302
	(!A1 * !B1 * Y)	0.00373	0.00366	0.00364
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00639	-0.00644	-0.00690
	(A1 * A2 * A3 * B1 * !Y)	0.00395	0.00394	0.00357
	(A1 * A2 * A3 * !B1 * !Y)	-0.00648	-0.00671	-0.00672
	(A1 * A2 * A3 * !B1 * !Y)	0.00346	0.00347	0.00346
	(A1 * A2 * !A3 * !B1 * Y)	-0.00555	-0.00598	-0.00600
	(A1 * A2 * !A3 * !B1 * Y)	0.00750	0.00733	0.00728
	(A1 * !A2 * !B1 * Y)	-0.00555	-0.00598	-0.00600
	(A1 * !A2 * !B1 * Y)	0.00750	0.00733	0.00728
	(!A1 * !B1 * Y)	-0.00555	-0.00600	-0.00600
	(!A1 * !B1 * Y)	0.00750	0.00737	0.00728

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a32o_1	12.78720
sky130_fd_sc_hs__a32o_2	14.38560
sky130_fd_sc_hs__a32o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__a32o_1	0.00247	0.00244	0.00253	0.00247	0.00228	1.39378
sky130_fd_sc_hs__a32o_2	0.00264	0.00259	0.00268	0.00259	0.00245	2.35789
sky130_fd_sc_hs__a32o_4	0.00451	0.00510	0.00456	0.00471	0.00540	5.13209

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a32o_1	0.00000	0.10277	0.22593
sky130_fd_sc_hs__a32o_2	0.00000	0.14381	0.22694
sky130_fd_sc_hs__a32o_4	0.00000	0.28884	0.45387

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)	0.06934	0.48825	5.49232
	A2->X (RR)	0.07376	0.49313	5.46932
	A3->X (RR)	0.07680	0.48352	5.34382
	B1->X (RR)	0.05332	0.45309	5.33219
	B2->X (RR)	0.05571	0.45317	5.28682
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.07117	0.43058	5.38987
	A2->X (RR)	0.07565	0.43213	5.36399
	A3->X (RR)	0.07881	0.42108	5.20848
	B1->X (RR)	0.05512	0.39358	5.16476
	B2->X (RR)	0.05793	0.39124	5.12287
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.07864	0.36552	5.54917
	A2->X (RR)	0.08496	0.37345	5.54940
	A3->X (RR)	0.08846	0.35937	5.43998
	B1->X (RR)	0.05443	0.31466	5.35113
	B2->X (RR)	0.05770	0.31520	5.32770

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.11887	0.51477	4.86702
	A2->X (FF)	0.13159	0.53790	4.95843
	A3->X (FF)	0.13703	0.54683	5.00024
	B1->X (FF)	0.09302	0.50644	5.18263
	B2->X (FF)	0.10295	0.52946	5.19649
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.14188	0.51520	4.58242
	A2->X (FF)	0.15602	0.54042	4.66801
	A3->X (FF)	0.16664	0.55832	4.72982
	B1->X (FF)	0.12592	0.53086	4.82050
	B2->X (FF)	0.13899	0.55812	4.87589
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.13399	0.48079	4.99911
	A2->X (FF)	0.14089	0.49870	5.01577
	A3->X (FF)	0.15893	0.52733	5.12398
	B1->X (FF)	0.12512	0.50989	5.14479
	B2->X (FF)	0.13223	0.52395	5.16626

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.01197	0.01271	0.05177
	A1	0.00577	0.00651	0.04587
	A2	0.01284	0.01303	0.04674
	A2	0.00575	0.00595	0.03995
	A3	0.01386	0.01379	0.03867
	A3	0.00573	0.00620	0.03077
	B1	0.00768	0.01032	0.07031
	B1	0.00331	0.00597	0.06616
	B2	0.00860	0.01064	0.06453
	B2	0.00330	0.00536	0.05944
sky130_fd_sc_hs__a32o_2	A1	0.01484	0.01557	0.05198
	A1	0.00845	0.00921	0.04605
	A2	0.01585	0.01614	0.04821
	A2	0.00843	0.00874	0.04124
	A3	0.01704	0.01705	0.03614
	A3	0.00843	0.00845	0.02754
	B1	0.01049	0.01278	0.06597
	B1	0.00593	0.00828	0.06141
	B2	0.01160	0.01342	0.06082
	B2	0.00591	0.00778	0.05513

sky130_fd_sc_hs__a32o_4	**A1**	0.02861	0.03118	0.11119
	A1	0.01681	0.01938	0.10059
	A2	0.03093	0.03249	0.10232
	A2	0.01675	0.01833	0.08935
	A3	0.03280	0.03415	0.10470
	A3	0.01678	0.01814	0.08955
	B1	0.01937	0.02443	0.14519
	B1	0.01113	0.01632	0.13786
	B2	0.02219	0.02625	0.14272
	B2	0.01102	0.01520	0.13245

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00363	0.00420	0.03369
	A1	0.00990	0.01043	0.03930
	A2	0.00415	0.00464	0.03301
	A2	0.01126	0.01174	0.04000
	A3	0.00432	0.00451	0.03417
	A3	0.01241	0.01259	0.04048
	B1	0.00347	0.00672	0.07077
	B1	0.00784	0.01095	0.07446
	B2	0.00376	0.00678	0.06815
	B2	0.00902	0.01203	0.07100

sky130_fd_sc_hs__a32o_2	**A1**	0.00614	0.00678	0.03609
	A1	0.01260	0.01304	0.04128
	A2	0.00691	0.00744	0.03652
	A2	0.01434	0.01465	0.04305
	A3	0.00710	0.00681	0.03331
	A3	0.01565	0.01535	0.04180
	B1	0.00577	0.00884	0.06961
	B1	0.01034	0.01328	0.07284
	B2	0.00633	0.00928	0.06579
	B2	0.01197	0.01477	0.07051
sky130_fd_sc_hs__a32o_4	**A1**	0.01220	0.01298	0.09111
	A1	0.02417	0.02492	0.10026
	A2	0.01328	0.01418	0.08570
	A2	0.02753	0.02813	0.09710
	A3	0.01508	0.01525	0.08517
	A3	0.03099	0.03115	0.10057
	B1	0.01158	0.01815	0.13119
	B1	0.01980	0.02625	0.13528
	B2	0.01153	0.01766	0.13293
	B2	0.02260	0.02869	0.13974

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)**	0.00156	0.00144	0.00144
	(A2 * A3 * B1 * B2 * X)	-0.00140	-0.00158	-0.00158
	(A2 * !A3 * B1 * B2 * X)	0.00135	0.00136	0.00136
	(A2 * !A3 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A2 * !A3 * B1 * !B2 * !X)	0.00044	0.00043	0.00041
	(A2 * !A3 * B1 * !B2 * !X)	-0.00193	-0.00194	-0.00198
	(A2 * !A3 * !B1 * !X)	0.00044	0.00043	0.00041
	(A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00198
	(!A2 * B1 * B2 * X)	0.00138	0.00140	0.00139
	(!A2 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * !B2 * !X)	0.00045	0.00045	0.00043
	(!A2 * B1 * !B2 * !X)	-0.00196	-0.00198	-0.00199
	(!A2 * !B1 * !X)	0.00045	0.00045	0.00043
	(!A2 * !B1 * !X)	-0.00196	-0.00198	-0.00199
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00174	0.00163	0.00162
	(A2 * A3 * B1 * B2 * X)	-0.00141	-0.00157	-0.00158
	(A2 * !A3 * B1 * B2 * X)	0.00152	0.00154	0.00153
	(A2 * !A3 * B1 * B2 * X)	-0.00160	-0.00161	-0.00161
	(A2 * !A3 * B1 * !B2 * !X)	0.00047	0.00048	0.00045
	(A2 * !A3 * B1 * !B2 * !X)	-0.00196	-0.00198	-0.00203
	(A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00197	-0.00198	-0.00203
	(!A2 * B1 * B2 * X)	0.00158	0.00160	0.00159
	(!A2 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(!A2 * B1 * !B2 * !X)	0.00049	0.00050	0.00048
	(!A2 * B1 * !B2 * !X)	-0.00199	-0.00202	-0.00203
	(!A2 * !B1 * !X)	0.00049	0.00050	0.00048
	(!A2 * !B1 * !X)	-0.00200	-0.00202	-0.00203

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00278	0.00263	0.00261
	(A2 * A3 * B1 * B2 * X)	-0.00284	-0.00316	-0.00315
	(A2 * !A3 * B1 * B2 * X)	0.00250	0.00251	0.00250
	(A2 * !A3 * B1 * B2 * X)	-0.00322	-0.00323	-0.00322
	(A2 * !A3 * B1 * !B2 * !X)	0.00081	0.00081	0.00075
	(A2 * !A3 * B1 * !B2 * !X)	-0.00365	-0.00367	-0.00379
	(A2 * !A3 * !B1 * !X)	0.00081	0.00081	0.00075
	(A2 * !A3 * !B1 * !X)	-0.00365	-0.00367	-0.00379
	(!A2 * B1 * B2 * X)	0.00250	0.00253	0.00251
	(!A2 * B1 * B2 * X)	-0.00321	-0.00324	-0.00322
	(!A2 * B1 * !B2 * !X)	0.00078	0.00080	0.00076
	(!A2 * B1 * !B2 * !X)	-0.00374	-0.00378	-0.00380
	(!A2 * !B1 * !X)	0.00078	0.00080	0.00076
	(!A2 * !B1 * !X)	-0.00374	-0.00378	-0.00380

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)**	-0.00144	-0.00144	-0.00143
	(A2 * A3 * B1 * B2 * X)	0.00158	0.00158	0.00158
	(A2 * !A3 * B1 * B2 * X)	-0.00125	-0.00136	-0.00136
	(A2 * !A3 * B1 * B2 * X)	0.00163	0.00163	0.00162
	(A2 * !A3 * B1 * !B2 * !X)	-0.00042	-0.00042	-0.00041
	(A2 * !A3 * B1 * !B2 * !X)	0.00199	0.00201	0.00199
	(A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00041
	(A2 * !A3 * !B1 * !X)	0.00199	0.00201	0.00199
	(!A2 * B1 * B2 * X)	-0.00134	-0.00138	-0.00139
	(!A2 * B1 * B2 * X)	0.00161	0.00162	0.00162
	(!A2 * B1 * !B2 * !X)	-0.00043	-0.00043	-0.00043
	(!A2 * B1 * !B2 * !X)	0.00199	0.00201	0.00199
	(!A2 * !B1 * !X)	-0.00042	-0.00043	-0.00043
	(!A2 * !B1 * !X)	0.00198	0.00201	0.00199
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00162	-0.00162	-0.00162
	(A2 * A3 * B1 * B2 * X)	0.00157	0.00158	0.00158
	(A2 * !A3 * B1 * B2 * X)	-0.00140	-0.00154	-0.00153
	(A2 * !A3 * B1 * B2 * X)	0.00161	0.00163	0.00162
	(A2 * !A3 * B1 * !B2 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * B1 * !B2 * !X)	0.00203	0.00205	0.00203
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(A2 * !A3 * !B1 * !X)	0.00203	0.00205	0.00203
	(!A2 * B1 * B2 * X)	-0.00151	-0.00156	-0.00157
	(!A2 * B1 * B2 * X)	0.00162	0.00162	0.00162
	(!A2 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * B1 * !B2 * !X)	0.00204	0.00205	0.00204
	(!A2 * !B1 * !X)	-0.00047	-0.00047	-0.00046
	(!A2 * !B1 * !X)	0.00203	0.00205	0.00204

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00260	-0.00260	-0.00259
	(A2 * A3 * B1 * B2 * X)	0.00315	0.00317	0.00315
	(A2 * !A3 * B1 * B2 * X)	-0.00218	-0.00249	-0.00249
	(A2 * !A3 * B1 * B2 * X)	0.00322	0.00326	0.00323
	(A2 * !A3 * B1 * !B2 * !X)	-0.00071	-0.00072	-0.00070
	(A2 * !A3 * B1 * !B2 * !X)	0.00379	0.00384	0.00381
	(A2 * !A3 * !B1 * !X)	-0.00071	-0.00072	-0.00070
	(A2 * !A3 * !B1 * !X)	0.00379	0.00384	0.00381
	(!A2 * B1 * B2 * X)	-0.00239	-0.00252	-0.00251
	(!A2 * B1 * B2 * X)	0.00321	0.00326	0.00323
	(!A2 * B1 * !B2 * !X)	-0.00074	-0.00075	-0.00074
	(!A2 * B1 * !B2 * !X)	0.00380	0.00384	0.00382
	(!A2 * !B1 * !X)	-0.00074	-0.00075	-0.00074
	(!A2 * !B1 * !X)	0.00380	0.00384	0.00382

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)**	0.00152	0.00141	0.00141
	(A1 * A3 * B1 * B2 * X)	-0.00140	-0.00158	-0.00158
	(A1 * !A3 * B1 * B2 * X)	0.00134	0.00135	0.00135
	(A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * B1 * !B2 * !X)	0.00051	0.00051	0.00051
	(A1 * !A3 * B1 * !B2 * !X)	-0.00172	-0.00175	-0.00173
	(A1 * !A3 * !B1 * !X)	0.00051	0.00051	0.00051
	(A1 * !A3 * !B1 * !X)	-0.00172	-0.00175	-0.00173
	(!A1 * A3 * B1 * B2 * X)	0.00135	0.00138	0.00136
	(!A1 * A3 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * B1 * !B2 * !X)	0.00124	0.00125	0.00124
	(!A1 * A3 * B1 * !B2 * !X)	-0.00173	-0.00173	-0.00173
	(!A1 * A3 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A1 * A3 * !B1 * !X)	-0.00172	-0.00174	-0.00173
	(!A1 * !A3 * B1 * B2 * X)	0.00078	0.00078	0.00078
	(!A1 * !A3 * B1 * B2 * X)	-0.00162	-0.00162	-0.00161
	(!A1 * !A3 * B1 * !B2 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00174	-0.00174	-0.00174
	(!A1 * !A3 * !B1 * !X)	0.00059	0.00059	0.00059
	(!A1 * !A3 * !B1 * !X)	-0.00174	-0.00174	-0.00174

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00171	0.00160	0.00160
	(A1 * A3 * B1 * B2 * X)	-0.00141	-0.00157	-0.00158
	(A1 * !A3 * B1 * B2 * X)	0.00151	0.00153	0.00152
	(A1 * !A3 * B1 * B2 * X)	-0.00160	-0.00162	-0.00161
	(A1 * !A3 * B1 * !B2 * !X)	0.00058	0.00058	0.00058
	(A1 * !A3 * B1 * !B2 * !X)	-0.00173	-0.00174	-0.00172
	(A1 * !A3 * !B1 * !X)	0.00058	0.00058	0.00058
	(A1 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00172
	(!A1 * A3 * B1 * B2 * X)	0.00154	0.00156	0.00154
	(!A1 * A3 * B1 * B2 * X)	-0.00160	-0.00162	-0.00161
	(!A1 * A3 * B1 * !B2 * !X)	0.00142	0.00144	0.00143
	(!A1 * A3 * B1 * !B2 * !X)	-0.00172	-0.00173	-0.00173
	(!A1 * A3 * !B1 * !X)	0.00143	0.00145	0.00143
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A3 * B1 * B2 * X)	0.00087	0.00087	0.00087
	(!A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * !A3 * B1 * !B2 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00173	-0.00174	-0.00174
	(!A1 * !A3 * !B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A3 * !B1 * !X)	-0.00173	-0.00174	-0.00174

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00309	0.00280	0.00277
	(A1 * A3 * B1 * B2 * X)	-0.00299	-0.00344	-0.00345
	(A1 * !A3 * B1 * B2 * X)	0.00270	0.00270	0.00270
	(A1 * !A3 * B1 * B2 * X)	-0.00355	-0.00355	-0.00354
	(A1 * !A3 * B1 * !B2 * !X)	0.00107	0.00108	0.00107
	(A1 * !A3 * B1 * !B2 * !X)	-0.00371	-0.00373	-0.00372
	(A1 * !A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(A1 * !A3 * !B1 * !X)	-0.00370	-0.00373	-0.00372
	(!A1 * A3 * B1 * B2 * X)	0.00268	0.00272	0.00270
	(!A1 * A3 * B1 * B2 * X)	-0.00352	-0.00356	-0.00354
	(!A1 * A3 * B1 * !B2 * !X)	0.00248	0.00251	0.00249
	(!A1 * A3 * B1 * !B2 * !X)	-0.00370	-0.00373	-0.00371
	(!A1 * A3 * !B1 * !X)	0.00248	0.00251	0.00249
	(!A1 * A3 * !B1 * !X)	-0.00370	-0.00372	-0.00371
	(!A1 * !A3 * B1 * B2 * X)	0.00161	0.00161	0.00161
	(!A1 * !A3 * B1 * B2 * X)	-0.00355	-0.00355	-0.00354
	(!A1 * !A3 * B1 * !B2 * !X)	0.00129	0.00130	0.00129
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00375	-0.00376	-0.00374
	(!A1 * !A3 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !A3 * !B1 * !X)	-0.00375	-0.00376	-0.00374

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)**	-0.00140	-0.00141	-0.00140
	(A1 * A3 * B1 * B2 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * B2 * X)	-0.00131	-0.00135	-0.00135
	(A1 * !A3 * B1 * B2 * X)	0.00162	0.00162	0.00162
	(A1 * !A3 * B1 * !B2 * !X)	-0.00049	-0.00050	-0.00050
	(A1 * !A3 * B1 * !B2 * !X)	0.00176	0.00178	0.00174
	(A1 * !A3 * !B1 * !X)	-0.00049	-0.00050	-0.00050
	(A1 * !A3 * !B1 * !X)	0.00176	0.00178	0.00174
	(!A1 * A3 * B1 * B2 * X)	-0.00131	-0.00137	-0.00136
	(!A1 * A3 * B1 * B2 * X)	0.00161	0.00163	0.00162
	(!A1 * A3 * B1 * !B2 * !X)	-0.00114	-0.00125	-0.00124
	(!A1 * A3 * B1 * !B2 * !X)	0.00180	0.00175	0.00173
	(!A1 * A3 * !B1 * !X)	-0.00114	-0.00125	-0.00124
	(!A1 * A3 * !B1 * !X)	0.00180	0.00175	0.00173
	(!A1 * !A3 * B1 * B2 * X)	-0.00078	-0.00078	-0.00078
	(!A1 * !A3 * B1 * B2 * X)	0.00162	0.00163	0.00162
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A3 * B1 * !B2 * !X)	0.00180	0.00182	0.00176
	(!A1 * !A3 * !B1 * !X)	-0.00059	-0.00059	-0.00059
	(!A1 * !A3 * !B1 * !X)	0.00180	0.00182	0.00176

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00159	-0.00159	-0.00159
	(A1 * A3 * B1 * B2 * X)	0.00157	0.00158	0.00158
	(A1 * !A3 * B1 * B2 * X)	-0.00147	-0.00152	-0.00152
	(A1 * !A3 * B1 * B2 * X)	0.00161	0.00162	0.00162
	(A1 * !A3 * B1 * !B2 * !X)	-0.00055	-0.00055	-0.00056
	(A1 * !A3 * B1 * !B2 * !X)	0.00176	0.00178	0.00174
	(A1 * !A3 * !B1 * !X)	-0.00055	-0.00055	-0.00056
	(A1 * !A3 * !B1 * !X)	0.00176	0.00178	0.00174
	(!A1 * A3 * B1 * B2 * X)	-0.00148	-0.00153	-0.00154
	(!A1 * A3 * B1 * B2 * X)	0.00161	0.00162	0.00162
	(!A1 * A3 * B1 * !B2 * !X)	-0.00131	-0.00142	-0.00142
	(!A1 * A3 * B1 * !B2 * !X)	0.00179	0.00175	0.00173
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00143	-0.00142
	(!A1 * A3 * !B1 * !X)	0.00179	0.00175	0.00173
	(!A1 * !A3 * B1 * B2 * X)	-0.00087	-0.00087	-0.00087
	(!A1 * !A3 * B1 * B2 * X)	0.00162	0.00163	0.00162
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * B1 * !B2 * !X)	0.00181	0.00182	0.00176
	(!A1 * !A3 * !B1 * !X)	-0.00067	-0.00067	-0.00067
	(!A1 * !A3 * !B1 * !X)	0.00181	0.00182	0.00176

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00275	-0.00276	-0.00275
	(A1 * A3 * B1 * B2 * X)	0.00342	0.00345	0.00345
	(A1 * !A3 * B1 * B2 * X)	-0.00252	-0.00269	-0.00268
	(A1 * !A3 * B1 * B2 * X)	0.00355	0.00359	0.00356
	(A1 * !A3 * B1 * !B2 * !X)	-0.00102	-0.00102	-0.00103
	(A1 * !A3 * B1 * !B2 * !X)	0.00381	0.00382	0.00375
	(A1 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00103
	(A1 * !A3 * !B1 * !X)	0.00381	0.00382	0.00375
	(!A1 * A3 * B1 * B2 * X)	-0.00256	-0.00267	-0.00267
	(!A1 * A3 * B1 * B2 * X)	0.00354	0.00359	0.00356
	(!A1 * A3 * B1 * !B2 * !X)	-0.00225	-0.00250	-0.00249
	(!A1 * A3 * B1 * !B2 * !X)	0.00390	0.00376	0.00372
	(!A1 * A3 * !B1 * !X)	-0.00225	-0.00250	-0.00249
	(!A1 * A3 * !B1 * !X)	0.00390	0.00376	0.00372
	(!A1 * !A3 * B1 * B2 * X)	-0.00161	-0.00161	-0.00161
	(!A1 * !A3 * B1 * B2 * X)	0.00357	0.00359	0.00356
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * B1 * !B2 * !X)	0.00390	0.00391	0.00378
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00390	0.00391	0.00378

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

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

sky130_fd_sc_hs__a32o_1	**(A1 * A2 * B1 * B2 * X)**	0.00167	0.00159	0.00158
	(A1 * A2 * B1 * B2 * X)	-0.00140	-0.00156	-0.00156
	(A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * B1 * !B2 * !X)	-0.00186	-0.00187	-0.00186
	(A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * !X)	-0.00186	-0.00187	-0.00186
	(!A2 * B1 * B2 * X)	0.00153	0.00154	0.00153
	(!A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * B1 * B2 * X)	0.00150	0.00151	0.00150
	(!A1 * A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00158
	(!A1 * A2 * B1 * !B2 * !X)	0.00124	0.00124	0.00124
	(!A1 * A2 * B1 * !B2 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * !B1 * !X)	0.00123	0.00123	0.00122
	(!A1 * A2 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A1 * !A2 * !B1 * !X)	-0.00186	-0.00187	-0.00186

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00187	0.00177	0.00177
	(A1 * A2 * B1 * B2 * X)	-0.00140	-0.00156	-0.00156
	(A1 * !A2 * B1 * !B2 * !X)	0.00143	0.00144	0.00144
	(A1 * !A2 * B1 * !B2 * !X)	-0.00185	-0.00186	-0.00186
	(A1 * !A2 * !B1 * !X)	0.00143	0.00144	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00185	-0.00186	-0.00186
	(!A2 * B1 * B2 * X)	0.00169	0.00171	0.00170
	(!A2 * B1 * B2 * X)	-0.00159	-0.00159	-0.00159
	(!A1 * A2 * B1 * B2 * X)	0.00171	0.00172	0.00171
	(!A1 * A2 * B1 * B2 * X)	-0.00160	-0.00160	-0.00159
	(!A1 * A2 * B1 * !B2 * !X)	0.00141	0.00142	0.00141
	(!A1 * A2 * B1 * !B2 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * A2 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * A2 * !B1 * !X)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	0.00143	0.00144	0.00144
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00185	-0.00186	-0.00186
	(!A1 * !A2 * !B1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !A2 * !B1 * !X)	-0.00185	-0.00187	-0.00186

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00301	0.00277	0.00275
	(A1 * A2 * B1 * B2 * X)	-0.00292	-0.00332	-0.00332
	(A1 * !A2 * B1 * !B2 * !X)	0.00263	0.00265	0.00264
	(A1 * !A2 * B1 * !B2 * !X)	-0.00340	-0.00342	-0.00341
	(A1 * !A2 * !B1 * !X)	0.00263	0.00265	0.00264
	(A1 * !A2 * !B1 * !X)	-0.00340	-0.00342	-0.00341
	(!A2 * B1 * B2 * X)	0.00263	0.00266	0.00264
	(!A2 * B1 * B2 * X)	-0.00340	-0.00342	-0.00340
	(!A1 * A2 * B1 * B2 * X)	0.00257	0.00259	0.00257
	(!A1 * A2 * B1 * B2 * X)	-0.00341	-0.00342	-0.00340
	(!A1 * A2 * B1 * !B2 * !X)	0.00256	0.00258	0.00256
	(!A1 * A2 * B1 * !B2 * !X)	-0.00342	-0.00342	-0.00341
	(!A1 * A2 * !B1 * !X)	0.00256	0.00258	0.00256
	(!A1 * A2 * !B1 * !X)	-0.00342	-0.00342	-0.00341
	(!A1 * !A2 * B1 * !B2 * !X)	0.00263	0.00265	0.00264
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00340	-0.00342	-0.00341
	(!A1 * !A2 * !B1 * !X)	0.00263	0.00265	0.00264
	(!A1 * !A2 * !B1 * !X)	-0.00340	-0.00342	-0.00341

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)**	-0.00157	-0.00158	-0.00158
	(A1 * A2 * B1 * B2 * X)	0.00155	0.00156	0.00156
	(A1 * !A2 * B1 * !B2 * !X)	-0.00121	-0.00126	-0.00126
	(A1 * !A2 * B1 * !B2 * !X)	0.00187	0.00187	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00121	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !X)	0.00187	0.00187	0.00186
	(!A2 * B1 * B2 * X)	-0.00149	-0.00153	-0.00153
	(!A2 * B1 * B2 * X)	0.00160	0.00160	0.00159
	(!A1 * A2 * B1 * B2 * X)	-0.00142	-0.00151	-0.00150
	(!A1 * A2 * B1 * B2 * X)	0.00159	0.00161	0.00159
	(!A1 * A2 * B1 * !B2 * !X)	-0.00115	-0.00124	-0.00124
	(!A1 * A2 * B1 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A1 * A2 * !B1 * !X)	-0.00115	-0.00123	-0.00122
	(!A1 * A2 * !B1 * !X)	0.00186	0.00188	0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00122	-0.00125	-0.00126
	(!A1 * !A2 * B1 * !B2 * !X)	0.00187	0.00188	0.00186
	(!A1 * !A2 * !B1 * !X)	-0.00122	-0.00125	-0.00126
	(!A1 * !A2 * !B1 * !X)	0.00187	0.00187	0.00186

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00176	-0.00177	-0.00176
	(A1 * A2 * B1 * B2 * X)	0.00155	0.00157	0.00156
	(A1 * !A2 * B1 * !B2 * !X)	-0.00138	-0.00144	-0.00144
	(A1 * !A2 * B1 * !B2 * !X)	0.00185	0.00187	0.00186
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00144	-0.00144
	(A1 * !A2 * !B1 * !X)	0.00185	0.00187	0.00186
	(!A2 * B1 * B2 * X)	-0.00165	-0.00171	-0.00170
	(!A2 * B1 * B2 * X)	0.00159	0.00161	0.00160
	(!A1 * A2 * B1 * B2 * X)	-0.00160	-0.00172	-0.00170
	(!A1 * A2 * B1 * B2 * X)	0.00160	0.00161	0.00160
	(!A1 * A2 * B1 * !B2 * !X)	-0.00133	-0.00142	-0.00141
	(!A1 * A2 * B1 * !B2 * !X)	0.00186	0.00187	0.00186
	(!A1 * A2 * !B1 * !X)	-0.00133	-0.00142	-0.00142
	(!A1 * A2 * !B1 * !X)	0.00186	0.00187	0.00186
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00139	-0.00144	-0.00144
	(!A1 * !A2 * B1 * !B2 * !X)	0.00185	0.00188	0.00186
	(!A1 * !A2 * !B1 * !X)	-0.00139	-0.00144	-0.00144
	(!A1 * !A2 * !B1 * !X)	0.00185	0.00187	0.00186

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00272	-0.00273	-0.00273
	(A1 * A2 * B1 * B2 * X)	0.00330	0.00333	0.00332
	(A1 * !A2 * B1 * !B2 * !X)	-0.00248	-0.00263	-0.00264
	(A1 * !A2 * B1 * !B2 * !X)	0.00341	0.00344	0.00342
	(A1 * !A2 * !B1 * !X)	-0.00248	-0.00263	-0.00264
	(A1 * !A2 * !B1 * !X)	0.00341	0.00344	0.00342
	(!A2 * B1 * B2 * X)	-0.00252	-0.00263	-0.00264
	(!A2 * B1 * B2 * X)	0.00341	0.00344	0.00342
	(!A1 * A2 * B1 * B2 * X)	-0.00238	-0.00259	-0.00257
	(!A1 * A2 * B1 * B2 * X)	0.00341	0.00344	0.00342
	(!A1 * A2 * B1 * !B2 * !X)	-0.00237	-0.00258	-0.00256
	(!A1 * A2 * B1 * !B2 * !X)	0.00343	0.00343	0.00342
	(!A1 * A2 * !B1 * !X)	-0.00237	-0.00258	-0.00256
	(!A1 * A2 * !B1 * !X)	0.00343	0.00343	0.00342
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00250	-0.00263	-0.00264
	(!A1 * !A2 * B1 * !B2 * !X)	0.00341	0.00345	0.00342
	(!A1 * !A2 * !B1 * !X)	-0.00250	-0.00263	-0.00264
	(!A1 * !A2 * !B1 * !X)	0.00341	0.00345	0.00342

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)**	0.00155	0.00156	0.00155
	(A1 * A2 * A3 * B2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A2 * A3 * !B2 * X)	0.00149	0.00150	0.00150
	(A1 * A2 * A3 * !B2 * X)	-0.00077	-0.00078	-0.00078
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00043	0.00041
	(A1 * A2 * !A3 * !B2 * !X)	-0.00194	-0.00195	-0.00196
	(A1 * !A2 * !B2 * !X)	0.00042	0.00043	0.00041
	(A1 * !A2 * !B2 * !X)	-0.00194	-0.00195	-0.00196
	(!A1 * !B2 * !X)	0.00042	0.00043	0.00041
	(!A1 * !B2 * !X)	-0.00194	-0.00195	-0.00196
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00172	0.00173	0.00171
	(A1 * A2 * A3 * B2 * X)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * A3 * !B2 * X)	0.00166	0.00168	0.00167
	(A1 * A2 * A3 * !B2 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !A3 * !B2 * !X)	0.00052	0.00052	0.00051
	(A1 * A2 * !A3 * !B2 * !X)	-0.00193	-0.00194	-0.00196
	(A1 * !A2 * !B2 * !X)	0.00052	0.00052	0.00051
	(A1 * !A2 * !B2 * !X)	-0.00193	-0.00194	-0.00196
	(!A1 * !B2 * !X)	0.00052	0.00052	0.00051
	(!A1 * !B2 * !X)	-0.00193	-0.00194	-0.00196
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00309	0.00313	0.00311
	(A1 * A2 * A3 * B2 * X)	-0.00158	-0.00160	-0.00158
	(A1 * A2 * A3 * !B2 * X)	0.00297	0.00299	0.00297
	(A1 * A2 * A3 * !B2 * X)	-0.00158	-0.00159	-0.00158
	(A1 * A2 * !A3 * !B2 * !X)	0.00076	0.00078	0.00075
	(A1 * A2 * !A3 * !B2 * !X)	-0.00390	-0.00394	-0.00397
	(A1 * !A2 * !B2 * !X)	0.00076	0.00078	0.00075
	(A1 * !A2 * !B2 * !X)	-0.00390	-0.00394	-0.00397
	(!A1 * !B2 * !X)	0.00076	0.00078	0.00075
	(!A1 * !B2 * !X)	-0.00390	-0.00394	-0.00397

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)	-0.00142	-0.00143	-0.00154
	(A1 * A2 * A3 * B2 * X)	0.00089	0.00089	0.00081
	(A1 * A2 * A3 * !B2 * X)	-0.00146	-0.00150	-0.00150
	(A1 * A2 * A3 * !B2 * X)	0.00078	0.00079	0.00078
	(A1 * A2 * !A3 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * A2 * !A3 * !B2 * !X)	0.00196	0.00199	0.00196
	(A1 * !A2 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(A1 * !A2 * !B2 * !X)	0.00196	0.00199	0.00196
	(!A1 * !B2 * !X)	-0.00041	-0.00042	-0.00041
	(!A1 * !B2 * !X)	0.00196	0.00199	0.00196
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00158	-0.00159	-0.00170
	(A1 * A2 * A3 * B2 * X)	0.00091	0.00090	0.00082
	(A1 * A2 * A3 * !B2 * X)	-0.00161	-0.00167	-0.00167
	(A1 * A2 * A3 * !B2 * X)	0.00080	0.00080	0.00079
	(A1 * A2 * !A3 * !B2 * !X)	-0.00050	-0.00050	-0.00049
	(A1 * A2 * !A3 * !B2 * !X)	0.00197	0.00198	0.00196
	(A1 * !A2 * !B2 * !X)	-0.00050	-0.00050	-0.00049
	(A1 * !A2 * !B2 * !X)	0.00197	0.00198	0.00196
	(!A1 * !B2 * !X)	-0.00050	-0.00050	-0.00049
	(!A1 * !B2 * !X)	0.00197	0.00198	0.00196

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00281	-0.00284	-0.00307
	(A1 * A2 * A3 * B2 * X)	0.00180	0.00182	0.00163
	(A1 * A2 * A3 * !B2 * X)	-0.00288	-0.00298	-0.00297
	(A1 * A2 * A3 * !B2 * X)	0.00159	0.00159	0.00158
	(A1 * A2 * !A3 * !B2 * !X)	-0.00074	-0.00076	-0.00073
	(A1 * A2 * !A3 * !B2 * !X)	0.00398	0.00402	0.00398
	(A1 * !A2 * !B2 * !X)	-0.00074	-0.00075	-0.00073
	(A1 * !A2 * !B2 * !X)	0.00398	0.00400	0.00398
	(!A1 * !B2 * !X)	-0.00074	-0.00076	-0.00073
	(!A1 * !B2 * !X)	0.00398	0.00402	0.00398

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)**	0.00153	0.00153	0.00152
	(A1 * A2 * A3 * B1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * A2 * A3 * !B1 * X)	0.00146	0.00147	0.00146
	(A1 * A2 * A3 * !B1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !A3 * !B1 * !X)	0.00135	0.00135	0.00135
	(A1 * A2 * !A3 * !B1 * !X)	-0.00164	-0.00164	-0.00164
	(A1 * !A2 * !B1 * !X)	0.00135	0.00136	0.00135
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00165	-0.00164
	(!A1 * !B1 * !X)	0.00135	0.00137	0.00135
	(!A1 * !B1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00174	0.00175	0.00173
	(A1 * A2 * A3 * B1 * X)	-0.00085	-0.00085	-0.00084
	(A1 * A2 * A3 * !B1 * X)	0.00168	0.00170	0.00168
	(A1 * A2 * A3 * !B1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !A3 * !B1 * !X)	0.00156	0.00158	0.00157
	(A1 * A2 * !A3 * !B1 * !X)	-0.00164	-0.00165	-0.00165
	(A1 * !A2 * !B1 * !X)	0.00156	0.00158	0.00157
	(A1 * !A2 * !B1 * !X)	-0.00164	-0.00165	-0.00165
	(!A1 * !B1 * !X)	0.00156	0.00158	0.00157
	(!A1 * !B1 * !X)	-0.00164	-0.00165	-0.00165
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00393	0.00401	0.00394
	(A1 * A2 * A3 * B1 * X)	-0.00165	-0.00169	-0.00166
	(A1 * A2 * A3 * !B1 * X)	0.00383	0.00386	0.00384
	(A1 * A2 * A3 * !B1 * X)	-0.00164	-0.00166	-0.00165
	(A1 * A2 * !A3 * !B1 * !X)	0.00336	0.00341	0.00337
	(A1 * A2 * !A3 * !B1 * !X)	-0.00348	-0.00351	-0.00349
	(A1 * !A2 * !B1 * !X)	0.00337	0.00341	0.00338
	(A1 * !A2 * !B1 * !X)	-0.00348	-0.00351	-0.00349
	(!A1 * !B1 * !X)	0.00336	0.00342	0.00338
	(!A1 * !B1 * !X)	-0.00348	-0.00351	-0.00349

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)**	-0.00138	-0.00139	-0.00150
	(A1 * A2 * A3 * B1 * X)	0.00094	0.00094	0.00085
	(A1 * A2 * A3 * !B1 * X)	-0.00143	-0.00147	-0.00146
	(A1 * A2 * A3 * !B1 * X)	0.00083	0.00083	0.00082
	(A1 * A2 * !A3 * !B1 * !X)	-0.00127	-0.00134	-0.00135
	(A1 * A2 * !A3 * !B1 * !X)	0.00170	0.00165	0.00164
	(A1 * !A2 * !B1 * !X)	-0.00127	-0.00134	-0.00135
	(A1 * !A2 * !B1 * !X)	0.00170	0.00165	0.00164
	(!A1 * !B1 * !X)	-0.00127	-0.00134	-0.00135
	(!A1 * !B1 * !X)	0.00170	0.00165	0.00164
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00160	-0.00161	-0.00172
	(A1 * A2 * A3 * B1 * X)	0.00096	0.00095	0.00086
	(A1 * A2 * A3 * !B1 * X)	-0.00164	-0.00168	-0.00168
	(A1 * A2 * A3 * !B1 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !A3 * !B1 * !X)	-0.00150	-0.00158	-0.00157
	(A1 * A2 * !A3 * !B1 * !X)	0.00169	0.00166	0.00165
	(A1 * !A2 * !B1 * !X)	-0.00150	-0.00158	-0.00157
	(A1 * !A2 * !B1 * !X)	0.00169	0.00166	0.00165
	(!A1 * !B1 * !X)	-0.00150	-0.00158	-0.00157
	(!A1 * !B1 * !X)	0.00169	0.00166	0.00165
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00364	-0.00367	-0.00391
	(A1 * A2 * A3 * B1 * X)	0.00188	0.00188	0.00170
	(A1 * A2 * A3 * !B1 * X)	-0.00373	-0.00385	-0.00383
	(A1 * A2 * A3 * !B1 * X)	0.00166	0.00167	0.00165
	(A1 * A2 * !A3 * !B1 * !X)	-0.00314	-0.00336	-0.00336
	(A1 * A2 * !A3 * !B1 * !X)	0.00364	0.00354	0.00350
	(A1 * !A2 * !B1 * !X)	-0.00315	-0.00336	-0.00336
	(A1 * !A2 * !B1 * !X)	0.00364	0.00354	0.00350
	(!A1 * !B1 * !X)	-0.00315	-0.00336	-0.00336
	(!A1 * !B1 * !X)	0.00364	0.00354	0.00350

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41oi_1	11.18880
sky130_fd_sc_hs__a41oi_2	19.18080
sky130_fd_sc_hs__a41oi_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__a41oi_1	0.00271	0.00275	0.00269	0.00273	0.00276	0.62798
sky130_fd_sc_hs__a41oi_2	0.00523	0.00510	0.00500	0.00499	0.00398	1.20645
sky130_fd_sc_hs__a41oi_4	0.01020	0.00986	0.00997	0.00987	0.00785	2.03393

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41oi_1	0.00000	0.03275	0.08122
sky130_fd_sc_hs__a41oi_2	0.00000	0.06503	0.16244
sky130_fd_sc_hs__a41oi_4	0.00000	0.13005	0.32488

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)	0.07487	0.86577	10.25160
	A2->Y (FR)	0.09290	0.90088	10.45990
	A3->Y (FR)	0.10202	0.88736	10.18270
	A4->Y (FR)	0.10359	0.84757	9.70414
	B1->Y (FR)	0.06440	0.88861	10.73580
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.06250	0.75037	10.48740
	A2->Y (FR)	0.07738	0.74065	10.14100
	A3->Y (FR)	0.09104	0.76054	10.22600
	A4->Y (FR)	0.10558	0.78001	10.28080
	B1->Y (FR)	0.02648	0.71515	10.48470
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.05795	0.62492	9.73445
	A2->Y (FR)	0.07673	0.62642	9.48311
	A3->Y (FR)	0.09452	0.65576	9.70292
	A4->Y (FR)	0.11259	0.68846	9.95472
	B1->Y (FR)	0.08275	0.69295	10.45070

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.02977	0.39021	4.43541
	A2->Y (RF)	0.03582	0.38110	4.25561
	A3->Y (RF)	0.03959	0.34983	3.78624
	A4->Y (RF)	0.04246	0.31859	3.30950
	B1->Y (RF)	0.01384	0.22488	2.51110
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.02917	0.39706	5.47264
	A2->Y (RF)	0.03798	0.38779	5.22386
	A3->Y (RF)	0.04245	0.32893	4.28857
	A4->Y (RF)	0.04633	0.30220	3.78941
	B1->Y (RF)	0.01574	0.31533	4.48322
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.02831	0.34025	5.35148
	A2->Y (RF)	0.03902	0.32862	4.99968
	A3->Y (RF)	0.04436	0.27776	4.12286
	A4->Y (RF)	0.04719	0.23748	3.41145
	B1->Y (RF)	0.01497	0.24735	4.04245

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00019	0.00010	0.00703
	A1	0.00640	0.00632	0.01328
	A2	0.00091	0.00076	0.00770
	A2	0.00805	0.00793	0.01486
	A3	0.00149	0.00135	0.00846
	A3	0.00957	0.00946	0.01658
	A4	0.00183	0.00173	0.00906
	A4	0.01096	0.01088	0.01819
	B1	-0.00019	0.00114	0.02385
	B1	0.00466	0.00601	0.02898
sky130_fd_sc_hs__a41oi_2	A1	-0.00095	-0.00090	0.01044
	A1	0.01033	0.01039	0.02170
	A2	0.00090	0.00058	0.01255
	A2	0.01432	0.01399	0.02604
	A3	0.00191	0.00168	0.01398
	A3	0.01724	0.01701	0.02937
	A4	0.00325	0.00303	0.01544
	A4	0.02077	0.02053	0.03298
	B1	-0.00035	0.00221	0.02878
	B1	0.00658	0.00920	0.03633

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00249	-0.00223	0.02326
	A1	0.01990	0.02024	0.04569
	A2	0.00171	0.00115	0.02774
	A2	0.02834	0.02782	0.05446
	A3	0.00373	0.00321	0.03019
	A3	0.03464	0.03415	0.06082
	A4	0.00579	0.00552	0.03275
	A4	0.04079	0.04048	0.06781
	B1	-0.00107	0.00368	0.06247
	B1	0.01260	0.01751	0.07730

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00817	0.00827	0.01419
	A1	0.00208	0.00216	0.00782
	A2	0.00917	0.00913	0.01393
	A2	0.00208	0.00202	0.00641
	A3	0.01013	0.01012	0.01480
	A3	0.00204	0.00196	0.00664
	A4	0.01127	0.01122	0.01651
	A4	0.00207	0.00196	0.00710
	B1	0.00455	0.00507	0.01377
	B1	-0.00029	0.00020	0.00890

sky130_fd_sc_hs__a41oi_2	**A1**	0.01487	0.01488	0.02427
	A1	0.00381	0.00381	0.01324
	A2	0.01707	0.01683	0.02483
	A2	0.00375	0.00352	0.01092
	A3	0.01907	0.01893	0.02769
	A3	0.00373	0.00347	0.01191
	A4	0.02137	0.02111	0.03013
	A4	0.00368	0.00340	0.01248
	B1	0.00550	0.00618	0.01698
	B1	-0.00143	-0.00077	0.00951
sky130_fd_sc_hs__a41oi_4	**A1**	0.02884	0.02916	0.04963
	A1	0.00681	0.00708	0.02758
	A2	0.03314	0.03283	0.05055
	A2	0.00671	0.00630	0.02309
	A3	0.03763	0.03720	0.05693
	A3	0.00659	0.00611	0.02482
	A4	0.04194	0.04159	0.06304
	A4	0.00652	0.00605	0.02745
	B1	0.01083	0.01269	0.03872
	B1	-0.00286	-0.00105	0.02455

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)**	0.00169	0.00164	0.00163
	(A2 * A3 * A4 * B1 * !Y)	-0.00164	-0.00180	-0.00179
	(A2 * A3 * !A4 * B1 * !Y)	0.00154	0.00156	0.00155
	(A2 * A3 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00184
	(A2 * A3 * !A4 * !B1 * Y)	0.00055	0.00055	0.00051
	(A2 * A3 * !A4 * !B1 * Y)	-0.00209	-0.00212	-0.00220
	(A2 * !A3 * B1 * !Y)	0.00159	0.00160	0.00159
	(A2 * !A3 * B1 * !Y)	-0.00184	-0.00184	-0.00184
	(A2 * !A3 * !B1 * Y)	0.00054	0.00055	0.00052
	(A2 * !A3 * !B1 * Y)	-0.00213	-0.00215	-0.00221
	(!A2 * B1 * !Y)	0.00159	0.00159	0.00159
	(!A2 * B1 * !Y)	-0.00183	-0.00184	-0.00184
	(!A2 * !B1 * Y)	0.00055	0.00055	0.00054
	(!A2 * !B1 * Y)	-0.00218	-0.00219	-0.00221
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00338	0.00328	0.00325
	(A2 * A3 * A4 * B1 * !Y)	-0.00320	-0.00352	-0.00350
	(A2 * A3 * !A4 * B1 * !Y)	0.00307	0.00310	0.00307
	(A2 * A3 * !A4 * B1 * !Y)	-0.00358	-0.00360	-0.00358
	(A2 * A3 * !A4 * !B1 * Y)	0.00101	0.00101	0.00091
	(A2 * A3 * !A4 * !B1 * Y)	-0.00418	-0.00421	-0.00441
	(A2 * !A3 * B1 * !Y)	0.00307	0.00309	0.00308
	(A2 * !A3 * B1 * !Y)	-0.00358	-0.00359	-0.00358
	(A2 * !A3 * !B1 * Y)	0.00098	0.00098	0.00091
	(A2 * !A3 * !B1 * Y)	-0.00428	-0.00430	-0.00443
	(!A2 * B1 * !Y)	0.00312	0.00315	0.00313
	(!A2 * B1 * !Y)	-0.00357	-0.00359	-0.00358
	(!A2 * !B1 * Y)	0.00100	0.00100	0.00096
	(!A2 * !B1 * Y)	-0.00437	-0.00439	-0.00445

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00677	0.00657	0.00651
	(A2 * A3 * A4 * B1 * !Y)	-0.00634	-0.00688	-0.00691
	(A2 * A3 * !A4 * B1 * !Y)	0.00615	0.00615	0.00616
	(A2 * A3 * !A4 * B1 * !Y)	-0.00709	-0.00708	-0.00708
	(A2 * A3 * !A4 * !B1 * Y)	0.00204	0.00204	0.00185
	(A2 * A3 * !A4 * !B1 * Y)	-0.00819	-0.00826	-0.00864
	(A2 * !A3 * B1 * !Y)	0.00618	0.00623	0.00622
	(A2 * !A3 * B1 * !Y)	-0.00705	-0.00709	-0.00708
	(A2 * !A3 * !B1 * Y)	0.00198	0.00198	0.00186
	(A2 * !A3 * !B1 * Y)	-0.00838	-0.00840	-0.00868
	(!A2 * B1 * !Y)	0.00627	0.00632	0.00629
	(!A2 * B1 * !Y)	-0.00708	-0.00711	-0.00708
	(!A2 * !B1 * Y)	0.00210	0.00210	0.00202
	(!A2 * !B1 * Y)	-0.00856	-0.00857	-0.00871

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)**	-0.00163	-0.00163	-0.00163
	(A2 * A3 * A4 * B1 * !Y)	0.00178	0.00180	0.00179
	(A2 * A3 * !A4 * B1 * !Y)	-0.00136	-0.00154	-0.00155
	(A2 * A3 * !A4 * B1 * !Y)	0.00184	0.00185	0.00185
	(A2 * A3 * !A4 * !B1 * Y)	-0.00052	-0.00052	-0.00051
	(A2 * A3 * !A4 * !B1 * Y)	0.00222	0.00224	0.00222
	(A2 * !A3 * B1 * !Y)	-0.00141	-0.00156	-0.00157
	(A2 * !A3 * B1 * !Y)	0.00184	0.00186	0.00185
	(A2 * !A3 * !B1 * Y)	-0.00052	-0.00053	-0.00052
	(A2 * !A3 * !B1 * Y)	0.00222	0.00224	0.00222
	(!A2 * B1 * !Y)	-0.00152	-0.00158	-0.00159
	(!A2 * B1 * !Y)	0.00183	0.00186	0.00184
	(!A2 * !B1 * Y)	-0.00053	-0.00054	-0.00053
	(!A2 * !B1 * Y)	0.00222	0.00225	0.00222
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00324	-0.00326	-0.00324
	(A2 * A3 * A4 * B1 * !Y)	0.00348	0.00353	0.00350
	(A2 * A3 * !A4 * B1 * !Y)	-0.00260	-0.00310	-0.00307
	(A2 * A3 * !A4 * B1 * !Y)	0.00359	0.00361	0.00359
	(A2 * A3 * !A4 * !B1 * Y)	-0.00090	-0.00092	-0.00091
	(A2 * A3 * !A4 * !B1 * Y)	0.00443	0.00450	0.00445
	(A2 * !A3 * B1 * !Y)	-0.00269	-0.00309	-0.00308
	(A2 * !A3 * B1 * !Y)	0.00358	0.00361	0.00359
	(A2 * !A3 * !B1 * Y)	-0.00091	-0.00092	-0.00091
	(A2 * !A3 * !B1 * Y)	0.00443	0.00450	0.00445
	(!A2 * B1 * !Y)	-0.00299	-0.00315	-0.00313
	(!A2 * B1 * !Y)	0.00358	0.00361	0.00359
	(!A2 * !B1 * Y)	-0.00093	-0.00095	-0.00094
	(!A2 * !B1 * Y)	0.00444	0.00453	0.00446

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00651	-0.00648	-0.00650
	(A2 * A3 * A4 * B1 * !Y)	0.00691	0.00688	0.00691
	(A2 * A3 * !A4 * B1 * !Y)	-0.00508	-0.00615	-0.00616
	(A2 * A3 * !A4 * B1 * !Y)	0.00710	0.00715	0.00711
	(A2 * A3 * !A4 * !B1 * Y)	-0.00189	-0.00192	-0.00185
	(A2 * A3 * !A4 * !B1 * Y)	0.00868	0.00881	0.00872
	(A2 * !A3 * B1 * !Y)	-0.00525	-0.00623	-0.00622
	(A2 * !A3 * B1 * !Y)	0.00708	0.00715	0.00711
	(A2 * !A3 * !B1 * Y)	-0.00190	-0.00192	-0.00186
	(A2 * !A3 * !B1 * Y)	0.00868	0.00881	0.00872
	(!A2 * B1 * !Y)	-0.00597	-0.00632	-0.00629
	(!A2 * B1 * !Y)	0.00708	0.00715	0.00711
	(!A2 * !B1 * Y)	-0.00197	-0.00201	-0.00197
	(!A2 * !B1 * Y)	0.00869	0.00886	0.00873

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)**	0.00163	0.00158	0.00157
	(A1 * A3 * A4 * B1 * !Y)	-0.00164	-0.00180	-0.00179
	(A1 * A3 * !A4 * B1 * !Y)	0.00150	0.00151	0.00151
	(A1 * A3 * !A4 * B1 * !Y)	-0.00184	-0.00184	-0.00184
	(A1 * A3 * !A4 * !B1 * Y)	0.00056	0.00057	0.00057
	(A1 * A3 * !A4 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(A1 * !A3 * B1 * !Y)	0.00151	0.00151	0.00151
	(A1 * !A3 * B1 * !Y)	-0.00184	-0.00183	-0.00184
	(A1 * !A3 * !B1 * Y)	0.00060	0.00061	0.00060
	(A1 * !A3 * !B1 * Y)	-0.00192	-0.00195	-0.00193
	(!A1 * A3 * A4 * B1 * !Y)	0.00153	0.00154	0.00153
	(!A1 * A3 * A4 * B1 * !Y)	-0.00183	-0.00185	-0.00184
	(!A1 * A3 * A4 * !B1 * Y)	0.00144	0.00145	0.00144
	(!A1 * A3 * A4 * !B1 * Y)	-0.00193	-0.00194	-0.00193
	(!A1 * A3 * !A4 * B1 * !Y)	0.00085	0.00086	0.00086
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00183	-0.00184	-0.00184
	(!A1 * A3 * !A4 * !B1 * Y)	0.00071	0.00071	0.00071
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00194	-0.00194	-0.00194
	(!A1 * !A3 * B1 * !Y)	0.00089	0.00089	0.00089
	(!A1 * !A3 * B1 * !Y)	-0.00184	-0.00184	-0.00184
	(!A1 * !A3 * !B1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A3 * !B1 * Y)	-0.00194	-0.00194	-0.00194

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00330	0.00319	0.00317
	(A1 * A3 * A4 * B1 * !Y)	-0.00326	-0.00358	-0.00356
	(A1 * A3 * !A4 * B1 * !Y)	0.00304	0.00304	0.00304
	(A1 * A3 * !A4 * B1 * !Y)	-0.00365	-0.00366	-0.00366
	(A1 * A3 * !A4 * !B1 * Y)	0.00125	0.00127	0.00127
	(A1 * A3 * !A4 * !B1 * Y)	-0.00369	-0.00373	-0.00371
	(A1 * !A3 * B1 * !Y)	0.00308	0.00310	0.00309
	(A1 * !A3 * B1 * !Y)	-0.00365	-0.00367	-0.00366
	(A1 * !A3 * !B1 * Y)	0.00133	0.00134	0.00134
	(A1 * !A3 * !B1 * Y)	-0.00370	-0.00372	-0.00371
	(!A1 * A3 * A4 * B1 * !Y)	0.00304	0.00308	0.00305
	(!A1 * A3 * A4 * B1 * !Y)	-0.00365	-0.00368	-0.00366
	(!A1 * A3 * A4 * !B1 * Y)	0.00304	0.00306	0.00304
	(!A1 * A3 * A4 * !B1 * Y)	-0.00371	-0.00372	-0.00370
	(!A1 * A3 * !A4 * B1 * !Y)	0.00174	0.00175	0.00173
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00366	-0.00369	-0.00366
	(!A1 * A3 * !A4 * !B1 * Y)	0.00156	0.00158	0.00156
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00372	-0.00375	-0.00373
	(!A1 * !A3 * B1 * !Y)	0.00179	0.00179	0.00178
	(!A1 * !A3 * B1 * !Y)	-0.00366	-0.00366	-0.00366
	(!A1 * !A3 * !B1 * Y)	0.00155	0.00155	0.00155
	(!A1 * !A3 * !B1 * Y)	-0.00375	-0.00374	-0.00374

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00654	0.00630	0.00626
	(A1 * A3 * A4 * B1 * !Y)	-0.00646	-0.00704	-0.00706
	(A1 * A3 * !A4 * B1 * !Y)	0.00590	0.00593	0.00590
	(A1 * A3 * !A4 * B1 * !Y)	-0.00727	-0.00729	-0.00726
	(A1 * A3 * !A4 * !B1 * Y)	0.00240	0.00243	0.00246
	(A1 * A3 * !A4 * !B1 * Y)	-0.00730	-0.00735	-0.00728
	(A1 * !A3 * B1 * !Y)	0.00593	0.00596	0.00596
	(A1 * !A3 * B1 * !Y)	-0.00724	-0.00727	-0.00726
	(A1 * !A3 * !B1 * Y)	0.00248	0.00250	0.00252
	(A1 * !A3 * !B1 * Y)	-0.00728	-0.00731	-0.00728
	(!A1 * A3 * A4 * B1 * !Y)	0.00612	0.00614	0.00612
	(!A1 * A3 * A4 * B1 * !Y)	-0.00725	-0.00728	-0.00726
	(!A1 * A3 * A4 * !B1 * Y)	0.00607	0.00609	0.00607
	(!A1 * A3 * A4 * !B1 * Y)	-0.00731	-0.00732	-0.00730
	(!A1 * A3 * !A4 * B1 * !Y)	0.00326	0.00331	0.00327
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00723	-0.00731	-0.00726
	(!A1 * A3 * !A4 * !B1 * Y)	0.00300	0.00304	0.00301
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00731	-0.00737	-0.00733
	(!A1 * !A3 * B1 * !Y)	0.00332	0.00333	0.00332
	(!A1 * !A3 * B1 * !Y)	-0.00727	-0.00727	-0.00726
	(!A1 * !A3 * !B1 * Y)	0.00293	0.00293	0.00293
	(!A1 * !A3 * !B1 * Y)	-0.00735	-0.00735	-0.00734

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)**	-0.00156	-0.00157	-0.00157
	(A1 * A3 * A4 * B1 * !Y)	0.00178	0.00180	0.00179
	(A1 * A3 * !A4 * B1 * !Y)	-0.00133	-0.00147	-0.00150
	(A1 * A3 * !A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(A1 * A3 * !A4 * !B1 * Y)	-0.00056	-0.00057	-0.00057
	(A1 * A3 * !A4 * !B1 * Y)	0.00197	0.00198	0.00194
	(A1 * !A3 * B1 * !Y)	-0.00146	-0.00151	-0.00151
	(A1 * !A3 * B1 * !Y)	0.00185	0.00186	0.00184
	(A1 * !A3 * !B1 * Y)	-0.00058	-0.00058	-0.00059
	(A1 * !A3 * !B1 * Y)	0.00198	0.00198	0.00194
	(!A1 * A3 * A4 * B1 * !Y)	-0.00145	-0.00152	-0.00152
	(!A1 * A3 * A4 * B1 * !Y)	0.00183	0.00186	0.00184
	(!A1 * A3 * A4 * !B1 * Y)	-0.00130	-0.00143	-0.00143
	(!A1 * A3 * A4 * !B1 * Y)	0.00201	0.00195	0.00193
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00085	-0.00086	-0.00086
	(!A1 * A3 * !A4 * B1 * !Y)	0.00184	0.00186	0.00184
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * A3 * !A4 * !B1 * Y)	0.00197	0.00197	0.00194
	(!A1 * !A3 * B1 * !Y)	-0.00089	-0.00089	-0.00089
	(!A1 * !A3 * B1 * !Y)	0.00185	0.00186	0.00184
	(!A1 * !A3 * !B1 * Y)	-0.00071	-0.00071	-0.00071
	(!A1 * !A3 * !B1 * Y)	0.00202	0.00203	0.00196

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00316	-0.00318	-0.00316
	(A1 * A3 * A4 * B1 * !Y)	0.00354	0.00359	0.00356
	(A1 * A3 * !A4 * B1 * !Y)	-0.00262	-0.00302	-0.00303
	(A1 * A3 * !A4 * B1 * !Y)	0.00365	0.00368	0.00367
	(A1 * A3 * !A4 * !B1 * Y)	-0.00124	-0.00124	-0.00125
	(A1 * A3 * !A4 * !B1 * Y)	0.00382	0.00384	0.00374
	(A1 * !A3 * B1 * !Y)	-0.00292	-0.00310	-0.00307
	(A1 * !A3 * B1 * !Y)	0.00366	0.00370	0.00367
	(A1 * !A3 * !B1 * Y)	-0.00128	-0.00129	-0.00130
	(A1 * !A3 * !B1 * Y)	0.00382	0.00384	0.00374
	(!A1 * A3 * A4 * B1 * !Y)	-0.00290	-0.00306	-0.00305
	(!A1 * A3 * A4 * B1 * !Y)	0.00366	0.00369	0.00367
	(!A1 * A3 * A4 * !B1 * Y)	-0.00262	-0.00301	-0.00303
	(!A1 * A3 * A4 * !B1 * Y)	0.00400	0.00374	0.00371
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00174	-0.00175	-0.00173
	(!A1 * A3 * !A4 * B1 * !Y)	0.00366	0.00370	0.00367
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00156	-0.00158	-0.00156
	(!A1 * A3 * !A4 * !B1 * Y)	0.00379	0.00376	0.00373
	(!A1 * !A3 * B1 * !Y)	-0.00179	-0.00179	-0.00178
	(!A1 * !A3 * B1 * !Y)	0.00368	0.00370	0.00367
	(!A1 * !A3 * !B1 * Y)	-0.00155	-0.00155	-0.00155
	(!A1 * !A3 * !B1 * Y)	0.00389	0.00391	0.00378

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00626	-0.00624	-0.00625
	(A1 * A3 * A4 * B1 * !Y)	0.00705	0.00704	0.00706
	(A1 * A3 * !A4 * B1 * !Y)	-0.00503	-0.00593	-0.00590
	(A1 * A3 * !A4 * B1 * !Y)	0.00728	0.00731	0.00728
	(A1 * A3 * !A4 * !B1 * Y)	-0.00232	-0.00235	-0.00239
	(A1 * A3 * !A4 * !B1 * Y)	0.00745	0.00755	0.00736
	(A1 * !A3 * B1 * !Y)	-0.00570	-0.00596	-0.00596
	(A1 * !A3 * B1 * !Y)	0.00725	0.00733	0.00728
	(A1 * !A3 * !B1 * Y)	-0.00236	-0.00240	-0.00244
	(A1 * !A3 * !B1 * Y)	0.00744	0.00756	0.00736
	(!A1 * A3 * A4 * B1 * !Y)	-0.00572	-0.00614	-0.00608
	(!A1 * A3 * A4 * B1 * !Y)	0.00725	0.00733	0.00728
	(!A1 * A3 * A4 * !B1 * Y)	-0.00517	-0.00609	-0.00603
	(!A1 * A3 * A4 * !B1 * Y)	0.00791	0.00737	0.00732
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00326	-0.00331	-0.00327
	(!A1 * A3 * !A4 * B1 * !Y)	0.00729	0.00734	0.00728
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00300	-0.00304	-0.00301
	(!A1 * A3 * !A4 * !B1 * Y)	0.00743	0.00741	0.00734
	(!A1 * !A3 * B1 * !Y)	-0.00332	-0.00333	-0.00332
	(!A1 * !A3 * B1 * !Y)	0.00730	0.00734	0.00728
	(!A1 * !A3 * !B1 * Y)	-0.00293	-0.00293	-0.00293
	(!A1 * !A3 * !B1 * Y)	0.00754	0.00768	0.00742

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)**	0.00159	0.00154	0.00154
	(A1 * A2 * A4 * B1 * !Y)	-0.00166	-0.00179	-0.00179
	(A1 * A2 * !A4 * B1 * !Y)	0.00150	0.00151	0.00150
	(A1 * A2 * !A4 * B1 * !Y)	-0.00184	-0.00185	-0.00183
	(A1 * A2 * !A4 * !B1 * Y)	0.00058	0.00059	0.00059
	(A1 * A2 * !A4 * !B1 * Y)	-0.00190	-0.00191	-0.00189
	(A1 * !A2 * A4 * !B1 * Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * A4 * !B1 * Y)	-0.00190	-0.00190	-0.00190
	(A1 * !A2 * !A4 * !B1 * Y)	0.00068	0.00068	0.00068
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00190	-0.00191	-0.00191
	(!A2 * A4 * B1 * !Y)	0.00150	0.00151	0.00150
	(!A2 * A4 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A2 * !A4 * B1 * !Y)	0.00081	0.00082	0.00081
	(!A2 * !A4 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * A4 * B1 * !Y)	0.00147	0.00148	0.00147
	(!A1 * A2 * A4 * B1 * !Y)	-0.00183	-0.00184	-0.00183
	(!A1 * A2 * A4 * !B1 * Y)	0.00141	0.00141	0.00141
	(!A1 * A2 * A4 * !B1 * Y)	-0.00190	-0.00190	-0.00190
	(!A1 * A2 * !A4 * B1 * !Y)	0.00082	0.00083	0.00082
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00184	-0.00184	-0.00183
	(!A1 * A2 * !A4 * !B1 * Y)	0.00068	0.00069	0.00069
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00190	-0.00191	-0.00191
	(!A1 * !A2 * A4 * !B1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00190	-0.00190	-0.00190
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00072	0.00073	0.00072
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00190	-0.00192	-0.00191

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00322	0.00314	0.00311
	(A1 * A2 * A4 * B1 * !Y)	-0.00325	-0.00356	-0.00355
	(A1 * A2 * !A4 * B1 * !Y)	0.00296	0.00297	0.00297
	(A1 * A2 * !A4 * B1 * !Y)	-0.00364	-0.00364	-0.00363
	(A1 * A2 * !A4 * !B1 * Y)	0.00130	0.00131	0.00131
	(A1 * A2 * !A4 * !B1 * Y)	-0.00359	-0.00359	-0.00357
	(A1 * !A2 * A4 * !B1 * Y)	0.00297	0.00300	0.00298
	(A1 * !A2 * A4 * !B1 * Y)	-0.00363	-0.00365	-0.00364
	(A1 * !A2 * !A4 * !B1 * Y)	0.00152	0.00152	0.00151
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00364	-0.00365	-0.00364
	(!A2 * A4 * B1 * !Y)	0.00299	0.00302	0.00299
	(!A2 * A4 * B1 * !Y)	-0.00363	-0.00366	-0.00363
	(!A2 * !A4 * B1 * !Y)	0.00165	0.00166	0.00165
	(!A2 * !A4 * B1 * !Y)	-0.00363	-0.00364	-0.00363
	(!A1 * A2 * A4 * B1 * !Y)	0.00296	0.00298	0.00297
	(!A1 * A2 * A4 * B1 * !Y)	-0.00362	-0.00364	-0.00363
	(!A1 * A2 * A4 * !B1 * Y)	0.00296	0.00298	0.00297
	(!A1 * A2 * A4 * !B1 * Y)	-0.00363	-0.00365	-0.00364
	(!A1 * A2 * !A4 * B1 * !Y)	0.00165	0.00166	0.00165
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00362	-0.00363	-0.00363
	(!A1 * A2 * !A4 * !B1 * Y)	0.00151	0.00152	0.00151
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00364	-0.00367	-0.00366
	(!A1 * !A2 * A4 * !B1 * Y)	0.00297	0.00301	0.00298
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00363	-0.00366	-0.00364
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00159	0.00160	0.00159
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00364	-0.00365	-0.00364

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00647	0.00623	0.00620
	(A1 * A2 * A4 * B1 * !Y)	-0.00655	-0.00717	-0.00714
	(A1 * A2 * !A4 * B1 * !Y)	0.00589	0.00595	0.00592
	(A1 * A2 * !A4 * B1 * !Y)	-0.00732	-0.00738	-0.00734
	(A1 * A2 * !A4 * !B1 * Y)	0.00244	0.00247	0.00245
	(A1 * A2 * !A4 * !B1 * Y)	-0.00726	-0.00730	-0.00721
	(A1 * !A2 * A4 * !B1 * Y)	0.00594	0.00599	0.00596
	(A1 * !A2 * A4 * !B1 * Y)	-0.00732	-0.00736	-0.00735
	(A1 * !A2 * !A4 * !B1 * Y)	0.00281	0.00281	0.00281
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00736	-0.00735	-0.00735
	(!A2 * A4 * B1 * !Y)	0.00594	0.00600	0.00597
	(!A2 * A4 * B1 * !Y)	-0.00732	-0.00736	-0.00734
	(!A2 * !A4 * B1 * !Y)	0.00308	0.00309	0.00307
	(!A2 * !A4 * B1 * !Y)	-0.00732	-0.00737	-0.00734
	(!A1 * A2 * A4 * B1 * !Y)	0.00591	0.00592	0.00591
	(!A1 * A2 * A4 * B1 * !Y)	-0.00736	-0.00735	-0.00734
	(!A1 * A2 * A4 * !B1 * Y)	0.00591	0.00593	0.00591
	(!A1 * A2 * A4 * !B1 * Y)	-0.00737	-0.00737	-0.00735
	(!A1 * A2 * !A4 * B1 * !Y)	0.00317	0.00320	0.00318
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00731	-0.00736	-0.00734
	(!A1 * A2 * !A4 * !B1 * Y)	0.00292	0.00294	0.00292
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00736	-0.00740	-0.00737
	(!A1 * !A2 * A4 * !B1 * Y)	0.00591	0.00598	0.00595
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00731	-0.00737	-0.00735
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00296	0.00298	0.00296
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00733	-0.00738	-0.00735

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)**	-0.00154	-0.00154	-0.00154
	(A1 * A2 * A4 * B1 * !Y)	0.00179	0.00179	0.00179
	(A1 * A2 * !A4 * B1 * !Y)	-0.00143	-0.00149	-0.00149
	(A1 * A2 * !A4 * B1 * !Y)	0.00184	0.00186	0.00184
	(A1 * A2 * !A4 * !B1 * Y)	-0.00055	-0.00056	-0.00057
	(A1 * A2 * !A4 * !B1 * Y)	0.00193	0.00196	0.00192
	(A1 * !A2 * A4 * !B1 * Y)	-0.00135	-0.00143	-0.00143
	(A1 * !A2 * A4 * !B1 * Y)	0.00190	0.00192	0.00190
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * !A4 * !B1 * Y)	0.00197	0.00198	0.00193
	(!A2 * A4 * B1 * !Y)	-0.00143	-0.00148	-0.00150
	(!A2 * A4 * B1 * !Y)	0.00183	0.00184	0.00184
	(!A2 * !A4 * B1 * !Y)	-0.00081	-0.00082	-0.00081
	(!A2 * !A4 * B1 * !Y)	0.00185	0.00185	0.00184
	(!A1 * A2 * A4 * B1 * !Y)	-0.00135	-0.00147	-0.00147
	(!A1 * A2 * A4 * B1 * !Y)	0.00183	0.00185	0.00184
	(!A1 * A2 * A4 * !B1 * Y)	-0.00128	-0.00140	-0.00141
	(!A1 * A2 * A4 * !B1 * Y)	0.00190	0.00191	0.00190
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00082	-0.00083	-0.00082
	(!A1 * A2 * !A4 * B1 * !Y)	0.00184	0.00185	0.00184
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00068	-0.00069	-0.00069
	(!A1 * A2 * !A4 * !B1 * Y)	0.00190	0.00192	0.00191
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00136	-0.00143	-0.00143
	(!A1 * !A2 * A4 * !B1 * Y)	0.00190	0.00192	0.00190
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00192	0.00193	0.00191

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00311	-0.00312	-0.00310
	(A1 * A2 * A4 * B1 * !Y)	0.00354	0.00358	0.00355
	(A1 * A2 * !A4 * B1 * !Y)	-0.00282	-0.00297	-0.00297
	(A1 * A2 * !A4 * B1 * !Y)	0.00365	0.00366	0.00365
	(A1 * A2 * !A4 * !B1 * Y)	-0.00123	-0.00124	-0.00124
	(A1 * A2 * !A4 * !B1 * Y)	0.00370	0.00375	0.00368
	(A1 * !A2 * A4 * !B1 * Y)	-0.00282	-0.00300	-0.00298
	(A1 * !A2 * A4 * !B1 * Y)	0.00363	0.00368	0.00365
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00152	-0.00152	-0.00151
	(A1 * !A2 * !A4 * !B1 * Y)	0.00371	0.00375	0.00366
	(!A2 * A4 * B1 * !Y)	-0.00287	-0.00302	-0.00299
	(!A2 * A4 * B1 * !Y)	0.00363	0.00368	0.00365
	(!A2 * !A4 * B1 * !Y)	-0.00165	-0.00166	-0.00165
	(!A2 * !A4 * B1 * !Y)	0.00363	0.00368	0.00365
	(!A1 * A2 * A4 * B1 * !Y)	-0.00267	-0.00298	-0.00297
	(!A1 * A2 * A4 * B1 * !Y)	0.00365	0.00368	0.00365
	(!A1 * A2 * A4 * !B1 * Y)	-0.00266	-0.00293	-0.00297
	(!A1 * A2 * A4 * !B1 * Y)	0.00366	0.00367	0.00365
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00165	-0.00166	-0.00165
	(!A1 * A2 * !A4 * B1 * !Y)	0.00363	0.00368	0.00365
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00151	-0.00152	-0.00151
	(!A1 * A2 * !A4 * !B1 * Y)	0.00367	0.00370	0.00367
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00284	-0.00301	-0.00298
	(!A1 * !A2 * A4 * !B1 * Y)	0.00363	0.00368	0.00365
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00159	-0.00160	-0.00159
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00364	0.00368	0.00365

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00617	-0.00620	-0.00618
	(A1 * A2 * A4 * B1 * !Y)	0.00711	0.00717	0.00714
	(A1 * A2 * !A4 * B1 * !Y)	-0.00565	-0.00595	-0.00592
	(A1 * A2 * !A4 * B1 * !Y)	0.00734	0.00741	0.00737
	(A1 * A2 * !A4 * !B1 * Y)	-0.00226	-0.00230	-0.00231
	(A1 * A2 * !A4 * !B1 * Y)	0.00752	0.00762	0.00744
	(A1 * !A2 * A4 * !B1 * Y)	-0.00550	-0.00590	-0.00593
	(A1 * !A2 * A4 * !B1 * Y)	0.00734	0.00741	0.00737
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00281	-0.00281	-0.00281
	(A1 * !A2 * !A4 * !B1 * Y)	0.00758	0.00766	0.00743
	(!A2 * A4 * B1 * !Y)	-0.00563	-0.00591	-0.00594
	(!A2 * A4 * B1 * !Y)	0.00733	0.00741	0.00737
	(!A2 * !A4 * B1 * !Y)	-0.00308	-0.00309	-0.00307
	(!A2 * !A4 * B1 * !Y)	0.00732	0.00743	0.00737
	(!A1 * A2 * A4 * B1 * !Y)	-0.00517	-0.00591	-0.00589
	(!A1 * A2 * A4 * B1 * !Y)	0.00737	0.00743	0.00737
	(!A1 * A2 * A4 * !B1 * Y)	-0.00513	-0.00578	-0.00589
	(!A1 * A2 * A4 * !B1 * Y)	0.00742	0.00740	0.00737
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00317	-0.00320	-0.00318
	(!A1 * A2 * !A4 * B1 * !Y)	0.00738	0.00743	0.00737
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00292	-0.00294	-0.00292
	(!A1 * A2 * !A4 * !B1 * Y)	0.00736	0.00744	0.00738
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00555	-0.00590	-0.00593
	(!A1 * !A2 * A4 * !B1 * Y)	0.00734	0.00741	0.00737
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00296	-0.00298	-0.00296
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00733	0.00743	0.00737

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)**	0.00170	0.00164	0.00165
	(A1 * A2 * A3 * B1 * !Y)	-0.00165	-0.00178	-0.00178
	(A1 * A2 * !A3 * !B1 * Y)	0.00145	0.00147	0.00146
	(A1 * A2 * !A3 * !B1 * Y)	-0.00196	-0.00198	-0.00197
	(A1 * !A2 * A3 * !B1 * Y)	0.00143	0.00144	0.00143
	(A1 * !A2 * A3 * !B1 * Y)	-0.00197	-0.00197	-0.00197
	(A1 * !A2 * !A3 * !B1 * Y)	0.00145	0.00146	0.00145
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00196	-0.00197	-0.00197
	(!A3 * B1 * !Y)	0.00157	0.00159	0.00158
	(!A3 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A2 * A3 * B1 * !Y)	0.00159	0.00160	0.00158
	(!A2 * A3 * B1 * !Y)	-0.00183	-0.00183	-0.00182
	(!A1 * A2 * A3 * B1 * !Y)	0.00159	0.00159	0.00159
	(!A1 * A2 * A3 * B1 * !Y)	-0.00182	-0.00183	-0.00182
	(!A1 * A2 * A3 * !B1 * Y)	0.00141	0.00141	0.00141
	(!A1 * A2 * A3 * !B1 * Y)	-0.00196	-0.00197	-0.00197
	(!A1 * !A3 * !B1 * Y)	0.00143	0.00144	0.00144
	(!A1 * !A3 * !B1 * Y)	-0.00196	-0.00197	-0.00197
	(!A1 * !A2 * A3 * !B1 * Y)	0.00146	0.00146	0.00146
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00197	-0.00197	-0.00197

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00325	0.00315	0.00313
	(A1 * A2 * A3 * B1 * !Y)	-0.00329	-0.00355	-0.00356
	(A1 * A2 * !A3 * !B1 * Y)	0.00298	0.00301	0.00299
	(A1 * A2 * !A3 * !B1 * Y)	-0.00364	-0.00366	-0.00365
	(A1 * !A2 * A3 * !B1 * Y)	0.00299	0.00300	0.00299
	(A1 * !A2 * A3 * !B1 * Y)	-0.00365	-0.00366	-0.00365
	(A1 * !A2 * !A3 * !B1 * Y)	0.00298	0.00302	0.00299
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00364	-0.00367	-0.00365
	(!A3 * B1 * !Y)	0.00299	0.00300	0.00300
	(!A3 * B1 * !Y)	-0.00364	-0.00365	-0.00365
	(!A2 * A3 * B1 * !Y)	0.00299	0.00302	0.00299
	(!A2 * A3 * B1 * !Y)	-0.00365	-0.00367	-0.00364
	(!A1 * A2 * A3 * B1 * !Y)	0.00297	0.00299	0.00297
	(!A1 * A2 * A3 * B1 * !Y)	-0.00365	-0.00366	-0.00364
	(!A1 * A2 * A3 * !B1 * Y)	0.00296	0.00300	0.00296
	(!A1 * A2 * A3 * !B1 * Y)	-0.00365	-0.00367	-0.00365
	(!A1 * !A3 * !B1 * Y)	0.00298	0.00302	0.00299
	(!A1 * !A3 * !B1 * Y)	-0.00364	-0.00367	-0.00365
	(!A1 * !A2 * A3 * !B1 * Y)	0.00298	0.00296	0.00298
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00365	-0.00364	-0.00365

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00645	0.00626	0.00621
	(A1 * A2 * A3 * B1 * !Y)	-0.00653	-0.00714	-0.00710
	(A1 * A2 * !A3 * !B1 * Y)	0.00596	0.00599	0.00599
	(A1 * A2 * !A3 * !B1 * Y)	-0.00727	-0.00729	-0.00729
	(A1 * !A2 * A3 * !B1 * Y)	0.00585	0.00590	0.00588
	(A1 * !A2 * A3 * !B1 * Y)	-0.00727	-0.00731	-0.00729
	(A1 * !A2 * !A3 * !B1 * Y)	0.00597	0.00604	0.00599
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00727	-0.00733	-0.00729
	(!A3 * B1 * !Y)	0.00597	0.00603	0.00600
	(!A3 * B1 * !Y)	-0.00727	-0.00732	-0.00729
	(!A2 * A3 * B1 * !Y)	0.00587	0.00591	0.00588
	(!A2 * A3 * B1 * !Y)	-0.00728	-0.00731	-0.00729
	(!A1 * A2 * A3 * B1 * !Y)	0.00568	0.00574	0.00572
	(!A1 * A2 * A3 * B1 * !Y)	-0.00725	-0.00730	-0.00729
	(!A1 * A2 * A3 * !B1 * Y)	0.00566	0.00572	0.00570
	(!A1 * A2 * A3 * !B1 * Y)	-0.00726	-0.00731	-0.00730
	(!A1 * !A3 * !B1 * Y)	0.00597	0.00604	0.00599
	(!A1 * !A3 * !B1 * Y)	-0.00727	-0.00733	-0.00729
	(!A1 * !A2 * A3 * !B1 * Y)	0.00591	0.00597	0.00594
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00727	-0.00731	-0.00729

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)**	-0.00164	-0.00164	-0.00164
	(A1 * A2 * A3 * B1 * !Y)	0.00178	0.00179	0.00178
	(A1 * A2 * !A3 * !B1 * Y)	-0.00139	-0.00144	-0.00145
	(A1 * A2 * !A3 * !B1 * Y)	0.00197	0.00198	0.00197
	(A1 * !A2 * A3 * !B1 * Y)	-0.00134	-0.00144	-0.00143
	(A1 * !A2 * A3 * !B1 * Y)	0.00197	0.00199	0.00197
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00140	-0.00145	-0.00145
	(A1 * !A2 * !A3 * !B1 * Y)	0.00197	0.00198	0.00197
	(!A3 * B1 * !Y)	-0.00154	-0.00158	-0.00158
	(!A3 * B1 * !Y)	0.00183	0.00184	0.00183
	(!A2 * A3 * B1 * !Y)	-0.00148	-0.00159	-0.00158
	(!A2 * A3 * B1 * !Y)	0.00183	0.00184	0.00183
	(!A1 * A2 * A3 * B1 * !Y)	-0.00145	-0.00159	-0.00157
	(!A1 * A2 * A3 * B1 * !Y)	0.00182	0.00184	0.00183
	(!A1 * A2 * A3 * !B1 * Y)	-0.00131	-0.00141	-0.00141
	(!A1 * A2 * A3 * !B1 * Y)	0.00196	0.00198	0.00197
	(!A1 * !A3 * !B1 * Y)	-0.00140	-0.00144	-0.00144
	(!A1 * !A3 * !B1 * Y)	0.00197	0.00198	0.00197
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00134	-0.00145	-0.00144
	(!A1 * !A2 * A3 * !B1 * Y)	0.00197	0.00198	0.00197

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00312	-0.00312	-0.00313
	(A1 * A2 * A3 * B1 * !Y)	0.00354	0.00355	0.00356
	(A1 * A2 * !A3 * !B1 * Y)	-0.00284	-0.00301	-0.00299
	(A1 * A2 * !A3 * !B1 * Y)	0.00364	0.00369	0.00366
	(A1 * !A2 * A3 * !B1 * Y)	-0.00272	-0.00295	-0.00298
	(A1 * !A2 * A3 * !B1 * Y)	0.00366	0.00369	0.00366
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00286	-0.00302	-0.00299
	(A1 * !A2 * !A3 * !B1 * Y)	0.00364	0.00369	0.00366
	(!A3 * B1 * !Y)	-0.00287	-0.00300	-0.00300
	(!A3 * B1 * !Y)	0.00364	0.00368	0.00366
	(!A2 * A3 * B1 * !Y)	-0.00272	-0.00295	-0.00298
	(!A2 * A3 * B1 * !Y)	0.00366	0.00368	0.00366
	(!A1 * A2 * A3 * B1 * !Y)	-0.00266	-0.00294	-0.00297
	(!A1 * A2 * A3 * B1 * !Y)	0.00366	0.00367	0.00366
	(!A1 * A2 * A3 * !B1 * Y)	-0.00266	-0.00293	-0.00296
	(!A1 * A2 * A3 * !B1 * Y)	0.00366	0.00367	0.00366
	(!A1 * !A3 * !B1 * Y)	-0.00285	-0.00302	-0.00299
	(!A1 * !A3 * !B1 * Y)	0.00364	0.00369	0.00366
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00272	-0.00295	-0.00298
	(!A1 * !A2 * A3 * !B1 * Y)	0.00366	0.00369	0.00366

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00620	-0.00622	-0.00620
	(A1 * A2 * A3 * B1 * !Y)	0.00710	0.00714	0.00710
	(A1 * A2 * !A3 * !B1 * Y)	-0.00563	-0.00598	-0.00597
	(A1 * A2 * !A3 * !B1 * Y)	0.00728	0.00737	0.00731
	(A1 * !A2 * A3 * !B1 * Y)	-0.00537	-0.00585	-0.00588
	(A1 * !A2 * A3 * !B1 * Y)	0.00732	0.00734	0.00731
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00567	-0.00599	-0.00598
	(A1 * !A2 * !A3 * !B1 * Y)	0.00728	0.00738	0.00731
	(!A3 * B1 * !Y)	-0.00570	-0.00594	-0.00598
	(!A3 * B1 * !Y)	0.00729	0.00735	0.00732
	(!A2 * A3 * B1 * !Y)	-0.00538	-0.00584	-0.00588
	(!A2 * A3 * B1 * !Y)	0.00732	0.00736	0.00732
	(!A1 * A2 * A3 * B1 * !Y)	-0.00530	-0.00574	-0.00572
	(!A1 * A2 * A3 * B1 * !Y)	0.00732	0.00734	0.00732
	(!A1 * A2 * A3 * !B1 * Y)	-0.00530	-0.00572	-0.00570
	(!A1 * A2 * A3 * !B1 * Y)	0.00732	0.00734	0.00732
	(!A1 * !A3 * !B1 * Y)	-0.00567	-0.00599	-0.00598
	(!A1 * !A3 * !B1 * Y)	0.00728	0.00738	0.00731
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00538	-0.00585	-0.00589
	(!A1 * !A2 * A3 * !B1 * Y)	0.00732	0.00734	0.00731

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)	0.00192	0.00194	0.00192
	(A1 * A2 * A3 * A4 * !Y)	-0.00086	-0.00087	-0.00086
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00204	0.00207	0.00205
	(A1 * A2 * A3 * A4 * !Y)	-0.00175	-0.00178	-0.00176
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00404	0.00408	0.00405
	(A1 * A2 * A3 * A4 * !Y)	-0.00347	-0.00351	-0.00347

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)	-0.00177	-0.00178	-0.00191
	(A1 * A2 * A3 * A4 * !Y)	0.00098	0.00098	0.00089
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00173	-0.00176	-0.00202
	(A1 * A2 * A3 * A4 * !Y)	0.00201	0.00202	0.00182
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00345	-0.00350	-0.00399
	(A1 * A2 * A3 * A4 * !Y)	0.00393	0.00394	0.00358

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__a41o_1	14.38560
sky130_fd_sc_hs__a41o_2	15.98400
sky130_fd_sc_hs__a41o_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__a41o_1	0.00255	0.00252	0.00255	0.00249	0.00263	1.44248
sky130_fd_sc_hs__a41o_2	0.00251	0.00258	0.00265	0.00248	0.00265	2.74155
sky130_fd_sc_hs__a41o_4	0.00495	0.00479	0.00495	0.00475	0.00488	4.41009

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a41o_1	0.00000	0.08779	0.13853
sky130_fd_sc_hs__a41o_2	0.00000	0.11782	0.13953
sky130_fd_sc_hs__a41o_4	0.00000	0.23565	0.27907

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)	0.06794	0.47769	5.51924
	A2->X (RR)	0.07325	0.48704	5.51651
	A3->X (RR)	0.07750	0.48435	5.47230
	A4->X (RR)	0.08012	0.47631	5.39876
	B1->X (RR)	0.04429	0.43292	5.28934
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.07043	0.41613	5.55915
	A2->X (RR)	0.07647	0.42310	5.55171
	A3->X (RR)	0.08057	0.41667	5.49598
	A4->X (RR)	0.08287	0.40578	5.41731
	B1->X (RR)	0.04191	0.35912	5.29557
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.08573	0.39761	5.60748
	A2->X (RR)	0.09432	0.40900	5.67031
	A3->X (RR)	0.09816	0.37916	5.47740
	A4->X (RR)	0.10143	0.36892	5.38981
	B1->X (RR)	0.03952	0.30294	5.17332

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.09542	0.46720	4.85366
	A2->X (FF)	0.11312	0.49652	4.90627
	A3->X (FF)	0.12515	0.51877	4.97699
	A4->X (FF)	0.13739	0.54166	5.06220
	B1->X (FF)	0.11398	0.53839	5.05318
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.11095	0.47236	4.82444
	A2->X (FF)	0.12939	0.50203	4.88343
	A3->X (FF)	0.13986	0.52094	4.94387
	A4->X (FF)	0.15052	0.54065	5.01881
	B1->X (FF)	0.12821	0.54061	5.02224
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.11740	0.44307	4.51087
	A2->X (FF)	0.13449	0.47113	4.56772
	A3->X (FF)	0.14721	0.49543	4.70677
	A4->X (FF)	0.16106	0.51865	4.79275
	B1->X (FF)	0.13568	0.52928	4.89488

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.01160	0.01276	0.05068
	A1	0.00621	0.00740	0.04559
	A2	0.01268	0.01348	0.04672
	A2	0.00621	0.00702	0.04056
	A3	0.01373	0.01440	0.04811
	A3	0.00622	0.00688	0.04090
	A4	0.01483	0.01546	0.04971
	A4	0.00620	0.00683	0.04131
	B1	0.00810	0.01112	0.07880
	B1	0.00386	0.00691	0.07479
sky130_fd_sc_hs__a41o_2	A1	0.01345	0.01464	0.05216
	A1	0.00807	0.00925	0.04738
	A2	0.01458	0.01541	0.04821
	A2	0.00807	0.00890	0.04233
	A3	0.01567	0.01641	0.04981
	A3	0.00806	0.00881	0.04285
	A4	0.01669	0.01741	0.05126
	A4	0.00804	0.00877	0.04306
	B1	0.00984	0.01263	0.07995
	B1	0.00556	0.00849	0.07616

sky130_fd_sc_hs__a41o_4	**A1**	0.02616	0.02783	0.08605
	A1	0.01539	0.01709	0.07626
	A2	0.02827	0.02940	0.08971
	A2	0.01538	0.01654	0.07750
	A3	0.03064	0.03171	0.09604
	A3	0.01536	0.01650	0.08185
	A4	0.03273	0.03375	0.09957
	A4	0.01532	0.01654	0.08300
	B1	0.01804	0.02380	0.14259
	B1	0.00985	0.01566	0.13441

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00342	0.00398	0.04025
	A1	0.00887	0.00944	0.04560
	A2	0.00394	0.00444	0.03752
	A2	0.01043	0.01091	0.04397
	A3	0.00456	0.00506	0.03859
	A3	0.01202	0.01251	0.04603
	A4	0.00500	0.00569	0.04081
	A4	0.01351	0.01400	0.04793
	B1	0.00308	0.00677	0.06565
	B1	0.00731	0.01097	0.06987

sky130_fd_sc_hs__a41o_2	**A1**	0.00632	0.00696	0.04176
	A1	0.01178	0.01207	0.04719
	A2	0.00720	0.00731	0.03971
	A2	0.01373	0.01376	0.04622
	A3	0.00784	0.00826	0.04222
	A3	0.01539	0.01536	0.04836
	A4	0.00835	0.00824	0.04169
	A4	0.01687	0.01672	0.05016
	B1	0.00561	0.00928	0.06796
	B1	0.00987	0.01354	0.07189
sky130_fd_sc_hs__a41o_4	**A1**	0.01254	0.01237	0.07598
	A1	0.02349	0.02324	0.08550
	A2	0.01489	0.01479	0.07500
	A2	0.02780	0.02722	0.08759
	A3	0.01596	0.01572	0.08069
	A3	0.03112	0.03043	0.09394
	A4	0.01781	0.01699	0.08290
	A4	0.03489	0.03378	0.09848
	B1	0.01116	0.01797	0.13292
	B1	0.01936	0.02607	0.14107

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)**	0.00159	0.00152	0.00151
	(A2 * A3 * A4 * B1 * X)	-0.00150	-0.00165	-0.00164
	(A2 * A3 * !A4 * B1 * X)	0.00144	0.00145	0.00144
	(A2 * A3 * !A4 * B1 * X)	-0.00168	-0.00169	-0.00168
	(A2 * A3 * !A4 * !B1 * !X)	0.00049	0.00049	0.00045
	(A2 * A3 * !A4 * !B1 * !X)	-0.00189	-0.00190	-0.00199
	(A2 * !A3 * B1 * X)	0.00143	0.00144	0.00143
	(A2 * !A3 * B1 * X)	-0.00168	-0.00169	-0.00168
	(A2 * !A3 * !B1 * !X)	0.00047	0.00048	0.00045
	(A2 * !A3 * !B1 * !X)	-0.00193	-0.00195	-0.00200
	(!A2 * B1 * X)	0.00146	0.00148	0.00147
	(!A2 * B1 * X)	-0.00168	-0.00169	-0.00168
	(!A2 * !B1 * !X)	0.00047	0.00048	0.00046
	(!A2 * !B1 * !X)	-0.00197	-0.00199	-0.00200
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00158	0.00151	0.00150
	(A2 * A3 * A4 * B1 * X)	-0.00150	-0.00165	-0.00165
	(A2 * A3 * !A4 * B1 * X)	0.00142	0.00143	0.00142
	(A2 * A3 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00169
	(A2 * A3 * !A4 * !B1 * !X)	0.00050	0.00050	0.00046
	(A2 * A3 * !A4 * !B1 * !X)	-0.00188	-0.00188	-0.00198
	(A2 * !A3 * B1 * X)	0.00143	0.00144	0.00144
	(A2 * !A3 * B1 * X)	-0.00169	-0.00169	-0.00169
	(A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00046
	(A2 * !A3 * !B1 * !X)	-0.00192	-0.00192	-0.00198
	(!A2 * B1 * X)	0.00145	0.00146	0.00145
	(!A2 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * !B1 * !X)	0.00050	0.00051	0.00049
	(!A2 * !B1 * !X)	-0.00196	-0.00197	-0.00199

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00331	0.00319	0.00317
	(A2 * A3 * A4 * B1 * X)	-0.00307	-0.00332	-0.00335
	(A2 * A3 * !A4 * B1 * X)	0.00298	0.00300	0.00299
	(A2 * A3 * !A4 * B1 * X)	-0.00344	-0.00346	-0.00344
	(A2 * A3 * !A4 * !B1 * !X)	0.00108	0.00109	0.00099
	(A2 * A3 * !A4 * !B1 * !X)	-0.00381	-0.00385	-0.00406
	(A2 * !A3 * B1 * X)	0.00299	0.00301	0.00299
	(A2 * !A3 * B1 * X)	-0.00345	-0.00345	-0.00344
	(A2 * !A3 * !B1 * !X)	0.00103	0.00104	0.00098
	(A2 * !A3 * !B1 * !X)	-0.00391	-0.00393	-0.00408
	(!A2 * B1 * X)	0.00304	0.00308	0.00305
	(!A2 * B1 * X)	-0.00343	-0.00347	-0.00344
	(!A2 * !B1 * !X)	0.00109	0.00110	0.00106
	(!A2 * !B1 * !X)	-0.00400	-0.00403	-0.00409

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)**	-0.00151	-0.00151	-0.00151
	(A2 * A3 * A4 * B1 * X)	0.00163	0.00165	0.00164
	(A2 * A3 * !A4 * B1 * X)	-0.00127	-0.00144	-0.00144
	(A2 * A3 * !A4 * B1 * X)	0.00168	0.00170	0.00169
	(A2 * A3 * !A4 * !B1 * !X)	-0.00045	-0.00045	-0.00044
	(A2 * A3 * !A4 * !B1 * !X)	0.00201	0.00202	0.00200
	(A2 * !A3 * B1 * X)	-0.00131	-0.00144	-0.00143
	(A2 * !A3 * B1 * X)	0.00168	0.00170	0.00169
	(A2 * !A3 * !B1 * !X)	-0.00045	-0.00045	-0.00044
	(A2 * !A3 * !B1 * !X)	0.00201	0.00202	0.00200
	(!A2 * B1 * X)	-0.00140	-0.00145	-0.00146
	(!A2 * B1 * X)	0.00168	0.00170	0.00169
	(!A2 * !B1 * !X)	-0.00045	-0.00046	-0.00045
	(!A2 * !B1 * !X)	0.00201	0.00202	0.00200
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00149	-0.00150	-0.00149
	(A2 * A3 * A4 * B1 * X)	0.00164	0.00165	0.00165
	(A2 * A3 * !A4 * B1 * X)	-0.00126	-0.00143	-0.00142
	(A2 * A3 * !A4 * B1 * X)	0.00169	0.00170	0.00170
	(A2 * A3 * !A4 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(A2 * A3 * !A4 * !B1 * !X)	0.00199	0.00201	0.00199
	(A2 * !A3 * B1 * X)	-0.00131	-0.00144	-0.00144
	(A2 * !A3 * B1 * X)	0.00169	0.00171	0.00170
	(A2 * !A3 * !B1 * !X)	-0.00046	-0.00047	-0.00046
	(A2 * !A3 * !B1 * !X)	0.00199	0.00201	0.00199
	(!A2 * B1 * X)	-0.00139	-0.00145	-0.00145
	(!A2 * B1 * X)	0.00170	0.00171	0.00170
	(!A2 * !B1 * !X)	-0.00048	-0.00048	-0.00047
	(!A2 * !B1 * !X)	0.00200	0.00201	0.00199

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00316	-0.00316	-0.00317
	(A2 * A3 * A4 * B1 * X)	0.00333	0.00332	0.00335
	(A2 * A3 * !A4 * B1 * X)	-0.00254	-0.00298	-0.00299
	(A2 * A3 * !A4 * B1 * X)	0.00346	0.00346	0.00345
	(A2 * A3 * !A4 * !B1 * !X)	-0.00099	-0.00101	-0.00099
	(A2 * A3 * !A4 * !B1 * !X)	0.00409	0.00414	0.00410
	(A2 * !A3 * B1 * X)	-0.00263	-0.00301	-0.00299
	(A2 * !A3 * B1 * X)	0.00346	0.00348	0.00345
	(A2 * !A3 * !B1 * !X)	-0.00100	-0.00101	-0.00098
	(A2 * !A3 * !B1 * !X)	0.00409	0.00414	0.00410
	(!A2 * B1 * X)	-0.00290	-0.00308	-0.00305
	(!A2 * B1 * X)	0.00344	0.00348	0.00345
	(!A2 * !B1 * !X)	-0.00104	-0.00104	-0.00103
	(!A2 * !B1 * !X)	0.00411	0.00414	0.00411

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)**	0.00161	0.00154	0.00154
	(A1 * A3 * A4 * B1 * X)	-0.00148	-0.00163	-0.00163
	(A1 * A3 * !A4 * B1 * X)	0.00145	0.00146	0.00144
	(A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(A1 * A3 * !A4 * !B1 * !X)	0.00061	0.00062	0.00062
	(A1 * A3 * !A4 * !B1 * !X)	-0.00167	-0.00169	-0.00167
	(A1 * !A3 * B1 * X)	0.00148	0.00149	0.00149
	(A1 * !A3 * B1 * X)	-0.00166	-0.00167	-0.00167
	(A1 * !A3 * !B1 * !X)	0.00063	0.00064	0.00064
	(A1 * !A3 * !B1 * !X)	-0.00167	-0.00169	-0.00167
	(!A1 * A3 * A4 * B1 * X)	0.00147	0.00148	0.00148
	(!A1 * A3 * A4 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * A3 * A4 * !B1 * !X)	0.00146	0.00147	0.00147
	(!A1 * A3 * A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(!A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00168	-0.00167
	(!A1 * A3 * !A4 * !B1 * !X)	0.00076	0.00076	0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00168	-0.00168	-0.00168
	(!A1 * !A3 * B1 * X)	0.00081	0.00082	0.00081
	(!A1 * !A3 * B1 * X)	-0.00167	-0.00167	-0.00167
	(!A1 * !A3 * !B1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00168

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00163	0.00156	0.00156
	(A1 * A3 * A4 * B1 * X)	-0.00148	-0.00164	-0.00163
	(A1 * A3 * !A4 * B1 * X)	0.00148	0.00148	0.00148
	(A1 * A3 * !A4 * B1 * X)	-0.00168	-0.00168	-0.00168
	(A1 * A3 * !A4 * !B1 * !X)	0.00062	0.00063	0.00064
	(A1 * A3 * !A4 * !B1 * !X)	-0.00168	-0.00170	-0.00168
	(A1 * !A3 * B1 * X)	0.00150	0.00150	0.00151
	(A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00168
	(A1 * !A3 * !B1 * !X)	0.00066	0.00067	0.00067
	(A1 * !A3 * !B1 * !X)	-0.00168	-0.00170	-0.00168
	(!A1 * A3 * A4 * B1 * X)	0.00149	0.00151	0.00150
	(!A1 * A3 * A4 * B1 * X)	-0.00167	-0.00169	-0.00168
	(!A1 * A3 * A4 * !B1 * !X)	0.00149	0.00150	0.00149
	(!A1 * A3 * A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * A3 * !A4 * B1 * X)	0.00083	0.00084	0.00083
	(!A1 * A3 * !A4 * B1 * X)	-0.00167	-0.00168	-0.00168
	(!A1 * A3 * !A4 * !B1 * !X)	0.00078	0.00078	0.00078
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A3 * B1 * X)	0.00086	0.00086	0.00086
	(!A1 * !A3 * B1 * X)	-0.00167	-0.00168	-0.00168
	(!A1 * !A3 * !B1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A3 * !B1 * !X)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00322	0.00311	0.00309
	(A1 * A3 * A4 * B1 * X)	-0.00301	-0.00330	-0.00329
	(A1 * A3 * !A4 * B1 * X)	0.00292	0.00292	0.00292
	(A1 * A3 * !A4 * B1 * X)	-0.00338	-0.00338	-0.00338
	(A1 * A3 * !A4 * !B1 * !X)	0.00119	0.00120	0.00121
	(A1 * A3 * !A4 * !B1 * !X)	-0.00337	-0.00341	-0.00338
	(A1 * !A3 * B1 * X)	0.00293	0.00294	0.00294
	(A1 * !A3 * B1 * X)	-0.00338	-0.00339	-0.00338
	(A1 * !A3 * !B1 * !X)	0.00121	0.00122	0.00123
	(A1 * !A3 * !B1 * !X)	-0.00337	-0.00339	-0.00338
	(!A1 * A3 * A4 * B1 * X)	0.00295	0.00299	0.00297
	(!A1 * A3 * A4 * B1 * X)	-0.00337	-0.00340	-0.00338
	(!A1 * A3 * A4 * !B1 * !X)	0.00295	0.00298	0.00296
	(!A1 * A3 * A4 * !B1 * !X)	-0.00337	-0.00339	-0.00338
	(!A1 * A3 * !A4 * B1 * X)	0.00159	0.00160	0.00160
	(!A1 * A3 * !A4 * B1 * X)	-0.00337	-0.00339	-0.00338
	(!A1 * A3 * !A4 * !B1 * !X)	0.00150	0.00151	0.00149
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00341	-0.00342	-0.00340
	(!A1 * !A3 * B1 * X)	0.00159	0.00159	0.00159
	(!A1 * !A3 * B1 * X)	-0.00339	-0.00339	-0.00338
	(!A1 * !A3 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * !A3 * !B1 * !X)	-0.00341	-0.00341	-0.00341

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)**	-0.00153	-0.00154	-0.00153
	(A1 * A3 * A4 * B1 * X)	0.00162	0.00163	0.00163
	(A1 * A3 * !A4 * B1 * X)	-0.00131	-0.00146	-0.00144
	(A1 * A3 * !A4 * B1 * X)	0.00167	0.00169	0.00168
	(A1 * A3 * !A4 * !B1 * !X)	-0.00060	-0.00060	-0.00061
	(A1 * A3 * !A4 * !B1 * !X)	0.00172	0.00173	0.00169
	(A1 * !A3 * B1 * X)	-0.00142	-0.00148	-0.00149
	(A1 * !A3 * B1 * X)	0.00166	0.00168	0.00168
	(A1 * !A3 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(A1 * !A3 * !B1 * !X)	0.00172	0.00172	0.00169
	(!A1 * A3 * A4 * B1 * X)	-0.00142	-0.00148	-0.00148
	(!A1 * A3 * A4 * B1 * X)	0.00167	0.00169	0.00168
	(!A1 * A3 * A4 * !B1 * !X)	-0.00134	-0.00147	-0.00147
	(!A1 * A3 * A4 * !B1 * !X)	0.00177	0.00170	0.00169
	(!A1 * A3 * !A4 * B1 * X)	-0.00082	-0.00082	-0.00082
	(!A1 * A3 * !A4 * B1 * X)	0.00167	0.00169	0.00168
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(!A1 * A3 * !A4 * !B1 * !X)	0.00173	0.00172	0.00169
	(!A1 * !A3 * B1 * X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A3 * B1 * X)	0.00168	0.00169	0.00168
	(!A1 * !A3 * !B1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A3 * !B1 * !X)	0.00177	0.00178	0.00171

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00155	-0.00155	-0.00155
	(A1 * A3 * A4 * B1 * X)	0.00162	0.00164	0.00163
	(A1 * A3 * !A4 * B1 * X)	-0.00132	-0.00147	-0.00148
	(A1 * A3 * !A4 * B1 * X)	0.00168	0.00170	0.00168
	(A1 * A3 * !A4 * !B1 * !X)	-0.00062	-0.00063	-0.00064
	(A1 * A3 * !A4 * !B1 * !X)	0.00173	0.00174	0.00170
	(A1 * !A3 * B1 * X)	-0.00143	-0.00150	-0.00151
	(A1 * !A3 * B1 * X)	0.00167	0.00169	0.00168
	(A1 * !A3 * !B1 * !X)	-0.00064	-0.00064	-0.00065
	(A1 * !A3 * !B1 * !X)	0.00173	0.00174	0.00170
	(!A1 * A3 * A4 * B1 * X)	-0.00144	-0.00151	-0.00150
	(!A1 * A3 * A4 * B1 * X)	0.00169	0.00170	0.00168
	(!A1 * A3 * A4 * !B1 * !X)	-0.00137	-0.00149	-0.00149
	(!A1 * A3 * A4 * !B1 * !X)	0.00178	0.00171	0.00169
	(!A1 * A3 * !A4 * B1 * X)	-0.00083	-0.00084	-0.00083
	(!A1 * A3 * !A4 * B1 * X)	0.00167	0.00170	0.00168
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00078	-0.00078	-0.00078
	(!A1 * A3 * !A4 * !B1 * !X)	0.00172	0.00172	0.00169
	(!A1 * !A3 * B1 * X)	-0.00086	-0.00086	-0.00086
	(!A1 * !A3 * B1 * X)	0.00169	0.00170	0.00168
	(!A1 * !A3 * !B1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A3 * !B1 * !X)	0.00177	0.00178	0.00171

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00308	-0.00310	-0.00308
	(A1 * A3 * A4 * B1 * X)	0.00327	0.00331	0.00329
	(A1 * A3 * !A4 * B1 * X)	-0.00254	-0.00292	-0.00292
	(A1 * A3 * !A4 * B1 * X)	0.00339	0.00341	0.00339
	(A1 * A3 * !A4 * !B1 * !X)	-0.00113	-0.00114	-0.00116
	(A1 * A3 * !A4 * !B1 * !X)	0.00349	0.00351	0.00342
	(A1 * !A3 * B1 * X)	-0.00282	-0.00294	-0.00294
	(A1 * !A3 * B1 * X)	0.00340	0.00341	0.00339
	(A1 * !A3 * !B1 * !X)	-0.00116	-0.00117	-0.00119
	(A1 * !A3 * !B1 * !X)	0.00349	0.00350	0.00342
	(!A1 * A3 * A4 * B1 * X)	-0.00283	-0.00299	-0.00297
	(!A1 * A3 * A4 * B1 * X)	0.00339	0.00342	0.00339
	(!A1 * A3 * A4 * !B1 * !X)	-0.00259	-0.00298	-0.00296
	(!A1 * A3 * A4 * !B1 * !X)	0.00367	0.00342	0.00339
	(!A1 * A3 * !A4 * B1 * X)	-0.00159	-0.00160	-0.00160
	(!A1 * A3 * !A4 * B1 * X)	0.00338	0.00343	0.00340
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00150	-0.00151	-0.00149
	(!A1 * A3 * !A4 * !B1 * !X)	0.00348	0.00345	0.00341
	(!A1 * !A3 * B1 * X)	-0.00159	-0.00159	-0.00159
	(!A1 * !A3 * B1 * X)	0.00339	0.00343	0.00340
	(!A1 * !A3 * !B1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * !X)	0.00354	0.00359	0.00345

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)**	0.00159	0.00152	0.00151
	(A1 * A2 * A4 * B1 * X)	-0.00150	-0.00166	-0.00166
	(A1 * A2 * !A4 * B1 * X)	0.00144	0.00145	0.00145
	(A1 * A2 * !A4 * B1 * X)	-0.00170	-0.00171	-0.00171
	(A1 * A2 * !A4 * !B1 * !X)	0.00065	0.00065	0.00065
	(A1 * A2 * !A4 * !B1 * !X)	-0.00168	-0.00170	-0.00168
	(A1 * !A2 * A4 * !B1 * !X)	0.00145	0.00147	0.00146
	(A1 * !A2 * A4 * !B1 * !X)	-0.00170	-0.00171	-0.00171
	(A1 * !A2 * !A4 * !B1 * !X)	0.00076	0.00076	0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00171	-0.00172	-0.00171
	(!A2 * A4 * B1 * X)	0.00145	0.00147	0.00146
	(!A2 * A4 * B1 * X)	-0.00170	-0.00171	-0.00171
	(!A2 * !A4 * B1 * X)	0.00081	0.00082	0.00082
	(!A2 * !A4 * B1 * X)	-0.00170	-0.00171	-0.00171
	(!A1 * A2 * A4 * B1 * X)	0.00140	0.00142	0.00141
	(!A1 * A2 * A4 * B1 * X)	-0.00170	-0.00172	-0.00171
	(!A1 * A2 * A4 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * A2 * A4 * !B1 * !X)	-0.00171	-0.00171	-0.00171
	(!A1 * A2 * !A4 * B1 * X)	0.00080	0.00080	0.00080
	(!A1 * A2 * !A4 * B1 * X)	-0.00170	-0.00171	-0.00171
	(!A1 * A2 * !A4 * !B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * A4 * !B1 * !X)	0.00145	0.00146	0.00146
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00170	-0.00171	-0.00171
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00079	0.00081	0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00170	-0.00172	-0.00171

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00166	0.00159	0.00158
	(A1 * A2 * A4 * B1 * X)	-0.00149	-0.00165	-0.00164
	(A1 * A2 * !A4 * B1 * X)	0.00150	0.00152	0.00151
	(A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00169
	(A1 * A2 * !A4 * !B1 * !X)	0.00068	0.00068	0.00068
	(A1 * A2 * !A4 * !B1 * !X)	-0.00169	-0.00169	-0.00168
	(A1 * !A2 * A4 * !B1 * !X)	0.00152	0.00154	0.00153
	(A1 * !A2 * A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * !A4 * !B1 * !X)	0.00077	0.00078	0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00169	-0.00171	-0.00169
	(!A2 * A4 * B1 * X)	0.00152	0.00153	0.00153
	(!A2 * A4 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A2 * !A4 * B1 * X)	0.00083	0.00084	0.00083
	(!A2 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * A4 * B1 * X)	0.00150	0.00150	0.00150
	(!A1 * A2 * A4 * B1 * X)	-0.00169	-0.00169	-0.00169
	(!A1 * A2 * A4 * !B1 * !X)	0.00151	0.00152	0.00151
	(!A1 * A2 * A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * !A4 * B1 * X)	0.00084	0.00085	0.00085
	(!A1 * A2 * !A4 * B1 * X)	-0.00169	-0.00170	-0.00169
	(!A1 * A2 * !A4 * !B1 * !X)	0.00078	0.00079	0.00079
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * A4 * !B1 * !X)	0.00152	0.00154	0.00153
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00169	-0.00170	-0.00169

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00330	0.00315	0.00315
	(A1 * A2 * A4 * B1 * X)	-0.00305	-0.00333	-0.00333
	(A1 * A2 * !A4 * B1 * X)	0.00302	0.00303	0.00302
	(A1 * A2 * !A4 * B1 * X)	-0.00343	-0.00344	-0.00343
	(A1 * A2 * !A4 * !B1 * !X)	0.00128	0.00130	0.00128
	(A1 * A2 * !A4 * !B1 * !X)	-0.00338	-0.00341	-0.00336
	(A1 * !A2 * A4 * !B1 * !X)	0.00302	0.00305	0.00303
	(A1 * !A2 * A4 * !B1 * !X)	-0.00342	-0.00344	-0.00343
	(A1 * !A2 * !A4 * !B1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00343	-0.00345	-0.00343
	(!A2 * A4 * B1 * X)	0.00303	0.00305	0.00304
	(!A2 * A4 * B1 * X)	-0.00342	-0.00344	-0.00343
	(!A2 * !A4 * B1 * X)	0.00162	0.00161	0.00162
	(!A2 * !A4 * B1 * X)	-0.00343	-0.00342	-0.00343
	(!A1 * A2 * A4 * B1 * X)	0.00302	0.00303	0.00302
	(!A1 * A2 * A4 * B1 * X)	-0.00344	-0.00343	-0.00343
	(!A1 * A2 * A4 * !B1 * !X)	0.00300	0.00302	0.00300
	(!A1 * A2 * A4 * !B1 * !X)	-0.00344	-0.00342	-0.00343
	(!A1 * A2 * !A4 * B1 * X)	0.00163	0.00163	0.00163
	(!A1 * A2 * !A4 * B1 * X)	-0.00343	-0.00344	-0.00343
	(!A1 * A2 * !A4 * !B1 * !X)	0.00149	0.00151	0.00150
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00344	-0.00346	-0.00345
	(!A1 * !A2 * A4 * !B1 * !X)	0.00301	0.00304	0.00303
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00342	-0.00344	-0.00343
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00343	-0.00345	-0.00344

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)**	-0.00150	-0.00151	-0.00151
	(A1 * A2 * A4 * B1 * X)	0.00165	0.00166	0.00166
	(A1 * A2 * !A4 * B1 * X)	-0.00140	-0.00145	-0.00145
	(A1 * A2 * !A4 * B1 * X)	0.00172	0.00173	0.00171
	(A1 * A2 * !A4 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !A4 * !B1 * !X)	0.00175	0.00176	0.00172
	(A1 * !A2 * A4 * !B1 * !X)	-0.00138	-0.00147	-0.00146
	(A1 * !A2 * A4 * !B1 * !X)	0.00170	0.00173	0.00171
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00076	-0.00076	-0.00076
	(A1 * !A2 * !A4 * !B1 * !X)	0.00177	0.00178	0.00173
	(!A2 * A4 * B1 * X)	-0.00140	-0.00145	-0.00146
	(!A2 * A4 * B1 * X)	0.00171	0.00172	0.00171
	(!A2 * !A4 * B1 * X)	-0.00081	-0.00082	-0.00082
	(!A2 * !A4 * B1 * X)	0.00172	0.00173	0.00171
	(!A1 * A2 * A4 * B1 * X)	-0.00130	-0.00142	-0.00141
	(!A1 * A2 * A4 * B1 * X)	0.00171	0.00172	0.00171
	(!A1 * A2 * A4 * !B1 * !X)	-0.00130	-0.00142	-0.00141
	(!A1 * A2 * A4 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A1 * A2 * !A4 * B1 * X)	-0.00080	-0.00080	-0.00080
	(!A1 * A2 * !A4 * B1 * X)	0.00170	0.00173	0.00171
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * A2 * !A4 * !B1 * !X)	0.00170	0.00172	0.00171
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00139	-0.00146	-0.00146
	(!A1 * !A2 * A4 * !B1 * !X)	0.00171	0.00173	0.00171
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00079	-0.00081	-0.00080
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00172	0.00173	0.00171

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00157	-0.00158	-0.00157
	(A1 * A2 * A4 * B1 * X)	0.00164	0.00165	0.00164
	(A1 * A2 * !A4 * B1 * X)	-0.00147	-0.00152	-0.00151
	(A1 * A2 * !A4 * B1 * X)	0.00170	0.00171	0.00170
	(A1 * A2 * !A4 * !B1 * !X)	-0.00065	-0.00065	-0.00066
	(A1 * A2 * !A4 * !B1 * !X)	0.00174	0.00175	0.00171
	(A1 * !A2 * A4 * !B1 * !X)	-0.00145	-0.00154	-0.00153
	(A1 * !A2 * A4 * !B1 * !X)	0.00169	0.00171	0.00170
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00077	-0.00078	-0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	0.00176	0.00177	0.00172
	(!A2 * A4 * B1 * X)	-0.00146	-0.00152	-0.00153
	(!A2 * A4 * B1 * X)	0.00169	0.00170	0.00170
	(!A2 * !A4 * B1 * X)	-0.00083	-0.00084	-0.00083
	(!A2 * !A4 * B1 * X)	0.00170	0.00171	0.00170
	(!A1 * A2 * A4 * B1 * X)	-0.00137	-0.00150	-0.00150
	(!A1 * A2 * A4 * B1 * X)	0.00169	0.00171	0.00170
	(!A1 * A2 * A4 * !B1 * !X)	-0.00137	-0.00150	-0.00151
	(!A1 * A2 * A4 * !B1 * !X)	0.00169	0.00170	0.00170
	(!A1 * A2 * !A4 * B1 * X)	-0.00084	-0.00085	-0.00085
	(!A1 * A2 * !A4 * B1 * X)	0.00169	0.00171	0.00170
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00078	-0.00079	-0.00079
	(!A1 * A2 * !A4 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00146	-0.00154	-0.00153
	(!A1 * !A2 * A4 * !B1 * !X)	0.00169	0.00171	0.00170
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00170	0.00171	0.00170

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00315	-0.00315	-0.00315
	(A1 * A2 * A4 * B1 * X)	0.00333	0.00334	0.00333
	(A1 * A2 * !A4 * B1 * X)	-0.00286	-0.00303	-0.00302
	(A1 * A2 * !A4 * B1 * X)	0.00343	0.00346	0.00344
	(A1 * A2 * !A4 * !B1 * !X)	-0.00118	-0.00120	-0.00121
	(A1 * A2 * !A4 * !B1 * !X)	0.00352	0.00357	0.00348
	(A1 * !A2 * A4 * !B1 * !X)	-0.00283	-0.00302	-0.00302
	(A1 * !A2 * A4 * !B1 * !X)	0.00343	0.00347	0.00344
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00148	-0.00149	-0.00148
	(A1 * !A2 * !A4 * !B1 * !X)	0.00355	0.00358	0.00347
	(!A2 * A4 * B1 * X)	-0.00287	-0.00302	-0.00302
	(!A2 * A4 * B1 * X)	0.00343	0.00347	0.00344
	(!A2 * !A4 * B1 * X)	-0.00162	-0.00161	-0.00162
	(!A2 * !A4 * B1 * X)	0.00343	0.00347	0.00345
	(!A1 * A2 * A4 * B1 * X)	-0.00270	-0.00297	-0.00300
	(!A1 * A2 * A4 * B1 * X)	0.00345	0.00347	0.00344
	(!A1 * A2 * A4 * !B1 * !X)	-0.00269	-0.00292	-0.00299
	(!A1 * A2 * A4 * !B1 * !X)	0.00346	0.00342	0.00344
	(!A1 * A2 * !A4 * B1 * X)	-0.00163	-0.00163	-0.00163
	(!A1 * A2 * !A4 * B1 * X)	0.00343	0.00347	0.00345
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00149	-0.00151	-0.00150
	(!A1 * A2 * !A4 * !B1 * !X)	0.00345	0.00348	0.00346
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00285	-0.00302	-0.00302
	(!A1 * !A2 * A4 * !B1 * !X)	0.00343	0.00347	0.00344
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00343	0.00348	0.00345

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)**	0.00169	0.00161	0.00161
	(A1 * A2 * A3 * B1 * X)	-0.00151	-0.00165	-0.00165
	(A1 * A2 * !A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * A2 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * A3 * !B1 * !X)	0.00152	0.00152	0.00151
	(A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(A1 * !A2 * !A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A3 * B1 * X)	0.00156	0.00157	0.00156
	(!A3 * B1 * X)	-0.00170	-0.00171	-0.00170
	(!A2 * A3 * B1 * X)	0.00153	0.00154	0.00154
	(!A2 * A3 * B1 * X)	-0.00169	-0.00170	-0.00170
	(!A1 * A2 * A3 * B1 * X)	0.00151	0.00151	0.00151
	(!A1 * A2 * A3 * B1 * X)	-0.00170	-0.00170	-0.00170
	(!A1 * A2 * A3 * !B1 * !X)	0.00151	0.00150	0.00150
	(!A1 * A2 * A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A3 * !B1 * !X)	0.00156	0.00156	0.00156
	(!A1 * !A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	0.00154	0.00156	0.00155
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00169	-0.00171	-0.00170

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00168	0.00161	0.00160
	(A1 * A2 * A3 * B1 * X)	-0.00151	-0.00166	-0.00165
	(A1 * A2 * !A3 * !B1 * !X)	0.00154	0.00155	0.00154
	(A1 * A2 * !A3 * !B1 * !X)	-0.00169	-0.00171	-0.00170
	(A1 * !A2 * A3 * !B1 * !X)	0.00153	0.00155	0.00154
	(A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * !A3 * !B1 * !X)	0.00154	0.00155	0.00154
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A3 * B1 * X)	0.00153	0.00155	0.00154
	(!A3 * B1 * X)	-0.00169	-0.00170	-0.00170
	(!A2 * A3 * B1 * X)	0.00151	0.00153	0.00152
	(!A2 * A3 * B1 * X)	-0.00169	-0.00171	-0.00170
	(!A1 * A2 * A3 * B1 * X)	0.00149	0.00150	0.00149
	(!A1 * A2 * A3 * B1 * X)	-0.00170	-0.00171	-0.00170
	(!A1 * A2 * A3 * !B1 * !X)	0.00150	0.00150	0.00149
	(!A1 * A2 * A3 * !B1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A3 * !B1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * A3 * !B1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00323	0.00312	0.00312
	(A1 * A2 * A3 * B1 * X)	-0.00303	-0.00325	-0.00325
	(A1 * A2 * !A3 * !B1 * !X)	0.00296	0.00299	0.00297
	(A1 * A2 * !A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334
	(A1 * !A2 * A3 * !B1 * !X)	0.00294	0.00298	0.00296
	(A1 * !A2 * A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334
	(A1 * !A2 * !A3 * !B1 * !X)	0.00296	0.00299	0.00297
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334
	(!A3 * B1 * X)	0.00298	0.00300	0.00299
	(!A3 * B1 * X)	-0.00334	-0.00335	-0.00334
	(!A2 * A3 * B1 * X)	0.00294	0.00296	0.00296
	(!A2 * A3 * B1 * X)	-0.00333	-0.00334	-0.00334
	(!A1 * A2 * A3 * B1 * X)	0.00294	0.00296	0.00294
	(!A1 * A2 * A3 * B1 * X)	-0.00334	-0.00335	-0.00334
	(!A1 * A2 * A3 * !B1 * !X)	0.00294	0.00295	0.00294
	(!A1 * A2 * A3 * !B1 * !X)	-0.00334	-0.00335	-0.00334
	(!A1 * !A3 * !B1 * !X)	0.00296	0.00299	0.00297
	(!A1 * !A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334
	(!A1 * !A2 * A3 * !B1 * !X)	0.00294	0.00298	0.00296
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00333	-0.00335	-0.00334

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__a41o_1	**(A1 * A2 * A3 * B1 * X)**	-0.00160	-0.00161	-0.00161
	(A1 * A2 * A3 * B1 * X)	0.00164	0.00166	0.00165
	(A1 * A2 * !A3 * !B1 * !X)	-0.00151	-0.00157	-0.00156
	(A1 * A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(A1 * !A2 * A3 * !B1 * !X)	-0.00145	-0.00152	-0.00151
	(A1 * !A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00151	-0.00157	-0.00156
	(A1 * !A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A3 * B1 * X)	-0.00151	-0.00155	-0.00156
	(!A3 * B1 * X)	0.00171	0.00171	0.00171
	(!A2 * A3 * B1 * X)	-0.00145	-0.00154	-0.00154
	(!A2 * A3 * B1 * X)	0.00170	0.00172	0.00171
	(!A1 * A2 * A3 * B1 * X)	-0.00141	-0.00151	-0.00151
	(!A1 * A2 * A3 * B1 * X)	0.00170	0.00172	0.00171
	(!A1 * A2 * A3 * !B1 * !X)	-0.00141	-0.00150	-0.00150
	(!A1 * A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00151	-0.00156	-0.00156
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00145	-0.00156	-0.00155
	(!A1 * !A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00159	-0.00160	-0.00159
	(A1 * A2 * A3 * B1 * X)	0.00164	0.00166	0.00165
	(A1 * A2 * !A3 * !B1 * !X)	-0.00149	-0.00155	-0.00154
	(A1 * A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(A1 * !A2 * A3 * !B1 * !X)	-0.00143	-0.00155	-0.00153
	(A1 * !A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00149	-0.00155	-0.00154
	(A1 * !A2 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A3 * B1 * X)	-0.00150	-0.00154	-0.00154
	(!A3 * B1 * X)	0.00171	0.00171	0.00171
	(!A2 * A3 * B1 * X)	-0.00143	-0.00153	-0.00152
	(!A2 * A3 * B1 * X)	0.00170	0.00172	0.00171
	(!A1 * A2 * A3 * B1 * X)	-0.00140	-0.00150	-0.00149
	(!A1 * A2 * A3 * B1 * X)	0.00170	0.00172	0.00171
	(!A1 * A2 * A3 * !B1 * !X)	-0.00140	-0.00150	-0.00149
	(!A1 * A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171
	(!A1 * !A3 * !B1 * !X)	-0.00149	-0.00155	-0.00154
	(!A1 * !A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00143	-0.00155	-0.00153
	(!A1 * !A2 * A3 * !B1 * !X)	0.00170	0.00172	0.00171

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00311	-0.00311	-0.00311
	(A1 * A2 * A3 * B1 * X)	0.00325	0.00325	0.00325
	(A1 * A2 * !A3 * !B1 * !X)	-0.00284	-0.00299	-0.00297
	(A1 * A2 * !A3 * !B1 * !X)	0.00334	0.00338	0.00335
	(A1 * !A2 * A3 * !B1 * !X)	-0.00272	-0.00292	-0.00296
	(A1 * !A2 * A3 * !B1 * !X)	0.00336	0.00336	0.00335
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00286	-0.00299	-0.00297
	(A1 * !A2 * !A3 * !B1 * !X)	0.00334	0.00338	0.00335
	(!A3 * B1 * X)	-0.00287	-0.00298	-0.00299
	(!A3 * B1 * X)	0.00334	0.00335	0.00335
	(!A2 * A3 * B1 * X)	-0.00273	-0.00293	-0.00296
	(!A2 * A3 * B1 * X)	0.00336	0.00338	0.00335
	(!A1 * A2 * A3 * B1 * X)	-0.00268	-0.00291	-0.00294
	(!A1 * A2 * A3 * B1 * X)	0.00336	0.00336	0.00335
	(!A1 * A2 * A3 * !B1 * !X)	-0.00267	-0.00291	-0.00294
	(!A1 * A2 * A3 * !B1 * !X)	0.00336	0.00336	0.00335
	(!A1 * !A3 * !B1 * !X)	-0.00286	-0.00299	-0.00297
	(!A1 * !A3 * !B1 * !X)	0.00334	0.00338	0.00335
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00272	-0.00292	-0.00296
	(!A1 * !A2 * A3 * !B1 * !X)	0.00336	0.00336	0.00335

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)**	0.00182	0.00183	0.00182
	(A1 * A2 * A3 * A4 * X)	-0.00082	-0.00082	-0.00081
sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * A4 * X)**	0.00184	0.00185	0.00184
	(A1 * A2 * A3 * A4 * X)	-0.00084	-0.00084	-0.00083
sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * A4 * X)**	0.00344	0.00348	0.00345
	(A1 * A2 * A3 * A4 * X)	-0.00170	-0.00172	-0.00171

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)	-0.00166	-0.00168	-0.00180
	(A1 * A2 * A3 * A4 * X)	0.00092	0.00093	0.00084
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00168	-0.00170	-0.00182
	(A1 * A2 * A3 * A4 * X)	0.00094	0.00095	0.00085
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00314	-0.00316	-0.00341
	(A1 * A2 * A3 * A4 * X)	0.00195	0.00195	0.00176

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2b_1	11.18880
sky130_fd_sc_hs__and2b_2	11.18880
sky130_fd_sc_hs__and2b_4	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	X
sky130_fd_sc_hs__and2b_1	0.00249	0.00234	1.44382
sky130_fd_sc_hs__and2b_2	0.00223	0.00269	2.35606
sky130_fd_sc_hs__and2b_4	0.00247	0.00490	5.12893

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.52040	0.94508
sky130_fd_sc_hs__and2b_2	0.00000	0.38786	0.59847
sky130_fd_sc_hs__and2b_4	0.00000	0.72047	1.89239

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)	0.08165	0.64239	8.29761
	B->X (RR)	0.04669	0.41647	5.46442
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.09045	0.58731	8.23866
	B->X (RR)	0.04942	0.35801	5.16492
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.08938	0.51327	8.31087
	B->X (RR)	0.05009	0.28173	5.41691

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)	0.06890	0.22216	1.56070
	B->X (FF)	0.05479	0.42421	4.71091
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.07729	0.18955	1.24301
	B->X (FF)	0.06222	0.40727	4.33252
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.07614	0.16816	1.37784
	B->X (FF)	0.06332	0.39264	4.79960

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	0.00588	0.00992	0.08669
	A_N	0.00949	0.01356	0.09032
	B	0.00767	0.00966	0.06699
	B	0.00406	0.00606	0.06368
sky130_fd_sc_hs__and2b_2	A_N	0.00916	0.01322	0.08818
	A_N	0.01241	0.01645	0.09155
	B	0.01064	0.01205	0.04850
	B	0.00642	0.00790	0.04430
sky130_fd_sc_hs__and2b_4	A_N	0.01727	0.02251	0.10873
	A_N	0.02067	0.02595	0.11217
	B	0.02025	0.02480	0.14964
	B	0.01280	0.01738	0.14311

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.01064	0.01359	0.08938
	A_N	0.00703	0.00995	0.08558
	B	0.00335	0.00735	0.06790
	B	0.00694	0.01080	0.06981
sky130_fd_sc_hs__and2b_2	A_N	0.01316	0.01598	0.08514
	A_N	0.00991	0.01273	0.08181
	B	0.00566	0.00922	0.06343
	B	0.00986	0.01337	0.06669
sky130_fd_sc_hs__and2b_4	A_N	0.02056	0.02465	0.11220
	A_N	0.01714	0.02121	0.10831
	B	0.01144	0.01924	0.15325
	B	0.01887	0.02656	0.15787

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00604	0.00911	0.07982
	(!B * !X)	0.00202	0.00506	0.07579
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00586	0.00891	0.07812
	(!B * !X)	0.00211	0.00513	0.07436
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00727	0.01066	0.08696
	(!B * !X)	0.00300	0.00638	0.08269

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	-0.00017	0.00388	0.07445
	(!B * !X)	0.00388	0.00794	0.07850
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00010	0.00424	0.07310
	(!B * !X)	0.00387	0.00801	0.07686
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00037	0.00414	0.07991
	(!B * !X)	0.00466	0.00843	0.08420

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00141	0.00142	0.00141
	(A_N * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00170	0.00172	0.00171
	(A_N * !X)	-0.00181	-0.00183	-0.00182
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00301	0.00306	0.00303
	(A_N * !X)	-0.00326	-0.00329	-0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00134	-0.00140	-0.00140
	(A_N * !X)	0.00170	0.00166	0.00163
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00164	-0.00171	-0.00170
	(A_N * !X)	0.00189	0.00185	0.00184
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00289	-0.00302	-0.00301
	(A_N * !X)	0.00335	0.00332	0.00329

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and2_1	7.99200
sky130_fd_sc_hs__and2_2	7.99200
sky130_fd_sc_hs__and2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__and2_1	0.00239	0.00234	1.40064
sky130_fd_sc_hs__and2_2	0.00258	0.00285	2.62500
sky130_fd_sc_hs__and2_4	0.00422	0.00470	5.24406

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.28416	0.94418
sky130_fd_sc_hs__and2_2	0.00000	0.15162	0.22694
sky130_fd_sc_hs__and2_4	0.00000	0.66322	1.89037

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)	0.04335	0.42099	5.65059
	B->X (RR)	0.04694	0.42260	5.44306
sky130_fd_sc_hs__and2_2	A->X (RR)	0.04474	0.35036	5.46937
	B->X (RR)	0.04855	0.35067	5.28721
sky130_fd_sc_hs__and2_4	A->X (RR)	0.04413	0.27807	5.60531
	B->X (RR)	0.05002	0.28453	5.51166

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.04949	0.40570	4.60263
	B->X (FF)	0.05655	0.42607	4.66310
sky130_fd_sc_hs__and2_2	A->X (FF)	0.05298	0.39106	4.48216
	B->X (FF)	0.06066	0.41086	4.56722
sky130_fd_sc_hs__and2_4	A->X (FF)	0.05799	0.37671	4.80257
	B->X (FF)	0.06468	0.39154	4.80427

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00706	0.01031	0.08375
	A	0.00313	0.00639	0.08004
	B	0.00780	0.00950	0.06101
	B	0.00314	0.00485	0.05665
sky130_fd_sc_hs__and2_2	A	0.00964	0.01219	0.07995
	A	0.00538	0.00800	0.07633
	B	0.01094	0.01228	0.05793
	B	0.00547	0.00686	0.05284
sky130_fd_sc_hs__and2_4	A	0.01782	0.02446	0.17282
	A	0.01107	0.01777	0.16713
	B	0.02034	0.02522	0.15185
	B	0.01102	0.01594	0.14370

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00262	0.00670	0.06713
	A	0.00654	0.01059	0.07043
	B	0.00328	0.00705	0.06334
	B	0.00790	0.01152	0.06792
sky130_fd_sc_hs__and2_2	A	0.00549	0.00936	0.06489
	A	0.00973	0.01351	0.06907
	B	0.00577	0.00910	0.06383
	B	0.01119	0.01451	0.06734
sky130_fd_sc_hs__and2_4	A	0.01067	0.01876	0.16024
	A	0.01741	0.02545	0.16285
	B	0.01118	0.01968	0.15637
	B	0.02040	0.02880	0.16311

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00075	0.00076	0.00074
	(!B * !X)	-0.00172	-0.00174	-0.00175
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00053	0.00053	0.00051
	(!B * !X)	-0.00202	-0.00202	-0.00204
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00079	0.00080	0.00076
	(!B * !X)	-0.00334	-0.00337	-0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00073	-0.00074	-0.00073
	(!B * !X)	0.00174	0.00177	0.00175
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00051	-0.00051	-0.00050
	(!B * !X)	0.00205	0.00206	0.00204
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00075	-0.00075	-0.00074
	(!B * !X)	0.00341	0.00343	0.00341

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00124	0.00125	0.00124
	(!A * !X)	-0.00163	-0.00164	-0.00164
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00142	0.00143	0.00143
	(!A * !X)	-0.00197	-0.00198	-0.00197
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00290	0.00292	0.00291
	(!A * !X)	-0.00302	-0.00303	-0.00302

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00118	-0.00124	-0.00124
	(!A * !X)	0.00169	0.00165	0.00164
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00135	-0.00143	-0.00143
	(!A * !X)	0.00204	0.00201	0.00198
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00278	-0.00292	-0.00291
	(!A * !X)	0.00313	0.00305	0.00304

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3b_1	12.78720
sky130_fd_sc_hs__and3b_2	14.38560
sky130_fd_sc_hs__and3b_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	X
sky130_fd_sc_hs__and3b_1	0.00218	0.00229	0.00228	1.38975
sky130_fd_sc_hs__and3b_2	0.00225	0.00273	0.00261	2.35552
sky130_fd_sc_hs__and3b_4	0.00250	0.00466	0.00480	5.14630

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3b_1	0.00000	0.46896	1.41666
sky130_fd_sc_hs__and3b_2	0.00000	0.38919	0.59847
sky130_fd_sc_hs__and3b_4	0.00000	0.36374	0.68083

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)	0.08950	0.65825	8.30923
	B->X (RR)	0.05825	0.45395	5.67972
	C->X (RR)	0.06141	0.44619	5.48280
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.09957	0.59681	8.19601
	B->X (RR)	0.06236	0.39532	5.52116
	C->X (RR)	0.06575	0.38500	5.24784
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.11108	0.54851	8.42797
	B->X (RR)	0.07485	0.34475	5.86343
	C->X (RR)	0.07763	0.31876	5.62518

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)	0.07289	0.21609	1.39471
	B->X (FF)	0.06237	0.43395	4.60384
	C->X (FF)	0.06584	0.44429	4.65282
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.07630	0.18305	1.02302
	B->X (FF)	0.06371	0.40680	4.18274
	C->X (FF)	0.07188	0.42858	4.29524
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.07473	0.16596	1.33688
	B->X (FF)	0.06119	0.38229	4.55446
	C->X (FF)	0.06487	0.39642	4.71187

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00733	0.01141	0.08817
	A_N	0.01028	0.01437	0.09114
	B	0.00863	0.01075	0.07706
	B	0.00494	0.00708	0.07354
	C	0.00959	0.01094	0.06165
	C	0.00507	0.00644	0.05742
sky130_fd_sc_hs__and3b_2	A_N	0.01042	0.01454	0.08831
	A_N	0.01355	0.01766	0.09161
	B	0.01202	0.01354	0.07408
	B	0.00773	0.00925	0.07036
	C	0.01310	0.01395	0.04845
	C	0.00791	0.00879	0.04361
sky130_fd_sc_hs__and3b_4	A_N	0.01921	0.02404	0.10873
	A_N	0.02222	0.02713	0.11188
	B	0.02228	0.02512	0.14240
	B	0.01468	0.01757	0.13503
	C	0.02441	0.02724	0.14231
	C	0.01477	0.01766	0.13367

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00997	0.01333	0.09005
	A_N	0.00700	0.01032	0.08702
	B	0.00352	0.00736	0.06890
	B	0.00718	0.01088	0.07204
	C	0.00378	0.00735	0.06813
	C	0.00822	0.01161	0.07196
sky130_fd_sc_hs__and3b_2	A_N	0.01290	0.01613	0.09039
	A_N	0.00977	0.01301	0.08721
	B	0.00582	0.00929	0.06585
	B	0.01008	0.01348	0.06939
	C	0.00623	0.00907	0.06117
	C	0.01133	0.01402	0.06592
sky130_fd_sc_hs__and3b_4	A_N	0.02159	0.02535	0.11081
	A_N	0.01857	0.02231	0.10734
	B	0.01261	0.01907	0.13136
	B	0.02015	0.02653	0.13762
	C	0.01309	0.01944	0.13981
	C	0.02257	0.02884	0.14916

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)	0.00523	0.00858	0.07968
	(B * !C * !X)	0.00162	0.00496	0.07606
	(!B * !X)	0.00522	0.00857	0.07965
	(!B * !X)	0.00162	0.00496	0.07606
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00568	0.00880	0.07818
	(B * !C * !X)	0.00193	0.00502	0.07442
	(!B * !X)	0.00567	0.00878	0.07816
	(!B * !X)	0.00193	0.00502	0.07441
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00773	0.01106	0.08728
	(B * !C * !X)	0.00360	0.00692	0.08314
	(!B * !X)	0.00769	0.01102	0.08723
	(!B * !X)	0.00360	0.00692	0.08314

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)	-0.00011	0.00422	0.07493
	(B * !C * !X)	0.00355	0.00789	0.07860
	(!B * !X)	-0.00012	0.00423	0.07495
	(!B * !X)	0.00348	0.00784	0.07856
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00001	0.00414	0.07316
	(B * !C * !X)	0.00385	0.00799	0.07698
	(!B * !X)	0.00000	0.00414	0.07318
	(!B * !X)	0.00376	0.00791	0.07693
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00024	0.00392	0.07950
	(B * !C * !X)	0.00451	0.00819	0.08376
	(!B * !X)	0.00028	0.00396	0.07958
	(!B * !X)	0.00438	0.00807	0.08368

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)	0.00141	0.00143	0.00142
	(A_N * C * !X)	-0.00148	-0.00150	-0.00149
	(A_N * !C * !X)	0.00083	0.00083	0.00083
	(A_N * !C * !X)	-0.00149	-0.00150	-0.00150
	(!A_N * !C * !X)	0.00050	0.00051	0.00050
	(!A_N * !C * !X)	-0.00173	-0.00174	-0.00173
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00173	0.00175	0.00174
	(A_N * C * !X)	-0.00176	-0.00178	-0.00176
	(A_N * !C * !X)	0.00104	0.00106	0.00105
	(A_N * !C * !X)	-0.00176	-0.00178	-0.00177
	(!A_N * !C * !X)	0.00068	0.00068	0.00067
	(!A_N * !C * !X)	-0.00203	-0.00204	-0.00204
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00277	0.00280	0.00278
	(A_N * C * !X)	-0.00337	-0.00338	-0.00336
	(A_N * !C * !X)	0.00157	0.00158	0.00157
	(A_N * !C * !X)	-0.00341	-0.00343	-0.00340
	(!A_N * !C * !X)	0.00110	0.00111	0.00111
	(!A_N * !C * !X)	-0.00362	-0.00364	-0.00364

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)	-0.00131	-0.00142	-0.00141
	(A_N * C * !X)	0.00158	0.00151	0.00150
	(A_N * !C * !X)	-0.00083	-0.00083	-0.00083
	(A_N * !C * !X)	0.00158	0.00159	0.00153
	(!A_N * !C * !X)	-0.00048	-0.00049	-0.00049
	(!A_N * !C * !X)	0.00175	0.00177	0.00174
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00163	-0.00173	-0.00172
	(A_N * C * !X)	0.00185	0.00180	0.00178
	(A_N * !C * !X)	-0.00104	-0.00106	-0.00105
	(A_N * !C * !X)	0.00186	0.00187	0.00180
	(!A_N * !C * !X)	-0.00065	-0.00066	-0.00066
	(!A_N * !C * !X)	0.00206	0.00208	0.00205
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00250	-0.00277	-0.00276
	(A_N * C * !X)	0.00357	0.00341	0.00338
	(A_N * !C * !X)	-0.00157	-0.00158	-0.00157
	(A_N * !C * !X)	0.00354	0.00357	0.00345
	(!A_N * !C * !X)	-0.00104	-0.00106	-0.00108
	(!A_N * !C * !X)	0.00369	0.00374	0.00367

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)	0.00126	0.00126	0.00125
	(A_N * B * !X)	-0.00156	-0.00156	-0.00156
	(A_N * !B * !X)	0.00125	0.00126	0.00126
	(A_N * !B * !X)	-0.00155	-0.00156	-0.00156
	(!A_N * !B * !X)	0.00125	0.00126	0.00125
	(!A_N * !B * !X)	-0.00155	-0.00157	-0.00156
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00157	0.00157	0.00156
	(A_N * B * !X)	-0.00177	-0.00177	-0.00176
	(A_N * !B * !X)	0.00156	0.00157	0.00156
	(A_N * !B * !X)	-0.00176	-0.00177	-0.00176
	(!A_N * !B * !X)	0.00155	0.00157	0.00156
	(!A_N * !B * !X)	-0.00176	-0.00177	-0.00177
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00264	0.00266	0.00265
	(A_N * B * !X)	-0.00348	-0.00350	-0.00349
	(A_N * !B * !X)	0.00262	0.00261	0.00262
	(A_N * !B * !X)	-0.00349	-0.00349	-0.00349
	(!A_N * !B * !X)	0.00262	0.00265	0.00262
	(!A_N * !B * !X)	-0.00350	-0.00352	-0.00349

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)	-0.00117	-0.00126	-0.00125
	(A_N * B * !X)	0.00157	0.00158	0.00157
	(A_N * !B * !X)	-0.00122	-0.00126	-0.00126
	(A_N * !B * !X)	0.00158	0.00158	0.00157
	(!A_N * !B * !X)	-0.00121	-0.00126	-0.00125
	(!A_N * !B * !X)	0.00158	0.00158	0.00157
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00146	-0.00156	-0.00154
	(A_N * B * !X)	0.00177	0.00179	0.00178
	(A_N * !B * !X)	-0.00150	-0.00156	-0.00155
	(A_N * !B * !X)	0.00178	0.00179	0.00178
	(!A_N * !B * !X)	-0.00150	-0.00157	-0.00155
	(!A_N * !B * !X)	0.00178	0.00178	0.00177
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00250	-0.00263	-0.00264
	(A_N * B * !X)	0.00351	0.00354	0.00351
	(A_N * !B * !X)	-0.00253	-0.00261	-0.00262
	(A_N * !B * !X)	0.00350	0.00353	0.00351
	(!A_N * !B * !X)	-0.00252	-0.00265	-0.00262
	(!A_N * !B * !X)	0.00353	0.00353	0.00351

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and3_1	9.59040
sky130_fd_sc_hs__and3_2	11.18880
sky130_fd_sc_hs__and3_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__and3_1	0.00247	0.00227	0.00223	1.44797
sky130_fd_sc_hs__and3_2	0.00244	0.00224	0.00227	2.74042
sky130_fd_sc_hs__and3_4	0.00443	0.00430	0.00445	5.13767

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.23272	1.41576
sky130_fd_sc_hs__and3_2	0.00000	0.28792	1.41676
sky130_fd_sc_hs__and3_4	0.00000	0.57583	2.83353

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)	0.05121	0.43498	5.68742
	B->X (RR)	0.05550	0.44162	5.62983
	C->X (RR)	0.05823	0.43593	5.51705
sky130_fd_sc_hs__and3_2	A->X (RR)	0.05735	0.37692	5.69612
	B->X (RR)	0.06158	0.38177	5.64008
	C->X (RR)	0.06423	0.37166	5.44028
sky130_fd_sc_hs__and3_4	A->X (RR)	0.06519	0.33681	5.91564
	B->X (RR)	0.07190	0.34455	5.87326
	C->X (RR)	0.07478	0.31839	5.61124

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.05444	0.41515	4.65923
	B->X (FF)	0.06174	0.43556	4.69283
	C->X (FF)	0.06304	0.44244	4.72447
sky130_fd_sc_hs__and3_2	A->X (FF)	0.06499	0.41417	4.61222
	B->X (FF)	0.07150	0.43198	4.65007
	C->X (FF)	0.07460	0.44126	4.70707
sky130_fd_sc_hs__and3_4	A->X (FF)	0.06040	0.37463	4.55309
	B->X (FF)	0.06765	0.39330	4.57864
	C->X (FF)	0.07234	0.41047	4.74530

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00794	0.01078	0.08057
	A	0.00380	0.00665	0.07662
	B	0.00845	0.01056	0.07679
	B	0.00382	0.00595	0.07240
	C	0.00939	0.01106	0.07132
	C	0.00377	0.00546	0.06601
sky130_fd_sc_hs__and3_2	A	0.01052	0.01305	0.08270
	A	0.00640	0.00900	0.07895
	B	0.01101	0.01289	0.07839
	B	0.00642	0.00837	0.07431
	C	0.01201	0.01334	0.06364
	C	0.00640	0.00782	0.05848
sky130_fd_sc_hs__and3_4	A	0.01987	0.02445	0.15785
	A	0.01229	0.01692	0.15027
	B	0.02181	0.02508	0.15179
	B	0.01236	0.01570	0.14246
	C	0.02394	0.02708	0.14733
	C	0.01237	0.01550	0.13679

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00247	0.00638	0.06733
	A	0.00661	0.01046	0.07146
	B	0.00343	0.00720	0.06708
	B	0.00801	0.01165	0.07165
	C	0.00375	0.00753	0.07002
	C	0.00926	0.01287	0.07510
sky130_fd_sc_hs__and3_2	A	0.00511	0.00913	0.07058
	A	0.00925	0.01308	0.07468
	B	0.00614	0.00991	0.07179
	B	0.01068	0.01424	0.07511
	C	0.00633	0.00960	0.06961
	C	0.01182	0.01509	0.07501
sky130_fd_sc_hs__and3_4	A	0.01111	0.01827	0.14254
	A	0.01870	0.02580	0.15007
	B	0.01276	0.01956	0.14173
	B	0.02213	0.02882	0.15077
	C	0.01343	0.02014	0.15199
	C	0.02479	0.03135	0.16023

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00081	0.00082	0.00079
	(B * !C * !X)	-0.00168	-0.00170	-0.00174
	(!B * !X)	0.00082	0.00082	0.00081
	(!B * !X)	-0.00171	-0.00172	-0.00174
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00082	0.00083	0.00080
	(B * !C * !X)	-0.00166	-0.00167	-0.00171
	(!B * !X)	0.00083	0.00084	0.00083
	(!B * !X)	-0.00168	-0.00169	-0.00171
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00090	0.00090	0.00084
	(B * !C * !X)	-0.00343	-0.00345	-0.00357
	(!B * !X)	0.00094	0.00095	0.00091
	(!B * !X)	-0.00350	-0.00353	-0.00358

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00079	-0.00080	-0.00079
	(B * !C * !X)	0.00174	0.00176	0.00174
	(!B * !X)	-0.00080	-0.00081	-0.00080
	(!B * !X)	0.00174	0.00176	0.00174
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00082	-0.00081	-0.00080
	(B * !C * !X)	0.00172	0.00173	0.00172
	(!B * !X)	-0.00083	-0.00082	-0.00081
	(!B * !X)	0.00172	0.00173	0.00172
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00085	-0.00086	-0.00084
	(B * !C * !X)	0.00358	0.00363	0.00359
	(!B * !X)	-0.00088	-0.00089	-0.00088
	(!B * !X)	0.00358	0.00363	0.00360

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00049	0.00049	0.00049
	(A * !C * !X)	-0.00149	-0.00150	-0.00148
	(!A * C * !X)	0.00120	0.00122	0.00121
	(!A * C * !X)	-0.00149	-0.00149	-0.00149
	(!A * !C * !X)	0.00057	0.00058	0.00058
	(!A * !C * !X)	-0.00148	-0.00150	-0.00149
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00047	0.00048	0.00047
	(A * !C * !X)	-0.00146	-0.00147	-0.00145
	(!A * C * !X)	0.00120	0.00121	0.00121
	(!A * C * !X)	-0.00146	-0.00146	-0.00146
	(!A * !C * !X)	0.00055	0.00056	0.00055
	(!A * !C * !X)	-0.00146	-0.00147	-0.00146
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00115	0.00116	0.00117
	(A * !C * !X)	-0.00289	-0.00290	-0.00289
	(!A * C * !X)	0.00265	0.00268	0.00266
	(!A * C * !X)	-0.00288	-0.00290	-0.00289
	(!A * !C * !X)	0.00135	0.00136	0.00136
	(!A * !C * !X)	-0.00291	-0.00292	-0.00292

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00047	-0.00047	-0.00048
	(A * !C * !X)	0.00151	0.00153	0.00150
	(!A * C * !X)	-0.00111	-0.00122	-0.00121
	(!A * C * !X)	0.00156	0.00151	0.00149
	(!A * !C * !X)	-0.00057	-0.00058	-0.00058
	(!A * !C * !X)	0.00155	0.00157	0.00151
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00045	-0.00046	-0.00046
	(A * !C * !X)	0.00148	0.00150	0.00147
	(!A * C * !X)	-0.00111	-0.00121	-0.00121
	(!A * C * !X)	0.00153	0.00148	0.00147
	(!A * !C * !X)	-0.00055	-0.00056	-0.00055
	(!A * !C * !X)	0.00152	0.00154	0.00148
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00111	-0.00111	-0.00113
	(A * !C * !X)	0.00300	0.00300	0.00293
	(!A * C * !X)	-0.00236	-0.00267	-0.00266
	(!A * C * !X)	0.00309	0.00293	0.00290
	(!A * !C * !X)	-0.00135	-0.00136	-0.00136
	(!A * !C * !X)	0.00302	0.00307	0.00296

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00124	0.00125	0.00125
	(A * !B * !X)	-0.00153	-0.00154	-0.00153
	(!A * B * !X)	0.00123	0.00124	0.00123
	(!A * B * !X)	-0.00154	-0.00154	-0.00153
	(!A * !B * !X)	0.00124	0.00125	0.00125
	(!A * !B * !X)	-0.00153	-0.00154	-0.00153
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00124	0.00124	0.00124
	(A * !B * !X)	-0.00154	-0.00155	-0.00154
	(!A * B * !X)	0.00123	0.00124	0.00123
	(!A * B * !X)	-0.00154	-0.00155	-0.00154
	(!A * !B * !X)	0.00124	0.00125	0.00124
	(!A * !B * !X)	-0.00154	-0.00155	-0.00154
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00263	0.00266	0.00264
	(A * !B * !X)	-0.00305	-0.00306	-0.00306
	(!A * B * !X)	0.00263	0.00264	0.00262
	(!A * B * !X)	-0.00307	-0.00307	-0.00306
	(!A * !B * !X)	0.00264	0.00265	0.00264
	(!A * !B * !X)	-0.00305	-0.00306	-0.00306

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00121	-0.00125	-0.00125
	(A * !B * !X)	0.00154	0.00155	0.00154
	(!A * B * !X)	-0.00115	-0.00124	-0.00123
	(!A * B * !X)	0.00154	0.00155	0.00154
	(!A * !B * !X)	-0.00121	-0.00125	-0.00125
	(!A * !B * !X)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00119	-0.00124	-0.00124
	(A * !B * !X)	0.00155	0.00156	0.00155
	(!A * B * !X)	-0.00113	-0.00124	-0.00122
	(!A * B * !X)	0.00154	0.00156	0.00155
	(!A * !B * !X)	-0.00119	-0.00125	-0.00124
	(!A * !B * !X)	0.00155	0.00156	0.00155
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00250	-0.00261	-0.00263
	(A * !B * !X)	0.00306	0.00309	0.00307
	(!A * B * !X)	-0.00244	-0.00260	-0.00261
	(!A * B * !X)	0.00308	0.00308	0.00307
	(!A * !B * !X)	-0.00251	-0.00261	-0.00263
	(!A * !B * !X)	0.00306	0.00309	0.00307

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4bb_1	15.98400
sky130_fd_sc_hs__and4bb_2	17.58240
sky130_fd_sc_hs__and4bb_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	X
sky130_fd_sc_hs__and4bb_1	0.00223	0.00226	0.00237	0.00231	1.24518
sky130_fd_sc_hs__and4bb_2	0.00226	0.00214	0.00258	0.00263	2.61209
sky130_fd_sc_hs__and4bb_4	0.00242	0.00257	0.00479	0.00463	4.97983

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4bb_1	0.00000	0.64993	1.88913
sky130_fd_sc_hs__and4bb_2	0.00000	0.61903	1.06913
sky130_fd_sc_hs__and4bb_4	0.00000	0.40796	0.90778

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)	0.10729	0.69974	8.41210
	B_N->X (FR)	0.11109	0.69992	8.25972
	C->X (RR)	0.07774	0.49735	5.74947
	D->X (RR)	0.08039	0.49080	5.66404
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.10292	0.58950	8.20950
	B_N->X (FR)	0.11383	0.60360	8.23289
	C->X (RR)	0.07798	0.40632	5.63498
	D->X (RR)	0.08161	0.39662	5.43039
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.13260	0.58086	8.38255
	B_N->X (FR)	0.14732	0.60055	8.41379
	C->X (RR)	0.10192	0.36997	5.86122
	D->X (RR)	0.10502	0.35023	5.63952

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)	0.07787	0.22122	1.42212
	B_N->X (RF)	0.08071	0.22645	1.27266
	C->X (FF)	0.06982	0.44665	4.54435
	D->X (FF)	0.07556	0.46153	4.62629
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.07766	0.19904	1.45936
	B_N->X (RF)	0.08592	0.21728	1.60765
	C->X (FF)	0.07146	0.44185	4.60065
	D->X (FF)	0.07666	0.45491	4.69160
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.08584	0.18159	1.30994
	B_N->X (RF)	0.08694	0.18782	1.31805
	C->X (FF)	0.06580	0.39415	4.48946
	D->X (FF)	0.06989	0.40959	4.63862

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	0.00789	0.01191	0.08604
	A_N	0.01094	0.01494	0.09160
	B_N	0.00864	0.01289	0.08705
	B_N	0.01209	0.01633	0.09057
	C	0.00993	0.01181	0.07820
	C	0.00628	0.00818	0.07469
	D	0.01079	0.01263	0.08089
	D	0.00641	0.00826	0.07671
sky130_fd_sc_hs__and4bb_2	A_N	0.01057	0.01464	0.08920
	A_N	0.01347	0.01753	0.09228
	B_N	0.01222	0.01578	0.08611
	B_N	0.01522	0.01879	0.08927
	C	0.01336	0.01417	0.07164
	C	0.00917	0.00997	0.06796
	D	0.01453	0.01490	0.05723
	D	0.00933	0.00971	0.05248
sky130_fd_sc_hs__and4bb_4	A_N	0.02213	0.02585	0.10714
	A_N	0.02467	0.02840	0.10973
	B_N	0.02436	0.02845	0.10842
	B_N	0.02740	0.03154	0.11157
	C	0.02670	0.02830	0.14285
	C	0.01886	0.02047	0.13525
	D	0.02851	0.02998	0.13723
	D	0.01892	0.02041	0.12866

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.01078	0.01342	0.08406
	A_N	0.00773	0.01035	0.08095
	B_N	0.01100	0.01428	0.09045
	B_N	0.00754	0.01081	0.08693
	C	0.00453	0.00826	0.07570
	C	0.00816	0.01171	0.07877
	D	0.00492	0.00851	0.07781
	D	0.00924	0.01280	0.08187
sky130_fd_sc_hs__and4bb_2	A_N	0.01282	0.01586	0.09095
	A_N	0.00991	0.01290	0.08767
	B_N	0.01350	0.01636	0.08396
	B_N	0.01049	0.01331	0.08062
	C	0.00672	0.00995	0.06381
	C	0.01091	0.01400	0.06656
	D	0.00703	0.00998	0.06260
	D	0.01215	0.01488	0.06655
sky130_fd_sc_hs__and4bb_4	A_N	0.02173	0.02552	0.10903
	A_N	0.01920	0.02294	0.10608
	B_N	0.02341	0.02713	0.11220
	B_N	0.02037	0.02404	0.10884
	C	0.01300	0.01875	0.13018
	C	0.02081	0.02642	0.13694
	D	0.01414	0.01918	0.13758
	D	0.02356	0.02853	0.14445

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)	0.00524	0.00839	0.07770
	(B_N * !X)	0.00179	0.00492	0.07425
	(!B_N * C * !D * !X)	0.00548	0.00864	0.07795
	(!B_N * C * !D * !X)	0.00202	0.00515	0.07449
	(!B_N * !C * !X)	0.00548	0.00864	0.07796
	(!B_N * !C * !X)	0.00203	0.00516	0.07450
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00531	0.00853	0.07952
	(B_N * !X)	0.00182	0.00502	0.07603
	(!B_N * C * !D * !X)	0.00554	0.00876	0.07975
	(!B_N * C * !D * !X)	0.00203	0.00523	0.07625
	(!B_N * !C * !X)	0.00554	0.00876	0.07976
	(!B_N * !C * !X)	0.00204	0.00524	0.07626
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00730	0.01046	0.08488
	(B_N * !X)	0.00373	0.00686	0.08129
	(!B_N * C * !D * !X)	0.00777	0.01091	0.08533
	(!B_N * C * !D * !X)	0.00416	0.00728	0.08171
	(!B_N * !C * !X)	0.00776	0.01090	0.08532
	(!B_N * !C * !X)	0.00417	0.00729	0.08172

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)	0.00028	0.00447	0.07344
	(B_N * !X)	0.00374	0.00792	0.07689
	(!B_N * C * !D * !X)	0.00005	0.00424	0.07318
	(!B_N * C * !D * !X)	0.00360	0.00778	0.07671
	(!B_N * !C * !X)	0.00004	0.00422	0.07318
	(!B_N * !C * !X)	0.00352	0.00770	0.07666
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00014	0.00447	0.07509
	(B_N * !X)	0.00363	0.00797	0.07859
	(!B_N * C * !D * !X)	-0.00007	0.00426	0.07485
	(!B_N * C * !D * !X)	0.00353	0.00786	0.07844
	(!B_N * !C * !X)	-0.00008	0.00424	0.07485
	(!B_N * !C * !X)	0.00344	0.00777	0.07838
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00113	0.00455	0.07836
	(B_N * !X)	0.00470	0.00815	0.08195
	(!B_N * C * !D * !X)	0.00069	0.00413	0.07791
	(!B_N * C * !D * !X)	0.00447	0.00792	0.08164
	(!B_N * !C * !X)	0.00066	0.00409	0.07790
	(!B_N * !C * !X)	0.00429	0.00774	0.08152

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)	0.00527	0.00825	0.07877
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00140	0.00437	0.07491
	(!C * !X)	0.00535	0.00848	0.07909
	(!C * !X)	0.00141	0.00451	0.07514
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00529	0.00815	0.07858
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00170	0.00454	0.07497
	(!C * !X)	0.00540	0.00844	0.07898
	(!C * !X)	0.00168	0.00470	0.07526
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00730	0.01000	0.08542
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00324	0.00591	0.08134
	(!C * !X)	0.00743	0.01051	0.08612
	(!C * !X)	0.00317	0.00623	0.08183

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)	0.00097	0.00522	0.07539
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00482	0.00907	0.07926
	(!C * !X)	0.00039	0.00469	0.07498
	(!C * !X)	0.00431	0.00864	0.07892
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00143	0.00558	0.07575
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00503	0.00919	0.07936
	(!C * !X)	0.00075	0.00495	0.07523
	(!C * !X)	0.00444	0.00866	0.07893
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00307	0.00667	0.08128
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00716	0.01076	0.08537
	(!C * !X)	0.00183	0.00546	0.08041
	(!C * !X)	0.00607	0.00971	0.08465

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)**	0.00158	0.00159	0.00159
	(A_N * B_N * D * !X)	-0.00144	-0.00145	-0.00144
	(A_N * B_N * !D * !X)	0.00108	0.00109	0.00107
	(A_N * B_N * !D * !X)	-0.00145	-0.00145	-0.00144
	(A_N * !B_N * D * !X)	0.00123	0.00124	0.00123
	(A_N * !B_N * D * !X)	-0.00181	-0.00181	-0.00181
	(A_N * !B_N * !D * !X)	0.00066	0.00067	0.00066
	(A_N * !B_N * !D * !X)	-0.00196	-0.00198	-0.00197
	(!A_N * B_N * D * !X)	0.00158	0.00160	0.00158
	(!A_N * B_N * D * !X)	-0.00144	-0.00145	-0.00144
	(!A_N * B_N * !D * !X)	0.00103	0.00104	0.00103
	(!A_N * B_N * !D * !X)	-0.00144	-0.00146	-0.00145
	(!A_N * !B_N * !D * !X)	0.00054	0.00055	0.00055
	(!A_N * !B_N * !D * !X)	-0.00181	-0.00184	-0.00182
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00167	0.00169	0.00168
	(A_N * B_N * D * !X)	-0.00168	-0.00170	-0.00169
	(A_N * B_N * !D * !X)	0.00107	0.00109	0.00107
	(A_N * B_N * !D * !X)	-0.00169	-0.00171	-0.00169
	(A_N * !B_N * D * !X)	0.00142	0.00142	0.00142
	(A_N * !B_N * D * !X)	-0.00197	-0.00197	-0.00197
	(A_N * !B_N * !D * !X)	0.00072	0.00072	0.00073
	(A_N * !B_N * !D * !X)	-0.00217	-0.00217	-0.00218
	(!A_N * B_N * D * !X)	0.00167	0.00169	0.00168
	(!A_N * B_N * D * !X)	-0.00169	-0.00171	-0.00170
	(!A_N * B_N * !D * !X)	0.00102	0.00103	0.00102
	(!A_N * B_N * !D * !X)	-0.00169	-0.00171	-0.00170
	(!A_N * !B_N * !D * !X)	0.00058	0.00059	0.00059
	(!A_N * !B_N * !D * !X)	-0.00199	-0.00202	-0.00201

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00284	0.00287	0.00285
	(A_N * B_N * D * !X)	-0.00352	-0.00355	-0.00353
	(A_N * B_N * !D * !X)	0.00171	0.00174	0.00172
	(A_N * B_N * !D * !X)	-0.00354	-0.00357	-0.00354
	(A_N * !B_N * D * !X)	0.00271	0.00273	0.00272
	(A_N * !B_N * D * !X)	-0.00366	-0.00367	-0.00367
	(A_N * !B_N * !D * !X)	0.00146	0.00147	0.00146
	(A_N * !B_N * !D * !X)	-0.00408	-0.00409	-0.00407
	(!A_N * B_N * D * !X)	0.00284	0.00286	0.00284
	(!A_N * B_N * D * !X)	-0.00352	-0.00354	-0.00353
	(!A_N * B_N * !D * !X)	0.00164	0.00165	0.00163
	(!A_N * B_N * !D * !X)	-0.00356	-0.00358	-0.00355
	(!A_N * !B_N * !D * !X)	0.00121	0.00122	0.00121
	(!A_N * !B_N * !D * !X)	-0.00375	-0.00377	-0.00375

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)**	-0.00154	-0.00158	-0.00157
	(A_N * B_N * D * !X)	0.00145	0.00147	0.00146
	(A_N * B_N * !D * !X)	-0.00108	-0.00109	-0.00107
	(A_N * B_N * !D * !X)	0.00146	0.00147	0.00146
	(A_N * !B_N * D * !X)	-0.00114	-0.00123	-0.00123
	(A_N * !B_N * D * !X)	0.00188	0.00184	0.00181
	(A_N * !B_N * !D * !X)	-0.00066	-0.00067	-0.00066
	(A_N * !B_N * !D * !X)	0.00202	0.00205	0.00203
	(!A_N * B_N * D * !X)	-0.00153	-0.00159	-0.00158
	(!A_N * B_N * D * !X)	0.00147	0.00147	0.00146
	(!A_N * B_N * !D * !X)	-0.00103	-0.00104	-0.00103
	(!A_N * B_N * !D * !X)	0.00151	0.00153	0.00147
	(!A_N * !B_N * !D * !X)	-0.00051	-0.00052	-0.00052
	(!A_N * !B_N * !D * !X)	0.00185	0.00188	0.00185
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00162	-0.00167	-0.00166
	(A_N * B_N * D * !X)	0.00171	0.00173	0.00172
	(A_N * B_N * !D * !X)	-0.00107	-0.00109	-0.00107
	(A_N * B_N * !D * !X)	0.00172	0.00173	0.00172
	(A_N * !B_N * D * !X)	-0.00130	-0.00139	-0.00140
	(A_N * !B_N * D * !X)	0.00207	0.00202	0.00198
	(A_N * !B_N * !D * !X)	-0.00072	-0.00072	-0.00073
	(A_N * !B_N * !D * !X)	0.00223	0.00228	0.00225
	(!A_N * B_N * D * !X)	-0.00162	-0.00167	-0.00166
	(!A_N * B_N * D * !X)	0.00172	0.00172	0.00171
	(!A_N * B_N * !D * !X)	-0.00102	-0.00103	-0.00102
	(!A_N * B_N * !D * !X)	0.00178	0.00178	0.00173
	(!A_N * !B_N * !D * !X)	-0.00056	-0.00056	-0.00057
	(!A_N * !B_N * !D * !X)	0.00205	0.00207	0.00203

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	-0.00277	-0.00284	-0.00283
	(A_N * B_N * D * !X)	0.00354	0.00357	0.00354
	(A_N * B_N * !D * !X)	-0.00171	-0.00174	-0.00172
	(A_N * B_N * !D * !X)	0.00358	0.00359	0.00356
	(A_N * !B_N * D * !X)	-0.00248	-0.00267	-0.00271
	(A_N * !B_N * D * !X)	0.00388	0.00373	0.00368
	(A_N * !B_N * !D * !X)	-0.00146	-0.00147	-0.00146
	(A_N * !B_N * !D * !X)	0.00411	0.00421	0.00419
	(!A_N * B_N * D * !X)	-0.00274	-0.00284	-0.00283
	(!A_N * B_N * D * !X)	0.00359	0.00357	0.00354
	(!A_N * B_N * !D * !X)	-0.00164	-0.00165	-0.00163
	(!A_N * B_N * !D * !X)	0.00371	0.00372	0.00361
	(!A_N * !B_N * !D * !X)	-0.00113	-0.00115	-0.00115
	(!A_N * !B_N * !D * !X)	0.00381	0.00386	0.00381

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)**	0.00145	0.00146	0.00145
	(A_N * B_N * C * !X)	-0.00141	-0.00141	-0.00140
	(A_N * !C * !X)	0.00144	0.00146	0.00145
	(A_N * !C * !X)	-0.00140	-0.00141	-0.00140
	(A_N * !B_N * C * !X)	0.00126	0.00127	0.00126
	(A_N * !B_N * C * !X)	-0.00160	-0.00161	-0.00161
	(!A_N * B_N * C * !X)	0.00144	0.00146	0.00145
	(!A_N * B_N * C * !X)	-0.00141	-0.00141	-0.00141
	(!A_N * B_N * !C * !X)	0.00144	0.00145	0.00144
	(!A_N * B_N * !C * !X)	-0.00141	-0.00142	-0.00141
	(!A_N * !B_N * !C * !X)	0.00126	0.00127	0.00127
	(!A_N * !B_N * !C * !X)	-0.00158	-0.00159	-0.00159

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00149	0.00150	0.00149
	(A_N * B_N * C * !X)	-0.00181	-0.00181	-0.00180
	(A_N * !C * !X)	0.00150	0.00152	0.00151
	(A_N * !C * !X)	-0.00180	-0.00181	-0.00180
	(A_N * !B_N * C * !X)	0.00144	0.00145	0.00145
	(A_N * !B_N * C * !X)	-0.00189	-0.00190	-0.00190
	(!A_N * B_N * C * !X)	0.00150	0.00150	0.00150
	(!A_N * B_N * C * !X)	-0.00181	-0.00181	-0.00181
	(!A_N * B_N * !C * !X)	0.00150	0.00151	0.00150
	(!A_N * B_N * !C * !X)	-0.00180	-0.00181	-0.00181
	(!A_N * !B_N * !C * !X)	0.00143	0.00144	0.00143
	(!A_N * !B_N * !C * !X)	-0.00187	-0.00188	-0.00188
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00257	0.00260	0.00258
	(A_N * B_N * C * !X)	-0.00348	-0.00351	-0.00349
	(A_N * !C * !X)	0.00255	0.00258	0.00257
	(A_N * !C * !X)	-0.00347	-0.00350	-0.00349
	(A_N * !B_N * C * !X)	0.00256	0.00257	0.00256
	(A_N * !B_N * C * !X)	-0.00355	-0.00355	-0.00354
	(!A_N * B_N * C * !X)	0.00257	0.00261	0.00258
	(!A_N * B_N * C * !X)	-0.00348	-0.00351	-0.00349
	(!A_N * B_N * !C * !X)	0.00259	0.00262	0.00259
	(!A_N * B_N * !C * !X)	-0.00348	-0.00351	-0.00349
	(!A_N * !B_N * !C * !X)	0.00258	0.00261	0.00259
	(!A_N * !B_N * !C * !X)	-0.00349	-0.00351	-0.00349

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)**	-0.00135	-0.00145	-0.00143
	(A_N * B_N * C * !X)	0.00142	0.00144	0.00143
	(A_N * !C * !X)	-0.00140	-0.00145	-0.00144
	(A_N * !C * !X)	0.00143	0.00144	0.00143
	(A_N * !B_N * C * !X)	-0.00116	-0.00127	-0.00125
	(A_N * !B_N * C * !X)	0.00167	0.00163	0.00162
	(!A_N * B_N * C * !X)	-0.00136	-0.00145	-0.00144
	(!A_N * B_N * C * !X)	0.00142	0.00143	0.00142
	(!A_N * B_N * !C * !X)	-0.00140	-0.00145	-0.00144
	(!A_N * B_N * !C * !X)	0.00143	0.00143	0.00142
	(!A_N * !B_N * !C * !X)	-0.00122	-0.00127	-0.00127
	(!A_N * !B_N * !C * !X)	0.00161	0.00160	0.00159
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00141	-0.00150	-0.00149
	(A_N * B_N * C * !X)	0.00182	0.00184	0.00183
	(A_N * !C * !X)	-0.00144	-0.00150	-0.00150
	(A_N * !C * !X)	0.00182	0.00184	0.00183
	(A_N * !B_N * C * !X)	-0.00131	-0.00144	-0.00142
	(A_N * !B_N * C * !X)	0.00196	0.00192	0.00191
	(!A_N * B_N * C * !X)	-0.00141	-0.00150	-0.00150
	(!A_N * B_N * C * !X)	0.00182	0.00184	0.00182
	(!A_N * B_N * !C * !X)	-0.00145	-0.00150	-0.00150
	(!A_N * B_N * !C * !X)	0.00181	0.00183	0.00182
	(!A_N * !B_N * !C * !X)	-0.00138	-0.00144	-0.00143
	(!A_N * !B_N * !C * !X)	0.00188	0.00189	0.00188

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00241	-0.00256	-0.00256
	(A_N * B_N * C * !X)	0.00351	0.00354	0.00351
	(A_N * !C * !X)	-0.00246	-0.00256	-0.00257
	(A_N * !C * !X)	0.00349	0.00353	0.00351
	(A_N * !B_N * C * !X)	-0.00236	-0.00254	-0.00254
	(A_N * !B_N * C * !X)	0.00365	0.00360	0.00356
	(!A_N * B_N * C * !X)	-0.00241	-0.00256	-0.00256
	(!A_N * B_N * C * !X)	0.00351	0.00354	0.00351
	(!A_N * B_N * !C * !X)	-0.00246	-0.00256	-0.00258
	(!A_N * B_N * !C * !X)	0.00349	0.00353	0.00351
	(!A_N * !B_N * !C * !X)	-0.00244	-0.00256	-0.00257
	(!A_N * !B_N * !C * !X)	0.00351	0.00353	0.00351

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4b_1	14.38560
sky130_fd_sc_hs__and4b_2	14.38560
sky130_fd_sc_hs__and4b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	X
sky130_fd_sc_hs__and4b_1	0.00237	0.00249	0.00239	0.00231	1.36282
sky130_fd_sc_hs__and4b_2	0.00219	0.00263	0.00262	0.00270	2.33403
sky130_fd_sc_hs__and4b_4	0.00237	0.00487	0.00524	0.00485	4.41915

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4b_1	0.00000	0.41369	1.88824
sky130_fd_sc_hs__and4b_2	0.00000	0.38278	0.59847
sky130_fd_sc_hs__and4b_4	0.00000	0.35071	0.90576

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)	0.09775	0.66802	8.28741
	B->X (RR)	0.06966	0.48103	5.83147
	C->X (RR)	0.07340	0.47860	5.77148
	D->X (RR)	0.07699	0.46898	5.53589
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.11026	0.61248	8.21492
	B->X (RR)	0.07183	0.41502	5.55919
	C->X (RR)	0.07619	0.41008	5.49038
	D->X (RR)	0.07932	0.39964	5.23511
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.13642	0.60211	8.52955
	B->X (RR)	0.08607	0.37923	5.86892
	C->X (RR)	0.09595	0.37364	5.67435
	D->X (RR)	0.09567	0.36286	5.64771

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)	0.07265	0.22123	1.44326
	B->X (FF)	0.06314	0.43641	4.46377
	C->X (FF)	0.06919	0.45189	4.56573
	D->X (FF)	0.07466	0.46859	4.66396
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.08316	0.19866	1.22574
	B->X (FF)	0.06931	0.41965	4.21642
	C->X (FF)	0.07601	0.43627	4.29465
	D->X (FF)	0.07996	0.44785	4.36721
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.09407	0.19237	1.06235
	B->X (FF)	0.06872	0.38718	4.23347
	C->X (FF)	0.07525	0.40459	4.32633
	D->X (FF)	0.08691	0.43426	4.47270

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	0.00744	0.01141	0.08705
	A_N	0.01031	0.01429	0.08997
	B	0.00914	0.01062	0.07319
	B	0.00487	0.00634	0.06901
	C	0.01012	0.01146	0.07565
	C	0.00506	0.00640	0.07070
	D	0.01088	0.01151	0.05997
	D	0.00505	0.00568	0.05442
sky130_fd_sc_hs__and4b_2	A_N	0.01062	0.01455	0.08672
	A_N	0.01335	0.01729	0.08962
	B	0.01197	0.01318	0.06920
	B	0.00746	0.00867	0.06527
	C	0.01300	0.01405	0.07143
	C	0.00766	0.00871	0.06668
	D	0.01417	0.01472	0.04884
	D	0.00764	0.00819	0.04230
sky130_fd_sc_hs__and4b_4	A_N	0.02190	0.02649	0.10945
	A_N	0.02495	0.02960	0.11250
	B	0.02403	0.02669	0.13798
	B	0.01575	0.01843	0.12980
	C	0.02677	0.02886	0.12302
	C	0.01624	0.01841	0.11316
	D	0.02813	0.03016	0.14306
	D	0.01632	0.01848	0.13209

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00997	0.01298	0.08866
	A_N	0.00707	0.01006	0.08565
	B	0.00355	0.00715	0.06171
	B	0.00783	0.01124	0.06553
	C	0.00375	0.00750	0.06447
	C	0.00875	0.01240	0.06894
	D	0.00434	0.00744	0.06264
	D	0.01005	0.01305	0.06831
sky130_fd_sc_hs__and4b_2	A_N	0.01345	0.01615	0.08359
	A_N	0.01072	0.01340	0.08079
	B	0.00628	0.00941	0.06265
	B	0.01077	0.01382	0.06648
	C	0.00688	0.01001	0.06523
	C	0.01215	0.01512	0.06956
	D	0.00699	0.00940	0.06159
	D	0.01336	0.01576	0.06736
sky130_fd_sc_hs__and4b_4	A_N	0.02341	0.02661	0.10605
	A_N	0.02035	0.02355	0.10297
	B	0.01197	0.01776	0.13194
	B	0.02023	0.02594	0.13934
	C	0.01290	0.01806	0.13238
	C	0.02321	0.02832	0.14154
	D	0.01493	0.01969	0.13610
	D	0.02638	0.03113	0.14593

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)	0.00538	0.00862	0.07973
	(B * C * !D * !X)	0.00146	0.00469	0.07582
	(B * !C * !X)	0.00538	0.00862	0.07973
	(B * !C * !X)	0.00146	0.00469	0.07582
	(!B * !X)	0.00536	0.00860	0.07972
	(!B * !X)	0.00147	0.00469	0.07583
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00595	0.00900	0.07824
	(B * C * !D * !X)	0.00224	0.00526	0.07452
	(B * !C * !X)	0.00595	0.00900	0.07824
	(B * !C * !X)	0.00224	0.00526	0.07452
	(!B * !X)	0.00594	0.00898	0.07822
	(!B * !X)	0.00224	0.00526	0.07452
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00917	0.01220	0.08588
	(B * C * !D * !X)	0.00470	0.00771	0.08141
	(B * !C * !X)	0.00915	0.01219	0.08588
	(B * !C * !X)	0.00470	0.00771	0.08142
	(!B * !X)	0.00909	0.01213	0.08581
	(!B * !X)	0.00470	0.00771	0.08141

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)	-0.00003	0.00409	0.07500
	(B * C * !D * !X)	0.00398	0.00810	0.07899
	(B * !C * !X)	-0.00005	0.00407	0.07499
	(B * !C * !X)	0.00394	0.00806	0.07897
	(!B * !X)	-0.00004	0.00408	0.07503
	(!B * !X)	0.00387	0.00800	0.07894
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00007	0.00415	0.07305
	(B * C * !D * !X)	0.00391	0.00799	0.07686
	(B * !C * !X)	0.00006	0.00414	0.07305
	(B * !C * !X)	0.00386	0.00795	0.07683
	(!B * !X)	0.00007	0.00417	0.07308
	(!B * !X)	0.00378	0.00789	0.07678
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00041	0.00384	0.07653
	(B * C * !D * !X)	0.00509	0.00853	0.08115
	(B * !C * !X)	0.00040	0.00384	0.07654
	(B * !C * !X)	0.00500	0.00844	0.08110
	(!B * !X)	0.00042	0.00386	0.07661
	(!B * !X)	0.00483	0.00828	0.08101

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)**	0.00146	0.00147	0.00147
	(A_N * C * D * !X)	-0.00165	-0.00166	-0.00165
	(A_N * C * !D * !X)	0.00090	0.00090	0.00090
	(A_N * C * !D * !X)	-0.00167	-0.00166	-0.00166
	(A_N * !C * !X)	0.00086	0.00087	0.00086
	(A_N * !C * !X)	-0.00165	-0.00167	-0.00166
	(!A_N * C * !D * !X)	0.00054	0.00054	0.00054
	(!A_N * C * !D * !X)	-0.00188	-0.00189	-0.00189
	(!A_N * !C * !X)	0.00054	0.00054	0.00054
	(!A_N * !C * !X)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00166	0.00167	0.00167
	(A_N * C * D * !X)	-0.00171	-0.00171	-0.00171
	(A_N * C * !D * !X)	0.00098	0.00099	0.00098
	(A_N * C * !D * !X)	-0.00171	-0.00173	-0.00172
	(A_N * !C * !X)	0.00099	0.00101	0.00100
	(A_N * !C * !X)	-0.00172	-0.00173	-0.00172
	(!A_N * C * !D * !X)	0.00056	0.00057	0.00057
	(!A_N * C * !D * !X)	-0.00197	-0.00199	-0.00200
	(!A_N * !C * !X)	0.00059	0.00060	0.00060
	(!A_N * !C * !X)	-0.00199	-0.00201	-0.00201
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00341	0.00345	0.00342
	(A_N * C * D * !X)	-0.00324	-0.00326	-0.00324
	(A_N * C * !D * !X)	0.00225	0.00226	0.00226
	(A_N * C * !D * !X)	-0.00324	-0.00326	-0.00325
	(A_N * !C * !X)	0.00230	0.00234	0.00231
	(A_N * !C * !X)	-0.00325	-0.00329	-0.00326
	(!A_N * C * !D * !X)	0.00132	0.00134	0.00133
	(!A_N * C * !D * !X)	-0.00385	-0.00389	-0.00391
	(!A_N * !C * !X)	0.00139	0.00141	0.00139
	(!A_N * !C * !X)	-0.00389	-0.00393	-0.00393

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)	-0.00135	-0.00146	-0.00146
	(A_N * C * D * !X)	0.00177	0.00168	0.00167
	(A_N * C * !D * !X)	-0.00090	-0.00090	-0.00090
	(A_N * C * !D * !X)	0.00174	0.00170	0.00167
	(A_N * !C * !X)	-0.00086	-0.00087	-0.00086
	(A_N * !C * !X)	0.00173	0.00175	0.00169
	(!A_N * C * !D * !X)	-0.00052	-0.00052	-0.00052
	(!A_N * C * !D * !X)	0.00192	0.00194	0.00191
	(!A_N * !C * !X)	-0.00052	-0.00052	-0.00053
	(!A_N * !C * !X)	0.00192	0.00194	0.00191
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00154	-0.00166	-0.00165
	(A_N * C * D * !X)	0.00180	0.00174	0.00172
	(A_N * C * !D * !X)	-0.00098	-0.00099	-0.00098
	(A_N * C * !D * !X)	0.00176	0.00176	0.00173
	(A_N * !C * !X)	-0.00099	-0.00101	-0.00100
	(A_N * !C * !X)	0.00181	0.00182	0.00175
	(!A_N * C * !D * !X)	-0.00056	-0.00056	-0.00057
	(!A_N * C * !D * !X)	0.00204	0.00205	0.00202
	(!A_N * !C * !X)	-0.00058	-0.00058	-0.00058
	(!A_N * !C * !X)	0.00204	0.00205	0.00202

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00322	-0.00343	-0.00341
	(A_N * C * D * !X)	0.00341	0.00327	0.00325
	(A_N * C * !D * !X)	-0.00225	-0.00226	-0.00226
	(A_N * C * !D * !X)	0.00333	0.00330	0.00326
	(A_N * !C * !X)	-0.00230	-0.00234	-0.00231
	(A_N * !C * !X)	0.00339	0.00339	0.00329
	(!A_N * C * !D * !X)	-0.00131	-0.00132	-0.00133
	(!A_N * C * !D * !X)	0.00398	0.00401	0.00396
	(!A_N * !C * !X)	-0.00134	-0.00135	-0.00136
	(!A_N * !C * !X)	0.00399	0.00401	0.00396

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)**	0.00148	0.00150	0.00149
	(A_N * B * D * !X)	-0.00147	-0.00148	-0.00148
	(A_N * B * !D * !X)	0.00093	0.00093	0.00093
	(A_N * B * !D * !X)	-0.00148	-0.00149	-0.00149
	(A_N * !B * D * !X)	0.00149	0.00150	0.00150
	(A_N * !B * D * !X)	-0.00147	-0.00148	-0.00148
	(A_N * !B * !D * !X)	0.00093	0.00093	0.00092
	(A_N * !B * !D * !X)	-0.00149	-0.00150	-0.00149
	(!A_N * B * !D * !X)	0.00079	0.00079	0.00078
	(!A_N * B * !D * !X)	-0.00149	-0.00150	-0.00149
	(!A_N * !B * D * !X)	0.00148	0.00149	0.00148
	(!A_N * !B * D * !X)	-0.00149	-0.00150	-0.00149
	(!A_N * !B * !D * !X)	0.00087	0.00088	0.00087
	(!A_N * !B * !D * !X)	-0.00150	-0.00151	-0.00150

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00144	0.00145	0.00144
	(A_N * B * D * !X)	-0.00169	-0.00169	-0.00169
	(A_N * B * !D * !X)	0.00075	0.00076	0.00075
	(A_N * B * !D * !X)	-0.00169	-0.00170	-0.00170
	(A_N * !B * D * !X)	0.00145	0.00147	0.00146
	(A_N * !B * D * !X)	-0.00168	-0.00170	-0.00169
	(A_N * !B * !D * !X)	0.00074	0.00074	0.00074
	(A_N * !B * !D * !X)	-0.00169	-0.00170	-0.00170
	(!A_N * B * !D * !X)	0.00058	0.00058	0.00058
	(!A_N * B * !D * !X)	-0.00171	-0.00172	-0.00171
	(!A_N * !B * D * !X)	0.00142	0.00144	0.00143
	(!A_N * !B * D * !X)	-0.00170	-0.00172	-0.00171
	(!A_N * !B * !D * !X)	0.00067	0.00067	0.00067
	(!A_N * !B * !D * !X)	-0.00172	-0.00172	-0.00172
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00317	0.00321	0.00319
	(A_N * B * D * !X)	-0.00345	-0.00347	-0.00346
	(A_N * B * !D * !X)	0.00204	0.00206	0.00205
	(A_N * B * !D * !X)	-0.00346	-0.00347	-0.00347
	(A_N * !B * D * !X)	0.00321	0.00323	0.00321
	(A_N * !B * D * !X)	-0.00346	-0.00347	-0.00346
	(A_N * !B * !D * !X)	0.00208	0.00210	0.00208
	(A_N * !B * !D * !X)	-0.00346	-0.00349	-0.00347
	(!A_N * B * !D * !X)	0.00173	0.00175	0.00174
	(!A_N * B * !D * !X)	-0.00351	-0.00354	-0.00351
	(!A_N * !B * D * !X)	0.00316	0.00317	0.00317
	(!A_N * !B * D * !X)	-0.00351	-0.00351	-0.00351
	(!A_N * !B * !D * !X)	0.00193	0.00195	0.00193
	(!A_N * !B * !D * !X)	-0.00353	-0.00355	-0.00354

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)	-0.00137	-0.00148	-0.00149
	(A_N * B * D * !X)	0.00149	0.00151	0.00149
	(A_N * B * !D * !X)	-0.00093	-0.00093	-0.00093
	(A_N * B * !D * !X)	0.00150	0.00152	0.00150
	(A_N * !B * D * !X)	-0.00145	-0.00149	-0.00149
	(A_N * !B * D * !X)	0.00149	0.00151	0.00149
	(A_N * !B * !D * !X)	-0.00093	-0.00093	-0.00092
	(A_N * !B * !D * !X)	0.00149	0.00151	0.00150
	(!A_N * B * !D * !X)	-0.00075	-0.00076	-0.00076
	(!A_N * B * !D * !X)	0.00153	0.00155	0.00152
	(!A_N * !B * D * !X)	-0.00142	-0.00148	-0.00148
	(!A_N * !B * D * !X)	0.00152	0.00152	0.00150
	(!A_N * !B * !D * !X)	-0.00087	-0.00088	-0.00087
	(!A_N * !B * !D * !X)	0.00158	0.00158	0.00153
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00132	-0.00143	-0.00144
	(A_N * B * D * !X)	0.00170	0.00171	0.00170
	(A_N * B * !D * !X)	-0.00075	-0.00076	-0.00075
	(A_N * B * !D * !X)	0.00170	0.00172	0.00171
	(A_N * !B * D * !X)	-0.00138	-0.00145	-0.00144
	(A_N * !B * D * !X)	0.00170	0.00172	0.00170
	(A_N * !B * !D * !X)	-0.00074	-0.00074	-0.00074
	(A_N * !B * !D * !X)	0.00172	0.00172	0.00171
	(!A_N * B * !D * !X)	-0.00055	-0.00056	-0.00056
	(!A_N * B * !D * !X)	0.00176	0.00177	0.00174
	(!A_N * !B * D * !X)	-0.00135	-0.00143	-0.00143
	(!A_N * !B * D * !X)	0.00173	0.00173	0.00172
	(!A_N * !B * !D * !X)	-0.00067	-0.00067	-0.00067
	(!A_N * !B * !D * !X)	0.00179	0.00180	0.00174

sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	-0.00300	-0.00321	-0.00319
	(A_N * B * D * !X)	0.00348	0.00350	0.00347
	(A_N * B * !D * !X)	-0.00204	-0.00206	-0.00205
	(A_N * B * !D * !X)	0.00348	0.00350	0.00348
	(A_N * !B * D * !X)	-0.00310	-0.00323	-0.00321
	(A_N * !B * D * !X)	0.00347	0.00350	0.00347
	(A_N * !B * !D * !X)	-0.00208	-0.00210	-0.00208
	(A_N * !B * !D * !X)	0.00348	0.00350	0.00348
	(!A_N * B * !D * !X)	-0.00168	-0.00169	-0.00170
	(!A_N * B * !D * !X)	0.00361	0.00363	0.00356
	(!A_N * !B * D * !X)	-0.00303	-0.00317	-0.00317
	(!A_N * !B * D * !X)	0.00355	0.00355	0.00352
	(!A_N * !B * !D * !X)	-0.00193	-0.00195	-0.00193
	(!A_N * !B * !D * !X)	0.00362	0.00365	0.00357

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)**	0.00121	0.00121	0.00122
	(A_N * B * C * !X)	-0.00161	-0.00161	-0.00161
	(A_N * !C * !X)	0.00125	0.00127	0.00126
	(A_N * !C * !X)	-0.00161	-0.00162	-0.00162
	(A_N * !B * C * !X)	0.00121	0.00122	0.00122
	(A_N * !B * C * !X)	-0.00161	-0.00162	-0.00162
	(!A_N * B * !C * !X)	0.00125	0.00126	0.00125
	(!A_N * B * !C * !X)	-0.00161	-0.00162	-0.00162
	(!A_N * !B * C * !X)	0.00121	0.00122	0.00121
	(!A_N * !B * C * !X)	-0.00162	-0.00162	-0.00162
	(!A_N * !B * !C * !X)	0.00125	0.00126	0.00126
	(!A_N * !B * !C * !X)	-0.00161	-0.00162	-0.00162

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00145	0.00146	0.00145
	(A_N * B * C * !X)	-0.00184	-0.00184	-0.00184
	(A_N * !C * !X)	0.00145	0.00146	0.00145
	(A_N * !C * !X)	-0.00184	-0.00184	-0.00184
	(A_N * !B * C * !X)	0.00146	0.00146	0.00146
	(A_N * !B * C * !X)	-0.00184	-0.00184	-0.00184
	(!A_N * B * !C * !X)	0.00145	0.00145	0.00145
	(!A_N * B * !C * !X)	-0.00186	-0.00186	-0.00186
	(!A_N * !B * C * !X)	0.00143	0.00143	0.00143
	(!A_N * !B * C * !X)	-0.00186	-0.00187	-0.00186
	(!A_N * !B * !C * !X)	0.00143	0.00144	0.00143
	(!A_N * !B * !C * !X)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00262	0.00263	0.00263
	(A_N * B * C * !X)	-0.00343	-0.00344	-0.00344
	(A_N * !C * !X)	0.00265	0.00267	0.00265
	(A_N * !C * !X)	-0.00344	-0.00346	-0.00344
	(A_N * !B * C * !X)	0.00264	0.00268	0.00265
	(A_N * !B * C * !X)	-0.00343	-0.00346	-0.00344
	(!A_N * B * !C * !X)	0.00260	0.00261	0.00260
	(!A_N * B * !C * !X)	-0.00349	-0.00350	-0.00349
	(!A_N * !B * C * !X)	0.00260	0.00262	0.00261
	(!A_N * !B * C * !X)	-0.00348	-0.00349	-0.00348
	(!A_N * !B * !C * !X)	0.00261	0.00264	0.00261
	(!A_N * !B * !C * !X)	-0.00349	-0.00351	-0.00349

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)**	-0.00113	-0.00121	-0.00122
	(A_N * B * C * !X)	0.00162	0.00164	0.00163
	(A_N * !C * !X)	-0.00121	-0.00126	-0.00126
	(A_N * !C * !X)	0.00163	0.00164	0.00163
	(A_N * !B * C * !X)	-0.00115	-0.00122	-0.00122
	(A_N * !B * C * !X)	0.00163	0.00164	0.00163
	(!A_N * B * !C * !X)	-0.00121	-0.00125	-0.00125
	(!A_N * B * !C * !X)	0.00163	0.00163	0.00162
	(!A_N * !B * C * !X)	-0.00115	-0.00122	-0.00121
	(!A_N * !B * C * !X)	0.00162	0.00164	0.00162
	(!A_N * !B * !C * !X)	-0.00122	-0.00126	-0.00126
	(!A_N * !B * !C * !X)	0.00163	0.00164	0.00162
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00133	-0.00145	-0.00144
	(A_N * B * C * !X)	0.00185	0.00186	0.00185
	(A_N * !C * !X)	-0.00140	-0.00145	-0.00145
	(A_N * !C * !X)	0.00185	0.00186	0.00185
	(A_N * !B * C * !X)	-0.00134	-0.00146	-0.00144
	(A_N * !B * C * !X)	0.00185	0.00186	0.00185
	(!A_N * B * !C * !X)	-0.00138	-0.00143	-0.00144
	(!A_N * B * !C * !X)	0.00187	0.00188	0.00187
	(!A_N * !B * C * !X)	-0.00133	-0.00143	-0.00143
	(!A_N * !B * C * !X)	0.00186	0.00188	0.00187
	(!A_N * !B * !C * !X)	-0.00139	-0.00143	-0.00143
	(!A_N * !B * !C * !X)	0.00187	0.00187	0.00187

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00241	-0.00263	-0.00263
	(A_N * B * C * !X)	0.00345	0.00348	0.00345
	(A_N * !C * !X)	-0.00253	-0.00264	-0.00263
	(A_N * !C * !X)	0.00345	0.00348	0.00345
	(A_N * !B * C * !X)	-0.00245	-0.00266	-0.00265
	(A_N * !B * C * !X)	0.00346	0.00347	0.00345
	(!A_N * B * !C * !X)	-0.00246	-0.00258	-0.00258
	(!A_N * B * !C * !X)	0.00351	0.00353	0.00350
	(!A_N * !B * C * !X)	-0.00240	-0.00261	-0.00261
	(!A_N * !B * C * !X)	0.00351	0.00351	0.00350
	(!A_N * !B * !C * !X)	-0.00249	-0.00260	-0.00260
	(!A_N * !B * !C * !X)	0.00350	0.00353	0.00350

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__and4_1	11.18880
sky130_fd_sc_hs__and4_2	12.78720
sky130_fd_sc_hs__and4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__and4_1	0.00251	0.00247	0.00238	0.00240	1.40596
sky130_fd_sc_hs__and4_2	0.00267	0.00274	0.00260	0.00256	2.34966
sky130_fd_sc_hs__and4_4	0.00461	0.00477	0.00525	0.00466	5.15506

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.17744	1.88734
sky130_fd_sc_hs__and4_2	0.00000	0.14654	0.45187
sky130_fd_sc_hs__and4_4	0.00000	0.29347	0.90374

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)	0.06277	0.47336	5.96557
	B->X (RR)	0.06799	0.48197	5.91955
	C->X (RR)	0.07093	0.47837	5.85446
	D->X (RR)	0.07503	0.46958	5.63082
sky130_fd_sc_hs__and4_2	A->X (RR)	0.06705	0.41849	5.71381
	B->X (RR)	0.07254	0.42417	5.67172
	C->X (RR)	0.07617	0.41850	5.60547
	D->X (RR)	0.07933	0.40723	5.31862
sky130_fd_sc_hs__and4_4	A->X (RR)	0.07243	0.35161	5.95277
	B->X (RR)	0.08094	0.36408	5.97403
	C->X (RR)	0.08933	0.35900	5.81887
	D->X (RR)	0.08890	0.34830	5.80786

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.05635	0.41485	4.50191
	B->X (FF)	0.06310	0.43320	4.51596
	C->X (FF)	0.06857	0.44880	4.60457
	D->X (FF)	0.07432	0.46399	4.68607
sky130_fd_sc_hs__and4_2	A->X (FF)	0.05928	0.39303	4.08559
	B->X (FF)	0.06725	0.41234	4.15573
	C->X (FF)	0.07259	0.42856	4.23630
	D->X (FF)	0.08081	0.44953	4.35168
sky130_fd_sc_hs__and4_4	A->X (FF)	0.06010	0.37757	4.64919
	B->X (FF)	0.06399	0.38433	4.59875
	C->X (FF)	0.06986	0.40115	4.69631
	D->X (FF)	0.07148	0.41235	4.77282

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00851	0.01082	0.07890
	A	0.00420	0.00651	0.07508
	B	0.00930	0.01103	0.07518
	B	0.00422	0.00595	0.07059
	C	0.01019	0.01178	0.07725
	C	0.00422	0.00581	0.07129
	D	0.01123	0.01214	0.06238
	D	0.00424	0.00515	0.05556
sky130_fd_sc_hs__and4_2	A	0.01150	0.01324	0.07525
	A	0.00676	0.00851	0.07085
	B	0.01258	0.01374	0.07091
	B	0.00689	0.00807	0.06558
	C	0.01352	0.01455	0.07314
	C	0.00690	0.00793	0.06704
	D	0.01468	0.01518	0.04879
	D	0.00693	0.00743	0.04146
sky130_fd_sc_hs__and4_4	A	0.02154	0.02544	0.14767
	A	0.01343	0.01736	0.14160
	B	0.02367	0.02651	0.14171
	B	0.01334	0.01617	0.13340
	C	0.02630	0.02857	0.13269
	C	0.01342	0.01570	0.12036
	D	0.02743	0.02965	0.15139
	D	0.01345	0.01567	0.13797

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00311	0.00679	0.06762
	A	0.00742	0.01105	0.07112
	B	0.00359	0.00711	0.06591
	B	0.00863	0.01214	0.07087
	C	0.00392	0.00758	0.06863
	C	0.00979	0.01327	0.07376
	D	0.00424	0.00731	0.06712
	D	0.01105	0.01413	0.07310
sky130_fd_sc_hs__and4_2	A	0.00548	0.00888	0.06407
	A	0.01023	0.01354	0.06786
	B	0.00605	0.00952	0.06331
	B	0.01170	0.01507	0.06804
	C	0.00669	0.00990	0.06554
	C	0.01318	0.01623	0.07141
	D	0.00700	0.00933	0.06114
	D	0.01454	0.01686	0.06802
sky130_fd_sc_hs__and4_4	A	0.01107	0.01727	0.13972
	A	0.01920	0.02532	0.14570
	B	0.01164	0.01771	0.13736
	B	0.02190	0.02795	0.14560
	C	0.01250	0.01810	0.13812
	C	0.02511	0.03070	0.14922
	D	0.01424	0.01998	0.14766
	D	0.02785	0.03355	0.15776

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)	0.00047	0.00047	0.00044
	(B * C * !D * !X)	-0.00182	-0.00183	-0.00190
	(B * !C * !X)	0.00045	0.00045	0.00043
	(B * !C * !X)	-0.00186	-0.00187	-0.00190
	(!B * !X)	0.00045	0.00045	0.00044
	(!B * !X)	-0.00188	-0.00189	-0.00190
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00056	0.00057	0.00053
	(B * C * !D * !X)	-0.00203	-0.00205	-0.00214
	(B * !C * !X)	0.00054	0.00055	0.00052
	(B * !C * !X)	-0.00207	-0.00210	-0.00214
	(!B * !X)	0.00054	0.00054	0.00053
	(!B * !X)	-0.00212	-0.00213	-0.00215
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00078	0.00079	0.00071
	(B * C * !D * !X)	-0.00373	-0.00376	-0.00392
	(B * !C * !X)	0.00077	0.00078	0.00072
	(B * !C * !X)	-0.00381	-0.00383	-0.00394
	(!B * !X)	0.00075	0.00076	0.00074
	(!B * !X)	-0.00389	-0.00391	-0.00395

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)	-0.00043	-0.00043	-0.00042
	(B * C * !D * !X)	0.00190	0.00192	0.00191
	(B * !C * !X)	-0.00043	-0.00043	-0.00043
	(B * !C * !X)	0.00190	0.00192	0.00191
	(!B * !X)	-0.00043	-0.00044	-0.00043
	(!B * !X)	0.00190	0.00192	0.00191
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00052	-0.00052	-0.00051
	(B * C * !D * !X)	0.00216	0.00217	0.00215
	(B * !C * !X)	-0.00052	-0.00052	-0.00051
	(B * !C * !X)	0.00216	0.00217	0.00215
	(!B * !X)	-0.00053	-0.00053	-0.00052
	(!B * !X)	0.00216	0.00217	0.00215
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00068	-0.00069	-0.00068
	(B * C * !D * !X)	0.00394	0.00399	0.00396
	(B * !C * !X)	-0.00069	-0.00070	-0.00068
	(B * !C * !X)	0.00395	0.00399	0.00396
	(!B * !X)	-0.00073	-0.00073	-0.00072
	(!B * !X)	0.00397	0.00399	0.00396

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)**	0.00052	0.00052	0.00052
	(A * C * !D * !X)	-0.00152	-0.00152	-0.00151
	(A * !C * !X)	0.00052	0.00053	0.00052
	(A * !C * !X)	-0.00152	-0.00153	-0.00151
	(!A * C * D * !X)	0.00125	0.00127	0.00126
	(!A * C * D * !X)	-0.00151	-0.00152	-0.00152
	(!A * C * !D * !X)	0.00063	0.00063	0.00063
	(!A * C * !D * !X)	-0.00152	-0.00152	-0.00152
	(!A * !C * !X)	0.00059	0.00060	0.00059
	(!A * !C * !X)	-0.00151	-0.00153	-0.00152
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00060	0.00061	0.00060
	(A * C * !D * !X)	-0.00179	-0.00181	-0.00180
	(A * !C * !X)	0.00062	0.00063	0.00062
	(A * !C * !X)	-0.00179	-0.00181	-0.00180
	(!A * C * D * !X)	0.00145	0.00146	0.00146
	(!A * C * D * !X)	-0.00180	-0.00181	-0.00180
	(!A * C * !D * !X)	0.00074	0.00075	0.00074
	(!A * C * !D * !X)	-0.00180	-0.00181	-0.00180
	(!A * !C * !X)	0.00071	0.00071	0.00071
	(!A * !C * !X)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00130	0.00132	0.00130
	(A * C * !D * !X)	-0.00337	-0.00339	-0.00338
	(A * !C * !X)	0.00137	0.00138	0.00136
	(A * !C * !X)	-0.00339	-0.00341	-0.00339
	(!A * C * D * !X)	0.00284	0.00286	0.00284
	(!A * C * D * !X)	-0.00336	-0.00338	-0.00336
	(!A * C * !D * !X)	0.00154	0.00156	0.00155
	(!A * C * !D * !X)	-0.00339	-0.00342	-0.00340
	(!A * !C * !X)	0.00156	0.00157	0.00156
	(!A * !C * !X)	-0.00341	-0.00344	-0.00341

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)	-0.00050	-0.00050	-0.00050
	(A * C * !D * !X)	0.00154	0.00155	0.00152
	(A * !C * !X)	-0.00050	-0.00051	-0.00051
	(A * !C * !X)	0.00154	0.00156	0.00152
	(!A * C * D * !X)	-0.00114	-0.00127	-0.00126
	(!A * C * D * !X)	0.00162	0.00154	0.00152
	(!A * C * !D * !X)	-0.00063	-0.00063	-0.00063
	(!A * C * !D * !X)	0.00159	0.00157	0.00152
	(!A * !C * !X)	-0.00059	-0.00060	-0.00059
	(!A * !C * !X)	0.00159	0.00160	0.00154
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00059	-0.00059	-0.00059
	(A * C * !D * !X)	0.00184	0.00185	0.00181
	(A * !C * !X)	-0.00060	-0.00060	-0.00060
	(A * !C * !X)	0.00184	0.00184	0.00181
	(!A * C * D * !X)	-0.00133	-0.00146	-0.00146
	(!A * C * D * !X)	0.00190	0.00183	0.00181
	(!A * C * !D * !X)	-0.00074	-0.00075	-0.00074
	(!A * C * !D * !X)	0.00187	0.00184	0.00181
	(!A * !C * !X)	-0.00071	-0.00071	-0.00071
	(!A * !C * !X)	0.00190	0.00190	0.00183

sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	-0.00128	-0.00129	-0.00129
	(A * C * !D * !X)	0.00345	0.00347	0.00341
	(A * !C * !X)	-0.00131	-0.00132	-0.00133
	(A * !C * !X)	0.00346	0.00347	0.00342
	(!A * C * D * !X)	-0.00261	-0.00286	-0.00284
	(!A * C * D * !X)	0.00356	0.00339	0.00338
	(!A * C * !D * !X)	-0.00154	-0.00156	-0.00155
	(!A * C * !D * !X)	0.00352	0.00345	0.00341
	(!A * !C * !X)	-0.00156	-0.00157	-0.00156
	(!A * !C * !X)	0.00358	0.00357	0.00347

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)**	0.00060	0.00061	0.00061
	(A * B * !D * !X)	-0.00144	-0.00145	-0.00143
	(A * !B * D * !X)	0.00132	0.00133	0.00132
	(A * !B * D * !X)	-0.00146	-0.00147	-0.00146
	(A * !B * !D * !X)	0.00068	0.00069	0.00069
	(A * !B * !D * !X)	-0.00146	-0.00147	-0.00146
	(!A * B * D * !X)	0.00128	0.00130	0.00129
	(!A * B * D * !X)	-0.00146	-0.00146	-0.00146
	(!A * B * !D * !X)	0.00068	0.00068	0.00068
	(!A * B * !D * !X)	-0.00145	-0.00146	-0.00146
	(!A * !B * D * !X)	0.00131	0.00132	0.00132
	(!A * !B * D * !X)	-0.00146	-0.00146	-0.00146
	(!A * !B * !D * !X)	0.00071	0.00072	0.00072
	(!A * !B * !D * !X)	-0.00145	-0.00146	-0.00146

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00065	0.00065	0.00065
	(A * B * !D * !X)	-0.00166	-0.00167	-0.00165
	(A * !B * D * !X)	0.00146	0.00147	0.00147
	(A * !B * D * !X)	-0.00168	-0.00169	-0.00168
	(A * !B * !D * !X)	0.00076	0.00076	0.00075
	(A * !B * !D * !X)	-0.00169	-0.00170	-0.00168
	(!A * B * D * !X)	0.00145	0.00146	0.00145
	(!A * B * D * !X)	-0.00168	-0.00169	-0.00168
	(!A * B * !D * !X)	0.00074	0.00074	0.00073
	(!A * B * !D * !X)	-0.00168	-0.00169	-0.00168
	(!A * !B * D * !X)	0.00146	0.00148	0.00147
	(!A * !B * D * !X)	-0.00168	-0.00169	-0.00168
	(!A * !B * !D * !X)	0.00079	0.00081	0.00080
	(!A * !B * !D * !X)	-0.00168	-0.00170	-0.00168
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00172	0.00173	0.00174
	(A * B * !D * !X)	-0.00348	-0.00350	-0.00348
	(A * !B * D * !X)	0.00317	0.00319	0.00318
	(A * !B * D * !X)	-0.00350	-0.00351	-0.00350
	(A * !B * !D * !X)	0.00191	0.00193	0.00191
	(A * !B * !D * !X)	-0.00352	-0.00354	-0.00352
	(!A * B * D * !X)	0.00310	0.00312	0.00311
	(!A * B * D * !X)	-0.00349	-0.00351	-0.00350
	(!A * B * !D * !X)	0.00188	0.00190	0.00188
	(!A * B * !D * !X)	-0.00351	-0.00354	-0.00352
	(!A * !B * D * !X)	0.00317	0.00319	0.00318
	(!A * !B * D * !X)	-0.00350	-0.00351	-0.00350
	(!A * !B * !D * !X)	0.00199	0.00201	0.00199
	(!A * !B * !D * !X)	-0.00352	-0.00355	-0.00353

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)	-0.00057	-0.00058	-0.00058
	(A * B * !D * !X)	0.00149	0.00151	0.00147
	(A * !B * D * !X)	-0.00125	-0.00133	-0.00132
	(A * !B * D * !X)	0.00146	0.00147	0.00146
	(A * !B * !D * !X)	-0.00068	-0.00069	-0.00069
	(A * !B * !D * !X)	0.00152	0.00153	0.00148
	(!A * B * D * !X)	-0.00118	-0.00130	-0.00129
	(!A * B * D * !X)	0.00147	0.00147	0.00146
	(!A * B * !D * !X)	-0.00068	-0.00068	-0.00068
	(!A * B * !D * !X)	0.00147	0.00148	0.00146
	(!A * !B * D * !X)	-0.00127	-0.00132	-0.00132
	(!A * !B * D * !X)	0.00146	0.00147	0.00146
	(!A * !B * !D * !X)	-0.00071	-0.00072	-0.00072
	(!A * !B * !D * !X)	0.00145	0.00147	0.00146
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00062	-0.00062	-0.00062
	(A * B * !D * !X)	0.00172	0.00174	0.00170
	(A * !B * D * !X)	-0.00139	-0.00147	-0.00147
	(A * !B * D * !X)	0.00168	0.00170	0.00169
	(A * !B * !D * !X)	-0.00076	-0.00076	-0.00075
	(A * !B * !D * !X)	0.00175	0.00176	0.00171
	(!A * B * D * !X)	-0.00131	-0.00144	-0.00145
	(!A * B * D * !X)	0.00169	0.00170	0.00169
	(!A * B * !D * !X)	-0.00074	-0.00074	-0.00073
	(!A * B * !D * !X)	0.00168	0.00170	0.00169
	(!A * !B * D * !X)	-0.00140	-0.00148	-0.00147
	(!A * !B * D * !X)	0.00168	0.00170	0.00169
	(!A * !B * !D * !X)	-0.00079	-0.00081	-0.00080
	(!A * !B * !D * !X)	0.00169	0.00170	0.00169

sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	-0.00167	-0.00168	-0.00169
	(A * B * !D * !X)	0.00360	0.00362	0.00355
	(A * !B * D * !X)	-0.00304	-0.00319	-0.00318
	(A * !B * D * !X)	0.00351	0.00354	0.00351
	(A * !B * !D * !X)	-0.00191	-0.00193	-0.00191
	(A * !B * !D * !X)	0.00363	0.00366	0.00357
	(!A * B * D * !X)	-0.00290	-0.00312	-0.00311
	(!A * B * D * !X)	0.00353	0.00353	0.00351
	(!A * B * !D * !X)	-0.00188	-0.00190	-0.00188
	(!A * B * !D * !X)	0.00353	0.00356	0.00354
	(!A * !B * D * !X)	-0.00306	-0.00319	-0.00318
	(!A * !B * D * !X)	0.00352	0.00354	0.00351
	(!A * !B * !D * !X)	-0.00199	-0.00201	-0.00199
	(!A * !B * !D * !X)	0.00353	0.00356	0.00354

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)**	0.00129	0.00130	0.00129
	(A * B * !C * !X)	-0.00162	-0.00163	-0.00163
	(A * !B * C * !X)	0.00126	0.00127	0.00126
	(A * !B * C * !X)	-0.00163	-0.00163	-0.00163
	(A * !B * !C * !X)	0.00129	0.00130	0.00129
	(A * !B * !C * !X)	-0.00162	-0.00163	-0.00163
	(!A * B * C * !X)	0.00126	0.00127	0.00126
	(!A * B * C * !X)	-0.00163	-0.00163	-0.00163
	(!A * !C * !X)	0.00129	0.00130	0.00129
	(!A * !C * !X)	-0.00162	-0.00163	-0.00163
	(!A * !B * C * !X)	0.00126	0.00127	0.00126
	(!A * !B * C * !X)	-0.00163	-0.00163	-0.00163

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00150	0.00151	0.00150
	(A * B * !C * !X)	-0.00175	-0.00175	-0.00175
	(A * !B * C * !X)	0.00147	0.00149	0.00148
	(A * !B * C * !X)	-0.00174	-0.00175	-0.00175
	(A * !B * !C * !X)	0.00150	0.00151	0.00150
	(A * !B * !C * !X)	-0.00175	-0.00175	-0.00175
	(!A * B * C * !X)	0.00145	0.00146	0.00144
	(!A * B * C * !X)	-0.00174	-0.00176	-0.00175
	(!A * !C * !X)	0.00150	0.00151	0.00150
	(!A * !C * !X)	-0.00175	-0.00175	-0.00175
	(!A * !B * C * !X)	0.00147	0.00149	0.00148
	(!A * !B * C * !X)	-0.00174	-0.00175	-0.00175
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00251	0.00255	0.00253
	(A * B * !C * !X)	-0.00340	-0.00343	-0.00341
	(A * !B * C * !X)	0.00253	0.00255	0.00254
	(A * !B * C * !X)	-0.00340	-0.00342	-0.00341
	(A * !B * !C * !X)	0.00254	0.00253	0.00253
	(A * !B * !C * !X)	-0.00341	-0.00341	-0.00341
	(!A * B * C * !X)	0.00250	0.00254	0.00252
	(!A * B * C * !X)	-0.00340	-0.00343	-0.00341
	(!A * !C * !X)	0.00253	0.00253	0.00252
	(!A * !C * !X)	-0.00341	-0.00341	-0.00341
	(!A * !B * C * !X)	0.00253	0.00255	0.00254
	(!A * !B * C * !X)	-0.00340	-0.00342	-0.00341

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)**	-0.00124	-0.00130	-0.00129
	(A * B * !C * !X)	0.00163	0.00164	0.00163
	(A * !B * C * !X)	-0.00119	-0.00127	-0.00126
	(A * !B * C * !X)	0.00163	0.00164	0.00163
	(A * !B * !C * !X)	-0.00125	-0.00130	-0.00129
	(A * !B * !C * !X)	0.00163	0.00164	0.00163
	(!A * B * C * !X)	-0.00116	-0.00127	-0.00126
	(!A * B * C * !X)	0.00163	0.00164	0.00163
	(!A * !C * !X)	-0.00125	-0.00130	-0.00129
	(!A * !C * !X)	0.00163	0.00164	0.00163
	(!A * !B * C * !X)	-0.00119	-0.00127	-0.00126
	(!A * !B * C * !X)	0.00163	0.00164	0.00163
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00145	-0.00151	-0.00150
	(A * B * !C * !X)	0.00175	0.00176	0.00175
	(A * !B * C * !X)	-0.00139	-0.00149	-0.00148
	(A * !B * C * !X)	0.00175	0.00176	0.00175
	(A * !B * !C * !X)	-0.00145	-0.00151	-0.00150
	(A * !B * !C * !X)	0.00175	0.00176	0.00175
	(!A * B * C * !X)	-0.00134	-0.00146	-0.00144
	(!A * B * C * !X)	0.00174	0.00176	0.00175
	(!A * !C * !X)	-0.00145	-0.00151	-0.00150
	(!A * !C * !X)	0.00175	0.00176	0.00175
	(!A * !B * C * !X)	-0.00139	-0.00149	-0.00148
	(!A * !B * C * !X)	0.00175	0.00177	0.00175

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00238	-0.00251	-0.00251
	(A * B * !C * !X)	0.00342	0.00345	0.00343
	(A * !B * C * !X)	-0.00231	-0.00250	-0.00252
	(A * !B * C * !X)	0.00343	0.00344	0.00343
	(A * !B * !C * !X)	-0.00240	-0.00252	-0.00252
	(A * !B * !C * !X)	0.00341	0.00345	0.00343
	(!A * B * C * !X)	-0.00224	-0.00250	-0.00251
	(!A * B * C * !X)	0.00343	0.00344	0.00343
	(!A * !C * !X)	-0.00239	-0.00251	-0.00251
	(!A * !C * !X)	0.00341	0.00345	0.00343
	(!A * !B * C * !X)	-0.00231	-0.00250	-0.00252
	(!A * !B * C * !X)	0.00343	0.00344	0.00343

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__buf_1	0.00242	1.38767
sky130_fd_sc_hs__buf_16	0.01535	21.26016
sky130_fd_sc_hs__buf_2	0.00256	2.48348
sky130_fd_sc_hs__buf_4	0.00348	5.20816
sky130_fd_sc_hs__buf_8	0.00787	9.80583
sky130_fd_sc_hs__bufbuf_16	0.00283	20.78484
sky130_fd_sc_hs__bufbuf_8	0.00225	9.99678

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.26821	0.47259
sky130_fd_sc_hs__buf_16	0.00000	0.70336	1.01304
sky130_fd_sc_hs__buf_2	0.00000	0.12119	0.12790
sky130_fd_sc_hs__buf_4	0.00000	0.59998	0.94719
sky130_fd_sc_hs__buf_8	0.00000	0.35168	0.50652
sky130_fd_sc_hs__bufbuf_16	0.00000	0.83125	1.20286
sky130_fd_sc_hs__bufbuf_8	0.00000	0.61990	0.66944

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)**	0.03850	0.41610	5.49898
sky130_fd_sc_hs__buf_16	**A->X (RR)**	0.04086	0.17966	5.54543
sky130_fd_sc_hs__buf_2	**A->X (RR)**	0.04047	0.33250	5.05843
sky130_fd_sc_hs__buf_4	**A->X (RR)**	0.04875	0.31429	5.84080
sky130_fd_sc_hs__buf_8	**A->X (RR)**	0.04046	0.22304	5.34379
sky130_fd_sc_hs__bufbuf_16	**A->X (RR)**	0.11859	0.26333	5.34289
sky130_fd_sc_hs__bufbuf_8	**A->X (RR)**	0.12523	0.28799	5.30093

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	**A->X (FF)**	0.04683	0.39183	4.47352
sky130_fd_sc_hs__buf_16	**A->X (FF)**	0.05607	0.34239	4.82560
sky130_fd_sc_hs__buf_2	**A->X (FF)**	0.05527	0.39113	4.36532
sky130_fd_sc_hs__buf_4	**A->X (FF)**	0.05466	0.35847	4.36112
sky130_fd_sc_hs__buf_8	**A->X (FF)**	0.05688	0.36673	4.85976
sky130_fd_sc_hs__bufbuf_16	**A->X (FF)**	0.14086	0.42372	4.59544
sky130_fd_sc_hs__bufbuf_8	**A->X (FF)**	0.12483	0.39222	4.48627

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00654	0.00883	0.06212
	A	0.00281	0.00513	0.05870
sky130_fd_sc_hs__buf_16	A	0.06480	0.08059	0.44920
	A	0.04117	0.05692	0.43010
sky130_fd_sc_hs__buf_2	A	0.00953	0.01160	0.05573
	A	0.00559	0.00773	0.05179
sky130_fd_sc_hs__buf_4	A	0.01540	0.01932	0.12548
	A	0.01003	0.01404	0.12056
sky130_fd_sc_hs__buf_8	A	0.03301	0.04040	0.21549
	A	0.02087	0.02830	0.20508
sky130_fd_sc_hs__bufbuf_16	A	0.07804	0.08559	0.16754
	A	0.07367	0.08143	0.16667
sky130_fd_sc_hs__bufbuf_8	A	0.03923	0.04380	0.11810
	A	0.03574	0.04041	0.11635

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	**A**	0.00287	0.00670	0.06633
	A	0.00660	0.01041	0.07004
sky130_fd_sc_hs__buf_16	**A**	0.04517	0.06525	0.44873
	A	0.06893	0.08898	0.45426
sky130_fd_sc_hs__buf_2	**A**	0.00537	0.00904	0.06117
	A	0.00933	0.01297	0.06466
sky130_fd_sc_hs__buf_4	**A**	0.01143	0.01825	0.11824
	A	0.01679	0.02356	0.12093
sky130_fd_sc_hs__buf_8	**A**	0.02213	0.03228	0.21547
	A	0.03431	0.04426	0.22119
sky130_fd_sc_hs__bufbuf_16	**A**	0.07765	0.08552	0.16993
	A	0.08203	0.08959	0.16889
sky130_fd_sc_hs__bufbuf_8	**A**	0.03607	0.04191	0.11766
	A	0.03955	0.04536	0.11777

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__clkbuf_1	0.00254	1.40479
sky130_fd_sc_hs__clkbuf_16	0.00851	21.46466
sky130_fd_sc_hs__clkbuf_2	0.00255	2.32375
sky130_fd_sc_hs__clkbuf_4	0.00233	5.16573
sky130_fd_sc_hs__clkbuf_8	0.00437	9.98272

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkbuf_1	0.00000	0.06318	0.06318
sky130_fd_sc_hs__clkbuf_16	0.00000	0.63177	1.00797
sky130_fd_sc_hs__clkbuf_2	0.00000	0.09477	0.12612
sky130_fd_sc_hs__clkbuf_4	0.00000	0.15794	0.25199
sky130_fd_sc_hs__clkbuf_8	0.00000	0.31589	0.50399

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)**	0.04198	0.43849	5.72254
sky130_fd_sc_hs__clkbuf_16	**A->X (RR)**	0.05689	0.25618	6.00593
sky130_fd_sc_hs__clkbuf_2	**A->X (RR)**	0.04692	0.38259	5.43944
sky130_fd_sc_hs__clkbuf_4	**A->X (RR)**	0.05982	0.35532	5.81512
sky130_fd_sc_hs__clkbuf_8	**A->X (RR)**	0.05655	0.29514	5.79780

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	**A->X (FF)**	0.04486	0.49732	6.35809
sky130_fd_sc_hs__clkbuf_16	**A->X (FF)**	0.06668	0.40373	6.78287
sky130_fd_sc_hs__clkbuf_2	**A->X (FF)**	0.05232	0.44968	5.70067
sky130_fd_sc_hs__clkbuf_4	**A->X (FF)**	0.06623	0.46701	6.40927
sky130_fd_sc_hs__clkbuf_8	**A->X (FF)**	0.06403	0.42446	6.44153

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00637	0.00777	0.04513
	A	0.00247	0.00386	0.04135
sky130_fd_sc_hs__clkbuf_16	A	0.05055	0.05692	0.23942
	A	0.03739	0.04397	0.23430
sky130_fd_sc_hs__clkbuf_2	A	0.00859	0.00959	0.03867
	A	0.00477	0.00581	0.03546
sky130_fd_sc_hs__clkbuf_4	A	0.01338	0.01474	0.05363
	A	0.00980	0.01119	0.05037
sky130_fd_sc_hs__clkbuf_8	A	0.02559	0.02876	0.11614
	A	0.01883	0.02204	0.11006

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00235	0.00496	0.05071
	A	0.00626	0.00887	0.05456
sky130_fd_sc_hs__clkbuf_16	A	0.03484	0.04580	0.23974
	A	0.04798	0.05886	0.24619
sky130_fd_sc_hs__clkbuf_2	A	0.00397	0.00624	0.04570
	A	0.00778	0.01000	0.04950
sky130_fd_sc_hs__clkbuf_4	A	0.00877	0.01183	0.05462
	A	0.01236	0.01511	0.05752
sky130_fd_sc_hs__clkbuf_8	A	0.01717	0.02295	0.11710
	A	0.02391	0.02954	0.12223

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00240	1.43097
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00243	1.43494
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00246	1.41929
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00239	1.41891
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00243	1.43167
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00246	1.43185

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.11953	0.12612
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.06328	0.12599
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.06380	0.12599
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.23223	0.23882
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.06350	0.12620
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.06504	0.12723

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)**	0.06903	0.61831	7.99965
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (FR)**	0.07692	0.63604	8.02582
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (FR)**	0.08886	0.65878	7.99950
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (FR)**	0.12383	0.67012	8.00259
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (FR)**	0.17293	0.73245	8.13713
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (FR)**	0.30528	0.87951	8.32322

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A->Y (RF)**	0.06638	0.35765	3.91271
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A->Y (RF)**	0.09283	0.40469	4.13933
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A->Y (RF)**	0.15729	0.49911	4.33414
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A->Y (RF)**	0.12105	0.41056	3.90050
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A->Y (RF)**	0.19218	0.50451	4.22356
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A->Y (RF)**	0.38336	0.72949	4.62890

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00499	0.00792	0.06374
	A	0.00870	0.01166	0.06770
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00539	0.00796	0.06029
	A	0.00914	0.01176	0.06428
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00608	0.00821	0.05944
	A	0.00989	0.01202	0.06347
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.01122	0.01381	0.06967
	A	0.01492	0.01749	0.07368
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.01258	0.01471	0.06687
	A	0.01632	0.01849	0.07078
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01525	0.01698	0.06786
	A	0.01906	0.02080	0.07165

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00872	0.01074	0.06771
	A	0.00501	0.00700	0.06292
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00941	0.01112	0.06366
	A	0.00566	0.00736	0.05938
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.01120	0.01273	0.06552
	A	0.00739	0.00894	0.06002
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01474	0.01658	0.07317
	A	0.01105	0.01283	0.06870
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01638	0.01788	0.07000
	A	0.01264	0.01413	0.06583
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.02039	0.02172	0.07337
	A	0.01658	0.01792	0.06857

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

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

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__clkinv_1	0.00306	1.89266
sky130_fd_sc_hs__clkinv_16	0.04487	30.72871
sky130_fd_sc_hs__clkinv_2	0.00578	3.67222
sky130_fd_sc_hs__clkinv_4	0.01146	7.14627
sky130_fd_sc_hs__clkinv_8	0.02293	12.98994

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkinv_1	0.00000	0.47171	0.94318
sky130_fd_sc_hs__clkinv_16	0.00000	0.75717	1.51053
sky130_fd_sc_hs__clkinv_2	0.00000	0.09465	0.18882
sky130_fd_sc_hs__clkinv_4	0.00000	0.18929	0.37763
sky130_fd_sc_hs__clkinv_8	0.00000	0.37859	0.75526

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)**	0.01708	0.61224	10.00080
sky130_fd_sc_hs__clkinv_16	**A->Y (FR)**	0.01240	0.37866	10.50340
sky130_fd_sc_hs__clkinv_2	**A->Y (FR)**	0.01589	0.56123	10.44070
sky130_fd_sc_hs__clkinv_4	**A->Y (FR)**	0.01405	0.49008	10.34430
sky130_fd_sc_hs__clkinv_8	**A->Y (FR)**	0.01440	0.42755	10.04550

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	**A->Y (RF)**	0.01831	0.56822	9.43795
sky130_fd_sc_hs__clkinv_16	**A->Y (RF)**	0.01304	0.28150	9.94712
sky130_fd_sc_hs__clkinv_2	**A->Y (RF)**	0.01610	0.47122	9.24629
sky130_fd_sc_hs__clkinv_4	**A->Y (RF)**	0.01425	0.39529	9.26057
sky130_fd_sc_hs__clkinv_8	**A->Y (RF)**	0.01467	0.32221	8.89545

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00046	0.00154	0.01997
	A	0.00427	0.00630	0.02469
sky130_fd_sc_hs__clkinv_16	A	-0.01372	0.01570	0.15182
	A	0.05532	0.08489	0.22786
sky130_fd_sc_hs__clkinv_2	A	-0.00124	0.00180	0.02054
	A	0.00767	0.01078	0.03028
sky130_fd_sc_hs__clkinv_4	A	-0.00271	0.00436	0.04473
	A	0.01493	0.02221	0.06361
sky130_fd_sc_hs__clkinv_8	A	-0.00539	0.01011	0.10936
	A	0.02995	0.04562	0.14628

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00355	0.00368	0.00767
	A	-0.00116	-0.00083	0.00284
sky130_fd_sc_hs__clkinv_16	A	0.04883	0.05812	0.11283
	A	-0.02028	-0.01158	0.04283
sky130_fd_sc_hs__clkinv_2	A	0.00699	0.00773	0.01496
	A	-0.00192	-0.00122	0.00566
sky130_fd_sc_hs__clkinv_4	A	0.01271	0.01469	0.03092
	A	-0.00494	-0.00312	0.01250
sky130_fd_sc_hs__clkinv_8	A	0.02501	0.02950	0.07114
	A	-0.01031	-0.00607	0.03439

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__conb_1	4.79520

Pin Capacitance Information

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

Leakage Information

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

SKY130_FD_SC_HS__DELAYx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlymetal6s2s_1	15.98400
sky130_fd_sc_hs__dlymetal6s4s_1	15.98400
sky130_fd_sc_hs__dlymetal6s6s_1	15.98400

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlymetal6s2s_1	0.00161	1.41959
sky130_fd_sc_hs__dlymetal6s4s_1	0.00160	1.41471
sky130_fd_sc_hs__dlymetal6s6s_1	0.00160	1.40903

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.12000	0.18953
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.12000	0.18953
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.12000	0.18953

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)**	0.04827	0.43200	5.25446
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.09491	0.47837	5.21633
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.13545	0.51539	5.22967

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.07057	0.47754	4.91480
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.13926	0.53150	4.90624
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.20327	0.59677	4.96069

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01676	0.01803	0.05630
	A	0.01429	0.01557	0.05403
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01678	0.01843	0.06793
	A	0.01430	0.01597	0.06547
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01679	0.01761	0.04368
	A	0.01432	0.01515	0.04122

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01432	0.01537	0.03928
	A	0.01679	0.01783	0.04110
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01436	0.01580	0.04976
	A	0.01683	0.01826	0.05162
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01439	0.01560	0.04088
	A	0.01686	0.01805	0.04269

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK_N	Q	Q_N
0	1	1	F	0	1
1	1	1	F	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbn_1	44.75520
sky130_fd_sc_hs__dfbbn_2	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK_N	Q	Q_N
sky130_fd_sc_hs__dfbbn_1	0.00174	0.00168	0.00521	0.00283	1.41486	1.28930
sky130_fd_sc_hs__dfbbn_2	0.00175	0.00170	0.00518	0.00283	2.65372	2.59729

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	1.02480	2.30241
sky130_fd_sc_hs__dfbbn_2	0.00000	0.87398	2.00723

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)	0.26849	0.86325	8.59722
	SET_B->Q (FR)	0.13859	0.75761	8.60882
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.29659	0.79541	8.48731
	SET_B->Q (FR)	0.15555	0.68924	8.49794

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)	0.26842	0.64003	4.81672
	RESET_B->Q (FF)	0.16954	0.56590	4.75227
	SET_B->Q (RF)	0.09542	0.28352	1.57678
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.29174	0.62239	4.65815
	RESET_B->Q (FF)	0.19116	0.55007	4.62144
	SET_B->Q (RF)	0.11633	0.27998	1.51443

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)	0.24715	0.86484	8.62502
	RESET_B->Q_N (FR)	0.14958	0.79550	8.57096
	SET_B->Q_N (RR)	0.07479	0.51416	5.68423
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.25084	0.77102	8.53964
	RESET_B->Q_N (FR)	0.15240	0.70153	8.51381
	SET_B->Q_N (RR)	0.07719	0.43236	5.64459

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)	0.21586	0.63015	4.63464
	SET_B->Q_N (FF)	0.09006	0.53213	4.86842
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.23399	0.62558	4.58226
	SET_B->Q_N (FF)	0.09813	0.52117	4.84301

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)	0.00667	0.09034	3.11832
	setup	CLK_N (F)	0.07047	-0.02728	-3.10992
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00507	0.08951	3.12455
	setup	CLK_N (F)	0.06570	-0.03138	-3.11884

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)	-0.09223	-0.13639	-0.59654
	setup	CLK_N (F)	0.10752	0.15000	0.60579
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.09238	-0.13739	-0.59693
	setup	CLK_N (F)	0.10916	0.14954	0.61054

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)	0.00667	0.09034	3.11832
	setup	CLK_N (F)	0.07047	-0.02728	-3.10992
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.00507	0.08951	3.12455
	setup	CLK_N (F)	0.06570	-0.03138	-3.11884

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)	-0.09223	-0.13639	-0.59654
	setup	CLK_N (F)	0.10752	0.15000	0.60579
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.09238	-0.13739	-0.59693
	setup	CLK_N (F)	0.10916	0.14954	0.61054

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)	0.06984	-0.02856	-2.98740
	removal	CLK_N (F)	0.01418	0.10139	3.00177
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.06640	-0.03558	-2.99628
	removal	CLK_N (F)	0.01418	0.10139	3.00767

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)	0.06984	-0.02856	-2.98740
	removal	CLK_N (F)	0.01418	0.10139	3.00177
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.06640	-0.03558	-2.99628
	removal	CLK_N (F)	0.01418	0.10139	3.00767

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 ()	0.14340	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.12795	0.58716	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.15223	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.13236	0.58716	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)	-0.01948	-0.13097	-2.93628
	removal	CLK_N (F)	0.03063	0.14288	3.13724
	hold	RESET_B (R)	-0.03139	-0.06118	-0.36790
	setup	RESET_B (R)	0.07062	0.09762	0.52676
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02104	-0.13097	-2.75749
	removal	CLK_N (F)	0.02865	0.14288	3.13617
	hold	RESET_B (R)	-0.04563	-0.07816	-0.47296
	setup	RESET_B (R)	0.07653	0.11612	0.60815

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)	-0.01948	-0.13097	-2.93628
	removal	CLK_N (F)	0.03063	0.14288	3.13724
	hold	RESET_B (R)	-0.03139	-0.06118	-0.36790
	hold	RESET_B (R)	-0.03290	-0.06158	-0.36901
	setup	RESET_B (R)	0.07062	0.09762	0.49260
	setup	RESET_B (R)	0.05315	0.08230	0.52676
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.02104	-0.13097	-2.75749
	removal	CLK_N (F)	0.02865	0.14288	3.13617
	hold	RESET_B (R)	-0.04580	-0.08867	-0.47961
	hold	RESET_B (R)	-0.04563	-0.07816	-0.47296
	setup	RESET_B (R)	0.07653	0.11612	0.60756
	setup	RESET_B (R)	0.05765	0.10708	0.60815

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 ()	0.10587	0.58716	16.50020
	min_pulse_width	SET_B ()	0.09483	0.58716	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.12574	0.58716	16.50020
	min_pulse_width	SET_B ()	0.10366	0.58716	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 ()	0.11911	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.10145	0.58716	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.11470	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.10145	0.58716	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 ()	0.11249	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.14340	0.58716	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.13015	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.15002	0.58716	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	0.01326	0.01520	0.05061
	CLK_N	0.01541	0.01737	0.05276
	SET_B	0.01376	0.01678	0.08315
	SET_B	0.01780	0.02082	0.08684
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01679	0.01837	0.05391
	CLK_N	0.01897	0.02059	0.05605
	SET_B	0.01696	0.02009	0.08644
	SET_B	0.02102	0.02404	0.09036

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01437	0.01653	0.05063
	CLK_N	0.01634	0.01849	0.05245
	RESET_B	0.01703	0.01826	0.03888
	RESET_B	0.01822	0.01944	0.03981
	SET_B	0.01793	0.01904	0.08229
	SET_B	0.01386	0.01497	0.07822
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01727	0.01960	0.05441
	CLK_N	0.01920	0.02153	0.05565
	RESET_B	0.01993	0.02141	0.04294
	RESET_B	0.02111	0.02253	0.04370
	SET_B	0.02080	0.02202	0.08480
	SET_B	0.01673	0.01795	0.08073

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01439	0.01655	0.05128
	CLK_N	0.01635	0.01851	0.05300
	RESET_B	0.01704	0.01827	0.03906
	RESET_B	0.01823	0.01945	0.04023
	SET_B	0.01794	0.01905	0.08258
	SET_B	0.01387	0.01498	0.07855
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01728	0.01962	0.05514
	CLK_N	0.01922	0.02155	0.05626
	RESET_B	0.01994	0.02141	0.04340
	RESET_B	0.02112	0.02254	0.04402
	SET_B	0.02081	0.02203	0.08525
	SET_B	0.01674	0.01796	0.08135

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01324	0.01518	0.05035
	CLK_N	0.01539	0.01734	0.05232
	SET_B	0.01372	0.01675	0.08208
	SET_B	0.01776	0.02079	0.08612
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01677	0.01836	0.05439
	CLK_N	0.01894	0.02056	0.05592
	SET_B	0.01692	0.02004	0.08629
	SET_B	0.02098	0.02399	0.08966

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)	0.01049	0.01105	0.03424
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00830	0.00886	0.03205
	(CLK_N * !SET_B * Q * !Q_N)	0.00681	0.00739	0.02790
	(CLK_N * !SET_B * Q * !Q_N)	0.00406	0.00465	0.02517
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00580	0.00637	0.02681
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00309	0.00367	0.02411
	!CLK_N	0.00366	0.00440	0.02587
	!CLK_N	0.00095	0.00169	0.02317
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01054	0.01110	0.03432
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00834	0.00890	0.03212
	(CLK_N * !SET_B * Q * !Q_N)	0.00682	0.00741	0.02798
	(CLK_N * !SET_B * Q * !Q_N)	0.00408	0.00467	0.02524
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00577	0.00635	0.02685
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00306	0.00364	0.02414
	!CLK_N	0.00364	0.00439	0.02592
	!CLK_N	0.00095	0.00168	0.02322

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)	0.00984	0.01045	0.03246
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01203	0.01263	0.03465
	(CLK_N * !SET_B * Q * !Q_N)	0.00256	0.00317	0.02247
	(CLK_N * !SET_B * Q * !Q_N)	0.00530	0.00592	0.02521
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00348	0.00418	0.02355
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00617	0.00688	0.02625
	!CLK_N	0.00128	0.00207	0.02287
	!CLK_N	0.00397	0.00477	0.02556
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00981	0.01043	0.03248
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.01202	0.01263	0.03469
	(CLK_N * !SET_B * Q * !Q_N)	0.00249	0.00310	0.02245
	(CLK_N * !SET_B * Q * !Q_N)	0.00523	0.00584	0.02519
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00346	0.00410	0.02358
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00615	0.00681	0.02628
	!CLK_N	0.00125	0.00204	0.02289
	!CLK_N	0.00394	0.00475	0.02559

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)	0.01146	0.01234	0.05458
	(CLK_N * D * SET_B * !Q * Q_N)	0.00891	0.00977	0.05202
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00677	0.00783	0.04838
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00369	0.00475	0.04530
	(!SET_B * Q * !Q_N)	0.00679	0.00797	0.04895
	(!SET_B * Q * !Q_N)	0.00365	0.00481	0.04580
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01152	0.01240	0.05495
	(CLK_N * D * SET_B * !Q * Q_N)	0.00892	0.00979	0.05235
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00675	0.00782	0.04871
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00365	0.00471	0.04560
	(!SET_B * Q * !Q_N)	0.00680	0.00799	0.04916
	(!SET_B * Q * !Q_N)	0.00362	0.00480	0.04597

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)	0.01001	0.01200	0.05443
	(CLK_N * D * SET_B * !Q * Q_N)	0.01256	0.01455	0.05699
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00336	0.00537	0.04553
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00644	0.00844	0.04861
	(!SET_B * Q * !Q_N)	0.00215	0.00424	0.04470
	(!SET_B * Q * !Q_N)	0.00532	0.00741	0.04786
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.01004	0.01205	0.05476
	(CLK_N * D * SET_B * !Q * Q_N)	0.01264	0.01466	0.05737
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00338	0.00541	0.04586
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00650	0.00853	0.04898
	(!SET_B * Q * !Q_N)	0.00215	0.00403	0.04487
	(!SET_B * Q * !Q_N)	0.00536	0.00723	0.04806

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)	0.00339	0.00344	0.00340
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00359	-0.00362	-0.00360
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01074	0.01212	0.07411
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00308	0.00440	0.06642
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00336	0.00341	0.00337
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00357	-0.00360	-0.00358
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.01074	0.01212	0.07403
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00314	0.00447	0.06642

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)	-0.00332	-0.00340	-0.00338
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00361	0.00366	0.00362
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00111	0.00422	0.06745
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00875	0.01192	0.07514
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00329	-0.00337	-0.00335
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00360	0.00363	0.00360
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00107	0.00418	0.06733
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00865	0.01184	0.07496

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)**	0.01939	0.02165	0.09209
	(D * RESET_B * SET_B * !Q * Q_N)	0.01578	0.01803	0.08849
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01232	0.01440	0.08383
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00819	0.01026	0.07970
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01460	0.01684	0.08753
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01047	0.01271	0.08340
	(!D * SET_B * !Q * Q_N)	0.01155	0.01365	0.08351
	(!D * SET_B * !Q * Q_N)	0.00742	0.00952	0.07940
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02035	0.02234	0.09285
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01571	0.01769	0.08821
	(!D * !SET_B * Q * !Q_N)	0.01289	0.01492	0.08540
	(!D * !SET_B * Q * !Q_N)	0.00880	0.01082	0.08132

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01946	0.02172	0.09216
	(D * RESET_B * SET_B * !Q * Q_N)	0.01583	0.01809	0.08854
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01230	0.01438	0.08381
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00818	0.01024	0.07968
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01461	0.01685	0.08725
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01048	0.01271	0.08312
	(!D * SET_B * !Q * Q_N)	0.01156	0.01366	0.08350
	(!D * SET_B * !Q * Q_N)	0.00744	0.00953	0.07939
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02035	0.02235	0.09285
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01572	0.01770	0.08822
	(!D * !SET_B * Q * !Q_N)	0.01284	0.01486	0.08535
	(!D * !SET_B * Q * !Q_N)	0.00874	0.01076	0.08126

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)	0.00931	0.01245	0.08130
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01344	0.01659	0.08542
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01312	0.01612	0.08456
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01725	0.02025	0.08868
	(!D * SET_B * !Q * Q_N)	0.01007	0.01313	0.08195
	(!D * SET_B * !Q * Q_N)	0.01417	0.01726	0.08607
	(!D * !SET_B * Q * !Q_N)	0.01293	0.01602	0.08619
	(!D * !SET_B * Q * !Q_N)	0.01700	0.02012	0.09028
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00932	0.01245	0.08129
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01345	0.01659	0.08542
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01308	0.01608	0.08451
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01721	0.02021	0.08864
	(!D * SET_B * !Q * Q_N)	0.01005	0.01311	0.08193
	(!D * SET_B * !Q * Q_N)	0.01415	0.01725	0.08606
	(!D * !SET_B * Q * !Q_N)	0.01297	0.01606	0.08624
	(!D * !SET_B * Q * !Q_N)	0.01705	0.02017	0.09033

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT	
D	RESET_B	SET_B	CLK	Q	Q_N
0	1	1	R	0	1
1	1	1	R	1	0
x	x	0	x	1	0
x	0	1	x	0	1
x	1	1	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfbbp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	RESET_B	SET_B	CLK	Q	Q_N
sky130_fd_sc_hs__dfbbp_1	0.00153	0.00184	0.00602	0.00280	1.42833	1.26863

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	1.02480	2.30241

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)	0.25733	0.64892	5.48509
	SET_B->Q (FR)	0.12518	0.74039	8.61516

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.20093	0.36961	1.66906
	RESET_B->Q (FF)	0.16508	0.56006	4.79651
	SET_B->Q (RF)	0.09778	0.27851	1.61745

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)	0.18070	0.59154	5.39624
	RESET_B->Q_N (FR)	0.14578	0.78853	8.53523
	SET_B->Q_N (RR)	0.07794	0.50877	5.63571

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)	0.20628	0.40832	1.39361
	SET_B->Q_N (FF)	0.08028	0.50377	4.74476

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)	-0.02432	-0.05556	-0.36391
	setup	CLK (R)	0.05049	0.07144	0.37593

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)	-0.06210	-0.20258	-3.74705
	setup	CLK (R)	0.09389	0.23268	3.75211

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)	-0.02432	-0.05556	-0.36391
	setup	CLK (R)	0.05049	0.07144	0.37593

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)	-0.06210	-0.20258	-3.74705
	setup	CLK (R)	0.09389	0.23268	3.75211

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)	0.06004	0.07025	0.20667
	removal	CLK (R)	-0.02852	-0.04273	-0.16323

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)	0.06004	0.07025	0.20667
	removal	CLK (R)	-0.02852	-0.04273	-0.16323

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 ()	0.12795	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.13236	0.58716	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)	0.00299	0.00819	0.60332
	removal	CLK (R)	0.04157	0.06350	0.04460
	hold	RESET_B (R)	-0.03441	-0.06546	-0.40385
	setup	RESET_B (R)	0.06463	0.09648	0.55575

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)	0.00299	0.00819	0.60332
	removal	CLK (R)	0.04157	0.06350	0.04460
	hold	RESET_B (R)	-0.03460	-0.06546	-0.40561
	hold	RESET_B (R)	-0.03441	-0.06624	-0.40385
	setup	RESET_B (R)	0.06364	0.09265	0.55575
	setup	RESET_B (R)	0.06463	0.09648	0.51974

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 ()	0.08379	0.58716	16.50020
	min_pulse_width	SET_B ()	0.09262	0.58716	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 ()	0.06613	0.58716	16.50020
	min_pulse_width	CLK ()	0.09041	0.58716	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 ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.14119	0.58716	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	0.01555	0.01684	0.05312
	CLK	0.01347	0.01467	0.05111
	SET_B	0.01352	0.01677	0.08446
	SET_B	0.01795	0.02120	0.08889

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01546	0.01692	0.05448
	CLK	0.01317	0.01459	0.05219
	RESET_B	0.01567	0.01686	0.03729
	RESET_B	0.01689	0.01808	0.03849
	SET_B	0.01713	0.01810	0.08269
	SET_B	0.01268	0.01366	0.07822

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01548	0.01690	0.05491
	CLK	0.01319	0.01460	0.05268
	RESET_B	0.01569	0.01688	0.03778
	RESET_B	0.01690	0.01809	0.03898
	SET_B	0.01714	0.01813	0.08293
	SET_B	0.01269	0.01366	0.07855

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01552	0.01673	0.05276
	CLK	0.01345	0.01464	0.05079
	SET_B	0.01348	0.01676	0.08375
	SET_B	0.01791	0.02114	0.08816

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00246	0.00356	0.02603
	CLK	0.00010	0.00119	0.02366
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00992	0.01062	0.03432
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00780	0.00849	0.03220
	(!CLK * !SET_B * Q * !Q_N)	0.00578	0.00654	0.02779
	(!CLK * !SET_B * Q * !Q_N)	0.00314	0.00388	0.02515
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00465	0.00539	0.02659
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00203	0.00276	0.02397

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00025	0.00086	0.02310
	CLK	0.00211	0.00323	0.02546
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00746	0.00835	0.03108
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00959	0.01047	0.03320
	(!CLK * !SET_B * Q * !Q_N)	0.00170	0.00243	0.02269
	(!CLK * !SET_B * Q * !Q_N)	0.00435	0.00508	0.02534
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00270	0.00346	0.02391
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00533	0.00609	0.02653

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)	0.00615	0.00726	0.04818
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00326	0.00435	0.04528
	(!SET_B * Q * !Q_N)	0.00667	0.00798	0.04923
	(!SET_B * Q * !Q_N)	0.00369	0.00500	0.04626
	(!CLK * D * SET_B * !Q * Q_N)	0.01156	0.01241	0.05498
	(!CLK * D * SET_B * !Q * Q_N)	0.00918	0.01001	0.05259

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)	0.00324	0.00503	0.04572
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00614	0.00795	0.04863
	(!SET_B * Q * !Q_N)	0.00153	0.00341	0.04442
	(!SET_B * Q * !Q_N)	0.00451	0.00640	0.04740
	(!CLK * D * SET_B * !Q * Q_N)	0.00847	0.01046	0.05309
	(!CLK * D * SET_B * !Q * Q_N)	0.01085	0.01285	0.05549

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)	0.00341	0.00345	0.00343
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00458	-0.00461	-0.00460
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00895	0.01041	0.07237
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00031	0.00169	0.06369

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)	-0.00337	-0.00342	-0.00341
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00464	0.00463	0.00463
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00199	0.00525	0.06814
	(!CLK * !D * RESET_B * Q * !Q_N)	0.01067	0.01398	0.07684

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)	0.01418	0.01627	0.08753
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00981	0.01190	0.08316
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01706	0.01906	0.09151
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01294	0.01494	0.08739
	(!D * SET_B * !Q * Q_N)	0.01430	0.01649	0.08787
	(!D * SET_B * !Q * Q_N)	0.00993	0.01211	0.08350
	(!D * !SET_B * Q * !Q_N)	0.01789	0.02018	0.09163
	(!D * !SET_B * Q * !Q_N)	0.01325	0.01554	0.08699

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)	0.01499	0.01810	0.09052
	(D * RESET_B * SET_B * !Q * Q_N)	0.01960	0.02272	0.09512
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00750	0.01070	0.08169
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01187	0.01508	0.08606
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00943	0.01263	0.08497
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01354	0.01675	0.08909
	(!D * SET_B * !Q * Q_N)	0.00736	0.01053	0.08142
	(!D * SET_B * !Q * Q_N)	0.01172	0.01490	0.08578
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01602	0.01941	0.09181
	(!D * RESET_B * SET_B * Q * !Q_N)	0.02016	0.02355	0.09595
	(!D * !SET_B * Q * !Q_N)	0.01019	0.01359	0.08549
	(!D * !SET_B * Q * !Q_N)	0.01483	0.01824	0.09013

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
D	**RESET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**R**	**0**	**1**
1	**1**	**R**	**1**	**0**
x	**0**	**x**	**0**	**1**
x	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrbp_1	38.36160
sky130_fd_sc_hs__dfrbp_2	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**RESET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfrbp_1	0.00181	0.00555	0.00286	1.44627	1.42709
sky130_fd_sc_hs__dfrbp_2	0.00166	0.00535	0.00286	2.81630	2.78264

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrbp_1	0.00000	0.41823	0.85868
sky130_fd_sc_hs__dfrbp_2	0.00000	0.36270	0.56248

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)	0.15740	0.54614	5.36632
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.18074	0.50140	5.95195

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.14905	0.31212	1.45835
	RESET_B->Q (FF)	0.21168	0.63640	5.04346
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.16997	0.30530	1.55617
	RESET_B->Q (FF)	0.25042	0.65555	5.21401

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)	0.12843	0.53393	5.42276
	RESET_B->Q_N (FR)	0.19056	0.85347	8.99026
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.12683	0.44295	5.30776
	RESET_B->Q_N (FR)	0.20728	0.79072	8.95674

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)	0.11885	0.32703	1.49731
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.11820	0.31664	1.56565

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)	-0.03616	-0.09525	-0.61024
	setup	CLK (R)	0.06813	0.12300	0.62335
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.03692	-0.09922	-0.63391
	setup	CLK (R)	0.08203	0.12900	0.64702

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)	-0.05924	-0.20092	-3.82553
	setup	CLK (R)	0.10715	0.26266	3.85323
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06846	-0.21900	-3.86363
	setup	CLK (R)	0.12141	0.27344	3.89202

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)	-0.03616	-0.09525	-0.61024
	setup	CLK (R)	0.06813	0.12300	0.62335
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.03692	-0.09922	-0.63391
	setup	CLK (R)	0.08203	0.12900	0.64702

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)	-0.05924	-0.20092	-3.82553
	setup	CLK (R)	0.10715	0.26266	3.85323
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.06846	-0.21900	-3.86363
	setup	CLK (R)	0.12141	0.27344	3.89202

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)	0.07516	0.12303	0.91095
	removal	CLK (R)	-0.06014	-0.11113	-0.90648
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.09095	0.12900	0.91408
	removal	CLK (R)	-0.06491	-0.11509	-0.91051

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)	0.07516	0.12303	0.91095
	removal	CLK (R)	-0.06014	-0.11113	-0.90648
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.09095	0.12900	0.91408
	removal	CLK (R)	-0.06491	-0.11509	-0.91051

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 ()	0.11249	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09704	0.58716	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.12353	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.10366	0.58716	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 ()	0.08600	0.58716	16.50020
	min_pulse_width	CLK ()	0.05730	0.58716	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	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 ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.13678	0.58716	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.12353	0.58716	16.50020
	min_pulse_width	CLK ()	0.13898	0.58716	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	0.01445	0.01550	0.05101
	CLK	0.01226	0.01325	0.04888
sky130_fd_sc_hs__dfrbp_2	CLK	0.01648	0.01757	0.05283
	CLK	0.01431	0.01533	0.05095

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01459	0.01587	0.05045
	CLK	0.01234	0.01360	0.04829
	RESET_B	0.01120	0.01246	0.03878
	RESET_B	0.01580	0.01704	0.04315
sky130_fd_sc_hs__dfrbp_2	CLK	0.01641	0.01799	0.05258
	CLK	0.01425	0.01582	0.05052
	RESET_B	0.01426	0.01592	0.04275
	RESET_B	0.01853	0.02016	0.04623

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01460	0.01591	0.05095
	CLK	0.01235	0.01361	0.04880
	RESET_B	0.01121	0.01247	0.03985
	RESET_B	0.01581	0.01705	0.04377
sky130_fd_sc_hs__dfrbp_2	CLK	0.01643	0.01801	0.05301
	CLK	0.01427	0.01585	0.05100
	RESET_B	0.01428	0.01593	0.04343
	RESET_B	0.01854	0.02018	0.04687

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01444	0.01542	0.05062
	CLK	0.01224	0.01323	0.04847
sky130_fd_sc_hs__dfrbp_2	CLK	0.01648	0.01744	0.05263
	CLK	0.01431	0.01528	0.05054

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00390	0.00464	0.02541
	(CLK * RESET_B)	0.00082	0.00155	0.02234
	(CLK * !RESET_B)	0.00042	0.00041	0.00041
	(CLK * !RESET_B)	-0.00132	-0.00132	-0.00133
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01089	0.01171	0.03626
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00766	0.00848	0.03303
	(!CLK * !RESET_B)	0.00041	0.00042	0.00041
	(!CLK * !RESET_B)	-0.00131	-0.00132	-0.00133
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00446	0.00511	0.02568
	(CLK * RESET_B)	0.00177	0.00241	0.02298
	(CLK * !RESET_B)	0.00047	0.00047	0.00047
	(CLK * !RESET_B)	-0.00112	-0.00113	-0.00114
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01325	0.01408	0.03815
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01072	0.01154	0.03562
	(!CLK * !RESET_B)	0.00047	0.00048	0.00047
	(!CLK * !RESET_B)	-0.00112	-0.00113	-0.00114

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00040	0.00116	0.02154
	(CLK * RESET_B)	0.00349	0.00424	0.02462
	(CLK * !RESET_B)	-0.00040	-0.00041	-0.00040
	(CLK * !RESET_B)	0.00134	0.00136	0.00134
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00689	0.00803	0.03239
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01010	0.01126	0.03561
	(!CLK * !RESET_B)	-0.00040	-0.00040	-0.00040
	(!CLK * !RESET_B)	0.00135	0.00135	0.00134
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00078	0.00146	0.02150
	(CLK * RESET_B)	0.00347	0.00415	0.02419
	(CLK * !RESET_B)	-0.00046	-0.00046	-0.00045
	(CLK * !RESET_B)	0.00116	0.00117	0.00115
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00822	0.00927	0.03211
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01074	0.01182	0.03464
	(!CLK * !RESET_B)	-0.00046	-0.00046	-0.00045
	(!CLK * !RESET_B)	0.00116	0.00116	0.00115

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)	0.00743	0.00789	0.02689
	(CLK * D * !Q * Q_N)	-0.00154	-0.00110	0.01791
	(CLK * !D * !Q * Q_N)	0.00358	0.00362	0.00360
	(CLK * !D * !Q * Q_N)	-0.00386	-0.00389	-0.00388
	(!CLK * D * !Q * Q_N)	0.01476	0.01519	0.04701
	(!CLK * D * !Q * Q_N)	0.00566	0.00606	0.03790
	(!CLK * !D * !Q * Q_N)	0.00352	0.00357	0.00352
	(!CLK * !D * !Q * Q_N)	-0.00396	-0.00399	-0.00396
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00827	0.00874	0.02763
	(CLK * D * !Q * Q_N)	-0.00030	0.00012	0.01906
	(CLK * !D * !Q * Q_N)	0.00390	0.00396	0.00391
	(CLK * !D * !Q * Q_N)	-0.00341	-0.00344	-0.00341
	(!CLK * D * !Q * Q_N)	0.01737	0.01779	0.04895
	(!CLK * D * !Q * Q_N)	0.00898	0.00937	0.04057
	(!CLK * !D * !Q * Q_N)	0.00384	0.00390	0.00385
	(!CLK * !D * !Q * Q_N)	-0.00346	-0.00349	-0.00346

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)	-0.00218	-0.00155	0.01743
	(CLK * D * !Q * Q_N)	0.00676	0.00746	0.02641
	(CLK * !D * !Q * Q_N)	-0.00348	-0.00362	-0.00359
	(CLK * !D * !Q * Q_N)	0.00393	0.00391	0.00389
	(!CLK * D * !Q * Q_N)	0.00499	0.00581	0.03982
	(!CLK * D * !Q * Q_N)	0.01412	0.01494	0.04893
	(!CLK * !D * !Q * Q_N)	-0.00340	-0.00354	-0.00351
	(!CLK * !D * !Q * Q_N)	0.00401	0.00399	0.00398
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00222	-0.00154	0.01741
	(CLK * D * !Q * Q_N)	0.00637	0.00705	0.02598
	(CLK * !D * !Q * Q_N)	-0.00383	-0.00392	-0.00390
	(CLK * !D * !Q * Q_N)	0.00349	0.00346	0.00342
	(!CLK * D * !Q * Q_N)	0.00615	0.00705	0.03907
	(!CLK * D * !Q * Q_N)	0.01457	0.01548	0.04746
	(!CLK * !D * !Q * Q_N)	-0.00378	-0.00388	-0.00385
	(!CLK * !D * !Q * Q_N)	0.00354	0.00350	0.00348

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)	0.01351	0.01535	0.08236
	(D * RESET_B * Q * !Q_N)	0.00906	0.01089	0.07791
	(D * !RESET_B * !Q * Q_N)	0.01395	0.01579	0.08275
	(D * !RESET_B * !Q * Q_N)	0.00950	0.01133	0.07831
	(!D * !Q * Q_N)	0.01395	0.01579	0.08263
	(!D * !Q * Q_N)	0.00950	0.01132	0.07818
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.01223	0.01414	0.08090
	(D * RESET_B * Q * !Q_N)	0.00789	0.00979	0.07657
	(D * !RESET_B * !Q * Q_N)	0.01227	0.01418	0.08089
	(D * !RESET_B * !Q * Q_N)	0.00793	0.00983	0.07656
	(!D * !Q * Q_N)	0.01227	0.01418	0.08091
	(!D * !Q * Q_N)	0.00793	0.00982	0.07658

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)	0.00754	0.01057	0.07727
	(D * RESET_B * Q * !Q_N)	0.01197	0.01502	0.08173
	(D * RESET_B * !Q * Q_N)	0.01379	0.01686	0.08567
	(D * RESET_B * !Q * Q_N)	0.01808	0.02119	0.08996
	(D * !RESET_B * !Q * Q_N)	0.00699	0.01004	0.07681
	(D * !RESET_B * !Q * Q_N)	0.01142	0.01450	0.08124
	(!D * RESET_B * Q * !Q_N)	0.01503	0.01824	0.08637
	(!D * RESET_B * Q * !Q_N)	0.01961	0.02284	0.09095
	(!D * !Q * Q_N)	0.00699	0.01004	0.07683
	(!D * !Q * Q_N)	0.01142	0.01450	0.08126
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00760	0.01062	0.07712
	(D * RESET_B * Q * !Q_N)	0.01192	0.01497	0.08146
	(D * RESET_B * !Q * Q_N)	0.01681	0.01972	0.08784
	(D * RESET_B * !Q * Q_N)	0.02126	0.02420	0.09230
	(D * !RESET_B * !Q * Q_N)	0.00753	0.01060	0.07712
	(D * !RESET_B * !Q * Q_N)	0.01184	0.01495	0.08146
	(!D * RESET_B * Q * !Q_N)	0.01621	0.01942	0.08750
	(!D * RESET_B * Q * !Q_N)	0.02037	0.02361	0.09168
	(!D * !Q * Q_N)	0.00752	0.01051	0.07713
	(!D * !Q * Q_N)	0.01184	0.01486	0.08147

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK_N	Q
0	1	F	0
1	1	F	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtn_1	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK_N	Q
sky130_fd_sc_hs__dfrtn_1	0.00178	0.00535	0.00273	1.36591

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.39607	0.79472

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)	0.17224	0.78509	8.57091

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)	0.14144	0.51334	4.56611
	RESET_B->Q (FF)	0.19540	0.61332	4.87870

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)	0.01562	0.09125	2.93917
	setup	CLK_N (F)	0.03322	-0.04363	-2.89952

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)	-0.04306	-0.08572	-0.42183
	setup	CLK_N (F)	0.12019	0.14347	0.45530

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)	0.01562	0.09125	2.93917
	setup	CLK_N (F)	0.03322	-0.04363	-2.89952

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)	-0.04306	-0.08572	-0.42183
	setup	CLK_N (F)	0.12019	0.14347	0.45530

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)	0.04190	-0.04763	-2.67416
	removal	CLK_N (F)	-0.01636	0.06350	2.67902

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)	0.04190	-0.04763	-2.67416
	removal	CLK_N (F)	-0.01636	0.06350	2.67902

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 ()	0.08821	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.11028	0.58716	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 ()	0.08158	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.12353	0.58716	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 ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.09041	0.58716	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	0.02268	0.02687	0.09722
	CLK_N	0.02682	0.03104	0.10136

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.02079	0.02455	0.09563
	CLK_N	0.02481	0.02858	0.09881
	RESET_B	0.01998	0.02211	0.07422
	RESET_B	0.02851	0.03060	0.08259

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)	0.01081	0.01167	0.03583
	(CLK_N * RESET_B)	0.00797	0.00882	0.03301
	(CLK_N * !RESET_B)	0.00042	0.00042	0.00041
	(CLK_N * !RESET_B)	-0.00130	-0.00131	-0.00132
	(!CLK_N * RESET_B)	0.00379	0.00453	0.02531
	(!CLK_N * RESET_B)	0.00087	0.00161	0.02239
	(!CLK_N * !RESET_B)	0.00042	0.00042	0.00041
	(!CLK_N * !RESET_B)	-0.00130	-0.00130	-0.00132

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)	0.00776	0.00901	0.03261
	(CLK_N * RESET_B)	0.01060	0.01184	0.03544
	(CLK_N * !RESET_B)	-0.00040	-0.00041	-0.00040
	(CLK_N * !RESET_B)	0.00132	0.00133	0.00132
	(!CLK_N * RESET_B)	0.00051	0.00126	0.02164
	(!CLK_N * RESET_B)	0.00344	0.00418	0.02455
	(!CLK_N * !RESET_B)	-0.00041	-0.00041	-0.00040
	(!CLK_N * !RESET_B)	0.00133	0.00134	0.00132

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)	0.01464	0.01512	0.04667
	(CLK_N * D * !Q)	0.00618	0.00661	0.03819
	(CLK_N * !D * !Q)	0.00376	0.00382	0.00377
	(CLK_N * !D * !Q)	-0.00344	-0.00346	-0.00344
	(!CLK_N * D * !Q)	0.00709	0.00763	0.02657
	(!CLK_N * D * !Q)	-0.00145	-0.00100	0.01801
	(!CLK_N * !D * !Q)	0.00367	0.00372	0.00368
	(!CLK_N * !D * !Q)	-0.00352	-0.00355	-0.00353

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)	0.00577	0.00648	0.04011
	(CLK_N * D * !Q)	0.01426	0.01497	0.04861
	(CLK_N * !D * !Q)	-0.00366	-0.00377	-0.00377
	(CLK_N * !D * !Q)	0.00347	0.00346	0.00345
	(!CLK_N * D * !Q)	-0.00199	-0.00123	0.01769
	(!CLK_N * D * !Q)	0.00660	0.00737	0.02625
	(!CLK_N * !D * !Q)	-0.00361	-0.00372	-0.00368
	(!CLK_N * !D * !Q)	0.00360	0.00359	0.00354

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)	0.01309	0.01501	0.08360
	(D * RESET_B * Q)	0.00899	0.01091	0.07951
	(D * RESET_B * !Q)	0.02033	0.02236	0.09180
	(D * RESET_B * !Q)	0.01632	0.01833	0.08777
	(D * !RESET_B * !Q)	0.01285	0.01487	0.08345
	(D * !RESET_B * !Q)	0.00875	0.01076	0.07935
	(!D * RESET_B * Q)	0.01987	0.02167	0.09181
	(!D * RESET_B * Q)	0.01569	0.01747	0.08763
	(!D * !Q)	0.01284	0.01479	0.08333
	(!D * !Q)	0.00875	0.01067	0.07923

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)	0.00930	0.01222	0.08039
	(D * RESET_B * Q)	0.01338	0.01631	0.08449
	(D * !RESET_B * !Q)	0.00946	0.01239	0.08116
	(D * !RESET_B * !Q)	0.01355	0.01648	0.08526
	(!D * !Q)	0.00944	0.01237	0.08046
	(!D * !Q)	0.01353	0.01647	0.08457

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	RESET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	0
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfrtp_1	36.76320
sky130_fd_sc_hs__dfrtp_2	38.36160
sky130_fd_sc_hs__dfrtp_4	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RESET_B	CLK	Q
sky130_fd_sc_hs__dfrtp_1	0.00179	0.00554	0.00287	1.46413
sky130_fd_sc_hs__dfrtp_2	0.00178	0.00545	0.00286	2.73372
sky130_fd_sc_hs__dfrtp_4	0.00180	0.00562	0.00286	5.46113

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtp_1	0.00000	0.39607	0.79472
sky130_fd_sc_hs__dfrtp_2	0.00000	0.43843	0.79572
sky130_fd_sc_hs__dfrtp_4	0.00000	0.68022	1.26933

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)**	0.13898	0.53006	5.38365
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RR)**	0.13833	0.43591	5.21029
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RR)**	0.17922	0.41493	5.36357

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	**CLK->Q (RF)**	0.14352	0.30838	1.49347
	RESET_B->Q (FF)	0.20119	0.62789	5.07661
sky130_fd_sc_hs__dfrtp_2	**CLK->Q (RF)**	0.15809	0.29280	1.34794
	RESET_B->Q (FF)	0.21484	0.61022	4.92942
sky130_fd_sc_hs__dfrtp_4	**CLK->Q (RF)**	0.15910	0.27469	1.56564
	RESET_B->Q (FF)	0.22141	0.59728	5.15253

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)	-0.04108	-0.09922	-0.61762
	setup	CLK (R)	0.08220	0.13141	0.63028
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04239	-0.09922	-0.61764
	setup	CLK (R)	0.07978	0.12900	0.62459
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04122	-0.09922	-0.61471
	setup	CLK (R)	0.07821	0.12700	0.62394

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)	-0.05454	-0.19476	-3.83438
	setup	CLK (R)	0.10687	0.25875	3.85626
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05041	-0.19259	-3.83372
	setup	CLK (R)	0.10603	0.25746	3.85704
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06591	-0.20561	-3.84520
	setup	CLK (R)	0.11226	0.26523	3.87245

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)	-0.04108	-0.09922	-0.61762
	setup	CLK (R)	0.08220	0.13141	0.63028
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04239	-0.09922	-0.61764
	setup	CLK (R)	0.07978	0.12900	0.62459
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04122	-0.09922	-0.61471
	setup	CLK (R)	0.07821	0.12700	0.62394

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)	-0.05454	-0.19476	-3.83438
	setup	CLK (R)	0.10687	0.25875	3.85626
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.05041	-0.19259	-3.83372
	setup	CLK (R)	0.10603	0.25746	3.85704
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06591	-0.20561	-3.84520
	setup	CLK (R)	0.11226	0.26523	3.87245

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)	0.08994	0.13235	0.91287
	removal	CLK (R)	-0.05954	-0.11113	-0.91155
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.08592	0.12900	0.91215
	removal	CLK (R)	-0.06014	-0.11113	-0.90755
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.08327	0.12700	0.90802
	removal	CLK (R)	-0.06422	-0.11113	-0.90355

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)	0.08994	0.13235	0.91287
	removal	CLK (R)	-0.05954	-0.11113	-0.91155
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.08592	0.12900	0.91215
	removal	CLK (R)	-0.06014	-0.11113	-0.90755
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.08327	0.12700	0.90802
	removal	CLK (R)	-0.06422	-0.11113	-0.90355

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 ()	0.11028	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09041	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.11249	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09262	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.11691	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09262	0.58716	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 ()	0.06613	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.05730	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.09483	0.58716	16.50020
	min_pulse_width	CLK ()	0.05950	0.58716	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 ()	0.12132	0.58716	16.50020
	min_pulse_width	CLK ()	0.13678	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.11911	0.58716	16.50020
	min_pulse_width	CLK ()	0.13678	0.58716	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.12353	0.58716	16.50020
	min_pulse_width	CLK ()	0.14561	0.58716	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	0.02562	0.02792	0.09899
	CLK	0.02123	0.02355	0.09485
sky130_fd_sc_hs__dfrtp_2	CLK	0.02819	0.03074	0.10181
	CLK	0.02382	0.02648	0.09746
sky130_fd_sc_hs__dfrtp_4	CLK	0.03572	0.03858	0.10955
	CLK	0.03118	0.03423	0.10596

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02750	0.02988	0.09941
	CLK	0.02286	0.02520	0.09462
	RESET_B	0.02028	0.02246	0.07622
	RESET_B	0.02939	0.03152	0.08394
sky130_fd_sc_hs__dfrtp_2	CLK	0.02973	0.03217	0.10183
	CLK	0.02512	0.02757	0.09705
	RESET_B	0.02263	0.02500	0.07743
	RESET_B	0.03161	0.03393	0.08626
sky130_fd_sc_hs__dfrtp_4	CLK	0.03848	0.04138	0.11086
	CLK	0.03370	0.03654	0.10561
	RESET_B	0.03082	0.03365	0.08638
	RESET_B	0.04007	0.04278	0.09531

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00386	0.00460	0.02539
	(CLK * RESET_B)	0.00081	0.00154	0.02234
	(CLK * !RESET_B)	0.00040	0.00041	0.00040
	(CLK * !RESET_B)	-0.00129	-0.00129	-0.00130
	(!CLK * RESET_B)	0.01112	0.01197	0.03640
	(!CLK * RESET_B)	0.00788	0.00873	0.03316
	(!CLK * !RESET_B)	0.00041	0.00041	0.00040
	(!CLK * !RESET_B)	-0.00129	-0.00130	-0.00130
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00376	0.00451	0.02533
	(CLK * RESET_B)	0.00074	0.00149	0.02231
	(CLK * !RESET_B)	0.00040	0.00041	0.00040
	(CLK * !RESET_B)	-0.00129	-0.00130	-0.00131
	(!CLK * RESET_B)	0.01074	0.01162	0.03616
	(!CLK * RESET_B)	0.00758	0.00844	0.03299
	(!CLK * !RESET_B)	0.00041	0.00041	0.00040
	(!CLK * !RESET_B)	-0.00129	-0.00130	-0.00131
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00389	0.00463	0.02540
	(CLK * RESET_B)	0.00084	0.00157	0.02235
	(CLK * !RESET_B)	0.00041	0.00041	0.00041
	(CLK * !RESET_B)	-0.00129	-0.00130	-0.00131
	(!CLK * RESET_B)	0.01204	0.01284	0.03683
	(!CLK * RESET_B)	0.00880	0.00961	0.03361
	(!CLK * !RESET_B)	0.00041	0.00042	0.00041
	(!CLK * !RESET_B)	-0.00130	-0.00131	-0.00131

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00039	0.00115	0.02155
	(CLK * RESET_B)	0.00346	0.00422	0.02461
	(CLK * !RESET_B)	-0.00040	-0.00040	-0.00039
	(CLK * !RESET_B)	0.00132	0.00133	0.00131
	(!CLK * RESET_B)	0.00717	0.00826	0.03235
	(!CLK * RESET_B)	0.01041	0.01150	0.03558
	(!CLK * !RESET_B)	-0.00040	-0.00039	-0.00039
	(!CLK * !RESET_B)	0.00132	0.00132	0.00131
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00039	0.00116	0.02160
	(CLK * RESET_B)	0.00342	0.00418	0.02462
	(CLK * !RESET_B)	-0.00040	-0.00040	-0.00039
	(CLK * !RESET_B)	0.00132	0.00134	0.00131
	(!CLK * RESET_B)	0.00719	0.00831	0.03247
	(!CLK * RESET_B)	0.01036	0.01148	0.03563
	(!CLK * !RESET_B)	-0.00040	-0.00039	-0.00039
	(!CLK * !RESET_B)	0.00132	0.00132	0.00131
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00041	0.00117	0.02154
	(CLK * RESET_B)	0.00346	0.00421	0.02459
	(CLK * !RESET_B)	-0.00040	-0.00040	-0.00039
	(CLK * !RESET_B)	0.00133	0.00134	0.00132
	(!CLK * RESET_B)	0.00734	0.00856	0.03219
	(!CLK * RESET_B)	0.01058	0.01180	0.03542
	(!CLK * !RESET_B)	-0.00040	-0.00040	-0.00039
	(!CLK * !RESET_B)	0.00133	0.00133	0.00132

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)	0.00740	0.00786	0.02687
	(CLK * D * !Q)	-0.00155	-0.00111	0.01792
	(CLK * !D * !Q)	0.00357	0.00361	0.00359
	(CLK * !D * !Q)	-0.00384	-0.00387	-0.00386
	(!CLK * D * !Q)	0.01504	0.01551	0.04723
	(!CLK * D * !Q)	0.00593	0.00636	0.03812
	(!CLK * !D * !Q)	0.00347	0.00352	0.00348
	(!CLK * !D * !Q)	-0.00398	-0.00401	-0.00398
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00725	0.00773	0.02677
	(CLK * D * !Q)	-0.00157	-0.00112	0.01794
	(CLK * !D * !Q)	0.00356	0.00360	0.00357
	(CLK * !D * !Q)	-0.00380	-0.00382	-0.00380
	(!CLK * D * !Q)	0.01459	0.01509	0.04692
	(!CLK * D * !Q)	0.00563	0.00609	0.03795
	(!CLK * !D * !Q)	0.00345	0.00350	0.00346
	(!CLK * !D * !Q)	-0.00391	-0.00394	-0.00391
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00760	0.00805	0.02706
	(CLK * D * !Q)	-0.00147	-0.00102	0.01798
	(CLK * !D * !Q)	0.00380	0.00381	0.00379
	(CLK * !D * !Q)	-0.00381	-0.00381	-0.00380
	(!CLK * D * !Q)	0.01585	0.01626	0.04760
	(!CLK * D * !Q)	0.00663	0.00700	0.03840
	(!CLK * !D * !Q)	0.00349	0.00355	0.00350
	(!CLK * !D * !Q)	-0.00409	-0.00412	-0.00409

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)	-0.00220	-0.00154	0.01742
	(CLK * D * !Q)	0.00673	0.00741	0.02638
	(CLK * !D * !Q)	-0.00348	-0.00361	-0.00358
	(CLK * !D * !Q)	0.00391	0.00389	0.00387
	(!CLK * D * !Q)	0.00517	0.00594	0.03971
	(!CLK * D * !Q)	0.01432	0.01509	0.04883
	(!CLK * !D * !Q)	-0.00336	-0.00349	-0.00346
	(!CLK * !D * !Q)	0.00402	0.00401	0.00399
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00216	-0.00149	0.01750
	(CLK * D * !Q)	0.00664	0.00737	0.02633
	(CLK * !D * !Q)	-0.00345	-0.00356	-0.00355
	(CLK * !D * !Q)	0.00385	0.00385	0.00381
	(!CLK * D * !Q)	0.00520	0.00608	0.03987
	(!CLK * D * !Q)	0.01419	0.01508	0.04884
	(!CLK * !D * !Q)	-0.00334	-0.00347	-0.00344
	(!CLK * !D * !Q)	0.00396	0.00395	0.00392
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00237	-0.00173	0.01724
	(CLK * D * !Q)	0.00667	0.00737	0.02631
	(CLK * !D * !Q)	-0.00367	-0.00380	-0.00378
	(CLK * !D * !Q)	0.00385	0.00384	0.00381
	(!CLK * D * !Q)	0.00550	0.00618	0.03968
	(!CLK * D * !Q)	0.01476	0.01543	0.04891
	(!CLK * !D * !Q)	-0.00338	-0.00351	-0.00348
	(!CLK * !D * !Q)	0.00414	0.00413	0.00411

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)	0.01397	0.01577	0.08270
	(D * RESET_B * Q)	0.00946	0.01126	0.07819
	(D * !RESET_B * !Q)	0.01457	0.01638	0.08326
	(D * !RESET_B * !Q)	0.01006	0.01185	0.07876
	(!D * !Q)	0.01457	0.01637	0.08313
	(!D * !Q)	0.01006	0.01185	0.07862
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01390	0.01570	0.08262
	(D * RESET_B * Q)	0.00941	0.01121	0.07813
	(D * !RESET_B * !Q)	0.01450	0.01630	0.08318
	(D * !RESET_B * !Q)	0.01001	0.01180	0.07869
	(!D * !Q)	0.01449	0.01629	0.08305
	(!D * !Q)	0.01001	0.01179	0.07857
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01470	0.01644	0.08290
	(D * RESET_B * Q)	0.01004	0.01178	0.07824
	(D * !RESET_B * !Q)	0.01519	0.01693	0.08334
	(D * !RESET_B * !Q)	0.01052	0.01227	0.07868
	(!D * !Q)	0.01518	0.01692	0.08336
	(!D * !Q)	0.01052	0.01226	0.07869

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)**	0.00759	0.01060	0.07721
	(D * RESET_B * Q)	0.01208	0.01512	0.08172
	(D * RESET_B * !Q)	0.01414	0.01719	0.08590
	(D * RESET_B * !Q)	0.01846	0.02153	0.09024
	(D * !RESET_B * !Q)	0.00696	0.01000	0.07660
	(D * !RESET_B * !Q)	0.01145	0.01451	0.08112
	(!D * RESET_B * Q)	0.01540	0.01858	0.08651
	(!D * RESET_B * Q)	0.02007	0.02327	0.09120
	(!D * !Q)	0.00696	0.00999	0.07661
	(!D * !Q)	0.01145	0.01451	0.08113
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00761	0.01063	0.07725
	(D * RESET_B * Q)	0.01208	0.01512	0.08173
	(D * RESET_B * !Q)	0.01389	0.01694	0.08568
	(D * RESET_B * !Q)	0.01821	0.02129	0.09000
	(D * !RESET_B * !Q)	0.00698	0.01003	0.07665
	(D * !RESET_B * !Q)	0.01145	0.01452	0.08115
	(!D * RESET_B * Q)	0.01543	0.01863	0.08654
	(!D * RESET_B * Q)	0.02005	0.02327	0.09116
	(!D * !Q)	0.00698	0.01002	0.07669
	(!D * !Q)	0.01145	0.01451	0.08118
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00791	0.01092	0.07768
	(D * RESET_B * Q)	0.01256	0.01560	0.08235
	(D * RESET_B * !Q)	0.01547	0.01843	0.08732
	(D * RESET_B * !Q)	0.01994	0.02293	0.09181
	(D * !RESET_B * !Q)	0.00739	0.01039	0.07675
	(D * !RESET_B * !Q)	0.01204	0.01505	0.08141
	(!D * RESET_B * Q)	0.01580	0.01905	0.08665
	(!D * RESET_B * Q)	0.02062	0.02390	0.09149
	(!D * !Q)	0.00739	0.01039	0.07677
	(!D * !Q)	0.01203	0.01504	0.08143

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
D	**SET_B**	**CLK**	**Q**	**Q_N**
0	**1**	**R**	**0**	**1**
1	**1**	**R**	**1**	**0**
x	**0**	**x**	**1**	**0**
x	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfsbp_1	39.96000
sky130_fd_sc_hs__dfsbp_2	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__dfsbp_1	0.00177	0.00329	0.00283	1.38609	1.29595
sky130_fd_sc_hs__dfsbp_2	0.00177	0.00325	0.00284	2.79685	2.70192

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfsbp_1	0.00000	0.50565	0.64957
sky130_fd_sc_hs__dfsbp_2	0.00000	0.33055	0.35439

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)	0.18458	0.57410	5.39189
	SET_B->Q (FR)	0.18909	0.86939	9.07114
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.21701	0.50070	5.32127
	SET_B->Q (FR)	0.22766	0.81194	9.05485

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.16838	0.32492	1.36690
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.18748	0.31210	1.41968

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)	0.14800	0.56358	5.36932
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.14752	0.46110	5.34376

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)	0.14071	0.34834	1.37486
	SET_B->Q_N (FF)	0.14096	0.64761	5.06280
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.15185	0.33970	1.47377
	SET_B->Q_N (FF)	0.15688	0.65159	5.22495

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)	-0.04027	-0.09922	-0.56927
	setup	CLK (R)	0.06085	0.11835	0.56105
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03852	-0.09525	-0.56484
	setup	CLK (R)	0.05617	0.11513	0.55648

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)	-0.04651	-0.18598	-3.93201
	setup	CLK (R)	0.11850	0.27947	3.94199
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04797	-0.19082	-3.92741
	setup	CLK (R)	0.11857	0.27409	3.93623

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)	-0.04027	-0.09922	-0.56927
	setup	CLK (R)	0.06085	0.11835	0.56105
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.03852	-0.09525	-0.56484
	setup	CLK (R)	0.05617	0.11513	0.55648

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)	-0.04651	-0.18598	-3.93201
	setup	CLK (R)	0.11850	0.27947	3.94199
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04797	-0.19082	-3.92741
	setup	CLK (R)	0.11857	0.27409	3.93623

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)	-0.06825	-0.09525	-0.25252
	removal	CLK (R)	0.08495	0.11113	0.34516
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06750	-0.09525	-0.26606
	removal	CLK (R)	0.08792	0.11509	0.31486

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)	-0.06825	-0.09525	-0.25252
	removal	CLK (R)	0.08495	0.11113	0.34516
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.06750	-0.09525	-0.26606
	removal	CLK (R)	0.08792	0.11509	0.31486

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 ()	0.15002	0.58716	16.50020
	min_pulse_width	SET_B ()	0.15002	0.58716	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.15885	0.58716	16.50020
	min_pulse_width	SET_B ()	0.18314	0.58716	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 ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.07275	0.58716	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.13678	0.58716	16.50020
	min_pulse_width	CLK ()	0.07937	0.58716	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 ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.16106	0.58716	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.15665	0.58716	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	0.01514	0.01601	0.05154
	CLK	0.01296	0.01382	0.04942
	SET_B	0.00867	0.00949	0.02946
	SET_B	0.01117	0.01199	0.03146
sky130_fd_sc_hs__dfsbp_2	CLK	0.01839	0.01889	0.05443
	CLK	0.01618	0.01664	0.05235
	SET_B	0.01234	0.01245	0.03386
	SET_B	0.01482	0.01499	0.03508

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01542	0.01655	0.05054
	CLK	0.01336	0.01447	0.04854
sky130_fd_sc_hs__dfsbp_2	CLK	0.01810	0.01945	0.05345
	CLK	0.01598	0.01732	0.05134

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01545	0.01658	0.05089
	CLK	0.01338	0.01449	0.04892
sky130_fd_sc_hs__dfsbp_2	CLK	0.01811	0.01948	0.05396
	CLK	0.01600	0.01737	0.05202

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01512	0.01597	0.05110
	CLK	0.01294	0.01380	0.04892
	SET_B	0.00865	0.00947	0.02860
	SET_B	0.01115	0.01196	0.03103
sky130_fd_sc_hs__dfsbp_2	CLK	0.01837	0.01881	0.05400
	CLK	0.01616	0.01659	0.05184
	SET_B	0.01233	0.01244	0.03356
	SET_B	0.01481	0.01497	0.03465

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00347	0.00434	0.02624
	CLK	0.00074	0.00159	0.02350
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01014	0.01070	0.03177
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00712	0.00768	0.02876
	(!CLK * !SET_B * Q * !Q_N)	0.00798	0.00855	0.02860
	(!CLK * !SET_B * Q * !Q_N)	0.00483	0.00540	0.02547
sky130_fd_sc_hs__dfsbp_2	CLK	0.00346	0.00433	0.02624
	CLK	0.00072	0.00157	0.02349
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01004	0.01062	0.03171
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00692	0.00750	0.02861
	(!CLK * !SET_B * Q * !Q_N)	0.00797	0.00854	0.02862
	(!CLK * !SET_B * Q * !Q_N)	0.00474	0.00531	0.02541

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00016	0.00104	0.02250
	CLK	0.00290	0.00379	0.02523
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00734	0.00813	0.02841
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01034	0.01114	0.03142
	(!CLK * !SET_B * Q * !Q_N)	0.00407	0.00463	0.02340
	(!CLK * !SET_B * Q * !Q_N)	0.00720	0.00777	0.02654
sky130_fd_sc_hs__dfsbp_2	CLK	0.00016	0.00104	0.02250
	CLK	0.00290	0.00379	0.02524
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00703	0.00784	0.02816
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.01014	0.01095	0.03127
	(!CLK * !SET_B * Q * !Q_N)	0.00392	0.00448	0.02329
	(!CLK * !SET_B * Q * !Q_N)	0.00713	0.00771	0.02651

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)	0.00267	0.00271	0.00269
	(CLK * Q * !Q_N)	-0.00219	-0.00221	-0.00219
	(!CLK * D * Q * !Q_N)	0.00292	0.00296	0.00294
	(!CLK * D * Q * !Q_N)	-0.00194	-0.00195	-0.00194
	(!CLK * !D * Q * !Q_N)	0.00552	0.00606	0.02498
	(!CLK * !D * Q * !Q_N)	0.00044	0.00096	0.01989
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00271	0.00274	0.00272
	(CLK * Q * !Q_N)	-0.00213	-0.00214	-0.00213
	(!CLK * D * Q * !Q_N)	0.00290	0.00293	0.00291
	(!CLK * D * Q * !Q_N)	-0.00194	-0.00195	-0.00194
	(!CLK * !D * Q * !Q_N)	0.00531	0.00587	0.02485
	(!CLK * !D * Q * !Q_N)	0.00027	0.00081	0.01981

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)	-0.00264	-0.00268	-0.00267
	(CLK * Q * !Q_N)	0.00224	0.00222	0.00221
	(!CLK * D * Q * !Q_N)	-0.00289	-0.00293	-0.00293
	(!CLK * D * Q * !Q_N)	0.00199	0.00197	0.00196
	(!CLK * !D * Q * !Q_N)	-0.00039	0.00043	0.01934
	(!CLK * !D * Q * !Q_N)	0.00471	0.00553	0.02443
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00268	-0.00272	-0.00271
	(CLK * Q * !Q_N)	0.00217	0.00215	0.00214
	(!CLK * D * Q * !Q_N)	-0.00286	-0.00291	-0.00290
	(!CLK * D * Q * !Q_N)	0.00199	0.00196	0.00195
	(!CLK * !D * Q * !Q_N)	-0.00033	0.00076	0.01944
	(!CLK * !D * Q * !Q_N)	0.00467	0.00579	0.02448

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)	0.01449	0.01623	0.08356
	(D * Q * !Q_N)	0.01024	0.01197	0.07931
	(!D * SET_B * !Q * Q_N)	0.01426	0.01598	0.08319
	(!D * SET_B * !Q * Q_N)	0.01001	0.01173	0.07894
	(!D * !SET_B * Q * !Q_N)	0.02711	0.02918	0.09776
	(!D * !SET_B * Q * !Q_N)	0.02246	0.02451	0.09312
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01432	0.01607	0.08346
	(D * Q * !Q_N)	0.00999	0.01173	0.07914
	(!D * SET_B * !Q * Q_N)	0.01419	0.01592	0.08320
	(!D * SET_B * !Q * Q_N)	0.00987	0.01159	0.07889
	(!D * !SET_B * Q * !Q_N)	0.02677	0.02872	0.09756
	(!D * !SET_B * Q * !Q_N)	0.02198	0.02391	0.09278

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)	0.01457	0.01761	0.08744
	(D * SET_B * !Q * Q_N)	0.01855	0.02159	0.09140
	(D * Q * !Q_N)	0.00834	0.01139	0.07905
	(D * Q * !Q_N)	0.01260	0.01565	0.08330
	(!D * SET_B * Q * !Q_N)	0.01721	0.02039	0.08930
	(!D * SET_B * Q * !Q_N)	0.02173	0.02492	0.09382
	(!D * SET_B * !Q * Q_N)	0.00851	0.01159	0.07933
	(!D * SET_B * !Q * Q_N)	0.01277	0.01586	0.08359
	(!D * !SET_B * Q * !Q_N)	0.01392	0.01709	0.08594
	(!D * !SET_B * Q * !Q_N)	0.01858	0.02174	0.09059
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01432	0.01737	0.08728
	(D * SET_B * !Q * Q_N)	0.01829	0.02134	0.09124
	(D * Q * !Q_N)	0.00821	0.01126	0.07902
	(D * Q * !Q_N)	0.01254	0.01560	0.08334
	(!D * SET_B * Q * !Q_N)	0.01673	0.01992	0.08891
	(!D * SET_B * Q * !Q_N)	0.02142	0.02462	0.09361
	(!D * SET_B * !Q * Q_N)	0.00830	0.01138	0.07921
	(!D * SET_B * !Q * Q_N)	0.01263	0.01572	0.08354
	(!D * !SET_B * Q * !Q_N)	0.01360	0.01677	0.08570
	(!D * !SET_B * Q * !Q_N)	0.01840	0.02157	0.09050

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	SET_B	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfstp_1	36.76320
sky130_fd_sc_hs__dfstp_2	39.96000
sky130_fd_sc_hs__dfstp_4	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SET_B	CLK	Q
sky130_fd_sc_hs__dfstp_1	0.00176	0.00342	0.00281	1.43638
sky130_fd_sc_hs__dfstp_2	0.00176	0.00322	0.00284	2.82517
sky130_fd_sc_hs__dfstp_4	0.00175	0.00325	0.00285	5.27073

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.46336	0.58663
sky130_fd_sc_hs__dfstp_2	0.00000	0.24596	0.34973
sky130_fd_sc_hs__dfstp_4	0.00000	0.84273	1.06123

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)	0.15380	0.53829	5.31931
	SET_B->Q (FR)	0.15652	0.81732	8.92290
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.15960	0.45396	5.34023
	SET_B->Q (FR)	0.16298	0.73730	8.95667
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.19005	0.42018	5.36353
	SET_B->Q (FR)	0.19528	0.71395	9.01432

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.15670	0.31524	1.45006
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.16504	0.29314	1.44942
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.17003	0.27243	1.38859

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)	-0.03846	-0.09525	-0.56024
	setup	CLK (R)	0.05883	0.11513	0.54960
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.03905	-0.09922	-0.56654
	setup	CLK (R)	0.06076	0.11724	0.55818
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03557	-0.09525	-0.55772
	setup	CLK (R)	0.05753	0.11113	0.55149

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)	-0.04153	-0.18208	-3.92543
	setup	CLK (R)	0.11821	0.27409	3.93685
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04223	-0.18464	-3.92915
	setup	CLK (R)	0.11937	0.27525	3.93828
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04751	-0.19000	-3.92565
	setup	CLK (R)	0.11731	0.27106	3.93376

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)	-0.03846	-0.09525	-0.56024
	setup	CLK (R)	0.05883	0.11513	0.54960
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.03905	-0.09922	-0.56654
	setup	CLK (R)	0.06076	0.11724	0.55818
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.03557	-0.09525	-0.55772
	setup	CLK (R)	0.05753	0.11113	0.55149

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)	-0.04153	-0.18208	-3.92543
	setup	CLK (R)	0.11821	0.27409	3.93685
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04223	-0.18464	-3.92915
	setup	CLK (R)	0.11937	0.27525	3.93828
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04751	-0.19000	-3.92565
	setup	CLK (R)	0.11731	0.27106	3.93376

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)	-0.06989	-0.09922	-0.25547
	removal	CLK (R)	0.08274	0.11113	0.43459
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06995	-0.09922	-0.25840
	removal	CLK (R)	0.08638	0.11113	0.38827
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06913	-0.09525	-0.24774
	removal	CLK (R)	0.08382	0.11113	0.34038

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)	-0.06989	-0.09922	-0.25547
	removal	CLK (R)	0.08274	0.11113	0.43459
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.06995	-0.09922	-0.25840
	removal	CLK (R)	0.08638	0.11113	0.38827
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.06913	-0.09525	-0.24774
	removal	CLK (R)	0.08382	0.11113	0.34038

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 ()	0.13457	0.58716	16.50020
	min_pulse_width	SET_B ()	0.11691	0.58716	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.13898	0.58716	16.50020
	min_pulse_width	SET_B ()	0.12132	0.58716	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.14561	0.58716	16.50020
	min_pulse_width	SET_B ()	0.13898	0.58716	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 ()	0.07937	0.58716	16.50020
	min_pulse_width	CLK ()	0.06392	0.58716	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.08379	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.10587	0.58716	16.50020
	min_pulse_width	CLK ()	0.06834	0.58716	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 ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.15665	0.58716	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	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	0.02552	0.02727	0.09829
	CLK	0.02135	0.02311	0.09435
	SET_B	0.02437	0.02500	0.05661
	SET_B	0.02921	0.02982	0.06170
sky130_fd_sc_hs__dfstp_2	CLK	0.02880	0.03077	0.10190
	CLK	0.02442	0.02645	0.09800
	SET_B	0.02772	0.02864	0.06029
	SET_B	0.03215	0.03309	0.06518
sky130_fd_sc_hs__dfstp_4	CLK	0.03565	0.03785	0.10912
	CLK	0.03123	0.03361	0.10561
	SET_B	0.03404	0.03542	0.06732
	SET_B	0.03850	0.03995	0.07243

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02777	0.02964	0.09760
	CLK	0.02339	0.02523	0.09312
sky130_fd_sc_hs__dfstp_2	CLK	0.03065	0.03277	0.10137
	CLK	0.02639	0.02846	0.09678
sky130_fd_sc_hs__dfstp_4	CLK	0.03814	0.04089	0.10965
	CLK	0.03388	0.03659	0.10462

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00348	0.00434	0.02623
	CLK	0.00075	0.00160	0.02350
	(!CLK * SET_B)	0.01003	0.01059	0.03171
	(!CLK * SET_B)	0.00702	0.00759	0.02871
	(!CLK * !SET_B * Q)	0.00792	0.00850	0.02859
	(!CLK * !SET_B * Q)	0.00477	0.00534	0.02545
sky130_fd_sc_hs__dfstp_2	CLK	0.00350	0.00436	0.02625
	CLK	0.00076	0.00161	0.02351
	(!CLK * SET_B)	0.01002	0.01058	0.03166
	(!CLK * SET_B)	0.00701	0.00757	0.02865
	(!CLK * !SET_B * Q)	0.00792	0.00848	0.02854
	(!CLK * !SET_B * Q)	0.00475	0.00531	0.02539
sky130_fd_sc_hs__dfstp_4	CLK	0.00350	0.00436	0.02624
	CLK	0.00077	0.00162	0.02351
	(!CLK * SET_B)	0.00997	0.01054	0.03166
	(!CLK * SET_B)	0.00694	0.00751	0.02864
	(!CLK * !SET_B * Q)	0.00784	0.00841	0.02852
	(!CLK * !SET_B * Q)	0.00467	0.00524	0.02537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00024	0.00111	0.02253
	CLK	0.00296	0.00385	0.02526
	(!CLK * SET_B)	0.00703	0.00783	0.02816
	(!CLK * SET_B)	0.01002	0.01084	0.03115
	(!CLK * !SET_B * Q)	0.00391	0.00448	0.02330
	(!CLK * !SET_B * Q)	0.00706	0.00764	0.02645
sky130_fd_sc_hs__dfstp_2	CLK	0.00022	0.00109	0.02250
	CLK	0.00295	0.00384	0.02524
	(!CLK * SET_B)	0.00723	0.00802	0.02830
	(!CLK * SET_B)	0.01022	0.01104	0.03130
	(!CLK * !SET_B * Q)	0.00411	0.00467	0.02344
	(!CLK * !SET_B * Q)	0.00727	0.00784	0.02660
sky130_fd_sc_hs__dfstp_4	CLK	0.00025	0.00112	0.02253
	CLK	0.00297	0.00385	0.02526
	(!CLK * SET_B)	0.00694	0.00775	0.02778
	(!CLK * SET_B)	0.00996	0.01077	0.03081
	(!CLK * !SET_B * Q)	0.00390	0.00447	0.02332
	(!CLK * !SET_B * Q)	0.00706	0.00764	0.02647

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00257	0.00259	0.00257
	(CLK * Q)	-0.00238	-0.00240	-0.00239
	(!CLK * D * Q)	0.00277	0.00281	0.00278
	(!CLK * D * Q)	-0.00218	-0.00220	-0.00218
	(!CLK * !D * Q)	0.00527	0.00583	0.02476
	(!CLK * !D * Q)	0.00008	0.00061	0.01956
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00252	0.00254	0.00252
	(CLK * Q)	-0.00220	-0.00221	-0.00220
	(!CLK * D * Q)	0.00272	0.00275	0.00272
	(!CLK * D * Q)	-0.00200	-0.00201	-0.00200
	(!CLK * !D * Q)	0.00522	0.00575	0.02470
	(!CLK * !D * Q)	0.00028	0.00079	0.01974
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00266	0.00269	0.00266
	(CLK * Q)	-0.00214	-0.00215	-0.00214
	(!CLK * D * Q)	0.00285	0.00287	0.00284
	(!CLK * D * Q)	-0.00196	-0.00197	-0.00195
	(!CLK * !D * Q)	0.00526	0.00580	0.02476
	(!CLK * !D * Q)	0.00025	0.00078	0.01974

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00251	-0.00258	-0.00256
	(CLK * Q)	0.00241	0.00242	0.00241
	(!CLK * D * Q)	-0.00271	-0.00278	-0.00277
	(!CLK * D * Q)	0.00221	0.00222	0.00220
	(!CLK * !D * Q)	-0.00026	0.00077	0.01949
	(!CLK * !D * Q)	0.00495	0.00599	0.02468
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00248	-0.00252	-0.00252
	(CLK * Q)	0.00224	0.00222	0.00221
	(!CLK * D * Q)	-0.00269	-0.00273	-0.00272
	(!CLK * D * Q)	0.00204	0.00202	0.00201
	(!CLK * !D * Q)	-0.00019	0.00066	0.01955
	(!CLK * !D * Q)	0.00479	0.00563	0.02451
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00261	-0.00265	-0.00265
	(CLK * Q)	0.00219	0.00217	0.00216
	(!CLK * D * Q)	-0.00279	-0.00283	-0.00283
	(!CLK * D * Q)	0.00201	0.00199	0.00198
	(!CLK * !D * Q)	-0.00023	0.00061	0.01951
	(!CLK * !D * Q)	0.00479	0.00564	0.02452

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01433	0.01605	0.08334
	(D * Q)	0.01005	0.01177	0.07907
	(!D * SET_B * !Q)	0.01424	0.01595	0.08313
	(!D * SET_B * !Q)	0.00996	0.01167	0.07886
	(!D * !SET_B * Q)	0.02646	0.02855	0.09708
	(!D * !SET_B * Q)	0.02177	0.02384	0.09239
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01454	0.01626	0.08363
	(D * Q)	0.01022	0.01194	0.07931
	(!D * SET_B * !Q)	0.01430	0.01601	0.08326
	(!D * SET_B * !Q)	0.00999	0.01169	0.07894
	(!D * !SET_B * Q)	0.02677	0.02883	0.09730
	(!D * !SET_B * Q)	0.02204	0.02408	0.09257
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01436	0.01610	0.08348
	(D * Q)	0.01002	0.01175	0.07913
	(!D * SET_B * !Q)	0.01430	0.01603	0.08328
	(!D * SET_B * !Q)	0.00996	0.01167	0.07893
	(!D * !SET_B * Q)	0.02633	0.02842	0.09707
	(!D * !SET_B * Q)	0.02156	0.02365	0.09232

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)**	0.01450	0.01753	0.08732
	(D * SET_B * !Q)	0.01854	0.02157	0.09136
	(D * Q)	0.00839	0.01143	0.07904
	(D * Q)	0.01267	0.01571	0.08332
	(!D * SET_B * Q)	0.01677	0.01995	0.08884
	(!D * SET_B * Q)	0.02131	0.02450	0.09338
	(!D * SET_B * !Q)	0.00842	0.01149	0.07919
	(!D * SET_B * !Q)	0.01270	0.01578	0.08347
	(!D * !SET_B * Q)	0.01364	0.01680	0.08563
	(!D * !SET_B * Q)	0.01834	0.02150	0.09032
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01440	0.01744	0.08731
	(D * SET_B * !Q)	0.01847	0.02151	0.09137
	(D * Q)	0.00823	0.01127	0.07900
	(D * Q)	0.01255	0.01560	0.08332
	(!D * SET_B * Q)	0.01686	0.02004	0.08903
	(!D * SET_B * Q)	0.02144	0.02463	0.09361
	(!D * SET_B * !Q)	0.00842	0.01149	0.07929
	(!D * SET_B * !Q)	0.01273	0.01582	0.08361
	(!D * !SET_B * Q)	0.01374	0.01690	0.08582
	(!D * !SET_B * Q)	0.01848	0.02164	0.09056
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01433	0.01736	0.08730
	(D * SET_B * !Q)	0.01839	0.02143	0.09134
	(D * Q)	0.00830	0.01134	0.07908
	(D * Q)	0.01265	0.01570	0.08343
	(!D * SET_B * Q)	0.01653	0.01973	0.08873
	(!D * SET_B * Q)	0.02118	0.02438	0.09338
	(!D * SET_B * !Q)	0.00830	0.01137	0.07919
	(!D * SET_B * !Q)	0.01265	0.01573	0.08354
	(!D * !SET_B * Q)	0.01350	0.01667	0.08562
	(!D * !SET_B * Q)	0.01828	0.02144	0.09040

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT	
D	CLK	Q	Q_N
0	R	0	1
1	R	1	0
x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxbp_1	31.96800
sky130_fd_sc_hs__dfxbp_2	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	CLK	Q	Q_N
sky130_fd_sc_hs__dfxbp_1	0.00180	0.00283	1.39663	1.38092
sky130_fd_sc_hs__dfxbp_2	0.00175	0.00284	2.36494	2.72807

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.79592	1.18702
sky130_fd_sc_hs__dfxbp_2	0.00000	1.09516	2.08172

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)	0.14221	0.53926	5.43069
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.16601	0.48527	5.26076

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.15224	0.33259	1.55556
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.14830	0.27862	1.07176

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)	0.18119	0.58024	5.42557
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.19101	0.49084	5.29687

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)	0.16484	0.32499	1.41920
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.20190	0.33268	1.47337

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)	-0.01651	-0.04763	-0.34736
	setup	CLK (R)	0.05694	0.08294	0.35540
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01185	-0.03969	-0.32721
	setup	CLK (R)	0.03676	0.06896	0.33834

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)	-0.03661	-0.16575	-3.74812
	setup	CLK (R)	0.08272	0.22456	3.76992
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.03909	-0.16532	-3.73501
	setup	CLK (R)	0.08191	0.22042	3.76127

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 ()	0.06613	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.08600	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	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** ()	0.10587	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12795	0.58716	16.50020
sky130_fd_sc_hs__dfxbp_2	**min_pulse_width**	**CLK** ()	0.09483	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.13015	0.58716	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	0.01405	0.01494	0.05193
	CLK	0.01203	0.01287	0.05000
sky130_fd_sc_hs__dfxbp_2	CLK	0.01735	0.01850	0.05543
	CLK	0.01530	0.01645	0.05353

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01460	0.01584	0.05187
	CLK	0.01258	0.01379	0.04986
sky130_fd_sc_hs__dfxbp_2	CLK	0.01814	0.01961	0.05564
	CLK	0.01609	0.01758	0.05373

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01462	0.01583	0.05240
	CLK	0.01260	0.01381	0.05045
sky130_fd_sc_hs__dfxbp_2	CLK	0.01815	0.01962	0.05614
	CLK	0.01610	0.01758	0.05428

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01404	0.01488	0.05162
	CLK	0.01202	0.01285	0.04967
sky130_fd_sc_hs__dfxbp_2	CLK	0.01734	0.01847	0.05505
	CLK	0.01529	0.01643	0.05304

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00253	0.00354	0.02535
	CLK	-0.00026	0.00074	0.02257
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00898	0.00992	0.03457
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00618	0.00712	0.03179
sky130_fd_sc_hs__dfxbp_2	CLK	0.00239	0.00343	0.02520
	CLK	-0.00031	0.00071	0.02250
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00879	0.00976	0.03440
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00608	0.00704	0.03169

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00026	0.00083	0.02238
	CLK	0.00253	0.00362	0.02515
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00526	0.00642	0.03028
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00804	0.00921	0.03306
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00024	0.00084	0.02238
	CLK	0.00244	0.00355	0.02507
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00492	0.00610	0.02995
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00762	0.00881	0.03266

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)	0.01277	0.01478	0.08417
	(D * Q * !Q_N)	0.00873	0.01072	0.08015
	(!D * !Q * Q_N)	0.01306	0.01493	0.08439
	(!D * !Q * Q_N)	0.00902	0.01089	0.08036
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01287	0.01485	0.08425
	(D * Q * !Q_N)	0.00876	0.01074	0.08015
	(!D * !Q * Q_N)	0.01301	0.01498	0.08437
	(!D * !Q * Q_N)	0.00890	0.01088	0.08029

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)	0.00983	0.01280	0.08150
	(D * Q * !Q_N)	0.01386	0.01684	0.08554
	(D * !Q * Q_N)	0.01568	0.01863	0.08980
	(D * !Q * Q_N)	0.01970	0.02267	0.09385
	(!D * Q * !Q_N)	0.01686	0.01997	0.09013
	(!D * Q * !Q_N)	0.02088	0.02401	0.09417
	(!D * !Q * Q_N)	0.00944	0.01240	0.08119
	(!D * !Q * Q_N)	0.01346	0.01645	0.08523
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00982	0.01276	0.08179
	(D * Q * !Q_N)	0.01390	0.01688	0.08589
	(D * !Q * Q_N)	0.01575	0.01874	0.08994
	(D * !Q * Q_N)	0.01984	0.02284	0.09404
	(!D * Q * !Q_N)	0.01639	0.01948	0.09016
	(!D * Q * !Q_N)	0.02048	0.02359	0.09426
	(!D * !Q * Q_N)	0.00956	0.01253	0.08163
	(!D * !Q * Q_N)	0.01364	0.01664	0.08573

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__dfxtp_1	27.17280
sky130_fd_sc_hs__dfxtp_2	28.77120
sky130_fd_sc_hs__dfxtp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
sky130_fd_sc_hs__dfxtp_1	0.00176	0.00283	1.40236
sky130_fd_sc_hs__dfxtp_2	0.00180	0.00283	2.81050
sky130_fd_sc_hs__dfxtp_4	0.00179	0.00284	5.10789

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.70671	1.48120
sky130_fd_sc_hs__dfxtp_2	0.00000	0.55912	1.12306
sky130_fd_sc_hs__dfxtp_4	0.00000	1.03791	1.95582

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)**	0.12896	0.52816	5.41652
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.13694	0.44035	5.37938
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.16452	0.40336	5.31375

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.14531	0.32193	1.53995
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.14867	0.29343	1.55214
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.15380	0.27152	1.48515

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)	-0.01384	-0.04512	-0.33287
	setup	CLK (R)	0.05840	0.08189	0.34368
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01350	-0.04439	-0.33777
	setup	CLK (R)	0.05477	0.08097	0.34922
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01500	-0.03969	-0.33327
	setup	CLK (R)	0.04482	0.07450	0.34185

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)	-0.03859	-0.16975	-3.76477
	setup	CLK (R)	0.08826	0.22989	3.78706
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03549	-0.16244	-3.74123
	setup	CLK (R)	0.08339	0.22265	3.76365
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03527	-0.16038	-3.73273
	setup	CLK (R)	0.08123	0.22093	3.75553

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 ()	0.05950	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.06613	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.08600	0.58716	16.50020
	min_pulse_width	CLK ()	0.05730	0.58716	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** ()	0.11028	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.13236	0.58716	16.50020
sky130_fd_sc_hs__dfxtp_2	**min_pulse_width**	**CLK** ()	0.10587	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.13015	0.58716	16.50020
sky130_fd_sc_hs__dfxtp_4	**min_pulse_width**	**CLK** ()	0.09924	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.13236	0.58716	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	0.02182	0.02352	0.09758
	CLK	0.01773	0.01945	0.09379
sky130_fd_sc_hs__dfxtp_2	CLK	0.02465	0.02655	0.10049
	CLK	0.02053	0.02247	0.09685
sky130_fd_sc_hs__dfxtp_4	CLK	0.03106	0.03316	0.10680
	CLK	0.02699	0.02923	0.10361

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.02306	0.02541	0.09764
	CLK	0.01897	0.02133	0.09341
sky130_fd_sc_hs__dfxtp_2	CLK	0.02581	0.02839	0.10108
	CLK	0.02169	0.02429	0.09658
sky130_fd_sc_hs__dfxtp_4	CLK	0.03330	0.03652	0.10938
	CLK	0.02923	0.03238	0.10456

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00236	0.00336	0.02517
	CLK	-0.00036	0.00063	0.02244
	!CLK	0.00887	0.00981	0.03447
	!CLK	0.00614	0.00708	0.03175
sky130_fd_sc_hs__dfxtp_2	CLK	0.00250	0.00352	0.02536
	CLK	-0.00029	0.00073	0.02257
	!CLK	0.00878	0.00972	0.03440
	!CLK	0.00598	0.00692	0.03161
sky130_fd_sc_hs__dfxtp_4	CLK	0.00238	0.00342	0.02525
	CLK	-0.00039	0.00063	0.02247
	!CLK	0.00880	0.00975	0.03440
	!CLK	0.00602	0.00698	0.03163

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00006	0.00112	0.02261
	CLK	0.00278	0.00385	0.02532
	!CLK	0.00558	0.00674	0.03054
	!CLK	0.00830	0.00946	0.03327
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00031	0.00078	0.02237
	CLK	0.00246	0.00357	0.02515
	!CLK	0.00533	0.00649	0.03037
	!CLK	0.00812	0.00929	0.03315
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00024	0.00086	0.02244
	CLK	0.00252	0.00364	0.02521
	!CLK	0.00527	0.00643	0.03026
	!CLK	0.00804	0.00920	0.03303

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01283	0.01481	0.08414
	(D * Q)	0.00876	0.01071	0.08005
	(!D * !Q)	0.01333	0.01530	0.08462
	(!D * !Q)	0.00925	0.01119	0.08054
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01287	0.01486	0.08422
	(D * Q)	0.00877	0.01073	0.08010
	(!D * !Q)	0.01326	0.01511	0.08461
	(!D * !Q)	0.00916	0.01099	0.08048
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01279	0.01476	0.08399
	(D * Q)	0.00873	0.01068	0.07993
	(!D * !Q)	0.01318	0.01502	0.08437
	(!D * !Q)	0.00913	0.01095	0.08030

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01025	0.01322	0.08207
	(D * Q)	0.01433	0.01731	0.08616
	(D * !Q)	0.01602	0.01896	0.09006
	(D * !Q)	0.02010	0.02306	0.09414
	(!D * Q)	0.01722	0.02033	0.09083
	(!D * Q)	0.02130	0.02443	0.09492
	(!D * !Q)	0.00965	0.01260	0.08158
	(!D * !Q)	0.01373	0.01670	0.08567
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01004	0.01301	0.08191
	(D * Q)	0.01414	0.01713	0.08603
	(D * !Q)	0.01566	0.01863	0.08968
	(D * !Q)	0.01976	0.02275	0.09380
	(!D * Q)	0.01708	0.02021	0.09080
	(!D * Q)	0.02119	0.02433	0.09492
	(!D * !Q)	0.00955	0.01250	0.08153
	(!D * !Q)	0.01366	0.01663	0.08565
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01044	0.01339	0.08209
	(D * Q)	0.01450	0.01747	0.08616
	(D * !Q)	0.01610	0.01904	0.08987
	(D * !Q)	0.02015	0.02312	0.09394
	(!D * Q)	0.01750	0.02062	0.09098
	(!D * Q)	0.02155	0.02469	0.09504
	(!D * !Q)	0.00993	0.01288	0.08168
	(!D * !Q)	0.01398	0.01695	0.08574

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Footprint

Cell Name	Area
sky130_fd_sc_hs__diode_2	0.00000

Pin Capacitance Information
Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__diode_2	0.00000	0.00000	0.00000

SKY130_FD_SC_HS__DLCLKPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
GATE	CLK	GCLK
x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlclkp_1	22.37760
sky130_fd_sc_hs__dlclkp_2	25.57440
sky130_fd_sc_hs__dlclkp_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	GATE	CLK	GCLK
sky130_fd_sc_hs__dlclkp_1	0.00250	0.00428	1.45007
sky130_fd_sc_hs__dlclkp_2	0.00249	0.00458	2.78241
sky130_fd_sc_hs__dlclkp_4	0.00248	0.00479	5.50731

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.89265	1.54004
sky130_fd_sc_hs__dlclkp_2	0.00000	0.69507	0.82280
sky130_fd_sc_hs__dlclkp_4	0.00000	0.74664	0.79056

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)**	0.04740	0.42227	5.57401
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.04856	0.34667	5.41526
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.06738	0.33645	5.66447

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.05659	0.42545	4.88223
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.06088	0.41551	4.81369
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.07964	0.44781	4.98208

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)	-0.02132	-0.04763	-0.44708
	setup	CLK (R)	0.09047	0.16558	0.48577
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.01729	-0.04366	-0.44828
	setup	CLK (R)	0.09662	0.15300	0.48195
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.01945	-0.04366	-0.42204
	setup	CLK (R)	0.09243	0.12300	0.47064

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)	-0.03389	-0.13891	-3.23663
	setup	CLK (R)	0.07452	0.19844	3.43933
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.03198	-0.13494	-3.22011
	setup	CLK (R)	0.06921	0.18256	3.30598
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.03021	-0.13097	-3.19882
	setup	CLK (R)	0.05855	0.15478	3.28461

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 ()	0.03301	0.58716	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.03743	0.58716	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.05509	0.58716	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** ()	0.12795	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.11470	0.58716	16.50020
sky130_fd_sc_hs__dlclkp_2	**min_pulse_width**	**CLK** ()	0.13678	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.11691	0.58716	16.50020
sky130_fd_sc_hs__dlclkp_4	**min_pulse_width**	**CLK** ()	0.13236	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.11470	0.58716	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	0.01622	0.02234	0.17397
	CLK	0.00960	0.01572	0.16760
sky130_fd_sc_hs__dlclkp_2	CLK	0.01932	0.02486	0.16926
	CLK	0.01223	0.01783	0.16282
sky130_fd_sc_hs__dlclkp_4	CLK	0.02526	0.02983	0.16378
	CLK	0.01801	0.02268	0.15724

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00968	0.01812	0.16967
	CLK	0.01624	0.02465	0.17547
sky130_fd_sc_hs__dlclkp_2	CLK	0.01259	0.02075	0.16456
	CLK	0.01962	0.02768	0.17128
sky130_fd_sc_hs__dlclkp_4	CLK	0.01934	0.02606	0.16370
	CLK	0.02653	0.03324	0.16824

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00187	0.00167	0.00164
	CLK	-0.00150	-0.00172	-0.00173
	(!CLK * !GCLK)	0.01161	0.01270	0.05286
	(!CLK * !GCLK)	0.00797	0.00904	0.04922
sky130_fd_sc_hs__dlclkp_2	CLK	0.00144	0.00145	0.00144
	CLK	-0.00192	-0.00194	-0.00194
	(!CLK * !GCLK)	0.01172	0.01282	0.05293
	(!CLK * !GCLK)	0.00811	0.00919	0.04931
sky130_fd_sc_hs__dlclkp_4	CLK	0.00140	0.00141	0.00140
	CLK	-0.00192	-0.00194	-0.00194
	(!CLK * !GCLK)	0.01144	0.01249	0.05255
	(!CLK * !GCLK)	0.00802	0.00905	0.04912

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00159	-0.00161	-0.00161
	CLK	0.00176	0.00177	0.00177
	(!CLK * !GCLK)	0.00766	0.00872	0.04847
	(!CLK * !GCLK)	0.01131	0.01239	0.05211
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00135	-0.00142	-0.00143
	CLK	0.00201	0.00197	0.00195
	(!CLK * !GCLK)	0.00800	0.00899	0.04878
	(!CLK * !GCLK)	0.01162	0.01261	0.05240
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00131	-0.00138	-0.00139
	CLK	0.00200	0.00197	0.00195
	(!CLK * !GCLK)	0.00858	0.00963	0.04926
	(!CLK * !GCLK)	0.01201	0.01308	0.05269

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.01018	0.01360	0.09786
	(!GATE * !GCLK)	0.00386	0.00726	0.09154
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.01069	0.01423	0.09830
	(!GATE * !GCLK)	0.00396	0.00744	0.09157
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.01064	0.01378	0.09583
	(!GATE * !GCLK)	0.00371	0.00679	0.08888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01363	0.01831	0.11464
	(GATE * !GCLK)	0.01995	0.02464	0.12094
	(!GATE * !GCLK)	0.00455	0.00901	0.09189
	(!GATE * !GCLK)	0.01085	0.01537	0.09822
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01405	0.01884	0.11323
	(GATE * !GCLK)	0.02086	0.02564	0.12004
	(!GATE * !GCLK)	0.00479	0.00924	0.09213
	(!GATE * !GCLK)	0.01156	0.01603	0.09889
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01358	0.01803	0.11045
	(GATE * !GCLK)	0.02074	0.02518	0.11761
	(!GATE * !GCLK)	0.00451	0.00880	0.08971
	(!GATE * !GCLK)	0.01146	0.01581	0.09670

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
D	GATE_N	RESET_B	Q	Q_N
0	0	x	0	1
x	1	0	0	1
x	1	1	1	1
1	x	0	0	1
1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbn_1	28.77120
sky130_fd_sc_hs__dlrbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	GATE_N	RESET_B	Q	Q_N
sky130_fd_sc_hs__dlrbn_1	0.00225	0.00247	0.00270	1.41434	1.41209
sky130_fd_sc_hs__dlrbn_2	0.00226	0.00247	0.00280	2.33542	2.70154

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	1.17763	1.60298
sky130_fd_sc_hs__dlrbn_2	0.00000	0.99052	1.30780

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)	0.17547	0.55429	5.53738
	GATE_N->Q (-R)	0.20892	0.79908	8.69455
	RESET_B->Q (RR)	0.06006	0.46352	5.54021
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.18106	0.48202	5.24535
	GATE_N->Q (-R)	0.21708	0.73267	8.45228
	RESET_B->Q (RR)	0.06543	0.40586	5.25051

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.13626	0.48388	4.44445
	GATE_N->Q (-F)	0.14844	0.52156	4.66757
	RESET_B->Q (FF)	0.06466	0.46541	4.71987
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.14969	0.46415	4.08246
	GATE_N->Q (-F)	0.16226	0.50214	4.30198
	RESET_B->Q (FF)	0.07446	0.45672	4.41567

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)	0.16809	0.73286	8.30192
	GATE_N->Q_N (-R)	0.18038	0.77033	8.52354
	RESET_B->Q_N (FR)	0.09823	0.69634	8.40506
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.19698	0.68288	8.55861
	GATE_N->Q_N (-R)	0.20970	0.72058	8.77805
	RESET_B->Q_N (FR)	0.12408	0.65988	8.70802

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)	0.19742	0.33925	1.54385
	GATE_N->Q_N (-F)	0.23092	0.58405	4.70025
	RESET_B->Q_N (RF)	0.08226	0.24505	1.36813
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.22405	0.34916	1.77498
	GATE_N->Q_N (-F)	0.26012	0.59985	4.98184
	RESET_B->Q_N (RF)	0.10819	0.27155	1.67171

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** ()	0.08158	0.58716	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B** ()	0.10145	0.58716	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	0.01196	0.01336	0.05039
	D	0.01015	0.01154	0.04868
	GATE_N	0.01221	0.01444	0.05556
	GATE_N	0.01392	0.01614	0.05681
	RESET_B	0.00786	0.00854	0.03034
	RESET_B	0.00578	0.00644	0.02836
sky130_fd_sc_hs__dlrbn_2	D	0.01453	0.01621	0.05234
	D	0.01274	0.01442	0.05068
	GATE_N	0.01479	0.01729	0.05725
	GATE_N	0.01649	0.01897	0.05871
	RESET_B	0.01065	0.01137	0.02866
	RESET_B	0.00851	0.00923	0.02662

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00930	0.01141	0.04842
	D	0.01110	0.01321	0.04999
	GATE_N	0.01133	0.01397	0.05624
	GATE_N	0.01327	0.01589	0.05788
	RESET_B	0.00501	0.00670	0.03396
	RESET_B	0.00708	0.00877	0.03568
sky130_fd_sc_hs__dlrbn_2	D	0.01216	0.01464	0.05086
	D	0.01394	0.01636	0.05236
	GATE_N	0.01419	0.01706	0.05823
	GATE_N	0.01610	0.01896	0.05990
	RESET_B	0.00764	0.00945	0.03574
	RESET_B	0.00977	0.01150	0.03771

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00932	0.01149	0.04855
	D	0.01113	0.01324	0.05030
	GATE_N	0.01135	0.01400	0.05636
	GATE_N	0.01329	0.01591	0.05828
	RESET_B	0.00502	0.00678	0.03668
	RESET_B	0.00709	0.00880	0.03629
sky130_fd_sc_hs__dlrbn_2	D	0.01218	0.01486	0.05078
	D	0.01396	0.01640	0.05256
	GATE_N	0.01421	0.01712	0.05955
	GATE_N	0.01611	0.01899	0.06051
	RESET_B	0.00764	0.00947	0.03678
	RESET_B	0.00976	0.01151	0.03814

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.01194	0.01333	0.04996
	D	0.01013	0.01153	0.04817
	GATE_N	0.01220	0.01442	0.05467
	GATE_N	0.01391	0.01613	0.05630
	RESET_B	0.00785	0.00852	0.03019
	RESET_B	0.00577	0.00643	0.02817
sky130_fd_sc_hs__dlrbn_2	D	0.01451	0.01621	0.05217
	D	0.01272	0.01440	0.05036
	GATE_N	0.01477	0.01726	0.05695
	GATE_N	0.01648	0.01895	0.05814
	RESET_B	0.01064	0.01138	0.02850
	RESET_B	0.00850	0.00923	0.02636

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)	0.00529	0.00824	0.07941
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00190	0.00483	0.07601
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00968	0.01250	0.08576
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00652	0.00931	0.08258
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)	0.00527	0.00816	0.07767
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00189	0.00477	0.07430
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00917	0.01193	0.08354
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00603	0.00878	0.08039

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)	0.00143	0.00561	0.07649
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00482	0.00902	0.07989
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00704	0.01112	0.08439
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01022	0.01431	0.08759
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)	0.00135	0.00542	0.07466
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00471	0.00880	0.07803
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00724	0.01122	0.08285
	(!GATE_N * !RESET_B * !Q * Q_N)	0.01039	0.01438	0.08601

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)	0.00927	0.01247	0.09568
	(D * RESET_B * Q * !Q_N)	0.00563	0.00883	0.09205
	(D * !RESET_B * !Q * Q_N)	0.01436	0.01754	0.10035
	(D * !RESET_B * !Q * Q_N)	0.01052	0.01367	0.09649
	(!D * !Q * Q_N)	0.00987	0.01304	0.09608
	(!D * !Q * Q_N)	0.00623	0.00938	0.09244
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00929	0.01243	0.09380
	(D * RESET_B * Q * !Q_N)	0.00569	0.00882	0.09020
	(D * !RESET_B * !Q * Q_N)	0.01455	0.01765	0.09857
	(D * !RESET_B * !Q * Q_N)	0.01073	0.01383	0.09474
	(!D * !Q * Q_N)	0.00977	0.01286	0.09407
	(!D * !Q * Q_N)	0.00616	0.00926	0.09048

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)	0.00714	0.01167	0.09337
	(D * RESET_B * Q * !Q_N)	0.01078	0.01532	0.09701
	(D * !RESET_B * !Q * Q_N)	0.01024	0.01458	0.09505
	(D * !RESET_B * !Q * Q_N)	0.01410	0.01844	0.09891
	(!D * !Q * Q_N)	0.00652	0.01112	0.09292
	(!D * !Q * Q_N)	0.01016	0.01475	0.09656
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00702	0.01145	0.09144
	(D * RESET_B * Q * !Q_N)	0.01064	0.01507	0.09504
	(D * !RESET_B * !Q * Q_N)	0.00976	0.01400	0.09258
	(D * !RESET_B * !Q * Q_N)	0.01359	0.01783	0.09641
	(!D * !Q * Q_N)	0.00651	0.01101	0.09111
	(!D * !Q * Q_N)	0.01013	0.01462	0.09472

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)	0.00161	0.00163	0.00162
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00193	-0.00195	-0.00194
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00171	0.00174	0.00172
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00196	-0.00198	-0.00197

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)	-0.00153	-0.00160	-0.00159
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00203	0.00199	0.00198
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00164	-0.00170	-0.00170
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00205	0.00201	0.00200

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
D	**GATE**	**RESET_B**	**Q**	**Q_N**
x	**x**	**0**	**0**	**1**
x	**0**	**1**	**1**	**1**
0	**1**	**1**	**0**	**1**
1	**1**	**1**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrbp_1	27.17280
sky130_fd_sc_hs__dlrbp_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	**GATE**	**RESET_B**	**Q**	**Q_N**
sky130_fd_sc_hs__dlrbp_1	0.00208	0.00237	0.00279	1.38071	1.38681
sky130_fd_sc_hs__dlrbp_2	0.00209	0.00236	0.00279	2.76936	2.86234

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrbp_1	0.00000	1.17763	1.60298
sky130_fd_sc_hs__dlrbp_2	0.00000	0.99052	1.30780

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)	0.17066	0.54244	5.39310
	GATE->Q (-R)	0.15161	0.52782	5.24695
	RESET_B->Q (RR)	0.06109	0.46346	5.44194
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.17549	0.45765	5.40152
	GATE->Q (-R)	0.15500	0.44022	5.25202
	RESET_B->Q (RR)	0.06380	0.39068	5.53151

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.13548	0.48137	4.41459
	GATE->Q (-F)	0.14620	0.29627	1.27835
	RESET_B->Q (FF)	0.06572	0.46677	4.67599
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.14832	0.47561	4.54247
	GATE->Q (-F)	0.15863	0.28900	1.40128
	RESET_B->Q (FF)	0.07080	0.46110	4.83818

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)	0.16909	0.73957	8.38364
	GATE->Q_N (-R)	0.17987	0.55444	5.24913
	RESET_B->Q_N (FR)	0.10119	0.70700	8.47007
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.19429	0.66617	8.45117
	GATE->Q_N (-R)	0.20472	0.47962	5.31092
	RESET_B->Q_N (FR)	0.11691	0.63700	8.55495

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)	0.19377	0.32893	1.44602
	GATE->Q_N (-F)	0.17478	0.31429	1.29944
	RESET_B->Q_N (RF)	0.08441	0.24611	1.31853
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.21305	0.32159	1.60868
	GATE->Q_N (-F)	0.19262	0.30412	1.45858
	RESET_B->Q_N (RF)	0.10113	0.25190	1.56760

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** ()	0.08158	0.58716	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B** ()	0.09483	0.58716	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	0.01130	0.01270	0.04883
	D	0.00960	0.01099	0.04721
	GATE	0.01284	0.01436	0.05699
	GATE	0.01094	0.01245	0.05515
	RESET_B	0.00792	0.00852	0.03026
	RESET_B	0.00577	0.00636	0.02821
sky130_fd_sc_hs__dlrbp_2	D	0.01422	0.01585	0.05217
	D	0.01253	0.01416	0.05053
	GATE	0.01571	0.01751	0.06018
	GATE	0.01382	0.01562	0.05842
	RESET_B	0.01072	0.01153	0.03580
	RESET_B	0.00857	0.00938	0.03382

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00966	0.01184	0.04788
	D	0.01136	0.01347	0.04930
	GATE	0.01326	0.01512	0.05572
	GATE	0.01163	0.01347	0.05421
	RESET_B	0.00517	0.00688	0.03378
	RESET_B	0.00731	0.00901	0.03582
sky130_fd_sc_hs__dlrbp_2	D	0.01254	0.01495	0.05149
	D	0.01423	0.01653	0.05245
	GATE	0.01613	0.01819	0.05896
	GATE	0.01448	0.01654	0.05743
	RESET_B	0.00799	0.01000	0.03900
	RESET_B	0.01013	0.01201	0.04010

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00968	0.01187	0.04798
	D	0.01138	0.01349	0.04963
	GATE	0.01328	0.01514	0.05602
	GATE	0.01165	0.01349	0.05440
	RESET_B	0.00519	0.00698	0.03435
	RESET_B	0.00733	0.00904	0.03627
sky130_fd_sc_hs__dlrbp_2	D	0.01256	0.01485	0.05139
	D	0.01425	0.01654	0.05274
	GATE	0.01615	0.01822	0.05931
	GATE	0.01450	0.01657	0.05776
	RESET_B	0.00800	0.01002	0.03840
	RESET_B	0.01014	0.01202	0.04051

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.01128	0.01269	0.04844
	D	0.00958	0.01098	0.04684
	GATE	0.01282	0.01434	0.05668
	GATE	0.01093	0.01243	0.05489
	RESET_B	0.00790	0.00850	0.03015
	RESET_B	0.00575	0.00635	0.02810
sky130_fd_sc_hs__dlrbp_2	D	0.01419	0.01584	0.05175
	D	0.01250	0.01415	0.05011
	GATE	0.01569	0.01747	0.06005
	GATE	0.01380	0.01558	0.05823
	RESET_B	0.01071	0.01153	0.03544
	RESET_B	0.00855	0.00939	0.03329

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)	0.00833	0.01117	0.08272
	(GATE * !RESET_B * !Q * Q_N)	0.00544	0.00827	0.07983
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00512	0.00809	0.07756
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00199	0.00495	0.07443
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00841	0.01123	0.08280
	(GATE * !RESET_B * !Q * Q_N)	0.00551	0.00832	0.07990
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00512	0.00805	0.07755
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00197	0.00491	0.07440

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)	0.00739	0.01138	0.08299
	(GATE * !RESET_B * !Q * Q_N)	0.01029	0.01429	0.08589
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00108	0.00517	0.07442
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00420	0.00830	0.07755
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00748	0.01146	0.08306
	(GATE * !RESET_B * !Q * Q_N)	0.01038	0.01437	0.08597
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00118	0.00527	0.07452
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00432	0.00842	0.07767

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)	0.00949	0.01270	0.09428
	(D * RESET_B * Q * !Q_N)	0.00597	0.00917	0.09075
	(D * !RESET_B * !Q * Q_N)	0.01106	0.01414	0.09912
	(D * !RESET_B * !Q * Q_N)	0.00776	0.01084	0.09583
	(!D * !Q * Q_N)	0.00952	0.01274	0.09414
	(!D * !Q * Q_N)	0.00600	0.00921	0.09062
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00951	0.01274	0.09434
	(D * RESET_B * Q * !Q_N)	0.00599	0.00919	0.09080
	(D * !RESET_B * !Q * Q_N)	0.01103	0.01414	0.09914
	(D * !RESET_B * !Q * Q_N)	0.00775	0.01086	0.09585
	(!D * !Q * Q_N)	0.00949	0.01274	0.09417
	(!D * !Q * Q_N)	0.00597	0.00919	0.09064

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)	0.00599	0.01049	0.09059
	(D * RESET_B * Q * !Q_N)	0.00951	0.01402	0.09411
	(D * !RESET_B * !Q * Q_N)	0.01014	0.01474	0.09792
	(D * !RESET_B * !Q * Q_N)	0.01343	0.01805	0.10122
	(!D * !Q * Q_N)	0.00594	0.01045	0.09080
	(!D * !Q * Q_N)	0.00945	0.01399	0.09432
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00597	0.01044	0.09057
	(D * RESET_B * Q * !Q_N)	0.00950	0.01399	0.09411
	(D * !RESET_B * !Q * Q_N)	0.01008	0.01465	0.09776
	(D * !RESET_B * !Q * Q_N)	0.01337	0.01796	0.10106
	(!D * !Q * Q_N)	0.00595	0.01045	0.09082
	(!D * !Q * Q_N)	0.00948	0.01399	0.09435

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)	0.00164	0.00165	0.00165
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00200	-0.00200	-0.00200
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00166	0.00168	0.00166
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00199	-0.00200	-0.00199

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)	-0.00156	-0.00162	-0.00162
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00208	0.00204	0.00203
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00158	-0.00165	-0.00164
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00207	0.00204	0.00202

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	**GATE_N**	**RESET_B**	**Q**
0	**0**	**x**	**0**
x	**1**	**0**	**0**
x	**1**	**1**	**1**
1	**x**	**0**	**0**
1	**x**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtn_1	23.97600
sky130_fd_sc_hs__dlrtn_2	27.17280
sky130_fd_sc_hs__dlrtn_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**GATE_N**	**RESET_B**	**Q**
sky130_fd_sc_hs__dlrtn_1	0.00207	0.00239	0.00267	1.43081
sky130_fd_sc_hs__dlrtn_2	0.00210	0.00237	0.00275	2.75544
sky130_fd_sc_hs__dlrtn_4	0.00209	0.00238	0.00452	5.09492

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtn_1	0.00000	0.85738	1.17170
sky130_fd_sc_hs__dlrtn_2	0.00000	0.87202	1.19333
sky130_fd_sc_hs__dlrtn_4	0.00000	1.49005	2.83613

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)	0.16246	0.53493	5.45586
	GATE_N->Q (-R)	0.18890	0.76639	8.54608
	RESET_B->Q (RR)	0.05252	0.43784	5.47790
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.16902	0.45311	5.40999
	GATE_N->Q (-R)	0.19540	0.68465	8.49797
	RESET_B->Q (RR)	0.05575	0.36447	5.38604
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.18688	0.40854	5.39972
	GATE_N->Q (-R)	0.21355	0.64114	8.48159
	RESET_B->Q (RR)	0.06091	0.30659	5.53984

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.12705	0.47024	4.45333
	GATE_N->Q (-F)	0.13453	0.49927	4.64333
	RESET_B->Q (FF)	0.05913	0.43877	4.66537
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.13165	0.44071	4.34880
	GATE_N->Q (-F)	0.13887	0.46990	4.54077
	RESET_B->Q (FF)	0.06279	0.42900	4.69871
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.14077	0.43021	4.40307
	GATE_N->Q (-F)	0.15076	0.46474	4.60650
	RESET_B->Q (FF)	0.06808	0.40448	4.81783

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** ()	0.07496	0.58716	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B** ()	0.08600	0.58716	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B** ()	0.10145	0.58716	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	0.01670	0.01944	0.09283
	D	0.01335	0.01611	0.08980
	GATE_N	0.01712	0.02119	0.10292
	GATE_N	0.02042	0.02448	0.10621
	RESET_B	0.00999	0.01138	0.06252
	RESET_B	0.00588	0.00727	0.05870
sky130_fd_sc_hs__dlrtn_2	D	0.01921	0.02235	0.09578
	D	0.01589	0.01907	0.09294
	GATE_N	0.01970	0.02422	0.10606
	GATE_N	0.02301	0.02759	0.10937
	RESET_B	0.01239	0.01367	0.05508
	RESET_B	0.00816	0.00949	0.05130
sky130_fd_sc_hs__dlrtn_4	D	0.02768	0.03166	0.10573
	D	0.02414	0.02814	0.10311
	GATE_N	0.02816	0.03355	0.11583
	GATE_N	0.03125	0.03664	0.11892
	RESET_B	0.02186	0.02597	0.14841
	RESET_B	0.01488	0.01908	0.14262

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01361	0.01770	0.09119
	D	0.01695	0.02103	0.09407
	GATE_N	0.01639	0.02120	0.10586
	GATE_N	0.02019	0.02498	0.10963
	RESET_B	0.00419	0.00819	0.06461
	RESET_B	0.00829	0.01209	0.06862
sky130_fd_sc_hs__dlrtn_2	D	0.01655	0.02096	0.09396
	D	0.01986	0.02427	0.09722
	GATE_N	0.01945	0.02491	0.10914
	GATE_N	0.02315	0.02828	0.11280
	RESET_B	0.00703	0.01052	0.06503
	RESET_B	0.01124	0.01458	0.06813
sky130_fd_sc_hs__dlrtn_4	D	0.02400	0.02892	0.10268
	D	0.02753	0.03241	0.10569
	GATE_N	0.02700	0.03253	0.12267
	GATE_N	0.03094	0.03646	0.12189
	RESET_B	0.01319	0.02041	0.15718
	RESET_B	0.02009	0.02718	0.16362

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)	0.00493	0.00786	0.07827
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00184	0.00478	0.07518
	(!GATE_N * !RESET_B * !Q)	0.00817	0.01111	0.08359
	(!GATE_N * !RESET_B * !Q)	0.00531	0.00824	0.08072
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00498	0.00792	0.07832
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00185	0.00478	0.07519
	(!GATE_N * !RESET_B * !Q)	0.00821	0.01114	0.08362
	(!GATE_N * !RESET_B * !Q)	0.00533	0.00823	0.08073
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00497	0.00793	0.07839
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00186	0.00480	0.07528
	(!GATE_N * !RESET_B * !Q)	0.00864	0.01157	0.08394
	(!GATE_N * !RESET_B * !Q)	0.00580	0.00872	0.08108

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)	0.00152	0.00568	0.07582
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00460	0.00879	0.07892
	(!GATE_N * !RESET_B * !Q)	0.00787	0.01193	0.08456
	(!GATE_N * !RESET_B * !Q)	0.01074	0.01480	0.08743
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00149	0.00567	0.07580
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00461	0.00880	0.07893
	(!GATE_N * !RESET_B * !Q)	0.00792	0.01199	0.08462
	(!GATE_N * !RESET_B * !Q)	0.01081	0.01490	0.08751
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00146	0.00563	0.07583
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00456	0.00876	0.07895
	(!GATE_N * !RESET_B * !Q)	0.00912	0.01319	0.08573
	(!GATE_N * !RESET_B * !Q)	0.01198	0.01607	0.08861

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)	0.00912	0.01240	0.09561
	(D * RESET_B * Q)	0.00557	0.00883	0.09205
	(D * !RESET_B * !Q)	0.01423	0.01749	0.10038
	(D * !RESET_B * !Q)	0.01047	0.01370	0.09661
	(!D * !Q)	0.00908	0.01236	0.09539
	(!D * !Q)	0.00553	0.00878	0.09183
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00907	0.01236	0.09560
	(D * RESET_B * Q)	0.00556	0.00884	0.09208
	(D * !RESET_B * !Q)	0.01426	0.01753	0.10049
	(D * !RESET_B * !Q)	0.01053	0.01377	0.09675
	(!D * !Q)	0.00902	0.01230	0.09536
	(!D * !Q)	0.00551	0.00876	0.09185
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00917	0.01244	0.09567
	(D * RESET_B * Q)	0.00565	0.00890	0.09214
	(D * !RESET_B * !Q)	0.01551	0.01877	0.10174
	(D * !RESET_B * !Q)	0.01175	0.01500	0.09797
	(!D * !Q)	0.00905	0.01232	0.09538
	(!D * !Q)	0.00553	0.00877	0.09185

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)	0.00600	0.01062	0.09239
	(D * RESET_B * Q)	0.00956	0.01418	0.09595
	(D * !RESET_B * !Q)	0.00861	0.01308	0.09357
	(D * !RESET_B * !Q)	0.01239	0.01686	0.09735
	(!D * !Q)	0.00599	0.01067	0.09254
	(!D * !Q)	0.00956	0.01423	0.09609
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00607	0.01068	0.09250
	(D * RESET_B * Q)	0.00959	0.01421	0.09602
	(D * !RESET_B * !Q)	0.00870	0.01317	0.09369
	(D * !RESET_B * !Q)	0.01245	0.01691	0.09745
	(!D * !Q)	0.00609	0.01077	0.09267
	(!D * !Q)	0.00962	0.01428	0.09619
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00610	0.01072	0.09253
	(D * RESET_B * Q)	0.00964	0.01426	0.09606
	(D * !RESET_B * !Q)	0.00915	0.01365	0.09415
	(D * !RESET_B * !Q)	0.01294	0.01744	0.09793
	(!D * !Q)	0.00616	0.01084	0.09272
	(!D * !Q)	0.00970	0.01436	0.09625

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)	0.00163	0.00165	0.00164
	(D * GATE_N * !Q) + (!D * !Q)	-0.00185	-0.00186	-0.00185
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00168	0.00168	0.00167
	(D * GATE_N * !Q) + (!D * !Q)	-0.00197	-0.00197	-0.00197
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00282	0.00285	0.00284
	(D * GATE_N * !Q) + (!D * !Q)	-0.00304	-0.00305	-0.00305

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)	-0.00156	-0.00162	-0.00162
	(D * GATE_N * !Q) + (!D * !Q)	0.00192	0.00189	0.00187
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00160	-0.00165	-0.00166
	(D * GATE_N * !Q) + (!D * !Q)	0.00204	0.00200	0.00200
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00266	-0.00282	-0.00282
	(D * GATE_N * !Q) + (!D * !Q)	0.00319	0.00311	0.00308

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	**GATE**	**RESET_B**	**Q**
x	**x**	**0**	**0**
x	**0**	**1**	**1**
0	**1**	**1**	**0**
1	**1**	**1**	**1**

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlrtp_1	22.37760
sky130_fd_sc_hs__dlrtp_2	23.97600
sky130_fd_sc_hs__dlrtp_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	**GATE**	**RESET_B**	**Q**
sky130_fd_sc_hs__dlrtp_1	0.00224	0.00241	0.00273	1.44555
sky130_fd_sc_hs__dlrtp_2	0.00221	0.00236	0.00281	2.76687
sky130_fd_sc_hs__dlrtp_4	0.00220	0.00235	0.00431	5.17159

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrtp_1	0.00000	0.85738	1.17169
sky130_fd_sc_hs__dlrtp_2	0.00000	0.87202	1.19333
sky130_fd_sc_hs__dlrtp_4	0.00000	1.49004	2.83612

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)	0.16137	0.53077	5.45649
	GATE->Q (-R)	0.14179	0.51521	5.30506
	RESET_B->Q (RR)	0.05309	0.43951	5.52933
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.16817	0.44875	5.37320
	GATE->Q (-R)	0.14819	0.43162	5.22574
	RESET_B->Q (RR)	0.05548	0.36530	5.44813
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.18613	0.40704	5.42498
	GATE->Q (-R)	0.16821	0.39338	5.29074
	RESET_B->Q (RR)	0.06073	0.30763	5.61354

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.13329	0.48816	4.65794
	GATE->Q (-F)	0.14361	0.30426	1.53411
	RESET_B->Q (FF)	0.05974	0.44597	4.75444
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.13885	0.45680	4.50696
	GATE->Q (-F)	0.14767	0.26881	1.36381
	RESET_B->Q (FF)	0.06084	0.42707	4.73074
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.14633	0.43972	4.48148
	GATE->Q (-F)	0.15510	0.25451	1.36768
	RESET_B->Q (FF)	0.06735	0.40443	4.85372

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** ()	0.07275	0.58716	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B** ()	0.08379	0.58716	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B** ()	0.10145	0.58716	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	0.01680	0.01926	0.09145
	D	0.01309	0.01558	0.08806
	GATE	0.01997	0.02271	0.10811
	GATE	0.01610	0.01885	0.10446
	RESET_B	0.00962	0.01078	0.06025
	RESET_B	0.00542	0.00658	0.05634
sky130_fd_sc_hs__dlrtp_2	D	0.01976	0.02272	0.09483
	D	0.01605	0.01906	0.09160
	GATE	0.02268	0.02591	0.11112
	GATE	0.01883	0.02208	0.10793
	RESET_B	0.01242	0.01361	0.05960
	RESET_B	0.00809	0.00934	0.05590
sky130_fd_sc_hs__dlrtp_4	D	0.02797	0.03186	0.10407
	D	0.02419	0.02814	0.10151
	GATE	0.03089	0.03504	0.12065
	GATE	0.02699	0.03117	0.11762
	RESET_B	0.02162	0.02586	0.15266
	RESET_B	0.01497	0.01926	0.14697

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01322	0.01729	0.08994
	D	0.01693	0.02093	0.09281
	GATE	0.02077	0.02430	0.10592
	GATE	0.01738	0.02091	0.10239
	RESET_B	0.00447	0.00790	0.06238
	RESET_B	0.00865	0.01196	0.06542
sky130_fd_sc_hs__dlrtp_2	D	0.01592	0.02040	0.09200
	D	0.01963	0.02392	0.09570
	GATE	0.02317	0.02708	0.10859
	GATE	0.01989	0.02373	0.10521
	RESET_B	0.00694	0.01049	0.06420
	RESET_B	0.01124	0.01478	0.06721
sky130_fd_sc_hs__dlrtp_4	D	0.02376	0.02874	0.10034
	D	0.02754	0.03224	0.10383
	GATE	0.03081	0.03510	0.11632
	GATE	0.02759	0.03183	0.11282
	RESET_B	0.01355	0.02095	0.16046
	RESET_B	0.02013	0.02736	0.16523

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)	0.00869	0.01146	0.08298
	(GATE * !RESET_B * !Q)	0.00549	0.00824	0.07977
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00538	0.00828	0.07771
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00193	0.00482	0.07425
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00880	0.01155	0.08302
	(GATE * !RESET_B * !Q)	0.00561	0.00834	0.07982
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00542	0.00830	0.07771
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00199	0.00486	0.07428
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00910	0.01180	0.08256
	(GATE * !RESET_B * !Q)	0.00592	0.00860	0.07936
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00541	0.00825	0.07708
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00198	0.00481	0.07366

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)	0.00728	0.01127	0.08282
	(GATE * !RESET_B * !Q)	0.01050	0.01449	0.08604
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00105	0.00516	0.07432
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00451	0.00863	0.07778
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00745	0.01142	0.08292
	(GATE * !RESET_B * !Q)	0.01067	0.01464	0.08613
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00111	0.00520	0.07435
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00455	0.00865	0.07779
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00860	0.01254	0.08344
	(GATE * !RESET_B * !Q)	0.01181	0.01576	0.08665
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00108	0.00517	0.07373
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00451	0.00861	0.07716

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)	0.00991	0.01308	0.09475
	(D * RESET_B * Q)	0.00627	0.00944	0.09113
	(D * !RESET_B * !Q)	0.01153	0.01458	0.09970
	(D * !RESET_B * !Q)	0.00815	0.01118	0.09634
	(!D * !Q)	0.00980	0.01298	0.09448
	(!D * !Q)	0.00617	0.00934	0.09085
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00970	0.01291	0.09445
	(D * RESET_B * Q)	0.00614	0.00932	0.09088
	(D * !RESET_B * !Q)	0.01137	0.01444	0.09942
	(D * !RESET_B * !Q)	0.00805	0.01111	0.09608
	(!D * !Q)	0.00957	0.01278	0.09417
	(!D * !Q)	0.00601	0.00920	0.09060
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00958	0.01271	0.09364
	(D * RESET_B * Q)	0.00601	0.00913	0.09007
	(D * !RESET_B * !Q)	0.01169	0.01464	0.09875
	(D * !RESET_B * !Q)	0.00835	0.01130	0.09541
	(!D * !Q)	0.00950	0.01263	0.09337
	(!D * !Q)	0.00593	0.00905	0.08980

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)	0.00596	0.01051	0.09074
	(D * RESET_B * Q)	0.00959	0.01415	0.09437
	(D * !RESET_B * !Q)	0.01016	0.01482	0.09810
	(D * !RESET_B * !Q)	0.01355	0.01821	0.10149
	(!D * !Q)	0.00604	0.01060	0.09109
	(!D * !Q)	0.00967	0.01424	0.09471
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00602	0.01047	0.09054
	(D * RESET_B * Q)	0.00958	0.01405	0.09411
	(D * !RESET_B * !Q)	0.01036	0.01491	0.09804
	(D * !RESET_B * !Q)	0.01369	0.01826	0.10139
	(!D * !Q)	0.00613	0.01058	0.09091
	(!D * !Q)	0.00969	0.01416	0.09448
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00597	0.01047	0.08989
	(D * RESET_B * Q)	0.00953	0.01404	0.09345
	(D * !RESET_B * !Q)	0.01152	0.01605	0.09842
	(D * !RESET_B * !Q)	0.01487	0.01940	0.10178
	(!D * !Q)	0.00599	0.01051	0.09012
	(!D * !Q)	0.00955	0.01409	0.09369

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)	0.00163	0.00164	0.00163
	(D * !GATE * !Q) + (!D * !Q)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00164	0.00166	0.00165
	(D * !GATE * !Q) + (!D * !Q)	-0.00200	-0.00202	-0.00201
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00275	0.00278	0.00277
	(D * !GATE * !Q) + (!D * !Q)	-0.00289	-0.00291	-0.00290

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)	-0.00154	-0.00162	-0.00162
	(D * !GATE * !Q) + (!D * !Q)	0.00197	0.00195	0.00193
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00157	-0.00163	-0.00163
	(D * !GATE * !Q) + (!D * !Q)	0.00209	0.00205	0.00204
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00259	-0.00274	-0.00274
	(D * !GATE * !Q) + (!D * !Q)	0.00303	0.00296	0.00294

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE_N	Q	Q_N
0	0	0	1
x	1	1	1
1	0	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbn_1	27.17280
sky130_fd_sc_hs__dlxbn_2	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE_N	Q	Q_N
sky130_fd_sc_hs__dlxbn_1	0.00223	0.00241	1.39339	1.40960
sky130_fd_sc_hs__dlxbn_2	0.00210	0.00239	2.35182	2.69988

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	1.07144	1.60298
sky130_fd_sc_hs__dlxbn_2	0.00000	0.95639	1.30780

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)	0.16536	0.54888	5.49504
	GATE_N->Q (-R)	0.19268	0.78262	8.58885
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.17115	0.47377	5.29469
	GATE_N->Q (-R)	0.19825	0.70668	8.38490

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.13482	0.48663	4.52669
	GATE_N->Q (-F)	0.14294	0.51755	4.72378
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.13916	0.44727	4.06712
	GATE_N->Q (-F)	0.14763	0.47829	4.26500

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)	0.16832	0.77379	8.97069
	GATE_N->Q_N (-R)	0.17652	0.80460	9.16725
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.18460	0.66835	8.53036
	GATE_N->Q_N (-R)	0.19321	0.69941	8.72820

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)	0.18869	0.34003	1.70708
	GATE_N->Q_N (-F)	0.21601	0.57367	4.80118
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.21216	0.33803	1.77827
	GATE_N->Q_N (-F)	0.23927	0.57090	4.86491

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01131	0.01318	0.04999
	D	0.00965	0.01150	0.04836
	GATE_N	0.01145	0.01401	0.05523
	GATE_N	0.01325	0.01580	0.05675
sky130_fd_sc_hs__dlxbn_2	D	0.01402	0.01617	0.05301
	D	0.01244	0.01458	0.05160
	GATE_N	0.01422	0.01705	0.06204
	GATE_N	0.01600	0.01880	0.06031

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00981	0.01217	0.04877
	D	0.01146	0.01378	0.05028
	GATE_N	0.01138	0.01405	0.05641
	GATE_N	0.01318	0.01584	0.05798
sky130_fd_sc_hs__dlxbn_2	D	0.01254	0.01512	0.05157
	D	0.01412	0.01668	0.05312
	GATE_N	0.01409	0.01710	0.05956
	GATE_N	0.01588	0.01875	0.06099

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00984	0.01216	0.04942
	D	0.01148	0.01380	0.05065
	GATE_N	0.01141	0.01411	0.05799
	GATE_N	0.01321	0.01587	0.05849
sky130_fd_sc_hs__dlxbn_2	D	0.01257	0.01515	0.05197
	D	0.01414	0.01671	0.05354
	GATE_N	0.01411	0.01720	0.06055
	GATE_N	0.01590	0.01878	0.06151

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.01130	0.01314	0.04955
	D	0.00964	0.01149	0.04791
	GATE_N	0.01144	0.01398	0.05449
	GATE_N	0.01324	0.01578	0.05628
sky130_fd_sc_hs__dlxbn_2	D	0.01402	0.01615	0.05267
	D	0.01244	0.01456	0.05111
	GATE_N	0.01421	0.01703	0.05870
	GATE_N	0.01600	0.01880	0.05942

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)	0.00522	0.00816	0.07868
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00192	0.00483	0.07537
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00511	0.00806	0.07859
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00194	0.00488	0.07543

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)	0.00128	0.00546	0.07569
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00458	0.00877	0.07901
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00134	0.00553	0.07579
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00449	0.00870	0.07896

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)	0.00943	0.01266	0.09583
	(D * Q * !Q_N)	0.00584	0.00906	0.09223
	(!D * !Q * Q_N)	0.00931	0.01254	0.09552
	(!D * !Q * Q_N)	0.00572	0.00892	0.09191
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00940	0.01264	0.09581
	(D * Q * !Q_N)	0.00583	0.00906	0.09223
	(!D * !Q * Q_N)	0.00929	0.01253	0.09550
	(!D * !Q * Q_N)	0.00571	0.00892	0.09191

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)	0.00608	0.01080	0.09249
	(D * Q * !Q_N)	0.00969	0.01438	0.09609
	(!D * !Q * Q_N)	0.00617	0.01091	0.09272
	(!D * !Q * Q_N)	0.00978	0.01452	0.09631
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00605	0.01069	0.09245
	(D * Q * !Q_N)	0.00963	0.01428	0.09603
	(!D * !Q * Q_N)	0.00613	0.01082	0.09267
	(!D * !Q * Q_N)	0.00970	0.01441	0.09624

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT	
D	GATE	Q	Q_N
x	0	1	1
0	1	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxbp_1	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	D	GATE	Q	Q_N
sky130_fd_sc_hs__dlxbp_1	0.00221	0.00242	1.39005	1.42399

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	1.07144	1.60298

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)	0.16246	0.54233	5.42425
	GATE->Q (-R)	0.14309	0.52602	5.27193

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.14069	0.49691	4.57070
	GATE->Q (-F)	0.14750	0.30687	1.42389

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)	0.17477	0.78524	9.09143
	GATE->Q_N (-R)	0.18163	0.59521	5.94672

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)	0.18595	0.33542	1.68352
	GATE->Q_N (-F)	0.16659	0.31906	1.53075

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01132	0.01323	0.04938
	D	0.00968	0.01153	0.04777
	GATE	0.01274	0.01474	0.05745
	GATE	0.01094	0.01293	0.05571

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00964	0.01195	0.04784
	D	0.01127	0.01358	0.04945
	GATE	0.01317	0.01524	0.05590
	GATE	0.01137	0.01341	0.05411

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00966	0.01198	0.04833
	D	0.01129	0.01360	0.04977
	GATE	0.01319	0.01523	0.05635
	GATE	0.01139	0.01343	0.05473

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.01131	0.01317	0.04908
	D	0.00967	0.01151	0.04747
	GATE	0.01273	0.01474	0.05719
	GATE	0.01093	0.01291	0.05546

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)	0.00536	0.00826	0.07771
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00208	0.00496	0.07443

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)	0.00112	0.00519	0.07439
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00440	0.00848	0.07768

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)	0.00942	0.01278	0.09421
	(D * Q * !Q_N)	0.00581	0.00916	0.09060
	(!D * !Q * Q_N)	0.00950	0.01274	0.09414
	(!D * !Q * Q_N)	0.00591	0.00912	0.09053

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)	0.00586	0.01035	0.09044
	(D * Q * !Q_N)	0.00946	0.01396	0.09405
	(!D * !Q * Q_N)	0.00575	0.01026	0.09059
	(!D * !Q * Q_N)	0.00934	0.01388	0.09420

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE_N	Q
0	0	0
x	1	1
1	x	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtn_1	22.37760
sky130_fd_sc_hs__dlxtn_2	23.97600
sky130_fd_sc_hs__dlxtn_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE_N	Q
sky130_fd_sc_hs__dlxtn_1	0.00221	0.00244	1.41500
sky130_fd_sc_hs__dlxtn_2	0.00226	0.00244	2.57892
sky130_fd_sc_hs__dlxtn_4	0.00225	0.00243	5.16533

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.82850	1.13141
sky130_fd_sc_hs__dlxtn_2	0.00000	0.83520	1.19333
sky130_fd_sc_hs__dlxtn_4	0.00000	1.34079	1.89296

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)	0.15292	0.52688	5.38925
	GATE_N->Q (-R)	0.18043	0.76012	8.48323
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.15613	0.43651	5.15035
	GATE_N->Q (-R)	0.18232	0.66737	8.23794
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.17285	0.39150	5.41172
	GATE_N->Q (-R)	0.19820	0.62178	8.48884

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.12488	0.46526	4.39884
	GATE_N->Q (-F)	0.13417	0.49760	4.59454
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.12886	0.43374	4.21138
	GATE_N->Q (-F)	0.13715	0.46481	4.40719
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.13973	0.43152	4.49851
	GATE_N->Q (-F)	0.15058	0.46751	4.70720

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01606	0.01920	0.09267
	D	0.01264	0.01579	0.08949
	GATE_N	0.01630	0.02079	0.10261
	GATE_N	0.01998	0.02448	0.10630
sky130_fd_sc_hs__dlxtn_2	D	0.01872	0.02210	0.09559
	D	0.01524	0.01865	0.09211
	GATE_N	0.01885	0.02367	0.10554
	GATE_N	0.02250	0.02732	0.10935
sky130_fd_sc_hs__dlxtn_4	D	0.02681	0.03033	0.10429
	D	0.02332	0.02692	0.10172
	GATE_N	0.02691	0.03188	0.11374
	GATE_N	0.03057	0.03559	0.11740

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01343	0.01747	0.09144
	D	0.01685	0.02087	0.09400
	GATE_N	0.01650	0.02142	0.10640
	GATE_N	0.02018	0.02503	0.10954
sky130_fd_sc_hs__dlxtn_2	D	0.01600	0.02030	0.09474
	D	0.01948	0.02373	0.09676
	GATE_N	0.01903	0.02468	0.10912
	GATE_N	0.02268	0.02775	0.11248
sky130_fd_sc_hs__dlxtn_4	D	0.02369	0.02850	0.10501
	D	0.02717	0.03190	0.10526
	GATE_N	0.02678	0.03271	0.12011
	GATE_N	0.03044	0.03597	0.12130

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00524	0.00810	0.07842
	GATE_N	0.00181	0.00465	0.07500
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00526	0.00812	0.07847
	GATE_N	0.00176	0.00461	0.07499
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00528	0.00812	0.07848
	GATE_N	0.00179	0.00462	0.07499

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00159	0.00573	0.07577
	GATE_N	0.00501	0.00916	0.07920
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00157	0.00573	0.07579
	GATE_N	0.00505	0.00923	0.07929
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00160	0.00576	0.07582
	GATE_N	0.00508	0.00926	0.07931

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00985	0.01301	0.09607
	(D * Q)	0.00618	0.00932	0.09238
	(!D * !Q)	0.00970	0.01286	0.09574
	(!D * !Q)	0.00603	0.00915	0.09204
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00963	0.01283	0.09592
	(D * Q)	0.00597	0.00916	0.09226
	(!D * !Q)	0.00943	0.01265	0.09555
	(!D * !Q)	0.00578	0.00896	0.09188
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00972	0.01290	0.09598
	(D * Q)	0.00606	0.00922	0.09231
	(!D * !Q)	0.00952	0.01270	0.09559
	(!D * !Q)	0.00587	0.00901	0.09192

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00614	0.01072	0.09244
	(D * Q)	0.00983	0.01442	0.09613
	(!D * !Q)	0.00625	0.01089	0.09270
	(!D * !Q)	0.00995	0.01459	0.09639
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00606	0.01067	0.09240
	(D * Q)	0.00972	0.01435	0.09606
	(!D * !Q)	0.00621	0.01089	0.09269
	(!D * !Q)	0.00987	0.01457	0.09636
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00612	0.01070	0.09245
	(D * Q)	0.00979	0.01438	0.09612
	(!D * !Q)	0.00627	0.01092	0.09273
	(!D * !Q)	0.00995	0.01459	0.09640

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
D	GATE	Q
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlxtp_1	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	GATE	Q
sky130_fd_sc_hs__dlxtp_1	0.00216	0.00249	1.36691

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.80294	1.13039

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)	0.18519	0.55961	5.41722
	GATE->Q (-R)	0.14789	0.52642	5.26913

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.13637	0.48521	4.50547
	GATE->Q (-F)	0.14707	0.30606	1.46465

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01747	0.02064	0.09377
	D	0.01393	0.01712	0.09046
	GATE	0.02063	0.02320	0.08751
	GATE	0.01680	0.01937	0.08398

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01519	0.01935	0.09217
	D	0.01871	0.02286	0.09566
	GATE	0.02228	0.02570	0.11009
	GATE	0.01880	0.02217	0.10652

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00491	0.00801	0.07883
	!GATE	0.00156	0.00464	0.07549

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00126	0.00539	0.07585
	!GATE	0.00460	0.00875	0.07920

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.01023	0.01349	0.09672
	(D * Q)	0.00658	0.00982	0.09306
	(!D * !Q)	0.00990	0.01315	0.09622
	(!D * !Q)	0.00626	0.00947	0.09256

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00514	0.00979	0.09148
	(D * Q)	0.00881	0.01345	0.09514
	(!D * !Q)	0.00557	0.01021	0.09201
	(!D * !Q)	0.00923	0.01389	0.09567

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	X
0	0
1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__dlygate4sd1_1	12.78720
sky130_fd_sc_hs__dlygate4sd2_1	12.78720
sky130_fd_sc_hs__dlygate4sd3_1	12.78720

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	X
sky130_fd_sc_hs__dlygate4sd1_1	0.00181	1.41710
sky130_fd_sc_hs__dlygate4sd2_1	0.00182	1.41467
sky130_fd_sc_hs__dlygate4sd3_1	0.00184	1.41461

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.04175	0.06493
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.04021	0.06339
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.04124	0.06442

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)**	0.11288	0.49526	5.25808
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.14275	0.53221	5.35811
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.26566	0.67457	5.63557

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.13980	0.53709	4.93731
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.17057	0.58205	5.01042
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.26731	0.71705	5.20647

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.01222	0.01254	0.03485
	A	0.00943	0.00976	0.03229
sky130_fd_sc_hs__dlygate4sd2_1	A	0.01290	0.01317	0.03471
	A	0.01009	0.01037	0.03207
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01493	0.01516	0.03602
	A	0.01208	0.01232	0.03334

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00909	0.00996	0.03191
	A	0.01188	0.01274	0.03388
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00982	0.01050	0.03084
	A	0.01263	0.01331	0.03357
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01235	0.01255	0.03229
	A	0.01519	0.01546	0.03444

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	0
1	0	1
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__ebufn_1	12.78720
sky130_fd_sc_hs__ebufn_2	14.38560
sky130_fd_sc_hs__ebufn_4	19.18080
sky130_fd_sc_hs__ebufn_8	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__ebufn_1	0.00225	0.00414	0.74325
sky130_fd_sc_hs__ebufn_2	0.00243	0.00533	1.20094
sky130_fd_sc_hs__ebufn_4	0.00265	0.00809	2.35533
sky130_fd_sc_hs__ebufn_8	0.00510	0.01339	3.99200

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ebufn_1	0.00000	0.56168	0.94325
sky130_fd_sc_hs__ebufn_2	0.00000	0.15440	0.22509
sky130_fd_sc_hs__ebufn_4	0.00000	0.11728	0.25376
sky130_fd_sc_hs__ebufn_8	0.00000	0.19226	0.50652

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)	0.05459	0.55924	5.73816
	TE_B->Z (RR)	0.01948	0.34853	5.01992
	TE_B->Z (FR)	0.04427	0.82249	10.46930
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.05109	0.47517	5.67040
	TE_B->Z (RR)	0.02113	0.34925	5.02065
	TE_B->Z (FR)	0.04513	0.73153	10.43750
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.05662	0.40607	5.65177
	TE_B->Z (RR)	0.02766	0.35106	5.02239
	TE_B->Z (FR)	0.04265	0.61574	10.26570
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.06267	0.34641	5.63892
	TE_B->Z (RR)	0.04713	0.35492	5.02616
	TE_B->Z (FR)	0.04920	0.54028	9.99436

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.05427	0.39662	4.04595
	TE_B->Z (RF)	0.01927	0.34851	5.01991
	TE_B->Z (FF)	0.04471	0.37208	3.97658
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.06119	0.39594	4.06752
	TE_B->Z (RF)	0.02098	0.34924	5.02064
	TE_B->Z (FF)	0.04781	0.35635	3.96876
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.07983	0.43822	4.29564
	TE_B->Z (RF)	0.02766	0.35101	5.02240
	TE_B->Z (FF)	0.05658	0.37138	4.12259
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.07900	0.41684	4.42584
	TE_B->Z (RF)	0.04653	0.35485	5.02623
	TE_B->Z (FF)	0.07894	0.40815	4.34336

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00686	0.01003	0.07980
	A	0.00329	0.00646	0.07634
	TE_B	0.00296	0.00705	0.07672
	TE_B	0.00926	0.01335	0.08311
sky130_fd_sc_hs__ebufn_2	A	0.00972	0.01325	0.08804
	A	0.00594	0.00960	0.08451
	TE_B	0.00591	0.00981	0.08383
	TE_B	0.01402	0.01795	0.09196
sky130_fd_sc_hs__ebufn_4	A	0.01542	0.01852	0.08423
	A	0.01129	0.01439	0.08062
	TE_B	0.01207	0.01525	0.08054
	TE_B	0.02442	0.02768	0.09308
sky130_fd_sc_hs__ebufn_8	A	0.02998	0.03656	0.16978
	A	0.02195	0.02854	0.16268
	TE_B	0.02490	0.02762	0.09087
	TE_B	0.04542	0.04825	0.11152

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00325	0.00731	0.07624
	A	0.00681	0.01087	0.07969
	TE_B	0.00349	0.00778	0.07726
	TE_B	0.00967	0.01395	0.08332
sky130_fd_sc_hs__ebufn_2	A	0.00607	0.01046	0.08355
	A	0.00985	0.01420	0.08681
	TE_B	0.00702	0.01121	0.08468
	TE_B	0.01477	0.01896	0.09235
sky130_fd_sc_hs__ebufn_4	A	0.01197	0.01630	0.08033
	A	0.01610	0.02030	0.08366
	TE_B	0.01405	0.01764	0.08241
	TE_B	0.02593	0.02950	0.09411
sky130_fd_sc_hs__ebufn_8	A	0.02353	0.03139	0.16325
	A	0.03156	0.03938	0.16895
	TE_B	0.02873	0.03228	0.09550
	TE_B	0.04832	0.05177	0.11423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00459	0.00780	0.07686
	(TE_B * Z)	0.00098	0.00417	0.07325
	(TE_B * !Z)	0.00449	0.00765	0.07667
	(TE_B * !Z)	0.00089	0.00405	0.07307
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00629	0.00954	0.08359
	(TE_B * Z)	0.00236	0.00560	0.07967
	(TE_B * !Z)	0.00592	0.00910	0.08297
	(TE_B * !Z)	0.00202	0.00520	0.07908
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00917	0.01127	0.07640
	(TE_B * Z)	0.00487	0.00694	0.07210
	(TE_B * !Z)	0.00856	0.01057	0.07547
	(TE_B * !Z)	0.00428	0.00628	0.07121
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01696	0.02157	0.15365
	(TE_B * Z)	0.00863	0.01316	0.14528
	(TE_B * !Z)	0.01574	0.02014	0.15163
	(TE_B * !Z)	0.00745	0.01180	0.14334

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00046	0.00472	0.07339
	(TE_B * Z)	0.00410	0.00837	0.07703
	(TE_B * !Z)	0.00054	0.00464	0.07362
	(TE_B * !Z)	0.00414	0.00824	0.07722
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00112	0.00476	0.07795
	(TE_B * Z)	0.00509	0.00874	0.08194
	(TE_B * !Z)	0.00145	0.00529	0.07874
	(TE_B * !Z)	0.00533	0.00918	0.08263
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00223	0.00518	0.06953
	(TE_B * Z)	0.00667	0.00963	0.07400
	(TE_B * !Z)	0.00283	0.00591	0.07071
	(TE_B * !Z)	0.00708	0.01016	0.07495
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00374	0.01000	0.14068
	(TE_B * Z)	0.01233	0.01858	0.14935
	(TE_B * !Z)	0.00497	0.01146	0.14298
	(TE_B * !Z)	0.01321	0.01975	0.15123

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00394	0.00712	0.07651
	(A * Z)	-0.00225	0.00089	0.07031
	(!A * !Z)	0.00399	0.00707	0.07650
	(!A * !Z)	-0.00220	0.00086	0.07030
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00436	0.00736	0.08125
	(A * Z)	-0.00342	-0.00047	0.07343
	(!A * !Z)	0.00451	0.00742	0.08130
	(!A * !Z)	-0.00327	-0.00040	0.07348
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00542	0.00686	0.07203
	(A * Z)	-0.00642	-0.00509	0.06014
	(!A * !Z)	0.00550	0.00688	0.07204
	(!A * !Z)	-0.00629	-0.00503	0.06015
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00735	0.00757	0.07015
	(A * Z)	-0.01219	-0.01210	0.05048
	(!A * !Z)	0.00726	0.00761	0.07057
	(!A * !Z)	-0.01225	-0.01206	0.05096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00082	0.00503	0.07446
	(A * Z)	0.00700	0.01127	0.08068
	(!A * !Z)	0.00081	0.00520	0.07448
	(!A * !Z)	0.00700	0.01142	0.08069
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00216	0.00638	0.07985
	(A * Z)	0.00996	0.01422	0.08766
	(!A * !Z)	0.00207	0.00633	0.07978
	(!A * !Z)	0.00986	0.01417	0.08759
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00474	0.00810	0.07315
	(A * Z)	0.01658	0.01996	0.08506
	(!A * !Z)	0.00477	0.00845	0.07317
	(!A * !Z)	0.01661	0.02038	0.08506
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00996	0.01346	0.07596
	(A * Z)	0.02956	0.03309	0.09565
	(!A * !Z)	0.01020	0.01333	0.07653
	(!A * !Z)	0.02972	0.03296	0.09617

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
D	DE	CLK	Q	Q_N
x	0	R	IQ	IQ_N
0	1	R	0	1
1	1	R	1	0
x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxbp_1	47.95200

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	D	DE	CLK	Q	Q_N
sky130_fd_sc_hs__edfxbp_1	0.00184	0.00360	0.00278	1.43522	1.44251

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.59908	1.03078

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)	0.13481	0.52940	5.35143

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.12199	0.32678	1.61225

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)	0.18159	0.56341	5.37834

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)	0.17801	0.35135	1.51164

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)	-0.06267	-0.13378	-0.62158
	setup	CLK (R)	0.07837	0.14539	0.61536

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)	-0.19557	-0.35734	-4.29906
	setup	CLK (R)	0.24982	0.40462	4.33031

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)	-0.06267	-0.13378	-0.62158
	setup	CLK (R)	0.07837	0.14539	0.61536

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)	-0.19557	-0.35734	-4.29906
	setup	CLK (R)	0.24982	0.40462	4.33031

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)	-0.00033	0.00397	0.21981
	setup	CLK (R)	0.27367	0.30274	0.59473

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)	-0.11170	-0.24304	-3.48344
	setup	CLK (R)	0.22838	0.37351	4.23589

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)	-0.00033	0.00397	0.21981
	hold	CLK (R)	-0.11468	-0.14794	-0.41435
	setup	CLK (R)	0.07878	0.13891	0.59473
	setup	CLK (R)	0.27367	0.30274	0.54362

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)	-0.21446	-0.36103	-4.23216
	hold	CLK (R)	-0.11170	-0.24304	-3.48344
	setup	CLK (R)	0.22838	0.37351	4.23589
	setup	CLK (R)	0.12141	0.24912	3.48525

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 ()	0.06171	0.58716	16.50020
	min_pulse_width	CLK ()	0.09483	0.58716	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 ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.16548	0.58716	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	0.01566	0.01693	0.05177
	CLK	0.01363	0.01482	0.04982

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01536	0.01622	0.05242
	CLK	0.01316	0.01402	0.05024

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01537	0.01627	0.05275
	CLK	0.01318	0.01404	0.05059

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01564	0.01686	0.05141
	CLK	0.01361	0.01480	0.04947

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00615	0.00654	0.02294
	(CLK * DE)	0.00314	0.00353	0.01994
	(CLK * !DE)	0.00125	0.00126	0.00126
	(CLK * !DE)	-0.00067	-0.00068	-0.00067
	(!CLK * DE * Q * !Q_N)	0.01369	0.01437	0.03457
	(!CLK * DE * Q * !Q_N)	0.01069	0.01136	0.03158
	(!CLK * DE * !Q * Q_N)	0.01299	0.01359	0.03346
	(!CLK * DE * !Q * Q_N)	0.00996	0.01054	0.03043
	(!CLK * !DE)	0.00125	0.00126	0.00125
	(!CLK * !DE)	-0.00067	-0.00068	-0.00067

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00209	0.00249	0.01783
	(CLK * DE)	0.00511	0.00552	0.02086
	(CLK * !DE)	-0.00037	-0.00037	-0.00037
	(CLK * !DE)	0.00150	0.00150	0.00151
	(!CLK * DE * Q * !Q_N)	0.01047	0.01113	0.03101
	(!CLK * DE * Q * !Q_N)	0.01349	0.01412	0.03400
	(!CLK * DE * !Q * Q_N)	0.01108	0.01187	0.03195
	(!CLK * DE * !Q * Q_N)	0.01413	0.01490	0.03499
	(!CLK * !DE)	-0.00037	-0.00037	-0.00037
	(!CLK * !DE)	0.00150	0.00151	0.00150

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00971	0.01155	0.06663
	CLK	0.00292	0.00472	0.05984
	(!CLK * D * Q * !Q_N)	0.00544	0.00694	0.04911
	(!CLK * D * Q * !Q_N)	-0.00006	0.00143	0.04359
	(!CLK * D * !Q * Q_N)	0.01718	0.01917	0.07699
	(!CLK * D * !Q * Q_N)	0.01040	0.01235	0.07020
	(!CLK * !D * Q * !Q_N)	0.01705	0.01853	0.06162
	(!CLK * !D * Q * !Q_N)	0.01268	0.01414	0.05723
	(!CLK * !D * !Q * Q_N)	0.00541	0.00699	0.04914
	(!CLK * !D * !Q * Q_N)	-0.00004	0.00151	0.04368

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00287	0.00510	0.05948
	CLK	0.00965	0.01191	0.06625
	(!CLK * D * Q * !Q_N)	-0.00024	0.00197	0.04390
	(!CLK * D * Q * !Q_N)	0.00527	0.00749	0.04941
	(!CLK * D * !Q * Q_N)	0.01177	0.01418	0.07251
	(!CLK * D * !Q * Q_N)	0.01856	0.02098	0.07929
	(!CLK * !D * Q * !Q_N)	0.01316	0.01532	0.05743
	(!CLK * !D * Q * !Q_N)	0.01752	0.01972	0.06184
	(!CLK * !D * !Q * Q_N)	-0.00027	0.00184	0.04390
	(!CLK * !D * !Q * Q_N)	0.00517	0.00732	0.04937

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)	0.01485	0.01689	0.08573
	(D * Q * !Q_N)	0.01062	0.01263	0.08150
	(D * !DE * !Q * Q_N)	0.01438	0.01650	0.08543
	(D * !DE * !Q * Q_N)	0.01016	0.01223	0.08119
	(!D * !Q * Q_N)	0.01439	0.01650	0.08545
	(!D * !Q * Q_N)	0.01016	0.01224	0.08120
	(!D * !DE * Q * !Q_N)	0.01485	0.01688	0.08573
	(!D * !DE * Q * !Q_N)	0.01062	0.01262	0.08150

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)	0.00770	0.01064	0.07908
	(D * Q * !Q_N)	0.01192	0.01489	0.08332
	(D * DE * !Q * Q_N)	0.01535	0.01823	0.08887
	(D * DE * !Q * Q_N)	0.01957	0.02248	0.09311
	(D * !DE * !Q * Q_N)	0.00807	0.01097	0.07929
	(D * !DE * !Q * Q_N)	0.01228	0.01523	0.08353
	(!D * DE * Q * !Q_N)	0.01759	0.02072	0.09036
	(!D * DE * Q * !Q_N)	0.02181	0.02498	0.09461
	(!D * !Q * Q_N)	0.00807	0.01097	0.07930
	(!D * !Q * Q_N)	0.01228	0.01523	0.08353
	(!D * !DE * Q * !Q_N)	0.00770	0.01064	0.07908
	(!D * !DE * Q * !Q_N)	0.01191	0.01488	0.08332

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
D	DE	CLK	Q
x	0	R	IQ
0	1	R	0
1	1	R	1
x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__edfxtp_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	DE	CLK	Q
sky130_fd_sc_hs__edfxtp_1	0.00188	0.00346	0.00272	1.42196

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.64800	1.19334

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)	0.12834	0.51876	5.28102

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.11414	0.30535	1.47045

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)	-0.06170	-0.13260	-0.62359
	setup	CLK (R)	0.07650	0.14500	0.61634

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)	-0.19181	-0.35334	-4.28857
	setup	CLK (R)	0.25156	0.40355	4.31945

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)	-0.00278	0.00397	0.21795
	setup	CLK (R)	0.27127	0.29931	0.59780

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)	-0.10699	-0.24227	-3.49246
	setup	CLK (R)	0.22470	0.37269	4.22557

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)	-0.00278	0.00397	0.21795
	hold	CLK (R)	-0.11237	-0.13984	-0.40261
	setup	CLK (R)	0.07504	0.13891	0.59780
	setup	CLK (R)	0.27127	0.29931	0.53670

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)	-0.21022	-0.35837	-4.22129
	hold	CLK (R)	-0.10699	-0.24227	-3.49246
	setup	CLK (R)	0.22470	0.37269	4.22557
	setup	CLK (R)	0.11738	0.25025	3.49552

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 ()	0.05730	0.58716	16.50020
	min_pulse_width	CLK ()	0.09041	0.58716	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 ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.16548	0.58716	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	0.02634	0.02887	0.09878
	CLK	0.02234	0.02487	0.09500

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.02563	0.02789	0.10033
	CLK	0.02136	0.02359	0.09594

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00597	0.00638	0.02281
	(CLK * DE)	0.00294	0.00333	0.01978
	(CLK * !DE)	0.00126	0.00128	0.00127
	(CLK * !DE)	-0.00069	-0.00069	-0.00069
	(!CLK * DE * Q)	0.01349	0.01417	0.03447
	(!CLK * DE * Q)	0.01046	0.01113	0.03145
	(!CLK * DE * !Q)	0.01277	0.01341	0.03333
	(!CLK * DE * !Q)	0.00971	0.01034	0.03027
	(!CLK * !DE)	0.00126	0.00127	0.00126
	(!CLK * !DE)	-0.00069	-0.00069	-0.00069

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00201	0.00253	0.01782
	(CLK * DE)	0.00507	0.00560	0.02088
	(CLK * !DE)	-0.00035	-0.00036	-0.00035
	(CLK * !DE)	0.00154	0.00155	0.00155
	(!CLK * DE * Q)	0.00997	0.01064	0.03060
	(!CLK * DE * Q)	0.01301	0.01366	0.03363
	(!CLK * DE * !Q)	0.01061	0.01136	0.03161
	(!CLK * DE * !Q)	0.01368	0.01441	0.03467
	(!CLK * !DE)	-0.00035	-0.00036	-0.00035
	(!CLK * !DE)	0.00154	0.00155	0.00155

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00942	0.01131	0.06644
	CLK	0.00283	0.00470	0.05985
	(!CLK * D * Q)	0.00527	0.00683	0.04904
	(!CLK * D * Q)	-0.00000	0.00153	0.04374
	(!CLK * D * !Q)	0.01681	0.01885	0.07676
	(!CLK * D * !Q)	0.01022	0.01228	0.07018
	(!CLK * !D * Q)	0.01645	0.01793	0.06093
	(!CLK * !D * Q)	0.01228	0.01374	0.05675
	(!CLK * !D * !Q)	0.00526	0.00688	0.04910
	(!CLK * !D * !Q)	0.00003	0.00160	0.04384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00284	0.00505	0.05944
	CLK	0.00942	0.01165	0.06601
	(!CLK * D * Q)	-0.00018	0.00201	0.04396
	(!CLK * D * Q)	0.00510	0.00733	0.04926
	(!CLK * D * !Q)	0.01136	0.01376	0.07189
	(!CLK * D * !Q)	0.01794	0.02035	0.07847
	(!CLK * !D * Q)	0.01298	0.01512	0.05732
	(!CLK * !D * Q)	0.01713	0.01932	0.06152
	(!CLK * !D * !Q)	-0.00024	0.00186	0.04393
	(!CLK * !D * !Q)	0.00499	0.00713	0.04920

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01422	0.01642	0.08532
	(D * Q)	0.01007	0.01225	0.08116
	(D * !DE * !Q)	0.01422	0.01630	0.08551
	(D * !DE * !Q)	0.01007	0.01213	0.08136
	(!D * !Q)	0.01422	0.01630	0.08553
	(!D * !Q)	0.01007	0.01213	0.08137
	(!D * !DE * Q)	0.01422	0.01642	0.08532
	(!D * !DE * Q)	0.01006	0.01224	0.08117

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00771	0.01069	0.07927
	(D * Q)	0.01184	0.01485	0.08343
	(D * DE * !Q)	0.01485	0.01780	0.08798
	(D * DE * !Q)	0.01898	0.02196	0.09214
	(D * !DE * !Q)	0.00760	0.01053	0.07900
	(D * !DE * !Q)	0.01173	0.01469	0.08316
	(!D * DE * Q)	0.01710	0.02015	0.08984
	(!D * DE * Q)	0.02123	0.02431	0.09399
	(!D * !Q)	0.00759	0.01053	0.07953
	(!D * !Q)	0.01173	0.01469	0.08369
	(!D * !DE * Q)	0.00771	0.01069	0.07927
	(!D * !DE * Q)	0.01184	0.01485	0.08343

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE_B	Z
0	0	1
1	0	0
-	1	HiZ

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvn_1	7.99200
sky130_fd_sc_hs__einvn_2	11.18880
sky130_fd_sc_hs__einvn_4	17.58240
sky130_fd_sc_hs__einvn_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE_B	Z
sky130_fd_sc_hs__einvn_1	0.00270	0.00304	0.75443
sky130_fd_sc_hs__einvn_2	0.00505	0.00455	1.32261
sky130_fd_sc_hs__einvn_4	0.01008	0.00804	2.50582
sky130_fd_sc_hs__einvn_8	0.02017	0.01333	4.32629

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvn_1	0.00000	0.19485	0.27624
sky130_fd_sc_hs__einvn_2	0.00000	0.20561	0.27645
sky130_fd_sc_hs__einvn_4	0.00000	0.08531	0.25276
sky130_fd_sc_hs__einvn_8	0.00000	0.12832	0.50451

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)	0.03677	0.82587	10.73160
	TE_B->Z (RR)	0.02073	0.34823	5.01964
	TE_B->Z (FR)	0.04376	0.82800	10.58360
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.02552	0.70494	10.57270
	TE_B->Z (RR)	0.02726	0.34979	5.02117
	TE_B->Z (FR)	0.03989	0.70781	10.39270
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.02371	0.61456	10.57530
	TE_B->Z (RR)	0.02844	0.35107	5.02243
	TE_B->Z (FR)	0.03833	0.60045	10.19520
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.02530	0.55009	10.46640
	TE_B->Z (RR)	0.04594	0.35680	5.02804
	TE_B->Z (FR)	0.04621	0.52370	9.86355

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01448	0.29822	3.74340
	TE_B->Z (RF)	0.02049	0.34823	5.01966
	TE_B->Z (FF)	0.04485	0.37377	3.77764
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01244	0.25482	3.84962
	TE_B->Z (RF)	0.02693	0.34977	5.02119
	TE_B->Z (FF)	0.05165	0.37521	3.99214
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01204	0.21004	3.90751
	TE_B->Z (RF)	0.02801	0.35107	5.02247
	TE_B->Z (FF)	0.05110	0.35365	4.10359
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01376	0.18968	4.20030
	TE_B->Z (RF)	0.04532	0.35676	5.02814
	TE_B->Z (FF)	0.07086	0.38860	4.36781

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00063	0.00062	0.01631
	A	0.00340	0.00464	0.02045
	TE_B	0.00200	0.00437	0.04774
	TE_B	0.00801	0.01038	0.05387
sky130_fd_sc_hs__einvn_2	A	-0.00221	0.00078	0.02973
	A	0.00558	0.00859	0.03757
	TE_B	0.00312	0.00543	0.04856
	TE_B	0.01286	0.01519	0.05843
sky130_fd_sc_hs__einvn_4	A	-0.00434	0.00069	0.05549
	A	0.01120	0.01627	0.07140
	TE_B	0.00655	0.01004	0.07842
	TE_B	0.02441	0.02789	0.09651
sky130_fd_sc_hs__einvn_8	A	-0.00820	0.00350	0.10229
	A	0.02295	0.03475	0.13411
	TE_B	0.01382	0.01689	0.08352
	TE_B	0.04539	0.04852	0.11521

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00375	0.00414	0.01028
	A	-0.00027	0.00012	0.00624
	TE_B	0.00396	0.00636	0.04543
	TE_B	0.00710	0.00948	0.04850
sky130_fd_sc_hs__einvn_2	A	0.00622	0.00735	0.01937
	A	-0.00155	-0.00047	0.01109
	TE_B	0.00684	0.00930	0.05301
	TE_B	0.01094	0.01336	0.05614
sky130_fd_sc_hs__einvn_4	A	0.01260	0.01471	0.03788
	A	-0.00291	-0.00084	0.02159
	TE_B	0.01421	0.01809	0.08646
	TE_B	0.02062	0.02446	0.09211
sky130_fd_sc_hs__einvn_8	A	0.02510	0.02926	0.07432
	A	-0.00596	-0.00182	0.04198
	TE_B	0.02886	0.03241	0.09957
	TE_B	0.03724	0.04069	0.10634

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00081	0.00082	0.00081
	(TE_B * Z)	-0.00129	-0.00131	-0.00129
	(TE_B * !Z)	0.00090	0.00091	0.00091
	(TE_B * !Z)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00153	0.00154	0.00150
	(TE_B * Z)	-0.00251	-0.00253	-0.00252
	(TE_B * !Z)	0.00183	0.00183	0.00184
	(TE_B * !Z)	-0.00209	-0.00209	-0.00209
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00279	0.00280	0.00272
	(TE_B * Z)	-0.00497	-0.00504	-0.00501
	(TE_B * !Z)	0.00332	0.00335	0.00333
	(TE_B * !Z)	-0.00428	-0.00432	-0.00428
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00530	0.00537	0.00521
	(TE_B * Z)	-0.00984	-0.00989	-0.00987
	(TE_B * !Z)	0.00649	0.00655	0.00651
	(TE_B * !Z)	-0.00848	-0.00856	-0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00079	-0.00081	-0.00079
	(TE_B * Z)	0.00129	0.00131	0.00129
	(TE_B * !Z)	-0.00090	-0.00091	-0.00091
	(TE_B * !Z)	0.00120	0.00121	0.00119
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00147	-0.00148	-0.00148
	(TE_B * Z)	0.00251	0.00253	0.00252
	(TE_B * !Z)	-0.00183	-0.00183	-0.00184
	(TE_B * !Z)	0.00216	0.00217	0.00209
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00267	-0.00271	-0.00269
	(TE_B * Z)	0.00497	0.00504	0.00501
	(TE_B * !Z)	-0.00332	-0.00335	-0.00333
	(TE_B * !Z)	0.00438	0.00441	0.00428
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00517	-0.00520	-0.00519
	(TE_B * Z)	0.00984	0.00989	0.00987
	(TE_B * !Z)	-0.00649	-0.00655	-0.00651
	(TE_B * !Z)	0.00866	0.00873	0.00846

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00283	0.00461	0.04830
	(A * !Z)	-0.00168	0.00001	0.04372
	(!A * Z)	0.00272	0.00451	0.04829
	(!A * Z)	-0.00167	-0.00001	0.04375
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00342	0.00463	0.04750
	(A * !Z)	-0.00349	-0.00229	0.04059
	(!A * Z)	0.00312	0.00456	0.04744
	(!A * Z)	-0.00343	-0.00223	0.04064
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00556	0.00733	0.07530
	(A * !Z)	-0.00644	-0.00492	0.06317
	(!A * Z)	0.00495	0.00696	0.07512
	(!A * Z)	-0.00640	-0.00484	0.06327
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00672	0.00751	0.07307
	(A * !Z)	-0.01277	-0.01248	0.05313
	(!A * Z)	0.00558	0.00707	0.07275
	(!A * Z)	-0.01271	-0.01217	0.05341

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00129	0.00391	0.04744
	(A * !Z)	0.00586	0.00851	0.05202
	(!A * Z)	0.00130	0.00379	0.04748
	(!A * Z)	0.00580	0.00831	0.05198
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00227	0.00465	0.04745
	(A * !Z)	0.00923	0.01164	0.05443
	(!A * Z)	0.00239	0.00476	0.04760
	(!A * Z)	0.00913	0.01153	0.05436
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00457	0.00812	0.07613
	(A * !Z)	0.01677	0.02036	0.08839
	(!A * Z)	0.00490	0.00848	0.07651
	(!A * Z)	0.01659	0.02023	0.08826
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00998	0.01337	0.07941
	(A * !Z)	0.02993	0.03344	0.09947
	(!A * Z)	0.01031	0.01372	0.07985
	(!A * Z)	0.02939	0.03284	0.09901

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	TE	Z
-	0	HiZ
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__einvp_1	7.99200
sky130_fd_sc_hs__einvp_2	11.18880
sky130_fd_sc_hs__einvp_4	19.18080
sky130_fd_sc_hs__einvp_8	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	TE	Z
sky130_fd_sc_hs__einvp_1	0.00273	0.00281	0.65803
sky130_fd_sc_hs__einvp_2	0.00498	0.00431	1.35340
sky130_fd_sc_hs__einvp_4	0.01008	0.00769	2.50479
sky130_fd_sc_hs__einvp_8	0.02019	0.01216	4.21210

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__einvp_1	0.00000	0.02446	0.12829
sky130_fd_sc_hs__einvp_2	0.00000	0.11367	0.40191
sky130_fd_sc_hs__einvp_4	0.00000	0.06466	0.31469
sky130_fd_sc_hs__einvp_8	0.00000	0.10768	0.56644

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)	0.04011	0.83323	10.42300
	TE->Z (FR)	0.06709	0.34825	5.01959
	TE->Z (RR)	0.05974	0.57106	5.24652
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.02509	0.69926	10.54070
	TE->Z (FR)	0.06437	0.34929	5.02063
	TE->Z (RR)	0.05828	0.46389	5.65594
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.02378	0.61274	10.54400
	TE->Z (FR)	0.07088	0.35123	5.02235
	TE->Z (RR)	0.05684	0.36549	5.50000
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.02540	0.54947	10.39320
	TE->Z (FR)	0.11963	0.37518	5.02774
	TE->Z (RR)	0.07225	0.34413	5.43338

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01478	0.28034	3.33081
	TE->Z (FF)	0.06769	0.34821	5.01953
	TE->Z (RF)	0.01561	0.26242	3.07164
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01197	0.24293	3.70196
	TE->Z (FF)	0.06484	0.34918	5.02055
	TE->Z (RF)	0.01482	0.22165	3.29904
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01228	0.21266	3.96307
	TE->Z (FF)	0.07159	0.35100	5.02213
	TE->Z (RF)	0.01606	0.17269	3.16192
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01388	0.19639	4.29300
	TE->Z (FF)	0.12081	0.37673	5.02713
	TE->Z (RF)	0.02071	0.13168	2.86684

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00086	0.00066	0.01994
	A	0.00331	0.00481	0.02417
	TE	0.00680	0.00760	0.02760
	TE	0.00419	0.00498	0.02500
sky130_fd_sc_hs__einvp_2	A	-0.00217	0.00027	0.03055
	A	0.00550	0.00795	0.03843
	TE	0.01059	0.01230	0.05540
	TE	0.00715	0.00885	0.05223
sky130_fd_sc_hs__einvp_4	A	-0.00418	0.00202	0.05624
	A	0.01136	0.01760	0.07215
	TE	0.01999	0.02236	0.09071
	TE	0.01466	0.01706	0.08579
sky130_fd_sc_hs__einvp_8	A	-0.00810	0.00282	0.09777
	A	0.02304	0.03408	0.12959
	TE	0.03495	0.03665	0.10273
	TE	0.02930	0.03101	0.09806

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00390	0.00435	0.01128
	A	-0.00024	0.00015	0.00697
	TE	0.00875	0.00960	0.03164
	TE	0.00299	0.00378	0.02569
sky130_fd_sc_hs__einvp_2	A	0.00626	0.00736	0.01936
	A	-0.00139	-0.00030	0.01155
	TE	0.01393	0.01560	0.05884
	TE	0.00464	0.00628	0.04923
sky130_fd_sc_hs__einvp_4	A	0.01238	0.01473	0.03739
	A	-0.00310	-0.00082	0.02189
	TE	0.02661	0.02907	0.09697
	TE	0.00930	0.01163	0.07956
sky130_fd_sc_hs__einvp_8	A	0.02501	0.02895	0.07144
	A	-0.00606	-0.00222	0.03993
	TE	0.04819	0.05003	0.11590
	TE	0.01835	0.02005	0.08581

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00068	0.00068	0.00069
	(!TE * Z)	-0.00133	-0.00134	-0.00133
	(!TE * !Z)	0.00078	0.00078	0.00077
	(!TE * !Z)	-0.00122	-0.00122	-0.00121
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00124	0.00125	0.00122
	(!TE * Z)	-0.00267	-0.00269	-0.00268
	(!TE * !Z)	0.00151	0.00151	0.00150
	(!TE * !Z)	-0.00224	-0.00225	-0.00223
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00237	0.00238	0.00232
	(!TE * Z)	-0.00527	-0.00532	-0.00529
	(!TE * !Z)	0.00290	0.00293	0.00291
	(!TE * !Z)	-0.00444	-0.00449	-0.00445
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00464	0.00465	0.00454
	(!TE * Z)	-0.01014	-0.01024	-0.01019
	(!TE * !Z)	0.00566	0.00572	0.00567
	(!TE * !Z)	-0.00855	-0.00865	-0.00856

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00068	-0.00068	-0.00068
	(!TE * Z)	0.00133	0.00134	0.00133
	(!TE * !Z)	-0.00078	-0.00078	-0.00077
	(!TE * !Z)	0.00122	0.00123	0.00122
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00122	-0.00123	-0.00122
	(!TE * Z)	0.00267	0.00269	0.00268
	(!TE * !Z)	-0.00151	-0.00151	-0.00150
	(!TE * !Z)	0.00232	0.00234	0.00224
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00232	-0.00234	-0.00232
	(!TE * Z)	0.00527	0.00532	0.00529
	(!TE * !Z)	-0.00290	-0.00293	-0.00291
	(!TE * !Z)	0.00461	0.00463	0.00445
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00456	-0.00461	-0.00454
	(!TE * Z)	0.01014	0.01024	0.01019
	(!TE * !Z)	-0.00566	-0.00572	-0.00567
	(!TE * !Z)	0.00880	0.00888	0.00856

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00610	0.00697	0.02912
	(A * !Z)	0.00212	0.00295	0.02512
	(!A * Z)	0.00607	0.00696	0.02907
	(!A * Z)	0.00201	0.00288	0.02499
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00930	0.01099	0.05395
	(A * !Z)	0.00329	0.00495	0.04791
	(!A * Z)	0.00935	0.01115	0.05395
	(!A * Z)	0.00310	0.00487	0.04768
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01750	0.02003	0.08789
	(A * !Z)	0.00688	0.00930	0.07720
	(!A * Z)	0.01756	0.02003	0.08784
	(!A * Z)	0.00647	0.00884	0.07670
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.03015	0.03192	0.09782
	(A * !Z)	0.01375	0.01545	0.08137
	(!A * Z)	0.03027	0.03202	0.09781
	(!A * Z)	0.01299	0.01465	0.08046

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00143	-0.00072	0.02069
	(A * !Z)	0.00252	0.00327	0.02468
	(!A * Z)	-0.00146	-0.00072	0.02070
	(!A * Z)	0.00258	0.00334	0.02474
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00320	-0.00131	0.04124
	(A * !Z)	0.00276	0.00475	0.04724
	(!A * Z)	-0.00342	-0.00137	0.04117
	(!A * Z)	0.00287	0.00488	0.04733
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00579	-0.00331	0.06395
	(A * !Z)	0.00469	0.00739	0.07455
	(!A * Z)	-0.00616	-0.00341	0.06384
	(!A * Z)	0.00493	0.00765	0.07475
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.01077	-0.00898	0.05568
	(A * !Z)	0.00527	0.00744	0.07203
	(!A * Z)	-0.01138	-0.00925	0.05546
	(!A * Z)	0.00580	0.00793	0.07238

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	1
0	0	1	0	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	1	1
1	1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcin_1	43.15680

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fahcin_1	0.00277	0.00677	0.00487	0.73745	1.41523

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	2.01501	2.26494

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)	0.12054	0.54402	3.72264
	B->COUT (RR)	0.10815	0.48281	3.71967
	CIN->COUT (FR)	0.05304	0.68767	8.61401

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.12188	0.57870	4.36766
	B->COUT (FF)	0.12543	0.54586	4.43166
	CIN->COUT (RF)	0.02769	0.31376	3.64325

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)	-	0.16289	0.79754	8.81020
	B->SUM (-R)	-	0.16872	0.79757	8.86132
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.06572	0.49358	5.67343
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.10279	0.68519	8.44106

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)	-	0.20387	0.63504	4.94345
	B->SUM (-F)	-	0.16381	0.57167	4.86958
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.08502	0.54459	5.23213
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.08814	0.26260	1.51220

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01514	0.01622	0.05230
	A	0.01290	0.01397	0.05007
	B	0.01641	0.01846	0.09489
	B	0.01144	0.01348	0.08995
	CIN	0.00635	0.00948	0.05613
	CIN	0.01010	0.01322	0.05997

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01366	0.01542	0.05101
	A	0.01566	0.01745	0.05301
	B	0.01181	0.01551	0.08823
	B	0.01679	0.02051	0.09323
	CIN	0.01059	0.01257	0.05908
	CIN	0.00685	0.00880	0.05528

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.03000	0.03176	0.10209
	A	-	0.02610	0.02833	0.09984
	B	-	0.03079	0.03627	0.20756
	B	-	0.02030	0.02578	0.19704
	CIN	(A * B) + (!A * !B)	0.00932	0.01643	0.15773
	CIN	(A * B) + (!A * !B)	0.01682	0.02393	0.16836
	CIN	(A * !B) + (!A * B)	0.01061	0.01258	0.05842
	CIN	(A * !B) + (!A * B)	0.00685	0.00884	0.05450

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02872	0.03297	0.10494
	A	-	0.03271	0.03696	0.10796
	B	-	0.02137	0.03177	0.19062
	B	-	0.03186	0.04224	0.19828
	CIN	(A * B) + (!A * !B)	0.01865	0.02523	0.16680
	CIN	(A * B) + (!A * !B)	0.01113	0.01770	0.15921
	CIN	(A * !B) + (!A * B)	0.00634	0.00934	0.05234
	CIN	(A * !B) + (!A * B)	0.01009	0.01308	0.05593

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT_N	SUM
0	0	0	1	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	0
1	0	0	1	1
1	0	1	0	0
1	1	0	0	0
1	1	1	0	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fahcon_1	38.36160

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT_N	SUM
sky130_fd_sc_hs__fahcon_1	0.00275	0.00857	0.00489	0.73113	1.36238

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	2.01501	2.31346

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)	0.16094	0.72321	6.46001
	B->COUT_N (FR)	0.11512	0.71755	8.67990
	CI->COUT_N (FR)	0.04824	0.66577	8.41243

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)	0.11334	0.32458	1.04335
	B->COUT_N (RF)	0.07303	0.35662	3.89915
	CI->COUT_N (RF)	0.02736	0.30846	3.62008

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)	-	0.14672	0.76747	8.51402
	B->SUM (-R)	-	0.13640	0.74626	8.52224
	CI->SUM (RR)	(A * B) + (!A * !B)	0.06335	0.48211	5.49681
	CI->SUM (FR)	(A * !B) + (!A * B)	0.10172	0.69150	8.44611

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)	-	0.18667	0.61073	4.83650
	B->SUM (-F)	-	0.14165	0.52712	4.68044
	CI->SUM (FF)	(A * B) + (!A * !B)	0.08213	0.51947	5.03560
	CI->SUM (RF)	(A * !B) + (!A * B)	0.09435	0.26608	1.50460

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	0.01365	0.01491	0.05074
	A	0.01570	0.01700	0.05314
	B	0.00891	0.01363	0.11552
	B	0.01546	0.02022	0.12258
	CI	0.00615	0.00919	0.05759
	CI	0.00992	0.01298	0.06136

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01416	0.01481	0.05074
	A	0.01212	0.01273	0.04868
	B	0.01548	0.01982	0.12029
	B	0.00894	0.01327	0.11363
	CI	0.01074	0.01262	0.06078
	CI	0.00698	0.00883	0.05694

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02617	0.02814	0.09962
	A	-	0.02208	0.02405	0.09581
	B	-	0.03128	0.04684	0.29336
	B	-	0.01820	0.03375	0.28013
	CI	(A * B) + (!A * !B)	0.01819	0.02456	0.17006
	CI	(A * B) + (!A * !B)	0.01065	0.01702	0.16278
	CI	(A * !B) + (!A * B)	0.00615	0.00904	0.05486
	CI	(A * !B) + (!A * B)	0.00992	0.01280	0.05870

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02654	0.03112	0.10260
	A	-	0.03070	0.03490	0.10532
	B	-	0.01939	0.03481	0.27005
	B	-	0.03252	0.04791	0.28286
	CI	(A * B) + (!A * !B)	0.01099	0.01860	0.16377
	CI	(A * B) + (!A * !B)	0.01853	0.02614	0.17070
	CI	(A * !B) + (!A * B)	0.01074	0.01264	0.06018
	CI	(A * !B) + (!A * B)	0.00698	0.00881	0.05595

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CI	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fah_1	46.35360
sky130_fd_sc_hs__fah_2	47.95200
sky130_fd_sc_hs__fah_4	51.14880

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CI	COUT	SUM
sky130_fd_sc_hs__fah_1	0.00463	0.00679	0.00245	1.20878	1.36633
sky130_fd_sc_hs__fah_2	0.00467	0.00773	0.00259	2.33666	2.65608
sky130_fd_sc_hs__fah_4	0.00459	0.00700	0.00247	4.34154	5.16999

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	2.01501	2.36195
sky130_fd_sc_hs__fah_2	0.00000	2.07895	2.42588
sky130_fd_sc_hs__fah_4	0.00000	2.20684	2.55378

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)	0.17726	0.60969	5.78890
	B->COUT (RR)	0.14502	0.62696	5.85637
	CI->COUT (RR)	0.09274	0.58946	6.37365
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.17725	0.48209	5.20157
	B->COUT (RR)	0.13184	0.48009	5.14294
	CI->COUT (RR)	0.08093	0.44106	5.41722
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.18740	0.44921	5.72089
	B->COUT (RR)	0.15268	0.46130	5.78841
	CI->COUT (RR)	0.10455	0.43985	6.27665

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.17709	0.55005	4.50520
	B->COUT (FF)	0.16780	0.59387	4.95582
	CI->COUT (FF)	0.10701	0.57012	5.08122
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.18422	0.54079	4.27959
	B->COUT (FF)	0.17679	0.58468	4.93414
	CI->COUT (FF)	0.10573	0.53713	4.72489
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.20004	0.57379	4.48236
	B->COUT (FF)	0.18239	0.59875	5.14724
	CI->COUT (FF)	0.12409	0.55817	5.04275

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)	-	0.17636	0.83902	9.21641
	B->SUM (-R)	-	0.16744	0.81201	9.14698
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08968	0.52480	5.55777
	CI->SUM (FR)	(A * !B) + (!A * B)	0.17392	0.84704	9.25399
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.18135	0.71750	8.57837
	B->SUM (-R)	-	0.17114	0.70238	8.65882
	CI->SUM (RR)	(A * B) + (!A * !B)	0.08202	0.43453	5.55667
	CI->SUM (FR)	(A * !B) + (!A * B)	0.16910	0.71230	8.62327
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.19061	0.67227	9.12225
	B->SUM (-R)	-	0.17947	0.65793	9.14342
	CI->SUM (RR)	(A * B) + (!A * !B)	0.10882	0.42110	5.67387
	CI->SUM (FR)	(A * !B) + (!A * B)	0.21772	0.73445	9.27593

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)	-	0.17722	0.56418	4.69819
	B->SUM (-F)	-	0.17483	0.60162	6.58198
	CI->SUM (FF)	(A * B) + (!A * !B)	0.10667	0.56839	4.94330
	CI->SUM (RF)	(A * !B) + (!A * B)	0.14996	0.40721	1.99781
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.19216	0.55579	4.56931
	B->SUM (-F)	-	0.18260	0.58180	4.71270
	CI->SUM (FF)	(A * B) + (!A * !B)	0.11107	0.54463	5.02722
	CI->SUM (RF)	(A * !B) + (!A * B)	0.12822	0.34100	1.56494
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.19778	0.58234	4.75971
	B->SUM (-F)	-	0.19070	0.60796	6.60686
	CI->SUM (FF)	(A * B) + (!A * !B)	0.13237	0.56588	5.09564
	CI->SUM (RF)	(A * !B) + (!A * B)	0.19511	0.44828	2.20788

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.02011	0.02289	0.10209
	A	0.01679	0.01949	0.09880
	B	0.01705	0.02005	0.10540
	B	0.01202	0.01499	0.10042
	CI	0.01231	0.01357	0.04892
	CI	0.01065	0.01185	0.04735
sky130_fd_sc_hs__fah_2	A	0.02253	0.02507	0.10281
	A	0.01885	0.02138	0.09913
	B	0.02104	0.02326	0.10194
	B	0.01527	0.01748	0.09628
	CI	0.01311	0.01402	0.04999
	CI	0.01112	0.01201	0.04820
sky130_fd_sc_hs__fah_4	A	0.02852	0.02992	0.10867
	A	0.02507	0.02646	0.10543
	B	0.02675	0.02761	0.11124
	B	0.02150	0.02236	0.10661
	CI	0.02186	0.02181	0.05724
	CI	0.02013	0.02008	0.05585

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01642	0.01990	0.09713
	A	0.01973	0.02321	0.10040
	B	0.01365	0.01763	0.09704
	B	0.01867	0.02265	0.10182
	CI	0.01039	0.01236	0.04842
	CI	0.01206	0.01402	0.04946
sky130_fd_sc_hs__fah_2	A	0.01903	0.02252	0.09980
	A	0.02271	0.02619	0.10295
	B	0.01426	0.01814	0.09271
	B	0.02005	0.02392	0.09847
	CI	0.01152	0.01305	0.04816
	CI	0.01351	0.01503	0.04974
sky130_fd_sc_hs__fah_4	A	0.02429	0.02674	0.10374
	A	0.02767	0.02999	0.10675
	B	0.02146	0.02404	0.10250
	B	0.02662	0.02925	0.10667
	CI	0.01969	0.02018	0.05618
	CI	0.02143	0.02193	0.05669

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.03461	0.03980	0.19507
	A	-	0.02750	0.03271	0.18818
	B	-	0.03183	0.03966	0.22738
	B	-	0.02163	0.02959	0.21732
	CI	(A * B) + (!A * !B)	0.01658	0.01816	0.07497
	CI	(A * B) + (!A * !B)	0.01280	0.01439	0.07149
	CI	(A * !B) + (!A * B)	0.01040	0.01238	0.04967
	CI	(A * !B) + (!A * B)	0.01206	0.01405	0.04965
sky130_fd_sc_hs__fah_2	A	-	0.03698	0.04194	0.19452
	A	-	0.02960	0.03460	0.18759
	B	-	0.03421	0.04255	0.21367
	B	-	0.02264	0.03100	0.20262
	CI	(A * B) + (!A * !B)	0.01711	0.01997	0.09530
	CI	(A * B) + (!A * !B)	0.01311	0.01599	0.09058
	CI	(A * !B) + (!A * B)	0.01154	0.01305	0.04857
	CI	(A * !B) + (!A * B)	0.01353	0.01504	0.05029
sky130_fd_sc_hs__fah_4	A	-	0.03987	0.04535	0.20132
	A	-	0.03276	0.03836	0.19502
	B	-	0.03817	0.04808	0.23169
	B	-	0.02747	0.03746	0.22171
	CI	(A * B) + (!A * !B)	0.02502	0.02720	0.08928
	CI	(A * B) + (!A * !B)	0.02120	0.02347	0.08617
	CI	(A * !B) + (!A * B)	0.01972	0.02019	0.06043
	CI	(A * !B) + (!A * B)	0.02145	0.02196	0.05702

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02641	0.03303	0.18514
	A	-	0.03381	0.04042	0.19226
	B	-	0.02346	0.03525	0.42707
	B	-	0.03395	0.04577	0.43673
	CI	(A * B) + (!A * !B)	0.01251	0.01539	0.07697
	CI	(A * B) + (!A * !B)	0.01628	0.01917	0.08003
	CI	(A * !B) + (!A * B)	0.01230	0.01350	0.04833
	CI	(A * !B) + (!A * B)	0.01063	0.01182	0.04665
sky130_fd_sc_hs__fah_2	A	-	0.03018	0.03614	0.18683
	A	-	0.03756	0.04348	0.19306
	B	-	0.02359	0.03448	0.18839
	B	-	0.03518	0.04603	0.19953
	CI	(A * B) + (!A * !B)	0.01496	0.01776	0.09257
	CI	(A * B) + (!A * !B)	0.01895	0.02175	0.09541
	CI	(A * !B) + (!A * B)	0.01309	0.01401	0.04954
	CI	(A * !B) + (!A * B)	0.01110	0.01200	0.04765
sky130_fd_sc_hs__fah_4	A	-	0.03576	0.04006	0.19360
	A	-	0.04299	0.04729	0.19901
	B	-	0.03513	0.04809	0.43496
	B	-	0.04592	0.05891	0.43505
	CI	(A * B) + (!A * !B)	0.02406	0.02416	0.09008
	CI	(A * B) + (!A * !B)	0.02787	0.02800	0.09105
	CI	(A * !B) + (!A * B)	0.02185	0.02194	0.05645
	CI	(A * !B) + (!A * B)	0.02011	0.02008	0.05456

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT	
A	B	CIN	COUT	SUM
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__fa_1	28.77120
sky130_fd_sc_hs__fa_2	30.36960
sky130_fd_sc_hs__fa_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)	
	A	B	CIN	COUT	SUM
sky130_fd_sc_hs__fa_1	0.00981	0.00949	0.00693	1.43540	1.45464
sky130_fd_sc_hs__fa_2	0.01038	0.00987	0.00739	2.36010	2.57269
sky130_fd_sc_hs__fa_4	0.01033	0.01030	0.00723	5.20192	5.13792

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fa_1	0.00000	0.20406	0.29240
sky130_fd_sc_hs__fa_2	0.00000	0.26643	0.35467
sky130_fd_sc_hs__fa_4	0.00000	0.39432	0.50601

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)	0.07230	0.48771	5.43464
	B->COUT (RR)	0.08361	0.49919	5.47479
	CIN->COUT (RR)	0.06815	0.49205	5.64121
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.07631	0.42562	5.31091
	B->COUT (RR)	0.08223	0.43833	5.34179
	CIN->COUT (RR)	0.07096	0.43556	5.44797
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.10624	0.40766	5.55302
	B->COUT (RR)	0.08755	0.40120	5.58885
	CIN->COUT (RR)	0.08873	0.41060	5.69335

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.14064	0.57585	5.27230
	B->COUT (FF)	0.15514	0.59011	5.30705
	CIN->COUT (FF)	0.10813	0.56265	5.32588
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.16344	0.57847	4.97659
	B->COUT (FF)	0.17385	0.59350	5.01052
	CIN->COUT (FF)	0.14740	0.57801	5.01380
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.22570	0.64830	5.46731
	B->COUT (FF)	0.20136	0.63361	5.44460
	CIN->COUT (FF)	0.20099	0.64475	5.49939

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.20355	0.80903	8.89062
	B->SUM (-R)	0.21650	0.81769	8.87315
	CIN->SUM (-R)	0.17956	0.78243	8.77093
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.25849	0.78378	8.85178
	B->SUM (-R)	0.26709	0.79451	8.84299
	CIN->SUM (-R)	0.24387	0.77516	8.79371
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.37353	0.82767	9.08881
	B->SUM (-R)	0.33908	0.81143	9.02770
	CIN->SUM (-R)	0.34784	0.82000	9.04136

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.15807	0.55522	5.29293
	B->SUM (-F)	0.16606	0.59784	5.45716
	CIN->SUM (-F)	0.12856	0.56162	5.41416
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.19595	0.58321	5.06902
	B->SUM (-F)	0.20945	0.62936	5.23172
	CIN->SUM (-F)	0.17360	0.59612	5.18486
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.27669	0.66348	5.45331
	B->SUM (-F)	0.24386	0.67168	5.59634
	CIN->SUM (-F)	0.22917	0.65646	5.56395

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01172	0.01217	0.03202
	A	0.00429	0.00471	0.02462
	B	0.01044	0.01119	0.03808
	B	0.00339	0.00410	0.03104
	CIN	0.00988	0.01067	0.04009
	CIN	0.00544	0.00622	0.03572
sky130_fd_sc_hs__fa_2	A	0.01531	0.01494	0.03277
	A	0.00719	0.00670	0.02467
	B	0.01414	0.01396	0.03921
	B	0.00670	0.00649	0.03190
	CIN	0.01357	0.01332	0.03987
	CIN	0.00855	0.00829	0.03508
sky130_fd_sc_hs__fa_4	A	0.02276	0.02168	0.03986
	A	0.01427	0.01288	0.03125
	B	0.02227	0.02063	0.04601
	B	0.01522	0.01344	0.03895
	CIN	0.02123	0.01987	0.04617
	CIN	0.01652	0.01500	0.04153

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00433	0.00478	0.02468
	A	0.01176	0.01225	0.03169
	B	0.00542	0.00619	0.03403
	B	0.01245	0.01325	0.04046
	CIN	0.00548	0.00664	0.03587
	CIN	0.01040	0.01154	0.04014
sky130_fd_sc_hs__fa_2	A	0.00774	0.00710	0.02518
	A	0.01571	0.01511	0.03239
	B	0.00866	0.00849	0.03467
	B	0.01607	0.01593	0.04160
	CIN	0.00917	0.00954	0.03691
	CIN	0.01424	0.01464	0.04100
sky130_fd_sc_hs__fa_4	A	0.01655	0.01372	0.03248
	A	0.02492	0.02205	0.03890
	B	0.01729	0.01509	0.04224
	B	0.02431	0.02210	0.04767
	CIN	0.01821	0.01628	0.04370
	CIN	0.02297	0.02103	0.04598

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01606	0.01585	0.04928
	A	0.00043	0.00010	0.03372
	B	0.01480	0.01516	0.04864
	B	0.01247	0.01327	0.04074
	CIN	0.01170	0.01296	0.04915
	CIN	0.00162	0.00288	0.03925
sky130_fd_sc_hs__fa_2	A	0.01978	0.02019	0.05372
	A	0.00342	0.00376	0.03613
	B	0.01834	0.01918	0.05219
	B	0.01609	0.01594	0.04191
	CIN	0.01481	0.01616	0.05749
	CIN	0.00449	0.00585	0.04717
sky130_fd_sc_hs__fa_4	A	0.02497	0.02489	0.05600
	A	0.00715	0.00707	0.03898
	B	0.02474	0.02502	0.05570
	B	0.02433	0.02216	0.04792
	CIN	0.02215	0.02261	0.05754
	CIN	0.01178	0.01229	0.04796

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00052	0.00111	0.02916
	A	0.01634	0.01690	0.04493
	B	0.01044	0.01120	0.03789
	B	0.01524	0.01609	0.04354
	CIN	0.00326	0.00469	0.04711
	CIN	0.01348	0.01496	0.05720
sky130_fd_sc_hs__fa_2	A	0.00387	0.00406	0.03713
	A	0.02039	0.02055	0.05340
	B	0.00451	0.00462	0.03736
	B	0.01898	0.01905	0.05148
	CIN	0.00793	0.00787	0.05020
	CIN	0.01843	0.01847	0.05984
sky130_fd_sc_hs__fa_4	A	0.01349	0.01081	0.04304
	A	0.03147	0.02878	0.05735
	B	0.01709	0.01106	0.03936
	B	0.03180	0.02600	0.05102
	CIN	0.01879	0.01354	0.05606
	CIN	0.02932	0.02424	0.06284

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT	
A	B	COUT	SUM
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__ha_1	15.98400
sky130_fd_sc_hs__ha_2	19.18080
sky130_fd_sc_hs__ha_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)	
	A	B	COUT	SUM
sky130_fd_sc_hs__ha_1	0.00467	0.00429	1.36757	1.26527
sky130_fd_sc_hs__ha_2	0.00468	0.00486	2.33545	2.43516
sky130_fd_sc_hs__ha_4	0.00902	0.00806	4.38940	5.09103

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__ha_1	0.00000	0.59127	1.00914
sky130_fd_sc_hs__ha_2	0.00000	0.31055	0.35382
sky130_fd_sc_hs__ha_4	0.00000	1.34140	2.14616

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)	0.05691	0.45394	5.43803
	B->COUT (RR)	0.05284	0.45325	5.63809
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.06121	0.40244	5.41816
	B->COUT (RR)	0.05854	0.40387	5.48754
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.07746	0.34555	5.43099
	B->COUT (RR)	0.06620	0.34006	5.57497

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.07114	0.46400	4.68268
	B->COUT (FF)	0.06204	0.44260	4.62627
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.08143	0.45997	4.50491
	B->COUT (FF)	0.07513	0.44291	4.45095
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.09879	0.44673	4.59471
	B->COUT (FF)	0.08287	0.41974	4.56195

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	0.05871	0.46310	5.34192
	A->SUM (FR)	B	0.11362	0.72228	8.47119
	B->SUM (RR)	!A	0.05051	0.44634	5.36493
	B->SUM (FR)	A	0.11202	0.71046	8.35552
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.06267	0.38052	5.09741
	A->SUM (FR)	B	0.14892	0.67303	8.32625
	B->SUM (RR)	!A	0.05635	0.36784	5.11738
	B->SUM (FR)	A	0.14649	0.65978	8.21560
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.07078	0.32927	5.40454
	A->SUM (FR)	B	0.17047	0.61942	8.60308
	B->SUM (RR)	!A	0.06110	0.31034	5.41273
	B->SUM (FR)	A	0.15913	0.60083	8.48177

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	0.09475	0.47002	4.74467
	A->SUM (RF)	B	0.08559	0.23898	1.13923
	B->SUM (FF)	!A	0.08309	0.46835	4.79515
	B->SUM (RF)	A	0.08162	0.23660	1.26966
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.12340	0.50494	4.83839
	A->SUM (RF)	B	0.10182	0.25104	1.30751
	B->SUM (FF)	!A	0.11158	0.50532	4.85703
	B->SUM (RF)	A	0.09932	0.25235	1.38136
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.12775	0.48361	5.11581
	A->SUM (RF)	B	0.13014	0.25913	1.52980
	B->SUM (FF)	!A	0.11270	0.48303	5.15930
	B->SUM (RF)	A	0.11892	0.25387	1.63887

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00799	0.00891	0.03714
	A	0.00384	0.00473	0.03311
	B	0.00750	0.00899	0.05037
	B	0.00419	0.00568	0.04723
sky130_fd_sc_hs__ha_2	A	0.01096	0.01187	0.04449
	A	0.00681	0.00772	0.04045
	B	0.01066	0.01175	0.04685
	B	0.00704	0.00813	0.04350
sky130_fd_sc_hs__ha_4	A	0.02084	0.02306	0.08381
	A	0.01321	0.01542	0.07633
	B	0.01953	0.02233	0.09974
	B	0.01368	0.01650	0.09445

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00397	0.00612	0.03835
	A	0.00812	0.01025	0.04247
	B	0.00479	0.00692	0.04224
	B	0.00802	0.01007	0.04518
sky130_fd_sc_hs__ha_2	A	0.00766	0.00923	0.04204
	A	0.01181	0.01330	0.04601
	B	0.00805	0.00948	0.04273
	B	0.01161	0.01298	0.04596
sky130_fd_sc_hs__ha_4	A	0.01407	0.01770	0.08929
	A	0.02169	0.02532	0.09663
	B	0.01546	0.01897	0.09530
	B	0.02111	0.02460	0.10050

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	0.00398	0.00618	0.03908
	A	B	0.00813	0.01027	0.04305
	A	!B	0.01177	0.01311	0.05140
	A	!B	0.00385	0.00517	0.04367
	B	A	0.00481	0.00696	0.04483
	B	A	0.00804	0.01009	0.04562
	B	!A	0.00874	0.01079	0.06494
	B	!A	0.00263	0.00468	0.05902
sky130_fd_sc_hs__ha_2	A	B	0.00767	0.00931	0.04242
	A	B	0.01182	0.01332	0.04650
	A	!B	0.01491	0.01607	0.05076
	A	!B	0.00709	0.00828	0.04296
	B	A	0.00806	0.00942	0.04289
	B	A	0.01162	0.01298	0.04625
	B	!A	0.01234	0.01401	0.06374
	B	!A	0.00571	0.00742	0.05710
sky130_fd_sc_hs__ha_4	A	B	0.01409	0.01795	0.08958
	A	B	0.02172	0.02541	0.09721
	A	!B	0.03039	0.03266	0.10379
	A	!B	0.01405	0.01636	0.08829
	B	A	0.01551	0.01914	0.09674
	B	A	0.02115	0.02468	0.10131
	B	!A	0.02367	0.02713	0.12661
	B	!A	0.01132	0.01487	0.11509

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	0.00798	0.00890	0.03698
	A	B	0.00384	0.00473	0.03294
	A	!B	0.00223	0.00336	0.04172
	A	!B	0.00995	0.01108	0.04868
	B	A	0.00749	0.00899	0.04976
	B	A	0.00419	0.00568	0.04664
	B	!A	0.00337	0.00650	0.06065
	B	!A	0.00952	0.01264	0.06616
sky130_fd_sc_hs__ha_2	A	B	0.01096	0.01189	0.04410
	A	B	0.00682	0.00773	0.03995
	A	!B	0.00582	0.00651	0.04090
	A	!B	0.01339	0.01391	0.04771
	B	A	0.01065	0.01178	0.04637
	B	A	0.00703	0.00815	0.04292
	B	!A	0.00647	0.00904	0.05979
	B	!A	0.01319	0.01556	0.06531
sky130_fd_sc_hs__ha_4	A	B	0.02083	0.02313	0.08310
	A	B	0.01321	0.01549	0.07538
	A	!B	0.01167	0.01239	0.08819
	A	!B	0.02754	0.02831	0.09734
	B	A	0.01952	0.02238	0.09880
	B	A	0.01367	0.01656	0.09320
	B	!A	0.01420	0.01801	0.12123
	B	!A	0.02684	0.03061	0.12985

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT	OUTPUT
A	Y
0	1
1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__bufinv_16	39.96000
sky130_fd_sc_hs__bufinv_8	20.77920
sky130_fd_sc_hs__inv_1	4.79520
sky130_fd_sc_hs__inv_16	27.17280
sky130_fd_sc_hs__inv_2	4.79520
sky130_fd_sc_hs__inv_4	7.99200
sky130_fd_sc_hs__inv_8	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)	Max Cap(pf)
	A	Y
sky130_fd_sc_hs__bufinv_16	0.00786	21.09624
sky130_fd_sc_hs__bufinv_8	0.00269	8.22345
sky130_fd_sc_hs__inv_1	0.00274	1.37949
sky130_fd_sc_hs__inv_16	0.04143	20.71832
sky130_fd_sc_hs__inv_2	0.00502	2.63383
sky130_fd_sc_hs__inv_4	0.01013	4.90028
sky130_fd_sc_hs__inv_8	0.02003	9.51439

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.79928	1.20185
sky130_fd_sc_hs__bufinv_8	0.00000	0.38365	0.56946
sky130_fd_sc_hs__inv_1	0.00000	0.03197	0.06294
sky130_fd_sc_hs__inv_16	0.00000	0.51154	1.00702
sky130_fd_sc_hs__inv_2	0.00000	0.06394	0.12588
sky130_fd_sc_hs__inv_4	0.00000	0.12788	0.25175
sky130_fd_sc_hs__inv_8	0.00000	0.25577	0.50351

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)**	0.09076	0.42642	8.42091
sky130_fd_sc_hs__bufinv_8	**A->Y (FR)**	0.11679	0.53249	8.41601
sky130_fd_sc_hs__inv_1	**A->Y (FR)**	0.02149	0.69668	10.56880
sky130_fd_sc_hs__inv_16	**A->Y (FR)**	0.01472	0.41950	10.57630
sky130_fd_sc_hs__inv_2	**A->Y (FR)**	0.01694	0.60036	10.41790
sky130_fd_sc_hs__inv_4	**A->Y (FR)**	0.01566	0.53330	10.38850
sky130_fd_sc_hs__inv_8	**A->Y (FR)**	0.01545	0.47058	10.30690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	**A->Y (RF)**	0.07802	0.13658	1.38302
sky130_fd_sc_hs__bufinv_8	**A->Y (RF)**	0.09418	0.19197	1.13796
sky130_fd_sc_hs__inv_1	**A->Y (RF)**	0.01157	0.31911	4.90523
sky130_fd_sc_hs__inv_16	**A->Y (RF)**	0.00862	0.12099	4.90327
sky130_fd_sc_hs__inv_2	**A->Y (RF)**	0.00954	0.25158	4.74372
sky130_fd_sc_hs__inv_4	**A->Y (RF)**	0.00895	0.20669	4.80002
sky130_fd_sc_hs__inv_8	**A->Y (RF)**	0.00902	0.15847	4.74385

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.06235	0.07601	0.29450
	A	0.07447	0.08857	0.30718
sky130_fd_sc_hs__bufinv_8	A	0.03286	0.03860	0.11996
	A	0.03700	0.04274	0.14005
sky130_fd_sc_hs__inv_1	A	-0.00095	0.00068	0.01624
	A	0.00326	0.00492	0.02078
sky130_fd_sc_hs__inv_16	A	-0.01848	0.02088	0.24973
	A	0.04533	0.08539	0.31824
sky130_fd_sc_hs__inv_2	A	-0.00222	0.00166	0.03260
	A	0.00551	0.00943	0.04098
sky130_fd_sc_hs__inv_4	A	-0.00437	0.00447	0.06046
	A	0.01122	0.02007	0.07724
sky130_fd_sc_hs__inv_8	A	-0.00864	0.00882	0.13998
	A	0.02222	0.03971	0.17255

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	**A**	0.07924	0.08901	0.30874
	A	0.06707	0.07681	0.29480
sky130_fd_sc_hs__bufinv_8	**A**	0.03824	0.04109	0.12097
	A	0.03410	0.03692	0.11652
sky130_fd_sc_hs__inv_1	**A**	0.00375	0.00422	0.01094
	A	-0.00046	-0.00001	0.00522
sky130_fd_sc_hs__inv_16	**A**	0.04973	0.06348	0.14906
	A	-0.01407	-0.00068	0.08220
sky130_fd_sc_hs__inv_2	**A**	0.00609	0.00722	0.01881
	A	-0.00164	-0.00062	0.00998
sky130_fd_sc_hs__inv_4	**A**	0.01235	0.01492	0.03731
	A	-0.00323	-0.00082	0.02014
sky130_fd_sc_hs__inv_8	**A**	0.02412	0.03234	0.07987
	A	-0.00673	0.00126	0.04898

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__maj3_1	12.78720
sky130_fd_sc_hs__maj3_2	15.98400
sky130_fd_sc_hs__maj3_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__maj3_1	0.00513	0.00480	0.00501	1.43383
sky130_fd_sc_hs__maj3_2	0.00544	0.00517	0.00531	2.76559
sky130_fd_sc_hs__maj3_4	0.00998	0.00941	0.00982	5.14977

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__maj3_1	0.00000	0.09280	0.22894
sky130_fd_sc_hs__maj3_2	0.00000	0.12412	0.22994
sky130_fd_sc_hs__maj3_4	0.00000	0.24955	0.45988

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)	0.06625	0.47478	5.36230
	B->X (RR)	0.06184	0.46393	5.44248
	C->X (RR)	0.06631	0.47590	5.44090
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.07268	0.40307	5.32140
	B->X (RR)	0.06197	0.39163	5.37280
	C->X (RR)	0.06525	0.40128	5.36499
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.06895	0.33003	5.30526
	B->X (RR)	0.06434	0.32378	5.39093
	C->X (RR)	0.06304	0.32416	5.30293

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.10890	0.52866	5.18711
	B->X (FF)	0.10184	0.52074	5.21577
	C->X (FF)	0.11754	0.53921	5.23888
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.12694	0.52821	5.03788
	B->X (FF)	0.12371	0.52608	5.03025
	C->X (FF)	0.14092	0.54852	5.08040
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.13454	0.50111	5.12719
	B->X (FF)	0.10251	0.47651	5.16977
	C->X (FF)	0.12855	0.50526	5.16649

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01462	0.01491	0.05002
	A	0.00419	0.00496	0.03478
	B	0.01289	0.01383	0.06824
	B	0.00408	0.00499	0.05966
	C	0.01257	0.01387	0.06658
	C	0.00248	0.00378	0.05679
sky130_fd_sc_hs__maj3_2	A	0.01769	0.01853	0.05341
	A	0.00530	0.00618	0.04148
	B	0.01576	0.01694	0.06374
	B	0.00683	0.00804	0.06153
	C	0.01624	0.01731	0.06761
	C	0.00519	0.00631	0.05706
sky130_fd_sc_hs__maj3_4	A	0.03442	0.03600	0.10753
	A	0.01288	0.01448	0.08665
	B	0.02805	0.03133	0.14279
	B	0.01079	0.01408	0.12632
	C	0.02891	0.03123	0.12370
	C	0.00926	0.01160	0.10490

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00200	0.00269	0.03876
	A	0.01324	0.01392	0.04943
	B	0.00354	0.00518	0.05878
	B	0.01232	0.01398	0.06760
	C	0.00399	0.00571	0.05867
	C	0.01385	0.01562	0.06793
sky130_fd_sc_hs__maj3_2	A	0.00591	0.00629	0.04262
	A	0.01787	0.01819	0.05215
	B	0.00696	0.00798	0.06155
	B	0.01653	0.01758	0.06883
	C	0.00764	0.00896	0.06129
	C	0.01842	0.01964	0.07001
sky130_fd_sc_hs__maj3_4	A	0.01272	0.01280	0.08203
	A	0.03419	0.03429	0.10334
	B	0.01352	0.01596	0.12287
	B	0.03041	0.03271	0.13980
	C	0.01453	0.01697	0.11730
	C	0.03369	0.03599	0.13609

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00401	0.00364	0.00359
	(B * C * X)	-0.00267	-0.00312	-0.00314
	(!B * !C * !X)	0.00325	0.00328	0.00326
	(!B * !C * !X)	-0.00342	-0.00343	-0.00342
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00383	0.00349	0.00343
	(B * C * X)	-0.00321	-0.00368	-0.00366
	(!B * !C * !X)	0.00291	0.00294	0.00293
	(!B * !C * !X)	-0.00403	-0.00405	-0.00405
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00716	0.00650	0.00639
	(B * C * X)	-0.00551	-0.00641	-0.00640
	(!B * !C * !X)	0.00565	0.00571	0.00568
	(!B * !C * !X)	-0.00695	-0.00699	-0.00697

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00356	-0.00358	-0.00357
	(B * C * X)	0.00312	0.00315	0.00315
	(!B * !C * !X)	-0.00307	-0.00322	-0.00324
	(!B * !C * !X)	0.00354	0.00345	0.00343
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00341	-0.00342	-0.00341
	(B * C * X)	0.00364	0.00368	0.00367
	(!B * !C * !X)	-0.00278	-0.00294	-0.00293
	(!B * !C * !X)	0.00416	0.00411	0.00406
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00636	-0.00637	-0.00635
	(B * C * X)	0.00637	0.00641	0.00640
	(!B * !C * !X)	-0.00543	-0.00568	-0.00568
	(!B * !C * !X)	0.00713	0.00704	0.00699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00297	0.00301	0.00298
	(A * C * X)	-0.00159	-0.00161	-0.00160
	(!A * !C * !X)	0.00071	0.00072	0.00070
	(!A * !C * !X)	-0.00389	-0.00392	-0.00394
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00346	0.00351	0.00348
	(A * C * X)	-0.00152	-0.00154	-0.00153
	(!A * !C * !X)	0.00086	0.00088	0.00085
	(!A * !C * !X)	-0.00395	-0.00399	-0.00403
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00587	0.00592	0.00587
	(A * C * X)	-0.00322	-0.00323	-0.00320
	(!A * !C * !X)	0.00167	0.00170	0.00162
	(!A * !C * !X)	-0.00756	-0.00763	-0.00770

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00289	-0.00290	-0.00297
	(A * C * X)	0.00166	0.00167	0.00162
	(!A * !C * !X)	-0.00068	-0.00069	-0.00069
	(!A * !C * !X)	0.00393	0.00394	0.00395
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00338	-0.00341	-0.00347
	(A * C * X)	0.00160	0.00161	0.00155
	(!A * !C * !X)	-0.00084	-0.00083	-0.00083
	(!A * !C * !X)	0.00404	0.00403	0.00403
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00567	-0.00568	-0.00585
	(A * C * X)	0.00339	0.00338	0.00325
	(!A * !C * !X)	-0.00156	-0.00159	-0.00158
	(!A * !C * !X)	0.00766	0.00774	0.00772

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00331	0.00311	0.00308
	(A * B * X)	-0.00218	-0.00239	-0.00240
	(!A * !B * !X)	0.00162	0.00163	0.00161
	(!A * !B * !X)	-0.00386	-0.00388	-0.00388
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00375	0.00354	0.00352
	(A * B * X)	-0.00213	-0.00234	-0.00235
	(!A * !B * !X)	0.00195	0.00197	0.00194
	(!A * !B * !X)	-0.00380	-0.00382	-0.00383
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00654	0.00616	0.00612
	(A * B * X)	-0.00430	-0.00473	-0.00476
	(!A * !B * !X)	0.00363	0.00368	0.00362
	(!A * !B * !X)	-0.00726	-0.00733	-0.00735

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00302	-0.00304	-0.00306
	(A * B * X)	0.00241	0.00244	0.00241
	(!A * !B * !X)	-0.00151	-0.00159	-0.00159
	(!A * !B * !X)	0.00393	0.00390	0.00389
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00345	-0.00346	-0.00350
	(A * B * X)	0.00237	0.00238	0.00237
	(!A * !B * !X)	-0.00184	-0.00194	-0.00193
	(!A * !B * !X)	0.00387	0.00389	0.00384
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00599	-0.00604	-0.00609
	(A * B * X)	0.00480	0.00487	0.00478
	(!A * !B * !X)	-0.00343	-0.00360	-0.00358
	(!A * !B * !X)	0.00740	0.00741	0.00737

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
A0	A1	S	Y
0	0	x	1
0	1	0	1
x	1	1	0
1	x	0	0
1	0	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2i_1	12.78720
sky130_fd_sc_hs__mux2i_2	20.77920
sky130_fd_sc_hs__mux2i_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	A1	S	Y
sky130_fd_sc_hs__mux2i_1	0.00273	0.00258	0.00482	0.66578
sky130_fd_sc_hs__mux2i_2	0.00511	0.00541	0.00778	1.08478
sky130_fd_sc_hs__mux2i_4	0.01010	0.01008	0.01350	1.84222

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2i_1	0.00000	0.27494	0.55819
sky130_fd_sc_hs__mux2i_2	0.00000	0.13464	0.28568
sky130_fd_sc_hs__mux2i_4	0.00000	0.62688	1.28960

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)	-	0.06653	0.86165	10.54660
	A1->Y (FR)	-	0.05984	0.85568	10.54910
	S->Y (RR)	(A0 * !A1)	0.09171	0.61014	5.61876
	S->Y (FR)	(!A0 * A1)	0.07649	0.86077	10.32960
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.07696	0.77857	10.59220
	A1->Y (FR)	-	0.06969	0.74242	10.10570
	S->Y (RR)	(A0 * !A1)	0.09968	0.49476	5.02795
	S->Y (FR)	(!A0 * A1)	0.08386	0.76041	10.12050
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.07223	0.67068	10.13490
	A1->Y (FR)	-	0.07233	0.68608	10.43480
	S->Y (RR)	(A0 * !A1)	0.11640	0.49655	5.85586
	S->Y (FR)	(!A0 * A1)	0.08058	0.64111	9.53676

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)	-	0.02009	0.30203	3.48572
	A1->Y (RF)	-	0.02159	0.33058	3.84995
	S->Y (FF)	(A0 * !A1)	0.06221	0.39128	3.79301
	S->Y (RF)	(!A0 * A1)	0.02552	0.29201	3.30888
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.02673	0.30590	4.00486
	A1->Y (RF)	-	0.02540	0.29164	3.83152
	S->Y (FF)	(A0 * !A1)	0.07529	0.40564	3.95832
	S->Y (RF)	(!A0 * A1)	0.02724	0.22570	2.86879
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.02487	0.24535	3.70955
	A1->Y (RF)	-	0.02916	0.28203	4.25491
	S->Y (FF)	(A0 * !A1)	0.07718	0.36414	3.58870
	S->Y (RF)	(!A0 * A1)	0.03044	0.17926	2.64932

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	-	0.00098	0.00206	0.01801
	A0	-	0.00668	0.00775	0.02379
	A1	-	0.00070	0.00164	0.01683
	A1	-	0.00591	0.00686	0.02214
	S	(A0 * !A1)	0.00935	0.01235	0.08363
	S	(A0 * !A1)	0.00486	0.00781	0.07921
	S	(!A0 * A1)	0.00162	0.00558	0.08457
	S	(!A0 * A1)	0.01192	0.01591	0.09497
sky130_fd_sc_hs__mux2i_2	A0	-	0.00234	0.00380	0.02970
	A0	-	0.01340	0.01452	0.04087
	A1	-	0.00218	0.00390	0.03113
	A1	-	0.01315	0.01488	0.04219
	S	(A0 * !A1)	0.01565	0.01810	0.08421
	S	(A0 * !A1)	0.01009	0.01254	0.07883
	S	(!A0 * A1)	0.00421	0.00769	0.09766
	S	(!A0 * A1)	0.02173	0.02530	0.11525
sky130_fd_sc_hs__mux2i_4	A0	-	0.00270	0.00519	0.05712
	A0	-	0.02457	0.02709	0.07919
	A1	-	0.00285	0.00491	0.05072
	A1	-	0.02365	0.02565	0.07176
	S	(A0 * !A1)	0.02690	0.03039	0.14990
	S	(A0 * !A1)	0.01858	0.02205	0.14163
	S	(!A0 * A1)	0.00694	0.01330	0.16196
	S	(!A0 * A1)	0.03874	0.04513	0.19381

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00702	0.00734	0.01383
	A0	-	0.00157	0.00189	0.00814
	A1	-	0.00679	0.00710	0.01317
	A1	-	0.00144	0.00174	0.00759
	S	(A0 * !A1)	0.00557	0.00984	0.08013
	S	(A0 * !A1)	0.01011	0.01436	0.08461
	S	(!A0 * A1)	0.01308	0.01614	0.09232
	S	(!A0 * A1)	0.00274	0.00575	0.08174
sky130_fd_sc_hs__mux2i_2	A0	-	0.01434	0.01489	0.02553
	A0	-	0.00389	0.00437	0.01503
	A1	-	0.01388	0.01446	0.02589
	A1	-	0.00279	0.00334	0.01450
	S	(A0 * !A1)	0.01211	0.01538	0.07742
	S	(A0 * !A1)	0.01750	0.02077	0.08254
	S	(!A0 * A1)	0.02318	0.02617	0.11230
	S	(!A0 * A1)	0.00554	0.00844	0.09448
sky130_fd_sc_hs__mux2i_4	A0	-	0.02665	0.02784	0.04971
	A0	-	0.00579	0.00695	0.02849
	A1	-	0.02652	0.02761	0.04750
	A1	-	0.00535	0.00633	0.02587
	S	(A0 * !A1)	0.02338	0.02926	0.15047
	S	(A0 * !A1)	0.03136	0.03739	0.15839
	S	(!A0 * A1)	0.04293	0.04667	0.18741
	S	(!A0 * A1)	0.01102	0.01464	0.15513

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00192	0.00193	0.00192
	(A1 * S * !Y)	-0.00092	-0.00093	-0.00092
	(!A1 * S * Y)	0.00081	0.00077	0.00076
	(!A1 * S * Y)	-0.00207	-0.00215	-0.00217
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00348	0.00352	0.00350
	(A1 * S * !Y)	-0.00169	-0.00171	-0.00169
	(!A1 * S * Y)	0.00114	0.00116	0.00110
	(!A1 * S * Y)	-0.00408	-0.00422	-0.00426
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00673	0.00676	0.00675
	(A1 * S * !Y)	-0.00349	-0.00350	-0.00348
	(!A1 * S * Y)	0.00221	0.00221	0.00212
	(!A1 * S * Y)	-0.00827	-0.00847	-0.00856

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00179	-0.00184	-0.00190
	(A1 * S * !Y)	0.00101	0.00101	0.00095
	(!A1 * S * Y)	-0.00075	-0.00074	-0.00075
	(!A1 * S * Y)	0.00218	0.00216	0.00217
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00326	-0.00339	-0.00347
	(A1 * S * !Y)	0.00179	0.00180	0.00172
	(!A1 * S * Y)	-0.00108	-0.00108	-0.00107
	(!A1 * S * Y)	0.00427	0.00428	0.00426
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00637	-0.00653	-0.00675
	(A1 * S * !Y)	0.00371	0.00373	0.00356
	(!A1 * S * Y)	-0.00206	-0.00206	-0.00206
	(!A1 * S * Y)	0.00855	0.00855	0.00856

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00173	0.00175	0.00174
	(A0 * !S * !Y)	-0.00093	-0.00094	-0.00093
	(!A0 * !S * Y)	0.00062	0.00061	0.00059
	(!A0 * !S * Y)	-0.00209	-0.00212	-0.00217
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00362	0.00365	0.00364
	(A0 * !S * !Y)	-0.00190	-0.00192	-0.00190
	(!A0 * !S * Y)	0.00123	0.00123	0.00119
	(!A0 * !S * Y)	-0.00425	-0.00432	-0.00437
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00665	0.00667	0.00668
	(A0 * !S * !Y)	-0.00350	-0.00352	-0.00351
	(!A0 * !S * Y)	0.00195	0.00195	0.00187
	(!A0 * !S * Y)	-0.00836	-0.00846	-0.00862

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00154	-0.00165	-0.00174
	(A0 * !S * !Y)	0.00104	0.00103	0.00095
	(!A0 * !S * Y)	-0.00058	-0.00058	-0.00057
	(!A0 * !S * Y)	0.00217	0.00218	0.00217
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00330	-0.00353	-0.00361
	(A0 * !S * !Y)	0.00204	0.00205	0.00194
	(!A0 * !S * Y)	-0.00117	-0.00117	-0.00116
	(!A0 * !S * Y)	0.00438	0.00439	0.00437
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00608	-0.00653	-0.00668
	(A0 * !S * !Y)	0.00376	0.00378	0.00358
	(!A0 * !S * Y)	-0.00184	-0.00184	-0.00183
	(!A0 * !S * Y)	0.00863	0.00864	0.00862

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00710	0.01017	0.08068
	(A0 * A1 * !Y)	-0.00010	0.00290	0.07344
	(!A0 * !A1 * Y)	0.00719	0.01016	0.08063
	(!A0 * !A1 * Y)	-0.00009	0.00285	0.07336
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.01115	0.01375	0.08850
	(A0 * A1 * !Y)	-0.00003	0.00250	0.07727
	(!A0 * !A1 * Y)	0.01071	0.01370	0.08842
	(!A0 * !A1 * Y)	-0.00048	0.00247	0.07728
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01958	0.02242	0.14315
	(A0 * A1 * !Y)	0.00026	0.00298	0.12372
	(!A0 * !A1 * Y)	0.01888	0.02249	0.14299
	(!A0 * !A1 * Y)	-0.00042	0.00309	0.12372

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00055	0.00334	0.07387
	(A0 * A1 * !Y)	0.00668	0.01061	0.08111
	(!A0 * !A1 * Y)	-0.00068	0.00327	0.07388
	(!A0 * !A1 * Y)	0.00658	0.01054	0.08113
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00073	0.00298	0.07683
	(A0 * A1 * !Y)	0.01049	0.01423	0.08802
	(!A0 * !A1 * Y)	-0.00069	0.00258	0.07684
	(!A0 * !A1 * Y)	0.01039	0.01380	0.08804
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00042	0.00535	0.12661
	(A0 * A1 * !Y)	0.01891	0.02476	0.14596
	(!A0 * !A1 * Y)	-0.00064	0.00511	0.12658
	(!A0 * !A1 * Y)	0.01848	0.02445	0.14596

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
A0	**A1**	**S**	**X**
0	**0**	**x**	**0**
0	**1**	**0**	**0**
x	**1**	**1**	**1**
1	**x**	**0**	**1**
1	**0**	**1**	**0**

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux2_1	14.38560
sky130_fd_sc_hs__mux2_2	17.58240
sky130_fd_sc_hs__mux2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A0	**A1**	**S**	**X**
sky130_fd_sc_hs__mux2_1	0.00265	0.00311	0.00445	1.43826
sky130_fd_sc_hs__mux2_2	0.00244	0.00277	0.00527	2.36542
sky130_fd_sc_hs__mux2_4	0.00470	0.00473	0.00795	4.40104

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux2_1	0.00000	0.33593	0.62508
sky130_fd_sc_hs__mux2_2	0.00000	0.36790	0.62609
sky130_fd_sc_hs__mux2_4	0.00000	0.32194	0.42146

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)	-	0.05093	0.44057	5.36901
	A1->X (RR)	-	0.05054	0.43934	5.30142
	S->X (RR)	(!A0 * A1)	0.05311	0.44133	5.24448
	S->X (FR)	(A0 * !A1)	0.10170	0.67169	8.35015
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.06281	0.41096	5.35750
	A1->X (RR)	-	0.05927	0.39777	5.26378
	S->X (RR)	(!A0 * A1)	0.06094	0.39420	5.22607
	S->X (FR)	(A0 * !A1)	0.11007	0.61120	8.25034
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.09093	0.38291	5.36584
	A1->X (RR)	-	0.09192	0.38830	5.47518
	S->X (RR)	(!A0 * A1)	0.09408	0.35847	5.23764
	S->X (FR)	(A0 * !A1)	0.14799	0.61084	8.42937

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)	-	0.08375	0.50813	5.03508
	A1->X (FF)	-	0.08144	0.50410	5.22294
	S->X (FF)	(!A0 * A1)	0.11300	0.52414	5.23509
	S->X (RF)	(A0 * !A1)	0.12685	0.30034	1.71107
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.10616	0.50960	4.78568
	A1->X (FF)	-	0.10852	0.51799	4.84461
	S->X (FF)	(!A0 * A1)	0.13418	0.50721	4.72699
	S->X (RF)	(A0 * !A1)	0.15784	0.29816	1.31472
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.12978	0.51136	4.75847
	A1->X (FF)	-	0.13081	0.51421	4.69865
	S->X (FF)	(!A0 * A1)	0.15599	0.49857	4.61876
	S->X (RF)	(A0 * !A1)	0.17722	0.29805	1.06470

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	-	0.00900	0.01064	0.06166
	A0	-	0.00446	0.00584	0.05686
	A1	-	0.01028	0.01189	0.05611
	A1	-	0.00445	0.00608	0.05050
	S	(A0 * !A1)	0.00898	0.01218	0.08347
	S	(A0 * !A1)	0.01248	0.01572	0.08703
	S	(!A0 * A1)	0.01626	0.02013	0.12046
	S	(!A0 * A1)	0.00642	0.01030	0.11065
sky130_fd_sc_hs__mux2_2	A0	-	0.01175	0.01355	0.06250
	A0	-	0.00753	0.00918	0.05819
	A1	-	0.01179	0.01361	0.06349
	A1	-	0.00620	0.00804	0.05834
	S	(A0 * !A1)	0.01153	0.01597	0.08367
	S	(A0 * !A1)	0.01588	0.02038	0.08829
	S	(!A0 * A1)	0.01956	0.02247	0.09789
	S	(!A0 * A1)	0.00889	0.01182	0.08782
sky130_fd_sc_hs__mux2_4	A0	-	0.02288	0.02568	0.10161
	A0	-	0.01272	0.01561	0.09228
	A1	-	0.02198	0.02470	0.11644
	A1	-	0.01241	0.01523	0.10798
	S	(A0 * !A1)	0.02205	0.02643	0.10153
	S	(A0 * !A1)	0.02823	0.03271	0.10800
	S	(!A0 * A1)	0.03473	0.03822	0.14062
	S	(!A0 * A1)	0.01770	0.02124	0.12468

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00359	0.00619	0.05052
	A0	-	0.00979	0.01219	0.05532
	A1	-	0.00477	0.00702	0.05961
	A1	-	0.01061	0.01281	0.06441
	S	(A0 * !A1)	0.01394	0.01639	0.08770
	S	(A0 * !A1)	0.01035	0.01274	0.08385
	S	(!A0 * A1)	0.00504	0.00963	0.10951
	S	(!A0 * A1)	0.01483	0.01938	0.11883
sky130_fd_sc_hs__mux2_2	A0	-	0.00667	0.00847	0.05657
	A0	-	0.01195	0.01373	0.06132
	A1	-	0.00832	0.00999	0.05761
	A1	-	0.01384	0.01540	0.06308
	S	(A0 * !A1)	0.01704	0.01907	0.08211
	S	(A0 * !A1)	0.01264	0.01454	0.07749
	S	(!A0 * A1)	0.00782	0.01130	0.10275
	S	(!A0 * A1)	0.01848	0.02178	0.11247
sky130_fd_sc_hs__mux2_4	A0	-	0.01619	0.01840	0.10641
	A0	-	0.02584	0.02766	0.11324
	A1	-	0.01682	0.01904	0.10420
	A1	-	0.02667	0.02863	0.11202
	S	(A0 * !A1)	0.03204	0.03290	0.10300
	S	(A0 * !A1)	0.02572	0.02650	0.09641
	S	(!A0 * A1)	0.01900	0.02101	0.14342
	S	(!A0 * A1)	0.03596	0.03744	0.15851

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00179	0.00180	0.00179
	(A1 * S * X)	-0.00077	-0.00077	-0.00077
	(!A1 * S * !X)	0.00065	0.00065	0.00062
	(!A1 * S * !X)	-0.00191	-0.00196	-0.00199
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00170	0.00171	0.00171
	(A1 * S * X)	-0.00083	-0.00084	-0.00083
	(!A1 * S * !X)	0.00073	0.00073	0.00069
	(!A1 * S * !X)	-0.00179	-0.00184	-0.00189
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00308	0.00309	0.00308
	(A1 * S * X)	-0.00165	-0.00165	-0.00164
	(!A1 * S * !X)	0.00111	0.00110	0.00106
	(!A1 * S * !X)	-0.00375	-0.00386	-0.00390

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00169	-0.00173	-0.00178
	(A1 * S * X)	0.00083	0.00084	0.00079
	(!A1 * S * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * S * !X)	0.00199	0.00199	0.00199
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00157	-0.00162	-0.00169
	(A1 * S * X)	0.00092	0.00092	0.00086
	(!A1 * S * !X)	-0.00067	-0.00067	-0.00066
	(!A1 * S * !X)	0.00189	0.00190	0.00189
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00291	-0.00299	-0.00308
	(A1 * S * X)	0.00176	0.00176	0.00168
	(!A1 * S * !X)	-0.00104	-0.00106	-0.00104
	(!A1 * S * !X)	0.00390	0.00392	0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00197	0.00199	0.00198
	(A0 * !S * X)	-0.00094	-0.00095	-0.00094
	(!A0 * !S * !X)	0.00056	0.00057	0.00056
	(!A0 * !S * !X)	-0.00228	-0.00232	-0.00233
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00183	0.00185	0.00184
	(A0 * !S * X)	-0.00079	-0.00081	-0.00080
	(!A0 * !S * !X)	0.00051	0.00051	0.00050
	(!A0 * !S * !X)	-0.00207	-0.00209	-0.00211
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00312	0.00317	0.00312
	(A0 * !S * X)	-0.00165	-0.00168	-0.00164
	(!A0 * !S * !X)	0.00087	0.00088	0.00084
	(!A0 * !S * !X)	-0.00392	-0.00400	-0.00405

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00188	-0.00195	-0.00198
	(A0 * !S * X)	0.00099	0.00099	0.00095
	(!A0 * !S * !X)	-0.00056	-0.00055	-0.00055
	(!A0 * !S * !X)	0.00234	0.00234	0.00233
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00172	-0.00179	-0.00184
	(A0 * !S * X)	0.00088	0.00088	0.00082
	(!A0 * !S * !X)	-0.00049	-0.00050	-0.00049
	(!A0 * !S * !X)	0.00211	0.00212	0.00211
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00284	-0.00304	-0.00311
	(A0 * !S * X)	0.00176	0.00175	0.00167
	(!A0 * !S * !X)	-0.00083	-0.00084	-0.00083
	(!A0 * !S * !X)	0.00406	0.00407	0.00405

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00727	0.01007	0.07939
	(A0 * A1 * X)	0.00073	0.00348	0.07280
	(!A0 * !A1 * !X)	0.00733	0.01029	0.07959
	(!A0 * !A1 * !X)	0.00078	0.00374	0.07306
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00735	0.01031	0.07925
	(A0 * A1 * X)	-0.00006	0.00284	0.07181
	(!A0 * !A1 * !X)	0.00697	0.00998	0.07878
	(!A0 * !A1 * !X)	-0.00044	0.00258	0.07141
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.01143	0.01396	0.08772
	(A0 * A1 * X)	0.00018	0.00258	0.07640
	(!A0 * !A1 * !X)	0.01145	0.01406	0.08739
	(!A0 * !A1 * !X)	0.00011	0.00275	0.07607

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	-0.00015	0.00401	0.07292
	(A0 * A1 * X)	0.00643	0.01060	0.07949
	(!A0 * !A1 * !X)	-0.00041	0.00333	0.07275
	(!A0 * !A1 * !X)	0.00609	0.00990	0.07931
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00084	0.00300	0.07202
	(A0 * A1 * X)	0.00660	0.01043	0.07945
	(!A0 * !A1 * !X)	-0.00059	0.00315	0.07208
	(!A0 * !A1 * !X)	0.00679	0.01058	0.07951
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00054	0.00287	0.07548
	(A0 * A1 * X)	0.01079	0.01422	0.08681
	(!A0 * !A1 * !X)	-0.00087	0.00255	0.07486
	(!A0 * !A1 * !X)	0.01042	0.01389	0.08619

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT						OUTPUT
A0	A1	A2	A3	S0	S1	X
0	0	0	0	x	x	0
0	x	0	1	0	x	0
x	0	x	1	1	0	0
x	x	x	1	1	1	1
0	0	1	x	x	0	0
0	x	1	x	0	1	1
0	x	1	0	1	1	0
0	1	0	x	0	x	0
0	1	x	x	1	0	1
0	1	x	0	1	1	0
0	1	1	x	0	0	0
1	0	0	x	0	0	1
1	x	0	0	x	1	0
1	0	x	0	1	x	0
1	x	0	1	0	1	0
1	x	1	x	0	x	1
1	1	0	x	x	0	1
1	1	1	x	1	0	1
1	1	1	0	1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__mux4_1	31.96800
sky130_fd_sc_hs__mux4_2	35.16480
sky130_fd_sc_hs__mux4_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)
	A0	A1	A2	A3	S0	S1	X
sky130_fd_sc_hs__mux4_1	0.00230	0.00242	0.00240	0.00267	0.00813	0.00519	1.34377
sky130_fd_sc_hs__mux4_2	0.00261	0.00246	0.00256	0.00250	0.00923	0.00536	2.70605
sky130_fd_sc_hs__mux4_4	0.00458	0.00440	0.00458	0.00459	0.01282	0.00799	5.11633

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.30543	0.55845
sky130_fd_sc_hs__mux4_2	0.00000	0.33568	0.61865
sky130_fd_sc_hs__mux4_4	0.00000	0.50977	0.91880

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)	0.09001	0.51549	5.36913
	A1->X (RR)	0.09144	0.51623	5.35044
	A2->X (RR)	0.09027	0.52008	5.36599
	A3->X (RR)	0.08849	0.51429	5.33741
	S0->X (-R)	0.14172	0.73397	8.40996
	S1->X (-R)	0.08570	0.66227	8.36106
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.09574	0.44036	5.38208
	A1->X (RR)	0.09154	0.43880	5.38282
	A2->X (RR)	0.08806	0.43187	5.36101
	A3->X (RR)	0.08338	0.42730	5.35231
	S0->X (-R)	0.13600	0.64807	8.40989
	S1->X (-R)	0.09257	0.58471	8.29800
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.11168	0.38732	5.48003
	A1->X (RR)	0.11558	0.39022	5.49420
	A2->X (RR)	0.11626	0.39315	5.46944
	A3->X (RR)	0.11020	0.38863	5.46249
	S0->X (-R)	0.19802	0.67923	8.62140
	S1->X (-R)	0.10813	0.56516	8.49885

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.14221	0.58174	5.01455
	A1->X (FF)	0.14983	0.59705	5.06410
	A2->X (FF)	0.15347	0.60603	5.08123
	A3->X (FF)	0.15302	0.60522	5.08437
	S0->X (-F)	0.14175	0.60320	5.13071
	S1->X (-F)	0.06840	0.47706	5.00509
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.17561	0.62271	5.20244
	A1->X (FF)	0.17453	0.61788	5.18715
	A2->X (FF)	0.17416	0.61799	5.19424
	A3->X (FF)	0.16862	0.60738	5.16686
	S0->X (-F)	0.15878	0.61667	5.19673
	S1->X (-F)	0.08123	0.48642	5.13041
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.18154	0.58489	5.28227
	A1->X (FF)	0.17689	0.57918	5.26088
	A2->X (FF)	0.19975	0.60702	5.33094
	A3->X (FF)	0.18882	0.59464	5.30250
	S0->X (-F)	0.17927	0.62330	5.44655
	S1->X (-F)	0.08668	0.47618	5.22980

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01593	0.01697	0.05361
	A0	0.00962	0.01068	0.04754
	A1	0.01455	0.01555	0.05109
	A1	0.00820	0.00921	0.04497
	A2	0.01431	0.01537	0.05089
	A2	0.00809	0.00917	0.04491
	A3	0.01331	0.01435	0.05030
	A3	0.00672	0.00777	0.04394
	S0	0.02571	0.03348	0.22012
	S0	0.01024	0.01798	0.20481
	S1	0.01205	0.01695	0.11868
	S1	0.00408	0.00898	0.11087
sky130_fd_sc_hs__mux4_2	A0	0.01951	0.02054	0.05459
	A0	0.01248	0.01354	0.04805
	A1	0.01811	0.01917	0.05358
	A1	0.01104	0.01213	0.04699
	A2	0.01703	0.01810	0.05148
	A2	0.01032	0.01140	0.04523
	A3	0.01601	0.01715	0.05140
	A3	0.00930	0.01045	0.04517
	S0	0.03044	0.03747	0.22141
	S0	0.01441	0.02148	0.20600
	S1	0.01460	0.01953	0.12166
	S1	0.00634	0.01130	0.11341

sky130_fd_sc_hs__mux4_4	**A0**	0.03610	0.03804	0.10792
	A0	0.02376	0.02578	0.09680
	A1	0.03330	0.03512	0.10595
	A1	0.02103	0.02295	0.09489
	A2	0.03335	0.03512	0.10342
	A2	0.02110	0.02296	0.09236
	A3	0.03153	0.03340	0.10335
	A3	0.01899	0.02094	0.09200
	S0	0.05166	0.06069	0.31951
	S0	0.02723	0.03634	0.29576
	S1	0.02641	0.03144	0.16093
	S1	0.01407	0.01916	0.14974

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00536	0.00601	0.04174
	A0	0.01167	0.01231	0.04802
	A1	0.00693	0.00753	0.04215
	A1	0.01323	0.01384	0.04828
	A2	0.00798	0.00849	0.04277
	A2	0.01418	0.01472	0.04898
	A3	0.00899	0.00946	0.04416
	A3	0.01552	0.01602	0.05069
	S0	0.00830	0.01719	0.20036
	S0	0.02375	0.03263	0.21580
	S1	0.00261	0.00876	0.11700
	S1	0.01058	0.01672	0.12489

sky130_fd_sc_hs__mux4_2	**A0**	0.01139	0.01060	0.04552
	A0	0.01840	0.01761	0.05079
	A1	0.01277	0.01190	0.04718
	A1	0.01980	0.01891	0.05236
	A2	0.01237	0.01163	0.04597
	A2	0.01908	0.01834	0.05074
	A3	0.01318	0.01249	0.04760
	A3	0.01985	0.01917	0.05251
	S0	0.01255	0.01999	0.20021
	S0	0.02877	0.03625	0.21635
	S1	0.00699	0.01245	0.11973
	S1	0.01524	0.02060	0.12659
sky130_fd_sc_hs__mux4_4	**A0**	0.02158	0.01955	0.08666
	A0	0.03391	0.03186	0.09893
	A1	0.02465	0.02263	0.09073
	A1	0.03688	0.03484	0.10292
	A2	0.02523	0.02239	0.09040
	A2	0.03748	0.03465	0.09986
	A3	0.02705	0.02458	0.09165
	A3	0.03950	0.03710	0.10404
	S0	0.02481	0.03249	0.28761
	S0	0.04911	0.05685	0.31005
	S1	0.01501	0.02045	0.15252
	S1	0.02728	0.03230	0.16436

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)**	0.00849	0.00954	0.04749
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00346	0.00450	0.04247
	(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)	0.00165	0.00149	0.00147
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00139	-0.00160	-0.00160
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00948	0.01036	0.04634
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00374	0.00460	0.04062
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00182	0.00162	0.00160
	(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)	-0.00133	-0.00156	-0.00158
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01594	0.01799	0.09157
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00609	0.00813	0.08174
	(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)	0.00321	0.00281	0.00275
	(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)	-0.00281	-0.00331	-0.00335

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)	0.00124	0.00223	0.03986
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00626	0.00726	0.04488
	(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)	-0.00144	-0.00146	-0.00146
	(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)	0.00160	0.00162	0.00161
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00191	0.00286	0.03838
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00765	0.00860	0.04412
	(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)	-0.00156	-0.00159	-0.00159
	(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)	0.00158	0.00159	0.00159

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00282	0.00470	0.07746
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.01267	0.01455	0.08729
	(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)	-0.00268	-0.00274	-0.00274
	(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)	0.00333	0.00336	0.00335

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)**	0.00712	0.00812	0.04507
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00208	0.00307	0.04003
	(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)	0.00156	0.00135	0.00133
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00155	-0.00179	-0.00179

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00809	0.00900	0.04517
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00235	0.00323	0.03943
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00159	0.00144	0.00142
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00153	-0.00171	-0.00171
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01308	0.01512	0.08976
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00339	0.00539	0.08005
	(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)	0.00309	0.00268	0.00263
	(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)	-0.00279	-0.00327	-0.00329

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)**	0.00273	0.00368	0.04002
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00777	0.00872	0.04506
	(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)	-0.00128	-0.00132	-0.00133
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00179	0.00179	0.00180
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00326	0.00418	0.04002
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00903	0.00995	0.04576
	(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)	-0.00137	-0.00142	-0.00142
	(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)	0.00171	0.00172	0.00172
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00600	0.00785	0.08163
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01571	0.01758	0.09132
	(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)	-0.00255	-0.00264	-0.00263
	(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)	0.00327	0.00331	0.00329

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)	0.00177	0.00157	0.00155
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00129	-0.00154	-0.00155
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00869	0.00967	0.04638
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00362	0.00459	0.04131
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)	0.00199	0.00178	0.00175
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00131	-0.00156	-0.00157
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00897	0.00980	0.04489
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00348	0.00429	0.03941

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)**	0.00334	0.00291	0.00286
	(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)	-0.00267	-0.00313	-0.00317
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01618	0.01814	0.08994
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00615	0.00805	0.07991

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)**	-0.00151	-0.00154	-0.00154
	(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)	0.00155	0.00157	0.00156
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00203	0.00294	0.03910
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00708	0.00801	0.04417

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)**	-0.00172	-0.00175	-0.00174
	(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)	0.00156	0.00158	0.00158
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00208	0.00298	0.03762
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00756	0.00849	0.04311
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)**	-0.00281	-0.00286	-0.00286
	(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)	0.00315	0.00318	0.00317
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00269	0.00450	0.07535
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01273	0.01457	0.08538

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)**	0.00769	0.00866	0.04584
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00229	0.00323	0.04042
	(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)	0.00196	0.00174	0.00172
	(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)	-0.00149	-0.00172	-0.00173
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00796	0.00886	0.04473
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00252	0.00339	0.03929
	(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)	0.00172	0.00154	0.00152
	(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)	-0.00144	-0.00165	-0.00166
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01442	0.01635	0.08998
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00417	0.00609	0.07974
	(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)	0.00320	0.00280	0.00278
	(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)	-0.00272	-0.00315	-0.00319

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)	0.00301	0.00391	0.04048
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00842	0.00934	0.04588
	(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)	-0.00168	-0.00172	-0.00172
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00174	0.00176	0.00175
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00300	0.00394	0.03951
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00845	0.00940	0.04494
	(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)	-0.00147	-0.00152	-0.00152
	(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)	0.00165	0.00167	0.00167

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00508	0.00682	0.07946
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01532	0.01710	0.08966
	(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)	-0.00268	-0.00277	-0.00278
	(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)	0.00318	0.00318	0.00319

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)**	0.00959	0.01241	0.08780
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00114	0.00163	0.07706
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01410	0.01657	0.09617
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00502	0.00744	0.08716
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01362	0.01930	0.15092
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00117	0.00680	0.13845
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00989	0.01277	0.08820
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00091	0.00190	0.07735
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01330	0.01603	0.09567
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00411	0.00681	0.08655
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01299	0.01586	0.09561
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00373	0.00655	0.08640
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01326	0.01897	0.14897
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00084	0.00651	0.13651
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01413	0.01978	0.14988
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00164	0.00727	0.13736
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01375	0.01628	0.09597
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00452	0.00700	0.08681
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01448	0.02006	0.15175
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00189	0.00744	0.13912

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01063	0.01357	0.08956
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00009	0.00294	0.07902
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01521	0.01726	0.09761
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00660	0.00864	0.08904
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01474	0.01995	0.15022
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00229	0.00748	0.13777
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01045	0.01364	0.08951
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00004	0.00305	0.07899
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01571	0.01741	0.09728
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00744	0.00907	0.08907
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01512	0.01690	0.09685
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00691	0.00859	0.08866
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01482	0.02003	0.15060
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00202	0.00721	0.13778
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01504	0.02031	0.15093
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00230	0.00754	0.13816
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01433	0.01645	0.09684
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00575	0.00784	0.08831
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01573	0.02096	0.15130
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00333	0.00854	0.13887

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01492	0.01688	0.08396
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00025	0.00172	0.06880
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02317	0.02368	0.09597
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01140	0.01185	0.08430
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.02224	0.02836	0.18959
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00373	0.00975	0.17105
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01486	0.01697	0.08409
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00030	0.00174	0.06891
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02337	0.02449	0.09665
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01098	0.01205	0.08449
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02239	0.02360	0.09628
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00999	0.01123	0.08406
	(!A0 * A1 * A2 * A3 * S1 * X)	0.02126	0.02779	0.19433
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00310	0.00958	0.17622
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.02208	0.02872	0.19548
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00394	0.01054	0.17727
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02275	0.02326	0.09650
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01082	0.01125	0.08466
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.02378	0.02987	0.19128
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00509	0.01112	0.17252

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)**	0.00052	0.00406	0.07882
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01124	0.01481	0.08957
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00657	0.01012	0.08955
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01565	0.01926	0.09846
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00218	0.00857	0.13940
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01462	0.02105	0.15189
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00027	0.00394	0.07836
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01106	0.01476	0.08920
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00631	0.00992	0.08860
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01548	0.01913	0.09755
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00663	0.01014	0.08873
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01590	0.01945	0.09776
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00143	0.00782	0.13712
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01385	0.02029	0.14958
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00060	0.00675	0.13612
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01308	0.01930	0.14864
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00700	0.01044	0.08976
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01624	0.01973	0.09880
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00136	0.00782	0.13854
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01395	0.02043	0.15118

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00121	0.00255	0.07803
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00931	0.01313	0.08859
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00503	0.00870	0.08838
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01364	0.01738	0.09677
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00066	0.00712	0.13638
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01307	0.01957	0.14884
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00105	0.00266	0.07802
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00945	0.01323	0.08858
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00560	0.00925	0.08891
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01386	0.01756	0.09696
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00621	0.00973	0.08962
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01444	0.01801	0.09766
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00003	0.00657	0.13625
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01282	0.01938	0.14907
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00022	0.00631	0.13588
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01255	0.01912	0.14864
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00589	0.00947	0.08903
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01448	0.01813	0.09741
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00038	0.00626	0.13531
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01204	0.01871	0.14773

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00172	0.00171	0.06869
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01338	0.01681	0.08383
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01031	0.01345	0.08712
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.02204	0.02519	0.09832
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00073	0.00849	0.16878
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01921	0.02698	0.18732
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00163	0.00169	0.06858
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01351	0.01691	0.08373
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00899	0.01266	0.08509
	(A0 * !A1 * A2 * A3 * S1 * X)	0.02136	0.02504	0.09695
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01007	0.01364	0.08557
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.02252	0.02610	0.09750
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00032	0.00886	0.17565
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01846	0.02703	0.19384
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00050	0.00793	0.17463
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01766	0.02617	0.19282
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01094	0.01390	0.08719
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.02291	0.02591	0.09858
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00072	0.00685	0.16712
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01801	0.02562	0.18590

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)	0.00634	0.01014	0.08610
	(A1 * A3 * S0 * X)	-0.00039	0.00336	0.07935
	(A0 * A2 * !S0 * X)	0.00634	0.01014	0.08610
	(A0 * A2 * !S0 * X)	-0.00040	0.00336	0.07935
	(!A1 * !A3 * S0 * !X)	0.00654	0.01034	0.08636
	(!A1 * !A3 * S0 * !X)	-0.00033	0.00343	0.07947
	(!A0 * !A2 * !S0 * !X)	0.00654	0.01034	0.08636
	(!A0 * !A2 * !S0 * !X)	-0.00033	0.00342	0.07947
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00664	0.01036	0.08590
	(A1 * A3 * S0 * X)	-0.00036	0.00330	0.07888
	(A0 * A2 * !S0 * X)	0.00664	0.01036	0.08589
	(A0 * A2 * !S0 * X)	-0.00036	0.00330	0.07888
	(!A1 * !A3 * S0 * !X)	0.00659	0.01040	0.08600
	(!A1 * !A3 * S0 * !X)	-0.00047	0.00330	0.07891
	(!A0 * !A2 * !S0 * !X)	0.00659	0.01040	0.08600
	(!A0 * !A2 * !S0 * !X)	-0.00047	0.00329	0.07891
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00968	0.01221	0.08045
	(A1 * A3 * S0 * X)	-0.00026	0.00221	0.07049
	(A0 * A2 * !S0 * X)	0.00967	0.01220	0.08045
	(A0 * A2 * !S0 * X)	-0.00026	0.00221	0.07049
	(!A1 * !A3 * S0 * !X)	0.00958	0.01234	0.08050
	(!A1 * !A3 * S0 * !X)	-0.00063	0.00208	0.07027
	(!A0 * !A2 * !S0 * !X)	0.00958	0.01234	0.08050
	(!A0 * !A2 * !S0 * !X)	-0.00063	0.00207	0.07027

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)	-0.00103	0.00322	0.07903
	(A1 * A3 * S0 * X)	0.00571	0.00998	0.08578
	(A0 * A2 * !S0 * X)	-0.00103	0.00324	0.07903
	(A0 * A2 * !S0 * X)	0.00571	0.01000	0.08578
	(!A1 * !A3 * S0 * !X)	-0.00108	0.00303	0.07875
	(!A1 * !A3 * S0 * !X)	0.00578	0.00997	0.08564
	(!A0 * !A2 * !S0 * !X)	-0.00108	0.00305	0.07875
	(!A0 * !A2 * !S0 * !X)	0.00578	0.00992	0.08561
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00114	0.00304	0.07847
	(A1 * A3 * S0 * X)	0.00588	0.01006	0.08549
	(A0 * A2 * !S0 * X)	-0.00114	0.00308	0.07847
	(A0 * A2 * !S0 * X)	0.00587	0.01010	0.08549
	(!A1 * !A3 * S0 * !X)	-0.00107	0.00303	0.07838
	(!A1 * !A3 * S0 * !X)	0.00601	0.01014	0.08548
	(!A0 * !A2 * !S0 * !X)	-0.00107	0.00303	0.07838
	(!A0 * !A2 * !S0 * !X)	0.00601	0.01014	0.08548
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00154	0.00206	0.07012
	(A1 * A3 * S0 * X)	0.00836	0.01204	0.08008
	(A0 * A2 * !S0 * X)	-0.00154	0.00205	0.07012
	(A0 * A2 * !S0 * X)	0.00836	0.01203	0.08008
	(!A1 * !A3 * S0 * !X)	-0.00116	0.00266	0.07009
	(!A1 * !A3 * S0 * !X)	0.00901	0.01294	0.08032
	(!A0 * !A2 * !S0 * !X)	-0.00116	0.00271	0.07009
	(!A0 * !A2 * !S0 * !X)	0.00901	0.01297	0.08032

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A_N	B	Y
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2b_1	7.99200
sky130_fd_sc_hs__nand2b_2	11.18880
sky130_fd_sc_hs__nand2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A_N	B	Y
sky130_fd_sc_hs__nand2b_1	0.00227	0.00266	1.29610
sky130_fd_sc_hs__nand2b_2	0.00252	0.00504	2.26679
sky130_fd_sc_hs__nand2b_4	0.00370	0.00782	2.79320

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.26819	0.47259
sky130_fd_sc_hs__nand2b_2	0.00000	0.12114	0.25378
sky130_fd_sc_hs__nand2b_4	0.00000	0.53694	0.94719

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)	0.04328	0.44135	5.70066
	B->Y (FR)	0.02933	0.70029	10.36440
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.04285	0.32851	4.77860
	B->Y (FR)	0.02821	0.62264	10.29350
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.05175	0.35742	5.57439
	B->Y (FR)	0.03501	0.62111	10.56980

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)	0.05318	0.44636	5.24668
	B->Y (RF)	0.01835	0.36022	5.34176
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.05781	0.43130	5.48451
	B->Y (RF)	0.01880	0.29379	5.12276
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.04612	0.33119	4.08488
	B->Y (RF)	0.01622	0.18777	3.56432

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	0.00709	0.01030	0.08151
	A_N	0.00351	0.00674	0.07809
	B	0.00001	0.00155	0.01540
	B	0.00396	0.00553	0.01966
sky130_fd_sc_hs__nand2b_2	A_N	0.00936	0.01228	0.07104
	A_N	0.00570	0.00868	0.06772
	B	-0.00022	0.00215	0.02896
	B	0.00749	0.00994	0.03708
sky130_fd_sc_hs__nand2b_4	A_N	0.01247	0.01737	0.13104
	A_N	0.00724	0.01218	0.12627
	B	-0.00086	0.00354	0.04369
	B	0.01109	0.01556	0.05567

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00360	0.00781	0.07360
	A_N	0.00717	0.01130	0.07657
	B	0.00512	0.00534	0.01021
	B	0.00114	0.00130	0.00510
sky130_fd_sc_hs__nand2b_2	A_N	0.00631	0.01038	0.08255
	A_N	0.00996	0.01398	0.08522
	B	0.00989	0.01038	0.01959
	B	0.00212	0.00249	0.01009
sky130_fd_sc_hs__nand2b_4	A_N	0.01119	0.01816	0.13930
	A_N	0.01642	0.02336	0.14410
	B	0.01742	0.01814	0.02962
	B	0.00537	0.00599	0.01749

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00586	0.00906	0.08055
	(!B * Y)	0.00207	0.00526	0.07675
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00810	0.01122	0.08623
	(!B * Y)	0.00393	0.00703	0.08205
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.01001	0.01496	0.13754
	(!B * Y)	0.00393	0.00885	0.13144

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	-0.00011	0.00412	0.07526
	(!B * Y)	0.00369	0.00794	0.07907
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00055	0.00408	0.07849
	(!B * Y)	0.00476	0.00829	0.08268
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00109	0.00811	0.13054
	(!B * Y)	0.00724	0.01426	0.13664

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00183	0.00184	0.00183
	(A_N * Y)	-0.00175	-0.00176	-0.00175
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00313	0.00318	0.00314
	(A_N * Y)	-0.00362	-0.00365	-0.00363
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00630	0.00639	0.00634
	(A_N * Y)	-0.00382	-0.00385	-0.00383

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00176	-0.00182	-0.00182
	(A_N * Y)	0.00182	0.00178	0.00177
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00302	-0.00315	-0.00314
	(A_N * Y)	0.00369	0.00367	0.00363
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00597	-0.00632	-0.00631
	(A_N * Y)	0.00408	0.00390	0.00386

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	x	1
1	0	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand2_1	4.79520
sky130_fd_sc_hs__nand2_2	7.99200
sky130_fd_sc_hs__nand2_4	14.38560
sky130_fd_sc_hs__nand2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nand2_1	0.00267	0.00259	1.38448
sky130_fd_sc_hs__nand2_2	0.00511	0.00506	2.60503
sky130_fd_sc_hs__nand2_4	0.00788	0.00763	2.69466
sky130_fd_sc_hs__nand2_8	0.01506	0.01508	4.79435

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2_1	0.00000	0.03195	0.12588
sky130_fd_sc_hs__nand2_2	0.00000	0.06389	0.25175
sky130_fd_sc_hs__nand2_4	0.00000	0.06484	0.25175
sky130_fd_sc_hs__nand2_8	0.00000	0.12969	0.50351

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)	0.02277	0.69731	10.57350
	B->Y (FR)	0.02846	0.70279	10.58020
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.01994	0.60326	10.42390
	B->Y (FR)	0.02721	0.60799	10.37720
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.02732	0.61705	10.61070
	B->Y (FR)	0.04156	0.62886	10.57780
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02240	0.53616	10.23780
	B->Y (FR)	0.03466	0.53052	9.73153

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01447	0.39053	5.98121
	B->Y (RF)	0.01708	0.37023	5.62313
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01431	0.35536	6.51210
	B->Y (RF)	0.01857	0.32805	5.96552
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01315	0.23172	4.37949
	B->Y (RF)	0.01660	0.19303	3.59773
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01204	0.19978	4.61158
	B->Y (RF)	0.01537	0.13778	3.29144

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00069	0.00072	0.01439
	A	0.00348	0.00492	0.01888
	B	-0.00023	0.00113	0.01502
	B	0.00494	0.00633	0.02051
sky130_fd_sc_hs__nand2_2	A	-0.00178	0.00187	0.02513
	A	0.00629	0.01000	0.03382
	B	-0.00007	0.00337	0.02720
	B	0.01018	0.01368	0.03807
sky130_fd_sc_hs__nand2_4	A	-0.00342	0.00097	0.03908
	A	0.00900	0.01347	0.05212
	B	-0.00033	0.00366	0.04290
	B	0.01634	0.02040	0.06017
sky130_fd_sc_hs__nand2_8	A	-0.00738	0.00216	0.09028
	A	0.01677	0.02635	0.11473
	B	-0.00194	0.00618	0.08580
	B	0.03097	0.03923	0.11866

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00393	0.00432	0.00982
	A	-0.00025	0.00008	0.00472
	B	0.00501	0.00532	0.00892
	B	-0.00021	-0.00005	0.00356
sky130_fd_sc_hs__nand2_2	A	0.00771	0.00862	0.01713
	A	-0.00037	0.00039	0.00905
	B	0.01010	0.01070	0.01870
	B	-0.00028	0.00006	0.00694
sky130_fd_sc_hs__nand2_4	A	0.01420	0.01553	0.02940
	A	0.00179	0.00302	0.01624
	B	0.01884	0.01942	0.03153
	B	0.00195	0.00247	0.01393
sky130_fd_sc_hs__nand2_8	A	0.02301	0.02587	0.06126
	A	-0.00108	0.00165	0.03247
	B	0.03269	0.03452	0.06225
	B	-0.00067	0.00091	0.02592

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00052	0.00053	0.00052
	(!B * Y)	-0.00218	-0.00219	-0.00221
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00098	0.00098	0.00094
	(!B * Y)	-0.00424	-0.00426	-0.00433
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00193	0.00192	0.00185
	(!B * Y)	-0.00520	-0.00521	-0.00534
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00378	0.00380	0.00367
	(!B * Y)	-0.00995	-0.01002	-0.01026

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00051	-0.00051	-0.00051
	(!B * Y)	0.00222	0.00223	0.00221
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00093	-0.00093	-0.00092
	(!B * Y)	0.00433	0.00437	0.00434
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00183	-0.00184	-0.00181
	(!B * Y)	0.00535	0.00543	0.00534
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00358	-0.00366	-0.00359
	(!B * Y)	0.01023	0.01044	0.01027

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00154	0.00155	0.00154
	(!A * Y)	-0.00186	-0.00186	-0.00185
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00298	0.00300	0.00298
	(!A * Y)	-0.00362	-0.00363	-0.00362
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00593	0.00600	0.00596
	(!A * Y)	-0.00380	-0.00382	-0.00381
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.01186	0.01198	0.01194
	(!A * Y)	-0.00758	-0.00763	-0.00762

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	**(!A * Y)**	-0.00147	-0.00155	-0.00154
	(!A * Y)	0.00191	0.00187	0.00186
sky130_fd_sc_hs__nand2_2	**(!A * Y)**	-0.00279	-0.00300	-0.00298
	(!A * Y)	0.00372	0.00366	0.00363
sky130_fd_sc_hs__nand2_4	**(!A * Y)**	-0.00552	-0.00595	-0.00596
	(!A * Y)	0.00404	0.00385	0.00382
sky130_fd_sc_hs__nand2_8	**(!A * Y)**	-0.01111	-0.01195	-0.01191
	(!A * Y)	0.00800	0.00771	0.00763

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3b_1	9.59040
sky130_fd_sc_hs__nand3b_2	14.38560
sky130_fd_sc_hs__nand3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A_N	B	C	Y
sky130_fd_sc_hs__nand3b_1	0.00212	0.00268	0.00260	1.36116
sky130_fd_sc_hs__nand3b_2	0.00250	0.00508	0.00505	2.61798
sky130_fd_sc_hs__nand3b_4	0.00351	0.00740	0.00747	2.35370

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3b_1	0.00000	0.26022	0.47259
sky130_fd_sc_hs__nand3b_2	0.00000	0.10521	0.37965
sky130_fd_sc_hs__nand3b_4	0.00000	0.52081	0.94719

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)	0.04428	0.41830	5.44865
	B->Y (FR)	0.03328	0.71448	10.65270
	C->Y (FR)	0.03735	0.70706	10.46430
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.04472	0.33109	5.22449
	B->Y (FR)	0.02898	0.60987	10.39470
	C->Y (FR)	0.03442	0.62233	10.51910
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.05666	0.37005	5.30517
	B->Y (FR)	0.04036	0.60907	9.89085
	C->Y (FR)	0.05547	0.64258	10.26300

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)	0.05728	0.51068	6.37983
	B->Y (RF)	0.02501	0.44075	6.59267
	C->Y (RF)	0.02751	0.40066	5.94748
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.06695	0.52862	7.47968
	B->Y (RF)	0.02673	0.42093	7.57655
	C->Y (RF)	0.02874	0.35106	6.46106
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.05909	0.45773	6.26539
	B->Y (RF)	0.03177	0.38752	6.66096
	C->Y (RF)	0.03366	0.24243	4.33017

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	0.00686	0.01016	0.08213
	A_N	0.00373	0.00704	0.07922
	B	0.00029	0.00153	0.01370
	B	0.00436	0.00563	0.01806
	C	0.00074	0.00197	0.01452
	C	0.00558	0.00683	0.01967
sky130_fd_sc_hs__nand3b_2	A_N	0.00970	0.01318	0.08787
	A_N	0.00626	0.00986	0.08444
	B	0.00045	0.00307	0.02370
	B	0.00860	0.01125	0.03247
	C	0.00125	0.00359	0.02497
	C	0.01148	0.01387	0.03577
sky130_fd_sc_hs__nand3b_4	A_N	0.01321	0.01873	0.13810
	A_N	0.00802	0.01360	0.13294
	B	0.00068	0.00242	0.03169
	B	0.01238	0.01414	0.04332
	C	0.00174	0.00459	0.03445
	C	0.01799	0.02088	0.05109

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00466	0.00883	0.07601
	A_N	0.00778	0.01194	0.07907
	B	0.00609	0.00620	0.00945
	B	0.00201	0.00212	0.00538
	C	0.00709	0.00722	0.01167
	C	0.00218	0.00225	0.00574
sky130_fd_sc_hs__nand3b_2	A_N	0.00853	0.01278	0.07869
	A_N	0.01197	0.01621	0.08167
	B	0.01157	0.01178	0.01825
	B	0.00336	0.00356	0.00931
	C	0.01378	0.01396	0.02052
	C	0.00337	0.00356	0.01010
sky130_fd_sc_hs__nand3b_4	A_N	0.01189	0.01866	0.13071
	A_N	0.01707	0.02382	0.13588
	B	0.01735	0.01758	0.02553
	B	0.00562	0.00582	0.01324
	C	0.02305	0.02345	0.03455
	C	0.00638	0.00668	0.01773

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)	0.00557	0.00887	0.08097
	(B * !C * Y)	0.00201	0.00530	0.07741
	(!B * Y)	0.00554	0.00885	0.08090
	(!B * Y)	0.00201	0.00532	0.07737
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00843	0.01155	0.08685
	(B * !C * Y)	0.00398	0.00707	0.08237
	(!B * Y)	0.00830	0.01146	0.08674
	(!B * Y)	0.00398	0.00711	0.08241
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.01009	0.01481	0.13339
	(B * !C * Y)	0.00385	0.00855	0.12714
	(!B * Y)	0.00992	0.01469	0.13379
	(!B * Y)	0.00382	0.00857	0.12768

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)	0.00006	0.00435	0.07611
	(B * !C * Y)	0.00369	0.00799	0.07974
	(!B * Y)	0.00008	0.00437	0.07609
	(!B * Y)	0.00361	0.00790	0.07963
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00046	0.00397	0.07855
	(B * !C * Y)	0.00508	0.00860	0.08314
	(!B * Y)	0.00063	0.00414	0.07874
	(!B * Y)	0.00498	0.00851	0.08309
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00118	0.00787	0.12624
	(B * !C * Y)	0.00775	0.01444	0.13275
	(!B * Y)	0.00141	0.00816	0.12707
	(!B * Y)	0.00755	0.01430	0.13321

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)	0.00169	0.00170	0.00170
	(A_N * C * Y)	-0.00181	-0.00181	-0.00181
	(A_N * !C * Y)	0.00101	0.00102	0.00101
	(A_N * !C * Y)	-0.00181	-0.00183	-0.00181
	(!A_N * !C * Y)	0.00056	0.00057	0.00057
	(!A_N * !C * Y)	-0.00213	-0.00216	-0.00215
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00315	0.00316	0.00315
	(A_N * C * Y)	-0.00374	-0.00374	-0.00373
	(A_N * !C * Y)	0.00182	0.00182	0.00181
	(A_N * !C * Y)	-0.00376	-0.00376	-0.00375
	(!A_N * !C * Y)	0.00124	0.00125	0.00126
	(!A_N * !C * Y)	-0.00403	-0.00405	-0.00404
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00637	0.00642	0.00638
	(A_N * C * Y)	-0.00363	-0.00364	-0.00362
	(A_N * !C * Y)	0.00327	0.00328	0.00329
	(A_N * !C * Y)	-0.00405	-0.00406	-0.00407
	(!A_N * !C * Y)	0.00230	0.00232	0.00236
	(!A_N * !C * Y)	-0.00444	-0.00447	-0.00446

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)	-0.00161	-0.00170	-0.00169
	(A_N * C * Y)	0.00187	0.00184	0.00182
	(A_N * !C * Y)	-0.00101	-0.00102	-0.00101
	(A_N * !C * Y)	0.00189	0.00190	0.00184
	(!A_N * !C * Y)	-0.00055	-0.00055	-0.00056
	(!A_N * !C * Y)	0.00218	0.00220	0.00216
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00293	-0.00316	-0.00315
	(A_N * C * Y)	0.00388	0.00378	0.00375
	(A_N * !C * Y)	-0.00182	-0.00182	-0.00181
	(A_N * !C * Y)	0.00385	0.00391	0.00378
	(!A_N * !C * Y)	-0.00119	-0.00120	-0.00123
	(!A_N * !C * Y)	0.00411	0.00416	0.00408
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00535	-0.00638	-0.00638
	(A_N * C * Y)	0.00455	0.00368	0.00365
	(A_N * !C * Y)	-0.00327	-0.00328	-0.00329
	(A_N * !C * Y)	0.00441	0.00440	0.00417
	(!A_N * !C * Y)	-0.00224	-0.00227	-0.00230
	(!A_N * !C * Y)	0.00455	0.00460	0.00449

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)	0.00152	0.00152	0.00152
	(A_N * B * Y)	-0.00178	-0.00178	-0.00178
	(A_N * !B * Y)	0.00148	0.00150	0.00149
	(A_N * !B * Y)	-0.00177	-0.00179	-0.00178
	(!A_N * !B * Y)	0.00142	0.00143	0.00142
	(!A_N * !B * Y)	-0.00184	-0.00185	-0.00184
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00319	0.00325	0.00321
	(A_N * B * Y)	-0.00357	-0.00361	-0.00358
	(A_N * !B * Y)	0.00320	0.00323	0.00322
	(A_N * !B * Y)	-0.00357	-0.00359	-0.00358
	(!A_N * !B * Y)	0.00286	0.00289	0.00287
	(!A_N * !B * Y)	-0.00393	-0.00395	-0.00394
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00609	0.00614	0.00610
	(A_N * B * Y)	-0.00368	-0.00369	-0.00368
	(A_N * !B * Y)	0.00616	0.00621	0.00619
	(A_N * !B * Y)	-0.00370	-0.00372	-0.00371
	(!A_N * !B * Y)	0.00567	0.00572	0.00570
	(!A_N * !B * Y)	-0.00418	-0.00420	-0.00418

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)	-0.00141	-0.00150	-0.00149
	(A_N * B * Y)	0.00178	0.00180	0.00179
	(A_N * !B * Y)	-0.00145	-0.00149	-0.00149
	(A_N * !B * Y)	0.00179	0.00180	0.00179
	(!A_N * !B * Y)	-0.00138	-0.00143	-0.00142
	(!A_N * !B * Y)	0.00186	0.00186	0.00185
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00306	-0.00325	-0.00321
	(A_N * B * Y)	0.00358	0.00362	0.00359
	(A_N * !B * Y)	-0.00310	-0.00323	-0.00322
	(A_N * !B * Y)	0.00358	0.00363	0.00360
	(!A_N * !B * Y)	-0.00274	-0.00286	-0.00287
	(!A_N * !B * Y)	0.00396	0.00396	0.00395
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00585	-0.00614	-0.00610
	(A_N * B * Y)	0.00372	0.00371	0.00368
	(A_N * !B * Y)	-0.00585	-0.00617	-0.00619
	(A_N * !B * Y)	0.00380	0.00377	0.00372
	(!A_N * !B * Y)	-0.00537	-0.00572	-0.00570
	(!A_N * !B * Y)	0.00429	0.00423	0.00418

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand3_1	7.99200
sky130_fd_sc_hs__nand3_2	11.18880
sky130_fd_sc_hs__nand3_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nand3_1	0.00271	0.00275	0.00267	1.37597
sky130_fd_sc_hs__nand3_2	0.00507	0.00551	0.00502	2.09895
sky130_fd_sc_hs__nand3_4	0.00762	0.00752	0.00755	2.67019

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand3_1	0.00000	0.02398	0.18882
sky130_fd_sc_hs__nand3_2	0.00000	0.04796	0.37763
sky130_fd_sc_hs__nand3_4	0.00000	0.04872	0.37763

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)	0.02741	0.69825	10.51320
	B->Y (FR)	0.03359	0.70233	10.48550
	C->Y (FR)	0.03815	0.70920	10.51760
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.02609	0.63624	10.48630
	B->Y (FR)	0.03012	0.57955	9.31894
	C->Y (FR)	0.03624	0.59085	9.37773
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.02709	0.61498	10.54860
	B->Y (FR)	0.04176	0.62232	10.45460
	C->Y (FR)	0.05095	0.62691	10.31100

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02030	0.46128	6.99060
	B->Y (RF)	0.02464	0.44373	6.66488
	C->Y (RF)	0.02666	0.40371	6.02132
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.01761	0.37103	6.35236
	B->Y (RF)	0.02369	0.36016	6.06070
	C->Y (RF)	0.02716	0.32133	5.37427
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01445	0.28737	5.34773
	B->Y (RF)	0.02042	0.25883	4.71881
	C->Y (RF)	0.02269	0.20433	3.74231

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00054	0.00070	0.01342
	A	0.00392	0.00517	0.01818
	B	0.00011	0.00122	0.01342
	B	0.00556	0.00669	0.01918
	C	0.00044	0.00155	0.01391
	C	0.00697	0.00810	0.02075
sky130_fd_sc_hs__nand3_2	A	-0.00165	0.00139	0.02366
	A	0.00676	0.00982	0.03250
	B	0.00011	0.00293	0.02777
	B	0.01097	0.01333	0.03888
	C	0.00144	0.00435	0.03105
	C	0.01418	0.01710	0.04396
sky130_fd_sc_hs__nand3_4	A	-0.00327	0.00050	0.03501
	A	0.00928	0.01310	0.04815
	B	-0.00003	0.00376	0.03874
	B	0.01677	0.02057	0.05613
	C	0.00171	0.00512	0.04234
	C	0.02300	0.02649	0.06408

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00538	0.00565	0.01079
	A	0.00093	0.00121	0.00568
	B	0.00647	0.00723	0.01043
	B	0.00097	0.00108	0.00432
	C	0.00757	0.00767	0.01171
	C	0.00092	0.00100	0.00445
sky130_fd_sc_hs__nand3_2	A	0.00920	0.00986	0.01887
	A	0.00079	0.00139	0.01027
	B	0.01160	0.01187	0.02019
	B	0.00064	0.00085	0.00803
	C	0.01371	0.01405	0.02242
	C	0.00070	0.00089	0.00930
sky130_fd_sc_hs__nand3_4	A	0.01384	0.01504	0.02787
	A	0.00134	0.00241	0.01401
	B	0.01844	0.01885	0.02944
	B	0.00145	0.00184	0.01145
	C	0.02302	0.02349	0.03528
	C	0.00123	0.00157	0.01255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00049	0.00049	0.00047
	(B * !C * Y)	-0.00215	-0.00217	-0.00221
	(!B * Y)	0.00051	0.00051	0.00049
	(!B * Y)	-0.00219	-0.00221	-0.00222
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00095	0.00096	0.00089
	(B * !C * Y)	-0.00400	-0.00401	-0.00415
	(!B * Y)	0.00102	0.00102	0.00098
	(!B * Y)	-0.00408	-0.00409	-0.00415
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00177	0.00178	0.00166
	(B * !C * Y)	-0.00487	-0.00491	-0.00517
	(!B * Y)	0.00188	0.00187	0.00180
	(!B * Y)	-0.00507	-0.00508	-0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00048	-0.00048	-0.00047
	(B * !C * Y)	0.00222	0.00224	0.00222
	(!B * Y)	-0.00049	-0.00049	-0.00048
	(!B * Y)	0.00222	0.00224	0.00222
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00089	-0.00090	-0.00089
	(B * !C * Y)	0.00414	0.00420	0.00416
	(!B * Y)	-0.00095	-0.00097	-0.00096
	(!B * Y)	0.00414	0.00419	0.00416
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00171	-0.00172	-0.00166
	(B * !C * Y)	0.00521	0.00526	0.00520
	(!B * Y)	-0.00178	-0.00179	-0.00176
	(!B * Y)	0.00522	0.00529	0.00521

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00064	0.00066	0.00065
	(A * !C * Y)	-0.00184	-0.00186	-0.00185
	(!A * C * Y)	0.00150	0.00151	0.00150
	(!A * C * Y)	-0.00185	-0.00186	-0.00185
	(!A * !C * Y)	0.00075	0.00075	0.00074
	(!A * !C * Y)	-0.00186	-0.00187	-0.00186
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00130	0.00131	0.00132
	(A * !C * Y)	-0.00389	-0.00391	-0.00389
	(!A * C * Y)	0.00299	0.00302	0.00300
	(!A * C * Y)	-0.00387	-0.00389	-0.00388
	(!A * !C * Y)	0.00157	0.00157	0.00156
	(!A * !C * Y)	-0.00393	-0.00392	-0.00392
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00233	0.00235	0.00236
	(A * !C * Y)	-0.00382	-0.00384	-0.00382
	(!A * C * Y)	0.00593	0.00599	0.00594
	(!A * C * Y)	-0.00383	-0.00385	-0.00383
	(!A * !C * Y)	0.00275	0.00277	0.00275
	(!A * !C * Y)	-0.00388	-0.00391	-0.00387

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00063	-0.00063	-0.00064
	(A * !C * Y)	0.00189	0.00190	0.00186
	(!A * C * Y)	-0.00140	-0.00151	-0.00150
	(!A * C * Y)	0.00192	0.00187	0.00186
	(!A * !C * Y)	-0.00075	-0.00075	-0.00074
	(!A * !C * Y)	0.00193	0.00194	0.00187
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00125	-0.00126	-0.00128
	(A * !C * Y)	0.00398	0.00401	0.00393
	(!A * C * Y)	-0.00274	-0.00299	-0.00299
	(!A * C * Y)	0.00401	0.00392	0.00389
	(!A * !C * Y)	-0.00157	-0.00157	-0.00156
	(!A * !C * Y)	0.00401	0.00406	0.00394
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00226	-0.00226	-0.00230
	(A * !C * Y)	0.00401	0.00402	0.00388
	(!A * C * Y)	-0.00530	-0.00596	-0.00592
	(!A * C * Y)	0.00423	0.00387	0.00384
	(!A * !C * Y)	-0.00275	-0.00277	-0.00275
	(!A * !C * Y)	0.00413	0.00419	0.00395

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00160	0.00160	0.00159
	(A * !B * Y)	-0.00187	-0.00187	-0.00187
	(!A * B * Y)	0.00162	0.00162	0.00161
	(!A * B * Y)	-0.00186	-0.00187	-0.00187
	(!A * !B * Y)	0.00159	0.00160	0.00159
	(!A * !B * Y)	-0.00186	-0.00187	-0.00187
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00296	0.00299	0.00297
	(A * !B * Y)	-0.00365	-0.00367	-0.00366
	(!A * B * Y)	0.00292	0.00295	0.00294
	(!A * B * Y)	-0.00364	-0.00366	-0.00365
	(!A * !B * Y)	0.00296	0.00300	0.00297
	(!A * !B * Y)	-0.00365	-0.00367	-0.00366
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00596	0.00602	0.00597
	(A * !B * Y)	-0.00387	-0.00389	-0.00388
	(!A * B * Y)	0.00591	0.00597	0.00593
	(!A * B * Y)	-0.00387	-0.00389	-0.00388
	(!A * !B * Y)	0.00595	0.00601	0.00598
	(!A * !B * Y)	-0.00387	-0.00389	-0.00388

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00155	-0.00160	-0.00159
	(A * !B * Y)	0.00187	0.00188	0.00187
	(!A * B * Y)	-0.00148	-0.00161	-0.00159
	(!A * B * Y)	0.00186	0.00188	0.00187
	(!A * !B * Y)	-0.00155	-0.00160	-0.00159
	(!A * !B * Y)	0.00187	0.00188	0.00187
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00280	-0.00294	-0.00296
	(A * !B * Y)	0.00366	0.00370	0.00367
	(!A * B * Y)	-0.00269	-0.00293	-0.00293
	(!A * B * Y)	0.00367	0.00370	0.00367
	(!A * !B * Y)	-0.00281	-0.00294	-0.00296
	(!A * !B * Y)	0.00366	0.00370	0.00367
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00568	-0.00598	-0.00597
	(A * !B * Y)	0.00387	0.00392	0.00389
	(!A * B * Y)	-0.00548	-0.00597	-0.00593
	(!A * B * Y)	0.00389	0.00392	0.00389
	(!A * !B * Y)	-0.00570	-0.00595	-0.00598
	(!A * !B * Y)	0.00387	0.00391	0.00389

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4bb_1	14.38560
sky130_fd_sc_hs__nand4bb_2	22.37760
sky130_fd_sc_hs__nand4bb_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B_N	C	D	Y
sky130_fd_sc_hs__nand4bb_1	0.00215	0.00209	0.00274	0.00277	1.28362
sky130_fd_sc_hs__nand4bb_2	0.00244	0.00240	0.00515	0.00508	2.36497
sky130_fd_sc_hs__nand4bb_4	0.00338	0.00349	0.01001	0.01004	3.50368

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4bb_1	0.00000	0.48851	0.94325
sky130_fd_sc_hs__nand4bb_2	0.00000	0.14654	0.50755
sky130_fd_sc_hs__nand4bb_4	0.00000	1.00828	1.88667

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)	0.05267	0.45225	5.71695
	B_N->Y (RR)	0.05988	0.45650	5.66351
	C->Y (FR)	0.04384	0.70989	10.27760
	D->Y (FR)	0.04960	0.71780	10.30750
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.04856	0.32954	4.88698
	B_N->Y (RR)	0.05498	0.31643	4.44916
	C->Y (FR)	0.03543	0.59722	9.74564
	D->Y (FR)	0.04126	0.60900	9.84065
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.05905	0.27940	3.85475
	B_N->Y (RR)	0.06929	0.29742	4.01043
	C->Y (FR)	0.03467	0.51708	8.81975
	D->Y (FR)	0.03988	0.52968	8.91657

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)	0.06621	0.58209	7.38732
	B_N->Y (FF)	0.07315	0.59200	7.38143
	C->Y (RF)	0.04040	0.48685	7.00298
	D->Y (RF)	0.04417	0.45393	6.45293
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.07626	0.60359	8.76629
	B_N->Y (FF)	0.09136	0.62523	8.77231
	C->Y (RF)	0.04314	0.44043	7.70160
	D->Y (RF)	0.04669	0.41207	7.16816
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.07823	0.51640	7.72913
	B_N->Y (FF)	0.08916	0.52965	7.68621
	C->Y (RF)	0.04649	0.35220	6.85828
	D->Y (RF)	0.04937	0.31393	6.15659

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	0.00722	0.01046	0.08196
	A_N	0.00451	0.00776	0.07939
	B_N	0.00783	0.01094	0.08238
	B_N	0.00522	0.00833	0.07997
	C	0.00099	0.00194	0.01331
	C	0.00543	0.00641	0.01796
	D	0.00150	0.00249	0.01437
	D	0.00686	0.00785	0.02002
sky130_fd_sc_hs__nand4bb_2	A_N	0.01014	0.01364	0.08866
	A_N	0.00727	0.01080	0.08637
	B_N	0.01239	0.01556	0.08990
	B_N	0.00962	0.01280	0.08744
	C	0.00154	0.00370	0.02297
	C	0.00961	0.01182	0.03107
	D	0.00293	0.00495	0.02476
	D	0.01313	0.01520	0.03507
sky130_fd_sc_hs__nand4bb_4	A_N	0.01683	0.02153	0.14200
	A_N	0.01317	0.01791	0.13986
	B_N	0.02044	0.02465	0.14717
	B_N	0.01663	0.02087	0.14429
	C	0.00244	0.00629	0.06090
	C	0.01839	0.02222	0.07785
	D	0.00462	0.00823	0.06436
	D	0.02483	0.02846	0.08514

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00583	0.01016	0.08115
	A_N	0.00853	0.01266	0.08385
	B_N	0.00732	0.01142	0.08254
	B_N	0.00993	0.01402	0.08507
	C	0.00878	0.00881	0.01213
	C	0.00433	0.00434	0.00746
	D	0.00991	0.00996	0.01366
	D	0.00446	0.00446	0.00805
sky130_fd_sc_hs__nand4bb_2	A_N	0.01010	0.01420	0.08793
	A_N	0.01296	0.01705	0.09057
	B_N	0.01282	0.01691	0.08989
	B_N	0.01558	0.01967	0.09246
	C	0.01558	0.01568	0.02258
	C	0.00744	0.00747	0.01354
	D	0.01782	0.01782	0.02477
	D	0.00740	0.00740	0.01399
sky130_fd_sc_hs__nand4bb_4	A_N	0.02047	0.02727	0.15092
	A_N	0.02411	0.03091	0.15290
	B_N	0.02504	0.03194	0.15540
	B_N	0.02884	0.03559	0.15753
	C	0.03060	0.03099	0.05165
	C	0.01454	0.01475	0.03554
	D	0.03515	0.03544	0.06121
	D	0.01448	0.01466	0.03855

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)	0.00521	0.00850	0.07934
	(B_N * Y)	0.00182	0.00509	0.07594
	(!B_N * C * !D * Y)	0.00573	0.00900	0.07984
	(!B_N * C * !D * Y)	0.00232	0.00558	0.07643
	(!B_N * !C * Y)	0.00573	0.00900	0.07984
	(!B_N * !C * Y)	0.00233	0.00559	0.07644
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00775	0.01088	0.08463
	(B_N * Y)	0.00406	0.00718	0.08095
	(!B_N * C * !D * Y)	0.00836	0.01147	0.08522
	(!B_N * C * !D * Y)	0.00466	0.00774	0.08151
	(!B_N * !C * Y)	0.00835	0.01146	0.08521
	(!B_N * !C * Y)	0.00467	0.00775	0.08151
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.01262	0.01679	0.13677
	(B_N * Y)	0.00736	0.01152	0.13151
	(!B_N * C * !D * Y)	0.01347	0.01763	0.13765
	(!B_N * C * !D * Y)	0.00812	0.01226	0.13232
	(!B_N * !C * Y)	0.01344	0.01761	0.13763
	(!B_N * !C * Y)	0.00816	0.01230	0.13234

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)	0.00031	0.00443	0.07502
	(B_N * Y)	0.00370	0.00784	0.07842
	(!B_N * C * !D * Y)	-0.00019	0.00394	0.07452
	(!B_N * C * !D * Y)	0.00332	0.00744	0.07801
	(!B_N * !C * Y)	-0.00020	0.00392	0.07451
	(!B_N * !C * Y)	0.00323	0.00736	0.07794
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00108	0.00453	0.07749
	(B_N * Y)	0.00476	0.00823	0.08117
	(!B_N * C * !D * Y)	0.00049	0.00394	0.07687
	(!B_N * C * !D * Y)	0.00438	0.00785	0.08074
	(!B_N * !C * Y)	0.00046	0.00391	0.07687
	(!B_N * !C * Y)	0.00420	0.00767	0.08061
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00234	0.00882	0.12868
	(B_N * Y)	0.00758	0.01410	0.13394
	(!B_N * C * !D * Y)	0.00156	0.00805	0.12790
	(!B_N * C * !D * Y)	0.00729	0.01382	0.13357
	(!B_N * !C * Y)	0.00152	0.00801	0.12790
	(!B_N * !C * Y)	0.00691	0.01343	0.13329

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)	0.00514	0.00810	0.07862
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00185	0.00479	0.07533
	(!C * Y)	0.00523	0.00842	0.07903
	(!C * Y)	0.00182	0.00500	0.07562
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00748	0.01012	0.08315
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00389	0.00652	0.07956
	(!C * Y)	0.00763	0.01062	0.08380
	(!C * Y)	0.00383	0.00680	0.08000
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01242	0.01570	0.13435
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00703	0.01028	0.12895
	(!C * Y)	0.01294	0.01693	0.13607
	(!C * Y)	0.00710	0.01106	0.13021

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)	0.00119	0.00537	0.07566
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00448	0.00868	0.07896
	(!C * Y)	0.00053	0.00473	0.07514
	(!C * Y)	0.00391	0.00813	0.07853
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00290	0.00627	0.07846
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00649	0.00987	0.08204
	(!C * Y)	0.00161	0.00502	0.07757
	(!C * Y)	0.00538	0.00879	0.08133
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00545	0.01164	0.13111
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.01083	0.01702	0.13651
	(!C * Y)	0.00288	0.00915	0.12904
	(!C * Y)	0.00863	0.01492	0.13481

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)**	0.00163	0.00165	0.00164
	(A_N * B_N * D * Y)	-0.00189	-0.00190	-0.00190
	(A_N * B_N * !D * Y)	0.00103	0.00105	0.00104
	(A_N * B_N * !D * Y)	-0.00190	-0.00193	-0.00191
	(A_N * !B_N * D * Y)	0.00143	0.00143	0.00143
	(A_N * !B_N * D * Y)	-0.00213	-0.00213	-0.00212
	(A_N * !B_N * !D * Y)	0.00075	0.00075	0.00075
	(A_N * !B_N * !D * Y)	-0.00233	-0.00234	-0.00233
	(!A_N * B_N * D * Y)	0.00163	0.00164	0.00163
	(!A_N * B_N * D * Y)	-0.00190	-0.00191	-0.00190
	(!A_N * B_N * !D * Y)	0.00099	0.00100	0.00099
	(!A_N * B_N * !D * Y)	-0.00192	-0.00193	-0.00191
	(!A_N * !B_N * !D * Y)	0.00060	0.00061	0.00061
	(!A_N * !B_N * !D * Y)	-0.00215	-0.00216	-0.00216
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00310	0.00311	0.00310
	(A_N * B_N * D * Y)	-0.00372	-0.00373	-0.00372
	(A_N * B_N * !D * Y)	0.00182	0.00185	0.00182
	(A_N * B_N * !D * Y)	-0.00373	-0.00376	-0.00373
	(A_N * !B_N * D * Y)	0.00304	0.00305	0.00304
	(A_N * !B_N * D * Y)	-0.00381	-0.00381	-0.00380
	(A_N * !B_N * !D * Y)	0.00164	0.00165	0.00164
	(A_N * !B_N * !D * Y)	-0.00423	-0.00425	-0.00423
	(!A_N * B_N * D * Y)	0.00310	0.00311	0.00310
	(!A_N * B_N * D * Y)	-0.00373	-0.00374	-0.00372
	(!A_N * B_N * !D * Y)	0.00173	0.00175	0.00173
	(!A_N * B_N * !D * Y)	-0.00374	-0.00377	-0.00374
	(!A_N * !B_N * !D * Y)	0.00131	0.00132	0.00133
	(!A_N * !B_N * !D * Y)	-0.00385	-0.00387	-0.00387

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00614	0.00622	0.00617
	(A_N * B_N * D * Y)	-0.00725	-0.00730	-0.00727
	(A_N * B_N * !D * Y)	0.00360	0.00365	0.00361
	(A_N * B_N * !D * Y)	-0.00726	-0.00734	-0.00728
	(A_N * !B_N * D * Y)	0.00602	0.00603	0.00602
	(A_N * !B_N * D * Y)	-0.00751	-0.00751	-0.00749
	(A_N * !B_N * !D * Y)	0.00313	0.00315	0.00313
	(A_N * !B_N * !D * Y)	-0.00836	-0.00840	-0.00836
	(!A_N * B_N * D * Y)	0.00613	0.00621	0.00616
	(!A_N * B_N * D * Y)	-0.00726	-0.00732	-0.00728
	(!A_N * B_N * !D * Y)	0.00340	0.00341	0.00340
	(!A_N * B_N * !D * Y)	-0.00732	-0.00732	-0.00730
	(!A_N * !B_N * !D * Y)	0.00252	0.00254	0.00255
	(!A_N * !B_N * !D * Y)	-0.00763	-0.00767	-0.00766

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)**	-0.00159	-0.00163	-0.00162
	(A_N * B_N * D * Y)	0.00191	0.00193	0.00192
	(A_N * B_N * !D * Y)	-0.00103	-0.00105	-0.00104
	(A_N * B_N * !D * Y)	0.00194	0.00195	0.00193
	(A_N * !B_N * D * Y)	-0.00131	-0.00141	-0.00142
	(A_N * !B_N * D * Y)	0.00222	0.00217	0.00213
	(A_N * !B_N * !D * Y)	-0.00075	-0.00075	-0.00075
	(A_N * !B_N * !D * Y)	0.00238	0.00241	0.00240
	(!A_N * B_N * D * Y)	-0.00158	-0.00163	-0.00162
	(!A_N * B_N * D * Y)	0.00193	0.00193	0.00191
	(!A_N * B_N * !D * Y)	-0.00099	-0.00100	-0.00099
	(!A_N * B_N * !D * Y)	0.00199	0.00200	0.00194
	(!A_N * !B_N * !D * Y)	-0.00058	-0.00058	-0.00058
	(!A_N * !B_N * !D * Y)	0.00221	0.00222	0.00219
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00301	-0.00310	-0.00308
	(A_N * B_N * D * Y)	0.00372	0.00377	0.00374
	(A_N * B_N * !D * Y)	-0.00182	-0.00185	-0.00182
	(A_N * B_N * !D * Y)	0.00375	0.00378	0.00375
	(A_N * !B_N * D * Y)	-0.00279	-0.00297	-0.00303
	(A_N * !B_N * D * Y)	0.00402	0.00386	0.00382
	(A_N * !B_N * !D * Y)	-0.00164	-0.00165	-0.00164
	(A_N * !B_N * !D * Y)	0.00426	0.00439	0.00434
	(!A_N * B_N * D * Y)	-0.00299	-0.00310	-0.00309
	(!A_N * B_N * D * Y)	0.00376	0.00377	0.00374
	(!A_N * B_N * !D * Y)	-0.00173	-0.00175	-0.00173
	(!A_N * B_N * !D * Y)	0.00383	0.00385	0.00377
	(!A_N * !B_N * !D * Y)	-0.00124	-0.00126	-0.00126
	(!A_N * !B_N * !D * Y)	0.00393	0.00399	0.00393

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	-0.00599	-0.00618	-0.00615
	(A_N * B_N * D * Y)	0.00729	0.00739	0.00732
	(A_N * B_N * !D * Y)	-0.00360	-0.00365	-0.00361
	(A_N * B_N * !D * Y)	0.00732	0.00740	0.00733
	(A_N * !B_N * D * Y)	-0.00543	-0.00590	-0.00597
	(A_N * !B_N * D * Y)	0.00800	0.00764	0.00754
	(A_N * !B_N * !D * Y)	-0.00313	-0.00315	-0.00313
	(A_N * !B_N * !D * Y)	0.00845	0.00874	0.00860
	(!A_N * B_N * D * Y)	-0.00591	-0.00619	-0.00615
	(!A_N * B_N * D * Y)	0.00740	0.00738	0.00732
	(!A_N * B_N * !D * Y)	-0.00340	-0.00341	-0.00340
	(!A_N * B_N * !D * Y)	0.00755	0.00764	0.00740
	(!A_N * !B_N * !D * Y)	-0.00238	-0.00242	-0.00244
	(!A_N * !B_N * !D * Y)	0.00778	0.00790	0.00777

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)**	0.00144	0.00145	0.00144
	(A_N * B_N * C * Y)	-0.00201	-0.00201	-0.00201
	(A_N * !C * Y)	0.00145	0.00146	0.00146
	(A_N * !C * Y)	-0.00200	-0.00201	-0.00201
	(A_N * !B_N * C * Y)	0.00140	0.00142	0.00141
	(A_N * !B_N * C * Y)	-0.00205	-0.00206	-0.00205
	(!A_N * B_N * C * Y)	0.00142	0.00144	0.00142
	(!A_N * B_N * C * Y)	-0.00202	-0.00202	-0.00201
	(!A_N * B_N * !C * Y)	0.00145	0.00146	0.00145
	(!A_N * B_N * !C * Y)	-0.00201	-0.00202	-0.00201
	(!A_N * !B_N * !C * Y)	0.00144	0.00147	0.00145
	(!A_N * !B_N * !C * Y)	-0.00201	-0.00203	-0.00202

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00302	0.00303	0.00302
	(A_N * B_N * C * Y)	-0.00363	-0.00364	-0.00363
	(A_N * !C * Y)	0.00303	0.00304	0.00303
	(A_N * !C * Y)	-0.00363	-0.00364	-0.00363
	(A_N * !B_N * C * Y)	0.00298	0.00300	0.00298
	(A_N * !B_N * C * Y)	-0.00372	-0.00372	-0.00370
	(!A_N * B_N * C * Y)	0.00302	0.00303	0.00302
	(!A_N * B_N * C * Y)	-0.00364	-0.00364	-0.00363
	(!A_N * B_N * !C * Y)	0.00298	0.00302	0.00300
	(!A_N * B_N * !C * Y)	-0.00361	-0.00364	-0.00363
	(!A_N * !B_N * !C * Y)	0.00303	0.00306	0.00305
	(!A_N * !B_N * !C * Y)	-0.00362	-0.00364	-0.00363
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00597	0.00603	0.00600
	(A_N * B_N * C * Y)	-0.00719	-0.00723	-0.00721
	(A_N * !C * Y)	0.00606	0.00611	0.00609
	(A_N * !C * Y)	-0.00719	-0.00724	-0.00722
	(A_N * !B_N * C * Y)	0.00592	0.00593	0.00591
	(A_N * !B_N * C * Y)	-0.00742	-0.00741	-0.00739
	(!A_N * B_N * C * Y)	0.00597	0.00600	0.00599
	(!A_N * B_N * C * Y)	-0.00721	-0.00723	-0.00722
	(!A_N * B_N * !C * Y)	0.00604	0.00606	0.00607
	(!A_N * B_N * !C * Y)	-0.00720	-0.00722	-0.00722
	(!A_N * !B_N * !C * Y)	0.00604	0.00609	0.00606
	(!A_N * !B_N * !C * Y)	-0.00722	-0.00725	-0.00723

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)**	-0.00134	-0.00144	-0.00143
	(A_N * B_N * C * Y)	0.00203	0.00204	0.00203
	(A_N * !C * Y)	-0.00138	-0.00145	-0.00144
	(A_N * !C * Y)	0.00202	0.00204	0.00203
	(A_N * !B_N * C * Y)	-0.00130	-0.00142	-0.00141
	(A_N * !B_N * C * Y)	0.00210	0.00207	0.00205
	(!A_N * B_N * C * Y)	-0.00135	-0.00144	-0.00142
	(!A_N * B_N * C * Y)	0.00202	0.00204	0.00203
	(!A_N * B_N * !C * Y)	-0.00138	-0.00143	-0.00144
	(!A_N * B_N * !C * Y)	0.00202	0.00203	0.00203
	(!A_N * !B_N * !C * Y)	-0.00138	-0.00144	-0.00145
	(!A_N * !B_N * !C * Y)	0.00202	0.00203	0.00202
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00281	-0.00301	-0.00302
	(A_N * B_N * C * Y)	0.00365	0.00366	0.00364
	(A_N * !C * Y)	-0.00288	-0.00304	-0.00303
	(A_N * !C * Y)	0.00363	0.00367	0.00364
	(A_N * !B_N * C * Y)	-0.00274	-0.00300	-0.00298
	(A_N * !B_N * C * Y)	0.00383	0.00372	0.00370
	(!A_N * B_N * C * Y)	-0.00281	-0.00301	-0.00302
	(!A_N * B_N * C * Y)	0.00365	0.00366	0.00364
	(!A_N * B_N * !C * Y)	-0.00289	-0.00302	-0.00300
	(!A_N * B_N * !C * Y)	0.00363	0.00367	0.00364
	(!A_N * !B_N * !C * Y)	-0.00287	-0.00303	-0.00304
	(!A_N * !B_N * !C * Y)	0.00366	0.00367	0.00364

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00560	-0.00599	-0.00600
	(A_N * B_N * C * Y)	0.00728	0.00730	0.00727
	(A_N * !C * Y)	-0.00574	-0.00605	-0.00604
	(A_N * !C * Y)	0.00724	0.00733	0.00727
	(A_N * !B_N * C * Y)	-0.00547	-0.00593	-0.00591
	(A_N * !B_N * C * Y)	0.00763	0.00742	0.00739
	(!A_N * B_N * C * Y)	-0.00561	-0.00599	-0.00599
	(!A_N * B_N * C * Y)	0.00727	0.00729	0.00726
	(!A_N * B_N * !C * Y)	-0.00575	-0.00606	-0.00604
	(!A_N * B_N * !C * Y)	0.00723	0.00733	0.00726
	(!A_N * !B_N * !C * Y)	-0.00571	-0.00606	-0.00605
	(!A_N * !B_N * !C * Y)	0.00729	0.00732	0.00725

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4b_1	11.18880
sky130_fd_sc_hs__nand4b_2	19.18080
sky130_fd_sc_hs__nand4b_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A_N	B	C	D	Y
sky130_fd_sc_hs__nand4b_1	0.00211	0.00269	0.00269	0.00260	1.36491
sky130_fd_sc_hs__nand4b_2	0.00263	0.00530	0.00514	0.00514	2.34175
sky130_fd_sc_hs__nand4b_4	0.00364	0.00761	0.00776	0.00744	2.65379

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4b_1	0.00000	0.25227	0.47259
sky130_fd_sc_hs__nand4b_2	0.00000	0.08929	0.50553
sky130_fd_sc_hs__nand4b_4	0.00000	0.50472	0.94719

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)	0.04635	0.41135	5.27589
	B->Y (FR)	0.03507	0.71572	10.65730
	C->Y (FR)	0.04106	0.72162	10.65850
	D->Y (FR)	0.04362	0.71377	10.46740
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.04730	0.30188	4.28340
	B->Y (FR)	0.03135	0.58805	9.65897
	C->Y (FR)	0.03732	0.60368	9.84585
	D->Y (FR)	0.04238	0.60892	9.79034
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.05874	0.36063	5.39416
	B->Y (FR)	0.04215	0.61418	10.22810
	C->Y (FR)	0.05345	0.62614	10.24490
	D->Y (FR)	0.06543	0.64800	10.43650

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)	0.06338	0.58708	7.48728
	B->Y (RF)	0.03078	0.52138	7.79708
	C->Y (RF)	0.03529	0.48915	7.24557
	D->Y (RF)	0.03747	0.45696	6.71105
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.07096	0.58520	8.55007
	B->Y (RF)	0.03623	0.49845	8.61628
	C->Y (RF)	0.04049	0.43211	7.55409
	D->Y (RF)	0.04445	0.40435	7.03953
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.05683	0.42868	6.06471
	B->Y (RF)	0.03109	0.34614	6.15957
	C->Y (RF)	0.03625	0.29256	5.20351
	D->Y (RF)	0.03938	0.25540	4.50170

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	0.00693	0.01007	0.08122
	A_N	0.00405	0.00722	0.07836
	B	0.00037	0.00140	0.01234
	B	0.00467	0.00572	0.01693
	C	0.00094	0.00189	0.01291
	C	0.00604	0.00702	0.01830
	D	0.00135	0.00233	0.01367
	D	0.00737	0.00839	0.02000
sky130_fd_sc_hs__nand4b_2	A_N	0.01018	0.01321	0.07641
	A_N	0.00742	0.01047	0.07451
	B	0.00023	0.00267	0.02162
	B	0.00911	0.01155	0.03060
	C	0.00144	0.00359	0.02369
	C	0.01211	0.01432	0.03434
	D	0.00276	0.00413	0.02499
	D	0.01563	0.01706	0.03818
sky130_fd_sc_hs__nand4b_4	A_N	0.01306	0.01803	0.13049
	A_N	0.00907	0.01410	0.12651
	B	0.00011	0.00324	0.03209
	B	0.01275	0.01596	0.04521
	C	0.00213	0.00494	0.03458
	C	0.01905	0.02189	0.05191
	D	0.00438	0.00660	0.03768
	D	0.02521	0.02713	0.05895

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00533	0.00936	0.07376
	A_N	0.00818	0.01223	0.07662
	B	0.00659	0.00666	0.00992
	B	0.00227	0.00235	0.00525
	C	0.00763	0.00768	0.01083
	C	0.00246	0.00250	0.00550
	D	0.00861	0.00866	0.01248
	D	0.00244	0.00246	0.00569
sky130_fd_sc_hs__nand4b_2	A_N	0.00976	0.01380	0.08721
	A_N	0.01252	0.01655	0.08996
	B	0.01326	0.01335	0.01891
	B	0.00433	0.00443	0.00984
	C	0.01537	0.01545	0.02222
	C	0.00451	0.00455	0.01068
	D	0.01768	0.01769	0.02415
	D	0.00445	0.00446	0.01093
sky130_fd_sc_hs__nand4b_4	A_N	0.01500	0.02184	0.14245
	A_N	0.01899	0.02575	0.14640
	B	0.02076	0.02101	0.02907
	B	0.00803	0.00824	0.01634
	C	0.02533	0.02553	0.03544
	C	0.00811	0.00823	0.01734
	D	0.02965	0.02985	0.04047
	D	0.00816	0.00826	0.01847

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)	0.00564	0.00881	0.08012
	(B * C * !D * Y)	0.00209	0.00526	0.07657
	(B * !C * Y)	0.00563	0.00881	0.08008
	(B * !C * Y)	0.00209	0.00528	0.07654
	(!B * Y)	0.00561	0.00879	0.08005
	(!B * Y)	0.00209	0.00527	0.07654
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00839	0.01156	0.08756
	(B * C * !D * Y)	0.00401	0.00716	0.08318
	(B * !C * Y)	0.00838	0.01155	0.08755
	(B * !C * Y)	0.00401	0.00716	0.08318
	(!B * Y)	0.00835	0.01151	0.08748
	(!B * Y)	0.00402	0.00717	0.08314
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.01001	0.01495	0.13686
	(B * C * !D * Y)	0.00390	0.00884	0.13076
	(B * !C * Y)	0.00999	0.01493	0.13685
	(B * !C * Y)	0.00390	0.00884	0.13076
	(!B * Y)	0.00992	0.01485	0.13677
	(!B * Y)	0.00391	0.00885	0.13076

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)	0.00025	0.00447	0.07544
	(B * C * !D * Y)	0.00393	0.00816	0.07909
	(B * !C * Y)	0.00026	0.00447	0.07539
	(B * !C * Y)	0.00388	0.00810	0.07900
	(!B * Y)	0.00028	0.00448	0.07543
	(!B * Y)	0.00379	0.00802	0.07895
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00033	0.00387	0.07921
	(B * C * !D * Y)	0.00496	0.00850	0.08379
	(B * !C * Y)	0.00031	0.00385	0.07921
	(B * !C * Y)	0.00484	0.00841	0.08372
	(!B * Y)	0.00031	0.00386	0.07926
	(!B * Y)	0.00466	0.00823	0.08361
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00098	0.00796	0.12956
	(B * C * !D * Y)	0.00758	0.01461	0.13605
	(B * !C * Y)	0.00094	0.00792	0.12957
	(B * !C * Y)	0.00735	0.01437	0.13591
	(!B * Y)	0.00097	0.00796	0.12968
	(!B * Y)	0.00699	0.01404	0.13569

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)**	0.00168	0.00169	0.00168
	(A_N * C * D * Y)	-0.00182	-0.00182	-0.00182
	(A_N * C * !D * Y)	0.00101	0.00102	0.00101
	(A_N * C * !D * Y)	-0.00182	-0.00183	-0.00182
	(A_N * !C * Y)	0.00102	0.00103	0.00102
	(A_N * !C * Y)	-0.00182	-0.00184	-0.00182
	(!A_N * C * !D * Y)	0.00055	0.00056	0.00057
	(!A_N * C * !D * Y)	-0.00210	-0.00212	-0.00213
	(!A_N * !C * Y)	0.00059	0.00060	0.00059
	(!A_N * !C * Y)	-0.00212	-0.00215	-0.00214
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00308	0.00312	0.00309
	(A_N * C * D * Y)	-0.00387	-0.00390	-0.00387
	(A_N * C * !D * Y)	0.00178	0.00180	0.00179
	(A_N * C * !D * Y)	-0.00389	-0.00391	-0.00390
	(A_N * !C * Y)	0.00182	0.00183	0.00182
	(A_N * !C * Y)	-0.00392	-0.00392	-0.00391
	(!A_N * C * !D * Y)	0.00119	0.00121	0.00121
	(!A_N * C * !D * Y)	-0.00411	-0.00416	-0.00417
	(!A_N * !C * Y)	0.00127	0.00128	0.00127
	(!A_N * !C * Y)	-0.00418	-0.00418	-0.00419
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00589	0.00592	0.00590
	(A_N * C * D * Y)	-0.00403	-0.00404	-0.00403
	(A_N * C * !D * Y)	0.00320	0.00323	0.00321
	(A_N * C * !D * Y)	-0.00407	-0.00410	-0.00408
	(A_N * !C * Y)	0.00326	0.00325	0.00326
	(A_N * !C * Y)	-0.00410	-0.00409	-0.00410
	(!A_N * C * !D * Y)	0.00221	0.00225	0.00225
	(!A_N * C * !D * Y)	-0.00435	-0.00441	-0.00448
	(!A_N * !C * Y)	0.00235	0.00237	0.00237
	(!A_N * !C * Y)	-0.00446	-0.00449	-0.00451

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)	-0.00157	-0.00168	-0.00167
	(A_N * C * D * Y)	0.00192	0.00185	0.00183
	(A_N * C * !D * Y)	-0.00101	-0.00102	-0.00101
	(A_N * C * !D * Y)	0.00186	0.00186	0.00183
	(A_N * !C * Y)	-0.00102	-0.00103	-0.00102
	(A_N * !C * Y)	0.00191	0.00192	0.00185
	(!A_N * C * !D * Y)	-0.00055	-0.00056	-0.00056
	(!A_N * C * !D * Y)	0.00217	0.00218	0.00215
	(!A_N * !C * Y)	-0.00057	-0.00057	-0.00058
	(!A_N * !C * Y)	0.00217	0.00218	0.00215
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00277	-0.00311	-0.00309
	(A_N * C * D * Y)	0.00416	0.00391	0.00388
	(A_N * C * !D * Y)	-0.00178	-0.00180	-0.00179
	(A_N * C * !D * Y)	0.00395	0.00397	0.00391
	(A_N * !C * Y)	-0.00182	-0.00183	-0.00182
	(A_N * !C * Y)	0.00402	0.00407	0.00394
	(!A_N * C * !D * Y)	-0.00118	-0.00119	-0.00120
	(!A_N * C * !D * Y)	0.00426	0.00429	0.00422
	(!A_N * !C * Y)	-0.00120	-0.00122	-0.00124
	(!A_N * !C * Y)	0.00424	0.00430	0.00422

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00519	-0.00592	-0.00590
	(A_N * C * D * Y)	0.00468	0.00408	0.00406
	(A_N * C * !D * Y)	-0.00320	-0.00323	-0.00321
	(A_N * C * !D * Y)	0.00425	0.00415	0.00409
	(A_N * !C * Y)	-0.00326	-0.00325	-0.00326
	(A_N * !C * Y)	0.00437	0.00443	0.00419
	(!A_N * C * !D * Y)	-0.00220	-0.00221	-0.00224
	(!A_N * C * !D * Y)	0.00463	0.00466	0.00455
	(!A_N * !C * Y)	-0.00227	-0.00228	-0.00231
	(!A_N * !C * Y)	0.00464	0.00466	0.00456

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)**	0.00148	0.00148	0.00147
	(A_N * B * D * Y)	-0.00182	-0.00182	-0.00181
	(A_N * B * !D * Y)	0.00079	0.00079	0.00079
	(A_N * B * !D * Y)	-0.00181	-0.00182	-0.00181
	(A_N * !B * D * Y)	0.00148	0.00149	0.00148
	(A_N * !B * D * Y)	-0.00181	-0.00182	-0.00181
	(A_N * !B * !D * Y)	0.00077	0.00078	0.00077
	(A_N * !B * !D * Y)	-0.00181	-0.00182	-0.00181
	(!A_N * B * !D * Y)	0.00057	0.00058	0.00058
	(!A_N * B * !D * Y)	-0.00187	-0.00188	-0.00187
	(!A_N * !B * D * Y)	0.00142	0.00144	0.00142
	(!A_N * !B * D * Y)	-0.00187	-0.00188	-0.00187
	(!A_N * !B * !D * Y)	0.00067	0.00067	0.00067
	(!A_N * !B * !D * Y)	-0.00188	-0.00188	-0.00188

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00299	0.00298	0.00299
	(A_N * B * D * Y)	-0.00371	-0.00370	-0.00370
	(A_N * B * !D * Y)	0.00160	0.00162	0.00160
	(A_N * B * !D * Y)	-0.00372	-0.00374	-0.00373
	(A_N * !B * D * Y)	0.00301	0.00304	0.00301
	(A_N * !B * D * Y)	-0.00369	-0.00372	-0.00370
	(A_N * !B * !D * Y)	0.00162	0.00164	0.00162
	(A_N * !B * !D * Y)	-0.00370	-0.00374	-0.00371
	(!A_N * B * !D * Y)	0.00129	0.00131	0.00131
	(!A_N * B * !D * Y)	-0.00368	-0.00372	-0.00367
	(!A_N * !B * D * Y)	0.00300	0.00302	0.00301
	(!A_N * !B * D * Y)	-0.00370	-0.00371	-0.00370
	(!A_N * !B * !D * Y)	0.00153	0.00152	0.00153
	(!A_N * !B * !D * Y)	-0.00372	-0.00371	-0.00372
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00607	0.00611	0.00607
	(A_N * B * D * Y)	-0.00401	-0.00402	-0.00400
	(A_N * B * !D * Y)	0.00310	0.00313	0.00311
	(A_N * B * !D * Y)	-0.00403	-0.00406	-0.00404
	(A_N * !B * D * Y)	0.00608	0.00612	0.00608
	(A_N * !B * D * Y)	-0.00400	-0.00401	-0.00400
	(A_N * !B * !D * Y)	0.00307	0.00311	0.00307
	(A_N * !B * !D * Y)	-0.00400	-0.00404	-0.00400
	(!A_N * B * !D * Y)	0.00250	0.00252	0.00253
	(!A_N * B * !D * Y)	-0.00398	-0.00399	-0.00395
	(!A_N * !B * D * Y)	0.00607	0.00610	0.00607
	(!A_N * !B * D * Y)	-0.00401	-0.00402	-0.00401
	(!A_N * !B * !D * Y)	0.00290	0.00293	0.00290
	(!A_N * !B * !D * Y)	-0.00402	-0.00406	-0.00402

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	(A_N * B * D * Y)	-0.00135	-0.00146	-0.00147
	(A_N * B * D * Y)	0.00182	0.00183	0.00183
	(A_N * B * !D * Y)	-0.00079	-0.00079	-0.00079
	(A_N * B * !D * Y)	0.00182	0.00184	0.00182
	(A_N * !B * D * Y)	-0.00141	-0.00149	-0.00148
	(A_N * !B * D * Y)	0.00182	0.00184	0.00183
	(A_N * !B * !D * Y)	-0.00077	-0.00078	-0.00077
	(A_N * !B * !D * Y)	0.00183	0.00184	0.00183
	(!A_N * B * !D * Y)	-0.00056	-0.00056	-0.00056
	(!A_N * B * !D * Y)	0.00193	0.00194	0.00190
	(!A_N * !B * D * Y)	-0.00135	-0.00144	-0.00142
	(!A_N * !B * D * Y)	0.00189	0.00189	0.00188
	(!A_N * !B * !D * Y)	-0.00067	-0.00067	-0.00067
	(!A_N * !B * !D * Y)	0.00195	0.00196	0.00190
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00274	-0.00294	-0.00299
	(A_N * B * D * Y)	0.00373	0.00371	0.00371
	(A_N * B * !D * Y)	-0.00160	-0.00162	-0.00160
	(A_N * B * !D * Y)	0.00372	0.00376	0.00374
	(A_N * !B * D * Y)	-0.00285	-0.00302	-0.00301
	(A_N * !B * D * Y)	0.00369	0.00374	0.00371
	(A_N * !B * !D * Y)	-0.00162	-0.00164	-0.00162
	(A_N * !B * !D * Y)	0.00370	0.00375	0.00372
	(!A_N * B * !D * Y)	-0.00122	-0.00124	-0.00125
	(!A_N * B * !D * Y)	0.00377	0.00383	0.00375
	(!A_N * !B * D * Y)	-0.00282	-0.00302	-0.00301
	(!A_N * !B * D * Y)	0.00373	0.00374	0.00371
	(!A_N * !B * !D * Y)	-0.00153	-0.00152	-0.00153
	(!A_N * !B * !D * Y)	0.00378	0.00383	0.00374

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00544	-0.00595	-0.00603
	(A_N * B * D * Y)	0.00408	0.00404	0.00403
	(A_N * B * !D * Y)	-0.00310	-0.00313	-0.00311
	(A_N * B * !D * Y)	0.00405	0.00409	0.00406
	(A_N * !B * D * Y)	-0.00573	-0.00610	-0.00606
	(A_N * !B * D * Y)	0.00401	0.00406	0.00402
	(A_N * !B * !D * Y)	-0.00307	-0.00311	-0.00307
	(A_N * !B * !D * Y)	0.00405	0.00406	0.00403
	(!A_N * B * !D * Y)	-0.00238	-0.00240	-0.00242
	(!A_N * B * !D * Y)	0.00419	0.00422	0.00408
	(!A_N * !B * D * Y)	-0.00563	-0.00610	-0.00606
	(!A_N * !B * D * Y)	0.00412	0.00405	0.00402
	(!A_N * !B * !D * Y)	-0.00290	-0.00293	-0.00290
	(!A_N * !B * !D * Y)	0.00433	0.00434	0.00411

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)	0.00147	0.00148	0.00146
	(A_N * B * C * Y)	-0.00177	-0.00178	-0.00177
	(A_N * !C * Y)	0.00150	0.00150	0.00149
	(A_N * !C * Y)	-0.00177	-0.00178	-0.00177
	(A_N * !B * C * Y)	0.00147	0.00147	0.00146
	(A_N * !B * C * Y)	-0.00177	-0.00177	-0.00177
	(!A_N * B * !C * Y)	0.00142	0.00143	0.00142
	(!A_N * B * !C * Y)	-0.00183	-0.00184	-0.00183
	(!A_N * !B * C * Y)	0.00141	0.00141	0.00141
	(!A_N * !B * C * Y)	-0.00183	-0.00184	-0.00183
	(!A_N * !B * !C * Y)	0.00145	0.00146	0.00145
	(!A_N * !B * !C * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00301	0.00303	0.00301
	(A_N * B * C * Y)	-0.00368	-0.00369	-0.00367
	(A_N * !C * Y)	0.00300	0.00301	0.00301
	(A_N * !C * Y)	-0.00366	-0.00367	-0.00367
	(A_N * !B * C * Y)	0.00301	0.00305	0.00302
	(A_N * !B * C * Y)	-0.00366	-0.00369	-0.00367
	(!A_N * B * !C * Y)	0.00299	0.00303	0.00301
	(!A_N * B * !C * Y)	-0.00366	-0.00369	-0.00367
	(!A_N * !B * C * Y)	0.00300	0.00304	0.00302
	(!A_N * !B * C * Y)	-0.00366	-0.00368	-0.00367
	(!A_N * !B * !C * Y)	0.00300	0.00303	0.00301
	(!A_N * !B * !C * Y)	-0.00366	-0.00369	-0.00367
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00578	0.00581	0.00581
	(A_N * B * C * Y)	-0.00365	-0.00366	-0.00366
	(A_N * !C * Y)	0.00596	0.00603	0.00600
	(A_N * !C * Y)	-0.00364	-0.00367	-0.00366
	(A_N * !B * C * Y)	0.00580	0.00583	0.00581
	(A_N * !B * C * Y)	-0.00366	-0.00366	-0.00366
	(!A_N * B * !C * Y)	0.00595	0.00601	0.00599
	(!A_N * B * !C * Y)	-0.00365	-0.00367	-0.00366
	(!A_N * !B * C * Y)	0.00577	0.00582	0.00580
	(!A_N * !B * C * Y)	-0.00366	-0.00367	-0.00367
	(!A_N * !B * !C * Y)	0.00595	0.00602	0.00599
	(!A_N * !B * !C * Y)	-0.00365	-0.00367	-0.00366

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)**	-0.00135	-0.00148	-0.00146
	(A_N * B * C * Y)	0.00177	0.00180	0.00178
	(A_N * !C * Y)	-0.00144	-0.00148	-0.00149
	(A_N * !C * Y)	0.00178	0.00179	0.00178
	(A_N * !B * C * Y)	-0.00137	-0.00147	-0.00146
	(A_N * !B * C * Y)	0.00178	0.00180	0.00178
	(!A_N * B * !C * Y)	-0.00138	-0.00143	-0.00142
	(!A_N * B * !C * Y)	0.00184	0.00185	0.00184
	(!A_N * !B * C * Y)	-0.00131	-0.00141	-0.00141
	(!A_N * !B * C * Y)	0.00183	0.00185	0.00184
	(!A_N * !B * !C * Y)	-0.00138	-0.00143	-0.00144
	(!A_N * !B * !C * Y)	0.00184	0.00185	0.00184
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00272	-0.00298	-0.00301
	(A_N * B * C * Y)	0.00369	0.00370	0.00368
	(A_N * !C * Y)	-0.00287	-0.00301	-0.00301
	(A_N * !C * Y)	0.00367	0.00371	0.00368
	(A_N * !B * C * Y)	-0.00274	-0.00298	-0.00301
	(A_N * !B * C * Y)	0.00369	0.00372	0.00368
	(!A_N * B * !C * Y)	-0.00286	-0.00303	-0.00301
	(!A_N * B * !C * Y)	0.00367	0.00371	0.00368
	(!A_N * !B * C * Y)	-0.00274	-0.00298	-0.00301
	(!A_N * !B * C * Y)	0.00369	0.00372	0.00368
	(!A_N * !B * !C * Y)	-0.00288	-0.00303	-0.00301
	(!A_N * !B * !C * Y)	0.00367	0.00371	0.00368

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00537	-0.00579	-0.00581
	(A_N * B * C * Y)	0.00368	0.00368	0.00369
	(A_N * !C * Y)	-0.00570	-0.00600	-0.00600
	(A_N * !C * Y)	0.00368	0.00372	0.00368
	(A_N * !B * C * Y)	-0.00539	-0.00581	-0.00581
	(A_N * !B * C * Y)	0.00367	0.00371	0.00368
	(!A_N * B * !C * Y)	-0.00568	-0.00601	-0.00599
	(!A_N * B * !C * Y)	0.00368	0.00371	0.00368
	(!A_N * !B * C * Y)	-0.00539	-0.00582	-0.00580
	(!A_N * !B * C * Y)	0.00367	0.00370	0.00368
	(!A_N * !B * !C * Y)	-0.00571	-0.00601	-0.00599
	(!A_N * !B * !C * Y)	0.00368	0.00371	0.00368

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nand4_1	9.59040
sky130_fd_sc_hs__nand4_2	15.98400
sky130_fd_sc_hs__nand4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nand4_1	0.00262	0.00277	0.00273	0.00273	1.36064
sky130_fd_sc_hs__nand4_2	0.00511	0.00516	0.00521	0.00505	2.35121
sky130_fd_sc_hs__nand4_4	0.00775	0.00755	0.00756	0.00776	2.53397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand4_1	0.00000	0.01602	0.25175
sky130_fd_sc_hs__nand4_2	0.00000	0.03205	0.50351
sky130_fd_sc_hs__nand4_4	0.00000	0.03263	0.50351

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)	0.02911	0.69426	10.39740
	B->Y (FR)	0.03729	0.71687	10.64830
	C->Y (FR)	0.04287	0.72334	10.65670
	D->Y (FR)	0.04571	0.71485	10.44860
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.02471	0.58886	9.82097
	B->Y (FR)	0.03203	0.59055	9.72149
	C->Y (FR)	0.03739	0.59865	9.76514
	D->Y (FR)	0.04261	0.61001	9.85624
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03049	0.59606	9.96607
	B->Y (FR)	0.04484	0.60591	9.93976
	C->Y (FR)	0.05875	0.63530	10.26460
	D->Y (FR)	0.06976	0.64898	10.30190

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.02440	0.52315	7.88623
	B->Y (RF)	0.03090	0.51182	7.62900
	C->Y (RF)	0.03474	0.47729	7.05668
	D->Y (RF)	0.03730	0.44501	6.51103
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.02421	0.51089	8.95482
	B->Y (RF)	0.03391	0.50095	8.69586
	C->Y (RF)	0.03853	0.43583	7.65003
	D->Y (RF)	0.04200	0.40618	7.10806
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.01906	0.35524	6.39545
	B->Y (RF)	0.02843	0.33807	5.93375
	C->Y (RF)	0.03364	0.28482	4.97140
	D->Y (RF)	0.03676	0.24652	4.26949

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00030	0.00077	0.01171
	A	0.00451	0.00559	0.01682
	B	0.00040	0.00136	0.01221
	B	0.00622	0.00720	0.01830
	C	0.00100	0.00192	0.01317
	C	0.00774	0.00868	0.02019
	D	0.00137	0.00230	0.01391
	D	0.00915	0.01012	0.02199
sky130_fd_sc_hs__nand4_2	A	-0.00144	0.00140	0.01997
	A	0.00745	0.01028	0.02883
	B	0.00046	0.00268	0.02212
	B	0.01154	0.01374	0.03337
	C	0.00136	0.00353	0.02346
	C	0.01465	0.01686	0.03673
	D	0.00277	0.00478	0.02500
	D	0.01809	0.02015	0.04026
sky130_fd_sc_hs__nand4_4	A	-0.00286	0.00060	0.03124
	A	0.01036	0.01387	0.04471
	B	0.00039	0.00340	0.03446
	B	0.01778	0.02080	0.05177
	C	0.00238	0.00528	0.03640
	C	0.02392	0.02682	0.05830
	D	0.00464	0.00726	0.03980
	D	0.03072	0.03302	0.06625

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00586	0.00610	0.01041
	A	0.00107	0.00128	0.00522
	B	0.00699	0.00706	0.01010
	B	0.00115	0.00120	0.00412
	C	0.00799	0.00805	0.01135
	C	0.00115	0.00118	0.00437
	D	0.00908	0.00914	0.01332
	D	0.00111	0.00113	0.00455
sky130_fd_sc_hs__nand4_2	A	0.01067	0.01108	0.01812
	A	0.00179	0.00221	0.00922
	B	0.01302	0.01311	0.01861
	B	0.00184	0.00192	0.00724
	C	0.01540	0.01546	0.02242
	C	0.00183	0.00187	0.00797
	D	0.01754	0.01755	0.02413
	D	0.00178	0.00179	0.00838
sky130_fd_sc_hs__nand4_4	A	0.01662	0.01758	0.02799
	A	0.00347	0.00430	0.01482
	B	0.02113	0.02132	0.03034
	B	0.00357	0.00376	0.01206
	C	0.02562	0.02581	0.03547
	C	0.00362	0.00372	0.01300
	D	0.03027	0.03043	0.04139
	D	0.00338	0.00346	0.01381

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)	0.00055	0.00055	0.00051
	(B * C * !D * Y)	-0.00205	-0.00206	-0.00214
	(B * !C * Y)	0.00055	0.00055	0.00052
	(B * !C * Y)	-0.00209	-0.00211	-0.00215
	(!B * Y)	0.00056	0.00055	0.00054
	(!B * Y)	-0.00213	-0.00213	-0.00215
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00098	0.00099	0.00089
	(B * C * !D * Y)	-0.00405	-0.00408	-0.00429
	(B * !C * Y)	0.00094	0.00094	0.00088
	(B * !C * Y)	-0.00415	-0.00418	-0.00431
	(!B * Y)	0.00099	0.00100	0.00096
	(!B * Y)	-0.00423	-0.00427	-0.00433
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00192	0.00192	0.00174
	(B * C * !D * Y)	-0.00478	-0.00481	-0.00521
	(B * !C * Y)	0.00185	0.00184	0.00173
	(B * !C * Y)	-0.00498	-0.00499	-0.00525
	(!B * Y)	0.00193	0.00193	0.00186
	(!B * Y)	-0.00515	-0.00516	-0.00528

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)	-0.00052	-0.00052	-0.00051
	(B * C * !D * Y)	0.00216	0.00218	0.00216
	(B * !C * Y)	-0.00053	-0.00053	-0.00052
	(B * !C * Y)	0.00216	0.00218	0.00216
	(!B * Y)	-0.00053	-0.00053	-0.00053
	(!B * Y)	0.00216	0.00217	0.00216
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00090	-0.00091	-0.00089
	(B * C * !D * Y)	0.00433	0.00437	0.00433
	(B * !C * Y)	-0.00091	-0.00091	-0.00088
	(B * !C * Y)	0.00433	0.00437	0.00433
	(!B * Y)	-0.00093	-0.00094	-0.00094
	(!B * Y)	0.00432	0.00437	0.00434
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00175	-0.00178	-0.00174
	(B * C * !D * Y)	0.00524	0.00533	0.00527
	(B * !C * Y)	-0.00175	-0.00178	-0.00173
	(B * !C * Y)	0.00524	0.00533	0.00527
	(!B * Y)	-0.00181	-0.00185	-0.00182
	(!B * Y)	0.00524	0.00537	0.00528

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)**	0.00058	0.00058	0.00058
	(A * C * !D * Y)	-0.00193	-0.00194	-0.00192
	(A * !C * Y)	0.00061	0.00062	0.00061
	(A * !C * Y)	-0.00193	-0.00195	-0.00193
	(!A * C * D * Y)	0.00144	0.00144	0.00144
	(!A * C * D * Y)	-0.00193	-0.00193	-0.00193
	(!A * C * !D * Y)	0.00072	0.00072	0.00072
	(!A * C * !D * Y)	-0.00194	-0.00195	-0.00194
	(!A * !C * Y)	0.00072	0.00073	0.00072
	(!A * !C * Y)	-0.00193	-0.00196	-0.00194
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00121	0.00123	0.00125
	(A * C * !D * Y)	-0.00366	-0.00370	-0.00367
	(A * !C * Y)	0.00123	0.00124	0.00126
	(A * !C * Y)	-0.00367	-0.00369	-0.00367
	(!A * C * D * Y)	0.00299	0.00302	0.00301
	(!A * C * D * Y)	-0.00366	-0.00369	-0.00368
	(!A * C * !D * Y)	0.00154	0.00155	0.00154
	(!A * C * !D * Y)	-0.00370	-0.00371	-0.00369
	(!A * !C * Y)	0.00146	0.00147	0.00146
	(!A * !C * Y)	-0.00371	-0.00371	-0.00370
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00231	0.00235	0.00237
	(A * C * !D * Y)	-0.00383	-0.00389	-0.00385
	(A * !C * Y)	0.00240	0.00240	0.00241
	(A * !C * Y)	-0.00387	-0.00388	-0.00386
	(!A * C * D * Y)	0.00599	0.00605	0.00601
	(!A * C * D * Y)	-0.00386	-0.00388	-0.00386
	(!A * C * !D * Y)	0.00291	0.00294	0.00292
	(!A * C * !D * Y)	-0.00389	-0.00392	-0.00389
	(!A * !C * Y)	0.00277	0.00278	0.00278
	(!A * !C * Y)	-0.00389	-0.00390	-0.00391

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	-0.00058
	(A * C * !D * Y)	0.00197	0.00198	0.00194
	(A * !C * Y)	-0.00059	-0.00059	-0.00060
	(A * !C * Y)	0.00197	0.00198	0.00194
	(!A * C * D * Y)	-0.00132	-0.00144	-0.00144
	(!A * C * D * Y)	0.00202	0.00195	0.00193
	(!A * C * !D * Y)	-0.00072	-0.00072	-0.00072
	(!A * C * !D * Y)	0.00197	0.00197	0.00194
	(!A * !C * Y)	-0.00072	-0.00073	-0.00072
	(!A * !C * Y)	0.00202	0.00203	0.00196
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00116	-0.00117	-0.00119
	(A * C * !D * Y)	0.00375	0.00381	0.00371
	(A * !C * Y)	-0.00118	-0.00120	-0.00122
	(A * !C * Y)	0.00375	0.00380	0.00371
	(!A * C * D * Y)	-0.00262	-0.00302	-0.00301
	(!A * C * D * Y)	0.00397	0.00370	0.00369
	(!A * C * !D * Y)	-0.00154	-0.00155	-0.00154
	(!A * C * !D * Y)	0.00375	0.00373	0.00370
	(!A * !C * Y)	-0.00146	-0.00147	-0.00146
	(!A * !C * Y)	0.00383	0.00387	0.00374

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00225	-0.00227	-0.00230
	(A * C * !D * Y)	0.00402	0.00405	0.00391
	(A * !C * Y)	-0.00230	-0.00231	-0.00235
	(A * !C * Y)	0.00402	0.00405	0.00391
	(!A * C * D * Y)	-0.00511	-0.00603	-0.00597
	(!A * C * D * Y)	0.00452	0.00389	0.00388
	(!A * C * !D * Y)	-0.00291	-0.00294	-0.00292
	(!A * C * !D * Y)	0.00408	0.00395	0.00389
	(!A * !C * Y)	-0.00277	-0.00278	-0.00278
	(!A * !C * Y)	0.00421	0.00423	0.00399

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)**	0.00059	0.00059	0.00059
	(A * B * !D * Y)	-0.00189	-0.00190	-0.00189
	(A * !B * D * Y)	0.00142	0.00144	0.00143
	(A * !B * D * Y)	-0.00189	-0.00191	-0.00189
	(A * !B * !D * Y)	0.00068	0.00068	0.00068
	(A * !B * !D * Y)	-0.00190	-0.00190	-0.00190
	(!A * B * D * Y)	0.00140	0.00141	0.00140
	(!A * B * D * Y)	-0.00189	-0.00189	-0.00189
	(!A * B * !D * Y)	0.00069	0.00069	0.00069
	(!A * B * !D * Y)	-0.00190	-0.00191	-0.00190
	(!A * !B * D * Y)	0.00142	0.00143	0.00143
	(!A * !B * D * Y)	-0.00189	-0.00190	-0.00189
	(!A * !B * !D * Y)	0.00072	0.00072	0.00072
	(!A * !B * !D * Y)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00129	0.00131	0.00129
	(A * B * !D * Y)	-0.00361	-0.00365	-0.00360
	(A * !B * D * Y)	0.00302	0.00305	0.00303
	(A * !B * D * Y)	-0.00366	-0.00368	-0.00367
	(A * !B * !D * Y)	0.00150	0.00151	0.00150
	(A * !B * !D * Y)	-0.00368	-0.00369	-0.00367
	(!A * B * D * Y)	0.00302	0.00304	0.00301
	(!A * B * D * Y)	-0.00368	-0.00369	-0.00367
	(!A * B * !D * Y)	0.00154	0.00155	0.00154
	(!A * B * !D * Y)	-0.00368	-0.00370	-0.00369
	(!A * !B * D * Y)	0.00301	0.00305	0.00302
	(!A * !B * D * Y)	-0.00366	-0.00369	-0.00367
	(!A * !B * !D * Y)	0.00158	0.00159	0.00158
	(!A * !B * !D * Y)	-0.00367	-0.00369	-0.00367
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00239	0.00242	0.00240
	(A * B * !D * Y)	-0.00370	-0.00373	-0.00367
	(A * !B * D * Y)	0.00584	0.00590	0.00587
	(A * !B * D * Y)	-0.00379	-0.00382	-0.00381
	(A * !B * !D * Y)	0.00277	0.00280	0.00278
	(A * !B * !D * Y)	-0.00380	-0.00383	-0.00381
	(!A * B * D * Y)	0.00580	0.00584	0.00580
	(!A * B * D * Y)	-0.00382	-0.00382	-0.00381
	(!A * B * !D * Y)	0.00281	0.00283	0.00282
	(!A * B * !D * Y)	-0.00382	-0.00384	-0.00383
	(!A * !B * D * Y)	0.00584	0.00590	0.00587
	(!A * !B * D * Y)	-0.00379	-0.00382	-0.00381
	(!A * !B * !D * Y)	0.00294	0.00294	0.00293
	(!A * !B * !D * Y)	-0.00382	-0.00382	-0.00381

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)	-0.00056	-0.00057	-0.00057
	(A * B * !D * Y)	0.00194	0.00195	0.00192
	(A * !B * D * Y)	-0.00136	-0.00144	-0.00143
	(A * !B * D * Y)	0.00189	0.00191	0.00190
	(A * !B * !D * Y)	-0.00068	-0.00068	-0.00068
	(A * !B * !D * Y)	0.00196	0.00197	0.00193
	(!A * B * D * Y)	-0.00128	-0.00141	-0.00140
	(!A * B * D * Y)	0.00189	0.00190	0.00190
	(!A * B * !D * Y)	-0.00069	-0.00069	-0.00069
	(!A * B * !D * Y)	0.00190	0.00192	0.00190
	(!A * !B * D * Y)	-0.00136	-0.00143	-0.00143
	(!A * !B * D * Y)	0.00189	0.00191	0.00190
	(!A * !B * !D * Y)	-0.00072	-0.00072	-0.00072
	(!A * !B * !D * Y)	0.00191	0.00192	0.00191
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00119	-0.00121	-0.00122
	(A * B * !D * Y)	0.00376	0.00382	0.00372
	(A * !B * D * Y)	-0.00283	-0.00303	-0.00302
	(A * !B * D * Y)	0.00367	0.00372	0.00368
	(A * !B * !D * Y)	-0.00150	-0.00151	-0.00150
	(A * !B * !D * Y)	0.00377	0.00380	0.00370
	(!A * B * D * Y)	-0.00267	-0.00294	-0.00300
	(!A * B * D * Y)	0.00370	0.00370	0.00368
	(!A * B * !D * Y)	-0.00154	-0.00155	-0.00154
	(!A * B * !D * Y)	0.00368	0.00372	0.00369
	(!A * !B * D * Y)	-0.00285	-0.00303	-0.00302
	(!A * !B * D * Y)	0.00367	0.00372	0.00368
	(!A * !B * !D * Y)	-0.00158	-0.00159	-0.00158
	(!A * !B * !D * Y)	0.00367	0.00372	0.00368

sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	-0.00224	-0.00226	-0.00227
	(A * B * !D * Y)	0.00399	0.00402	0.00388
	(A * !B * D * Y)	-0.00541	-0.00583	-0.00586
	(A * !B * D * Y)	0.00380	0.00384	0.00382
	(A * !B * !D * Y)	-0.00277	-0.00280	-0.00278
	(A * !B * !D * Y)	0.00410	0.00408	0.00388
	(!A * B * D * Y)	-0.00507	-0.00570	-0.00580
	(!A * B * D * Y)	0.00387	0.00383	0.00382
	(!A * B * !D * Y)	-0.00281	-0.00283	-0.00282
	(!A * B * !D * Y)	0.00382	0.00386	0.00383
	(!A * !B * D * Y)	-0.00547	-0.00584	-0.00586
	(!A * !B * D * Y)	0.00380	0.00384	0.00382
	(!A * !B * !D * Y)	-0.00294	-0.00294	-0.00293
	(!A * !B * !D * Y)	0.00384	0.00385	0.00382

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)**	0.00144	0.00144	0.00143
	(A * B * !C * Y)	-0.00198	-0.00198	-0.00197
	(A * !B * C * Y)	0.00141	0.00141	0.00141
	(A * !B * C * Y)	-0.00197	-0.00198	-0.00197
	(A * !B * !C * Y)	0.00144	0.00144	0.00143
	(A * !B * !C * Y)	-0.00198	-0.00198	-0.00197
	(!A * B * C * Y)	0.00140	0.00141	0.00140
	(!A * B * C * Y)	-0.00197	-0.00198	-0.00197
	(!A * !C * Y)	0.00144	0.00144	0.00143
	(!A * !C * Y)	-0.00198	-0.00198	-0.00197
	(!A * !B * C * Y)	0.00141	0.00141	0.00140
	(!A * !B * C * Y)	-0.00197	-0.00198	-0.00197

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00305	0.00309	0.00307
	(A * B * !C * Y)	-0.00361	-0.00363	-0.00362
	(A * !B * C * Y)	0.00298	0.00299	0.00298
	(A * !B * C * Y)	-0.00363	-0.00363	-0.00362
	(A * !B * !C * Y)	0.00304	0.00305	0.00304
	(A * !B * !C * Y)	-0.00362	-0.00363	-0.00362
	(!A * B * C * Y)	0.00299	0.00301	0.00299
	(!A * B * C * Y)	-0.00363	-0.00364	-0.00362
	(!A * !C * Y)	0.00305	0.00308	0.00306
	(!A * !C * Y)	-0.00361	-0.00363	-0.00362
	(!A * !B * C * Y)	0.00298	0.00299	0.00298
	(!A * !B * C * Y)	-0.00363	-0.00363	-0.00362
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00605	0.00610	0.00607
	(A * B * !C * Y)	-0.00388	-0.00390	-0.00389
	(A * !B * C * Y)	0.00605	0.00606	0.00604
	(A * !B * C * Y)	-0.00390	-0.00390	-0.00389
	(A * !B * !C * Y)	0.00605	0.00613	0.00607
	(A * !B * !C * Y)	-0.00388	-0.00391	-0.00389
	(!A * B * C * Y)	0.00584	0.00586	0.00584
	(!A * B * C * Y)	-0.00390	-0.00390	-0.00389
	(!A * !C * Y)	0.00605	0.00613	0.00607
	(!A * !C * Y)	-0.00388	-0.00391	-0.00389
	(!A * !B * C * Y)	0.00600	0.00609	0.00604
	(!A * !B * C * Y)	-0.00387	-0.00391	-0.00389

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)**	-0.00138	-0.00144	-0.00143
	(A * B * !C * Y)	0.00198	0.00199	0.00198
	(A * !B * C * Y)	-0.00133	-0.00141	-0.00141
	(A * !B * C * Y)	0.00197	0.00199	0.00198
	(A * !B * !C * Y)	-0.00139	-0.00144	-0.00143
	(A * !B * !C * Y)	0.00198	0.00199	0.00198
	(!A * B * C * Y)	-0.00129	-0.00141	-0.00140
	(!A * B * C * Y)	0.00197	0.00199	0.00198
	(!A * !C * Y)	-0.00139	-0.00144	-0.00143
	(!A * !C * Y)	0.00198	0.00199	0.00198
	(!A * !B * C * Y)	-0.00133	-0.00141	-0.00140
	(!A * !B * C * Y)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00288	-0.00305	-0.00305
	(A * B * !C * Y)	0.00362	0.00366	0.00363
	(A * !B * C * Y)	-0.00274	-0.00298	-0.00298
	(A * !B * C * Y)	0.00364	0.00365	0.00363
	(A * !B * !C * Y)	-0.00290	-0.00305	-0.00304
	(A * !B * !C * Y)	0.00362	0.00366	0.00363
	(!A * B * C * Y)	-0.00269	-0.00299	-0.00299
	(!A * B * C * Y)	0.00364	0.00365	0.00363
	(!A * !C * Y)	-0.00290	-0.00305	-0.00305
	(!A * !C * Y)	0.00362	0.00366	0.00363
	(!A * !B * C * Y)	-0.00274	-0.00298	-0.00298
	(!A * !B * C * Y)	0.00364	0.00365	0.00363

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00577	-0.00610	-0.00607
	(A * B * !C * Y)	0.00388	0.00393	0.00390
	(A * !B * C * Y)	-0.00551	-0.00601	-0.00604
	(A * !B * C * Y)	0.00391	0.00391	0.00390
	(A * !B * !C * Y)	-0.00582	-0.00613	-0.00607
	(A * !B * !C * Y)	0.00388	0.00393	0.00390
	(!A * B * C * Y)	-0.00541	-0.00586	-0.00584
	(!A * B * C * Y)	0.00391	0.00392	0.00390
	(!A * !C * Y)	-0.00582	-0.00613	-0.00607
	(!A * !C * Y)	0.00388	0.00393	0.00390
	(!A * !B * C * Y)	-0.00551	-0.00600	-0.00604
	(!A * !B * C * Y)	0.00391	0.00392	0.00390

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	Y
x	0	0
0	1	1
1	1	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2b_1	7.99200
sky130_fd_sc_hs__nor2b_2	11.18880
sky130_fd_sc_hs__nor2b_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	Y
sky130_fd_sc_hs__nor2b_1	0.00262	0.00216	0.75245
sky130_fd_sc_hs__nor2b_2	0.00516	0.00248	1.29657
sky130_fd_sc_hs__nor2b_4	0.00846	0.00354	2.55285

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.25898	0.49526
sky130_fd_sc_hs__nor2b_2	0.00000	0.10272	0.15980
sky130_fd_sc_hs__nor2b_4	0.00000	0.56204	1.03785

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)	0.04976	0.83451	10.65400
	B_N->Y (RR)	0.05674	0.56289	5.81621
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.04876	0.71757	10.40150
	B_N->Y (RR)	0.05118	0.44620	5.53071
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.03795	0.59935	10.22120
	B_N->Y (RR)	0.05105	0.38163	5.93863

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01399	0.24749	3.00621
	B_N->Y (FF)	0.04913	0.35113	3.53806
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01267	0.19064	2.73659
	B_N->Y (FF)	0.05322	0.34350	3.30615
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.01828	0.27882	4.88259
	B_N->Y (FF)	0.05596	0.36968	4.41204

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00071	0.00091	0.00950
	A	0.00468	0.00488	0.01360
	B_N	0.00691	0.00987	0.07578
	B_N	0.00363	0.00658	0.07256
sky130_fd_sc_hs__nor2b_2	A	0.00148	0.00195	0.02006
	A	0.00947	0.00997	0.02818
	B_N	0.00983	0.01313	0.09071
	B_N	0.00664	0.00995	0.08774
sky130_fd_sc_hs__nor2b_4	A	0.00278	0.00348	0.02239
	A	0.01573	0.01642	0.03559
	B_N	0.01487	0.01945	0.13725
	B_N	0.01018	0.01478	0.13266

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00471	0.00507	0.01238
	A	0.00076	0.00106	0.00833
	B_N	0.00359	0.00794	0.07774
	B_N	0.00686	0.01121	0.08101
sky130_fd_sc_hs__nor2b_2	A	0.00921	0.01001	0.02526
	A	0.00129	0.00205	0.01722
	B_N	0.00655	0.01098	0.07635
	B_N	0.00973	0.01415	0.07949
sky130_fd_sc_hs__nor2b_4	A	0.01429	0.01499	0.03285
	A	0.00139	0.00201	0.01960
	B_N	0.00934	0.01661	0.13876
	B_N	0.01404	0.02125	0.14174

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00177	0.00157	0.00156
	(!B_N * !Y)	-0.00183	-0.00204	-0.00205
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00364	0.00321	0.00318
	(!B_N * !Y)	-0.00322	-0.00371	-0.00373
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00476	0.00392	0.00387
	(!B_N * !Y)	-0.00652	-0.00742	-0.00746

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00154	-0.00155	-0.00155
	(!B_N * !Y)	0.00203	0.00206	0.00205
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00316	-0.00316	-0.00317
	(!B_N * !Y)	0.00371	0.00371	0.00373
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00385	-0.00387	-0.00386
	(!B_N * !Y)	0.00742	0.00749	0.00747

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00432	0.00749	0.07921
	(A * !Y)	0.00074	0.00390	0.07562
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00555	0.00868	0.08542
	(A * !Y)	0.00154	0.00466	0.08142
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00851	0.01303	0.13517
	(A * !Y)	0.00256	0.00706	0.12923

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00128	0.00571	0.07711
	(A * !Y)	0.00487	0.00928	0.08070
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00293	0.00691	0.08319
	(A * !Y)	0.00692	0.01090	0.08719
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00342	0.01039	0.13286
	(A * !Y)	0.00934	0.01633	0.13877

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
x	1	0
1	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor2_1	4.79520
sky130_fd_sc_hs__nor2_2	7.99200
sky130_fd_sc_hs__nor2_4	14.38560
sky130_fd_sc_hs__nor2_8	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__nor2_1	0.00263	0.00270	0.74071
sky130_fd_sc_hs__nor2_2	0.00414	0.00393	1.30007
sky130_fd_sc_hs__nor2_4	0.00788	0.00784	2.44204
sky130_fd_sc_hs__nor2_8	0.01535	0.01545	4.40426

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.02274	0.06294
sky130_fd_sc_hs__nor2_2	0.00000	0.04497	0.12588
sky130_fd_sc_hs__nor2_4	0.00000	0.08995	0.25175
sky130_fd_sc_hs__nor2_8	0.00000	0.17989	0.50351

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)	0.04858	0.82896	10.54970
	B->Y (FR)	0.03855	0.82386	10.63020
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.04007	0.70981	10.39400
	B->Y (FR)	0.02485	0.70039	10.46720
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.03942	0.61000	10.29110
	B->Y (FR)	0.02409	0.61234	10.49270
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.03986	0.52635	10.09440
	B->Y (FR)	0.02957	0.55316	10.53910

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01425	0.24528	2.95986
	B->Y (RF)	0.01263	0.23952	2.94494
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.01830	0.32608	4.72724
	B->Y (RF)	0.01406	0.31632	4.71946
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.01769	0.26632	4.58524
	B->Y (RF)	0.01337	0.24892	4.50653
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.01675	0.20826	4.30339
	B->Y (RF)	0.01949	0.20196	4.28566

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00064	-0.00043	0.00830
	A	0.00464	0.00485	0.01370
	B	-0.00081	0.00030	0.01807
	B	0.00359	0.00469	0.02258
sky130_fd_sc_hs__nor2_2	A	-0.00110	-0.00084	0.00951
	A	0.00763	0.00790	0.01829
	B	-0.00093	0.00081	0.02291
	B	0.00536	0.00713	0.02941
sky130_fd_sc_hs__nor2_4	A	-0.00042	0.00017	0.02084
	A	0.01646	0.01708	0.03787
	B	-0.00102	0.00282	0.04582
	B	0.01171	0.01562	0.05894
sky130_fd_sc_hs__nor2_8	A	-0.00147	0.00020	0.04236
	A	0.03162	0.03328	0.07571
	B	-0.00284	0.00584	0.09266
	B	0.02239	0.03116	0.11852

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00594	0.00628	0.01373
	A	0.00068	0.00098	0.00840
	B	0.00428	0.00476	0.01178
	B	-0.00011	0.00032	0.00733
sky130_fd_sc_hs__nor2_2	A	0.00995	0.01028	0.02022
	A	0.00134	0.00166	0.01070
	B	0.00496	0.00570	0.01542
	B	-0.00133	-0.00063	0.00823
sky130_fd_sc_hs__nor2_4	A	0.01887	0.01958	0.03785
	A	0.00222	0.00282	0.02123
	B	0.00988	0.01169	0.02927
	B	-0.00286	-0.00112	0.01648
sky130_fd_sc_hs__nor2_8	A	0.03585	0.03895	0.07527
	A	0.00312	0.00604	0.04245
	B	0.01956	0.02347	0.06313
	B	-0.00566	-0.00184	0.03450

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00189	0.00169	0.00167
	(B * !Y)	-0.00155	-0.00178	-0.00178
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00258	0.00213	0.00210
	(B * !Y)	-0.00300	-0.00356	-0.00356
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00447	0.00341	0.00339
	(B * !Y)	-0.00603	-0.00711	-0.00718
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00848	0.00657	0.00654
	(B * !Y)	-0.01209	-0.01419	-0.01428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00167	-0.00167	-0.00167
	(B * !Y)	0.00177	0.00178	0.00178
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00209	-0.00211	-0.00209
	(B * !Y)	0.00354	0.00359	0.00356
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00338	-0.00339	-0.00336
	(B * !Y)	0.00717	0.00724	0.00718
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00652	-0.00653	-0.00649
	(B * !Y)	0.01424	0.01435	0.01428

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00189	0.00190	0.00188
	(A * !Y)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00207	0.00209	0.00207
	(A * !Y)	-0.00172	-0.00174	-0.00173
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00417	0.00422	0.00419
	(A * !Y)	-0.00341	-0.00344	-0.00342
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00821	0.00830	0.00824
	(A * !Y)	-0.00673	-0.00681	-0.00676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	**(A * !Y)**	-0.00184	-0.00185	-0.00188
	(A * !Y)	0.00089	0.00089	0.00086
sky130_fd_sc_hs__nor2_2	**(A * !Y)**	-0.00192	-0.00194	-0.00206
	(A * !Y)	0.00185	0.00186	0.00176
sky130_fd_sc_hs__nor2_4	**(A * !Y)**	-0.00391	-0.00393	-0.00416
	(A * !Y)	0.00365	0.00365	0.00348
sky130_fd_sc_hs__nor2_8	**(A * !Y)**	-0.00772	-0.00782	-0.00820
	(A * !Y)	0.00715	0.00723	0.00687

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
A	B	C_N	Y
0	x	0	0
0	0	1	1
x	1	1	0
1	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3b_1	9.59040
sky130_fd_sc_hs__nor3b_2	15.98400
sky130_fd_sc_hs__nor3b_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	Y
sky130_fd_sc_hs__nor3b_1	0.00258	0.00270	0.00209	0.50098
sky130_fd_sc_hs__nor3b_2	0.00505	0.00503	0.00248	0.86854
sky130_fd_sc_hs__nor3b_4	0.01013	0.01007	0.00347	1.47786

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3b_1	0.00000	0.25099	0.49526
sky130_fd_sc_hs__nor3b_2	0.00000	0.08674	0.15980
sky130_fd_sc_hs__nor3b_4	0.00000	0.53109	1.03785

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)	0.09216	0.94215	10.28010
	B->Y (FR)	0.08359	0.96850	10.83220
	C_N->Y (RR)	0.07666	0.68539	5.95476
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.08893	0.79639	9.94939
	B->Y (FR)	0.07891	0.83255	10.71380
	C_N->Y (RR)	0.06439	0.54417	5.74361
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.09276	0.68949	9.71258
	B->Y (FR)	0.08294	0.72882	10.54290
	C_N->Y (RR)	0.08041	0.51015	6.14797

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01493	0.20994	2.02138
	B->Y (RF)	0.01607	0.21391	2.12285
	C_N->Y (FF)	0.05089	0.32846	3.05514
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01244	0.15434	1.71683
	B->Y (RF)	0.01281	0.14463	1.67826
	C_N->Y (FF)	0.05431	0.32307	2.86459
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01233	0.12091	1.58891
	B->Y (RF)	0.01257	0.11288	1.55381
	C_N->Y (FF)	0.06018	0.31017	2.67087

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00156	0.00152	0.01051
	A	0.00647	0.00646	0.01547
	B	0.00137	0.00145	0.01038
	B	0.00561	0.00569	0.01468
	C_N	0.00735	0.01028	0.07616
	C_N	0.00457	0.00750	0.07354
sky130_fd_sc_hs__nor3b_2	A	0.00233	0.00229	0.02067
	A	0.01271	0.01270	0.03110
	B	0.00230	0.00255	0.02024
	B	0.01067	0.01093	0.02871
	C_N	0.01056	0.01379	0.09136
	C_N	0.00800	0.01123	0.08893
sky130_fd_sc_hs__nor3b_4	A	0.00428	0.00428	0.04077
	A	0.02517	0.02516	0.06172
	B	0.00446	0.00494	0.04009
	B	0.02139	0.02193	0.05722
	C_N	0.01904	0.02326	0.14552
	C_N	0.01608	0.02031	0.14314

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00656	0.00678	0.01548
	A	0.00169	0.00190	0.01062
	B	0.00511	0.00549	0.01348
	B	0.00089	0.00125	0.00925
	C_N	0.00392	0.00819	0.07762
	C_N	0.00669	0.01097	0.08042
sky130_fd_sc_hs__nor3b_2	A	0.01332	0.01383	0.03211
	A	0.00311	0.00359	0.02189
	B	0.00979	0.01083	0.02753
	B	0.00147	0.00245	0.01918
	C_N	0.00725	0.01174	0.07756
	C_N	0.00981	0.01431	0.08012
sky130_fd_sc_hs__nor3b_4	A	0.02621	0.02721	0.06319
	A	0.00568	0.00658	0.04265
	B	0.01934	0.02072	0.05395
	B	0.00249	0.00379	0.03706
	C_N	0.01587	0.02296	0.14467
	C_N	0.01882	0.02593	0.14761

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)	0.00162	0.00157	0.00156
	(B * C_N * !Y)	-0.00165	-0.00173	-0.00173
	(B * !C_N * !Y)	0.00150	0.00150	0.00150
	(B * !C_N * !Y)	-0.00176	-0.00180	-0.00179
	(!B * !C_N * !Y)	0.00151	0.00150	0.00150
	(!B * !C_N * !Y)	-0.00162	-0.00176	-0.00175
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00324	0.00317	0.00315
	(B * C_N * !Y)	-0.00345	-0.00361	-0.00361
	(B * !C_N * !Y)	0.00317	0.00317	0.00315
	(B * !C_N * !Y)	-0.00351	-0.00361	-0.00360
	(!B * !C_N * !Y)	0.00320	0.00317	0.00315
	(!B * !C_N * !Y)	-0.00329	-0.00351	-0.00352
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00686	0.00676	0.00673
	(B * C_N * !Y)	-0.00650	-0.00688	-0.00690
	(B * !C_N * !Y)	0.00625	0.00628	0.00626
	(B * !C_N * !Y)	-0.00710	-0.00736	-0.00736
	(!B * !C_N * !Y)	0.00631	0.00630	0.00626
	(!B * !C_N * !Y)	-0.00671	-0.00721	-0.00718

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)	-0.00155	-0.00156	-0.00155
	(B * C_N * !Y)	0.00173	0.00174	0.00173
	(B * !C_N * !Y)	-0.00149	-0.00150	-0.00149
	(B * !C_N * !Y)	0.00179	0.00181	0.00179
	(!B * !C_N * !Y)	-0.00149	-0.00149	-0.00149
	(!B * !C_N * !Y)	0.00175	0.00176	0.00175
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00314	-0.00315	-0.00314
	(B * C_N * !Y)	0.00359	0.00363	0.00361
	(B * !C_N * !Y)	-0.00313	-0.00315	-0.00314
	(B * !C_N * !Y)	0.00359	0.00363	0.00360
	(!B * !C_N * !Y)	-0.00314	-0.00315	-0.00315
	(!B * !C_N * !Y)	0.00350	0.00351	0.00352
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00669	-0.00674	-0.00671
	(B * C_N * !Y)	0.00685	0.00694	0.00690
	(B * !C_N * !Y)	-0.00624	-0.00628	-0.00625
	(B * !C_N * !Y)	0.00732	0.00741	0.00736
	(!B * !C_N * !Y)	-0.00622	-0.00625	-0.00624
	(!B * !C_N * !Y)	0.00714	0.00721	0.00718

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)	0.00184	0.00185	0.00183
	(A * C_N * !Y)	-0.00094	-0.00094	-0.00094
	(A * !C_N * !Y)	0.00162	0.00165	0.00159
	(A * !C_N * !Y)	-0.00138	-0.00138	-0.00138
	(!A * !C_N * !Y)	0.00185	0.00157	0.00156
	(!A * !C_N * !Y)	-0.00166	-0.00196	-0.00196
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00324	0.00327	0.00324
	(A * C_N * !Y)	-0.00198	-0.00201	-0.00200
	(A * !C_N * !Y)	0.00319	0.00326	0.00319
	(A * !C_N * !Y)	-0.00245	-0.00247	-0.00246
	(!A * !C_N * !Y)	0.00373	0.00318	0.00312
	(!A * !C_N * !Y)	-0.00304	-0.00371	-0.00369
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00661	0.00667	0.00658
	(A * C_N * !Y)	-0.00392	-0.00395	-0.00396
	(A * !C_N * !Y)	0.00655	0.00664	0.00641
	(A * !C_N * !Y)	-0.00491	-0.00494	-0.00492
	(!A * !C_N * !Y)	0.00767	0.00639	0.00628
	(!A * !C_N * !Y)	-0.00596	-0.00741	-0.00737

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)	-0.00181	-0.00181	-0.00180
	(A * C_N * !Y)	0.00097	0.00097	0.00097
	(A * !C_N * !Y)	-0.00156	-0.00156	-0.00156
	(A * !C_N * !Y)	0.00138	0.00138	0.00138
	(!A * !C_N * !Y)	-0.00156	-0.00156	-0.00155
	(!A * !C_N * !Y)	0.00197	0.00198	0.00197
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00319	-0.00322	-0.00320
	(A * C_N * !Y)	0.00202	0.00204	0.00205
	(A * !C_N * !Y)	-0.00313	-0.00315	-0.00314
	(A * !C_N * !Y)	0.00245	0.00247	0.00246
	(!A * !C_N * !Y)	-0.00311	-0.00313	-0.00311
	(!A * !C_N * !Y)	0.00368	0.00372	0.00370
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00651	-0.00654	-0.00649
	(A * C_N * !Y)	0.00400	0.00404	0.00408
	(A * !C_N * !Y)	-0.00630	-0.00632	-0.00630
	(A * !C_N * !Y)	0.00491	0.00494	0.00492
	(!A * !C_N * !Y)	-0.00624	-0.00629	-0.00624
	(!A * !C_N * !Y)	0.00735	0.00744	0.00739

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00425	0.00741	0.07874
	(B * !Y)	0.00081	0.00397	0.07530
	(A * !B * !Y)	0.00431	0.00747	0.07874
	(A * !B * !Y)	0.00083	0.00398	0.07527
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00551	0.00866	0.08552
	(B * !Y)	0.00156	0.00470	0.08158
	(A * !B * !Y)	0.00566	0.00881	0.08556
	(A * !B * !Y)	0.00161	0.00475	0.08154
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00886	0.01268	0.13464
	(B * !Y)	0.00293	0.00674	0.12873
	(A * !B * !Y)	0.00913	0.01295	0.13483
	(A * !B * !Y)	0.00301	0.00682	0.12875

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00134	0.00571	0.07676
	(B * !Y)	0.00476	0.00914	0.08019
	(A * !B * !Y)	0.00134	0.00571	0.07671
	(A * !B * !Y)	0.00477	0.00914	0.08015
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00288	0.00689	0.08323
	(B * !Y)	0.00682	0.01082	0.08716
	(A * !B * !Y)	0.00288	0.00689	0.08322
	(A * !B * !Y)	0.00683	0.01083	0.08716
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00694	0.01380	0.13630
	(B * !Y)	0.01285	0.01971	0.14221
	(A * !B * !Y)	0.00694	0.01379	0.13627
	(A * !B * !Y)	0.01287	0.01974	0.14221

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor3_1	6.39360
sky130_fd_sc_hs__nor3_2	11.18880
sky130_fd_sc_hs__nor3_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	Y
sky130_fd_sc_hs__nor3_1	0.00268	0.00291	0.00275	0.49876
sky130_fd_sc_hs__nor3_2	0.00409	0.00430	0.00398	0.94780
sky130_fd_sc_hs__nor3_4	0.00900	0.00887	0.00853	1.44397

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor3_1	0.00000	0.01475	0.06294
sky130_fd_sc_hs__nor3_2	0.00000	0.02912	0.12588
sky130_fd_sc_hs__nor3_4	0.00000	0.05825	0.25175

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)	0.09356	0.93351	10.15090
	B->Y (FR)	0.08615	0.95983	10.71680
	C->Y (FR)	0.06249	0.92976	10.59890
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.07482	0.78863	10.20110
	B->Y (FR)	0.06374	0.80529	10.72810
	C->Y (FR)	0.03290	0.76870	10.60240
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.08510	0.68136	9.49943
	B->Y (FR)	0.06991	0.69754	10.10220
	C->Y (FR)	0.04004	0.67570	10.11530

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01549	0.20987	2.00578
	B->Y (RF)	0.01690	0.21210	2.08765
	C->Y (RF)	0.01460	0.20772	2.09163
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02155	0.29732	3.70878
	B->Y (RF)	0.02074	0.28556	3.65914
	C->Y (RF)	0.01539	0.27370	3.64791
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.01549	0.22314	3.00315
	B->Y (RF)	0.01790	0.21961	3.07209
	C->Y (RF)	0.02109	0.21075	3.05952

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	-0.00010	-0.00015	0.00883
	A	0.00673	0.00671	0.01570
	B	-0.00005	0.00001	0.00893
	B	0.00587	0.00595	0.01491
	C	-0.00016	0.00075	0.01851
	C	0.00482	0.00575	0.02356
sky130_fd_sc_hs__nor3_2	A	-0.00025	-0.00027	0.01005
	A	0.01066	0.01065	0.02102
	B	0.00003	0.00016	0.01105
	B	0.00907	0.00907	0.02020
	C	-0.00008	0.00151	0.02491
	C	0.00660	0.00787	0.03171
sky130_fd_sc_hs__nor3_4	A	-0.00078	-0.00091	0.02217
	A	0.02269	0.02258	0.04576
	B	-0.00079	-0.00048	0.02455
	B	0.01807	0.01838	0.04348
	C	-0.00153	0.00206	0.05173
	C	0.01361	0.01719	0.06698

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00847	0.00868	0.01747
	A	0.00171	0.00190	0.01072
	B	0.00686	0.00721	0.01529
	B	0.00098	0.00130	0.00940
	C	0.00491	0.00540	0.01321
	C	-0.00007	0.00038	0.00821
sky130_fd_sc_hs__nor3_2	A	0.01400	0.01433	0.02466
	A	0.00330	0.00360	0.01383
	B	0.01049	0.01094	0.02102
	B	0.00156	0.00201	0.01186
	C	0.00545	0.00631	0.01631
	C	-0.00122	-0.00042	0.00927
sky130_fd_sc_hs__nor3_4	A	0.02972	0.03007	0.05126
	A	0.00679	0.00702	0.02821
	B	0.02155	0.02236	0.04458
	B	0.00289	0.00360	0.02573
	C	0.01247	0.01434	0.03717
	C	-0.00268	-0.00085	0.02188

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00171	0.00172	0.00172
	(B * C * !Y)	-0.00171	-0.00176	-0.00176
	(B * !C * !Y)	0.00173	0.00173	0.00172
	(B * !C * !Y)	-0.00167	-0.00176	-0.00176
	(!B * C * !Y)	0.00174	0.00172	0.00172
	(!B * C * !Y)	-0.00158	-0.00172	-0.00171
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00201	0.00203	0.00200
	(B * C * !Y)	-0.00334	-0.00348	-0.00347
	(B * !C * !Y)	0.00204	0.00203	0.00200
	(B * !C * !Y)	-0.00328	-0.00347	-0.00347
	(!B * C * !Y)	0.00206	0.00203	0.00200
	(!B * C * !Y)	-0.00306	-0.00339	-0.00336
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00384	0.00385	0.00383
	(B * C * !Y)	-0.00716	-0.00748	-0.00744
	(B * !C * !Y)	0.00415	0.00385	0.00383
	(B * !C * !Y)	-0.00681	-0.00747	-0.00744
	(!B * C * !Y)	0.00402	0.00384	0.00383
	(!B * C * !Y)	-0.00647	-0.00725	-0.00721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00171	-0.00172	-0.00171
	(B * C * !Y)	0.00176	0.00177	0.00176
	(B * !C * !Y)	-0.00171	-0.00172	-0.00171
	(B * !C * !Y)	0.00176	0.00177	0.00176
	(!B * C * !Y)	-0.00171	-0.00171	-0.00171
	(!B * C * !Y)	0.00171	0.00172	0.00171
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00199	-0.00200	-0.00200
	(B * C * !Y)	0.00345	0.00348	0.00347
	(B * !C * !Y)	-0.00199	-0.00200	-0.00200
	(B * !C * !Y)	0.00345	0.00347	0.00347
	(!B * C * !Y)	-0.00200	-0.00201	-0.00200
	(!B * C * !Y)	0.00334	0.00339	0.00336
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00383	-0.00384	-0.00383
	(B * C * !Y)	0.00743	0.00748	0.00744
	(B * !C * !Y)	-0.00383	-0.00384	-0.00383
	(B * !C * !Y)	0.00743	0.00747	0.00744
	(!B * C * !Y)	-0.00382	-0.00384	-0.00382
	(!B * C * !Y)	0.00721	0.00727	0.00721

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00185	0.00187	0.00181
	(A * C * !Y)	-0.00108	-0.00109	-0.00108
	(A * !C * !Y)	0.00179	0.00180	0.00177
	(A * !C * !Y)	-0.00092	-0.00092	-0.00092
	(!A * C * !Y)	0.00206	0.00178	0.00177
	(!A * C * !Y)	-0.00137	-0.00169	-0.00170
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00190	0.00194	0.00183
	(A * C * !Y)	-0.00238	-0.00239	-0.00238
	(A * !C * !Y)	0.00185	0.00185	0.00178
	(A * !C * !Y)	-0.00205	-0.00205	-0.00207
	(!A * C * !Y)	0.00245	0.00179	0.00175
	(!A * C * !Y)	-0.00293	-0.00371	-0.00369
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00430	0.00432	0.00417
	(A * C * !Y)	-0.00447	-0.00453	-0.00449
	(A * !C * !Y)	0.00415	0.00419	0.00413
	(A * !C * !Y)	-0.00373	-0.00377	-0.00377
	(!A * C * !Y)	0.00531	0.00413	0.00412
	(!A * C * !Y)	-0.00562	-0.00687	-0.00690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00177	-0.00178	-0.00177
	(A * C * !Y)	0.00108	0.00109	0.00108
	(A * !C * !Y)	-0.00175	-0.00177	-0.00175
	(A * !C * !Y)	0.00093	0.00094	0.00095
	(!A * C * !Y)	-0.00176	-0.00177	-0.00176
	(!A * C * !Y)	0.00169	0.00170	0.00170
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00177	-0.00177	-0.00177
	(A * C * !Y)	0.00238	0.00239	0.00238
	(A * !C * !Y)	-0.00175	-0.00175	-0.00173
	(A * !C * !Y)	0.00212	0.00213	0.00213
	(!A * C * !Y)	-0.00174	-0.00175	-0.00174
	(!A * C * !Y)	0.00367	0.00371	0.00369
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00411	-0.00414	-0.00412
	(A * C * !Y)	0.00447	0.00453	0.00449
	(A * !C * !Y)	-0.00409	-0.00408	-0.00403
	(A * !C * !Y)	0.00382	0.00382	0.00387
	(!A * C * !Y)	-0.00411	-0.00411	-0.00409
	(!A * C * !Y)	0.00688	0.00691	0.00690

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00186	0.00187	0.00185
	(B * !Y)	-0.00086	-0.00086	-0.00085
	(A * !B * !Y)	0.00186	0.00187	0.00185
	(A * !B * !Y)	-0.00086	-0.00086	-0.00085
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00206	0.00207	0.00205
	(B * !Y)	-0.00172	-0.00172	-0.00171
	(A * !B * !Y)	0.00206	0.00207	0.00205
	(A * !B * !Y)	-0.00172	-0.00172	-0.00171
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00463	0.00465	0.00463
	(B * !Y)	-0.00353	-0.00354	-0.00353
	(A * !B * !Y)	0.00463	0.00465	0.00464
	(A * !B * !Y)	-0.00351	-0.00353	-0.00352

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00181	-0.00181	-0.00185
	(B * !Y)	0.00090	0.00090	0.00087
	(A * !B * !Y)	-0.00174	-0.00176	-0.00184
	(A * !B * !Y)	0.00092	0.00093	0.00086
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00190	-0.00191	-0.00204
	(B * !Y)	0.00184	0.00184	0.00174
	(A * !B * !Y)	-0.00177	-0.00179	-0.00201
	(A * !B * !Y)	0.00189	0.00191	0.00175
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00437	-0.00441	-0.00461
	(B * !Y)	0.00375	0.00378	0.00360
	(A * !B * !Y)	-0.00407	-0.00411	-0.00454
	(A * !B * !Y)	0.00388	0.00391	0.00359

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C_N	D_N	Y
0	x	0	x	0
0	x	1	0	0
0	0	1	1	1
x	1	1	1	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4bb_1	15.98400
sky130_fd_sc_hs__nor4bb_2	23.97600
sky130_fd_sc_hs__nor4bb_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	Y
sky130_fd_sc_hs__nor4bb_1	0.00271	0.00278	0.00223	0.00219	0.37007
sky130_fd_sc_hs__nor4bb_2	0.00505	0.00530	0.00257	0.00243	0.62248
sky130_fd_sc_hs__nor4bb_4	0.00995	0.01063	0.00352	0.00342	1.17756

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4bb_1	0.00000	0.48183	0.96399
sky130_fd_sc_hs__nor4bb_2	0.00000	0.13319	0.26655
sky130_fd_sc_hs__nor4bb_4	0.00000	0.98157	1.96958

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)	0.14973	1.05094	9.90134
	B->Y (FR)	0.14154	1.06305	10.35480
	C_N->Y (RR)	0.14055	0.83096	5.98046
	D_N->Y (RR)	0.09311	0.77205	5.86903
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.15562	0.93182	9.82888
	B->Y (FR)	0.14361	0.93143	10.26080
	C_N->Y (RR)	0.14097	0.71385	6.04409
	D_N->Y (RR)	0.08411	0.64933	5.95091
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.15683	0.80143	9.82295
	B->Y (FR)	0.14481	0.80719	10.29370
	C_N->Y (RR)	0.14117	0.62233	6.40786
	D_N->Y (RR)	0.08916	0.56757	6.33000

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01581	0.18936	1.42944
	B->Y (RF)	0.01620	0.18053	1.38464
	C_N->Y (FF)	0.06258	0.32896	2.77496
	D_N->Y (FF)	0.05258	0.31085	2.66782
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01326	0.13686	1.11348
	B->Y (RF)	0.01381	0.13445	1.12838
	C_N->Y (FF)	0.06456	0.32616	2.80425
	D_N->Y (FF)	0.05532	0.31395	2.78578
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01427	0.12626	1.31559
	B->Y (RF)	0.01449	0.11202	1.18308
	C_N->Y (FF)	0.06663	0.30690	2.38503
	D_N->Y (FF)	0.06167	0.30225	2.48332

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00311	0.00296	0.01224
	A	0.00844	0.00831	0.01759
	B	0.00304	0.00294	0.01193
	B	0.00756	0.00741	0.01646
	C_N	0.00985	0.01250	0.07937
	C_N	0.00698	0.00963	0.07651
	D_N	0.00802	0.01112	0.08342
	D_N	0.00546	0.00858	0.08090
sky130_fd_sc_hs__nor4bb_2	A	0.00572	0.00551	0.02321
	A	0.01623	0.01605	0.03381
	B	0.00565	0.00546	0.02319
	B	0.01435	0.01418	0.03191
	C_N	0.01439	0.01738	0.09509
	C_N	0.01188	0.01488	0.09280
	D_N	0.01191	0.01512	0.09356
	D_N	0.00970	0.01290	0.09136
sky130_fd_sc_hs__nor4bb_4	A	0.01189	0.01132	0.04587
	A	0.03215	0.03161	0.06639
	B	0.01157	0.01115	0.04519
	B	0.02882	0.02840	0.06255
	C_N	0.02606	0.02970	0.15071
	C_N	0.02329	0.02692	0.14819
	D_N	0.02095	0.02537	0.15062
	D_N	0.01839	0.02282	0.14832

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00784	0.00795	0.01791
	A	0.00256	0.00267	0.01266
	B	0.00633	0.00667	0.01609
	B	0.00184	0.00216	0.01159
	C_N	0.00582	0.00982	0.07904
	C_N	0.00870	0.01270	0.08190
	D_N	0.00424	0.00851	0.07575
	D_N	0.00679	0.01105	0.07829
sky130_fd_sc_hs__nor4bb_2	A	0.01581	0.01593	0.03602
	A	0.00554	0.00565	0.02577
	B	0.01178	0.01230	0.03129
	B	0.00315	0.00361	0.02264
	C_N	0.01097	0.01502	0.09087
	C_N	0.01348	0.01752	0.09337
	D_N	0.00763	0.01205	0.08798
	D_N	0.00983	0.01426	0.09018
sky130_fd_sc_hs__nor4bb_4	A	0.03026	0.03068	0.07077
	A	0.01041	0.01077	0.05095
	B	0.02381	0.02503	0.06384
	B	0.00673	0.00786	0.04671
	C_N	0.02020	0.02699	0.13663
	C_N	0.02298	0.02977	0.13939
	D_N	0.01609	0.02355	0.14580
	D_N	0.01866	0.02611	0.14834

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)**	0.00181	0.00179	0.00178
	(B * C_N * D_N * !Y)	-0.00166	-0.00173	-0.00173
	(B * !D_N * !Y)	0.00180	0.00178	0.00177
	(B * !D_N * !Y)	-0.00167	-0.00173	-0.00174
	(B * !C_N * D_N * !Y)	0.00165	0.00165	0.00164
	(B * !C_N * D_N * !Y)	-0.00183	-0.00187	-0.00187
	(!B * C_N * !D_N * !Y)	0.00187	0.00180	0.00179
	(!B * C_N * !D_N * !Y)	-0.00155	-0.00169	-0.00168
	(!B * !C_N * D_N * !Y)	0.00164	0.00165	0.00164
	(!B * !C_N * D_N * !Y)	-0.00171	-0.00184	-0.00183
	(!B * !C_N * !D_N * !Y)	0.00163	0.00164	0.00163
	(!B * !C_N * !D_N * !Y)	-0.00171	-0.00183	-0.00182
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00319	0.00314	0.00313
	(B * C_N * D_N * !Y)	-0.00341	-0.00359	-0.00359
	(B * !D_N * !Y)	0.00318	0.00314	0.00313
	(B * !D_N * !Y)	-0.00343	-0.00359	-0.00359
	(B * !C_N * D_N * !Y)	0.00312	0.00314	0.00312
	(B * !C_N * D_N * !Y)	-0.00346	-0.00360	-0.00359
	(!B * C_N * !D_N * !Y)	0.00336	0.00322	0.00317
	(!B * C_N * !D_N * !Y)	-0.00319	-0.00345	-0.00344
	(!B * !C_N * D_N * !Y)	0.00314	0.00314	0.00312
	(!B * !C_N * D_N * !Y)	-0.00325	-0.00351	-0.00350
	(!B * !C_N * !D_N * !Y)	0.00313	0.00314	0.00312
	(!B * !C_N * !D_N * !Y)	-0.00325	-0.00350	-0.00349

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00624	0.00619	0.00610
	(B * C_N * D_N * !Y)	-0.00657	-0.00697	-0.00694
	(B * !D_N * !Y)	0.00624	0.00620	0.00610
	(B * !D_N * !Y)	-0.00662	-0.00694	-0.00692
	(B * !C_N * D_N * !Y)	0.00609	0.00616	0.00608
	(B * !C_N * D_N * !Y)	-0.00672	-0.00697	-0.00695
	(!B * C_N * !D_N * !Y)	0.00654	0.00631	0.00617
	(!B * C_N * !D_N * !Y)	-0.00607	-0.00665	-0.00663
	(!B * !C_N * D_N * !Y)	0.00609	0.00615	0.00608
	(!B * !C_N * D_N * !Y)	-0.00624	-0.00678	-0.00674
	(!B * !C_N * !D_N * !Y)	0.00605	0.00614	0.00607
	(!B * !C_N * !D_N * !Y)	-0.00623	-0.00678	-0.00674

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)**	-0.00175	-0.00176	-0.00176
	(B * C_N * D_N * !Y)	0.00174	0.00176	0.00174
	(B * !D_N * !Y)	-0.00175	-0.00177	-0.00176
	(B * !D_N * !Y)	0.00173	0.00176	0.00174
	(B * !C_N * D_N * !Y)	-0.00162	-0.00162	-0.00163
	(B * !C_N * D_N * !Y)	0.00186	0.00187	0.00187
	(!B * C_N * !D_N * !Y)	-0.00179	-0.00180	-0.00179
	(!B * C_N * !D_N * !Y)	0.00166	0.00169	0.00168
	(!B * !C_N * D_N * !Y)	-0.00162	-0.00163	-0.00163
	(!B * !C_N * D_N * !Y)	0.00182	0.00184	0.00183
	(!B * !C_N * !D_N * !Y)	-0.00163	-0.00164	-0.00163
	(!B * !C_N * !D_N * !Y)	0.00183	0.00183	0.00182

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00311	-0.00313	-0.00312
	(B * C_N * D_N * !Y)	0.00358	0.00362	0.00359
	(B * !D_N * !Y)	-0.00311	-0.00313	-0.00312
	(B * !D_N * !Y)	0.00357	0.00362	0.00359
	(B * !C_N * D_N * !Y)	-0.00311	-0.00313	-0.00312
	(B * !C_N * D_N * !Y)	0.00358	0.00362	0.00359
	(!B * C_N * !D_N * !Y)	-0.00321	-0.00322	-0.00317
	(!B * C_N * !D_N * !Y)	0.00343	0.00345	0.00344
	(!B * !C_N * D_N * !Y)	-0.00311	-0.00312	-0.00311
	(!B * !C_N * D_N * !Y)	0.00348	0.00351	0.00350
	(!B * !C_N * !D_N * !Y)	-0.00311	-0.00312	-0.00312
	(!B * !C_N * !D_N * !Y)	0.00348	0.00350	0.00349
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00603	-0.00607	-0.00605
	(B * C_N * D_N * !Y)	0.00690	0.00698	0.00694
	(B * !D_N * !Y)	-0.00606	-0.00609	-0.00608
	(B * !D_N * !Y)	0.00689	0.00694	0.00692
	(B * !C_N * D_N * !Y)	-0.00603	-0.00606	-0.00605
	(B * !C_N * D_N * !Y)	0.00691	0.00697	0.00695
	(!B * C_N * !D_N * !Y)	-0.00622	-0.00626	-0.00617
	(!B * C_N * !D_N * !Y)	0.00658	0.00665	0.00663
	(!B * !C_N * D_N * !Y)	-0.00605	-0.00607	-0.00605
	(!B * !C_N * D_N * !Y)	0.00674	0.00678	0.00674
	(!B * !C_N * !D_N * !Y)	-0.00605	-0.00607	-0.00605
	(!B * !C_N * !D_N * !Y)	0.00674	0.00678	0.00674

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)**	0.00191	0.00192	0.00190
	(A * C_N * D_N * !Y)	-0.00094	-0.00094	-0.00093
	(A * C_N * !D_N * !Y)	0.00208	0.00217	0.00214
	(A * C_N * !D_N * !Y)	-0.00113	-0.00112	-0.00112
	(A * !C_N * D_N * !Y)	0.00171	0.00174	0.00172
	(A * !C_N * D_N * !Y)	-0.00133	-0.00134	-0.00133
	(A * !C_N * !D_N * !Y)	0.00172	0.00173	0.00171
	(A * !C_N * !D_N * !Y)	-0.00140	-0.00141	-0.00139
	(!A * C_N * !D_N * !Y)	0.00208	0.00193	0.00190
	(!A * C_N * !D_N * !Y)	-0.00149	-0.00166	-0.00166
	(!A * !C_N * D_N * !Y)	0.00178	0.00172	0.00170
	(!A * !C_N * D_N * !Y)	-0.00178	-0.00189	-0.00189
	(!A * !C_N * !D_N * !Y)	0.00170	0.00171	0.00170
	(!A * !C_N * !D_N * !Y)	-0.00186	-0.00189	-0.00189
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00336	0.00340	0.00337
	(A * C_N * D_N * !Y)	-0.00208	-0.00210	-0.00209
	(A * C_N * !D_N * !Y)	0.00370	0.00383	0.00383
	(A * C_N * !D_N * !Y)	-0.00248	-0.00250	-0.00248
	(A * !C_N * D_N * !Y)	0.00329	0.00332	0.00328
	(A * !C_N * D_N * !Y)	-0.00262	-0.00264	-0.00261
	(A * !C_N * !D_N * !Y)	0.00326	0.00330	0.00327
	(A * !C_N * !D_N * !Y)	-0.00275	-0.00276	-0.00274
	(!A * C_N * !D_N * !Y)	0.00369	0.00347	0.00338
	(!A * C_N * !D_N * !Y)	-0.00331	-0.00358	-0.00357
	(!A * !C_N * D_N * !Y)	0.00339	0.00325	0.00326
	(!A * !C_N * D_N * !Y)	-0.00360	-0.00377	-0.00378
	(!A * !C_N * !D_N * !Y)	0.00326	0.00325	0.00325
	(!A * !C_N * !D_N * !Y)	-0.00371	-0.00377	-0.00378

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00656	0.00662	0.00654
	(A * C_N * D_N * !Y)	-0.00414	-0.00417	-0.00413
	(A * C_N * !D_N * !Y)	0.00726	0.00751	0.00750
	(A * C_N * !D_N * !Y)	-0.00482	-0.00485	-0.00482
	(A * !C_N * D_N * !Y)	0.00632	0.00645	0.00631
	(A * !C_N * D_N * !Y)	-0.00512	-0.00519	-0.00514
	(A * !C_N * !D_N * !Y)	0.00625	0.00635	0.00626
	(A * !C_N * !D_N * !Y)	-0.00544	-0.00550	-0.00546
	(!A * C_N * !D_N * !Y)	0.00732	0.00669	0.00656
	(!A * C_N * !D_N * !Y)	-0.00633	-0.00705	-0.00704
	(!A * !C_N * D_N * !Y)	0.00670	0.00631	0.00627
	(!A * !C_N * D_N * !Y)	-0.00693	-0.00747	-0.00748
	(!A * !C_N * !D_N * !Y)	0.00624	0.00629	0.00625
	(!A * !C_N * !D_N * !Y)	-0.00733	-0.00751	-0.00747

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)**	-0.00187	-0.00188	-0.00187
	(A * C_N * D_N * !Y)	0.00096	0.00097	0.00097
	(A * C_N * !D_N * !Y)	-0.00204	-0.00204	-0.00204
	(A * C_N * !D_N * !Y)	0.00113	0.00112	0.00112
	(A * !C_N * D_N * !Y)	-0.00170	-0.00171	-0.00170
	(A * !C_N * D_N * !Y)	0.00133	0.00134	0.00133
	(A * !C_N * !D_N * !Y)	-0.00171	-0.00171	-0.00170
	(A * !C_N * !D_N * !Y)	0.00140	0.00141	0.00139
	(!A * C_N * !D_N * !Y)	-0.00193	-0.00193	-0.00190
	(!A * C_N * !D_N * !Y)	0.00165	0.00166	0.00166
	(!A * !C_N * D_N * !Y)	-0.00170	-0.00170	-0.00169
	(!A * !C_N * D_N * !Y)	0.00189	0.00191	0.00189
	(!A * !C_N * !D_N * !Y)	-0.00170	-0.00171	-0.00170
	(!A * !C_N * !D_N * !Y)	0.00189	0.00190	0.00189
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00328	-0.00331	-0.00330
	(A * C_N * D_N * !Y)	0.00215	0.00217	0.00218
	(A * C_N * !D_N * !Y)	-0.00367	-0.00369	-0.00367
	(A * C_N * !D_N * !Y)	0.00248	0.00250	0.00248
	(A * !C_N * D_N * !Y)	-0.00326	-0.00327	-0.00326
	(A * !C_N * D_N * !Y)	0.00262	0.00264	0.00261
	(A * !C_N * !D_N * !Y)	-0.00326	-0.00327	-0.00325
	(A * !C_N * !D_N * !Y)	0.00275	0.00276	0.00274
	(!A * C_N * !D_N * !Y)	-0.00347	-0.00347	-0.00338
	(!A * C_N * !D_N * !Y)	0.00358	0.00358	0.00357
	(!A * !C_N * D_N * !Y)	-0.00325	-0.00325	-0.00325
	(!A * !C_N * D_N * !Y)	0.00378	0.00381	0.00378
	(!A * !C_N * !D_N * !Y)	-0.00325	-0.00325	-0.00325
	(!A * !C_N * !D_N * !Y)	0.00378	0.00381	0.00378

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	-0.00646	-0.00645	-0.00645
	(A * C_N * D_N * !Y)	0.00423	0.00423	0.00423
	(A * C_N * !D_N * !Y)	-0.00715	-0.00718	-0.00716
	(A * C_N * !D_N * !Y)	0.00482	0.00485	0.00482
	(A * !C_N * D_N * !Y)	-0.00624	-0.00629	-0.00625
	(A * !C_N * D_N * !Y)	0.00512	0.00519	0.00514
	(A * !C_N * !D_N * !Y)	-0.00623	-0.00628	-0.00624
	(A * !C_N * !D_N * !Y)	0.00544	0.00550	0.00546
	(!A * C_N * !D_N * !Y)	-0.00671	-0.00669	-0.00656
	(!A * C_N * !D_N * !Y)	0.00699	0.00705	0.00704
	(!A * !C_N * D_N * !Y)	-0.00624	-0.00624	-0.00624
	(!A * !C_N * D_N * !Y)	0.00748	0.00747	0.00748
	(!A * !C_N * !D_N * !Y)	-0.00624	-0.00626	-0.00624
	(!A * !C_N * !D_N * !Y)	0.00747	0.00751	0.00747

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4bb_1	**(B * !Y)**	0.00491	0.00787	0.07845
	(B * !Y)	0.00117	0.00413	0.07472
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00496	0.00792	0.07842
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00116	0.00411	0.07464
sky130_fd_sc_hs__nor4bb_2	**(B * !Y)**	0.00552	0.00853	0.08541
	(B * !Y)	0.00152	0.00452	0.08142
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00566	0.00866	0.08550
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00153	0.00452	0.08139
sky130_fd_sc_hs__nor4bb_4	**(B * !Y)**	0.00878	0.01272	0.13326
	(B * !Y)	0.00316	0.00709	0.12764
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00896	0.01290	0.13338
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00310	0.00703	0.12756

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00181	0.00606	0.07643
	(B * !Y)	0.00553	0.00979	0.08016
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00182	0.00607	0.07638
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00554	0.00981	0.08011
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00349	0.00742	0.08383
	(B * !Y)	0.00748	0.01141	0.08780
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00350	0.00743	0.08383
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00750	0.01143	0.08781
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00643	0.01305	0.13423
	(B * !Y)	0.01199	0.01861	0.13981
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00646	0.01308	0.13425
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.01203	0.01866	0.13984

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)	0.00432	0.00742	0.07899
	(B * C_N * !Y)	0.00092	0.00400	0.07559
	(A * !B * C_N * !Y)	0.00440	0.00750	0.07905
	(A * !B * C_N * !Y)	0.00097	0.00405	0.07562
	(!C_N * !Y)	0.00463	0.00772	0.07932
	(!C_N * !Y)	0.00124	0.00432	0.07592
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00530	0.00842	0.08514
	(B * C_N * !Y)	0.00165	0.00474	0.08147
	(A * !B * C_N * !Y)	0.00553	0.00865	0.08531
	(A * !B * C_N * !Y)	0.00177	0.00486	0.08155
	(!C_N * !Y)	0.00566	0.00877	0.08551
	(!C_N * !Y)	0.00203	0.00511	0.08186
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00809	0.01195	0.13330
	(B * C_N * !Y)	0.00276	0.00661	0.12799
	(A * !B * C_N * !Y)	0.00845	0.01230	0.13357
	(A * !B * C_N * !Y)	0.00296	0.00681	0.12814
	(!C_N * !Y)	0.00868	0.01254	0.13403
	(!C_N * !Y)	0.00341	0.00726	0.12878

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)	0.00162	0.00599	0.07733
	(B * C_N * !Y)	0.00501	0.00939	0.08072
	(A * !B * C_N * !Y)	0.00162	0.00599	0.07733
	(A * !B * C_N * !Y)	0.00501	0.00939	0.08072
	(!C_N * !Y)	0.00126	0.00561	0.07697
	(!C_N * !Y)	0.00465	0.00902	0.08036
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00316	0.00706	0.08350
	(B * C_N * !Y)	0.00679	0.01070	0.08714
	(A * !B * C_N * !Y)	0.00316	0.00706	0.08350
	(A * !B * C_N * !Y)	0.00680	0.01071	0.08714
	(!C_N * !Y)	0.00272	0.00662	0.08308
	(!C_N * !Y)	0.00636	0.01027	0.08671
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00756	0.01430	0.13641
	(B * C_N * !Y)	0.01281	0.01956	0.14169
	(A * !B * C_N * !Y)	0.00756	0.01429	0.13641
	(A * !B * C_N * !Y)	0.01282	0.01957	0.14169
	(!C_N * !Y)	0.00673	0.01346	0.13567
	(!C_N * !Y)	0.01198	0.01873	0.14094

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT
A	B	C	D_N	Y
0	0	x	0	0
0	0	0	1	1
0	x	1	1	0
x	1	x	x	0
1	x	x	x	0

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4b_1	11.18880
sky130_fd_sc_hs__nor4b_2	19.18080
sky130_fd_sc_hs__nor4b_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	Y
sky130_fd_sc_hs__nor4b_1	0.00261	0.00272	0.00271	0.00213	0.37332
sky130_fd_sc_hs__nor4b_2	0.00515	0.00521	0.00525	0.00248	0.61538
sky130_fd_sc_hs__nor4b_4	0.01009	0.01015	0.01032	0.00370	1.11740

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4b_1	0.00000	0.24559	0.49526
sky130_fd_sc_hs__nor4b_2	0.00000	0.07594	0.15980
sky130_fd_sc_hs__nor4b_4	0.00000	0.50948	1.03785

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)	0.14434	1.04696	9.93193
	B->Y (FR)	0.13565	1.05877	10.38390
	C->Y (FR)	0.11371	1.06517	10.80480
	D_N->Y (RR)	0.09653	0.78076	5.95809
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.15609	0.92730	9.73911
	B->Y (FR)	0.14414	0.92749	10.16690
	C->Y (FR)	0.12033	0.94361	10.81770
	D_N->Y (RR)	0.08404	0.64095	5.81519
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.15615	0.79552	9.56779
	B->Y (FR)	0.14450	0.79972	10.05900
	C->Y (FR)	0.11802	0.81395	10.72240
	D_N->Y (RR)	0.09269	0.56743	6.21467

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.01620	0.19707	1.52931
	B->Y (RF)	0.01703	0.19177	1.51826
	C->Y (RF)	0.01687	0.18579	1.50430
	D_N->Y (FF)	0.05346	0.31685	2.79229
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01316	0.13490	1.08302
	B->Y (RF)	0.01363	0.13270	1.09874
	C->Y (RF)	0.01531	0.13232	1.14413
	D_N->Y (FF)	0.05713	0.31525	2.65007
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01355	0.11118	1.08968
	B->Y (RF)	0.01349	0.10377	1.04720
	C->Y (RF)	0.01355	0.08798	0.93073
	D_N->Y (FF)	0.06021	0.29663	2.35767

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00175	0.00161	0.01042
	A	0.00796	0.00783	0.01664
	B	0.00173	0.00162	0.01012
	B	0.00707	0.00693	0.01547
	C	0.00151	0.00154	0.01045
	C	0.00614	0.00617	0.01511
	D_N	0.00771	0.01058	0.07754
	D_N	0.00517	0.00804	0.07501
sky130_fd_sc_hs__nor4b_2	A	0.00308	0.00285	0.02104
	A	0.01651	0.01630	0.03448
	B	0.00312	0.00291	0.02088
	B	0.01452	0.01433	0.03231
	C	0.00300	0.00302	0.02040
	C	0.01253	0.01259	0.02993
	D_N	0.01140	0.01455	0.09241
	D_N	0.00980	0.01294	0.09087
sky130_fd_sc_hs__nor4b_4	A	0.00615	0.00566	0.04075
	A	0.03259	0.03208	0.06729
	B	0.00616	0.00576	0.04071
	B	0.02864	0.02820	0.06320
	C	0.00579	0.00605	0.04097
	C	0.02465	0.02489	0.05996
	D_N	0.02006	0.02419	0.14799
	D_N	0.01892	0.02306	0.14726

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00882	0.00894	0.01843
	A	0.00272	0.00283	0.01235
	B	0.00724	0.00758	0.01652
	B	0.00198	0.00229	0.01125
	C	0.00558	0.00612	0.01465
	C	0.00099	0.00149	0.01004
	D_N	0.00450	0.00875	0.07808
	D_N	0.00704	0.01128	0.08061
sky130_fd_sc_hs__nor4b_2	A	0.01853	0.01862	0.03872
	A	0.00545	0.00553	0.02571
	B	0.01450	0.01496	0.03395
	B	0.00325	0.00368	0.02271
	C	0.01102	0.01175	0.02932
	C	0.00152	0.00220	0.01981
	D_N	0.00843	0.01287	0.07952
	D_N	0.01002	0.01448	0.08111
sky130_fd_sc_hs__nor4b_4	A	0.03597	0.03629	0.07516
	A	0.01019	0.01043	0.04951
	B	0.02833	0.02928	0.06626
	B	0.00615	0.00702	0.04411
	C	0.02119	0.02328	0.05799
	C	0.00243	0.00441	0.03918
	D_N	0.01718	0.02438	0.13575
	D_N	0.01831	0.02551	0.13686

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)**	0.00158	0.00159	0.00158
	(B * C * D_N * !Y)	-0.00168	-0.00173	-0.00173
	(B * !D_N * !Y)	0.00152	0.00152	0.00151
	(B * !D_N * !Y)	-0.00176	-0.00179	-0.00179
	(B * !C * D_N * !Y)	0.00159	0.00159	0.00158
	(B * !C * D_N * !Y)	-0.00166	-0.00173	-0.00173
	(!B * C * D_N * !Y)	0.00158	0.00159	0.00158
	(!B * C * D_N * !Y)	-0.00155	-0.00169	-0.00168
	(!B * C * !D_N * !Y)	0.00151	0.00152	0.00151
	(!B * C * !D_N * !Y)	-0.00162	-0.00175	-0.00174
	(!B * !C * !D_N * !Y)	0.00151	0.00151	0.00151
	(!B * !C * !D_N * !Y)	-0.00161	-0.00175	-0.00173
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00318	0.00320	0.00318
	(B * C * D_N * !Y)	-0.00349	-0.00363	-0.00363
	(B * !D_N * !Y)	0.00318	0.00319	0.00318
	(B * !D_N * !Y)	-0.00349	-0.00364	-0.00363
	(B * !C * D_N * !Y)	0.00319	0.00320	0.00318
	(B * !C * D_N * !Y)	-0.00344	-0.00363	-0.00363
	(!B * C * D_N * !Y)	0.00318	0.00319	0.00318
	(!B * C * D_N * !Y)	-0.00324	-0.00352	-0.00351
	(!B * C * !D_N * !Y)	0.00318	0.00319	0.00318
	(!B * C * !D_N * !Y)	-0.00324	-0.00353	-0.00351
	(!B * !C * !D_N * !Y)	0.00320	0.00320	0.00318
	(!B * !C * !D_N * !Y)	-0.00321	-0.00352	-0.00348

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00624	0.00623	0.00622
	(B * C * D_N * !Y)	-0.00689	-0.00715	-0.00716
	(B * !D_N * !Y)	0.00623	0.00622	0.00621
	(B * !D_N * !Y)	-0.00691	-0.00716	-0.00715
	(B * !C * D_N * !Y)	0.00625	0.00623	0.00622
	(B * !C * D_N * !Y)	-0.00681	-0.00714	-0.00716
	(!B * C * D_N * !Y)	0.00619	0.00627	0.00622
	(!B * C * D_N * !Y)	-0.00635	-0.00695	-0.00693
	(!B * C * !D_N * !Y)	0.00621	0.00626	0.00621
	(!B * C * !D_N * !Y)	-0.00640	-0.00696	-0.00692
	(!B * !C * !D_N * !Y)	0.00623	0.00626	0.00622
	(!B * !C * !D_N * !Y)	-0.00633	-0.00692	-0.00685

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)**	-0.00157	-0.00158	-0.00157
	(B * C * D_N * !Y)	0.00173	0.00175	0.00173
	(B * !D_N * !Y)	-0.00151	-0.00151	-0.00151
	(B * !D_N * !Y)	0.00178	0.00179	0.00179
	(B * !C * D_N * !Y)	-0.00157	-0.00158	-0.00157
	(B * !C * D_N * !Y)	0.00173	0.00175	0.00173
	(!B * C * D_N * !Y)	-0.00157	-0.00157	-0.00157
	(!B * C * D_N * !Y)	0.00169	0.00169	0.00168
	(!B * C * !D_N * !Y)	-0.00151	-0.00151	-0.00151
	(!B * C * !D_N * !Y)	0.00174	0.00175	0.00174
	(!B * !C * !D_N * !Y)	-0.00150	-0.00151	-0.00151
	(!B * !C * !D_N * !Y)	0.00172	0.00175	0.00173

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00316	-0.00318	-0.00317
	(B * C * D_N * !Y)	0.00361	0.00365	0.00363
	(B * !D_N * !Y)	-0.00316	-0.00318	-0.00317
	(B * !D_N * !Y)	0.00361	0.00365	0.00363
	(B * !C * D_N * !Y)	-0.00316	-0.00318	-0.00317
	(B * !C * D_N * !Y)	0.00361	0.00364	0.00363
	(!B * C * D_N * !Y)	-0.00316	-0.00318	-0.00317
	(!B * C * D_N * !Y)	0.00349	0.00352	0.00351
	(!B * C * !D_N * !Y)	-0.00316	-0.00318	-0.00317
	(!B * C * !D_N * !Y)	0.00349	0.00353	0.00351
	(!B * !C * !D_N * !Y)	-0.00318	-0.00320	-0.00318
	(!B * !C * !D_N * !Y)	0.00349	0.00352	0.00348
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00617	-0.00621	-0.00619
	(B * C * D_N * !Y)	0.00712	0.00719	0.00716
	(B * !D_N * !Y)	-0.00618	-0.00622	-0.00620
	(B * !D_N * !Y)	0.00712	0.00719	0.00715
	(B * !C * D_N * !Y)	-0.00617	-0.00620	-0.00619
	(B * !C * D_N * !Y)	0.00713	0.00717	0.00716
	(!B * C * D_N * !Y)	-0.00617	-0.00620	-0.00619
	(!B * C * D_N * !Y)	0.00690	0.00695	0.00693
	(!B * C * !D_N * !Y)	-0.00618	-0.00621	-0.00620
	(!B * C * !D_N * !Y)	0.00689	0.00696	0.00692
	(!B * !C * !D_N * !Y)	-0.00621	-0.00624	-0.00620
	(!B * !C * !D_N * !Y)	0.00685	0.00692	0.00685

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)**	0.00165	0.00167	0.00164
	(A * C * D_N * !Y)	-0.00113	-0.00113	-0.00112
	(A * C * !D_N * !Y)	0.00156	0.00157	0.00156
	(A * C * !D_N * !Y)	-0.00125	-0.00126	-0.00125
	(A * !C * D_N * !Y)	0.00163	0.00164	0.00162
	(A * !C * D_N * !Y)	-0.00095	-0.00095	-0.00094
	(A * !C * !D_N * !Y)	0.00155	0.00155	0.00155
	(A * !C * !D_N * !Y)	-0.00119	-0.00119	-0.00119
	(!A * C * D_N * !Y)	0.00172	0.00163	0.00162
	(!A * C * D_N * !Y)	-0.00156	-0.00171	-0.00171
	(!A * C * !D_N * !Y)	0.00155	0.00156	0.00155
	(!A * C * !D_N * !Y)	-0.00173	-0.00178	-0.00177
	(!A * !C * !D_N * !Y)	0.00159	0.00156	0.00155
	(!A * !C * !D_N * !Y)	-0.00155	-0.00172	-0.00172
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00327	0.00331	0.00326
	(A * C * D_N * !Y)	-0.00246	-0.00247	-0.00245
	(A * C * !D_N * !Y)	0.00325	0.00329	0.00325
	(A * C * !D_N * !Y)	-0.00258	-0.00259	-0.00257
	(A * !C * D_N * !Y)	0.00323	0.00327	0.00324
	(A * !C * D_N * !Y)	-0.00205	-0.00207	-0.00205
	(A * !C * !D_N * !Y)	0.00327	0.00329	0.00328
	(A * !C * !D_N * !Y)	-0.00244	-0.00246	-0.00244
	(!A * C * D_N * !Y)	0.00337	0.00329	0.00324
	(!A * C * D_N * !Y)	-0.00340	-0.00365	-0.00364
	(!A * C * !D_N * !Y)	0.00324	0.00328	0.00324
	(!A * C * !D_N * !Y)	-0.00352	-0.00363	-0.00364
	(!A * !C * !D_N * !Y)	0.00331	0.00329	0.00324
	(!A * !C * !D_N * !Y)	-0.00327	-0.00353	-0.00353

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00638	0.00646	0.00636
	(A * C * D_N * !Y)	-0.00481	-0.00481	-0.00479
	(A * C * !D_N * !Y)	0.00633	0.00642	0.00634
	(A * C * !D_N * !Y)	-0.00504	-0.00505	-0.00502
	(A * !C * D_N * !Y)	0.00631	0.00639	0.00633
	(A * !C * D_N * !Y)	-0.00401	-0.00406	-0.00402
	(A * !C * !D_N * !Y)	0.00637	0.00640	0.00638
	(A * !C * !D_N * !Y)	-0.00478	-0.00476	-0.00476
	(!A * C * D_N * !Y)	0.00669	0.00642	0.00633
	(!A * C * D_N * !Y)	-0.00666	-0.00719	-0.00721
	(!A * C * !D_N * !Y)	0.00635	0.00641	0.00632
	(!A * C * !D_N * !Y)	-0.00698	-0.00719	-0.00720
	(!A * !C * !D_N * !Y)	0.00647	0.00632	0.00632
	(!A * !C * !D_N * !Y)	-0.00642	-0.00699	-0.00697

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)**	-0.00162	-0.00162	-0.00162
	(A * C * D_N * !Y)	0.00113	0.00113	0.00112
	(A * C * !D_N * !Y)	-0.00155	-0.00156	-0.00155
	(A * C * !D_N * !Y)	0.00125	0.00126	0.00125
	(A * !C * D_N * !Y)	-0.00159	-0.00160	-0.00159
	(A * !C * D_N * !Y)	0.00096	0.00097	0.00097
	(A * !C * !D_N * !Y)	-0.00155	-0.00155	-0.00155
	(A * !C * !D_N * !Y)	0.00119	0.00119	0.00119
	(!A * C * D_N * !Y)	-0.00160	-0.00161	-0.00161
	(!A * C * D_N * !Y)	0.00171	0.00173	0.00171
	(!A * C * !D_N * !Y)	-0.00155	-0.00156	-0.00155
	(!A * C * !D_N * !Y)	0.00176	0.00178	0.00177
	(!A * !C * !D_N * !Y)	-0.00155	-0.00155	-0.00155
	(!A * !C * !D_N * !Y)	0.00171	0.00172	0.00172
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00324	-0.00326	-0.00324
	(A * C * D_N * !Y)	0.00246	0.00247	0.00245
	(A * C * !D_N * !Y)	-0.00324	-0.00325	-0.00324
	(A * C * !D_N * !Y)	0.00258	0.00259	0.00257
	(A * !C * D_N * !Y)	-0.00317	-0.00319	-0.00316
	(A * !C * D_N * !Y)	0.00212	0.00214	0.00215
	(A * !C * !D_N * !Y)	-0.00326	-0.00328	-0.00326
	(A * !C * !D_N * !Y)	0.00244	0.00246	0.00244
	(!A * C * D_N * !Y)	-0.00323	-0.00324	-0.00323
	(!A * C * D_N * !Y)	0.00364	0.00365	0.00364
	(!A * C * !D_N * !Y)	-0.00323	-0.00323	-0.00323
	(!A * C * !D_N * !Y)	0.00364	0.00363	0.00364
	(!A * !C * !D_N * !Y)	-0.00324	-0.00324	-0.00324
	(!A * !C * !D_N * !Y)	0.00353	0.00353	0.00353

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00632	-0.00632	-0.00631
	(A * C * D_N * !Y)	0.00481	0.00481	0.00479
	(A * C * !D_N * !Y)	-0.00632	-0.00633	-0.00631
	(A * C * !D_N * !Y)	0.00504	0.00505	0.00502
	(A * !C * D_N * !Y)	-0.00621	-0.00625	-0.00620
	(A * !C * D_N * !Y)	0.00413	0.00417	0.00418
	(A * !C * !D_N * !Y)	-0.00635	-0.00635	-0.00635
	(A * !C * !D_N * !Y)	0.00478	0.00476	0.00476
	(!A * C * D_N * !Y)	-0.00630	-0.00629	-0.00630
	(!A * C * D_N * !Y)	0.00721	0.00719	0.00721
	(!A * C * !D_N * !Y)	-0.00631	-0.00630	-0.00631
	(!A * C * !D_N * !Y)	0.00720	0.00719	0.00720
	(!A * !C * !D_N * !Y)	-0.00632	-0.00632	-0.00631
	(!A * !C * !D_N * !Y)	0.00698	0.00699	0.00697

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)	0.00185	0.00186	0.00184
	(B * D_N * !Y)	-0.00095	-0.00094	-0.00094
	(B * !D_N * !Y)	0.00159	0.00161	0.00157
	(B * !D_N * !Y)	-0.00139	-0.00140	-0.00140
	(A * !B * D_N * !Y)	0.00186	0.00186	0.00184
	(A * !B * D_N * !Y)	-0.00094	-0.00093	-0.00093
	(A * !B * !D_N * !Y)	0.00163	0.00160	0.00156
	(A * !B * !D_N * !Y)	-0.00143	-0.00143	-0.00142
	(!A * !B * !D_N * !Y)	0.00186	0.00159	0.00156
	(!A * !B * !D_N * !Y)	-0.00166	-0.00199	-0.00198

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00348	0.00352	0.00349
	(B * D_N * !Y)	-0.00192	-0.00194	-0.00193
	(B * !D_N * !Y)	0.00334	0.00340	0.00334
	(B * !D_N * !Y)	-0.00248	-0.00250	-0.00248
	(A * !B * D_N * !Y)	0.00348	0.00353	0.00349
	(A * !B * D_N * !Y)	-0.00191	-0.00193	-0.00192
	(A * !B * !D_N * !Y)	0.00342	0.00334	0.00332
	(A * !B * !D_N * !Y)	-0.00253	-0.00256	-0.00255
	(!A * !B * !D_N * !Y)	0.00395	0.00333	0.00328
	(!A * !B * !D_N * !Y)	-0.00296	-0.00366	-0.00366
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00685	0.00693	0.00685
	(B * D_N * !Y)	-0.00381	-0.00386	-0.00383
	(B * !D_N * !Y)	0.00676	0.00694	0.00675
	(B * !D_N * !Y)	-0.00469	-0.00476	-0.00473
	(A * !B * D_N * !Y)	0.00690	0.00695	0.00686
	(A * !B * D_N * !Y)	-0.00380	-0.00382	-0.00381
	(A * !B * !D_N * !Y)	0.00696	0.00676	0.00670
	(A * !B * !D_N * !Y)	-0.00482	-0.00491	-0.00484
	(!A * !B * !D_N * !Y)	0.00802	0.00673	0.00665
	(!A * !B * !D_N * !Y)	-0.00562	-0.00705	-0.00710

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)**	-0.00182	-0.00183	-0.00182
	(B * D_N * !Y)	0.00096	0.00097	0.00097
	(B * !D_N * !Y)	-0.00155	-0.00156	-0.00156
	(B * !D_N * !Y)	0.00139	0.00140	0.00140
	(A * !B * D_N * !Y)	-0.00178	-0.00179	-0.00181
	(A * !B * D_N * !Y)	0.00095	0.00096	0.00095
	(A * !B * !D_N * !Y)	-0.00156	-0.00156	-0.00156
	(A * !B * !D_N * !Y)	0.00143	0.00143	0.00142
	(!A * !B * !D_N * !Y)	-0.00155	-0.00156	-0.00155
	(!A * !B * !D_N * !Y)	0.00197	0.00199	0.00198
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00344	-0.00345	-0.00345
	(B * D_N * !Y)	0.00196	0.00197	0.00199
	(B * !D_N * !Y)	-0.00331	-0.00333	-0.00331
	(B * !D_N * !Y)	0.00248	0.00250	0.00248
	(A * !B * D_N * !Y)	-0.00334	-0.00337	-0.00343
	(A * !B * D_N * !Y)	0.00197	0.00199	0.00196
	(A * !B * !D_N * !Y)	-0.00330	-0.00332	-0.00331
	(A * !B * !D_N * !Y)	0.00253	0.00256	0.00255
	(!A * !B * !D_N * !Y)	-0.00328	-0.00329	-0.00328
	(!A * !B * !D_N * !Y)	0.00365	0.00366	0.00366
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00675	-0.00677	-0.00677
	(B * D_N * !Y)	0.00391	0.00393	0.00395
	(B * !D_N * !Y)	-0.00666	-0.00673	-0.00669
	(B * !D_N * !Y)	0.00469	0.00476	0.00473
	(A * !B * D_N * !Y)	-0.00658	-0.00661	-0.00674
	(A * !B * D_N * !Y)	0.00392	0.00394	0.00389
	(A * !B * !D_N * !Y)	-0.00667	-0.00674	-0.00669
	(A * !B * !D_N * !Y)	0.00482	0.00491	0.00484
	(!A * !B * !D_N * !Y)	-0.00664	-0.00665	-0.00662
	(!A * !B * !D_N * !Y)	0.00708	0.00709	0.00710

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00439	0.00749	0.07839
	(C * !Y)	0.00084	0.00392	0.07483
	(B * !C * !Y)	0.00446	0.00756	0.07842
	(B * !C * !Y)	0.00086	0.00394	0.07482
	(A * !B * !C * !Y)	0.00454	0.00763	0.07830
	(A * !B * !C * !Y)	0.00090	0.00397	0.07466
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00558	0.00870	0.08546
	(C * !Y)	0.00154	0.00466	0.08145
	(B * !C * !Y)	0.00573	0.00886	0.08558
	(B * !C * !Y)	0.00161	0.00472	0.08149
	(A * !B * !C * !Y)	0.00594	0.00907	0.08574
	(A * !B * !C * !Y)	0.00173	0.00484	0.08157
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00847	0.01246	0.13436
	(C * !Y)	0.00257	0.00653	0.12845
	(B * !C * !Y)	0.00878	0.01277	0.13458
	(B * !C * !Y)	0.00272	0.00668	0.12853
	(A * !B * !C * !Y)	0.00919	0.01316	0.13488
	(A * !B * !C * !Y)	0.00295	0.00690	0.12869

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00135	0.00574	0.07633
	(C * !Y)	0.00491	0.00931	0.07989
	(B * !C * !Y)	0.00135	0.00573	0.07630
	(B * !C * !Y)	0.00492	0.00931	0.07987
	(A * !B * !C * !Y)	0.00135	0.00574	0.07616
	(A * !B * !C * !Y)	0.00493	0.00932	0.07973
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00288	0.00687	0.08318
	(C * !Y)	0.00690	0.01088	0.08720
	(B * !C * !Y)	0.00288	0.00687	0.08318
	(B * !C * !Y)	0.00691	0.01089	0.08720
	(A * !B * !C * !Y)	0.00288	0.00687	0.08317
	(A * !B * !C * !Y)	0.00691	0.01089	0.08719
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00615	0.01307	0.13529
	(C * !Y)	0.01202	0.01898	0.14119
	(B * !C * !Y)	0.00615	0.01306	0.13529
	(B * !C * !Y)	0.01204	0.01899	0.14119
	(A * !B * !C * !Y)	0.00615	0.01307	0.13528
	(A * !B * !C * !Y)	0.01204	0.01900	0.14119

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__nor4_1	9.59040
sky130_fd_sc_hs__nor4_2	14.38560
sky130_fd_sc_hs__nor4_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	Y
sky130_fd_sc_hs__nor4_1	0.00256	0.00272	0.00271	0.00275	0.37801
sky130_fd_sc_hs__nor4_2	0.00391	0.00452	0.00448	0.00418	0.65970
sky130_fd_sc_hs__nor4_4	0.00772	0.00809	0.00789	0.00804	1.14875

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor4_1	0.00000	0.00935	0.06294
sky130_fd_sc_hs__nor4_2	0.00000	0.01845	0.12588
sky130_fd_sc_hs__nor4_4	0.00000	0.03689	0.25175

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)	0.14028	1.04128	9.93677
	B->Y (FR)	0.13283	1.05480	10.39180
	C->Y (FR)	0.11115	1.06093	10.82050
	D->Y (FR)	0.07569	1.01511	10.60260
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.12225	0.88184	9.71502
	B->Y (FR)	0.11037	0.88462	10.12630
	C->Y (FR)	0.08111	0.87941	10.55820
	D->Y (FR)	0.04121	0.82419	10.27600
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.13464	0.76902	9.42331
	B->Y (FR)	0.12371	0.77568	9.93470
	C->Y (FR)	0.09741	0.78222	10.53250
	D->Y (FR)	0.04900	0.73525	10.36660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01550	0.18889	1.45217
	B->Y (RF)	0.01713	0.19294	1.54432
	C->Y (RF)	0.01724	0.18926	1.54329
	D->Y (RF)	0.01489	0.18052	1.50383
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02028	0.26542	2.72359
	B->Y (RF)	0.02310	0.26894	2.84622
	C->Y (RF)	0.02252	0.25741	2.82209
	D->Y (RF)	0.01827	0.23480	2.65890
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02076	0.21152	2.39631
	B->Y (RF)	0.02192	0.20471	2.41390
	C->Y (RF)	0.02270	0.20027	2.47967
	D->Y (RF)	0.01704	0.18420	2.44342

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00016	0.00003	0.00898
	A	0.00791	0.00781	0.01675
	B	0.00028	0.00017	0.00866
	B	0.00710	0.00697	0.01548
	C	0.00028	0.00030	0.00930
	C	0.00613	0.00615	0.01518
	D	0.00013	0.00103	0.01853
	D	0.00519	0.00610	0.02362
sky130_fd_sc_hs__nor4_2	A	0.00021	0.00010	0.01031
	A	0.01321	0.01312	0.02334
	B	-0.00014	-0.00024	0.01010
	B	0.01163	0.01156	0.02191
	C	0.00010	0.00014	0.01156
	C	0.00958	0.00962	0.02109
	D	-0.00024	0.00122	0.02520
	D	0.00725	0.00854	0.03274
sky130_fd_sc_hs__nor4_4	A	0.00286	0.00260	0.02393
	A	0.02943	0.02920	0.05062
	B	0.00296	0.00268	0.02459
	B	0.02576	0.02548	0.04741
	C	0.00309	0.00314	0.02576
	C	0.02174	0.02160	0.04453
	D	0.00265	0.00559	0.05085
	D	0.01740	0.02039	0.06571

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.01022	0.01036	0.02020
	A	0.00261	0.00274	0.01262
	B	0.00858	0.00892	0.01786
	B	0.00187	0.00218	0.01115
	C	0.00671	0.00711	0.01576
	C	0.00091	0.00128	0.00995
	D	0.00483	0.00537	0.01399
	D	-0.00020	0.00030	0.00894
sky130_fd_sc_hs__nor4_2	A	0.01783	0.01776	0.02951
	A	0.00522	0.00511	0.01691
	B	0.01488	0.01514	0.02606
	B	0.00335	0.00356	0.01448
	C	0.01040	0.01103	0.02160
	C	0.00102	0.00159	0.01218
	D	0.00621	0.00728	0.01803
	D	-0.00127	-0.00025	0.01049
sky130_fd_sc_hs__nor4_4	A	0.03590	0.03582	0.06053
	A	0.01014	0.01000	0.03478
	B	0.02842	0.02902	0.05219
	B	0.00607	0.00662	0.02980
	C	0.02089	0.02210	0.04361
	C	0.00244	0.00359	0.02512
	D	0.01229	0.01413	0.03534
	D	-0.00245	-0.00064	0.02056

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00161	0.00163	0.00162
	(B * D * !Y)	-0.00172	-0.00178	-0.00178
	(B * C * !D * !Y)	0.00161	0.00163	0.00162
	(B * C * !D * !Y)	-0.00172	-0.00178	-0.00178
	(B * !C * !D * !Y)	0.00161	0.00163	0.00162
	(B * !C * !D * !Y)	-0.00170	-0.00177	-0.00178
	(!B * C * D * !Y)	0.00162	0.00163	0.00162
	(!B * C * D * !Y)	-0.00161	-0.00173	-0.00172
	(!B * C * !D * !Y)	0.00163	0.00163	0.00162
	(!B * C * !D * !Y)	-0.00161	-0.00173	-0.00172
	(!B * !C * D * !Y)	0.00163	0.00162	0.00162
	(!B * !C * D * !Y)	-0.00159	-0.00171	-0.00171
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00163	0.00164	0.00162
	(B * D * !Y)	-0.00334	-0.00347	-0.00346
	(B * C * !D * !Y)	0.00163	0.00164	0.00162
	(B * C * !D * !Y)	-0.00333	-0.00347	-0.00346
	(B * !C * !D * !Y)	0.00164	0.00164	0.00162
	(B * !C * !D * !Y)	-0.00327	-0.00347	-0.00345
	(!B * C * D * !Y)	0.00163	0.00164	0.00162
	(!B * C * D * !Y)	-0.00305	-0.00334	-0.00333
	(!B * C * !D * !Y)	0.00163	0.00164	0.00162
	(!B * C * !D * !Y)	-0.00304	-0.00334	-0.00333
	(!B * !C * D * !Y)	0.00164	0.00164	0.00162
	(!B * !C * D * !Y)	-0.00298	-0.00327	-0.00328

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00337	0.00343	0.00338
	(B * D * !Y)	-0.00680	-0.00711	-0.00709
	(B * C * !D * !Y)	0.00337	0.00343	0.00338
	(B * C * !D * !Y)	-0.00679	-0.00711	-0.00709
	(B * !C * !D * !Y)	0.00337	0.00343	0.00338
	(B * !C * !D * !Y)	-0.00670	-0.00711	-0.00709
	(!B * C * D * !Y)	0.00336	0.00341	0.00338
	(!B * C * D * !Y)	-0.00630	-0.00690	-0.00686
	(!B * C * !D * !Y)	0.00337	0.00341	0.00338
	(!B * C * !D * !Y)	-0.00630	-0.00690	-0.00686
	(!B * !C * D * !Y)	0.00340	0.00341	0.00338
	(!B * !C * D * !Y)	-0.00621	-0.00676	-0.00676

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00161	-0.00162	-0.00162
	(B * D * !Y)	0.00178	0.00178	0.00178
	(B * C * !D * !Y)	-0.00161	-0.00162	-0.00162
	(B * C * !D * !Y)	0.00178	0.00178	0.00178
	(B * !C * !D * !Y)	-0.00161	-0.00162	-0.00162
	(B * !C * !D * !Y)	0.00178	0.00177	0.00178
	(!B * C * D * !Y)	-0.00162	-0.00162	-0.00162
	(!B * C * D * !Y)	0.00172	0.00173	0.00172
	(!B * C * !D * !Y)	-0.00162	-0.00162	-0.00162
	(!B * C * !D * !Y)	0.00172	0.00173	0.00172
	(!B * !C * D * !Y)	-0.00162	-0.00162	-0.00162
	(!B * !C * D * !Y)	0.00170	0.00171	0.00171

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00161	-0.00162	-0.00162
	(B * D * !Y)	0.00343	0.00347	0.00346
	(B * C * !D * !Y)	-0.00161	-0.00162	-0.00162
	(B * C * !D * !Y)	0.00343	0.00347	0.00346
	(B * !C * !D * !Y)	-0.00161	-0.00162	-0.00162
	(B * !C * !D * !Y)	0.00343	0.00347	0.00345
	(!B * C * D * !Y)	-0.00162	-0.00162	-0.00162
	(!B * C * D * !Y)	0.00332	0.00334	0.00333
	(!B * C * !D * !Y)	-0.00162	-0.00162	-0.00162
	(!B * C * !D * !Y)	0.00332	0.00334	0.00333
	(!B * !C * D * !Y)	-0.00161	-0.00162	-0.00162
	(!B * !C * D * !Y)	0.00327	0.00327	0.00328
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00336	-0.00338	-0.00337
	(B * D * !Y)	0.00705	0.00711	0.00709
	(B * C * !D * !Y)	-0.00336	-0.00338	-0.00337
	(B * C * !D * !Y)	0.00705	0.00711	0.00709
	(B * !C * !D * !Y)	-0.00336	-0.00338	-0.00337
	(B * !C * !D * !Y)	0.00705	0.00711	0.00709
	(!B * C * D * !Y)	-0.00336	-0.00338	-0.00337
	(!B * C * D * !Y)	0.00683	0.00690	0.00686
	(!B * C * !D * !Y)	-0.00336	-0.00338	-0.00337
	(!B * C * !D * !Y)	0.00683	0.00690	0.00686
	(!B * !C * D * !Y)	-0.00337	-0.00338	-0.00337
	(!B * !C * D * !Y)	0.00673	0.00676	0.00676

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)**	0.00156	0.00158	0.00156
	(A * C * D * !Y)	-0.00126	-0.00126	-0.00125
	(A * C * !D * !Y)	0.00157	0.00158	0.00156
	(A * C * !D * !Y)	-0.00119	-0.00120	-0.00119
	(A * !C * D * !Y)	0.00156	0.00159	0.00156
	(A * !C * D * !Y)	-0.00118	-0.00118	-0.00117
	(A * !C * !D * !Y)	0.00157	0.00157	0.00156
	(A * !C * !D * !Y)	-0.00102	-0.00102	-0.00101
	(!A * C * D * !Y)	0.00156	0.00157	0.00156
	(!A * C * D * !Y)	-0.00172	-0.00179	-0.00178
	(!A * C * !D * !Y)	0.00164	0.00157	0.00156
	(!A * C * !D * !Y)	-0.00164	-0.00179	-0.00178
	(!A * !C * D * !Y)	0.00160	0.00156	0.00156
	(!A * !C * D * !Y)	-0.00154	-0.00173	-0.00172
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00206	0.00208	0.00206
	(A * C * D * !Y)	-0.00254	-0.00257	-0.00255
	(A * C * !D * !Y)	0.00206	0.00208	0.00206
	(A * C * !D * !Y)	-0.00240	-0.00243	-0.00241
	(A * !C * D * !Y)	0.00205	0.00209	0.00205
	(A * !C * D * !Y)	-0.00237	-0.00240	-0.00238
	(A * !C * !D * !Y)	0.00203	0.00205	0.00204
	(A * !C * !D * !Y)	-0.00206	-0.00208	-0.00206
	(!A * C * D * !Y)	0.00204	0.00206	0.00203
	(!A * C * D * !Y)	-0.00345	-0.00366	-0.00363
	(!A * C * !D * !Y)	0.00221	0.00206	0.00203
	(!A * C * !D * !Y)	-0.00328	-0.00366	-0.00363
	(!A * !C * D * !Y)	0.00213	0.00206	0.00203
	(!A * !C * D * !Y)	-0.00311	-0.00351	-0.00350

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00352	0.00354	0.00350
	(A * C * D * !Y)	-0.00509	-0.00511	-0.00507
	(A * C * !D * !Y)	0.00350	0.00354	0.00350
	(A * C * !D * !Y)	-0.00483	-0.00488	-0.00484
	(A * !C * D * !Y)	0.00353	0.00356	0.00353
	(A * !C * D * !Y)	-0.00476	-0.00479	-0.00475
	(A * !C * !D * !Y)	0.00351	0.00352	0.00349
	(A * !C * !D * !Y)	-0.00414	-0.00414	-0.00411
	(!A * C * D * !Y)	0.00352	0.00354	0.00349
	(!A * C * D * !Y)	-0.00702	-0.00734	-0.00730
	(!A * C * !D * !Y)	0.00378	0.00354	0.00349
	(!A * C * !D * !Y)	-0.00670	-0.00733	-0.00730
	(!A * !C * D * !Y)	0.00366	0.00355	0.00350
	(!A * !C * D * !Y)	-0.00637	-0.00705	-0.00703

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)**	-0.00156	-0.00157	-0.00156
	(A * C * D * !Y)	0.00126	0.00126	0.00125
	(A * C * !D * !Y)	-0.00156	-0.00157	-0.00156
	(A * C * !D * !Y)	0.00119	0.00120	0.00119
	(A * !C * D * !Y)	-0.00156	-0.00156	-0.00156
	(A * !C * D * !Y)	0.00118	0.00118	0.00117
	(A * !C * !D * !Y)	-0.00155	-0.00155	-0.00154
	(A * !C * !D * !Y)	0.00103	0.00103	0.00104
	(!A * C * D * !Y)	-0.00156	-0.00157	-0.00156
	(!A * C * D * !Y)	0.00178	0.00179	0.00178
	(!A * C * !D * !Y)	-0.00156	-0.00156	-0.00156
	(!A * C * !D * !Y)	0.00178	0.00179	0.00178
	(!A * !C * D * !Y)	-0.00155	-0.00156	-0.00156
	(!A * !C * D * !Y)	0.00172	0.00173	0.00172
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00204	-0.00206	-0.00205
	(A * C * D * !Y)	0.00254	0.00257	0.00255
	(A * C * !D * !Y)	-0.00204	-0.00206	-0.00205
	(A * C * !D * !Y)	0.00240	0.00243	0.00241
	(A * !C * D * !Y)	-0.00203	-0.00205	-0.00204
	(A * !C * D * !Y)	0.00237	0.00240	0.00238
	(A * !C * !D * !Y)	-0.00202	-0.00204	-0.00202
	(A * !C * !D * !Y)	0.00209	0.00211	0.00209
	(!A * C * D * !Y)	-0.00204	-0.00205	-0.00203
	(!A * C * D * !Y)	0.00363	0.00366	0.00363
	(!A * C * !D * !Y)	-0.00204	-0.00204	-0.00203
	(!A * C * !D * !Y)	0.00363	0.00366	0.00363
	(!A * !C * D * !Y)	-0.00202	-0.00203	-0.00202
	(!A * !C * D * !Y)	0.00349	0.00351	0.00350

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	-0.00349	-0.00351	-0.00349
	(A * C * D * !Y)	0.00509	0.00511	0.00507
	(A * C * !D * !Y)	-0.00348	-0.00351	-0.00349
	(A * C * !D * !Y)	0.00483	0.00488	0.00484
	(A * !C * D * !Y)	-0.00351	-0.00353	-0.00351
	(A * !C * D * !Y)	0.00476	0.00479	0.00475
	(A * !C * !D * !Y)	-0.00339	-0.00342	-0.00338
	(A * !C * !D * !Y)	0.00416	0.00422	0.00423
	(!A * C * D * !Y)	-0.00348	-0.00350	-0.00348
	(!A * C * D * !Y)	0.00727	0.00734	0.00730
	(!A * C * !D * !Y)	-0.00348	-0.00350	-0.00348
	(!A * C * !D * !Y)	0.00727	0.00733	0.00730
	(!A * !C * D * !Y)	-0.00350	-0.00350	-0.00349
	(!A * !C * D * !Y)	0.00704	0.00705	0.00703

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00162	0.00164	0.00159
	(B * D * !Y)	-0.00112	-0.00113	-0.00112
	(B * !D * !Y)	0.00160	0.00160	0.00159
	(B * !D * !Y)	-0.00096	-0.00096	-0.00095
	(A * !B * D * !Y)	0.00167	0.00162	0.00158
	(A * !B * D * !Y)	-0.00116	-0.00116	-0.00115
	(A * !B * !D * !Y)	0.00161	0.00161	0.00159
	(A * !B * !D * !Y)	-0.00095	-0.00095	-0.00095
	(!A * !B * D * !Y)	0.00190	0.00161	0.00159
	(!A * !B * D * !Y)	-0.00139	-0.00173	-0.00172

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00210	0.00209	0.00204
	(B * D * !Y)	-0.00231	-0.00232	-0.00230
	(B * !D * !Y)	0.00204	0.00204	0.00202
	(B * !D * !Y)	-0.00195	-0.00194	-0.00194
	(A * !B * D * !Y)	0.00219	0.00207	0.00202
	(A * !B * D * !Y)	-0.00236	-0.00236	-0.00235
	(A * !B * !D * !Y)	0.00206	0.00206	0.00202
	(A * !B * !D * !Y)	-0.00193	-0.00192	-0.00193
	(!A * !B * D * !Y)	0.00262	0.00203	0.00200
	(!A * !B * D * !Y)	-0.00287	-0.00353	-0.00353
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00351	0.00356	0.00343
	(B * D * !Y)	-0.00459	-0.00460	-0.00460
	(B * !D * !Y)	0.00341	0.00343	0.00337
	(B * !D * !Y)	-0.00395	-0.00397	-0.00397
	(A * !B * D * !Y)	0.00376	0.00343	0.00338
	(A * !B * D * !Y)	-0.00475	-0.00479	-0.00474
	(A * !B * !D * !Y)	0.00347	0.00347	0.00338
	(A * !B * !D * !Y)	-0.00392	-0.00392	-0.00394
	(!A * !B * D * !Y)	0.00482	0.00343	0.00334
	(!A * !B * D * !Y)	-0.00553	-0.00711	-0.00712

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00158	-0.00158	-0.00158
	(B * D * !Y)	0.00112	0.00113	0.00112
	(B * !D * !Y)	-0.00158	-0.00158	-0.00157
	(B * !D * !Y)	0.00097	0.00097	0.00098
	(A * !B * D * !Y)	-0.00158	-0.00159	-0.00158
	(A * !B * D * !Y)	0.00116	0.00116	0.00115
	(A * !B * !D * !Y)	-0.00155	-0.00156	-0.00157
	(A * !B * !D * !Y)	0.00095	0.00096	0.00096
	(!A * !B * D * !Y)	-0.00157	-0.00158	-0.00158
	(!A * !B * D * !Y)	0.00171	0.00173	0.00172
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00203	-0.00204	-0.00203
	(B * D * !Y)	0.00231	0.00232	0.00230
	(B * !D * !Y)	-0.00200	-0.00201	-0.00198
	(B * !D * !Y)	0.00196	0.00198	0.00199
	(A * !B * D * !Y)	-0.00202	-0.00202	-0.00201
	(A * !B * D * !Y)	0.00236	0.00236	0.00235
	(A * !B * !D * !Y)	-0.00193	-0.00195	-0.00197
	(A * !B * !D * !Y)	0.00197	0.00199	0.00196
	(!A * !B * D * !Y)	-0.00200	-0.00200	-0.00199
	(!A * !B * D * !Y)	0.00353	0.00355	0.00353
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00337	-0.00338	-0.00338
	(B * D * !Y)	0.00459	0.00460	0.00460
	(B * !D * !Y)	-0.00331	-0.00333	-0.00329
	(B * !D * !Y)	0.00400	0.00405	0.00407
	(A * !B * D * !Y)	-0.00338	-0.00340	-0.00337
	(A * !B * D * !Y)	0.00475	0.00479	0.00474
	(A * !B * !D * !Y)	-0.00325	-0.00327	-0.00328
	(A * !B * !D * !Y)	0.00395	0.00400	0.00401
	(!A * !B * D * !Y)	-0.00332	-0.00335	-0.00332
	(!A * !B * D * !Y)	0.00707	0.00714	0.00712

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00184	0.00184	0.00183
	(C * !Y)	-0.00088	-0.00087	-0.00087
	(B * !C * !Y)	0.00184	0.00184	0.00183
	(B * !C * !Y)	-0.00087	-0.00087	-0.00087
	(A * !B * !C * !Y)	0.00184	0.00184	0.00183
	(A * !B * !C * !Y)	-0.00087	-0.00087	-0.00087
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00222	0.00227	0.00222
	(C * !Y)	-0.00171	-0.00175	-0.00172
	(B * !C * !Y)	0.00222	0.00227	0.00222
	(B * !C * !Y)	-0.00170	-0.00174	-0.00171
	(A * !B * !C * !Y)	0.00223	0.00227	0.00223
	(A * !B * !C * !Y)	-0.00171	-0.00174	-0.00171
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00422	0.00422	0.00419
	(C * !Y)	-0.00346	-0.00344	-0.00342
	(B * !C * !Y)	0.00421	0.00422	0.00419
	(B * !C * !Y)	-0.00345	-0.00344	-0.00341
	(A * !B * !C * !Y)	0.00421	0.00423	0.00419
	(A * !B * !C * !Y)	-0.00344	-0.00344	-0.00341

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00178	-0.00179	-0.00182
	(C * !Y)	0.00092	0.00092	0.00088
	(B * !C * !Y)	-0.00172	-0.00172	-0.00181
	(B * !C * !Y)	0.00095	0.00095	0.00088
	(A * !B * !C * !Y)	-0.00163	-0.00164	-0.00179
	(A * !B * !C * !Y)	0.00099	0.00100	0.00090
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00211	-0.00211	-0.00221
	(C * !Y)	0.00181	0.00180	0.00174
	(B * !C * !Y)	-0.00195	-0.00194	-0.00218
	(B * !C * !Y)	0.00190	0.00189	0.00175
	(A * !B * !C * !Y)	-0.00178	-0.00177	-0.00212
	(A * !B * !C * !Y)	0.00200	0.00199	0.00178
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00393	-0.00397	-0.00417
	(C * !Y)	0.00363	0.00365	0.00348
	(B * !C * !Y)	-0.00366	-0.00370	-0.00410
	(B * !C * !Y)	0.00378	0.00379	0.00350
	(A * !B * !C * !Y)	-0.00326	-0.00330	-0.00398
	(A * !B * !C * !Y)	0.00402	0.00403	0.00357

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111ai_1	11.18880
sky130_fd_sc_hs__o2111ai_2	19.18080
sky130_fd_sc_hs__o2111ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	Y
sky130_fd_sc_hs__o2111ai_1	0.00259	0.00270	0.00261	0.00278	0.00271	0.73459
sky130_fd_sc_hs__o2111ai_2	0.00500	0.00505	0.00523	0.00509	0.00507	1.27340
sky130_fd_sc_hs__o2111ai_4	0.00997	0.01009	0.00772	0.00779	0.00771	2.08930

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.02084	0.25175
sky130_fd_sc_hs__o2111ai_2	0.00000	0.04168	0.50351
sky130_fd_sc_hs__o2111ai_4	0.00000	0.04796	0.62938

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)	0.10119	0.88180	10.53910
	A2->Y (FR)	0.09221	0.87288	10.60820
	B1->Y (FR)	0.04065	0.59082	7.62384
	C1->Y (FR)	0.03551	0.58569	7.62640
	D1->Y (FR)	0.02944	0.57771	7.60994
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.10596	0.77538	10.34430
	A2->Y (FR)	0.09169	0.76164	10.44230
	B1->Y (FR)	0.03849	0.51826	7.28337
	C1->Y (FR)	0.03269	0.50830	7.25976
	D1->Y (FR)	0.02489	0.49998	7.23647
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.11421	0.69095	10.03750
	A2->Y (FR)	0.09693	0.68724	10.22890
	B1->Y (FR)	0.07005	0.64150	9.76734
	C1->Y (FR)	0.05089	0.59570	9.23593
	D1->Y (FR)	0.03785	0.60861	9.69551

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.04713	0.36113	4.02176
	A2->Y (RF)	0.03966	0.34444	3.92279
	B1->Y (RF)	0.04301	0.40137	4.70069
	C1->Y (RF)	0.03868	0.43129	5.17585
	D1->Y (RF)	0.03252	0.43826	5.34024
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.05497	0.32052	4.09075
	A2->Y (RF)	0.04402	0.30198	3.98769
	B1->Y (RF)	0.05011	0.35645	4.75899
	C1->Y (RF)	0.04474	0.41752	5.73734
	D1->Y (RF)	0.03404	0.42210	5.95502
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.05165	0.24169	3.49555
	A2->Y (RF)	0.04515	0.23683	3.63192
	B1->Y (RF)	0.03841	0.28566	4.56166
	C1->Y (RF)	0.03275	0.33357	5.42450
	D1->Y (RF)	0.02153	0.34447	5.79369

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00199	0.00199	0.00876
	A1	0.01084	0.01087	0.01771
	A2	0.00202	0.00281	0.01679
	A2	0.00990	0.01070	0.02476
	B1	0.00098	0.00224	0.02014
	B1	0.00750	0.00875	0.02685
	C1	0.00037	0.00163	0.01907
	C1	0.00602	0.00727	0.02492
	D1	-0.00011	0.00121	0.01828
	D1	0.00452	0.00559	0.02308
sky130_fd_sc_hs__o2111ai_2	A1	0.00327	0.00319	0.01509
	A1	0.02109	0.02101	0.03292
	A2	0.00333	0.00443	0.02846
	A2	0.01902	0.01968	0.04425
	B1	0.00124	0.00329	0.03598
	B1	0.01454	0.01656	0.04979
	C1	0.00029	0.00308	0.03345
	C1	0.01140	0.01423	0.04495
	D1	-0.00168	0.00065	0.03134
	D1	0.00731	0.00973	0.04082

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00568	0.00549	0.03085
	A1	0.04053	0.04037	0.06570
	A2	0.00546	0.00787	0.05171
	A2	0.03656	0.03896	0.08296
	B1	0.00209	0.00520	0.04089
	B1	0.02858	0.03147	0.06589
	C1	0.00023	0.00336	0.03955
	C1	0.02248	0.02548	0.06072
	D1	-0.00302	0.00029	0.03495
	D1	0.01106	0.01439	0.04911

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.01106	0.01103	0.01579
	A1	0.00201	0.00197	0.00651
	A2	0.00933	0.00938	0.01408
	A2	0.00122	0.00124	0.00563
	B1	0.00774	0.00782	0.01316
	B1	0.00111	0.00115	0.00614
	C1	0.00680	0.00690	0.01167
	C1	0.00110	0.00118	0.00597
	D1	0.00567	0.00593	0.01296
	D1	0.00105	0.00131	0.00754

sky130_fd_sc_hs__o2111ai_2	**A1**	0.02281	0.02265	0.03227
	A1	0.00462	0.00439	0.01329
	A2	0.01833	0.01847	0.02800
	A2	0.00217	0.00220	0.01085
	B1	0.01550	0.01563	0.02685
	B1	0.00192	0.00198	0.01223
	C1	0.01321	0.01331	0.02313
	C1	0.00199	0.00209	0.01096
	D1	0.01082	0.01143	0.02336
	D1	0.00185	0.00245	0.01371
sky130_fd_sc_hs__o2111ai_4	**A1**	0.04369	0.04321	0.06195
	A1	0.00806	0.00750	0.02626
	A2	0.03485	0.03499	0.05404
	A2	0.00280	0.00289	0.02096
	B1	0.03691	0.03695	0.04819
	B1	0.00484	0.00496	0.01626
	C1	0.03260	0.03284	0.04330
	C1	0.00489	0.00508	0.01525
	D1	0.02792	0.02867	0.04053
	D1	0.00480	0.00551	0.01802

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)**	0.00184	0.00165	0.00163
	(A2 * B1 * C1 * D1 * !Y)	-0.00155	-0.00178	-0.00178
	(A2 * B1 * C1 * !D1 * Y)	0.00163	0.00163	0.00162
	(A2 * B1 * C1 * !D1 * Y)	-0.00175	-0.00179	-0.00178
	(A2 * B1 * !C1 * Y)	0.00161	0.00163	0.00162
	(A2 * B1 * !C1 * Y)	-0.00174	-0.00179	-0.00178
	(A2 * !B1 * Y)	0.00163	0.00163	0.00162
	(A2 * !B1 * Y)	-0.00175	-0.00179	-0.00178
	(!A2 * B1 * C1 * !D1 * Y)	0.00150	0.00152	0.00151
	(!A2 * B1 * C1 * !D1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * B1 * !C1 * D1 * Y)	0.00152	0.00153	0.00152
	(!A2 * B1 * !C1 * D1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * B1 * !C1 * !D1 * Y)	0.00152	0.00153	0.00153
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * C1 * D1 * Y)	0.00154	0.00155	0.00155
	(!A2 * !B1 * C1 * D1 * Y)	-0.00180	-0.00180	-0.00180
	(!A2 * !B1 * !D1 * Y)	0.00154	0.00156	0.00155
	(!A2 * !B1 * !D1 * Y)	-0.00180	-0.00181	-0.00180
	(!A2 * !B1 * !C1 * D1 * Y)	0.00154	0.00156	0.00155
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00180	-0.00181	-0.00180

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00363	0.00318	0.00315
	(A2 * B1 * C1 * D1 * !Y)	-0.00305	-0.00358	-0.00360
	(A2 * B1 * C1 * !D1 * Y)	0.00314	0.00315	0.00314
	(A2 * B1 * C1 * !D1 * Y)	-0.00350	-0.00360	-0.00360
	(A2 * B1 * !C1 * Y)	0.00314	0.00315	0.00314
	(A2 * B1 * !C1 * Y)	-0.00350	-0.00360	-0.00360
	(A2 * !B1 * Y)	0.00314	0.00315	0.00314
	(A2 * !B1 * Y)	-0.00350	-0.00360	-0.00360
	(!A2 * B1 * C1 * !D1 * Y)	0.00296	0.00298	0.00296
	(!A2 * B1 * C1 * !D1 * Y)	-0.00364	-0.00367	-0.00365
	(!A2 * B1 * !C1 * D1 * Y)	0.00296	0.00299	0.00298
	(!A2 * B1 * !C1 * D1 * Y)	-0.00363	-0.00366	-0.00365
	(!A2 * B1 * !C1 * !D1 * Y)	0.00296	0.00299	0.00298
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00363	-0.00366	-0.00365
	(!A2 * !B1 * C1 * D1 * Y)	0.00298	0.00302	0.00299
	(!A2 * !B1 * C1 * D1 * Y)	-0.00364	-0.00367	-0.00365
	(!A2 * !B1 * !D1 * Y)	0.00298	0.00302	0.00299
	(!A2 * !B1 * !D1 * Y)	-0.00364	-0.00367	-0.00365
	(!A2 * !B1 * !C1 * D1 * Y)	0.00298	0.00302	0.00299
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00364	-0.00367	-0.00365

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00734	0.00646	0.00641
	(A2 * B1 * C1 * D1 * !Y)	-0.00592	-0.00693	-0.00695
	(A2 * B1 * C1 * !D1 * Y)	0.00616	0.00617	0.00615
	(A2 * B1 * C1 * !D1 * Y)	-0.00703	-0.00722	-0.00721
	(A2 * B1 * !C1 * Y)	0.00616	0.00618	0.00615
	(A2 * B1 * !C1 * Y)	-0.00703	-0.00722	-0.00721
	(A2 * !B1 * Y)	0.00616	0.00617	0.00615
	(A2 * !B1 * Y)	-0.00703	-0.00722	-0.00721
	(!A2 * B1 * C1 * !D1 * Y)	0.00574	0.00576	0.00574
	(!A2 * B1 * C1 * !D1 * Y)	-0.00728	-0.00728	-0.00727
	(!A2 * B1 * !C1 * D1 * Y)	0.00584	0.00587	0.00584
	(!A2 * B1 * !C1 * D1 * Y)	-0.00728	-0.00729	-0.00727
	(!A2 * B1 * !C1 * !D1 * Y)	0.00578	0.00583	0.00578
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00728	-0.00730	-0.00727
	(!A2 * !B1 * C1 * D1 * Y)	0.00588	0.00592	0.00590
	(!A2 * !B1 * C1 * D1 * Y)	-0.00726	-0.00728	-0.00727
	(!A2 * !B1 * !D1 * Y)	0.00585	0.00592	0.00589
	(!A2 * !B1 * !D1 * Y)	-0.00724	-0.00729	-0.00727
	(!A2 * !B1 * !C1 * D1 * Y)	0.00585	0.00591	0.00589
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00724	-0.00729	-0.00727

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)**	-0.00162	-0.00162	-0.00162
	(A2 * B1 * C1 * D1 * !Y)	0.00178	0.00178	0.00179
	(A2 * B1 * C1 * !D1 * Y)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * C1 * !D1 * Y)	0.00178	0.00179	0.00178
	(A2 * B1 * !C1 * Y)	-0.00161	-0.00162	-0.00162
	(A2 * B1 * !C1 * Y)	0.00178	0.00179	0.00178
	(A2 * !B1 * Y)	-0.00162	-0.00162	-0.00162
	(A2 * !B1 * Y)	0.00178	0.00179	0.00178
	(!A2 * B1 * C1 * !D1 * Y)	-0.00138	-0.00152	-0.00151
	(!A2 * B1 * C1 * !D1 * Y)	0.00180	0.00182	0.00181
	(!A2 * B1 * !C1 * D1 * Y)	-0.00142	-0.00153	-0.00152
	(!A2 * B1 * !C1 * D1 * Y)	0.00180	0.00182	0.00181
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00142	-0.00153	-0.00153
	(!A2 * B1 * !C1 * !D1 * Y)	0.00180	0.00182	0.00181
	(!A2 * !B1 * C1 * D1 * Y)	-0.00147	-0.00155	-0.00155
	(!A2 * !B1 * C1 * D1 * Y)	0.00180	0.00181	0.00181
	(!A2 * !B1 * !D1 * Y)	-0.00148	-0.00156	-0.00155
	(!A2 * !B1 * !D1 * Y)	0.00180	0.00181	0.00181
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00148	-0.00156	-0.00155
	(!A2 * !B1 * !C1 * D1 * Y)	0.00180	0.00181	0.00181

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00313	-0.00314	-0.00314
	(A2 * B1 * C1 * D1 * !Y)	0.00357	0.00359	0.00360
	(A2 * B1 * C1 * !D1 * Y)	-0.00313	-0.00314	-0.00313
	(A2 * B1 * C1 * !D1 * Y)	0.00358	0.00361	0.00360
	(A2 * B1 * !C1 * Y)	-0.00313	-0.00314	-0.00313
	(A2 * B1 * !C1 * Y)	0.00358	0.00361	0.00360
	(A2 * !B1 * Y)	-0.00313	-0.00314	-0.00313
	(A2 * !B1 * Y)	0.00359	0.00361	0.00360
	(!A2 * B1 * C1 * !D1 * Y)	-0.00265	-0.00294	-0.00296
	(!A2 * B1 * C1 * !D1 * Y)	0.00364	0.00367	0.00366
	(!A2 * B1 * !C1 * D1 * Y)	-0.00269	-0.00296	-0.00298
	(!A2 * B1 * !C1 * D1 * Y)	0.00364	0.00368	0.00366
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00270	-0.00296	-0.00298
	(!A2 * B1 * !C1 * !D1 * Y)	0.00364	0.00368	0.00366
	(!A2 * !B1 * C1 * D1 * Y)	-0.00281	-0.00299	-0.00299
	(!A2 * !B1 * C1 * D1 * Y)	0.00364	0.00367	0.00366
	(!A2 * !B1 * !D1 * Y)	-0.00282	-0.00299	-0.00299
	(!A2 * !B1 * !D1 * Y)	0.00364	0.00367	0.00366
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00282	-0.00299	-0.00299
	(!A2 * !B1 * !C1 * D1 * Y)	0.00364	0.00367	0.00366

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00638	-0.00641	-0.00639
	(A2 * B1 * C1 * D1 * !Y)	0.00690	0.00696	0.00695
	(A2 * B1 * C1 * !D1 * Y)	-0.00612	-0.00615	-0.00614
	(A2 * B1 * C1 * !D1 * Y)	0.00717	0.00724	0.00721
	(A2 * B1 * !C1 * Y)	-0.00612	-0.00615	-0.00614
	(A2 * B1 * !C1 * Y)	0.00717	0.00724	0.00721
	(A2 * !B1 * Y)	-0.00612	-0.00615	-0.00613
	(A2 * !B1 * Y)	0.00717	0.00724	0.00721
	(!A2 * B1 * C1 * !D1 * Y)	-0.00519	-0.00575	-0.00574
	(!A2 * B1 * C1 * !D1 * Y)	0.00730	0.00732	0.00729
	(!A2 * B1 * !C1 * D1 * Y)	-0.00529	-0.00578	-0.00584
	(!A2 * B1 * !C1 * D1 * Y)	0.00730	0.00734	0.00729
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00529	-0.00580	-0.00578
	(!A2 * B1 * !C1 * !D1 * Y)	0.00730	0.00732	0.00729
	(!A2 * !B1 * C1 * D1 * Y)	-0.00550	-0.00585	-0.00590
	(!A2 * !B1 * C1 * D1 * Y)	0.00727	0.00732	0.00729
	(!A2 * !B1 * !D1 * Y)	-0.00551	-0.00586	-0.00589
	(!A2 * !B1 * !D1 * Y)	0.00727	0.00734	0.00729
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00551	-0.00585	-0.00589
	(!A2 * !B1 * !C1 * D1 * Y)	0.00727	0.00733	0.00729

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)**	0.00176	0.00177	0.00176
	(A1 * B1 * C1 * D1 * !Y)	-0.00084	-0.00085	-0.00085
	(A1 * B1 * C1 * !D1 * Y)	0.00158	0.00159	0.00158
	(A1 * B1 * C1 * !D1 * Y)	-0.00172	-0.00176	-0.00176
	(A1 * B1 * !C1 * D1 * Y)	0.00158	0.00159	0.00158
	(A1 * B1 * !C1 * D1 * Y)	-0.00172	-0.00176	-0.00176
	(A1 * B1 * !C1 * !D1 * Y)	0.00158	0.00161	0.00158
	(A1 * B1 * !C1 * !D1 * Y)	-0.00172	-0.00177	-0.00176
	(A1 * !B1 * C1 * D1 * Y)	0.00158	0.00161	0.00158
	(A1 * !B1 * C1 * D1 * Y)	-0.00172	-0.00177	-0.00176
	(A1 * !B1 * !D1 * Y)	0.00158	0.00161	0.00158
	(A1 * !B1 * !D1 * Y)	-0.00172	-0.00177	-0.00176
	(A1 * !B1 * !C1 * D1 * Y)	0.00158	0.00161	0.00158
	(A1 * !B1 * !C1 * D1 * Y)	-0.00172	-0.00177	-0.00176
	(!A1 * B1 * C1 * !D1 * Y)	0.00147	0.00149	0.00147
	(!A1 * B1 * C1 * !D1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * B1 * !C1 * D1 * Y)	0.00148	0.00148	0.00148
	(!A1 * B1 * !C1 * D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * B1 * !C1 * !D1 * Y)	0.00148	0.00149	0.00148
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00178	-0.00178	-0.00178
	(!A1 * !B1 * C1 * D1 * Y)	0.00150	0.00153	0.00151
	(!A1 * !B1 * C1 * D1 * Y)	-0.00177	-0.00179	-0.00178
	(!A1 * !B1 * !D1 * Y)	0.00150	0.00152	0.00151
	(!A1 * !B1 * !D1 * Y)	-0.00177	-0.00178	-0.00178
	(!A1 * !B1 * !C1 * D1 * Y)	0.00150	0.00152	0.00151
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00177	-0.00179	-0.00178

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00341	0.00345	0.00343
	(A1 * B1 * C1 * D1 * !Y)	-0.00172	-0.00174	-0.00173
	(A1 * B1 * C1 * !D1 * Y)	0.00306	0.00312	0.00307
	(A1 * B1 * C1 * !D1 * Y)	-0.00343	-0.00356	-0.00355
	(A1 * B1 * !C1 * D1 * Y)	0.00306	0.00312	0.00307
	(A1 * B1 * !C1 * D1 * Y)	-0.00343	-0.00356	-0.00355
	(A1 * B1 * !C1 * !D1 * Y)	0.00307	0.00308	0.00307
	(A1 * B1 * !C1 * !D1 * Y)	-0.00344	-0.00356	-0.00355
	(A1 * !B1 * C1 * D1 * Y)	0.00306	0.00312	0.00307
	(A1 * !B1 * C1 * D1 * Y)	-0.00343	-0.00355	-0.00355
	(A1 * !B1 * !D1 * Y)	0.00307	0.00308	0.00307
	(A1 * !B1 * !D1 * Y)	-0.00344	-0.00356	-0.00355
	(A1 * !B1 * !C1 * D1 * Y)	0.00307	0.00308	0.00307
	(A1 * !B1 * !C1 * D1 * Y)	-0.00344	-0.00356	-0.00355
	(!A1 * B1 * C1 * !D1 * Y)	0.00291	0.00293	0.00292
	(!A1 * B1 * C1 * !D1 * Y)	-0.00360	-0.00360	-0.00360
	(!A1 * B1 * !C1 * D1 * Y)	0.00293	0.00297	0.00293
	(!A1 * B1 * !C1 * D1 * Y)	-0.00360	-0.00362	-0.00360
	(!A1 * B1 * !C1 * !D1 * Y)	0.00293	0.00295	0.00293
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00360	-0.00361	-0.00360
	(!A1 * !B1 * C1 * D1 * Y)	0.00297	0.00300	0.00297
	(!A1 * !B1 * C1 * D1 * Y)	-0.00359	-0.00362	-0.00360
	(!A1 * !B1 * !D1 * Y)	0.00297	0.00301	0.00297
	(!A1 * !B1 * !D1 * Y)	-0.00359	-0.00362	-0.00360
	(!A1 * !B1 * !C1 * D1 * Y)	0.00297	0.00301	0.00298
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00359	-0.00362	-0.00360

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00705	0.00712	0.00706
	(A1 * B1 * C1 * D1 * !Y)	-0.00345	-0.00349	-0.00346
	(A1 * B1 * C1 * !D1 * Y)	0.00623	0.00629	0.00625
	(A1 * B1 * C1 * !D1 * Y)	-0.00697	-0.00719	-0.00718
	(A1 * B1 * !C1 * D1 * Y)	0.00624	0.00628	0.00625
	(A1 * B1 * !C1 * D1 * Y)	-0.00697	-0.00716	-0.00718
	(A1 * B1 * !C1 * !D1 * Y)	0.00622	0.00634	0.00625
	(A1 * B1 * !C1 * !D1 * Y)	-0.00696	-0.00723	-0.00719
	(A1 * !B1 * C1 * D1 * Y)	0.00624	0.00629	0.00625
	(A1 * !B1 * C1 * D1 * Y)	-0.00697	-0.00717	-0.00718
	(A1 * !B1 * !D1 * Y)	0.00626	0.00634	0.00625
	(A1 * !B1 * !D1 * Y)	-0.00700	-0.00723	-0.00719
	(A1 * !B1 * !C1 * D1 * Y)	0.00626	0.00634	0.00625
	(A1 * !B1 * !C1 * D1 * Y)	-0.00700	-0.00723	-0.00719
	(!A1 * B1 * C1 * !D1 * Y)	0.00575	0.00573	0.00573
	(!A1 * B1 * C1 * !D1 * Y)	-0.00729	-0.00727	-0.00727
	(!A1 * B1 * !C1 * D1 * Y)	0.00582	0.00588	0.00585
	(!A1 * B1 * !C1 * D1 * Y)	-0.00724	-0.00729	-0.00727
	(!A1 * B1 * !C1 * !D1 * Y)	0.00581	0.00590	0.00584
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00724	-0.00731	-0.00727
	(!A1 * !B1 * C1 * D1 * Y)	0.00594	0.00601	0.00594
	(!A1 * !B1 * C1 * D1 * Y)	-0.00725	-0.00732	-0.00727
	(!A1 * !B1 * !D1 * Y)	0.00592	0.00597	0.00593
	(!A1 * !B1 * !D1 * Y)	-0.00725	-0.00730	-0.00727
	(!A1 * !B1 * !C1 * D1 * Y)	0.00592	0.00598	0.00593
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00725	-0.00730	-0.00727

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)**	-0.00171	-0.00172	-0.00175
	(A1 * B1 * C1 * D1 * !Y)	0.00089	0.00089	0.00086
	(A1 * B1 * C1 * !D1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * C1 * !D1 * Y)	0.00176	0.00177	0.00176
	(A1 * B1 * !C1 * D1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * !C1 * D1 * Y)	0.00176	0.00177	0.00176
	(A1 * B1 * !C1 * !D1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * B1 * !C1 * !D1 * Y)	0.00175	0.00177	0.00176
	(A1 * !B1 * C1 * D1 * Y)	-0.00157	-0.00159	-0.00158
	(A1 * !B1 * C1 * D1 * Y)	0.00174	0.00177	0.00176
	(A1 * !B1 * !D1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * !D1 * Y)	0.00176	0.00177	0.00176
	(A1 * !B1 * !C1 * D1 * Y)	-0.00158	-0.00159	-0.00158
	(A1 * !B1 * !C1 * D1 * Y)	0.00176	0.00177	0.00176
	(!A1 * B1 * C1 * !D1 * Y)	-0.00134	-0.00149	-0.00147
	(!A1 * B1 * C1 * !D1 * Y)	0.00177	0.00179	0.00178
	(!A1 * B1 * !C1 * D1 * Y)	-0.00138	-0.00148	-0.00148
	(!A1 * B1 * !C1 * D1 * Y)	0.00178	0.00180	0.00178
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00138	-0.00149	-0.00148
	(!A1 * B1 * !C1 * !D1 * Y)	0.00178	0.00180	0.00178
	(!A1 * !B1 * C1 * D1 * Y)	-0.00145	-0.00153	-0.00151
	(!A1 * !B1 * C1 * D1 * Y)	0.00178	0.00180	0.00178
	(!A1 * !B1 * !D1 * Y)	-0.00145	-0.00152	-0.00151
	(!A1 * !B1 * !D1 * Y)	0.00178	0.00179	0.00178
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00145	-0.00152	-0.00151
	(!A1 * !B1 * !C1 * D1 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00326	-0.00328	-0.00340
	(A1 * B1 * C1 * D1 * !Y)	0.00186	0.00187	0.00177
	(A1 * B1 * C1 * !D1 * Y)	-0.00306	-0.00307	-0.00307
	(A1 * B1 * C1 * !D1 * Y)	0.00353	0.00356	0.00355
	(A1 * B1 * !C1 * D1 * Y)	-0.00306	-0.00307	-0.00307
	(A1 * B1 * !C1 * D1 * Y)	0.00353	0.00356	0.00355
	(A1 * B1 * !C1 * !D1 * Y)	-0.00307	-0.00308	-0.00307
	(A1 * B1 * !C1 * !D1 * Y)	0.00355	0.00358	0.00355
	(A1 * !B1 * C1 * D1 * Y)	-0.00306	-0.00307	-0.00307
	(A1 * !B1 * C1 * D1 * Y)	0.00353	0.00355	0.00355
	(A1 * !B1 * !D1 * Y)	-0.00307	-0.00308	-0.00307
	(A1 * !B1 * !D1 * Y)	0.00355	0.00358	0.00355
	(A1 * !B1 * !C1 * D1 * Y)	-0.00307	-0.00308	-0.00307
	(A1 * !B1 * !C1 * D1 * Y)	0.00355	0.00358	0.00355
	(!A1 * B1 * C1 * !D1 * Y)	-0.00259	-0.00288	-0.00292
	(!A1 * B1 * C1 * !D1 * Y)	0.00361	0.00362	0.00361
	(!A1 * B1 * !C1 * D1 * Y)	-0.00265	-0.00290	-0.00293
	(!A1 * B1 * !C1 * D1 * Y)	0.00361	0.00362	0.00361
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00265	-0.00290	-0.00293
	(!A1 * B1 * !C1 * !D1 * Y)	0.00361	0.00362	0.00361
	(!A1 * !B1 * C1 * D1 * Y)	-0.00274	-0.00292	-0.00295
	(!A1 * !B1 * C1 * D1 * Y)	0.00359	0.00362	0.00361
	(!A1 * !B1 * !D1 * Y)	-0.00275	-0.00293	-0.00295
	(!A1 * !B1 * !D1 * Y)	0.00359	0.00362	0.00361
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00275	-0.00293	-0.00295
	(!A1 * !B1 * !C1 * D1 * Y)	0.00359	0.00362	0.00361

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00677	-0.00679	-0.00703
	(A1 * B1 * C1 * D1 * !Y)	0.00376	0.00375	0.00353
	(A1 * B1 * C1 * !D1 * Y)	-0.00623	-0.00625	-0.00624
	(A1 * B1 * C1 * !D1 * Y)	0.00720	0.00719	0.00718
	(A1 * B1 * !C1 * D1 * Y)	-0.00624	-0.00623	-0.00624
	(A1 * B1 * !C1 * D1 * Y)	0.00720	0.00716	0.00718
	(A1 * B1 * !C1 * !D1 * Y)	-0.00622	-0.00626	-0.00624
	(A1 * B1 * !C1 * !D1 * Y)	0.00719	0.00723	0.00719
	(A1 * !B1 * C1 * D1 * Y)	-0.00624	-0.00624	-0.00624
	(A1 * !B1 * C1 * D1 * Y)	0.00718	0.00717	0.00718
	(A1 * !B1 * !D1 * Y)	-0.00624	-0.00626	-0.00624
	(A1 * !B1 * !D1 * Y)	0.00718	0.00723	0.00719
	(A1 * !B1 * !C1 * D1 * Y)	-0.00624	-0.00626	-0.00624
	(A1 * !B1 * !C1 * D1 * Y)	0.00719	0.00723	0.00719
	(!A1 * B1 * C1 * !D1 * Y)	-0.00532	-0.00573	-0.00573
	(!A1 * B1 * C1 * !D1 * Y)	0.00730	0.00731	0.00729
	(!A1 * B1 * !C1 * D1 * Y)	-0.00541	-0.00588	-0.00585
	(!A1 * B1 * !C1 * D1 * Y)	0.00729	0.00735	0.00729
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00541	-0.00590	-0.00584
	(!A1 * B1 * !C1 * !D1 * Y)	0.00729	0.00734	0.00729
	(!A1 * !B1 * C1 * D1 * Y)	-0.00559	-0.00594	-0.00594
	(!A1 * !B1 * C1 * D1 * Y)	0.00725	0.00732	0.00729
	(!A1 * !B1 * !D1 * Y)	-0.00560	-0.00594	-0.00593
	(!A1 * !B1 * !D1 * Y)	0.00725	0.00732	0.00729
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00560	-0.00594	-0.00593
	(!A1 * !B1 * !C1 * D1 * Y)	0.00725	0.00732	0.00729

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)**	0.00144	0.00145	0.00144
	(A2 * C1 * !D1 * Y)	-0.00180	-0.00180	-0.00180
	(A2 * !C1 * D1 * Y)	0.00146	0.00148	0.00147
	(A2 * !C1 * D1 * Y)	-0.00179	-0.00181	-0.00180
	(A2 * !C1 * !D1 * Y)	0.00146	0.00147	0.00147
	(A2 * !C1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(A1 * !A2 * C1 * !D1 * Y)	0.00141	0.00143	0.00142
	(A1 * !A2 * C1 * !D1 * Y)	-0.00179	-0.00180	-0.00180
	(A1 * !A2 * !C1 * D1 * Y)	0.00146	0.00148	0.00147
	(A1 * !A2 * !C1 * D1 * Y)	-0.00179	-0.00181	-0.00180
	(A1 * !A2 * !C1 * !D1 * Y)	0.00146	0.00148	0.00147
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00179	-0.00181	-0.00180
	(!A1 * !A2 * C1 * D1 * Y)	0.00064	0.00065	0.00065
	(!A1 * !A2 * C1 * D1 * Y)	-0.00177	-0.00178	-0.00177
	(!A1 * !A2 * C1 * !D1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00180	-0.00182	-0.00180
	(!A1 * !A2 * !C1 * D1 * Y)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00180	-0.00180	-0.00180
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00083	0.00083	0.00083
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00180	-0.00181	-0.00180

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00309	0.00311	0.00310
	(A2 * C1 * !D1 * Y)	-0.00373	-0.00375	-0.00374
	(A2 * !C1 * D1 * Y)	0.00311	0.00313	0.00312
	(A2 * !C1 * D1 * Y)	-0.00373	-0.00375	-0.00374
	(A2 * !C1 * !D1 * Y)	0.00311	0.00314	0.00312
	(A2 * !C1 * !D1 * Y)	-0.00373	-0.00376	-0.00374
	(A1 * !A2 * C1 * !D1 * Y)	0.00309	0.00313	0.00310
	(A1 * !A2 * C1 * !D1 * Y)	-0.00373	-0.00377	-0.00374
	(A1 * !A2 * !C1 * D1 * Y)	0.00311	0.00314	0.00311
	(A1 * !A2 * !C1 * D1 * Y)	-0.00373	-0.00376	-0.00374
	(A1 * !A2 * !C1 * !D1 * Y)	0.00311	0.00312	0.00311
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00373	-0.00375	-0.00374
	(!A1 * !A2 * C1 * D1 * Y)	0.00137	0.00139	0.00139
	(!A1 * !A2 * C1 * D1 * Y)	-0.00368	-0.00371	-0.00366
	(!A1 * !A2 * C1 * !D1 * Y)	0.00161	0.00163	0.00162
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00373	-0.00377	-0.00375
	(!A1 * !A2 * !C1 * D1 * Y)	0.00164	0.00166	0.00165
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00373	-0.00375	-0.00374
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00173	0.00173	0.00172
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00374	-0.00375	-0.00374

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00591	0.00594	0.00591
	(A2 * C1 * !D1 * Y)	-0.00392	-0.00393	-0.00392
	(A2 * !C1 * D1 * Y)	0.00597	0.00603	0.00598
	(A2 * !C1 * D1 * Y)	-0.00392	-0.00394	-0.00392
	(A2 * !C1 * !D1 * Y)	0.00597	0.00604	0.00598
	(A2 * !C1 * !D1 * Y)	-0.00392	-0.00395	-0.00392
	(A1 * !A2 * C1 * !D1 * Y)	0.00586	0.00592	0.00587
	(A1 * !A2 * C1 * !D1 * Y)	-0.00392	-0.00394	-0.00392
	(A1 * !A2 * !C1 * D1 * Y)	0.00596	0.00603	0.00597
	(A1 * !A2 * !C1 * D1 * Y)	-0.00392	-0.00394	-0.00392
	(A1 * !A2 * !C1 * !D1 * Y)	0.00597	0.00604	0.00597
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00392	-0.00395	-0.00392
	(!A1 * !A2 * C1 * D1 * Y)	0.00252	0.00255	0.00254
	(!A1 * !A2 * C1 * D1 * Y)	-0.00381	-0.00384	-0.00378
	(!A1 * !A2 * C1 * !D1 * Y)	0.00295	0.00298	0.00295
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00394	-0.00397	-0.00395
	(!A1 * !A2 * !C1 * D1 * Y)	0.00302	0.00306	0.00303
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00391	-0.00394	-0.00392
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00317	0.00319	0.00316
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00393	-0.00395	-0.00393

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)**	-0.00132	-0.00145	-0.00144
	(A2 * C1 * !D1 * Y)	0.00180	0.00181	0.00180
	(A2 * !C1 * D1 * Y)	-0.00139	-0.00147	-0.00147
	(A2 * !C1 * D1 * Y)	0.00179	0.00182	0.00181
	(A2 * !C1 * !D1 * Y)	-0.00140	-0.00147	-0.00147
	(A2 * !C1 * !D1 * Y)	0.00179	0.00182	0.00181
	(A1 * !A2 * C1 * !D1 * Y)	-0.00129	-0.00143	-0.00142
	(A1 * !A2 * C1 * !D1 * Y)	0.00180	0.00182	0.00180
	(A1 * !A2 * !C1 * D1 * Y)	-0.00138	-0.00148	-0.00147
	(A1 * !A2 * !C1 * D1 * Y)	0.00179	0.00183	0.00181
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00139	-0.00148	-0.00147
	(A1 * !A2 * !C1 * !D1 * Y)	0.00179	0.00183	0.00181
	(!A1 * !A2 * C1 * D1 * Y)	-0.00061	-0.00061	-0.00062
	(!A1 * !A2 * C1 * D1 * Y)	0.00184	0.00186	0.00182
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * C1 * !D1 * Y)	0.00181	0.00182	0.00180
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !C1 * D1 * Y)	0.00185	0.00184	0.00181
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00083	-0.00083	-0.00083
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00181	0.00182	0.00181

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00283	-0.00306	-0.00309
	(A2 * C1 * !D1 * Y)	0.00376	0.00379	0.00375
	(A2 * !C1 * D1 * Y)	-0.00296	-0.00313	-0.00312
	(A2 * !C1 * D1 * Y)	0.00373	0.00377	0.00375
	(A2 * !C1 * !D1 * Y)	-0.00297	-0.00314	-0.00312
	(A2 * !C1 * !D1 * Y)	0.00373	0.00377	0.00375
	(A1 * !A2 * C1 * !D1 * Y)	-0.00276	-0.00304	-0.00309
	(A1 * !A2 * C1 * !D1 * Y)	0.00376	0.00377	0.00375
	(A1 * !A2 * !C1 * D1 * Y)	-0.00292	-0.00314	-0.00311
	(A1 * !A2 * !C1 * D1 * Y)	0.00373	0.00378	0.00375
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00295	-0.00312	-0.00311
	(A1 * !A2 * !C1 * !D1 * Y)	0.00373	0.00378	0.00375
	(!A1 * !A2 * C1 * D1 * Y)	-0.00129	-0.00131	-0.00132
	(!A1 * !A2 * C1 * D1 * Y)	0.00381	0.00386	0.00378
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00161	-0.00163	-0.00162
	(!A1 * !A2 * C1 * !D1 * Y)	0.00374	0.00378	0.00375
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00164	-0.00166	-0.00165
	(!A1 * !A2 * !C1 * D1 * Y)	0.00379	0.00382	0.00376
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00173	-0.00173	-0.00172
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00374	0.00379	0.00375

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00527	-0.00583	-0.00591
	(A2 * C1 * !D1 * Y)	0.00393	0.00395	0.00393
	(A2 * !C1 * D1 * Y)	-0.00565	-0.00603	-0.00598
	(A2 * !C1 * D1 * Y)	0.00392	0.00396	0.00393
	(A2 * !C1 * !D1 * Y)	-0.00570	-0.00604	-0.00598
	(A2 * !C1 * !D1 * Y)	0.00392	0.00396	0.00393
	(A1 * !A2 * C1 * !D1 * Y)	-0.00519	-0.00586	-0.00587
	(A1 * !A2 * C1 * !D1 * Y)	0.00395	0.00394	0.00393
	(A1 * !A2 * !C1 * D1 * Y)	-0.00560	-0.00603	-0.00597
	(A1 * !A2 * !C1 * D1 * Y)	0.00392	0.00396	0.00393
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00567	-0.00604	-0.00597
	(A1 * !A2 * !C1 * !D1 * Y)	0.00392	0.00396	0.00393
	(!A1 * !A2 * C1 * D1 * Y)	-0.00238	-0.00239	-0.00240
	(!A1 * !A2 * C1 * D1 * Y)	0.00409	0.00412	0.00399
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00295	-0.00298	-0.00295
	(!A1 * !A2 * C1 * !D1 * Y)	0.00395	0.00399	0.00395
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00302	-0.00306	-0.00303
	(!A1 * !A2 * !C1 * D1 * Y)	0.00415	0.00409	0.00395
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00317	-0.00319	-0.00316
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00394	0.00398	0.00394

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)**	0.00149	0.00151	0.00150
	(A2 * B1 * !D1 * Y)	-0.00186	-0.00187	-0.00187
	(A2 * !B1 * D1 * Y)	0.00065	0.00066	0.00065
	(A2 * !B1 * D1 * Y)	-0.00185	-0.00188	-0.00186
	(A2 * !B1 * !D1 * Y)	0.00074	0.00075	0.00074
	(A2 * !B1 * !D1 * Y)	-0.00187	-0.00189	-0.00187
	(A1 * !A2 * B1 * !D1 * Y)	0.00149	0.00150	0.00150
	(A1 * !A2 * B1 * !D1 * Y)	-0.00186	-0.00187	-0.00187
	(!A2 * !B1 * D1 * Y)	0.00065	0.00066	0.00065
	(!A2 * !B1 * D1 * Y)	-0.00186	-0.00188	-0.00186
	(!A2 * !B1 * !D1 * Y)	0.00074	0.00074	0.00074
	(!A2 * !B1 * !D1 * Y)	-0.00187	-0.00187	-0.00187
	(!A1 * !A2 * B1 * D1 * Y)	0.00063	0.00064	0.00062
	(!A1 * !A2 * B1 * D1 * Y)	-0.00186	-0.00188	-0.00186
	(!A1 * !A2 * B1 * !D1 * Y)	0.00080	0.00079	0.00079
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00187	-0.00187	-0.00187

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00295	0.00298	0.00297
	(A2 * B1 * !D1 * Y)	-0.00363	-0.00365	-0.00364
	(A2 * !B1 * D1 * Y)	0.00131	0.00132	0.00132
	(A2 * !B1 * D1 * Y)	-0.00363	-0.00365	-0.00363
	(A2 * !B1 * !D1 * Y)	0.00155	0.00157	0.00155
	(A2 * !B1 * !D1 * Y)	-0.00366	-0.00369	-0.00365
	(A1 * !A2 * B1 * !D1 * Y)	0.00293	0.00296	0.00295
	(A1 * !A2 * B1 * !D1 * Y)	-0.00362	-0.00365	-0.00364
	(!A2 * !B1 * D1 * Y)	0.00131	0.00132	0.00132
	(!A2 * !B1 * D1 * Y)	-0.00363	-0.00365	-0.00363
	(!A2 * !B1 * !D1 * Y)	0.00155	0.00157	0.00155
	(!A2 * !B1 * !D1 * Y)	-0.00366	-0.00369	-0.00365
	(!A1 * !A2 * B1 * D1 * Y)	0.00123	0.00125	0.00125
	(!A1 * !A2 * B1 * D1 * Y)	-0.00362	-0.00366	-0.00363
	(!A1 * !A2 * B1 * !D1 * Y)	0.00158	0.00159	0.00158
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00366	-0.00367	-0.00365

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00583	0.00588	0.00586
	(A2 * B1 * !D1 * Y)	-0.00385	-0.00387	-0.00386
	(A2 * !B1 * D1 * Y)	0.00243	0.00245	0.00245
	(A2 * !B1 * D1 * Y)	-0.00385	-0.00388	-0.00386
	(A2 * !B1 * !D1 * Y)	0.00283	0.00286	0.00284
	(A2 * !B1 * !D1 * Y)	-0.00391	-0.00395	-0.00391
	(A1 * !A2 * B1 * !D1 * Y)	0.00583	0.00588	0.00586
	(A1 * !A2 * B1 * !D1 * Y)	-0.00385	-0.00387	-0.00386
	(!A2 * !B1 * D1 * Y)	0.00243	0.00247	0.00245
	(!A2 * !B1 * D1 * Y)	-0.00386	-0.00390	-0.00386
	(!A2 * !B1 * !D1 * Y)	0.00284	0.00286	0.00284
	(!A2 * !B1 * !D1 * Y)	-0.00392	-0.00395	-0.00391
	(!A1 * !A2 * B1 * D1 * Y)	0.00232	0.00236	0.00235
	(!A1 * !A2 * B1 * D1 * Y)	-0.00384	-0.00389	-0.00386
	(!A1 * !A2 * B1 * !D1 * Y)	0.00297	0.00299	0.00297
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00391	-0.00392	-0.00389

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)**	-0.00138	-0.00151	-0.00150
	(A2 * B1 * !D1 * Y)	0.00196	0.00190	0.00187
	(A2 * !B1 * D1 * Y)	-0.00063	-0.00064	-0.00064
	(A2 * !B1 * D1 * Y)	0.00190	0.00191	0.00187
	(A2 * !B1 * !D1 * Y)	-0.00074	-0.00075	-0.00074
	(A2 * !B1 * !D1 * Y)	0.00196	0.00196	0.00189
	(A1 * !A2 * B1 * !D1 * Y)	-0.00137	-0.00150	-0.00150
	(A1 * !A2 * B1 * !D1 * Y)	0.00198	0.00189	0.00187
	(!A2 * !B1 * D1 * Y)	-0.00063	-0.00064	-0.00064
	(!A2 * !B1 * D1 * Y)	0.00189	0.00191	0.00187
	(!A2 * !B1 * !D1 * Y)	-0.00074	-0.00074	-0.00074
	(!A2 * !B1 * !D1 * Y)	0.00196	0.00196	0.00189
	(!A1 * !A2 * B1 * D1 * Y)	-0.00060	-0.00061	-0.00061
	(!A1 * !A2 * B1 * D1 * Y)	0.00189	0.00191	0.00187
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00080	-0.00079	-0.00079
	(!A1 * !A2 * B1 * !D1 * Y)	0.00194	0.00191	0.00187

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00260	-0.00298	-0.00297
	(A2 * B1 * !D1 * Y)	0.00393	0.00369	0.00365
	(A2 * !B1 * D1 * Y)	-0.00125	-0.00127	-0.00129
	(A2 * !B1 * D1 * Y)	0.00371	0.00377	0.00367
	(A2 * !B1 * !D1 * Y)	-0.00155	-0.00157	-0.00155
	(A2 * !B1 * !D1 * Y)	0.00380	0.00382	0.00368
	(A1 * !A2 * B1 * !D1 * Y)	-0.00255	-0.00296	-0.00295
	(A1 * !A2 * B1 * !D1 * Y)	0.00396	0.00367	0.00365
	(!A2 * !B1 * D1 * Y)	-0.00125	-0.00127	-0.00129
	(!A2 * !B1 * D1 * Y)	0.00371	0.00376	0.00367
	(!A2 * !B1 * !D1 * Y)	-0.00155	-0.00157	-0.00155
	(!A2 * !B1 * !D1 * Y)	0.00380	0.00382	0.00368
	(!A1 * !A2 * B1 * D1 * Y)	-0.00121	-0.00123	-0.00125
	(!A1 * !A2 * B1 * D1 * Y)	0.00371	0.00376	0.00367
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00158	-0.00159	-0.00158
	(!A1 * !A2 * B1 * !D1 * Y)	0.00376	0.00369	0.00365

sky130_fd_sc_hs__o2111ai_4	(A2 * B1 * !D1 * Y)	-0.00506	-0.00588	-0.00586
	(A2 * B1 * !D1 * Y)	0.00454	0.00389	0.00387
	(A2 * !B1 * D1 * Y)	-0.00235	-0.00236	-0.00239
	(A2 * !B1 * D1 * Y)	0.00405	0.00407	0.00392
	(A2 * !B1 * !D1 * Y)	-0.00283	-0.00286	-0.00284
	(A2 * !B1 * !D1 * Y)	0.00425	0.00426	0.00399
	(A1 * !A2 * B1 * !D1 * Y)	-0.00502	-0.00588	-0.00586
	(A1 * !A2 * B1 * !D1 * Y)	0.00458	0.00389	0.00387
	(!A2 * !B1 * D1 * Y)	-0.00235	-0.00236	-0.00239
	(!A2 * !B1 * D1 * Y)	0.00405	0.00406	0.00392
	(!A2 * !B1 * !D1 * Y)	-0.00284	-0.00286	-0.00284
	(!A2 * !B1 * !D1 * Y)	0.00425	0.00426	0.00399
	(!A1 * !A2 * B1 * D1 * Y)	-0.00229	-0.00229	-0.00231
	(!A1 * !A2 * B1 * D1 * Y)	0.00405	0.00406	0.00392
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00297	-0.00299	-0.00297
	(!A1 * !A2 * B1 * !D1 * Y)	0.00426	0.00403	0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	(A2 * !C1 * Y)	0.00048	0.00048	0.00047
	(A2 * !C1 * Y)	-0.00219	-0.00219	-0.00221
	(A2 * !B1 * C1 * Y)	0.00048	0.00049	0.00046
	(A2 * !B1 * C1 * Y)	-0.00215	-0.00217	-0.00221
	(!A2 * !C1 * Y)	0.00047	0.00048	0.00047
	(!A2 * !C1 * Y)	-0.00218	-0.00219	-0.00221
	(!A2 * !B1 * C1 * Y)	0.00048	0.00049	0.00046
	(!A2 * !B1 * C1 * Y)	-0.00214	-0.00217	-0.00221
	(!A1 * !A2 * B1 * C1 * Y)	0.00052	0.00052	0.00047
	(!A1 * !A2 * B1 * C1 * Y)	-0.00207	-0.00209	-0.00220

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00111	0.00111	0.00107
	(A2 * !C1 * Y)	-0.00418	-0.00419	-0.00425
	(A2 * !B1 * C1 * Y)	0.00109	0.00109	0.00102
	(A2 * !B1 * C1 * Y)	-0.00408	-0.00410	-0.00424
	(!A2 * !C1 * Y)	0.00111	0.00110	0.00107
	(!A2 * !C1 * Y)	-0.00418	-0.00416	-0.00425
	(!A2 * !B1 * C1 * Y)	0.00109	0.00109	0.00102
	(!A2 * !B1 * C1 * Y)	-0.00408	-0.00410	-0.00424
	(!A1 * !A2 * B1 * C1 * Y)	0.00112	0.00113	0.00101
	(!A1 * !A2 * B1 * C1 * Y)	-0.00394	-0.00398	-0.00421
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00193	0.00195	0.00188
	(A2 * !C1 * Y)	-0.00503	-0.00507	-0.00519
	(A2 * !B1 * C1 * Y)	0.00192	0.00193	0.00181
	(A2 * !B1 * C1 * Y)	-0.00486	-0.00490	-0.00515
	(!A2 * !C1 * Y)	0.00194	0.00195	0.00188
	(!A2 * !C1 * Y)	-0.00504	-0.00507	-0.00519
	(!A2 * !B1 * C1 * Y)	0.00192	0.00191	0.00181
	(!A2 * !B1 * C1 * Y)	-0.00486	-0.00486	-0.00515
	(!A1 * !A2 * B1 * C1 * Y)	0.00201	0.00202	0.00181
	(!A1 * !A2 * B1 * C1 * Y)	-0.00460	-0.00465	-0.00511

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00046	-0.00046	-0.00046
	(A2 * !C1 * Y)	0.00222	0.00223	0.00222
	(A2 * !B1 * C1 * Y)	-0.00046	-0.00046	-0.00045
	(A2 * !B1 * C1 * Y)	0.00222	0.00223	0.00221
	(!A2 * !C1 * Y)	-0.00046	-0.00046	-0.00046
	(!A2 * !C1 * Y)	0.00222	0.00223	0.00222
	(!A2 * !B1 * C1 * Y)	-0.00046	-0.00046	-0.00045
	(!A2 * !B1 * C1 * Y)	0.00222	0.00223	0.00221
	(!A1 * !A2 * B1 * C1 * Y)	-0.00046	-0.00046	-0.00045
	(!A1 * !A2 * B1 * C1 * Y)	0.00222	0.00224	0.00221
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00105	-0.00105	-0.00104
	(A2 * !C1 * Y)	0.00426	0.00430	0.00426
	(A2 * !B1 * C1 * Y)	-0.00102	-0.00103	-0.00101
	(A2 * !B1 * C1 * Y)	0.00426	0.00430	0.00426
	(!A2 * !C1 * Y)	-0.00104	-0.00105	-0.00104
	(!A2 * !C1 * Y)	0.00423	0.00430	0.00426
	(!A2 * !B1 * C1 * Y)	-0.00101	-0.00103	-0.00101
	(!A2 * !B1 * C1 * Y)	0.00423	0.00430	0.00426
	(!A1 * !A2 * B1 * C1 * Y)	-0.00100	-0.00102	-0.00101
	(!A1 * !A2 * B1 * C1 * Y)	0.00423	0.00430	0.00426
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00186	-0.00188	-0.00184
	(A2 * !C1 * Y)	0.00521	0.00528	0.00519
	(A2 * !B1 * C1 * Y)	-0.00181	-0.00182	-0.00179
	(A2 * !B1 * C1 * Y)	0.00520	0.00524	0.00519
	(!A2 * !C1 * Y)	-0.00186	-0.00187	-0.00184
	(!A2 * !C1 * Y)	0.00521	0.00527	0.00519
	(!A2 * !B1 * C1 * Y)	-0.00181	-0.00182	-0.00179
	(!A2 * !B1 * C1 * Y)	0.00520	0.00523	0.00519
	(!A1 * !A2 * B1 * C1 * Y)	-0.00180	-0.00181	-0.00178
	(!A1 * !A2 * B1 * C1 * Y)	0.00520	0.00524	0.00519

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2111a_1	12.78720
sky130_fd_sc_hs__o2111a_2	15.98400
sky130_fd_sc_hs__o2111a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	C1	D1	X
sky130_fd_sc_hs__o2111a_1	0.00250	0.00256	0.00238	0.00259	0.00260	1.37344
sky130_fd_sc_hs__o2111a_2	0.00253	0.00253	0.00249	0.00258	0.00268	2.82063
sky130_fd_sc_hs__o2111a_4	0.00481	0.00520	0.00441	0.00455	0.00459	5.16088

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111a_1	0.00000	0.19498	1.52822
sky130_fd_sc_hs__o2111a_2	0.00000	0.15111	0.45187
sky130_fd_sc_hs__o2111a_4	0.00000	0.50423	3.05843

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)	0.08206	0.48567	5.40586
	A2->X (RR)	0.07259	0.47186	5.43228
	B1->X (RR)	0.07756	0.49800	5.74951
	C1->X (RR)	0.07367	0.50009	5.80880
	D1->X (RR)	0.06788	0.48883	5.72279
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.08866	0.41103	5.43666
	A2->X (RR)	0.07906	0.39781	5.45991
	B1->X (RR)	0.08465	0.42519	5.79563
	C1->X (RR)	0.08056	0.43058	5.85922
	D1->X (RR)	0.07441	0.42370	5.83115
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.10983	0.36170	5.40361
	A2->X (RR)	0.10074	0.36000	5.43691
	B1->X (RR)	0.10578	0.38884	5.88206
	C1->X (RR)	0.10139	0.41400	6.05060
	D1->X (RR)	0.09128	0.40180	6.06426

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.12715	0.53629	4.92561
	A2->X (FF)	0.11799	0.53929	4.95005
	B1->X (FF)	0.07358	0.45940	4.71853
	C1->X (FF)	0.06611	0.44012	4.64362
	D1->X (FF)	0.05459	0.41200	4.59100
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.14518	0.54883	5.15936
	A2->X (FF)	0.13606	0.55467	5.18675
	B1->X (FF)	0.07127	0.43903	4.80746
	C1->X (FF)	0.06569	0.42408	4.73497
	D1->X (FF)	0.05658	0.40000	4.67150
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.17550	0.55093	5.18698
	A2->X (FF)	0.16762	0.57950	5.32716
	B1->X (FF)	0.09394	0.45744	4.92558
	C1->X (FF)	0.08749	0.43770	4.77422
	D1->X (FF)	0.07620	0.41229	4.72423

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01348	0.01414	0.04845
	A1	0.00474	0.00540	0.03993
	A2	0.01186	0.01293	0.06274
	A2	0.00403	0.00510	0.05511
	B1	0.01030	0.01222	0.07796
	B1	0.00410	0.00602	0.07202
	C1	0.00935	0.01137	0.07588
	C1	0.00409	0.00611	0.07079
	D1	0.00836	0.01037	0.06320
	D1	0.00406	0.00606	0.05915
sky130_fd_sc_hs__o2111a_2	A1	0.01644	0.01717	0.05101
	A1	0.00769	0.00844	0.04291
	A2	0.01472	0.01575	0.06464
	A2	0.00697	0.00803	0.05752
	B1	0.01321	0.01473	0.07574
	B1	0.00684	0.00837	0.06975
	C1	0.01218	0.01377	0.07324
	C1	0.00681	0.00842	0.06817
	D1	0.01121	0.01317	0.06890
	D1	0.00675	0.00871	0.06479

sky130_fd_sc_hs__o2111a_4	**A1**	0.03419	0.03462	0.08941
	A1	0.01638	0.01681	0.07251
	A2	0.03130	0.03218	0.10314
	A2	0.01497	0.01584	0.08764
	B1	0.02762	0.03005	0.14913
	B1	0.01487	0.01735	0.13704
	C1	0.02557	0.02769	0.13883
	C1	0.01487	0.01701	0.12813
	D1	0.02327	0.02648	0.14429
	D1	0.01476	0.01800	0.13786

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00508	0.00591	0.04022
	A1	0.01359	0.01442	0.04840
	A2	0.00515	0.00746	0.05782
	A2	0.01272	0.01503	0.06536
	B1	0.00402	0.00767	0.07419
	B1	0.01009	0.01368	0.08018
	C1	0.00355	0.00753	0.07286
	C1	0.00877	0.01259	0.07758
	D1	0.00291	0.00642	0.07246
	D1	0.00724	0.01072	0.07609

sky130_fd_sc_hs__o2111a_2	**A1**	0.00863	0.00900	0.04359
	A1	0.01714	0.01734	0.05058
	A2	0.00878	0.01051	0.06170
	A2	0.01628	0.01800	0.06743
	B1	0.00672	0.01013	0.07252
	B1	0.01298	0.01618	0.07866
	C1	0.00624	0.00951	0.07039
	C1	0.01156	0.01480	0.07569
	D1	0.00549	0.00884	0.07129
	D1	0.00995	0.01328	0.07575
sky130_fd_sc_hs__o2111a_4	**A1**	0.01822	0.01666	0.07534
	A1	0.03555	0.03384	0.09247
	A2	0.01840	0.01857	0.10197
	A2	0.03420	0.03437	0.11642
	B1	0.01414	0.01971	0.13978
	B1	0.02661	0.03215	0.15184
	C1	0.01313	0.01872	0.13085
	C1	0.02371	0.02927	0.14136
	D1	0.01097	0.01704	0.13252
	D1	0.01948	0.02553	0.14000

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)**	0.00187	0.00167	0.00165
	(A2 * B1 * C1 * D1 * X)	-0.00140	-0.00161	-0.00163
	(A2 * B1 * C1 * !D1 * !X)	0.00163	0.00164	0.00163
	(A2 * B1 * C1 * !D1 * !X)	-0.00161	-0.00164	-0.00164
	(A2 * B1 * !C1 * !X)	0.00163	0.00164	0.00163
	(A2 * B1 * !C1 * !X)	-0.00161	-0.00164	-0.00164
	(A2 * !B1 * !X)	0.00163	0.00164	0.00163
	(A2 * !B1 * !X)	-0.00161	-0.00164	-0.00164
	(!A2 * B1 * C1 * !D1 * !X)	0.00152	0.00152	0.00151
	(!A2 * B1 * C1 * !D1 * !X)	-0.00166	-0.00167	-0.00166
	(!A2 * B1 * !C1 * D1 * !X)	0.00152	0.00153	0.00153
	(!A2 * B1 * !C1 * D1 * !X)	-0.00165	-0.00166	-0.00166
	(!A2 * B1 * !C1 * !D1 * !X)	0.00152	0.00153	0.00153
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00166	-0.00166	-0.00166
	(!A2 * !B1 * C1 * D1 * !X)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * D1 * !X)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !D1 * !X)	0.00158	0.00158	0.00158
	(!A2 * !B1 * !D1 * !X)	-0.00166	-0.00167	-0.00166
	(!A2 * !B1 * !C1 * D1 * !X)	0.00156	0.00157	0.00157
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00192	0.00172	0.00170
	(A2 * B1 * C1 * D1 * X)	-0.00139	-0.00161	-0.00163
	(A2 * B1 * C1 * !D1 * !X)	0.00170	0.00170	0.00169
	(A2 * B1 * C1 * !D1 * !X)	-0.00160	-0.00163	-0.00163
	(A2 * B1 * !C1 * !X)	0.00170	0.00170	0.00169
	(A2 * B1 * !C1 * !X)	-0.00160	-0.00163	-0.00163
	(A2 * !B1 * !X)	0.00170	0.00170	0.00169
	(A2 * !B1 * !X)	-0.00160	-0.00163	-0.00163
	(!A2 * B1 * C1 * !D1 * !X)	0.00162	0.00162	0.00161
	(!A2 * B1 * C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * B1 * !C1 * D1 * !X)	0.00161	0.00163	0.00162
	(!A2 * B1 * !C1 * D1 * !X)	-0.00163	-0.00165	-0.00164
	(!A2 * B1 * !C1 * !D1 * !X)	0.00162	0.00163	0.00163
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00163	-0.00165	-0.00164
	(!A2 * !B1 * C1 * D1 * !X)	0.00161	0.00163	0.00162
	(!A2 * !B1 * C1 * D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !D1 * !X)	0.00161	0.00163	0.00162
	(!A2 * !B1 * !D1 * !X)	-0.00164	-0.00165	-0.00164
	(!A2 * !B1 * !C1 * D1 * !X)	0.00161	0.00163	0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00375	0.00333	0.00329
	(A2 * B1 * C1 * D1 * X)	-0.00269	-0.00315	-0.00319
	(A2 * B1 * C1 * !D1 * !X)	0.00303	0.00304	0.00302
	(A2 * B1 * C1 * !D1 * !X)	-0.00338	-0.00345	-0.00345
	(A2 * B1 * !C1 * !X)	0.00303	0.00304	0.00302
	(A2 * B1 * !C1 * !X)	-0.00338	-0.00345	-0.00345
	(A2 * !B1 * !X)	0.00303	0.00304	0.00302
	(A2 * !B1 * !X)	-0.00338	-0.00345	-0.00345
	(!A2 * B1 * C1 * !D1 * !X)	0.00285	0.00289	0.00286
	(!A2 * B1 * C1 * !D1 * !X)	-0.00347	-0.00350	-0.00348
	(!A2 * B1 * !C1 * D1 * !X)	0.00285	0.00290	0.00286
	(!A2 * B1 * !C1 * D1 * !X)	-0.00347	-0.00350	-0.00348
	(!A2 * B1 * !C1 * !D1 * !X)	0.00286	0.00289	0.00287
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00347	-0.00349	-0.00348
	(!A2 * !B1 * C1 * D1 * !X)	0.00288	0.00290	0.00289
	(!A2 * !B1 * C1 * D1 * !X)	-0.00348	-0.00349	-0.00348
	(!A2 * !B1 * !D1 * !X)	0.00288	0.00290	0.00289
	(!A2 * !B1 * !D1 * !X)	-0.00348	-0.00349	-0.00348
	(!A2 * !B1 * !C1 * D1 * !X)	0.00289	0.00290	0.00289
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00348	-0.00349	-0.00348

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)**	-0.00161	-0.00162	-0.00161
	(A2 * B1 * C1 * D1 * X)	0.00165	0.00167	0.00166
	(A2 * B1 * C1 * !D1 * !X)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * C1 * !D1 * !X)	0.00165	0.00165	0.00164
	(A2 * B1 * !C1 * !X)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * !C1 * !X)	0.00165	0.00165	0.00164
	(A2 * !B1 * !X)	-0.00163	-0.00163	-0.00163
	(A2 * !B1 * !X)	0.00165	0.00165	0.00164
	(!A2 * B1 * C1 * !D1 * !X)	-0.00139	-0.00152	-0.00151
	(!A2 * B1 * C1 * !D1 * !X)	0.00166	0.00168	0.00167
	(!A2 * B1 * !C1 * D1 * !X)	-0.00143	-0.00153	-0.00153
	(!A2 * B1 * !C1 * D1 * !X)	0.00166	0.00168	0.00167
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00143	-0.00153	-0.00153
	(!A2 * B1 * !C1 * !D1 * !X)	0.00166	0.00168	0.00167
	(!A2 * !B1 * C1 * D1 * !X)	-0.00149	-0.00157	-0.00156
	(!A2 * !B1 * C1 * D1 * !X)	0.00166	0.00168	0.00167
	(!A2 * !B1 * !D1 * !X)	-0.00149	-0.00158	-0.00157
	(!A2 * !B1 * !D1 * !X)	0.00166	0.00168	0.00167
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00149	-0.00157	-0.00157
	(!A2 * !B1 * !C1 * D1 * !X)	0.00166	0.00168	0.00167

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00168	-0.00169	-0.00168
	(A2 * B1 * C1 * D1 * X)	0.00163	0.00164	0.00164
	(A2 * B1 * C1 * !D1 * !X)	-0.00169	-0.00169	-0.00169
	(A2 * B1 * C1 * !D1 * !X)	0.00162	0.00163	0.00163
	(A2 * B1 * !C1 * !X)	-0.00169	-0.00169	-0.00169
	(A2 * B1 * !C1 * !X)	0.00163	0.00163	0.00163
	(A2 * !B1 * !X)	-0.00169	-0.00169	-0.00169
	(A2 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A2 * B1 * C1 * !D1 * !X)	-0.00146	-0.00162	-0.00161
	(!A2 * B1 * C1 * !D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * D1 * !X)	-0.00149	-0.00163	-0.00162
	(!A2 * B1 * !C1 * D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00149	-0.00163	-0.00162
	(!A2 * B1 * !C1 * !D1 * !X)	0.00164	0.00166	0.00165
	(!A2 * !B1 * C1 * D1 * !X)	-0.00156	-0.00163	-0.00162
	(!A2 * !B1 * C1 * D1 * !X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * !D1 * !X)	-0.00156	-0.00163	-0.00162
	(!A2 * !B1 * !D1 * !X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00156	-0.00163	-0.00162
	(!A2 * !B1 * !C1 * D1 * !X)	0.00165	0.00166	0.00165

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00322	-0.00324	-0.00322
	(A2 * B1 * C1 * D1 * X)	0.00321	0.00324	0.00323
	(A2 * B1 * C1 * !D1 * !X)	-0.00300	-0.00302	-0.00301
	(A2 * B1 * C1 * !D1 * !X)	0.00343	0.00347	0.00345
	(A2 * B1 * !C1 * !X)	-0.00300	-0.00302	-0.00301
	(A2 * B1 * !C1 * !X)	0.00343	0.00347	0.00345
	(A2 * !B1 * !X)	-0.00300	-0.00302	-0.00301
	(A2 * !B1 * !X)	0.00343	0.00347	0.00345
	(!A2 * B1 * C1 * !D1 * !X)	-0.00263	-0.00284	-0.00286
	(!A2 * B1 * C1 * !D1 * !X)	0.00348	0.00351	0.00349
	(!A2 * B1 * !C1 * D1 * !X)	-0.00265	-0.00284	-0.00286
	(!A2 * B1 * !C1 * D1 * !X)	0.00348	0.00351	0.00349
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00265	-0.00285	-0.00287
	(!A2 * B1 * !C1 * !D1 * !X)	0.00348	0.00351	0.00349
	(!A2 * !B1 * C1 * D1 * !X)	-0.00274	-0.00289	-0.00289
	(!A2 * !B1 * C1 * D1 * !X)	0.00348	0.00350	0.00350
	(!A2 * !B1 * !D1 * !X)	-0.00275	-0.00289	-0.00289
	(!A2 * !B1 * !D1 * !X)	0.00348	0.00350	0.00349
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00275	-0.00289	-0.00289
	(!A2 * !B1 * !C1 * D1 * !X)	0.00348	0.00350	0.00350

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)**	0.00171	0.00172	0.00171
	(A1 * B1 * C1 * D1 * X)	-0.00081	-0.00080	-0.00080
	(A1 * B1 * C1 * !D1 * !X)	0.00155	0.00157	0.00155
	(A1 * B1 * C1 * !D1 * !X)	-0.00158	-0.00162	-0.00161
	(A1 * B1 * !C1 * D1 * !X)	0.00155	0.00157	0.00155
	(A1 * B1 * !C1 * D1 * !X)	-0.00158	-0.00162	-0.00161
	(A1 * B1 * !C1 * !D1 * !X)	0.00155	0.00156	0.00155
	(A1 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00162	-0.00161
	(A1 * !B1 * C1 * D1 * !X)	0.00155	0.00157	0.00155
	(A1 * !B1 * C1 * D1 * !X)	-0.00158	-0.00162	-0.00161
	(A1 * !B1 * !D1 * !X)	0.00155	0.00157	0.00155
	(A1 * !B1 * !D1 * !X)	-0.00158	-0.00161	-0.00161
	(A1 * !B1 * !C1 * D1 * !X)	0.00155	0.00154	0.00155
	(A1 * !B1 * !C1 * D1 * !X)	-0.00158	-0.00161	-0.00161
	(!A1 * B1 * C1 * !D1 * !X)	0.00144	0.00144	0.00144
	(!A1 * B1 * C1 * !D1 * !X)	-0.00163	-0.00163	-0.00163
	(!A1 * B1 * !C1 * D1 * !X)	0.00149	0.00151	0.00149
	(!A1 * B1 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * B1 * !C1 * !D1 * !X)	0.00148	0.00150	0.00148
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * C1 * D1 * !X)	0.00149	0.00151	0.00150
	(!A1 * !B1 * C1 * D1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * !D1 * !X)	0.00147	0.00150	0.00148
	(!A1 * !B1 * !D1 * !X)	-0.00163	-0.00164	-0.00163
	(!A1 * !B1 * !C1 * D1 * !X)	0.00147	0.00148	0.00147
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00163

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00169	0.00171	0.00170
	(A1 * B1 * C1 * D1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * B1 * C1 * !D1 * !X)	0.00156	0.00158	0.00156
	(A1 * B1 * C1 * !D1 * !X)	-0.00154	-0.00158	-0.00158
	(A1 * B1 * !C1 * D1 * !X)	0.00156	0.00158	0.00156
	(A1 * B1 * !C1 * D1 * !X)	-0.00154	-0.00158	-0.00158
	(A1 * B1 * !C1 * !D1 * !X)	0.00156	0.00158	0.00156
	(A1 * B1 * !C1 * !D1 * !X)	-0.00155	-0.00158	-0.00158
	(A1 * !B1 * C1 * D1 * !X)	0.00157	0.00156	0.00156
	(A1 * !B1 * C1 * D1 * !X)	-0.00155	-0.00158	-0.00158
	(A1 * !B1 * !D1 * !X)	0.00157	0.00158	0.00156
	(A1 * !B1 * !D1 * !X)	-0.00155	-0.00158	-0.00158
	(A1 * !B1 * !C1 * D1 * !X)	0.00157	0.00158	0.00156
	(A1 * !B1 * !C1 * D1 * !X)	-0.00155	-0.00158	-0.00158
	(!A1 * B1 * C1 * !D1 * !X)	0.00147	0.00147	0.00147
	(!A1 * B1 * C1 * !D1 * !X)	-0.00159	-0.00159	-0.00159
	(!A1 * B1 * !C1 * D1 * !X)	0.00147	0.00148	0.00147
	(!A1 * B1 * !C1 * D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * B1 * !C1 * !D1 * !X)	0.00146	0.00148	0.00147
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00158	-0.00160	-0.00159
	(!A1 * !B1 * C1 * D1 * !X)	0.00148	0.00149	0.00149
	(!A1 * !B1 * C1 * D1 * !X)	-0.00159	-0.00159	-0.00159
	(!A1 * !B1 * !D1 * !X)	0.00148	0.00151	0.00149
	(!A1 * !B1 * !D1 * !X)	-0.00159	-0.00160	-0.00159
	(!A1 * !B1 * !C1 * D1 * !X)	0.00148	0.00151	0.00149
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00159	-0.00160	-0.00159

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00376	0.00377	0.00375
	(A1 * B1 * C1 * D1 * X)	-0.00160	-0.00160	-0.00158
	(A1 * B1 * C1 * !D1 * !X)	0.00317	0.00317	0.00318
	(A1 * B1 * C1 * !D1 * !X)	-0.00339	-0.00347	-0.00347
	(A1 * B1 * !C1 * D1 * !X)	0.00317	0.00316	0.00318
	(A1 * B1 * !C1 * D1 * !X)	-0.00339	-0.00346	-0.00347
	(A1 * B1 * !C1 * !D1 * !X)	0.00318	0.00322	0.00318
	(A1 * B1 * !C1 * !D1 * !X)	-0.00340	-0.00349	-0.00347
	(A1 * !B1 * C1 * D1 * !X)	0.00317	0.00322	0.00318
	(A1 * !B1 * C1 * D1 * !X)	-0.00339	-0.00349	-0.00347
	(A1 * !B1 * !D1 * !X)	0.00318	0.00318	0.00318
	(A1 * !B1 * !D1 * !X)	-0.00340	-0.00347	-0.00347
	(A1 * !B1 * !C1 * D1 * !X)	0.00318	0.00318	0.00318
	(A1 * !B1 * !C1 * D1 * !X)	-0.00340	-0.00347	-0.00347
	(!A1 * B1 * C1 * !D1 * !X)	0.00290	0.00295	0.00292
	(!A1 * B1 * C1 * !D1 * !X)	-0.00349	-0.00353	-0.00351
	(!A1 * B1 * !C1 * D1 * !X)	0.00295	0.00298	0.00296
	(!A1 * B1 * !C1 * D1 * !X)	-0.00350	-0.00352	-0.00351
	(!A1 * B1 * !C1 * !D1 * !X)	0.00295	0.00299	0.00296
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00350	-0.00352	-0.00351
	(!A1 * !B1 * C1 * D1 * !X)	0.00302	0.00306	0.00303
	(!A1 * !B1 * C1 * D1 * !X)	-0.00351	-0.00353	-0.00351
	(!A1 * !B1 * !D1 * !X)	0.00303	0.00306	0.00303
	(!A1 * !B1 * !D1 * !X)	-0.00351	-0.00352	-0.00351
	(!A1 * !B1 * !C1 * D1 * !X)	0.00302	0.00304	0.00302
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00351	-0.00352	-0.00351

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)**	-0.00164	-0.00165	-0.00168
	(A1 * B1 * C1 * D1 * X)	0.00086	0.00086	0.00083
	(A1 * B1 * C1 * !D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * C1 * !D1 * !X)	0.00161	0.00162	0.00161
	(A1 * B1 * !C1 * D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !C1 * D1 * !X)	0.00161	0.00162	0.00161
	(A1 * B1 * !C1 * !D1 * !X)	-0.00154	-0.00156	-0.00155
	(A1 * B1 * !C1 * !D1 * !X)	0.00160	0.00162	0.00161
	(A1 * !B1 * C1 * D1 * !X)	-0.00154	-0.00156	-0.00155
	(A1 * !B1 * C1 * D1 * !X)	0.00160	0.00162	0.00161
	(A1 * !B1 * !D1 * !X)	-0.00154	-0.00155	-0.00155
	(A1 * !B1 * !D1 * !X)	0.00161	0.00161	0.00161
	(A1 * !B1 * !C1 * D1 * !X)	-0.00154	-0.00154	-0.00155
	(A1 * !B1 * !C1 * D1 * !X)	0.00161	0.00161	0.00161
	(!A1 * B1 * C1 * !D1 * !X)	-0.00131	-0.00144	-0.00144
	(!A1 * B1 * C1 * !D1 * !X)	0.00163	0.00165	0.00164
	(!A1 * B1 * !C1 * D1 * !X)	-0.00135	-0.00149	-0.00148
	(!A1 * B1 * !C1 * D1 * !X)	0.00163	0.00165	0.00164
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00135	-0.00149	-0.00148
	(!A1 * B1 * !C1 * !D1 * !X)	0.00163	0.00165	0.00164
	(!A1 * !B1 * C1 * D1 * !X)	-0.00141	-0.00149	-0.00149
	(!A1 * !B1 * C1 * D1 * !X)	0.00163	0.00164	0.00164
	(!A1 * !B1 * !D1 * !X)	-0.00141	-0.00149	-0.00148
	(!A1 * !B1 * !D1 * !X)	0.00163	0.00164	0.00164
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00141	-0.00148	-0.00147
	(!A1 * !B1 * !C1 * D1 * !X)	0.00163	0.00164	0.00164

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00165	-0.00165	-0.00168
	(A1 * B1 * C1 * D1 * X)	0.00082	0.00082	0.00080
	(A1 * B1 * C1 * !D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * C1 * !D1 * !X)	0.00157	0.00158	0.00158
	(A1 * B1 * !C1 * D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !C1 * D1 * !X)	0.00157	0.00158	0.00158
	(A1 * B1 * !C1 * !D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !C1 * !D1 * !X)	0.00157	0.00158	0.00158
	(A1 * !B1 * C1 * D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * C1 * D1 * !X)	0.00157	0.00158	0.00158
	(A1 * !B1 * !D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !D1 * !X)	0.00157	0.00158	0.00158
	(A1 * !B1 * !C1 * D1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !C1 * D1 * !X)	0.00157	0.00158	0.00158
	(!A1 * B1 * C1 * !D1 * !X)	-0.00133	-0.00147	-0.00147
	(!A1 * B1 * C1 * !D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * B1 * !C1 * D1 * !X)	-0.00136	-0.00148	-0.00147
	(!A1 * B1 * !C1 * D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00136	-0.00148	-0.00147
	(!A1 * B1 * !C1 * !D1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !B1 * C1 * D1 * !X)	-0.00143	-0.00149	-0.00149
	(!A1 * !B1 * C1 * D1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * !D1 * !X)	-0.00143	-0.00150	-0.00149
	(!A1 * !B1 * !D1 * !X)	0.00160	0.00161	0.00160
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00143	-0.00151	-0.00149
	(!A1 * !B1 * !C1 * D1 * !X)	0.00160	0.00161	0.00160

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00360	-0.00362	-0.00369
	(A1 * B1 * C1 * D1 * X)	0.00172	0.00173	0.00165
	(A1 * B1 * C1 * !D1 * !X)	-0.00317	-0.00317	-0.00317
	(A1 * B1 * C1 * !D1 * !X)	0.00347	0.00349	0.00347
	(A1 * B1 * !C1 * D1 * !X)	-0.00317	-0.00316	-0.00317
	(A1 * B1 * !C1 * D1 * !X)	0.00347	0.00349	0.00347
	(A1 * B1 * !C1 * !D1 * !X)	-0.00315	-0.00318	-0.00316
	(A1 * B1 * !C1 * !D1 * !X)	0.00345	0.00349	0.00347
	(A1 * !B1 * C1 * D1 * !X)	-0.00315	-0.00319	-0.00317
	(A1 * !B1 * C1 * D1 * !X)	0.00345	0.00349	0.00347
	(A1 * !B1 * !D1 * !X)	-0.00316	-0.00318	-0.00316
	(A1 * !B1 * !D1 * !X)	0.00346	0.00349	0.00347
	(A1 * !B1 * !C1 * D1 * !X)	-0.00316	-0.00318	-0.00316
	(A1 * !B1 * !C1 * D1 * !X)	0.00346	0.00349	0.00347
	(!A1 * B1 * C1 * !D1 * !X)	-0.00264	-0.00295	-0.00292
	(!A1 * B1 * C1 * !D1 * !X)	0.00351	0.00353	0.00352
	(!A1 * B1 * !C1 * D1 * !X)	-0.00268	-0.00298	-0.00296
	(!A1 * B1 * !C1 * D1 * !X)	0.00351	0.00353	0.00352
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00268	-0.00299	-0.00296
	(!A1 * B1 * !C1 * !D1 * !X)	0.00351	0.00353	0.00352
	(!A1 * !B1 * C1 * D1 * !X)	-0.00283	-0.00302	-0.00303
	(!A1 * !B1 * C1 * D1 * !X)	0.00351	0.00353	0.00352
	(!A1 * !B1 * !D1 * !X)	-0.00283	-0.00302	-0.00303
	(!A1 * !B1 * !D1 * !X)	0.00351	0.00354	0.00352
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00283	-0.00302	-0.00302
	(!A1 * !B1 * !C1 * D1 * !X)	0.00351	0.00354	0.00352

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)**	0.00142	0.00143	0.00142
	(A2 * C1 * !D1 * !X)	-0.00144	-0.00144	-0.00144
	(A2 * !C1 * D1 * !X)	0.00144	0.00146	0.00145
	(A2 * !C1 * D1 * !X)	-0.00143	-0.00145	-0.00144
	(A2 * !C1 * !D1 * !X)	0.00144	0.00146	0.00145
	(A2 * !C1 * !D1 * !X)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * C1 * !D1 * !X)	0.00142	0.00144	0.00142
	(A1 * !A2 * C1 * !D1 * !X)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * !C1 * D1 * !X)	0.00144	0.00147	0.00145
	(A1 * !A2 * !C1 * D1 * !X)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * !C1 * !D1 * !X)	0.00144	0.00147	0.00145
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * C1 * D1 * !X)	0.00062	0.00063	0.00062
	(!A1 * !A2 * C1 * D1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * C1 * !D1 * !X)	0.00072	0.00073	0.00072
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !C1 * D1 * !X)	0.00076	0.00077	0.00076
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00144	-0.00144	-0.00144
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00144	-0.00144	-0.00144

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00144	0.00145	0.00144
	(A2 * C1 * !D1 * !X)	-0.00164	-0.00164	-0.00163
	(A2 * !C1 * D1 * !X)	0.00146	0.00148	0.00147
	(A2 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00164
	(A2 * !C1 * !D1 * !X)	0.00146	0.00147	0.00147
	(A2 * !C1 * !D1 * !X)	-0.00163	-0.00164	-0.00164
	(A1 * !A2 * C1 * !D1 * !X)	0.00146	0.00147	0.00146
	(A1 * !A2 * C1 * !D1 * !X)	-0.00164	-0.00164	-0.00163
	(A1 * !A2 * !C1 * D1 * !X)	0.00147	0.00148	0.00147
	(A1 * !A2 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00164
	(A1 * !A2 * !C1 * !D1 * !X)	0.00147	0.00147	0.00147
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00163	-0.00163	-0.00164
	(!A1 * !A2 * C1 * D1 * !X)	0.00066	0.00067	0.00066
	(!A1 * !A2 * C1 * D1 * !X)	-0.00160	-0.00162	-0.00160
	(!A1 * !A2 * C1 * !D1 * !X)	0.00078	0.00079	0.00078
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00163	-0.00165	-0.00164
	(!A1 * !A2 * !C1 * D1 * !X)	0.00080	0.00081	0.00081
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00163	-0.00164	-0.00164
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00084	0.00085	0.00084
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00164	-0.00165	-0.00164

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00289	0.00292	0.00291
	(A2 * C1 * !D1 * !X)	-0.00282	-0.00284	-0.00283
	(A2 * !C1 * D1 * !X)	0.00293	0.00297	0.00294
	(A2 * !C1 * D1 * !X)	-0.00282	-0.00285	-0.00283
	(A2 * !C1 * !D1 * !X)	0.00292	0.00298	0.00294
	(A2 * !C1 * !D1 * !X)	-0.00282	-0.00285	-0.00283
	(A1 * !A2 * C1 * !D1 * !X)	0.00290	0.00292	0.00290
	(A1 * !A2 * C1 * !D1 * !X)	-0.00283	-0.00284	-0.00283
	(A1 * !A2 * !C1 * D1 * !X)	0.00293	0.00296	0.00294
	(A1 * !A2 * !C1 * D1 * !X)	-0.00282	-0.00284	-0.00283
	(A1 * !A2 * !C1 * !D1 * !X)	0.00293	0.00296	0.00294
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00282	-0.00284	-0.00283
	(!A1 * !A2 * C1 * D1 * !X)	0.00122	0.00124	0.00123
	(!A1 * !A2 * C1 * D1 * !X)	-0.00278	-0.00279	-0.00276
	(!A1 * !A2 * C1 * !D1 * !X)	0.00148	0.00149	0.00148
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00284	-0.00286	-0.00285
	(!A1 * !A2 * !C1 * D1 * !X)	0.00147	0.00148	0.00147
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00284	-0.00285	-0.00284
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00283	-0.00286	-0.00284

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)**	-0.00129	-0.00142	-0.00142
	(A2 * C1 * !D1 * !X)	0.00144	0.00145	0.00144
	(A2 * !C1 * D1 * !X)	-0.00136	-0.00143	-0.00144
	(A2 * !C1 * D1 * !X)	0.00143	0.00145	0.00144
	(A2 * !C1 * !D1 * !X)	-0.00137	-0.00144	-0.00144
	(A2 * !C1 * !D1 * !X)	0.00143	0.00145	0.00144
	(A1 * !A2 * C1 * !D1 * !X)	-0.00126	-0.00141	-0.00142
	(A1 * !A2 * C1 * !D1 * !X)	0.00144	0.00145	0.00144
	(A1 * !A2 * !C1 * D1 * !X)	-0.00135	-0.00144	-0.00144
	(A1 * !A2 * !C1 * D1 * !X)	0.00144	0.00146	0.00144
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00137	-0.00144	-0.00144
	(A1 * !A2 * !C1 * !D1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * C1 * D1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * C1 * D1 * !X)	0.00148	0.00149	0.00145
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * C1 * !D1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * !C1 * D1 * !X)	0.00151	0.00149	0.00145
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00079	-0.00079	-0.00079
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00145	0.00145	0.00144

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00133	-0.00145	-0.00144
	(A2 * C1 * !D1 * !X)	0.00164	0.00165	0.00164
	(A2 * !C1 * D1 * !X)	-0.00140	-0.00147	-0.00147
	(A2 * !C1 * D1 * !X)	0.00163	0.00165	0.00164
	(A2 * !C1 * !D1 * !X)	-0.00141	-0.00147	-0.00147
	(A2 * !C1 * !D1 * !X)	0.00163	0.00165	0.00164
	(A1 * !A2 * C1 * !D1 * !X)	-0.00130	-0.00145	-0.00146
	(A1 * !A2 * C1 * !D1 * !X)	0.00164	0.00166	0.00164
	(A1 * !A2 * !C1 * D1 * !X)	-0.00140	-0.00148	-0.00147
	(A1 * !A2 * !C1 * D1 * !X)	0.00164	0.00166	0.00164
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00141	-0.00147	-0.00147
	(A1 * !A2 * !C1 * !D1 * !X)	0.00164	0.00166	0.00164
	(!A1 * !A2 * C1 * D1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * C1 * D1 * !X)	0.00167	0.00169	0.00165
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00078	-0.00079	-0.00078
	(!A1 * !A2 * C1 * !D1 * !X)	0.00165	0.00165	0.00164
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * !C1 * D1 * !X)	0.00167	0.00167	0.00164
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00164	0.00165	0.00164

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00263	-0.00286	-0.00289
	(A2 * C1 * !D1 * !X)	0.00284	0.00287	0.00284
	(A2 * !C1 * D1 * !X)	-0.00275	-0.00294	-0.00291
	(A2 * !C1 * D1 * !X)	0.00283	0.00285	0.00284
	(A2 * !C1 * !D1 * !X)	-0.00276	-0.00294	-0.00291
	(A2 * !C1 * !D1 * !X)	0.00283	0.00285	0.00284
	(A1 * !A2 * C1 * !D1 * !X)	-0.00256	-0.00284	-0.00289
	(A1 * !A2 * C1 * !D1 * !X)	0.00285	0.00285	0.00284
	(A1 * !A2 * !C1 * D1 * !X)	-0.00272	-0.00293	-0.00291
	(A1 * !A2 * !C1 * D1 * !X)	0.00283	0.00286	0.00284
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00274	-0.00293	-0.00291
	(A1 * !A2 * !C1 * !D1 * !X)	0.00283	0.00286	0.00284
	(!A1 * !A2 * C1 * D1 * !X)	-0.00111	-0.00114	-0.00114
	(!A1 * !A2 * C1 * D1 * !X)	0.00290	0.00294	0.00288
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00148	-0.00149	-0.00148
	(!A1 * !A2 * C1 * !D1 * !X)	0.00284	0.00287	0.00285
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00147	-0.00148	-0.00147
	(!A1 * !A2 * !C1 * D1 * !X)	0.00288	0.00290	0.00285
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00154	-0.00155	-0.00154
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00283	0.00287	0.00285

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)**	0.00143	0.00144	0.00143
	(A2 * B1 * !D1 * !X)	-0.00153	-0.00153	-0.00153
	(A2 * !B1 * D1 * !X)	0.00057	0.00058	0.00057
	(A2 * !B1 * D1 * !X)	-0.00152	-0.00154	-0.00152
	(A2 * !B1 * !D1 * !X)	0.00065	0.00066	0.00065
	(A2 * !B1 * !D1 * !X)	-0.00153	-0.00155	-0.00153
	(A1 * !A2 * B1 * !D1 * !X)	0.00143	0.00145	0.00143
	(A1 * !A2 * B1 * !D1 * !X)	-0.00153	-0.00154	-0.00153
	(!A2 * !B1 * D1 * !X)	0.00058	0.00058	0.00057
	(!A2 * !B1 * D1 * !X)	-0.00153	-0.00154	-0.00152
	(!A2 * !B1 * !D1 * !X)	0.00065	0.00066	0.00065
	(!A2 * !B1 * !D1 * !X)	-0.00153	-0.00155	-0.00153
	(!A1 * !A2 * B1 * D1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * B1 * D1 * !X)	-0.00153	-0.00154	-0.00152
	(!A1 * !A2 * B1 * !D1 * !X)	0.00074	0.00075	0.00075
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00153	-0.00153	-0.00153

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00145	0.00146	0.00146
	(A2 * B1 * !D1 * !X)	-0.00169	-0.00170	-0.00170
	(A2 * !B1 * D1 * !X)	0.00061	0.00062	0.00062
	(A2 * !B1 * D1 * !X)	-0.00169	-0.00170	-0.00169
	(A2 * !B1 * !D1 * !X)	0.00071	0.00072	0.00071
	(A2 * !B1 * !D1 * !X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * B1 * !D1 * !X)	0.00145	0.00146	0.00146
	(A1 * !A2 * B1 * !D1 * !X)	-0.00169	-0.00170	-0.00170
	(!A2 * !B1 * D1 * !X)	0.00061	0.00062	0.00062
	(!A2 * !B1 * D1 * !X)	-0.00169	-0.00170	-0.00169
	(!A2 * !B1 * !D1 * !X)	0.00071	0.00072	0.00071
	(!A2 * !B1 * !D1 * !X)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * B1 * D1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A2 * B1 * D1 * !X)	-0.00170	-0.00170	-0.00169
	(!A1 * !A2 * B1 * !D1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00297	0.00299	0.00298
	(A2 * B1 * !D1 * !X)	-0.00290	-0.00291	-0.00290
	(A2 * !B1 * D1 * !X)	0.00128	0.00129	0.00129
	(A2 * !B1 * D1 * !X)	-0.00290	-0.00292	-0.00290
	(A2 * !B1 * !D1 * !X)	0.00150	0.00150	0.00150
	(A2 * !B1 * !D1 * !X)	-0.00293	-0.00292	-0.00292
	(A1 * !A2 * B1 * !D1 * !X)	0.00297	0.00300	0.00299
	(A1 * !A2 * B1 * !D1 * !X)	-0.00289	-0.00291	-0.00290
	(!A2 * !B1 * D1 * !X)	0.00128	0.00129	0.00129
	(!A2 * !B1 * D1 * !X)	-0.00290	-0.00292	-0.00290
	(!A2 * !B1 * !D1 * !X)	0.00150	0.00150	0.00150
	(!A2 * !B1 * !D1 * !X)	-0.00293	-0.00292	-0.00292
	(!A1 * !A2 * B1 * D1 * !X)	0.00121	0.00123	0.00125
	(!A1 * !A2 * B1 * D1 * !X)	-0.00290	-0.00292	-0.00290
	(!A1 * !A2 * B1 * !D1 * !X)	0.00157	0.00158	0.00157
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00293	-0.00294	-0.00292

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)**	-0.00131	-0.00144	-0.00143
	(A2 * B1 * !D1 * !X)	0.00162	0.00156	0.00154
	(A2 * !B1 * D1 * !X)	-0.00056	-0.00056	-0.00056
	(A2 * !B1 * D1 * !X)	0.00156	0.00157	0.00154
	(A2 * !B1 * !D1 * !X)	-0.00065	-0.00066	-0.00065
	(A2 * !B1 * !D1 * !X)	0.00161	0.00162	0.00155
	(A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00144	-0.00143
	(A1 * !A2 * B1 * !D1 * !X)	0.00164	0.00155	0.00154
	(!A2 * !B1 * D1 * !X)	-0.00056	-0.00056	-0.00056
	(!A2 * !B1 * D1 * !X)	0.00156	0.00157	0.00154
	(!A2 * !B1 * !D1 * !X)	-0.00065	-0.00066	-0.00065
	(!A2 * !B1 * !D1 * !X)	0.00161	0.00162	0.00155
	(!A1 * !A2 * B1 * D1 * !X)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * B1 * D1 * !X)	0.00156	0.00157	0.00154
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00074	-0.00075	-0.00075
	(!A1 * !A2 * B1 * !D1 * !X)	0.00160	0.00158	0.00153

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00132	-0.00145	-0.00145
	(A2 * B1 * !D1 * !X)	0.00178	0.00172	0.00170
	(A2 * !B1 * D1 * !X)	-0.00059	-0.00059	-0.00060
	(A2 * !B1 * D1 * !X)	0.00173	0.00174	0.00171
	(A2 * !B1 * !D1 * !X)	-0.00071	-0.00072	-0.00071
	(A2 * !B1 * !D1 * !X)	0.00178	0.00179	0.00172
	(A1 * !A2 * B1 * !D1 * !X)	-0.00132	-0.00145	-0.00145
	(A1 * !A2 * B1 * !D1 * !X)	0.00180	0.00172	0.00170
	(!A2 * !B1 * D1 * !X)	-0.00059	-0.00059	-0.00060
	(!A2 * !B1 * D1 * !X)	0.00173	0.00174	0.00171
	(!A2 * !B1 * !D1 * !X)	-0.00071	-0.00072	-0.00071
	(!A2 * !B1 * !D1 * !X)	0.00178	0.00179	0.00172
	(!A1 * !A2 * B1 * D1 * !X)	-0.00058	-0.00058	-0.00059
	(!A1 * !A2 * B1 * D1 * !X)	0.00173	0.00174	0.00171
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B1 * !D1 * !X)	0.00174	0.00172	0.00170

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	-0.00264	-0.00299	-0.00298
	(A2 * B1 * !D1 * !X)	0.00316	0.00294	0.00292
	(A2 * !B1 * D1 * !X)	-0.00123	-0.00123	-0.00125
	(A2 * !B1 * D1 * !X)	0.00301	0.00302	0.00294
	(A2 * !B1 * !D1 * !X)	-0.00150	-0.00150	-0.00150
	(A2 * !B1 * !D1 * !X)	0.00303	0.00308	0.00296
	(A1 * !A2 * B1 * !D1 * !X)	-0.00258	-0.00300	-0.00299
	(A1 * !A2 * B1 * !D1 * !X)	0.00320	0.00292	0.00292
	(!A2 * !B1 * D1 * !X)	-0.00123	-0.00123	-0.00125
	(!A2 * !B1 * D1 * !X)	0.00301	0.00302	0.00294
	(!A2 * !B1 * !D1 * !X)	-0.00150	-0.00150	-0.00150
	(!A2 * !B1 * !D1 * !X)	0.00306	0.00308	0.00296
	(!A1 * !A2 * B1 * D1 * !X)	-0.00119	-0.00119	-0.00121
	(!A1 * !A2 * B1 * D1 * !X)	0.00301	0.00302	0.00294
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00157	-0.00158	-0.00157
	(!A1 * !A2 * B1 * !D1 * !X)	0.00301	0.00296	0.00293

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	0.00049	0.00050	0.00048
	(A2 * !C1 * !X)	-0.00187	-0.00188	-0.00190
	(A2 * !B1 * C1 * !X)	0.00049	0.00049	0.00047
	(A2 * !B1 * C1 * !X)	-0.00184	-0.00185	-0.00189
	(!A2 * !C1 * !X)	0.00050	0.00050	0.00048
	(!A2 * !C1 * !X)	-0.00187	-0.00188	-0.00190
	(!A2 * !B1 * C1 * !X)	0.00049	0.00049	0.00047
	(!A2 * !B1 * C1 * !X)	-0.00184	-0.00185	-0.00189
	(!A1 * !A2 * B1 * C1 * !X)	0.00054	0.00054	0.00049
	(!A1 * !A2 * B1 * C1 * !X)	-0.00177	-0.00178	-0.00188

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00052	0.00052	0.00051
	(A2 * !C1 * !X)	-0.00208	-0.00209	-0.00211
	(A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00048
	(A2 * !B1 * C1 * !X)	-0.00205	-0.00207	-0.00211
	(!A2 * !C1 * !X)	0.00052	0.00052	0.00051
	(!A2 * !C1 * !X)	-0.00208	-0.00209	-0.00211
	(!A2 * !B1 * C1 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * C1 * !X)	-0.00205	-0.00207	-0.00211
	(!A1 * !A2 * B1 * C1 * !X)	0.00055	0.00055	0.00049
	(!A1 * !A2 * B1 * C1 * !X)	-0.00198	-0.00198	-0.00210
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00109	0.00109	0.00105
	(A2 * !C1 * !X)	-0.00347	-0.00347	-0.00354
	(A2 * !B1 * C1 * !X)	0.00103	0.00104	0.00097
	(A2 * !B1 * C1 * !X)	-0.00337	-0.00339	-0.00353
	(!A2 * !C1 * !X)	0.00108	0.00109	0.00105
	(!A2 * !C1 * !X)	-0.00346	-0.00347	-0.00354
	(!A2 * !B1 * C1 * !X)	0.00103	0.00104	0.00097
	(!A2 * !B1 * C1 * !X)	-0.00337	-0.00339	-0.00353
	(!A1 * !A2 * B1 * C1 * !X)	0.00108	0.00109	0.00097
	(!A1 * !A2 * B1 * C1 * !X)	-0.00325	-0.00327	-0.00351

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00048	-0.00048	-0.00047
	(A2 * !C1 * !X)	0.00190	0.00193	0.00190
	(A2 * !B1 * C1 * !X)	-0.00047	-0.00047	-0.00047
	(A2 * !B1 * C1 * !X)	0.00189	0.00192	0.00190
	(!A2 * !C1 * !X)	-0.00048	-0.00048	-0.00047
	(!A2 * !C1 * !X)	0.00190	0.00193	0.00190
	(!A2 * !B1 * C1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !B1 * C1 * !X)	0.00189	0.00192	0.00190
	(!A1 * !A2 * B1 * C1 * !X)	-0.00047	-0.00048	-0.00046
	(!A1 * !A2 * B1 * C1 * !X)	0.00189	0.00192	0.00190
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00050	-0.00050	-0.00049
	(A2 * !C1 * !X)	0.00211	0.00213	0.00212
	(A2 * !B1 * C1 * !X)	-0.00048	-0.00049	-0.00048
	(A2 * !B1 * C1 * !X)	0.00211	0.00214	0.00212
	(!A2 * !C1 * !X)	-0.00050	-0.00050	-0.00049
	(!A2 * !C1 * !X)	0.00211	0.00213	0.00212
	(!A2 * !B1 * C1 * !X)	-0.00048	-0.00049	-0.00048
	(!A2 * !B1 * C1 * !X)	0.00211	0.00213	0.00212
	(!A1 * !A2 * B1 * C1 * !X)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * B1 * C1 * !X)	0.00211	0.00214	0.00212
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00102	-0.00104	-0.00102
	(A2 * !C1 * !X)	0.00354	0.00361	0.00356
	(A2 * !B1 * C1 * !X)	-0.00098	-0.00100	-0.00097
	(A2 * !B1 * C1 * !X)	0.00354	0.00359	0.00355
	(!A2 * !C1 * !X)	-0.00102	-0.00104	-0.00102
	(!A2 * !C1 * !X)	0.00354	0.00361	0.00356
	(!A2 * !B1 * C1 * !X)	-0.00098	-0.00100	-0.00097
	(!A2 * !B1 * C1 * !X)	0.00354	0.00358	0.00355
	(!A1 * !A2 * B1 * C1 * !X)	-0.00098	-0.00100	-0.00097
	(!A1 * !A2 * B1 * C1 * !X)	0.00354	0.00358	0.00355

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211ai_1	9.59040
sky130_fd_sc_hs__o211ai_2	15.98400
sky130_fd_sc_hs__o211ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	Y
sky130_fd_sc_hs__o211ai_1	0.00259	0.00270	0.00275	0.00268	0.73252
sky130_fd_sc_hs__o211ai_2	0.00503	0.00517	0.00516	0.00502	1.27657
sky130_fd_sc_hs__o211ai_4	0.00992	0.01019	0.00742	0.00764	2.33541

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.02964	0.18882
sky130_fd_sc_hs__o211ai_2	0.00000	0.05927	0.37763
sky130_fd_sc_hs__o211ai_4	0.00000	0.07134	0.50351

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)	0.08995	0.87037	10.52600
	A2->Y (FR)	0.08076	0.86103	10.60030
	B1->Y (FR)	0.03645	0.59622	7.75020
	C1->Y (FR)	0.02958	0.58887	7.73622
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.08711	0.75596	10.35660
	A2->Y (FR)	0.07297	0.74635	10.45920
	B1->Y (FR)	0.03042	0.50773	7.28137
	C1->Y (FR)	0.02194	0.49378	7.19904
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.08369	0.65355	10.17480
	A2->Y (FR)	0.07038	0.65587	10.43220
	B1->Y (FR)	0.04403	0.61355	9.90922
	C1->Y (FR)	0.02808	0.59018	9.72170

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.03700	0.33015	3.77889
	A2->Y (RF)	0.03101	0.31645	3.70172
	B1->Y (RF)	0.03325	0.37938	4.52865
	C1->Y (RF)	0.02780	0.39043	4.73976
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.03595	0.25862	3.43348
	A2->Y (RF)	0.02983	0.25113	3.44936
	B1->Y (RF)	0.03284	0.33384	4.60081
	C1->Y (RF)	0.02510	0.34488	4.86826
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.03765	0.22602	3.62475
	A2->Y (RF)	0.02860	0.20840	3.49160
	B1->Y (RF)	0.03123	0.28719	4.71609
	C1->Y (RF)	0.02414	0.32441	5.45117

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00147	0.00150	0.00877
	A1	0.00911	0.00916	0.01652
	A2	0.00148	0.00247	0.01760
	A2	0.00818	0.00918	0.02437
	B1	0.00044	0.00187	0.02103
	B1	0.00588	0.00735	0.02664
	C1	-0.00018	0.00127	0.02002
	C1	0.00421	0.00564	0.02456
sky130_fd_sc_hs__o211ai_2	A1	0.00167	0.00179	0.01570
	A1	0.01717	0.01730	0.03120
	A2	0.00168	0.00357	0.03046
	A2	0.01508	0.01701	0.04403
	B1	0.00025	0.00353	0.03929
	B1	0.01105	0.01437	0.05040
	C1	-0.00173	0.00216	0.03684
	C1	0.00681	0.01079	0.04615
sky130_fd_sc_hs__o211ai_4	A1	0.00328	0.00344	0.02847
	A1	0.03346	0.03360	0.05875
	A2	0.00324	0.00712	0.05554
	A2	0.02938	0.03296	0.08198
	B1	-0.00016	0.00371	0.04137
	B1	0.01692	0.02084	0.05859
	C1	-0.00341	0.00049	0.03862
	C1	0.00951	0.01341	0.05157

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00981	0.00985	0.01460
	A1	0.00204	0.00203	0.00676
	A2	0.00808	0.00814	0.01299
	A2	0.00123	0.00129	0.00588
	B1	0.00663	0.00677	0.01241
	B1	0.00113	0.00123	0.00646
	C1	0.00550	0.00581	0.01252
	C1	0.00112	0.00143	0.00812
sky130_fd_sc_hs__o211ai_2	A1	0.01925	0.01922	0.02968
	A1	0.00356	0.00347	0.01351
	A2	0.01477	0.01504	0.02494
	A2	0.00107	0.00128	0.01084
	B1	0.01173	0.01201	0.02288
	B1	0.00081	0.00105	0.01149
	C1	0.00925	0.01007	0.02395
	C1	0.00070	0.00150	0.01472
sky130_fd_sc_hs__o211ai_4	A1	0.03535	0.03521	0.05452
	A1	0.00475	0.00455	0.02353
	A2	0.02670	0.02718	0.04637
	A2	-0.00007	0.00037	0.01857
	B1	0.01939	0.01991	0.03198
	B1	0.00213	0.00253	0.01368
	C1	0.01490	0.01581	0.02996
	C1	0.00199	0.00289	0.01587

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)**	0.00184	0.00165	0.00163
	(A2 * B1 * C1 * !Y)	-0.00154	-0.00177	-0.00177
	(A2 * B1 * !C1 * Y)	0.00163	0.00164	0.00163
	(A2 * B1 * !C1 * Y)	-0.00173	-0.00178	-0.00177
	(A2 * !B1 * Y)	0.00163	0.00164	0.00163
	(A2 * !B1 * Y)	-0.00173	-0.00178	-0.00177
	(!A2 * B1 * !C1 * Y)	0.00156	0.00157	0.00157
	(!A2 * B1 * !C1 * Y)	-0.00178	-0.00179	-0.00179
	(!A2 * !B1 * C1 * Y)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * Y)	-0.00178	-0.00179	-0.00179
	(!A2 * !B1 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A2 * !B1 * !C1 * Y)	-0.00178	-0.00179	-0.00179
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00371	0.00323	0.00320
	(A2 * B1 * C1 * !Y)	-0.00304	-0.00359	-0.00362
	(A2 * B1 * !C1 * Y)	0.00318	0.00320	0.00318
	(A2 * B1 * !C1 * Y)	-0.00351	-0.00363	-0.00362
	(A2 * !B1 * Y)	0.00318	0.00320	0.00318
	(A2 * !B1 * Y)	-0.00351	-0.00363	-0.00362
	(!A2 * B1 * !C1 * Y)	0.00298	0.00301	0.00299
	(!A2 * B1 * !C1 * Y)	-0.00367	-0.00369	-0.00369
	(!A2 * !B1 * C1 * Y)	0.00303	0.00307	0.00304
	(!A2 * !B1 * C1 * Y)	-0.00367	-0.00370	-0.00368
	(!A2 * !B1 * !C1 * Y)	0.00304	0.00307	0.00305
	(!A2 * !B1 * !C1 * Y)	-0.00367	-0.00370	-0.00368

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00727	0.00630	0.00625
	(A2 * B1 * C1 * !Y)	-0.00604	-0.00714	-0.00719
	(A2 * B1 * !C1 * Y)	0.00623	0.00625	0.00624
	(A2 * B1 * !C1 * Y)	-0.00698	-0.00719	-0.00718
	(A2 * !B1 * Y)	0.00623	0.00626	0.00624
	(A2 * !B1 * Y)	-0.00698	-0.00719	-0.00718
	(!A2 * B1 * !C1 * Y)	0.00586	0.00592	0.00589
	(!A2 * B1 * !C1 * Y)	-0.00728	-0.00731	-0.00730
	(!A2 * !B1 * C1 * Y)	0.00599	0.00601	0.00599
	(!A2 * !B1 * C1 * Y)	-0.00729	-0.00731	-0.00729
	(!A2 * !B1 * !C1 * Y)	0.00600	0.00602	0.00600
	(!A2 * !B1 * !C1 * Y)	-0.00729	-0.00731	-0.00729

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)**	-0.00162	-0.00163	-0.00162
	(A2 * B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(A2 * B1 * !C1 * Y)	-0.00163	-0.00163	-0.00163
	(A2 * B1 * !C1 * Y)	0.00177	0.00178	0.00177
	(A2 * !B1 * Y)	-0.00162	-0.00163	-0.00163
	(A2 * !B1 * Y)	0.00176	0.00178	0.00177
	(!A2 * B1 * !C1 * Y)	-0.00143	-0.00157	-0.00156
	(!A2 * B1 * !C1 * Y)	0.00179	0.00181	0.00179
	(!A2 * !B1 * C1 * Y)	-0.00148	-0.00157	-0.00156
	(!A2 * !B1 * C1 * Y)	0.00178	0.00181	0.00179
	(!A2 * !B1 * !C1 * Y)	-0.00149	-0.00157	-0.00156
	(!A2 * !B1 * !C1 * Y)	0.00178	0.00181	0.00179

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00319	-0.00320	-0.00318
	(A2 * B1 * C1 * !Y)	0.00362	0.00364	0.00362
	(A2 * B1 * !C1 * Y)	-0.00318	-0.00319	-0.00318
	(A2 * B1 * !C1 * Y)	0.00363	0.00366	0.00362
	(A2 * !B1 * Y)	-0.00317	-0.00319	-0.00318
	(A2 * !B1 * Y)	0.00361	0.00366	0.00362
	(!A2 * B1 * !C1 * Y)	-0.00283	-0.00301	-0.00299
	(!A2 * B1 * !C1 * Y)	0.00369	0.00372	0.00370
	(!A2 * !B1 * C1 * Y)	-0.00290	-0.00305	-0.00304
	(!A2 * !B1 * C1 * Y)	0.00367	0.00371	0.00369
	(!A2 * !B1 * !C1 * Y)	-0.00290	-0.00307	-0.00305
	(!A2 * !B1 * !C1 * Y)	0.00367	0.00372	0.00369
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00622	-0.00624	-0.00622
	(A2 * B1 * C1 * !Y)	0.00715	0.00721	0.00719
	(A2 * B1 * !C1 * Y)	-0.00621	-0.00625	-0.00623
	(A2 * B1 * !C1 * Y)	0.00715	0.00722	0.00718
	(A2 * !B1 * Y)	-0.00621	-0.00625	-0.00623
	(A2 * !B1 * Y)	0.00715	0.00722	0.00718
	(!A2 * B1 * !C1 * Y)	-0.00541	-0.00587	-0.00589
	(!A2 * B1 * !C1 * Y)	0.00733	0.00737	0.00732
	(!A2 * !B1 * C1 * Y)	-0.00558	-0.00593	-0.00598
	(!A2 * !B1 * C1 * Y)	0.00729	0.00734	0.00731
	(!A2 * !B1 * !C1 * Y)	-0.00559	-0.00593	-0.00598
	(!A2 * !B1 * !C1 * Y)	0.00729	0.00735	0.00732

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)**	0.00175	0.00176	0.00175
	(A1 * B1 * C1 * !Y)	-0.00089	-0.00089	-0.00088
	(A1 * B1 * !C1 * Y)	0.00159	0.00160	0.00159
	(A1 * B1 * !C1 * Y)	-0.00174	-0.00178	-0.00178
	(A1 * !B1 * C1 * Y)	0.00159	0.00159	0.00159
	(A1 * !B1 * C1 * Y)	-0.00174	-0.00178	-0.00178
	(A1 * !B1 * !C1 * Y)	0.00159	0.00159	0.00159
	(A1 * !B1 * !C1 * Y)	-0.00174	-0.00179	-0.00178
	(!A1 * B1 * !C1 * Y)	0.00148	0.00149	0.00148
	(!A1 * B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * C1 * Y)	0.00151	0.00153	0.00151
	(!A1 * !B1 * C1 * Y)	-0.00180	-0.00181	-0.00180
	(!A1 * !B1 * !C1 * Y)	0.00152	0.00154	0.00152
	(!A1 * !B1 * !C1 * Y)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00362	0.00363	0.00361
	(A1 * B1 * C1 * !Y)	-0.00173	-0.00172	-0.00171
	(A1 * B1 * !C1 * Y)	0.00319	0.00324	0.00319
	(A1 * B1 * !C1 * Y)	-0.00346	-0.00360	-0.00358
	(A1 * !B1 * C1 * Y)	0.00320	0.00324	0.00319
	(A1 * !B1 * C1 * Y)	-0.00347	-0.00360	-0.00358
	(A1 * !B1 * !C1 * Y)	0.00320	0.00321	0.00319
	(A1 * !B1 * !C1 * Y)	-0.00348	-0.00360	-0.00359
	(!A1 * B1 * !C1 * Y)	0.00300	0.00302	0.00300
	(!A1 * B1 * !C1 * Y)	-0.00364	-0.00365	-0.00364
	(!A1 * !B1 * C1 * Y)	0.00303	0.00306	0.00304
	(!A1 * !B1 * C1 * Y)	-0.00363	-0.00365	-0.00364
	(!A1 * !B1 * !C1 * Y)	0.00304	0.00306	0.00304
	(!A1 * !B1 * !C1 * Y)	-0.00362	-0.00365	-0.00364

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00706	0.00711	0.00704
	(A1 * B1 * C1 * !Y)	-0.00350	-0.00350	-0.00347
	(A1 * B1 * !C1 * Y)	0.00621	0.00627	0.00624
	(A1 * B1 * !C1 * Y)	-0.00698	-0.00721	-0.00719
	(A1 * !B1 * C1 * Y)	0.00622	0.00627	0.00624
	(A1 * !B1 * C1 * Y)	-0.00698	-0.00721	-0.00719
	(A1 * !B1 * !C1 * Y)	0.00623	0.00633	0.00624
	(A1 * !B1 * !C1 * Y)	-0.00700	-0.00722	-0.00721
	(!A1 * B1 * !C1 * Y)	0.00587	0.00591	0.00587
	(!A1 * B1 * !C1 * Y)	-0.00733	-0.00735	-0.00732
	(!A1 * !B1 * C1 * Y)	0.00596	0.00603	0.00597
	(!A1 * !B1 * C1 * Y)	-0.00731	-0.00736	-0.00732
	(!A1 * !B1 * !C1 * Y)	0.00596	0.00606	0.00598
	(!A1 * !B1 * !C1 * Y)	-0.00731	-0.00737	-0.00732

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)**	-0.00170	-0.00171	-0.00174
	(A1 * B1 * C1 * !Y)	0.00093	0.00093	0.00090
	(A1 * B1 * !C1 * Y)	-0.00159	-0.00159	-0.00159
	(A1 * B1 * !C1 * Y)	0.00178	0.00178	0.00178
	(A1 * !B1 * C1 * Y)	-0.00158	-0.00159	-0.00159
	(A1 * !B1 * C1 * Y)	0.00177	0.00178	0.00178
	(A1 * !B1 * !C1 * Y)	-0.00158	-0.00159	-0.00159
	(A1 * !B1 * !C1 * Y)	0.00177	0.00179	0.00178
	(!A1 * B1 * !C1 * Y)	-0.00139	-0.00149	-0.00148
	(!A1 * B1 * !C1 * Y)	0.00180	0.00182	0.00181
	(!A1 * !B1 * C1 * Y)	-0.00144	-0.00153	-0.00151
	(!A1 * !B1 * C1 * Y)	0.00180	0.00182	0.00181
	(!A1 * !B1 * !C1 * Y)	-0.00144	-0.00154	-0.00152
	(!A1 * !B1 * !C1 * Y)	0.00180	0.00182	0.00181
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00345	-0.00347	-0.00359
	(A1 * B1 * C1 * !Y)	0.00185	0.00185	0.00175
	(A1 * B1 * !C1 * Y)	-0.00319	-0.00320	-0.00319
	(A1 * B1 * !C1 * Y)	0.00358	0.00360	0.00358
	(A1 * !B1 * C1 * Y)	-0.00319	-0.00320	-0.00319
	(A1 * !B1 * C1 * Y)	0.00359	0.00360	0.00358
	(A1 * !B1 * !C1 * Y)	-0.00317	-0.00320	-0.00319
	(A1 * !B1 * !C1 * Y)	0.00356	0.00360	0.00359
	(!A1 * B1 * !C1 * Y)	-0.00281	-0.00302	-0.00300
	(!A1 * B1 * !C1 * Y)	0.00365	0.00367	0.00365
	(!A1 * !B1 * C1 * Y)	-0.00288	-0.00305	-0.00304
	(!A1 * !B1 * C1 * Y)	0.00363	0.00366	0.00365
	(!A1 * !B1 * !C1 * Y)	-0.00288	-0.00305	-0.00304
	(!A1 * !B1 * !C1 * Y)	0.00362	0.00366	0.00365

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00673	-0.00678	-0.00701
	(A1 * B1 * C1 * !Y)	0.00368	0.00371	0.00353
	(A1 * B1 * !C1 * Y)	-0.00621	-0.00624	-0.00622
	(A1 * B1 * !C1 * Y)	0.00719	0.00721	0.00719
	(A1 * !B1 * C1 * Y)	-0.00620	-0.00623	-0.00622
	(A1 * !B1 * C1 * Y)	0.00716	0.00721	0.00719
	(A1 * !B1 * !C1 * Y)	-0.00621	-0.00623	-0.00622
	(A1 * !B1 * !C1 * Y)	0.00718	0.00722	0.00721
	(!A1 * B1 * !C1 * Y)	-0.00537	-0.00591	-0.00587
	(!A1 * B1 * !C1 * Y)	0.00735	0.00736	0.00734
	(!A1 * !B1 * C1 * Y)	-0.00556	-0.00594	-0.00597
	(!A1 * !B1 * C1 * Y)	0.00731	0.00737	0.00734
	(!A1 * !B1 * !C1 * Y)	-0.00557	-0.00594	-0.00597
	(!A1 * !B1 * !C1 * Y)	0.00731	0.00737	0.00734

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00148	0.00150	0.00149
	(A2 * !C1 * Y)	-0.00189	-0.00191	-0.00189
	(A1 * !A2 * !C1 * Y)	0.00147	0.00148	0.00148
	(A1 * !A2 * !C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * C1 * Y)	0.00066	0.00067	0.00066
	(!A1 * !A2 * C1 * Y)	-0.00190	-0.00191	-0.00189
	(!A1 * !A2 * !C1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !C1 * Y)	-0.00190	-0.00191	-0.00190
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00300	0.00302	0.00300
	(A2 * !C1 * Y)	-0.00371	-0.00372	-0.00371
	(A1 * !A2 * !C1 * Y)	0.00300	0.00303	0.00301
	(A1 * !A2 * !C1 * Y)	-0.00371	-0.00373	-0.00371
	(!A1 * !A2 * C1 * Y)	0.00124	0.00125	0.00126
	(!A1 * !A2 * C1 * Y)	-0.00370	-0.00372	-0.00371
	(!A1 * !A2 * !C1 * Y)	0.00154	0.00153	0.00153
	(!A1 * !A2 * !C1 * Y)	-0.00374	-0.00372	-0.00374
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00594	0.00599	0.00594
	(A2 * !C1 * Y)	-0.00373	-0.00374	-0.00372
	(A1 * !A2 * !C1 * Y)	0.00587	0.00591	0.00589
	(A1 * !A2 * !C1 * Y)	-0.00372	-0.00373	-0.00372
	(!A1 * !A2 * C1 * Y)	0.00240	0.00243	0.00243
	(!A1 * !A2 * C1 * Y)	-0.00371	-0.00374	-0.00371
	(!A1 * !A2 * !C1 * Y)	0.00297	0.00300	0.00297
	(!A1 * !A2 * !C1 * Y)	-0.00376	-0.00379	-0.00376

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00138	-0.00149	-0.00149
	(A2 * !C1 * Y)	0.00195	0.00192	0.00190
	(A1 * !A2 * !C1 * Y)	-0.00136	-0.00148	-0.00148
	(A1 * !A2 * !C1 * Y)	0.00198	0.00192	0.00190
	(!A1 * !A2 * C1 * Y)	-0.00063	-0.00063	-0.00064
	(!A1 * !A2 * C1 * Y)	0.00194	0.00195	0.00190
	(!A1 * !A2 * !C1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !C1 * Y)	0.00200	0.00199	0.00191
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00271	-0.00300	-0.00299
	(A2 * !C1 * Y)	0.00387	0.00376	0.00372
	(A1 * !A2 * !C1 * Y)	-0.00267	-0.00301	-0.00299
	(A1 * !A2 * !C1 * Y)	0.00394	0.00375	0.00372
	(!A1 * !A2 * C1 * Y)	-0.00118	-0.00120	-0.00122
	(!A1 * !A2 * C1 * Y)	0.00380	0.00385	0.00375
	(!A1 * !A2 * !C1 * Y)	-0.00154	-0.00153	-0.00153
	(!A1 * !A2 * !C1 * Y)	0.00389	0.00390	0.00376
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00540	-0.00594	-0.00592
	(A2 * !C1 * Y)	0.00402	0.00377	0.00374
	(A1 * !A2 * !C1 * Y)	-0.00525	-0.00591	-0.00589
	(A1 * !A2 * !C1 * Y)	0.00421	0.00376	0.00374
	(!A1 * !A2 * C1 * Y)	-0.00229	-0.00232	-0.00236
	(!A1 * !A2 * C1 * Y)	0.00387	0.00392	0.00377
	(!A1 * !A2 * !C1 * Y)	-0.00297	-0.00300	-0.00297
	(!A1 * !A2 * !C1 * Y)	0.00411	0.00407	0.00381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00051	0.00051	0.00049
	(A2 * !B1 * Y)	-0.00216	-0.00218	-0.00219
	(!A2 * !B1 * Y)	0.00050	0.00051	0.00049
	(!A2 * !B1 * Y)	-0.00215	-0.00218	-0.00219
	(!A1 * !A2 * B1 * Y)	0.00052	0.00052	0.00048
	(!A1 * !A2 * B1 * Y)	-0.00210	-0.00210	-0.00218
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00107	0.00107	0.00103
	(A2 * !B1 * Y)	-0.00418	-0.00420	-0.00427
	(!A2 * !B1 * Y)	0.00106	0.00107	0.00103
	(!A2 * !B1 * Y)	-0.00417	-0.00420	-0.00427
	(!A1 * !A2 * B1 * Y)	0.00103	0.00103	0.00096
	(!A1 * !A2 * B1 * Y)	-0.00406	-0.00408	-0.00425
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00202	0.00203	0.00196
	(A2 * !B1 * Y)	-0.00492	-0.00496	-0.00508
	(!A2 * !B1 * Y)	0.00202	0.00203	0.00196
	(!A2 * !B1 * Y)	-0.00493	-0.00495	-0.00508
	(!A1 * !A2 * B1 * Y)	0.00198	0.00198	0.00183
	(!A1 * !A2 * B1 * Y)	-0.00468	-0.00471	-0.00504

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00049	-0.00049	-0.00048
	(A2 * !B1 * Y)	0.00219	0.00221	0.00219
	(!A2 * !B1 * Y)	-0.00049	-0.00049	-0.00048
	(!A2 * !B1 * Y)	0.00219	0.00221	0.00219
	(!A1 * !A2 * B1 * Y)	-0.00048	-0.00048	-0.00047
	(!A1 * !A2 * B1 * Y)	0.00219	0.00221	0.00219
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(A2 * !B1 * Y)	0.00426	0.00431	0.00428
	(!A2 * !B1 * Y)	-0.00100	-0.00101	-0.00100
	(!A2 * !B1 * Y)	0.00426	0.00431	0.00428
	(!A1 * !A2 * B1 * Y)	-0.00097	-0.00098	-0.00096
	(!A1 * !A2 * B1 * Y)	0.00427	0.00432	0.00428
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00191	-0.00195	-0.00191
	(A2 * !B1 * Y)	0.00507	0.00517	0.00509
	(!A2 * !B1 * Y)	-0.00191	-0.00195	-0.00191
	(!A2 * !B1 * Y)	0.00507	0.00517	0.00509
	(!A1 * !A2 * B1 * Y)	-0.00185	-0.00187	-0.00183
	(!A1 * !A2 * B1 * Y)	0.00507	0.00513	0.00508

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o211a_1	14.38560
sky130_fd_sc_hs__o211a_2	12.78720
sky130_fd_sc_hs__o211a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	C1	X
sky130_fd_sc_hs__o211a_1	0.00252	0.00272	0.00250	0.00245	1.48856
sky130_fd_sc_hs__o211a_2	0.00267	0.00266	0.00266	0.00259	2.83453
sky130_fd_sc_hs__o211a_4	0.00484	0.00461	0.00480	0.00422	5.12814

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211a_1	0.00000	0.10410	0.33840
sky130_fd_sc_hs__o211a_2	0.00000	0.15502	0.33940
sky130_fd_sc_hs__o211a_4	0.00000	0.58019	2.11529

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)	0.07582	0.46871	5.40181
	A2->X (RR)	0.06721	0.45525	5.43792
	B1->X (RR)	0.07111	0.48179	5.84655
	C1->X (RR)	0.06595	0.47414	5.89353
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.07719	0.39479	5.36416
	A2->X (RR)	0.06605	0.37951	5.36573
	B1->X (RR)	0.07311	0.41568	5.79139
	C1->X (RR)	0.06778	0.41039	5.82517
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.07808	0.33264	5.40207
	A2->X (RR)	0.07226	0.31884	5.45896
	B1->X (RR)	0.07266	0.34390	5.72444
	C1->X (RR)	0.06552	0.33327	5.74619

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.11551	0.52284	5.11243
	A2->X (FF)	0.10686	0.52518	5.15218
	B1->X (FF)	0.05570	0.42591	4.80927
	C1->X (FF)	0.04983	0.40969	4.80165
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.13211	0.52570	5.12230
	A2->X (FF)	0.12199	0.53024	5.15664
	B1->X (FF)	0.06498	0.42455	4.80205
	C1->X (FF)	0.05880	0.40820	4.77358
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.12624	0.48465	5.04580
	A2->X (FF)	0.11304	0.48233	5.07462
	B1->X (FF)	0.06926	0.41085	4.80773
	C1->X (FF)	0.06862	0.41250	4.89106

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.01241	0.01323	0.04627
	A1	0.00492	0.00574	0.03909
	A2	0.01120	0.01241	0.05974
	A2	0.00426	0.00547	0.05311
	B1	0.00941	0.01152	0.07740
	B1	0.00408	0.00620	0.07223
	C1	0.00844	0.01125	0.08219
	C1	0.00405	0.00687	0.07789
sky130_fd_sc_hs__o211a_2	A1	0.01518	0.01606	0.04503
	A1	0.00734	0.00821	0.03765
	A2	0.01346	0.01466	0.05692
	A2	0.00653	0.00776	0.05045
	B1	0.01204	0.01396	0.07663
	B1	0.00640	0.00840	0.07152
	C1	0.01100	0.01340	0.08007
	C1	0.00637	0.00887	0.07584
sky130_fd_sc_hs__o211a_4	A1	0.02825	0.03029	0.10294
	A1	0.01398	0.01610	0.08957
	A2	0.02453	0.02734	0.12950
	A2	0.01235	0.01522	0.11851
	B1	0.02224	0.02639	0.14730
	B1	0.01238	0.01659	0.13836
	C1	0.01970	0.02499	0.16102
	C1	0.01249	0.01788	0.15450

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00479	0.00552	0.04173
	A1	0.01215	0.01285	0.04834
	A2	0.00437	0.00702	0.05866
	A2	0.01116	0.01378	0.06483
	B1	0.00373	0.00738	0.07395
	B1	0.00903	0.01247	0.07865
	C1	0.00330	0.00695	0.07703
	C1	0.00771	0.01125	0.08089
sky130_fd_sc_hs__o211a_2	A1	0.00781	0.00794	0.04273
	A1	0.01552	0.01565	0.04877
	A2	0.00780	0.00986	0.06041
	A2	0.01457	0.01658	0.06537
	B1	0.00622	0.00976	0.07500
	B1	0.01180	0.01524	0.07886
	C1	0.00569	0.00933	0.07610
	C1	0.01031	0.01380	0.07958
sky130_fd_sc_hs__o211a_4	A1	0.01504	0.01648	0.08939
	A1	0.02906	0.02993	0.10020
	A2	0.01553	0.01964	0.12393
	A2	0.02740	0.03095	0.13312
	B1	0.01138	0.01862	0.15355
	B1	0.02300	0.02978	0.16123
	C1	0.01135	0.01885	0.15487
	C1	0.02037	0.02741	0.15756

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)**	0.00180	0.00161	0.00159
	(A2 * B1 * C1 * X)	-0.00141	-0.00163	-0.00163
	(A2 * B1 * !C1 * !X)	0.00141	0.00141	0.00140
	(A2 * B1 * !C1 * !X)	-0.00178	-0.00182	-0.00181
	(A2 * !B1 * !X)	0.00141	0.00141	0.00140
	(A2 * !B1 * !X)	-0.00178	-0.00182	-0.00181
	(!A2 * B1 * !C1 * !X)	0.00134	0.00133	0.00133
	(!A2 * B1 * !C1 * !X)	-0.00184	-0.00183	-0.00183
	(!A2 * !B1 * C1 * !X)	0.00133	0.00134	0.00134
	(!A2 * !B1 * C1 * !X)	-0.00183	-0.00184	-0.00184
	(!A2 * !B1 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A2 * !B1 * !C1 * !X)	-0.00183	-0.00184	-0.00184
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00198	0.00178	0.00176
	(A2 * B1 * C1 * X)	-0.00135	-0.00157	-0.00158
	(A2 * B1 * !C1 * !X)	0.00152	0.00153	0.00152
	(A2 * B1 * !C1 * !X)	-0.00179	-0.00183	-0.00182
	(A2 * !B1 * !X)	0.00152	0.00153	0.00152
	(A2 * !B1 * !X)	-0.00179	-0.00183	-0.00182
	(!A2 * B1 * !C1 * !X)	0.00146	0.00146	0.00145
	(!A2 * B1 * !C1 * !X)	-0.00185	-0.00185	-0.00184
	(!A2 * !B1 * C1 * !X)	0.00146	0.00147	0.00146
	(!A2 * !B1 * C1 * !X)	-0.00184	-0.00185	-0.00185
	(!A2 * !B1 * !C1 * !X)	0.00145	0.00147	0.00146
	(!A2 * !B1 * !C1 * !X)	-0.00184	-0.00185	-0.00185

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00354	0.00321	0.00316
	(A2 * B1 * C1 * X)	-0.00279	-0.00325	-0.00325
	(A2 * B1 * !C1 * !X)	0.00309	0.00315	0.00310
	(A2 * B1 * !C1 * !X)	-0.00320	-0.00328	-0.00330
	(A2 * !B1 * !X)	0.00309	0.00315	0.00310
	(A2 * !B1 * !X)	-0.00320	-0.00329	-0.00330
	(!A2 * B1 * !C1 * !X)	0.00293	0.00295	0.00295
	(!A2 * B1 * !C1 * !X)	-0.00332	-0.00334	-0.00333
	(!A2 * !B1 * C1 * !X)	0.00298	0.00300	0.00298
	(!A2 * !B1 * C1 * !X)	-0.00333	-0.00334	-0.00333
	(!A2 * !B1 * !C1 * !X)	0.00302	0.00304	0.00303
	(!A2 * !B1 * !C1 * !X)	-0.00333	-0.00334	-0.00333

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)**	-0.00158	-0.00158	-0.00157
	(A2 * B1 * C1 * X)	0.00163	0.00165	0.00164
	(A2 * B1 * !C1 * !X)	-0.00139	-0.00140	-0.00140
	(A2 * B1 * !C1 * !X)	0.00180	0.00182	0.00181
	(A2 * !B1 * !X)	-0.00140	-0.00140	-0.00140
	(A2 * !B1 * !X)	0.00182	0.00182	0.00181
	(!A2 * B1 * !C1 * !X)	-0.00122	-0.00133	-0.00133
	(!A2 * B1 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A2 * !B1 * C1 * !X)	-0.00127	-0.00134	-0.00134
	(!A2 * !B1 * C1 * !X)	0.00185	0.00185	0.00184
	(!A2 * !B1 * !C1 * !X)	-0.00128	-0.00134	-0.00133
	(!A2 * !B1 * !C1 * !X)	0.00185	0.00185	0.00184

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00174	-0.00176	-0.00175
	(A2 * B1 * C1 * X)	0.00157	0.00159	0.00159
	(A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * !C1 * !X)	0.00183	0.00184	0.00182
	(A2 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A2 * !B1 * !X)	0.00182	0.00184	0.00182
	(!A2 * B1 * !C1 * !X)	-0.00133	-0.00145	-0.00145
	(!A2 * B1 * !C1 * !X)	0.00185	0.00186	0.00185
	(!A2 * !B1 * C1 * !X)	-0.00138	-0.00146	-0.00146
	(!A2 * !B1 * C1 * !X)	0.00185	0.00186	0.00185
	(!A2 * !B1 * !C1 * !X)	-0.00138	-0.00147	-0.00146
	(!A2 * !B1 * !C1 * !X)	0.00185	0.00187	0.00185
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00311	-0.00312	-0.00311
	(A2 * B1 * C1 * X)	0.00326	0.00329	0.00328
	(A2 * B1 * !C1 * !X)	-0.00309	-0.00308	-0.00309
	(A2 * B1 * !C1 * !X)	0.00329	0.00328	0.00330
	(A2 * !B1 * !X)	-0.00309	-0.00309	-0.00309
	(A2 * !B1 * !X)	0.00329	0.00329	0.00330
	(!A2 * B1 * !C1 * !X)	-0.00277	-0.00295	-0.00295
	(!A2 * B1 * !C1 * !X)	0.00335	0.00336	0.00335
	(!A2 * !B1 * C1 * !X)	-0.00287	-0.00300	-0.00298
	(!A2 * !B1 * C1 * !X)	0.00334	0.00336	0.00335
	(!A2 * !B1 * !C1 * !X)	-0.00287	-0.00303	-0.00300
	(!A2 * !B1 * !C1 * !X)	0.00334	0.00336	0.00335

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)**	0.00202	0.00204	0.00202
	(A1 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * B1 * !C1 * !X)	0.00183	0.00185	0.00182
	(A1 * B1 * !C1 * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !B1 * C1 * !X)	0.00184	0.00185	0.00182
	(A1 * !B1 * C1 * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !B1 * !C1 * !X)	0.00183	0.00184	0.00182
	(A1 * !B1 * !C1 * !X)	-0.00162	-0.00165	-0.00165
	(!A1 * B1 * !C1 * !X)	0.00172	0.00174	0.00173
	(!A1 * B1 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * C1 * !X)	0.00178	0.00179	0.00178
	(!A1 * !B1 * C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * !C1 * !X)	0.00175	0.00177	0.00175
	(!A1 * !B1 * !C1 * !X)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00178	0.00179	0.00177
	(A1 * B1 * C1 * X)	-0.00080	-0.00079	-0.00079
	(A1 * B1 * !C1 * !X)	0.00149	0.00152	0.00149
	(A1 * B1 * !C1 * !X)	-0.00169	-0.00173	-0.00172
	(A1 * !B1 * C1 * !X)	0.00149	0.00150	0.00149
	(A1 * !B1 * C1 * !X)	-0.00169	-0.00173	-0.00172
	(A1 * !B1 * !C1 * !X)	0.00149	0.00152	0.00149
	(A1 * !B1 * !C1 * !X)	-0.00169	-0.00173	-0.00172
	(!A1 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A1 * B1 * !C1 * !X)	-0.00175	-0.00175	-0.00174
	(!A1 * !B1 * C1 * !X)	0.00142	0.00143	0.00143
	(!A1 * !B1 * C1 * !X)	-0.00175	-0.00175	-0.00175
	(!A1 * !B1 * !C1 * !X)	0.00143	0.00143	0.00144
	(!A1 * !B1 * !C1 * !X)	-0.00174	-0.00174	-0.00175

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00305	0.00306	0.00304
	(A1 * B1 * C1 * X)	-0.00162	-0.00161	-0.00160
	(A1 * B1 * !C1 * !X)	0.00265	0.00266	0.00266
	(A1 * B1 * !C1 * !X)	-0.00322	-0.00331	-0.00330
	(A1 * !B1 * C1 * !X)	0.00265	0.00270	0.00266
	(A1 * !B1 * C1 * !X)	-0.00322	-0.00331	-0.00330
	(A1 * !B1 * !C1 * !X)	0.00265	0.00266	0.00265
	(A1 * !B1 * !C1 * !X)	-0.00322	-0.00331	-0.00331
	(!A1 * B1 * !C1 * !X)	0.00246	0.00246	0.00246
	(!A1 * B1 * !C1 * !X)	-0.00336	-0.00335	-0.00335
	(!A1 * !B1 * C1 * !X)	0.00253	0.00255	0.00254
	(!A1 * !B1 * C1 * !X)	-0.00335	-0.00336	-0.00335
	(!A1 * !B1 * !C1 * !X)	0.00253	0.00256	0.00254
	(!A1 * !B1 * !C1 * !X)	-0.00334	-0.00337	-0.00335

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

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

sky130_fd_sc_hs__o211a_1	**(A1 * B1 * C1 * X)**	-0.00197	-0.00198	-0.00201
	(A1 * B1 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * B1 * !C1 * !X)	0.00164	0.00165	0.00165
	(A1 * !B1 * C1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * C1 * !X)	0.00164	0.00165	0.00165
	(A1 * !B1 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(A1 * !B1 * !C1 * !X)	0.00164	0.00166	0.00165
	(!A1 * B1 * !C1 * !X)	-0.00163	-0.00174	-0.00173
	(!A1 * B1 * !C1 * !X)	0.00167	0.00169	0.00167
	(!A1 * !B1 * C1 * !X)	-0.00168	-0.00176	-0.00177
	(!A1 * !B1 * C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * !B1 * !C1 * !X)	-0.00168	-0.00176	-0.00175
	(!A1 * !B1 * !C1 * !X)	0.00167	0.00169	0.00168
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00173	-0.00173	-0.00176
	(A1 * B1 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(A1 * B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(A1 * !B1 * C1 * !X)	-0.00148	-0.00150	-0.00149
	(A1 * !B1 * C1 * !X)	0.00171	0.00173	0.00172
	(A1 * !B1 * !C1 * !X)	-0.00148	-0.00150	-0.00149
	(A1 * !B1 * !C1 * !X)	0.00172	0.00173	0.00172
	(!A1 * B1 * !C1 * !X)	-0.00131	-0.00142	-0.00141
	(!A1 * B1 * !C1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !B1 * C1 * !X)	-0.00136	-0.00143	-0.00143
	(!A1 * !B1 * C1 * !X)	0.00175	0.00176	0.00175
	(!A1 * !B1 * !C1 * !X)	-0.00136	-0.00143	-0.00144
	(!A1 * !B1 * !C1 * !X)	0.00175	0.00176	0.00175

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00291	-0.00292	-0.00300
	(A1 * B1 * C1 * X)	0.00173	0.00172	0.00166
	(A1 * B1 * !C1 * !X)	-0.00265	-0.00266	-0.00265
	(A1 * B1 * !C1 * !X)	0.00330	0.00331	0.00330
	(A1 * !B1 * C1 * !X)	-0.00265	-0.00266	-0.00264
	(A1 * !B1 * C1 * !X)	0.00331	0.00331	0.00330
	(A1 * !B1 * !C1 * !X)	-0.00263	-0.00266	-0.00264
	(A1 * !B1 * !C1 * !X)	0.00328	0.00333	0.00331
	(!A1 * B1 * !C1 * !X)	-0.00231	-0.00246	-0.00246
	(!A1 * B1 * !C1 * !X)	0.00336	0.00338	0.00336
	(!A1 * !B1 * C1 * !X)	-0.00241	-0.00255	-0.00254
	(!A1 * !B1 * C1 * !X)	0.00337	0.00338	0.00336
	(!A1 * !B1 * !C1 * !X)	-0.00242	-0.00256	-0.00254
	(!A1 * !B1 * !C1 * !X)	0.00337	0.00338	0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00122	0.00124	0.00123
	(A2 * !C1 * !X)	-0.00187	-0.00189	-0.00188
	(A1 * !A2 * !C1 * !X)	0.00122	0.00123	0.00123
	(A1 * !A2 * !C1 * !X)	-0.00187	-0.00188	-0.00188
	(!A1 * !A2 * C1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * C1 * !X)	-0.00190	-0.00190	-0.00189
	(!A1 * !A2 * !C1 * !X)	0.00068	0.00068	0.00068
	(!A1 * !A2 * !C1 * !X)	-0.00190	-0.00191	-0.00191
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00142	0.00143	0.00143
	(A2 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(A1 * !A2 * !C1 * !X)	0.00142	0.00144	0.00143
	(A1 * !A2 * !C1 * !X)	-0.00176	-0.00177	-0.00177
	(!A1 * !A2 * C1 * !X)	0.00060	0.00061	0.00059
	(!A1 * !A2 * C1 * !X)	-0.00179	-0.00180	-0.00178
	(!A1 * !A2 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A2 * !C1 * !X)	-0.00180	-0.00180	-0.00180
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00307	0.00310	0.00309
	(A2 * !C1 * !X)	-0.00301	-0.00302	-0.00301
	(A1 * !A2 * !C1 * !X)	0.00307	0.00312	0.00309
	(A1 * !A2 * !C1 * !X)	-0.00300	-0.00303	-0.00301
	(!A1 * !A2 * C1 * !X)	0.00162	0.00164	0.00161
	(!A1 * !A2 * C1 * !X)	-0.00301	-0.00304	-0.00303
	(!A1 * !A2 * !C1 * !X)	0.00187	0.00188	0.00188
	(!A1 * !A2 * !C1 * !X)	-0.00304	-0.00305	-0.00305

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00114	-0.00123	-0.00123
	(A2 * !C1 * !X)	0.00195	0.00191	0.00188
	(A1 * !A2 * !C1 * !X)	-0.00112	-0.00123	-0.00123
	(A1 * !A2 * !C1 * !X)	0.00197	0.00191	0.00188
	(!A1 * !A2 * C1 * !X)	-0.00050	-0.00050	-0.00050
	(!A1 * !A2 * C1 * !X)	0.00192	0.00194	0.00190
	(!A1 * !A2 * !C1 * !X)	-0.00068	-0.00068	-0.00068
	(!A1 * !A2 * !C1 * !X)	0.00200	0.00198	0.00192
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00131	-0.00142	-0.00142
	(A2 * !C1 * !X)	0.00184	0.00179	0.00177
	(A1 * !A2 * !C1 * !X)	-0.00129	-0.00142	-0.00142
	(A1 * !A2 * !C1 * !X)	0.00186	0.00179	0.00177
	(!A1 * !A2 * C1 * !X)	-0.00056	-0.00057	-0.00057
	(!A1 * !A2 * C1 * !X)	0.00181	0.00183	0.00179
	(!A1 * !A2 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * !C1 * !X)	0.00191	0.00190	0.00182
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00294	-0.00310	-0.00309
	(A2 * !C1 * !X)	0.00312	0.00304	0.00303
	(A1 * !A2 * !C1 * !X)	-0.00292	-0.00312	-0.00309
	(A1 * !A2 * !C1 * !X)	0.00314	0.00304	0.00303
	(!A1 * !A2 * C1 * !X)	-0.00156	-0.00157	-0.00157
	(!A1 * !A2 * C1 * !X)	0.00310	0.00311	0.00305
	(!A1 * !A2 * !C1 * !X)	-0.00187	-0.00188	-0.00188
	(!A1 * !A2 * !C1 * !X)	0.00322	0.00320	0.00309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00042	0.00042	0.00041
	(A2 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A2 * !B1 * !X)	0.00042	0.00042	0.00041
	(!A2 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A1 * !A2 * B1 * !X)	0.00045	0.00045	0.00041
	(!A1 * !A2 * B1 * !X)	-0.00201	-0.00202	-0.00209
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00052	0.00052	0.00051
	(A2 * !B1 * !X)	-0.00199	-0.00201	-0.00202
	(!A2 * !B1 * !X)	0.00052	0.00052	0.00051
	(!A2 * !B1 * !X)	-0.00199	-0.00201	-0.00202
	(!A1 * !A2 * B1 * !X)	0.00056	0.00055	0.00052
	(!A1 * !A2 * B1 * !X)	-0.00195	-0.00195	-0.00202
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00076	0.00077	0.00074
	(A2 * !B1 * !X)	-0.00336	-0.00340	-0.00343
	(!A2 * !B1 * !X)	0.00076	0.00077	0.00074
	(!A2 * !B1 * !X)	-0.00338	-0.00340	-0.00343
	(!A1 * !A2 * B1 * !X)	0.00081	0.00081	0.00074
	(!A1 * !A2 * B1 * !X)	-0.00324	-0.00326	-0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(A2 * !B1 * !X)	0.00209	0.00212	0.00210
	(!A2 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !X)	0.00209	0.00212	0.00210
	(!A1 * !A2 * B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * B1 * !X)	0.00209	0.00212	0.00210
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(A2 * !B1 * !X)	0.00201	0.00204	0.00202
	(!A2 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(!A2 * !B1 * !X)	0.00201	0.00204	0.00202
	(!A1 * !A2 * B1 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * B1 * !X)	0.00201	0.00204	0.00202
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00073	-0.00073	-0.00072
	(A2 * !B1 * !X)	0.00344	0.00346	0.00344
	(!A2 * !B1 * !X)	-0.00073	-0.00073	-0.00072
	(!A2 * !B1 * !X)	0.00344	0.00346	0.00344
	(!A1 * !A2 * B1 * !X)	-0.00070	-0.00070	-0.00069
	(!A1 * !A2 * B1 * !X)	0.00344	0.00346	0.00344

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ai_1	7.99200
sky130_fd_sc_hs__o21ai_2	11.18880
sky130_fd_sc_hs__o21ai_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	Y
sky130_fd_sc_hs__o21ai_1	0.00272	0.00280	0.00272	0.74339
sky130_fd_sc_hs__o21ai_2	0.00551	0.00509	0.00501	1.34401
sky130_fd_sc_hs__o21ai_4	0.00973	0.01005	0.00756	2.23726

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ai_1	0.00000	0.03530	0.12588
sky130_fd_sc_hs__o21ai_2	0.00000	0.07061	0.25175
sky130_fd_sc_hs__o21ai_4	0.00000	0.09401	0.37763

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)	0.07155	0.85384	10.60300
	A2->Y (FR)	0.06184	0.84639	10.67560
	B1->Y (FR)	0.02515	0.57681	7.65735
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.06382	0.72146	10.32470
	A2->Y (FR)	0.05049	0.71299	10.38830
	B1->Y (FR)	0.01934	0.50739	7.51139
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.06505	0.62774	9.98796
	A2->Y (FR)	0.05193	0.64216	10.38080
	B1->Y (FR)	0.02676	0.62240	10.29850

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.02591	0.30074	3.56191
	A2->Y (RF)	0.02172	0.29027	3.50366
	B1->Y (RF)	0.02162	0.33970	4.14864
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02129	0.23508	3.31065
	A2->Y (RF)	0.01883	0.22970	3.34140
	B1->Y (RF)	0.01398	0.26730	4.03052
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02124	0.18703	3.06582
	A2->Y (RF)	0.01814	0.17787	3.06089
	B1->Y (RF)	0.01168	0.20727	3.73115

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00048	0.00054	0.00805
	A1	0.00725	0.00733	0.01494
	A2	0.00052	0.00167	0.01737
	A2	0.00627	0.00742	0.02323
	B1	-0.00051	0.00128	0.02182
	B1	0.00400	0.00572	0.02633
sky130_fd_sc_hs__o21ai_2	A1	0.00042	0.00061	0.01608
	A1	0.01337	0.01361	0.02910
	A2	0.00041	0.00308	0.03245
	A2	0.01106	0.01376	0.04325
	B1	-0.00208	0.00209	0.04116
	B1	0.00598	0.01022	0.04925
sky130_fd_sc_hs__o21ai_4	A1	0.00052	0.00106	0.03209
	A1	0.02567	0.02626	0.05732
	A2	0.00014	0.00386	0.05988
	A2	0.02145	0.02484	0.08151
	B1	-0.00387	0.00106	0.04683
	B1	0.00840	0.01341	0.05953

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00801	0.00810	0.01333
	A1	0.00117	0.00121	0.00626
	A2	0.00620	0.00635	0.01142
	A2	0.00036	0.00050	0.00534
	B1	0.00463	0.00507	0.01294
	B1	0.00012	0.00052	0.00812
sky130_fd_sc_hs__o21ai_2	A1	0.01490	0.01499	0.02531
	A1	0.00186	0.00191	0.01204
	A2	0.01058	0.01103	0.02130
	A2	-0.00024	0.00016	0.00996
	B1	0.00756	0.00872	0.02405
	B1	-0.00051	0.00061	0.01553
sky130_fd_sc_hs__o21ai_4	A1	0.02815	0.02857	0.05029
	A1	0.00292	0.00323	0.02452
	A2	0.02005	0.02110	0.04189
	A2	-0.00160	-0.00058	0.01942
	B1	0.01270	0.01401	0.03069
	B1	0.00043	0.00170	0.01787

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00202	0.00182	0.00180
	(A2 * B1 * !Y)	-0.00151	-0.00174	-0.00175
	(A2 * !B1 * Y)	0.00165	0.00167	0.00166
	(A2 * !B1 * Y)	-0.00184	-0.00189	-0.00188
	(!A2 * !B1 * Y)	0.00158	0.00160	0.00158
	(!A2 * !B1 * Y)	-0.00190	-0.00192	-0.00191
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00382	0.00340	0.00336
	(A2 * B1 * !Y)	-0.00301	-0.00354	-0.00355
	(A2 * !B1 * Y)	0.00314	0.00319	0.00317
	(A2 * !B1 * Y)	-0.00362	-0.00375	-0.00373
	(!A2 * !B1 * Y)	0.00306	0.00308	0.00307
	(!A2 * !B1 * Y)	-0.00377	-0.00379	-0.00378
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00710	0.00622	0.00615
	(A2 * B1 * !Y)	-0.00604	-0.00704	-0.00707
	(A2 * !B1 * Y)	0.00614	0.00615	0.00612
	(A2 * !B1 * Y)	-0.00691	-0.00710	-0.00709
	(!A2 * !B1 * Y)	0.00584	0.00584	0.00584
	(!A2 * !B1 * Y)	-0.00721	-0.00720	-0.00720

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00180	-0.00179	-0.00179
	(A2 * B1 * !Y)	0.00174	0.00174	0.00175
	(A2 * !B1 * Y)	-0.00165	-0.00166	-0.00166
	(A2 * !B1 * Y)	0.00188	0.00189	0.00188
	(!A2 * !B1 * Y)	-0.00152	-0.00159	-0.00158
	(!A2 * !B1 * Y)	0.00193	0.00192	0.00191
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00334	-0.00335	-0.00334
	(A2 * B1 * !Y)	0.00353	0.00355	0.00355
	(A2 * !B1 * Y)	-0.00314	-0.00317	-0.00316
	(A2 * !B1 * Y)	0.00372	0.00375	0.00373
	(!A2 * !B1 * Y)	-0.00286	-0.00303	-0.00305
	(!A2 * !B1 * Y)	0.00380	0.00381	0.00379
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00612	-0.00616	-0.00613
	(A2 * B1 * !Y)	0.00703	0.00714	0.00707
	(A2 * !B1 * Y)	-0.00610	-0.00613	-0.00611
	(A2 * !B1 * Y)	0.00706	0.00712	0.00709
	(!A2 * !B1 * Y)	-0.00550	-0.00584	-0.00584
	(!A2 * !B1 * Y)	0.00727	0.00725	0.00722

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00185	0.00186	0.00185
	(A1 * B1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * !B1 * Y)	0.00150	0.00151	0.00150
	(A1 * !B1 * Y)	-0.00188	-0.00193	-0.00192
	(!A1 * !B1 * Y)	0.00144	0.00146	0.00145
	(!A1 * !B1 * Y)	-0.00194	-0.00196	-0.00195
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00332	0.00337	0.00334
	(A1 * B1 * !Y)	-0.00170	-0.00172	-0.00171
	(A1 * !B1 * Y)	0.00307	0.00312	0.00307
	(A1 * !B1 * Y)	-0.00336	-0.00345	-0.00345
	(!A1 * !B1 * Y)	0.00293	0.00295	0.00294
	(!A1 * !B1 * Y)	-0.00349	-0.00350	-0.00350
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00703	0.00711	0.00705
	(A1 * B1 * !Y)	-0.00345	-0.00349	-0.00346
	(A1 * !B1 * Y)	0.00620	0.00627	0.00622
	(A1 * !B1 * Y)	-0.00700	-0.00722	-0.00720
	(!A1 * !B1 * Y)	0.00596	0.00597	0.00597
	(!A1 * !B1 * Y)	-0.00733	-0.00734	-0.00734

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00179	-0.00181	-0.00184
	(A1 * B1 * !Y)	0.00088	0.00089	0.00086
	(A1 * !B1 * Y)	-0.00149	-0.00151	-0.00150
	(A1 * !B1 * Y)	0.00191	0.00194	0.00192
	(!A1 * !B1 * Y)	-0.00138	-0.00146	-0.00145
	(!A1 * !B1 * Y)	0.00196	0.00196	0.00195
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00321	-0.00324	-0.00333
	(A1 * B1 * !Y)	0.00180	0.00182	0.00174
	(A1 * !B1 * Y)	-0.00306	-0.00307	-0.00307
	(A1 * !B1 * Y)	0.00343	0.00345	0.00345
	(!A1 * !B1 * Y)	-0.00278	-0.00295	-0.00294
	(!A1 * !B1 * Y)	0.00351	0.00352	0.00351
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00676	-0.00680	-0.00702
	(A1 * B1 * !Y)	0.00368	0.00369	0.00352
	(A1 * !B1 * Y)	-0.00619	-0.00622	-0.00620
	(A1 * !B1 * Y)	0.00717	0.00722	0.00720
	(!A1 * !B1 * Y)	-0.00556	-0.00593	-0.00597
	(!A1 * !B1 * Y)	0.00740	0.00738	0.00736

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00055	0.00054	0.00052
	(!A1 * !A2 * Y)	-0.00223	-0.00224	-0.00228
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00110	0.00110	0.00105
	(!A1 * !A2 * Y)	-0.00408	-0.00409	-0.00419
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00190	0.00191	0.00182
	(!A1 * !A2 * Y)	-0.00481	-0.00484	-0.00502

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * Y)	0.00229	0.00232	0.00228
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00103	-0.00104	-0.00102
	(!A1 * !A2 * Y)	0.00419	0.00427	0.00420
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00178	-0.00181	-0.00178
	(!A1 * !A2 * Y)	0.00502	0.00511	0.00503

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21a_1	9.59040
sky130_fd_sc_hs__o21a_2	12.78720
sky130_fd_sc_hs__o21a_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1	X
sky130_fd_sc_hs__o21a_1	0.00235	0.00237	0.00236	1.43771
sky130_fd_sc_hs__o21a_2	0.00255	0.00252	0.00261	2.77664
sky130_fd_sc_hs__o21a_4	0.00489	0.00452	0.00436	5.23048

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21a_1	0.00000	0.23713	0.58506
sky130_fd_sc_hs__o21a_2	0.00000	0.14162	0.22694
sky130_fd_sc_hs__o21a_4	0.00000	0.55369	1.17212

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)	0.05445	0.43839	5.32341
	A2->X (RR)	0.04806	0.42327	5.35571
	B1->X (RR)	0.05011	0.43911	5.62085
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.05628	0.37045	5.34486
	A2->X (RR)	0.05027	0.35802	5.35268
	B1->X (RR)	0.05214	0.37376	5.58877
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.06010	0.30489	5.30312
	A2->X (RR)	0.05460	0.29059	5.35324
	B1->X (RR)	0.05232	0.30159	5.52829

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.09300	0.47528	4.95271
	A2->X (FF)	0.08225	0.47250	4.99331
	B1->X (FF)	0.04682	0.39862	4.84826
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.11478	0.49241	4.97499
	A2->X (FF)	0.10519	0.49534	5.00796
	B1->X (FF)	0.05272	0.38920	4.70145
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.11357	0.46267	5.05796
	A2->X (FF)	0.09904	0.45805	5.08838
	B1->X (FF)	0.05937	0.39427	4.91572

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00975	0.01105	0.04935
	A1	0.00392	0.00524	0.04375
	A2	0.00801	0.01001	0.06410
	A2	0.00310	0.00511	0.05942
	B1	0.00679	0.00999	0.07600
	B1	0.00317	0.00639	0.07269
sky130_fd_sc_hs__o21a_2	A1	0.01281	0.01412	0.05017
	A1	0.00649	0.00783	0.04431
	A2	0.01110	0.01295	0.06463
	A2	0.00578	0.00770	0.05978
	B1	0.00966	0.01232	0.07020
	B1	0.00562	0.00834	0.06678
sky130_fd_sc_hs__o21a_4	A1	0.02485	0.02754	0.10254
	A1	0.01291	0.01567	0.09142
	A2	0.02099	0.02478	0.12985
	A2	0.01120	0.01511	0.12094
	B1	0.01824	0.02417	0.14839
	B1	0.01125	0.01725	0.14257

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00389	0.00515	0.04258
	A1	0.00964	0.01081	0.04832
	A2	0.00391	0.00708	0.06114
	A2	0.00874	0.01188	0.06527
	B1	0.00288	0.00713	0.08247
	B1	0.00651	0.01067	0.08601
sky130_fd_sc_hs__o21a_2	A1	0.00725	0.00797	0.04324
	A1	0.01349	0.01421	0.04934
	A2	0.00739	0.00960	0.06445
	A2	0.01260	0.01481	0.06674
	B1	0.00555	0.00937	0.07795
	B1	0.00959	0.01330	0.08120
sky130_fd_sc_hs__o21a_4	A1	0.01367	0.01535	0.08825
	A1	0.02550	0.02687	0.09900
	A2	0.01400	0.01861	0.12268
	A2	0.02363	0.02809	0.13211
	B1	0.01087	0.01840	0.16213
	B1	0.01965	0.02689	0.16386

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00167	0.00147	0.00145
	(A2 * B1 * X)	-0.00143	-0.00165	-0.00165
	(A2 * !B1 * !X)	0.00145	0.00146	0.00145
	(A2 * !B1 * !X)	-0.00162	-0.00166	-0.00165
	(!A2 * !B1 * !X)	0.00138	0.00139	0.00139
	(!A2 * !B1 * !X)	-0.00167	-0.00167	-0.00167
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00194	0.00174	0.00172
	(A2 * B1 * X)	-0.00140	-0.00162	-0.00163
	(A2 * !B1 * !X)	0.00172	0.00172	0.00172
	(A2 * !B1 * !X)	-0.00160	-0.00163	-0.00163
	(!A2 * !B1 * !X)	0.00163	0.00163	0.00164
	(!A2 * !B1 * !X)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00360	0.00328	0.00322
	(A2 * B1 * X)	-0.00272	-0.00318	-0.00317
	(A2 * !B1 * !X)	0.00311	0.00317	0.00313
	(A2 * !B1 * !X)	-0.00316	-0.00328	-0.00326
	(!A2 * !B1 * !X)	0.00304	0.00308	0.00304
	(!A2 * !B1 * !X)	-0.00329	-0.00331	-0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00144	-0.00144	-0.00143
	(A2 * B1 * X)	0.00166	0.00167	0.00166
	(A2 * !B1 * !X)	-0.00144	-0.00145	-0.00144
	(A2 * !B1 * !X)	0.00166	0.00166	0.00165
	(!A2 * !B1 * !X)	-0.00131	-0.00139	-0.00139
	(!A2 * !B1 * !X)	0.00169	0.00169	0.00168
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00170	-0.00171	-0.00170
	(A2 * B1 * X)	0.00163	0.00164	0.00163
	(A2 * !B1 * !X)	-0.00171	-0.00171	-0.00171
	(A2 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A2 * !B1 * !X)	-0.00156	-0.00163	-0.00164
	(!A2 * !B1 * !X)	0.00166	0.00166	0.00165
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00319	-0.00320	-0.00319
	(A2 * B1 * X)	0.00317	0.00319	0.00318
	(A2 * !B1 * !X)	-0.00311	-0.00313	-0.00312
	(A2 * !B1 * !X)	0.00325	0.00328	0.00326
	(!A2 * !B1 * !X)	-0.00288	-0.00305	-0.00302
	(!A2 * !B1 * !X)	0.00333	0.00332	0.00330

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00149	0.00150	0.00148
	(A1 * B1 * X)	-0.00084	-0.00084	-0.00084
	(A1 * !B1 * !X)	0.00137	0.00138	0.00137
	(A1 * !B1 * !X)	-0.00157	-0.00161	-0.00160
	(!A1 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !B1 * !X)	-0.00162	-0.00163	-0.00162
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00168	0.00170	0.00169
	(A1 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !B1 * !X)	0.00154	0.00155	0.00154
	(A1 * !B1 * !X)	-0.00155	-0.00158	-0.00158
	(!A1 * !B1 * !X)	0.00147	0.00147	0.00147
	(!A1 * !B1 * !X)	-0.00160	-0.00160	-0.00160
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00297	0.00298	0.00296
	(A1 * B1 * X)	-0.00159	-0.00159	-0.00158
	(A1 * !B1 * !X)	0.00264	0.00267	0.00263
	(A1 * !B1 * !X)	-0.00316	-0.00324	-0.00322
	(!A1 * !B1 * !X)	0.00250	0.00253	0.00251
	(!A1 * !B1 * !X)	-0.00326	-0.00328	-0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00143	-0.00144	-0.00147
	(A1 * B1 * X)	0.00089	0.00089	0.00085
	(A1 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * !B1 * !X)	0.00159	0.00161	0.00160
	(!A1 * !B1 * !X)	-0.00123	-0.00133	-0.00132
	(!A1 * !B1 * !X)	0.00164	0.00164	0.00162
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00164	-0.00165	-0.00168
	(A1 * B1 * X)	0.00082	0.00082	0.00079
	(A1 * !B1 * !X)	-0.00154	-0.00154	-0.00154
	(A1 * !B1 * !X)	0.00158	0.00158	0.00158
	(!A1 * !B1 * !X)	-0.00141	-0.00147	-0.00147
	(!A1 * !B1 * !X)	0.00162	0.00161	0.00161
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00284	-0.00286	-0.00294
	(A1 * B1 * X)	0.00169	0.00169	0.00162
	(A1 * !B1 * !X)	-0.00263	-0.00264	-0.00262
	(A1 * !B1 * !X)	0.00322	0.00324	0.00322
	(!A1 * !B1 * !X)	-0.00238	-0.00253	-0.00251
	(!A1 * !B1 * !X)	0.00332	0.00330	0.00329

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00051	0.00051	0.00049
	(!A1 * !A2 * !X)	-0.00179	-0.00179	-0.00183
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00055	0.00055	0.00052
	(!A1 * !A2 * !X)	-0.00202	-0.00202	-0.00207
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00084	0.00085	0.00079
	(!A1 * !A2 * !X)	-0.00344	-0.00346	-0.00355

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00047	-0.00048	-0.00047
	(!A1 * !A2 * !X)	0.00183	0.00187	0.00184
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00051	-0.00052	-0.00051
	(!A1 * !A2 * !X)	0.00207	0.00211	0.00208
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00077	-0.00079	-0.00077
	(!A1 * !A2 * !X)	0.00356	0.00362	0.00357

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21bai_1	9.59040
sky130_fd_sc_hs__o21bai_2	14.38560
sky130_fd_sc_hs__o21bai_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	Y
sky130_fd_sc_hs__o21bai_1	0.00258	0.00287	0.00228	0.73163
sky130_fd_sc_hs__o21bai_2	0.00548	0.00502	0.00249	1.35462
sky130_fd_sc_hs__o21bai_4	0.00984	0.00999	0.00336	2.38071

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21bai_1	0.00000	0.27155	0.47259
sky130_fd_sc_hs__o21bai_2	0.00000	0.12785	0.25378
sky130_fd_sc_hs__o21bai_4	0.00000	0.56610	0.94719

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)	0.06707	0.84690	10.51070
	A2->Y (FR)	0.05811	0.84076	10.59490
	B1_N->Y (RR)	0.04252	0.28342	2.33487
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.06151	0.71882	10.31470
	A2->Y (FR)	0.04900	0.71095	10.38450
	B1_N->Y (RR)	0.04233	0.23272	2.19681
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.06401	0.63449	10.20970
	A2->Y (FR)	0.05034	0.64116	10.48130
	B1_N->Y (RR)	0.05742	0.38769	5.74847

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.02578	0.30072	3.55550
	A2->Y (RF)	0.02175	0.29127	3.50869
	B1_N->Y (FF)	0.05761	0.40390	4.14072
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.02321	0.23682	3.33903
	A2->Y (RF)	0.02051	0.23196	3.36891
	B1_N->Y (FF)	0.05827	0.39503	4.31336
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.02863	0.20084	3.33291
	A2->Y (RF)	0.02109	0.18736	3.25692
	B1_N->Y (FF)	0.05969	0.35460	4.20726

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00044	0.00054	0.00822
	A1	0.00563	0.00573	0.01352
	A2	0.00038	0.00154	0.01747
	A2	0.00484	0.00600	0.02204
	B1_N	0.00677	0.00958	0.07280
	B1_N	0.00449	0.00734	0.07062
sky130_fd_sc_hs__o21bai_2	A1	0.00036	0.00062	0.01613
	A1	0.01081	0.01111	0.02665
	A2	0.00040	0.00329	0.03251
	A2	0.00840	0.01130	0.04065
	B1_N	0.00928	0.01235	0.07623
	B1_N	0.00769	0.01082	0.07516
sky130_fd_sc_hs__o21bai_4	A1	0.00067	0.00118	0.02839
	A1	0.02101	0.02161	0.04894
	A2	0.00044	0.00463	0.06026
	A2	0.01680	0.02099	0.07694
	B1_N	0.01225	0.01760	0.14291
	B1_N	0.01211	0.01762	0.14345

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00744	0.00754	0.01263
	A1	0.00223	0.00228	0.00731
	A2	0.00574	0.00592	0.01106
	A2	0.00123	0.00138	0.00622
	B1_N	0.00545	0.00957	0.07995
	B1_N	0.00676	0.01086	0.08117
sky130_fd_sc_hs__o21bai_2	A1	0.01483	0.01491	0.02505
	A1	0.00436	0.00442	0.01456
	A2	0.01058	0.01101	0.02136
	A2	0.00248	0.00289	0.01264
	B1_N	0.01087	0.01504	0.08879
	B1_N	0.01256	0.01665	0.08952
sky130_fd_sc_hs__o21bai_4	A1	0.02958	0.02984	0.05018
	A1	0.00920	0.00943	0.02979
	A2	0.02115	0.02215	0.04173
	A2	0.00464	0.00555	0.02506
	B1_N	0.02199	0.02891	0.15268
	B1_N	0.02260	0.02950	0.15270

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)	0.00163	0.00164	0.00163
	(A2 * B1_N * Y)	-0.00173	-0.00177	-0.00177
	(A2 * !B1_N * !Y)	0.00184	0.00164	0.00162
	(A2 * !B1_N * !Y)	-0.00155	-0.00177	-0.00177
	(!A2 * B1_N * Y)	0.00157	0.00158	0.00157
	(!A2 * B1_N * Y)	-0.00179	-0.00179	-0.00179
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00332	0.00334	0.00332
	(A2 * B1_N * Y)	-0.00361	-0.00371	-0.00370
	(A2 * !B1_N * !Y)	0.00383	0.00341	0.00337
	(A2 * !B1_N * !Y)	-0.00314	-0.00363	-0.00365
	(!A2 * B1_N * Y)	0.00324	0.00327	0.00325
	(!A2 * B1_N * Y)	-0.00374	-0.00375	-0.00374
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00621	0.00631	0.00622
	(A2 * B1_N * Y)	-0.00695	-0.00721	-0.00718
	(A2 * !B1_N * !Y)	0.00723	0.00635	0.00623
	(A2 * !B1_N * !Y)	-0.00604	-0.00719	-0.00716
	(!A2 * B1_N * Y)	0.00597	0.00602	0.00601
	(!A2 * B1_N * Y)	-0.00725	-0.00729	-0.00728

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)	-0.00161	-0.00162	-0.00161
	(A2 * B1_N * Y)	0.00176	0.00178	0.00177
	(A2 * !B1_N * !Y)	-0.00162	-0.00162	-0.00161
	(A2 * !B1_N * !Y)	0.00177	0.00178	0.00177
	(!A2 * B1_N * Y)	-0.00150	-0.00157	-0.00157
	(!A2 * B1_N * Y)	0.00181	0.00181	0.00180
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00330	-0.00332	-0.00331
	(A2 * B1_N * Y)	0.00368	0.00372	0.00370
	(A2 * !B1_N * !Y)	-0.00335	-0.00336	-0.00335
	(A2 * !B1_N * !Y)	0.00363	0.00366	0.00365
	(!A2 * B1_N * Y)	-0.00310	-0.00323	-0.00324
	(!A2 * B1_N * Y)	0.00376	0.00378	0.00376
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00617	-0.00620	-0.00619
	(A2 * B1_N * Y)	0.00714	0.00721	0.00718
	(A2 * !B1_N * !Y)	-0.00619	-0.00623	-0.00620
	(A2 * !B1_N * !Y)	0.00712	0.00719	0.00716
	(!A2 * B1_N * Y)	-0.00573	-0.00602	-0.00601
	(!A2 * B1_N * Y)	0.00736	0.00738	0.00731

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)	0.00166	0.00167	0.00166
	(A1 * B1_N * Y)	-0.00189	-0.00194	-0.00194
	(A1 * !B1_N * !Y)	0.00189	0.00189	0.00188
	(A1 * !B1_N * !Y)	-0.00099	-0.00098	-0.00098
	(!A1 * B1_N * Y)	0.00161	0.00163	0.00161
	(!A1 * B1_N * Y)	-0.00196	-0.00197	-0.00196
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00302	0.00307	0.00303
	(A1 * B1_N * Y)	-0.00335	-0.00346	-0.00345
	(A1 * !B1_N * !Y)	0.00329	0.00333	0.00330
	(A1 * !B1_N * !Y)	-0.00170	-0.00172	-0.00170
	(!A1 * B1_N * Y)	0.00292	0.00294	0.00293
	(!A1 * B1_N * Y)	-0.00349	-0.00350	-0.00350
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00615	0.00622	0.00616
	(A1 * B1_N * Y)	-0.00697	-0.00719	-0.00718
	(A1 * !B1_N * !Y)	0.00691	0.00699	0.00693
	(A1 * !B1_N * !Y)	-0.00348	-0.00352	-0.00348
	(!A1 * B1_N * Y)	0.00594	0.00599	0.00597
	(!A1 * B1_N * Y)	-0.00727	-0.00731	-0.00730

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)	-0.00165	-0.00166	-0.00165
	(A1 * B1_N * Y)	0.00193	0.00195	0.00194
	(A1 * !B1_N * !Y)	-0.00182	-0.00184	-0.00187
	(A1 * !B1_N * !Y)	0.00102	0.00102	0.00099
	(!A1 * B1_N * Y)	-0.00155	-0.00160	-0.00161
	(!A1 * B1_N * Y)	0.00199	0.00198	0.00197
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00302	-0.00304	-0.00302
	(A1 * B1_N * Y)	0.00344	0.00346	0.00345
	(A1 * !B1_N * !Y)	-0.00318	-0.00319	-0.00329
	(A1 * !B1_N * !Y)	0.00180	0.00180	0.00173
	(!A1 * B1_N * Y)	-0.00283	-0.00294	-0.00293
	(!A1 * B1_N * Y)	0.00351	0.00352	0.00351
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00613	-0.00615	-0.00613
	(A1 * B1_N * Y)	0.00718	0.00719	0.00718
	(A1 * !B1_N * !Y)	-0.00667	-0.00668	-0.00690
	(A1 * !B1_N * !Y)	0.00373	0.00371	0.00354
	(!A1 * B1_N * Y)	-0.00569	-0.00597	-0.00597
	(!A1 * B1_N * Y)	0.00737	0.00738	0.00733

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)	0.00566	0.00888	0.08077
	(!A1 * !A2 * Y)	0.00196	0.00518	0.07707
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00817	0.01135	0.08720
	(!A1 * !A2 * Y)	0.00399	0.00715	0.08301
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00989	0.01497	0.13790
	(!A1 * !A2 * Y)	0.00421	0.00927	0.13221

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)	-0.00001	0.00439	0.07587
	(!A1 * !A2 * Y)	0.00372	0.00812	0.07958
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00054	0.00411	0.07931
	(!A1 * !A2 * Y)	0.00476	0.00835	0.08351
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00117	0.00826	0.13093
	(!A1 * !A2 * Y)	0.00692	0.01403	0.13668

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o21ba_1	12.78720
sky130_fd_sc_hs__o21ba_2	12.78720
sky130_fd_sc_hs__o21ba_4	20.77920

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A1	A2	B1_N	X
sky130_fd_sc_hs__o21ba_1	0.00238	0.00253	0.00208	1.27026
sky130_fd_sc_hs__o21ba_2	0.00247	0.00259	0.00221	2.42726
sky130_fd_sc_hs__o21ba_4	0.00497	0.00471	0.00265	4.45615

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o21ba_1	0.00000	0.33870	0.53655
sky130_fd_sc_hs__o21ba_2	0.00000	0.37786	0.59847
sky130_fd_sc_hs__o21ba_4	0.00000	0.58566	1.17312

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)	0.06127	0.46592	5.33987
	A2->X (RR)	0.05466	0.45185	5.37559
	B1_N->X (FR)	0.09707	0.68993	8.46396
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.06060	0.37675	5.13698
	A2->X (RR)	0.05315	0.36338	5.13866
	B1_N->X (FR)	0.09952	0.59424	8.19247
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.06516	0.31561	5.13983
	A2->X (RR)	0.06036	0.30194	5.19429
	B1_N->X (FR)	0.10115	0.54971	8.35324

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.09588	0.47406	4.67638
	A2->X (FF)	0.08679	0.47317	4.72156
	B1_N->X (RF)	0.06723	0.20568	1.21241
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.11291	0.48489	4.75838
	A2->X (FF)	0.10342	0.48732	4.79006
	B1_N->X (RF)	0.07386	0.19459	1.40202
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.11228	0.45232	4.66200
	A2->X (FF)	0.09795	0.44869	4.68941
	B1_N->X (RF)	0.07847	0.17457	1.03694

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.01034	0.01158	0.04985
	A1	0.00553	0.00677	0.04524
	A2	0.00881	0.01070	0.06470
	A2	0.00471	0.00660	0.06080
	B1_N	0.00894	0.01314	0.08988
	B1_N	0.01017	0.01464	0.09277
sky130_fd_sc_hs__o21ba_2	A1	0.01275	0.01411	0.05013
	A1	0.00782	0.00921	0.04520
	A2	0.01114	0.01300	0.06468
	A2	0.00693	0.00887	0.06049
	B1_N	0.01115	0.01553	0.08620
	B1_N	0.01252	0.01702	0.08945
sky130_fd_sc_hs__o21ba_4	A1	0.02480	0.02740	0.10197
	A1	0.01497	0.01760	0.09214
	A2	0.02098	0.02462	0.12916
	A2	0.01330	0.01694	0.12148
	B1_N	0.02128	0.02610	0.10522
	B1_N	0.02121	0.02626	0.10742

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00393	0.00511	0.04310
	A1	0.00870	0.00988	0.04726
	A2	0.00390	0.00662	0.06078
	A2	0.00794	0.01066	0.06438
	B1_N	0.01004	0.01304	0.08491
	B1_N	0.00705	0.01004	0.08190
sky130_fd_sc_hs__o21ba_2	A1	0.00679	0.00774	0.04277
	A1	0.01169	0.01250	0.04760
	A2	0.00676	0.00937	0.06237
	A2	0.01090	0.01350	0.06514
	B1_N	0.01286	0.01553	0.08779
	B1_N	0.01060	0.01314	0.08376
sky130_fd_sc_hs__o21ba_4	A1	0.01330	0.01471	0.08736
	A1	0.02308	0.02444	0.09625
	A2	0.01358	0.01804	0.12194
	A2	0.02115	0.02539	0.12937
	B1_N	0.02181	0.02469	0.09753
	B1_N	0.02000	0.02275	0.09390

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)	0.00144	0.00145	0.00144
	(A2 * B1_N * !X)	-0.00163	-0.00166	-0.00167
	(A2 * !B1_N * X)	0.00166	0.00146	0.00144
	(A2 * !B1_N * X)	-0.00144	-0.00166	-0.00167
	(!A2 * B1_N * !X)	0.00139	0.00140	0.00139
	(!A2 * B1_N * !X)	-0.00168	-0.00168	-0.00168
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00163	0.00164	0.00162
	(A2 * B1_N * !X)	-0.00159	-0.00163	-0.00163
	(A2 * !B1_N * X)	0.00185	0.00165	0.00163
	(A2 * !B1_N * X)	-0.00140	-0.00162	-0.00163
	(!A2 * B1_N * !X)	0.00157	0.00157	0.00157
	(!A2 * B1_N * !X)	-0.00164	-0.00164	-0.00164
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00318	0.00324	0.00320
	(A2 * B1_N * !X)	-0.00322	-0.00334	-0.00332
	(A2 * !B1_N * X)	0.00361	0.00328	0.00322
	(A2 * !B1_N * X)	-0.00284	-0.00330	-0.00330
	(!A2 * B1_N * !X)	0.00308	0.00312	0.00309
	(!A2 * B1_N * !X)	-0.00336	-0.00338	-0.00336

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)	-0.00143	-0.00143	-0.00143
	(A2 * B1_N * !X)	0.00167	0.00168	0.00167
	(A2 * !B1_N * X)	-0.00143	-0.00143	-0.00142
	(A2 * !B1_N * X)	0.00167	0.00168	0.00168
	(!A2 * B1_N * !X)	-0.00133	-0.00139	-0.00139
	(!A2 * B1_N * !X)	0.00172	0.00170	0.00169
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00161	-0.00162	-0.00161
	(A2 * B1_N * !X)	0.00163	0.00164	0.00163
	(A2 * !B1_N * X)	-0.00162	-0.00162	-0.00161
	(A2 * !B1_N * X)	0.00163	0.00164	0.00163
	(!A2 * B1_N * !X)	-0.00150	-0.00157	-0.00157
	(!A2 * B1_N * !X)	0.00166	0.00166	0.00165
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00318	-0.00320	-0.00318
	(A2 * B1_N * !X)	0.00331	0.00334	0.00332
	(A2 * !B1_N * X)	-0.00319	-0.00320	-0.00319
	(A2 * !B1_N * X)	0.00330	0.00332	0.00331
	(!A2 * B1_N * !X)	-0.00300	-0.00312	-0.00309
	(!A2 * B1_N * !X)	0.00340	0.00339	0.00337

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)	0.00151	0.00152	0.00152
	(A1 * B1_N * !X)	-0.00164	-0.00168	-0.00168
	(A1 * !B1_N * X)	0.00158	0.00160	0.00159
	(A1 * !B1_N * X)	-0.00094	-0.00095	-0.00094
	(!A1 * B1_N * !X)	0.00147	0.00148	0.00147
	(!A1 * B1_N * !X)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00166	0.00167	0.00166
	(A1 * B1_N * !X)	-0.00161	-0.00165	-0.00165
	(A1 * !B1_N * X)	0.00177	0.00178	0.00177
	(A1 * !B1_N * X)	-0.00087	-0.00088	-0.00088
	(!A1 * B1_N * !X)	0.00160	0.00163	0.00161
	(!A1 * B1_N * !X)	-0.00166	-0.00167	-0.00166
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00272	0.00272	0.00271
	(A1 * B1_N * !X)	-0.00325	-0.00333	-0.00333
	(A1 * !B1_N * X)	0.00303	0.00306	0.00304
	(A1 * !B1_N * X)	-0.00167	-0.00169	-0.00167
	(!A1 * B1_N * !X)	0.00262	0.00266	0.00263
	(!A1 * B1_N * !X)	-0.00338	-0.00340	-0.00338

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	(A1 * B1_N * !X)	-0.00150	-0.00151	-0.00150
	(A1 * B1_N * !X)	0.00168	0.00168	0.00168
	(A1 * !B1_N * X)	-0.00154	-0.00155	-0.00158
	(A1 * !B1_N * X)	0.00098	0.00098	0.00095
	(!A1 * B1_N * !X)	-0.00141	-0.00148	-0.00147
	(!A1 * B1_N * !X)	0.00172	0.00172	0.00171
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00164	-0.00166	-0.00165
	(A1 * B1_N * !X)	0.00164	0.00165	0.00165
	(A1 * !B1_N * X)	-0.00172	-0.00173	-0.00176
	(A1 * !B1_N * X)	0.00092	0.00092	0.00089
	(!A1 * B1_N * !X)	-0.00155	-0.00161	-0.00161
	(!A1 * B1_N * !X)	0.00169	0.00168	0.00168
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00270	-0.00271	-0.00270
	(A1 * B1_N * !X)	0.00331	0.00333	0.00333
	(A1 * !B1_N * X)	-0.00292	-0.00293	-0.00301
	(A1 * !B1_N * X)	0.00179	0.00179	0.00171
	(!A1 * B1_N * !X)	-0.00249	-0.00261	-0.00262
	(!A1 * B1_N * !X)	0.00345	0.00341	0.00340

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)	0.00524	0.00849	0.07798
	(!A1 * !A2 * !X)	0.00181	0.00505	0.07455
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00575	0.00885	0.07817
	(!A1 * !A2 * !X)	0.00214	0.00522	0.07455
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00800	0.01061	0.07665
	(!A1 * !A2 * !X)	0.00361	0.00619	0.07226

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)	0.00010	0.00425	0.07344
	(!A1 * !A2 * !X)	0.00355	0.00769	0.07688
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00005	0.00420	0.07316
	(!A1 * !A2 * !X)	0.00369	0.00786	0.07680
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00026	0.00347	0.06905
	(!A1 * !A2 * !X)	0.00469	0.00792	0.07348

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221ai_1	12.78720
sky130_fd_sc_hs__o221ai_2	19.18080
sky130_fd_sc_hs__o221ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	Y
sky130_fd_sc_hs__o221ai_1	0.00267	0.00283	0.00279	0.00271	0.00275	0.72810
sky130_fd_sc_hs__o221ai_2	0.00548	0.00500	0.00576	0.00500	0.00505	1.31074
sky130_fd_sc_hs__o221ai_4	0.01041	0.00990	0.01054	0.00987	0.01005	2.40619

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.03499	0.18882
sky130_fd_sc_hs__o221ai_2	0.00000	0.06997	0.37763
sky130_fd_sc_hs__o221ai_4	0.00000	0.13994	0.75526

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)	0.10462	0.88605	10.51580
	A2->Y (FR)	0.09516	0.87638	10.59730
	B1->Y (FR)	0.07623	0.84529	10.38720
	B2->Y (FR)	0.06563	0.83758	10.47170
	C1->Y (FR)	0.02746	0.57133	7.52150
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.09652	0.75269	10.22650
	A2->Y (FR)	0.08401	0.74428	10.29360
	B1->Y (FR)	0.07035	0.72045	10.15170
	B2->Y (FR)	0.05755	0.71140	10.21010
	C1->Y (FR)	0.02164	0.49616	7.26943
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.08822	0.64602	9.89790
	A2->Y (FR)	0.07632	0.64593	10.08330
	B1->Y (FR)	0.07218	0.64000	10.22300
	B2->Y (FR)	0.05645	0.63826	10.38770
	C1->Y (FR)	0.02179	0.45341	7.38971

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.04783	0.34268	3.74053
	A2->Y (RF)	0.04220	0.33399	3.71277
	B1->Y (RF)	0.04270	0.39593	4.59448
	B2->Y (RF)	0.03589	0.37761	4.45206
	C1->Y (RF)	0.03582	0.42903	5.12338
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.03847	0.27087	3.58725
	A2->Y (RF)	0.03375	0.26576	3.63053
	B1->Y (RF)	0.03299	0.32210	4.47232
	B2->Y (RF)	0.02861	0.33308	4.76504
	C1->Y (RF)	0.01911	0.35419	5.24723
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.04410	0.23741	3.75602
	A2->Y (RF)	0.03643	0.22739	3.78247
	B1->Y (RF)	0.03918	0.30225	4.89868
	B2->Y (RF)	0.03129	0.29409	4.97888
	C1->Y (RF)	0.02148	0.33302	5.81339

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00211	0.00210	0.00933
	A1	0.01147	0.01149	0.01837
	A2	0.00219	0.00309	0.01806
	A2	0.01046	0.01136	0.02640
	B1	0.00062	0.00061	0.00780
	B1	0.00859	0.00854	0.01544
	B2	0.00061	0.00165	0.01661
	B2	0.00648	0.00752	0.02259
	C1	-0.00061	0.00097	0.01983
	C1	0.00424	0.00573	0.02469
sky130_fd_sc_hs__o221ai_2	A1	0.00338	0.00336	0.01754
	A1	0.02148	0.02152	0.03558
	A2	0.00341	0.00495	0.03277
	A2	0.01916	0.02072	0.04822
	B1	0.00059	0.00061	0.01497
	B1	0.01617	0.01618	0.03003
	B2	0.00080	0.00243	0.02934
	B2	0.01391	0.01546	0.04166
	C1	-0.00191	0.00192	0.03753
	C1	0.00684	0.01078	0.04673

sky130_fd_sc_hs__o221ai_4	**A1**	0.00555	0.00552	0.03004
	A1	0.04130	0.04141	0.06516
	A2	0.00574	0.00834	0.05348
	A2	0.03703	0.03972	0.08354
	B1	0.00082	0.00101	0.03173
	B1	0.03140	0.03155	0.06132
	B2	0.00081	0.00406	0.05749
	B2	0.02310	0.02636	0.07999
	C1	-0.00352	0.00347	0.09185
	C1	0.01379	0.02087	0.10973

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.01251	0.01252	0.01738
	A1	0.00279	0.00275	0.00744
	A2	0.00935	0.00939	0.01436
	A2	0.00086	0.00089	0.00553
	B1	0.01076	0.01083	0.01528
	B1	0.00173	0.00174	0.00631
	B2	0.00691	0.00702	0.01193
	B2	0.00096	0.00106	0.00568
	C1	0.00561	0.00593	0.01285
	C1	0.00077	0.00107	0.00777

sky130_fd_sc_hs__o221ai_2	**A1**	0.02367	0.02355	0.03301
	A1	0.00495	0.00480	0.01425
	A2	0.01952	0.01963	0.02947
	A2	0.00088	0.00101	0.01030
	B1	0.02057	0.02055	0.02972
	B1	0.00290	0.00286	0.01202
	B2	0.01223	0.01246	0.02116
	B2	0.00089	0.00113	0.00949
	C1	0.00931	0.01022	0.02401
	C1	0.00056	0.00141	0.01478
sky130_fd_sc_hs__o221ai_4	**A1**	0.04681	0.04671	0.06662
	A1	0.00984	0.00966	0.02961
	A2	0.03875	0.03897	0.05858
	A2	0.00178	0.00202	0.02161
	B1	0.04044	0.04062	0.06238
	B1	0.00565	0.00584	0.02879
	B2	0.02445	0.02520	0.04781
	B2	0.00188	0.00255	0.02420
	C1	0.01827	0.02084	0.06111
	C1	0.00100	0.00346	0.04161

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)**	0.00193	0.00174	0.00173
	(A2 * B2 * C1 * !Y)	-0.00158	-0.00181	-0.00181
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00173	0.00173	0.00173
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00177	-0.00181	-0.00180
	(A2 * B1 * !B2 * C1 * !Y)	0.00193	0.00174	0.00173
	(A2 * B1 * !B2 * C1 * !Y)	-0.00158	-0.00181	-0.00181
	(A2 * !B1 * !B2 * Y)	0.00173	0.00173	0.00173
	(A2 * !B1 * !B2 * Y)	-0.00177	-0.00181	-0.00180
	(!A2 * B2 * !C1 * Y)	0.00161	0.00161	0.00160
	(!A2 * B2 * !C1 * Y)	-0.00183	-0.00183	-0.00183
	(!A2 * B1 * !B2 * !C1 * Y)	0.00162	0.00162	0.00161
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00182	-0.00183	-0.00183
	(!A2 * !B1 * !B2 * C1 * Y)	0.00164	0.00166	0.00165
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00182	-0.00183	-0.00182
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00165	0.00166	0.00165
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00379	0.00334	0.00330
	(A2 * B2 * C1 * !Y)	-0.00308	-0.00357	-0.00360
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00316	0.00319	0.00318
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00360	-0.00372	-0.00371
	(A2 * B1 * !B2 * C1 * !Y)	0.00379	0.00334	0.00330
	(A2 * B1 * !B2 * C1 * !Y)	-0.00308	-0.00357	-0.00360
	(A2 * !B1 * !B2 * Y)	0.00318	0.00320	0.00318
	(A2 * !B1 * !B2 * Y)	-0.00363	-0.00373	-0.00371
	(!A2 * B2 * !C1 * Y)	0.00303	0.00303	0.00302
	(!A2 * B2 * !C1 * Y)	-0.00377	-0.00377	-0.00376
	(!A2 * B1 * !B2 * !C1 * Y)	0.00305	0.00305	0.00304
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00377	-0.00377	-0.00376
	(!A2 * !B1 * !B2 * C1 * Y)	0.00306	0.00308	0.00307
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00374	-0.00377	-0.00376
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00306	0.00308	0.00307
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00375	-0.00377	-0.00376

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00746	0.00658	0.00650
	(A2 * B2 * C1 * !Y)	-0.00600	-0.00703	-0.00708
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00642	0.00647	0.00643
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00694	-0.00714	-0.00713
	(A2 * B1 * !B2 * C1 * !Y)	0.00746	0.00658	0.00650
	(A2 * B1 * !B2 * C1 * !Y)	-0.00600	-0.00703	-0.00708
	(A2 * !B1 * !B2 * Y)	0.00642	0.00647	0.00643
	(A2 * !B1 * !B2 * Y)	-0.00694	-0.00714	-0.00713
	(!A2 * B2 * !C1 * Y)	0.00607	0.00614	0.00609
	(!A2 * B2 * !C1 * Y)	-0.00721	-0.00726	-0.00723
	(!A2 * B1 * !B2 * !C1 * Y)	0.00611	0.00615	0.00613
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00721	-0.00724	-0.00723
	(!A2 * !B1 * !B2 * C1 * Y)	0.00620	0.00623	0.00620
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00723	-0.00724	-0.00723
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00620	0.00623	0.00620
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00721	-0.00725	-0.00723

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)**	-0.00172	-0.00172	-0.00172
	(A2 * B2 * C1 * !Y)	0.00181	0.00181	0.00181
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00172	-0.00173	-0.00172
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00181	0.00182	0.00180
	(A2 * B1 * !B2 * C1 * !Y)	-0.00172	-0.00172	-0.00172
	(A2 * B1 * !B2 * C1 * !Y)	0.00181	0.00181	0.00181
	(A2 * !B1 * !B2 * Y)	-0.00172	-0.00173	-0.00172
	(A2 * !B1 * !B2 * Y)	0.00181	0.00182	0.00180
	(!A2 * B2 * !C1 * Y)	-0.00148	-0.00161	-0.00160
	(!A2 * B2 * !C1 * Y)	0.00183	0.00184	0.00183
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00151	-0.00162	-0.00161
	(!A2 * B1 * !B2 * !C1 * Y)	0.00182	0.00184	0.00183
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00156	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * C1 * Y)	0.00184	0.00184	0.00183
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00156	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00328	-0.00330	-0.00329
	(A2 * B2 * C1 * !Y)	0.00357	0.00361	0.00360
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00316	-0.00318	-0.00317
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00369	0.00373	0.00371
	(A2 * B1 * !B2 * C1 * !Y)	-0.00328	-0.00330	-0.00329
	(A2 * B1 * !B2 * C1 * !Y)	0.00358	0.00361	0.00360
	(A2 * !B1 * !B2 * Y)	-0.00316	-0.00318	-0.00317
	(A2 * !B1 * !B2 * Y)	0.00369	0.00373	0.00371
	(!A2 * B2 * !C1 * Y)	-0.00271	-0.00300	-0.00302
	(!A2 * B2 * !C1 * Y)	0.00378	0.00378	0.00377
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00276	-0.00302	-0.00303
	(!A2 * B1 * !B2 * !C1 * Y)	0.00378	0.00378	0.00377
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00285	-0.00303	-0.00305
	(!A2 * !B1 * !B2 * C1 * Y)	0.00374	0.00380	0.00377
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00286	-0.00304	-0.00306
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00375	0.00379	0.00377

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00646	-0.00649	-0.00647
	(A2 * B2 * C1 * !Y)	0.00704	0.00711	0.00708
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00641	-0.00643	-0.00642
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00710	0.00716	0.00713
	(A2 * B1 * !B2 * C1 * !Y)	-0.00646	-0.00649	-0.00647
	(A2 * B1 * !B2 * C1 * !Y)	0.00704	0.00710	0.00708
	(A2 * !B1 * !B2 * Y)	-0.00640	-0.00643	-0.00642
	(A2 * !B1 * !B2 * Y)	0.00710	0.00716	0.00713
	(!A2 * B2 * !C1 * Y)	-0.00543	-0.00601	-0.00608
	(!A2 * B2 * !C1 * Y)	0.00722	0.00728	0.00725
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00554	-0.00607	-0.00611
	(!A2 * B1 * !B2 * !C1 * Y)	0.00722	0.00728	0.00725
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00575	-0.00612	-0.00617
	(!A2 * !B1 * !B2 * C1 * Y)	0.00723	0.00728	0.00725
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00575	-0.00613	-0.00617
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00721	0.00729	0.00725

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)**	0.00182	0.00182	0.00181
	(A1 * B2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * B2 * !C1 * Y)	0.00156	0.00157	0.00156
	(A1 * B2 * !C1 * Y)	-0.00189	-0.00194	-0.00194
	(A1 * B1 * !B2 * C1 * !Y)	0.00182	0.00182	0.00181
	(A1 * B1 * !B2 * C1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * B1 * !B2 * !C1 * Y)	0.00156	0.00157	0.00156
	(A1 * B1 * !B2 * !C1 * Y)	-0.00189	-0.00194	-0.00193
	(A1 * !B1 * !B2 * C1 * Y)	0.00156	0.00159	0.00156
	(A1 * !B1 * !B2 * C1 * Y)	-0.00189	-0.00195	-0.00193
	(A1 * !B1 * !B2 * !C1 * Y)	0.00156	0.00159	0.00156
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00189	-0.00195	-0.00193
	(!A1 * B2 * !C1 * Y)	0.00146	0.00148	0.00147
	(!A1 * B2 * !C1 * Y)	-0.00195	-0.00197	-0.00196
	(!A1 * B1 * !B2 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00196	-0.00196	-0.00196
	(!A1 * !B1 * !B2 * C1 * Y)	0.00149	0.00151	0.00149
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00196	-0.00197	-0.00196
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00196	-0.00196	-0.00196

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00327	0.00331	0.00329
	(A1 * B2 * C1 * !Y)	-0.00169	-0.00171	-0.00170
	(A1 * B2 * !C1 * Y)	0.00300	0.00306	0.00301
	(A1 * B2 * !C1 * Y)	-0.00334	-0.00345	-0.00344
	(A1 * B1 * !B2 * C1 * !Y)	0.00327	0.00331	0.00329
	(A1 * B1 * !B2 * C1 * !Y)	-0.00169	-0.00171	-0.00170
	(A1 * B1 * !B2 * !C1 * Y)	0.00301	0.00303	0.00301
	(A1 * B1 * !B2 * !C1 * Y)	-0.00335	-0.00345	-0.00344
	(A1 * !B1 * !B2 * C1 * Y)	0.00301	0.00304	0.00302
	(A1 * !B1 * !B2 * C1 * Y)	-0.00335	-0.00344	-0.00343
	(A1 * !B1 * !B2 * !C1 * Y)	0.00301	0.00306	0.00301
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00335	-0.00345	-0.00344
	(!A1 * B2 * !C1 * Y)	0.00285	0.00286	0.00285
	(!A1 * B2 * !C1 * Y)	-0.00348	-0.00349	-0.00349
	(!A1 * B1 * !B2 * !C1 * Y)	0.00287	0.00289	0.00287
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00348	-0.00350	-0.00349
	(!A1 * !B1 * !B2 * C1 * Y)	0.00289	0.00291	0.00290
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00348	-0.00350	-0.00349
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00290	0.00291	0.00291
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00348	-0.00349	-0.00349

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00662	0.00670	0.00665
	(A1 * B2 * C1 * !Y)	-0.00338	-0.00341	-0.00339
	(A1 * B2 * !C1 * Y)	0.00588	0.00587	0.00588
	(A1 * B2 * !C1 * Y)	-0.00691	-0.00710	-0.00708
	(A1 * B1 * !B2 * C1 * !Y)	0.00662	0.00670	0.00665
	(A1 * B1 * !B2 * C1 * !Y)	-0.00338	-0.00341	-0.00339
	(A1 * B1 * !B2 * !C1 * Y)	0.00588	0.00592	0.00588
	(A1 * B1 * !B2 * !C1 * Y)	-0.00691	-0.00711	-0.00708
	(A1 * !B1 * !B2 * C1 * Y)	0.00588	0.00594	0.00588
	(A1 * !B1 * !B2 * C1 * Y)	-0.00691	-0.00709	-0.00707
	(A1 * !B1 * !B2 * !C1 * Y)	0.00588	0.00597	0.00588
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00691	-0.00710	-0.00709
	(!A1 * B2 * !C1 * Y)	0.00561	0.00565	0.00561
	(!A1 * B2 * !C1 * Y)	-0.00717	-0.00722	-0.00719
	(!A1 * B1 * !B2 * !C1 * Y)	0.00561	0.00569	0.00564
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00716	-0.00723	-0.00719
	(!A1 * !B1 * !B2 * C1 * Y)	0.00568	0.00574	0.00570
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00716	-0.00722	-0.00719
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00569	0.00567	0.00570
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00717	-0.00717	-0.00719

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)**	-0.00175	-0.00176	-0.00180
	(A1 * B2 * C1 * !Y)	0.00100	0.00100	0.00097
	(A1 * B2 * !C1 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * B2 * !C1 * Y)	0.00193	0.00195	0.00194
	(A1 * B1 * !B2 * C1 * !Y)	-0.00175	-0.00176	-0.00180
	(A1 * B1 * !B2 * C1 * !Y)	0.00100	0.00100	0.00097
	(A1 * B1 * !B2 * !C1 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * B1 * !B2 * !C1 * Y)	0.00193	0.00195	0.00193
	(A1 * !B1 * !B2 * C1 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * !B1 * !B2 * C1 * Y)	0.00193	0.00195	0.00193
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00155	-0.00157	-0.00156
	(A1 * !B1 * !B2 * !C1 * Y)	0.00192	0.00195	0.00193
	(!A1 * B2 * !C1 * Y)	-0.00134	-0.00148	-0.00147
	(!A1 * B2 * !C1 * Y)	0.00196	0.00198	0.00196
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00137	-0.00147	-0.00146
	(!A1 * B1 * !B2 * !C1 * Y)	0.00196	0.00197	0.00196
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00141	-0.00151	-0.00149
	(!A1 * !B1 * !B2 * C1 * Y)	0.00196	0.00197	0.00196
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00142	-0.00150	-0.00149
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00196	0.00197	0.00196

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00316	-0.00318	-0.00327
	(A1 * B2 * C1 * !Y)	0.00178	0.00179	0.00172
	(A1 * B2 * !C1 * Y)	-0.00300	-0.00302	-0.00301
	(A1 * B2 * !C1 * Y)	0.00342	0.00345	0.00344
	(A1 * B1 * !B2 * C1 * !Y)	-0.00316	-0.00318	-0.00327
	(A1 * B1 * !B2 * C1 * !Y)	0.00179	0.00179	0.00172
	(A1 * B1 * !B2 * !C1 * Y)	-0.00301	-0.00302	-0.00301
	(A1 * B1 * !B2 * !C1 * Y)	0.00343	0.00345	0.00344
	(A1 * !B1 * !B2 * C1 * Y)	-0.00300	-0.00302	-0.00301
	(A1 * !B1 * !B2 * C1 * Y)	0.00342	0.00344	0.00343
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00301	-0.00301	-0.00301
	(A1 * !B1 * !B2 * !C1 * Y)	0.00344	0.00345	0.00344
	(!A1 * B2 * !C1 * Y)	-0.00256	-0.00283	-0.00285
	(!A1 * B2 * !C1 * Y)	0.00348	0.00351	0.00350
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00261	-0.00285	-0.00287
	(!A1 * B1 * !B2 * !C1 * Y)	0.00348	0.00351	0.00350
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00271	-0.00288	-0.00290
	(!A1 * !B1 * !B2 * C1 * Y)	0.00348	0.00352	0.00350
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00271	-0.00288	-0.00290
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00348	0.00352	0.00350

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00639	-0.00642	-0.00662
	(A1 * B2 * C1 * !Y)	0.00357	0.00359	0.00344
	(A1 * B2 * !C1 * Y)	-0.00585	-0.00587	-0.00587
	(A1 * B2 * !C1 * Y)	0.00705	0.00711	0.00708
	(A1 * B1 * !B2 * C1 * !Y)	-0.00639	-0.00642	-0.00662
	(A1 * B1 * !B2 * C1 * !Y)	0.00357	0.00359	0.00344
	(A1 * B1 * !B2 * !C1 * Y)	-0.00587	-0.00589	-0.00587
	(A1 * B1 * !B2 * !C1 * Y)	0.00707	0.00711	0.00708
	(A1 * !B1 * !B2 * C1 * Y)	-0.00585	-0.00589	-0.00587
	(A1 * !B1 * !B2 * C1 * Y)	0.00704	0.00709	0.00707
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00587	-0.00588	-0.00587
	(A1 * !B1 * !B2 * !C1 * Y)	0.00708	0.00710	0.00709
	(!A1 * B2 * !C1 * Y)	-0.00500	-0.00556	-0.00559
	(!A1 * B2 * !C1 * Y)	0.00717	0.00723	0.00721
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00509	-0.00558	-0.00561
	(!A1 * B1 * !B2 * !C1 * Y)	0.00716	0.00723	0.00721
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00528	-0.00562	-0.00566
	(!A1 * !B1 * !B2 * C1 * Y)	0.00716	0.00725	0.00721
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00528	-0.00563	-0.00566
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00717	0.00724	0.00721

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)**	0.00201	0.00182	0.00181
	(A2 * B2 * C1 * !Y)	-0.00153	-0.00175	-0.00176
	(A2 * !B2 * !C1 * Y)	0.00157	0.00159	0.00158
	(A2 * !B2 * !C1 * Y)	-0.00193	-0.00195	-0.00194
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00164	0.00164	0.00164
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00189	-0.00193	-0.00192
	(A1 * !A2 * B2 * C1 * !Y)	0.00201	0.00182	0.00181
	(A1 * !A2 * B2 * C1 * !Y)	-0.00153	-0.00175	-0.00176
	(A1 * !A2 * !B2 * !C1 * Y)	0.00159	0.00160	0.00158
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00195	-0.00195	-0.00194
	(!A1 * !A2 * B2 * C1 * Y)	0.00071	0.00071	0.00071
	(!A1 * !A2 * B2 * C1 * Y)	-0.00190	-0.00194	-0.00194
	(!A1 * !A2 * B2 * !C1 * Y)	0.00088	0.00089	0.00088
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00190	-0.00194	-0.00193
	(!A1 * !A2 * !B2 * C1 * Y)	0.00073	0.00073	0.00074
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00194	-0.00195	-0.00194
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00195	-0.00197	-0.00195

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00398	0.00357	0.00354
	(A2 * B2 * C1 * !Y)	-0.00299	-0.00348	-0.00348
	(A2 * !B2 * !C1 * Y)	0.00308	0.00310	0.00309
	(A2 * !B2 * !C1 * Y)	-0.00384	-0.00386	-0.00385
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00318	0.00322	0.00320
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00370	-0.00383	-0.00381
	(A1 * !A2 * B2 * C1 * !Y)	0.00398	0.00357	0.00354
	(A1 * !A2 * B2 * C1 * !Y)	-0.00299	-0.00347	-0.00348
	(A1 * !A2 * !B2 * !C1 * Y)	0.00307	0.00310	0.00309
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00384	-0.00386	-0.00385
	(!A1 * !A2 * B2 * C1 * Y)	0.00128	0.00129	0.00128
	(!A1 * !A2 * B2 * C1 * Y)	-0.00373	-0.00383	-0.00383
	(!A1 * !A2 * B2 * !C1 * Y)	0.00161	0.00162	0.00160
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00375	-0.00384	-0.00381
	(!A1 * !A2 * !B2 * C1 * Y)	0.00133	0.00134	0.00134
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00384	-0.00385	-0.00383
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00170	0.00171	0.00170
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00385	-0.00388	-0.00386

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00758	0.00674	0.00663
	(A2 * B2 * C1 * !Y)	-0.00587	-0.00695	-0.00692
	(A2 * !B2 * !C1 * Y)	0.00589	0.00593	0.00590
	(A2 * !B2 * !C1 * Y)	-0.00743	-0.00745	-0.00742
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00619	0.00628	0.00620
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00716	-0.00737	-0.00734
	(A1 * !A2 * B2 * C1 * !Y)	0.00758	0.00673	0.00663
	(A1 * !A2 * B2 * C1 * !Y)	-0.00587	-0.00695	-0.00692
	(A1 * !A2 * !B2 * !C1 * Y)	0.00592	0.00596	0.00593
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00742	-0.00745	-0.00742
	(!A1 * !A2 * B2 * C1 * Y)	0.00239	0.00241	0.00238
	(!A1 * !A2 * B2 * C1 * Y)	-0.00717	-0.00742	-0.00738
	(!A1 * !A2 * B2 * !C1 * Y)	0.00298	0.00302	0.00298
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00718	-0.00739	-0.00735
	(!A1 * !A2 * !B2 * C1 * Y)	0.00247	0.00249	0.00249
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00738	-0.00742	-0.00739
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00314	0.00319	0.00316
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00742	-0.00749	-0.00745

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)**	-0.00179	-0.00180	-0.00180
	(A2 * B2 * C1 * !Y)	0.00174	0.00176	0.00176
	(A2 * !B2 * !C1 * Y)	-0.00150	-0.00158	-0.00158
	(A2 * !B2 * !C1 * Y)	0.00197	0.00196	0.00195
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00164	-0.00164	-0.00163
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00193	0.00194	0.00192
	(A1 * !A2 * B2 * C1 * !Y)	-0.00179	-0.00180	-0.00179
	(A1 * !A2 * B2 * C1 * !Y)	0.00174	0.00177	0.00176
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00148	-0.00159	-0.00158
	(A1 * !A2 * !B2 * !C1 * Y)	0.00198	0.00196	0.00195
	(!A1 * !A2 * B2 * C1 * Y)	-0.00067	-0.00067	-0.00070
	(!A1 * !A2 * B2 * C1 * Y)	0.00200	0.00201	0.00194
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00088	-0.00089	-0.00088
	(!A1 * !A2 * B2 * !C1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00070	-0.00070	-0.00071
	(!A1 * !A2 * !B2 * C1 * Y)	0.00201	0.00202	0.00196
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00093	-0.00094	-0.00093
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00196	0.00198	0.00196

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00351	-0.00353	-0.00352
	(A2 * B2 * C1 * !Y)	0.00346	0.00349	0.00348
	(A2 * !B2 * !C1 * Y)	-0.00283	-0.00306	-0.00308
	(A2 * !B2 * !C1 * Y)	0.00393	0.00389	0.00386
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00318	-0.00320	-0.00319
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00380	0.00383	0.00381
	(A1 * !A2 * B2 * C1 * !Y)	-0.00351	-0.00353	-0.00352
	(A1 * !A2 * B2 * C1 * !Y)	0.00346	0.00349	0.00348
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00280	-0.00306	-0.00308
	(A1 * !A2 * !B2 * !C1 * Y)	0.00395	0.00389	0.00386
	(!A1 * !A2 * B2 * C1 * Y)	-0.00120	-0.00121	-0.00126
	(!A1 * !A2 * B2 * C1 * Y)	0.00398	0.00398	0.00384
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00161	-0.00162	-0.00160
	(!A1 * !A2 * B2 * !C1 * Y)	0.00380	0.00384	0.00381
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00125	-0.00126	-0.00129
	(!A1 * !A2 * !B2 * C1 * Y)	0.00396	0.00401	0.00388
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00170	-0.00171	-0.00170
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00394	0.00394	0.00386

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00659	-0.00662	-0.00660
	(A2 * B2 * C1 * !Y)	0.00688	0.00695	0.00692
	(A2 * !B2 * !C1 * Y)	-0.00535	-0.00593	-0.00590
	(A2 * !B2 * !C1 * Y)	0.00767	0.00751	0.00744
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00617	-0.00620	-0.00619
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00730	0.00737	0.00734
	(A1 * !A2 * B2 * C1 * !Y)	-0.00659	-0.00664	-0.00660
	(A1 * !A2 * B2 * C1 * !Y)	0.00689	0.00698	0.00692
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00526	-0.00596	-0.00593
	(A1 * !A2 * !B2 * !C1 * Y)	0.00773	0.00747	0.00744
	(!A1 * !A2 * B2 * C1 * Y)	-0.00222	-0.00224	-0.00234
	(!A1 * !A2 * B2 * C1 * Y)	0.00764	0.00770	0.00741
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00298	-0.00302	-0.00298
	(!A1 * !A2 * B2 * !C1 * Y)	0.00733	0.00739	0.00735
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00232	-0.00236	-0.00240
	(!A1 * !A2 * !B2 * C1 * Y)	0.00762	0.00772	0.00749
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00314	-0.00319	-0.00316
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00762	0.00764	0.00746

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)**	0.00177	0.00178	0.00177
	(A2 * B1 * C1 * !Y)	-0.00086	-0.00086	-0.00085
	(A2 * B1 * !C1 * Y)	0.00156	0.00156	0.00156
	(A2 * B1 * !C1 * Y)	-0.00176	-0.00179	-0.00180
	(A2 * !B1 * !C1 * Y)	0.00151	0.00153	0.00151
	(A2 * !B1 * !C1 * Y)	-0.00181	-0.00183	-0.00182
	(A1 * !A2 * B1 * C1 * !Y)	0.00177	0.00178	0.00177
	(A1 * !A2 * B1 * C1 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * B1 * !C1 * Y)	0.00156	0.00157	0.00156
	(A1 * !A2 * B1 * !C1 * Y)	-0.00176	-0.00180	-0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	0.00151	0.00152	0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00182	-0.00182	-0.00182
	(!A1 * !A2 * B1 * C1 * Y)	0.00064	0.00065	0.00065
	(!A1 * !A2 * B1 * C1 * Y)	-0.00177	-0.00182	-0.00181
	(!A1 * !A2 * B1 * !C1 * Y)	0.00081	0.00082	0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00177	-0.00181	-0.00181
	(!A1 * !A2 * !B1 * C1 * Y)	0.00067	0.00067	0.00067
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00182	-0.00182	-0.00181
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00086	0.00087	0.00087
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00326	0.00330	0.00327
	(A2 * B1 * C1 * !Y)	-0.00168	-0.00170	-0.00169
	(A2 * B1 * !C1 * Y)	0.00298	0.00303	0.00298
	(A2 * B1 * !C1 * Y)	-0.00336	-0.00346	-0.00344
	(A2 * !B1 * !C1 * Y)	0.00289	0.00292	0.00290
	(A2 * !B1 * !C1 * Y)	-0.00348	-0.00350	-0.00349
	(A1 * !A2 * B1 * C1 * !Y)	0.00326	0.00330	0.00328
	(A1 * !A2 * B1 * C1 * !Y)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * B1 * !C1 * Y)	0.00298	0.00299	0.00298
	(A1 * !A2 * B1 * !C1 * Y)	-0.00336	-0.00345	-0.00344
	(A1 * !A2 * !B1 * !C1 * Y)	0.00287	0.00292	0.00289
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00348	-0.00351	-0.00349
	(!A1 * !A2 * B1 * C1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * C1 * Y)	-0.00336	-0.00346	-0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	0.00147	0.00149	0.00147
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00337	-0.00345	-0.00345
	(!A1 * !A2 * !B1 * C1 * Y)	0.00120	0.00120	0.00120
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00348	-0.00349	-0.00346
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00156	0.00157	0.00156
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00349	-0.00352	-0.00350

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00663	0.00673	0.00667
	(A2 * B1 * C1 * !Y)	-0.00335	-0.00341	-0.00337
	(A2 * B1 * !C1 * Y)	0.00604	0.00614	0.00605
	(A2 * B1 * !C1 * Y)	-0.00677	-0.00694	-0.00693
	(A2 * !B1 * !C1 * Y)	0.00576	0.00580	0.00577
	(A2 * !B1 * !C1 * Y)	-0.00704	-0.00705	-0.00703
	(A1 * !A2 * B1 * C1 * !Y)	0.00668	0.00673	0.00667
	(A1 * !A2 * B1 * C1 * !Y)	-0.00341	-0.00341	-0.00337
	(A1 * !A2 * B1 * !C1 * Y)	0.00605	0.00607	0.00605
	(A1 * !A2 * B1 * !C1 * Y)	-0.00677	-0.00696	-0.00693
	(A1 * !A2 * !B1 * !C1 * Y)	0.00585	0.00588	0.00587
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00703	-0.00704	-0.00703
	(!A1 * !A2 * B1 * C1 * Y)	0.00229	0.00231	0.00229
	(!A1 * !A2 * B1 * C1 * Y)	-0.00676	-0.00698	-0.00699
	(!A1 * !A2 * B1 * !C1 * Y)	0.00290	0.00290	0.00289
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00679	-0.00698	-0.00694
	(!A1 * !A2 * !B1 * C1 * Y)	0.00240	0.00241	0.00240
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00703	-0.00704	-0.00700
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00305	0.00310	0.00307
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00703	-0.00711	-0.00706

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)**	-0.00172	-0.00173	-0.00176
	(A2 * B1 * C1 * !Y)	0.00090	0.00090	0.00087
	(A2 * B1 * !C1 * Y)	-0.00156	-0.00156	-0.00156
	(A2 * B1 * !C1 * Y)	0.00180	0.00179	0.00180
	(A2 * !B1 * !C1 * Y)	-0.00144	-0.00151	-0.00151
	(A2 * !B1 * !C1 * Y)	0.00183	0.00183	0.00183
	(A1 * !A2 * B1 * C1 * !Y)	-0.00172	-0.00173	-0.00176
	(A1 * !A2 * B1 * C1 * !Y)	0.00090	0.00090	0.00087
	(A1 * !A2 * B1 * !C1 * Y)	-0.00156	-0.00156	-0.00156
	(A1 * !A2 * B1 * !C1 * Y)	0.00180	0.00180	0.00180
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00141	-0.00151	-0.00151
	(A1 * !A2 * !B1 * !C1 * Y)	0.00184	0.00184	0.00183
	(!A1 * !A2 * B1 * C1 * Y)	-0.00061	-0.00061	-0.00063
	(!A1 * !A2 * B1 * C1 * Y)	0.00187	0.00188	0.00182
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * B1 * !C1 * Y)	0.00181	0.00181	0.00181
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00063	-0.00063	-0.00065
	(!A1 * !A2 * !B1 * C1 * Y)	0.00188	0.00189	0.00184
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00086	-0.00087	-0.00087
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00184	0.00185	0.00183

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00315	-0.00316	-0.00326
	(A2 * B1 * C1 * !Y)	0.00178	0.00179	0.00172
	(A2 * B1 * !C1 * Y)	-0.00297	-0.00299	-0.00298
	(A2 * B1 * !C1 * Y)	0.00343	0.00346	0.00344
	(A2 * !B1 * !C1 * Y)	-0.00259	-0.00288	-0.00288
	(A2 * !B1 * !C1 * Y)	0.00355	0.00353	0.00350
	(A1 * !A2 * B1 * C1 * !Y)	-0.00315	-0.00316	-0.00326
	(A1 * !A2 * B1 * C1 * !Y)	0.00178	0.00179	0.00172
	(A1 * !A2 * B1 * !C1 * Y)	-0.00298	-0.00299	-0.00298
	(A1 * !A2 * B1 * !C1 * Y)	0.00344	0.00345	0.00344
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00258	-0.00288	-0.00288
	(A1 * !A2 * !B1 * !C1 * Y)	0.00360	0.00352	0.00350
	(!A1 * !A2 * B1 * C1 * Y)	-0.00107	-0.00109	-0.00113
	(!A1 * !A2 * B1 * C1 * Y)	0.00357	0.00360	0.00347
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00147	-0.00149	-0.00147
	(!A1 * !A2 * B1 * !C1 * Y)	0.00344	0.00345	0.00345
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00111	-0.00112	-0.00115
	(!A1 * !A2 * !B1 * C1 * Y)	0.00359	0.00362	0.00352
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00156	-0.00157	-0.00156
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00354	0.00355	0.00350

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00642	-0.00646	-0.00664
	(A2 * B1 * C1 * !Y)	0.00355	0.00357	0.00343
	(A2 * B1 * !C1 * Y)	-0.00602	-0.00605	-0.00604
	(A2 * B1 * !C1 * Y)	0.00689	0.00694	0.00693
	(A2 * !B1 * !C1 * Y)	-0.00521	-0.00580	-0.00577
	(A2 * !B1 * !C1 * Y)	0.00729	0.00711	0.00705
	(A1 * !A2 * B1 * C1 * !Y)	-0.00645	-0.00646	-0.00664
	(A1 * !A2 * B1 * C1 * !Y)	0.00358	0.00357	0.00343
	(A1 * !A2 * B1 * !C1 * Y)	-0.00604	-0.00607	-0.00604
	(A1 * !A2 * B1 * !C1 * Y)	0.00692	0.00697	0.00693
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00513	-0.00585	-0.00582
	(A1 * !A2 * !B1 * !C1 * Y)	0.00736	0.00711	0.00705
	(!A1 * !A2 * B1 * C1 * Y)	-0.00214	-0.00218	-0.00226
	(!A1 * !A2 * B1 * C1 * Y)	0.00720	0.00727	0.00699
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00290	-0.00290	-0.00289
	(!A1 * !A2 * B1 * !C1 * Y)	0.00693	0.00699	0.00694
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00226	-0.00227	-0.00231
	(!A1 * !A2 * !B1 * C1 * Y)	0.00726	0.00729	0.00710
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00305	-0.00310	-0.00307
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00718	0.00721	0.00707

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)	0.00062	0.00062	0.00059
	(A2 * !B1 * !B2 * Y)	-0.00225	-0.00227	-0.00230
	(!A2 * !B1 * !B2 * Y)	0.00061	0.00062	0.00059
	(!A2 * !B1 * !B2 * Y)	-0.00224	-0.00227	-0.00230
	(!A1 * !A2 * B2 * Y)	0.00063	0.00063	0.00056
	(!A1 * !A2 * B2 * Y)	-0.00214	-0.00215	-0.00228
	(!A1 * !A2 * B1 * !B2 * Y)	0.00062	0.00063	0.00057
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00215	-0.00216	-0.00228
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00111	0.00111	0.00106
	(A2 * !B1 * !B2 * Y)	-0.00415	-0.00417	-0.00426
	(!A2 * !B1 * !B2 * Y)	0.00111	0.00111	0.00106
	(!A2 * !B1 * !B2 * Y)	-0.00415	-0.00416	-0.00426
	(!A1 * !A2 * B2 * Y)	0.00114	0.00114	0.00102
	(!A1 * !A2 * B2 * Y)	-0.00396	-0.00398	-0.00424
	(!A1 * !A2 * B1 * !B2 * Y)	0.00114	0.00115	0.00104
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00399	-0.00402	-0.00424
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00190	0.00190	0.00181
	(A2 * !B1 * !B2 * Y)	-0.00845	-0.00848	-0.00865
	(!A2 * !B1 * !B2 * Y)	0.00190	0.00190	0.00181
	(!A2 * !B1 * !B2 * Y)	-0.00845	-0.00847	-0.00864
	(!A1 * !A2 * B2 * Y)	0.00196	0.00195	0.00175
	(!A1 * !A2 * B2 * Y)	-0.00811	-0.00812	-0.00859
	(!A1 * !A2 * B1 * !B2 * Y)	0.00198	0.00197	0.00178
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00817	-0.00819	-0.00860

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)	-0.00058	-0.00058	-0.00057
	(A2 * !B1 * !B2 * Y)	0.00231	0.00234	0.00231
	(!A2 * !B1 * !B2 * Y)	-0.00058	-0.00058	-0.00057
	(!A2 * !B1 * !B2 * Y)	0.00231	0.00234	0.00231
	(!A1 * !A2 * B2 * Y)	-0.00056	-0.00056	-0.00055
	(!A1 * !A2 * B2 * Y)	0.00231	0.00234	0.00230
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * B1 * !B2 * Y)	0.00231	0.00234	0.00231
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00103	-0.00105	-0.00103
	(A2 * !B1 * !B2 * Y)	0.00425	0.00435	0.00428
	(!A2 * !B1 * !B2 * Y)	-0.00103	-0.00105	-0.00103
	(!A2 * !B1 * !B2 * Y)	0.00425	0.00434	0.00428
	(!A1 * !A2 * B2 * Y)	-0.00099	-0.00102	-0.00099
	(!A1 * !A2 * B2 * Y)	0.00425	0.00434	0.00428
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00100	-0.00102	-0.00100
	(!A1 * !A2 * B1 * !B2 * Y)	0.00425	0.00434	0.00428
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00176	-0.00180	-0.00177
	(A2 * !B1 * !B2 * Y)	0.00862	0.00881	0.00867
	(!A2 * !B1 * !B2 * Y)	-0.00176	-0.00180	-0.00177
	(!A2 * !B1 * !B2 * Y)	0.00861	0.00880	0.00867
	(!A1 * !A2 * B2 * Y)	-0.00170	-0.00174	-0.00169
	(!A1 * !A2 * B2 * Y)	0.00862	0.00880	0.00866
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00173	-0.00175	-0.00171
	(!A1 * !A2 * B1 * !B2 * Y)	0.00867	0.00880	0.00867

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o221a_1	14.38560
sky130_fd_sc_hs__o221a_2	15.98400
sky130_fd_sc_hs__o221a_4	25.57440

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	B1	B2	C1	X
sky130_fd_sc_hs__o221a_1	0.00248	0.00246	0.00241	0.00258	0.00253	1.40196
sky130_fd_sc_hs__o221a_2	0.00263	0.00258	0.00258	0.00269	0.00264	2.77238
sky130_fd_sc_hs__o221a_4	0.00494	0.00446	0.00526	0.00447	0.00455	5.18476

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.10745	0.33840
sky130_fd_sc_hs__o221a_2	0.00000	0.15243	0.33940
sky130_fd_sc_hs__o221a_4	0.00000	0.30594	0.67880

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)	0.08670	0.49933	5.43714
	A2->X (RR)	0.08222	0.49325	5.49405
	B1->X (RR)	0.08116	0.51334	5.64269
	B2->X (RR)	0.07707	0.49984	5.69703
	C1->X (RR)	0.07325	0.50266	5.96332
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.08491	0.41361	5.38987
	A2->X (RR)	0.08091	0.40819	5.42770
	B1->X (RR)	0.07964	0.43178	5.59448
	B2->X (RR)	0.07781	0.42132	5.63266
	C1->X (RR)	0.07239	0.42412	5.86382
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.09336	0.35483	5.42011
	A2->X (RR)	0.08859	0.35167	5.51037
	B1->X (RR)	0.08865	0.37309	5.58914
	B2->X (RR)	0.08337	0.35824	5.64889
	C1->X (RR)	0.07776	0.36511	5.91826

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.12560	0.54960	4.96993
	A2->X (FF)	0.11503	0.55297	5.07773
	B1->X (FF)	0.10649	0.49850	4.84749
	B2->X (FF)	0.09681	0.49687	4.88525
	C1->X (FF)	0.05074	0.41655	4.59621
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.14521	0.55638	5.06730
	A2->X (FF)	0.13369	0.56095	5.15288
	B1->X (FF)	0.12259	0.50388	4.93841
	B2->X (FF)	0.11288	0.50624	4.95931
	C1->X (FF)	0.05791	0.41142	4.63197
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.13169	0.50545	5.07636
	A2->X (FF)	0.11825	0.50488	5.13302
	B1->X (FF)	0.11933	0.48108	4.95550
	B2->X (FF)	0.10461	0.47776	4.97955
	C1->X (FF)	0.05482	0.37795	4.65432

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01336	0.01354	0.03886
	A1	0.00492	0.00563	0.03063
	A2	0.01179	0.01263	0.05067
	A2	0.00425	0.00510	0.04342
	B1	0.01132	0.01213	0.04808
	B1	0.00501	0.00582	0.04205
	B2	0.00988	0.01118	0.06203
	B2	0.00421	0.00550	0.05658
	C1	0.00850	0.01125	0.08151
	C1	0.00402	0.00678	0.07709
sky130_fd_sc_hs__o221a_2	A1	0.01661	0.01690	0.04052
	A1	0.00756	0.00781	0.03178
	A2	0.01491	0.01584	0.05190
	A2	0.00674	0.00769	0.04418
	B1	0.01416	0.01505	0.04881
	B1	0.00740	0.00830	0.04267
	B2	0.01274	0.01393	0.06263
	B2	0.00670	0.00793	0.05720
	C1	0.01125	0.01359	0.08056
	C1	0.00649	0.00890	0.07612

sky130_fd_sc_hs__o221a_4	**A1**	0.03065	0.03201	0.09496
	A1	0.01417	0.01558	0.07939
	A2	0.02672	0.02881	0.11661
	A2	0.01249	0.01462	0.10356
	B1	0.02691	0.02901	0.10053
	B1	0.01404	0.01619	0.08885
	B2	0.02282	0.02567	0.12622
	B2	0.01246	0.01536	0.11701
	C1	0.02009	0.02537	0.16250
	C1	0.01195	0.01727	0.15489

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00519	0.00561	0.03463
	A1	0.01373	0.01415	0.04289
	A2	0.00518	0.00701	0.05645
	A2	0.01280	0.01463	0.06281
	B1	0.00443	0.00533	0.03787
	B1	0.01157	0.01237	0.04222
	B2	0.00424	0.00669	0.05557
	B2	0.01072	0.01324	0.05834
	C1	0.00316	0.00679	0.07165
	C1	0.00766	0.01120	0.07570

sky130_fd_sc_hs__o221a_2	**A1**	0.00843	0.00818	0.03809
	A1	0.01755	0.01729	0.04541
	A2	0.00844	0.00965	0.05897
	A2	0.01660	0.01781	0.06458
	B1	0.00728	0.00779	0.04003
	B1	0.01492	0.01528	0.04447
	B2	0.00715	0.00930	0.05710
	B2	0.01401	0.01613	0.06086
	C1	0.00544	0.00941	0.07150
	C1	0.01108	0.01483	0.07522
sky130_fd_sc_hs__o221a_4	**A1**	0.01593	0.01654	0.08221
	A1	0.03269	0.03291	0.09672
	A2	0.01656	0.01963	0.11817
	A2	0.03102	0.03374	0.13144
	B1	0.01374	0.01543	0.08384
	B1	0.02842	0.02908	0.09160
	B2	0.01458	0.01868	0.11267
	B2	0.02646	0.03053	0.12323
	C1	0.01101	0.01808	0.14899
	C1	0.02091	0.02776	0.15238

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)**	0.00176	0.00156	0.00154
	(A2 * B2 * C1 * X)	-0.00136	-0.00158	-0.00160
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00133	0.00134	0.00133
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00177	-0.00180	-0.00180
	(A2 * B1 * !B2 * C1 * X)	0.00176	0.00156	0.00154
	(A2 * B1 * !B2 * C1 * X)	-0.00136	-0.00158	-0.00160
	(A2 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(A2 * !B1 * !B2 * !X)	-0.00177	-0.00180	-0.00180
	(!A2 * B2 * !C1 * !X)	0.00124	0.00125	0.00124
	(!A2 * B2 * !C1 * !X)	-0.00182	-0.00182	-0.00181
	(!A2 * B1 * !B2 * !C1 * !X)	0.00125	0.00125	0.00124
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00182	-0.00182	-0.00181
	(!A2 * !B1 * !B2 * C1 * !X)	0.00126	0.00128	0.00127
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00197	0.00177	0.00176
	(A2 * B2 * C1 * X)	-0.00135	-0.00158	-0.00159
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00153	0.00154	0.00153
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00177	-0.00181	-0.00181
	(A2 * B1 * !B2 * C1 * X)	0.00197	0.00177	0.00176
	(A2 * B1 * !B2 * C1 * X)	-0.00135	-0.00158	-0.00159
	(A2 * !B1 * !B2 * !X)	0.00153	0.00154	0.00153
	(A2 * !B1 * !B2 * !X)	-0.00177	-0.00181	-0.00181
	(!A2 * B2 * !C1 * !X)	0.00144	0.00144	0.00143
	(!A2 * B2 * !C1 * !X)	-0.00182	-0.00183	-0.00182
	(!A2 * B1 * !B2 * !C1 * !X)	0.00145	0.00146	0.00144
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00183	-0.00183	-0.00182
	(!A2 * !B1 * !B2 * C1 * !X)	0.00145	0.00147	0.00146
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00182	-0.00183	-0.00182
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00147	0.00149	0.00148
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00362	0.00330	0.00324
	(A2 * B2 * C1 * X)	-0.00271	-0.00316	-0.00315
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00296	0.00302	0.00298
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00332	-0.00343	-0.00341
	(A2 * B1 * !B2 * C1 * X)	0.00362	0.00330	0.00324
	(A2 * B1 * !B2 * C1 * X)	-0.00271	-0.00315	-0.00315
	(A2 * !B1 * !B2 * !X)	0.00296	0.00302	0.00298
	(A2 * !B1 * !B2 * !X)	-0.00332	-0.00343	-0.00341
	(!A2 * B2 * !C1 * !X)	0.00280	0.00284	0.00282
	(!A2 * B2 * !C1 * !X)	-0.00344	-0.00346	-0.00345
	(!A2 * B1 * !B2 * !C1 * !X)	0.00284	0.00286	0.00285
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00344	-0.00345	-0.00345
	(!A2 * !B1 * !B2 * C1 * !X)	0.00287	0.00290	0.00288
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00344	-0.00346	-0.00344
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00285	0.00287	0.00286
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00344	-0.00345	-0.00345

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)**	-0.00152	-0.00153	-0.00152
	(A2 * B2 * C1 * X)	0.00159	0.00161	0.00160
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00133	-0.00133	-0.00133
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00180	0.00180	0.00180
	(A2 * B1 * !B2 * C1 * X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * !B2 * C1 * X)	0.00159	0.00161	0.00160
	(A2 * !B1 * !B2 * !X)	-0.00133	-0.00133	-0.00133
	(A2 * !B1 * !B2 * !X)	0.00180	0.00180	0.00180
	(!A2 * B2 * !C1 * !X)	-0.00115	-0.00125	-0.00124
	(!A2 * B2 * !C1 * !X)	0.00182	0.00183	0.00182
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00117	-0.00125	-0.00124
	(!A2 * B1 * !B2 * !C1 * !X)	0.00182	0.00183	0.00182
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00120	-0.00128	-0.00127
	(!A2 * !B1 * !B2 * C1 * !X)	0.00182	0.00183	0.00182
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00120	-0.00128	-0.00127
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00174	-0.00175	-0.00174
	(A2 * B2 * C1 * X)	0.00158	0.00159	0.00159
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00180	0.00182	0.00181
	(A2 * B1 * !B2 * C1 * X)	-0.00174	-0.00175	-0.00174
	(A2 * B1 * !B2 * C1 * X)	0.00158	0.00159	0.00159
	(A2 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * !B2 * !X)	0.00180	0.00182	0.00181
	(!A2 * B2 * !C1 * !X)	-0.00131	-0.00144	-0.00143
	(!A2 * B2 * !C1 * !X)	0.00182	0.00184	0.00183
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00134	-0.00146	-0.00144
	(!A2 * B1 * !B2 * !C1 * !X)	0.00183	0.00184	0.00183
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00138	-0.00147	-0.00146
	(!A2 * !B1 * !B2 * C1 * !X)	0.00183	0.00184	0.00183
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00139	-0.00148	-0.00147
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00322	-0.00324	-0.00322
	(A2 * B2 * C1 * X)	0.00314	0.00317	0.00316
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00296	-0.00298	-0.00297
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00341	0.00343	0.00341
	(A2 * B1 * !B2 * C1 * X)	-0.00322	-0.00323	-0.00322
	(A2 * B1 * !B2 * C1 * X)	0.00314	0.00317	0.00316
	(A2 * !B1 * !B2 * !X)	-0.00296	-0.00298	-0.00297
	(A2 * !B1 * !B2 * !X)	0.00341	0.00343	0.00341
	(!A2 * B2 * !C1 * !X)	-0.00261	-0.00284	-0.00282
	(!A2 * B2 * !C1 * !X)	0.00346	0.00347	0.00346
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00265	-0.00286	-0.00285
	(!A2 * B1 * !B2 * !C1 * !X)	0.00346	0.00347	0.00346
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00271	-0.00289	-0.00286
	(!A2 * !B1 * !B2 * C1 * !X)	0.00346	0.00348	0.00346
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00272	-0.00287	-0.00286
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00346	0.00347	0.00346

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)**	0.00157	0.00158	0.00157
	(A1 * B2 * C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B2 * !C1 * !X)	0.00137	0.00137	0.00137
	(A1 * B2 * !C1 * !X)	-0.00162	-0.00166	-0.00166
	(A1 * B1 * !B2 * C1 * X)	0.00157	0.00158	0.00157
	(A1 * B1 * !B2 * C1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * B1 * !B2 * !C1 * !X)	0.00137	0.00139	0.00137
	(A1 * B1 * !B2 * !C1 * !X)	-0.00162	-0.00166	-0.00166
	(A1 * !B1 * !B2 * C1 * !X)	0.00136	0.00136	0.00137
	(A1 * !B1 * !B2 * C1 * !X)	-0.00162	-0.00165	-0.00165
	(A1 * !B1 * !B2 * !C1 * !X)	0.00136	0.00139	0.00137
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00162	-0.00166	-0.00166
	(!A1 * B2 * !C1 * !X)	0.00126	0.00127	0.00126
	(!A1 * B2 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00129	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * !B2 * C1 * !X)	0.00129	0.00130	0.00130
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00167	-0.00168	-0.00167
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00129	0.00131	0.00130
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00167	-0.00169	-0.00168

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00176	0.00177	0.00176
	(A1 * B2 * C1 * X)	-0.00080	-0.00079	-0.00079
	(A1 * B2 * !C1 * !X)	0.00155	0.00156	0.00156
	(A1 * B2 * !C1 * !X)	-0.00161	-0.00165	-0.00165
	(A1 * B1 * !B2 * C1 * X)	0.00176	0.00177	0.00176
	(A1 * B1 * !B2 * C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * B1 * !B2 * !C1 * !X)	0.00155	0.00156	0.00156
	(A1 * B1 * !B2 * !C1 * !X)	-0.00161	-0.00165	-0.00165
	(A1 * !B1 * !B2 * C1 * !X)	0.00155	0.00158	0.00156
	(A1 * !B1 * !B2 * C1 * !X)	-0.00161	-0.00165	-0.00164
	(A1 * !B1 * !B2 * !C1 * !X)	0.00155	0.00158	0.00156
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00161	-0.00165	-0.00165
	(!A1 * B2 * !C1 * !X)	0.00145	0.00147	0.00145
	(!A1 * B2 * !C1 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * B1 * !B2 * !C1 * !X)	0.00146	0.00146	0.00146
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00167	-0.00166	-0.00166
	(!A1 * !B1 * !B2 * C1 * !X)	0.00148	0.00150	0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00166	-0.00167	-0.00166
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00148	0.00150	0.00148
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00166	-0.00167	-0.00166

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00287	0.00291	0.00289
	(A1 * B2 * C1 * X)	-0.00156	-0.00159	-0.00158
	(A1 * B2 * !C1 * !X)	0.00256	0.00260	0.00256
	(A1 * B2 * !C1 * !X)	-0.00315	-0.00323	-0.00322
	(A1 * B1 * !B2 * C1 * X)	0.00287	0.00291	0.00289
	(A1 * B1 * !B2 * C1 * X)	-0.00156	-0.00159	-0.00158
	(A1 * B1 * !B2 * !C1 * !X)	0.00256	0.00260	0.00256
	(A1 * B1 * !B2 * !C1 * !X)	-0.00315	-0.00323	-0.00322
	(A1 * !B1 * !B2 * C1 * !X)	0.00256	0.00257	0.00256
	(A1 * !B1 * !B2 * C1 * !X)	-0.00315	-0.00323	-0.00322
	(A1 * !B1 * !B2 * !C1 * !X)	0.00256	0.00260	0.00256
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00315	-0.00323	-0.00322
	(!A1 * B2 * !C1 * !X)	0.00242	0.00243	0.00242
	(!A1 * B2 * !C1 * !X)	-0.00327	-0.00327	-0.00326
	(!A1 * B1 * !B2 * !C1 * !X)	0.00244	0.00246	0.00244
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00327	-0.00328	-0.00326
	(!A1 * !B1 * !B2 * C1 * !X)	0.00244	0.00248	0.00246
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00325	-0.00328	-0.00326
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00245	0.00247	0.00246
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00325	-0.00327	-0.00326

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)**	-0.00152	-0.00153	-0.00156
	(A1 * B2 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * B2 * !C1 * !X)	-0.00137	-0.00137	-0.00136
	(A1 * B2 * !C1 * !X)	0.00166	0.00166	0.00166
	(A1 * B1 * !B2 * C1 * X)	-0.00152	-0.00153	-0.00156
	(A1 * B1 * !B2 * C1 * X)	0.00084	0.00084	0.00081
	(A1 * B1 * !B2 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(A1 * B1 * !B2 * !C1 * !X)	0.00165	0.00166	0.00166
	(A1 * !B1 * !B2 * C1 * !X)	-0.00136	-0.00136	-0.00136
	(A1 * !B1 * !B2 * C1 * !X)	0.00165	0.00166	0.00165
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00136	-0.00137	-0.00136
	(A1 * !B1 * !B2 * !C1 * !X)	0.00165	0.00166	0.00166
	(!A1 * B2 * !C1 * !X)	-0.00116	-0.00127	-0.00126
	(!A1 * B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00119	-0.00129	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00167	0.00169	0.00168
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00122	-0.00130	-0.00130
	(!A1 * !B1 * !B2 * C1 * !X)	0.00168	0.00169	0.00168
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00122	-0.00131	-0.00130
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00168	0.00169	0.00168

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00171	-0.00172	-0.00175
	(A1 * B2 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B2 * !C1 * !X)	-0.00154	-0.00156	-0.00155
	(A1 * B2 * !C1 * !X)	0.00163	0.00165	0.00165
	(A1 * B1 * !B2 * C1 * X)	-0.00171	-0.00172	-0.00175
	(A1 * B1 * !B2 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * B1 * !B2 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * B1 * !B2 * !C1 * !X)	0.00165	0.00165	0.00165
	(A1 * !B1 * !B2 * C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !B2 * C1 * !X)	0.00164	0.00165	0.00164
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !B2 * !C1 * !X)	0.00164	0.00165	0.00165
	(!A1 * B2 * !C1 * !X)	-0.00132	-0.00147	-0.00145
	(!A1 * B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00135	-0.00146	-0.00146
	(!A1 * B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00140	-0.00150	-0.00149
	(!A1 * !B1 * !B2 * C1 * !X)	0.00167	0.00168	0.00167
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00140	-0.00150	-0.00148
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00167	0.00168	0.00167

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00279	-0.00280	-0.00287
	(A1 * B2 * C1 * X)	0.00167	0.00168	0.00160
	(A1 * B2 * !C1 * !X)	-0.00254	-0.00256	-0.00255
	(A1 * B2 * !C1 * !X)	0.00320	0.00323	0.00322
	(A1 * B1 * !B2 * C1 * X)	-0.00279	-0.00280	-0.00287
	(A1 * B1 * !B2 * C1 * X)	0.00167	0.00168	0.00160
	(A1 * B1 * !B2 * !C1 * !X)	-0.00254	-0.00256	-0.00255
	(A1 * B1 * !B2 * !C1 * !X)	0.00320	0.00323	0.00322
	(A1 * !B1 * !B2 * C1 * !X)	-0.00255	-0.00257	-0.00255
	(A1 * !B1 * !B2 * C1 * !X)	0.00322	0.00323	0.00322
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00254	-0.00256	-0.00255
	(A1 * !B1 * !B2 * !C1 * !X)	0.00320	0.00323	0.00322
	(!A1 * B2 * !C1 * !X)	-0.00214	-0.00243	-0.00242
	(!A1 * B2 * !C1 * !X)	0.00327	0.00329	0.00328
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00219	-0.00244	-0.00244
	(!A1 * B1 * !B2 * !C1 * !X)	0.00327	0.00329	0.00328
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00227	-0.00243	-0.00245
	(!A1 * !B1 * !B2 * C1 * !X)	0.00328	0.00329	0.00328
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00227	-0.00243	-0.00245
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00328	0.00329	0.00328

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)**	0.00164	0.00145	0.00144
	(A2 * B2 * C1 * X)	-0.00140	-0.00162	-0.00163
	(A2 * !B2 * !C1 * !X)	0.00131	0.00133	0.00132
	(A2 * !B2 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00136	0.00137	0.00136
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00167	-0.00170	-0.00170
	(A1 * !A2 * B2 * C1 * X)	0.00164	0.00145	0.00144
	(A1 * !A2 * B2 * C1 * X)	-0.00140	-0.00162	-0.00163
	(A1 * !A2 * !B2 * !C1 * !X)	0.00131	0.00133	0.00132
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00171	-0.00172	-0.00171
	(!A1 * !A2 * B2 * C1 * !X)	0.00056	0.00056	0.00056
	(!A1 * !A2 * B2 * C1 * !X)	-0.00167	-0.00171	-0.00171
	(!A1 * !A2 * B2 * !C1 * !X)	0.00070	0.00071	0.00070
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00167	-0.00171	-0.00170
	(!A1 * !A2 * !B2 * C1 * !X)	0.00057	0.00057	0.00058
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00171	-0.00172	-0.00170
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00171	-0.00173	-0.00172

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00188	0.00168	0.00166
	(A2 * B2 * C1 * X)	-0.00137	-0.00159	-0.00160
	(A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A2 * !B2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00154	0.00155	0.00154
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00168	-0.00172	-0.00171
	(A1 * !A2 * B2 * C1 * X)	0.00188	0.00168	0.00166
	(A1 * !A2 * B2 * C1 * X)	-0.00137	-0.00159	-0.00160
	(A1 * !A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * B2 * C1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B2 * C1 * !X)	-0.00169	-0.00173	-0.00173
	(!A1 * !A2 * B2 * !C1 * !X)	0.00077	0.00078	0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00170	-0.00173	-0.00173
	(!A1 * !A2 * !B2 * C1 * !X)	0.00063	0.00064	0.00064
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00081	0.00082	0.00081
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00174	-0.00176	-0.00175

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00395	0.00360	0.00358
	(A2 * B2 * C1 * X)	-0.00273	-0.00314	-0.00317
	(A2 * !B2 * !C1 * !X)	0.00322	0.00326	0.00323
	(A2 * !B2 * !C1 * !X)	-0.00343	-0.00346	-0.00344
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00333	0.00335	0.00334
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00331	-0.00340	-0.00340
	(A1 * !A2 * B2 * C1 * X)	0.00395	0.00360	0.00358
	(A1 * !A2 * B2 * C1 * X)	-0.00273	-0.00314	-0.00317
	(A1 * !A2 * !B2 * !C1 * !X)	0.00322	0.00326	0.00323
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00343	-0.00345	-0.00344
	(!A1 * !A2 * B2 * C1 * !X)	0.00161	0.00163	0.00162
	(!A1 * !A2 * B2 * C1 * !X)	-0.00333	-0.00342	-0.00343
	(!A1 * !A2 * B2 * !C1 * !X)	0.00188	0.00189	0.00188
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00335	-0.00343	-0.00343
	(!A1 * !A2 * !B2 * C1 * !X)	0.00164	0.00166	0.00167
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00343	-0.00347	-0.00343
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00195	0.00198	0.00196
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00346	-0.00349	-0.00347

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)**	-0.00143	-0.00143	-0.00143
	(A2 * B2 * C1 * X)	0.00163	0.00163	0.00163
	(A2 * !B2 * !C1 * !X)	-0.00124	-0.00132	-0.00132
	(A2 * !B2 * !C1 * !X)	0.00175	0.00174	0.00172
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00136	-0.00136	-0.00136
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00170	0.00171	0.00170
	(A1 * !A2 * B2 * C1 * X)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * B2 * C1 * X)	0.00163	0.00164	0.00163
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00122	-0.00133	-0.00132
	(A1 * !A2 * !B2 * !C1 * !X)	0.00176	0.00173	0.00172
	(!A1 * !A2 * B2 * C1 * !X)	-0.00052	-0.00053	-0.00055
	(!A1 * !A2 * B2 * C1 * !X)	0.00177	0.00178	0.00172
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00070	-0.00071	-0.00070
	(!A1 * !A2 * B2 * !C1 * !X)	0.00171	0.00171	0.00170
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00054	-0.00055	-0.00056
	(!A1 * !A2 * !B2 * C1 * !X)	0.00176	0.00178	0.00173
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00074	-0.00075	-0.00074
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00173	0.00175	0.00172

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00165	-0.00165	-0.00165
	(A2 * B2 * C1 * X)	0.00159	0.00160	0.00160
	(A2 * !B2 * !C1 * !X)	-0.00138	-0.00149	-0.00148
	(A2 * !B2 * !C1 * !X)	0.00175	0.00175	0.00174
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00154	-0.00154	-0.00154
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00171	0.00173	0.00171
	(A1 * !A2 * B2 * C1 * X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * X)	0.00159	0.00161	0.00160
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00137	-0.00149	-0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	0.00177	0.00175	0.00174
	(!A1 * !A2 * B2 * C1 * !X)	-0.00057	-0.00058	-0.00060
	(!A1 * !A2 * B2 * C1 * !X)	0.00180	0.00181	0.00174
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * B2 * !C1 * !X)	0.00173	0.00173	0.00173
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00060	-0.00060	-0.00062
	(!A1 * !A2 * !B2 * C1 * !X)	0.00179	0.00181	0.00176
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00081	-0.00082	-0.00081
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00177	0.00178	0.00175

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00356	-0.00358	-0.00356
	(A2 * B2 * C1 * X)	0.00315	0.00319	0.00317
	(A2 * !B2 * !C1 * !X)	-0.00306	-0.00326	-0.00323
	(A2 * !B2 * !C1 * !X)	0.00350	0.00346	0.00345
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00333	-0.00335	-0.00333
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00339	0.00343	0.00340
	(A1 * !A2 * B2 * C1 * X)	-0.00356	-0.00358	-0.00356
	(A1 * !A2 * B2 * C1 * X)	0.00316	0.00320	0.00317
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00303	-0.00326	-0.00323
	(A1 * !A2 * !B2 * !C1 * !X)	0.00352	0.00346	0.00345
	(!A1 * !A2 * B2 * C1 * !X)	-0.00151	-0.00153	-0.00158
	(!A1 * !A2 * B2 * C1 * !X)	0.00361	0.00364	0.00347
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00188	-0.00189	-0.00188
	(!A1 * !A2 * B2 * !C1 * !X)	0.00344	0.00347	0.00343
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00158	-0.00159	-0.00162
	(!A1 * !A2 * !B2 * C1 * !X)	0.00355	0.00357	0.00349
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00195	-0.00198	-0.00196
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00356	0.00357	0.00349

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)**	0.00175	0.00177	0.00175
	(A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A2 * B1 * !C1 * !X)	0.00151	0.00152	0.00152
	(A2 * B1 * !C1 * !X)	-0.00167	-0.00171	-0.00171
	(A2 * !B1 * !C1 * !X)	0.00146	0.00148	0.00146
	(A2 * !B1 * !C1 * !X)	-0.00172	-0.00173	-0.00172
	(A1 * !A2 * B1 * C1 * X)	0.00175	0.00177	0.00175
	(A1 * !A2 * B1 * C1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A2 * B1 * !C1 * !X)	0.00151	0.00152	0.00152
	(A1 * !A2 * B1 * !C1 * !X)	-0.00167	-0.00171	-0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	0.00146	0.00148	0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00173	-0.00172
	(!A1 * !A2 * B1 * C1 * !X)	0.00065	0.00066	0.00066
	(!A1 * !A2 * B1 * C1 * !X)	-0.00167	-0.00172	-0.00172
	(!A1 * !A2 * B1 * !C1 * !X)	0.00079	0.00080	0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00167	-0.00172	-0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	0.00066	0.00067	0.00068
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00172	-0.00172	-0.00171
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00172	-0.00173	-0.00173

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00188	0.00189	0.00188
	(A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A2 * B1 * !C1 * !X)	0.00165	0.00168	0.00166
	(A2 * B1 * !C1 * !X)	-0.00164	-0.00168	-0.00167
	(A2 * !B1 * !C1 * !X)	0.00159	0.00162	0.00160
	(A2 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00188	0.00189	0.00188
	(A1 * !A2 * B1 * C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B1 * !C1 * !X)	0.00165	0.00168	0.00166
	(A1 * !A2 * B1 * !C1 * !X)	-0.00164	-0.00168	-0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	0.00159	0.00160	0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00169	-0.00170	-0.00169
	(!A1 * !A2 * B1 * C1 * !X)	0.00068	0.00069	0.00068
	(!A1 * !A2 * B1 * C1 * !X)	-0.00165	-0.00170	-0.00169
	(!A1 * !A2 * B1 * !C1 * !X)	0.00083	0.00084	0.00083
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00166	-0.00169	-0.00169
	(!A1 * !A2 * !B1 * C1 * !X)	0.00069	0.00070	0.00071
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00169	-0.00169	-0.00169
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00087	0.00088	0.00088
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00171	-0.00171	-0.00171

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00297	0.00301	0.00299
	(A2 * B1 * C1 * X)	-0.00157	-0.00160	-0.00158
	(A2 * B1 * !C1 * !X)	0.00262	0.00266	0.00262
	(A2 * B1 * !C1 * !X)	-0.00321	-0.00328	-0.00328
	(A2 * !B1 * !C1 * !X)	0.00254	0.00256	0.00255
	(A2 * !B1 * !C1 * !X)	-0.00331	-0.00333	-0.00332
	(A1 * !A2 * B1 * C1 * X)	0.00300	0.00301	0.00299
	(A1 * !A2 * B1 * C1 * X)	-0.00160	-0.00160	-0.00158
	(A1 * !A2 * B1 * !C1 * !X)	0.00262	0.00266	0.00262
	(A1 * !A2 * B1 * !C1 * !X)	-0.00321	-0.00328	-0.00328
	(A1 * !A2 * !B1 * !C1 * !X)	0.00254	0.00258	0.00255
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00331	-0.00334	-0.00332
	(!A1 * !A2 * B1 * C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * B1 * C1 * !X)	-0.00322	-0.00331	-0.00331
	(!A1 * !A2 * B1 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00323	-0.00331	-0.00331
	(!A1 * !A2 * !B1 * C1 * !X)	0.00100	0.00101	0.00103
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00332	-0.00334	-0.00332
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00336	-0.00337	-0.00335

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)**	-0.00171	-0.00172	-0.00175
	(A2 * B1 * C1 * X)	0.00086	0.00086	0.00083
	(A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A2 * B1 * !C1 * !X)	0.00171	0.00171	0.00171
	(A2 * !B1 * !C1 * !X)	-0.00139	-0.00147	-0.00146
	(A2 * !B1 * !C1 * !X)	0.00175	0.00174	0.00173
	(A1 * !A2 * B1 * C1 * X)	-0.00171	-0.00172	-0.00175
	(A1 * !A2 * B1 * C1 * X)	0.00086	0.00086	0.00083
	(A1 * !A2 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * !A2 * B1 * !C1 * !X)	0.00170	0.00171	0.00171
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00137	-0.00148	-0.00147
	(A1 * !A2 * !B1 * !C1 * !X)	0.00177	0.00173	0.00173
	(!A1 * !A2 * B1 * C1 * !X)	-0.00060	-0.00061	-0.00064
	(!A1 * !A2 * B1 * C1 * !X)	0.00181	0.00182	0.00173
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B1 * !C1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00063	-0.00064	-0.00066
	(!A1 * !A2 * !B1 * C1 * !X)	0.00176	0.00178	0.00174
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00176	0.00177	0.00173

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00184	-0.00185	-0.00187
	(A2 * B1 * C1 * X)	0.00083	0.00083	0.00080
	(A2 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A2 * B1 * !C1 * !X)	0.00167	0.00168	0.00167
	(A2 * !B1 * !C1 * !X)	-0.00150	-0.00160	-0.00160
	(A2 * !B1 * !C1 * !X)	0.00172	0.00171	0.00170
	(A1 * !A2 * B1 * C1 * X)	-0.00184	-0.00185	-0.00187
	(A1 * !A2 * B1 * C1 * X)	0.00083	0.00083	0.00080
	(A1 * !A2 * B1 * !C1 * !X)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B1 * !C1 * !X)	0.00167	0.00168	0.00167
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00149	-0.00160	-0.00160
	(A1 * !A2 * !B1 * !C1 * !X)	0.00173	0.00171	0.00170
	(!A1 * !A2 * B1 * C1 * !X)	-0.00062	-0.00063	-0.00066
	(!A1 * !A2 * B1 * C1 * !X)	0.00179	0.00179	0.00171
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * !A2 * B1 * !C1 * !X)	0.00169	0.00169	0.00169
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00066	-0.00067	-0.00068
	(!A1 * !A2 * !B1 * C1 * !X)	0.00175	0.00176	0.00172
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00087	-0.00088	-0.00088
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00174	0.00175	0.00172

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00288	-0.00290	-0.00298
	(A2 * B1 * C1 * X)	0.00167	0.00169	0.00161
	(A2 * B1 * !C1 * !X)	-0.00261	-0.00262	-0.00261
	(A2 * B1 * !C1 * !X)	0.00328	0.00328	0.00328
	(A2 * !B1 * !C1 * !X)	-0.00236	-0.00253	-0.00253
	(A2 * !B1 * !C1 * !X)	0.00338	0.00336	0.00334
	(A1 * !A2 * B1 * C1 * X)	-0.00288	-0.00290	-0.00298
	(A1 * !A2 * B1 * C1 * X)	0.00167	0.00169	0.00161
	(A1 * !A2 * B1 * !C1 * !X)	-0.00261	-0.00262	-0.00261
	(A1 * !A2 * B1 * !C1 * !X)	0.00327	0.00328	0.00328
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00233	-0.00253	-0.00253
	(A1 * !A2 * !B1 * !C1 * !X)	0.00340	0.00336	0.00334
	(!A1 * !A2 * B1 * C1 * !X)	-0.00090	-0.00091	-0.00095
	(!A1 * !A2 * B1 * C1 * !X)	0.00346	0.00347	0.00333
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * B1 * !C1 * !X)	0.00331	0.00333	0.00331
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00095	-0.00096	-0.00098
	(!A1 * !A2 * !B1 * C1 * !X)	0.00343	0.00345	0.00337
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00132	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00339	0.00343	0.00337

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)	0.00055	0.00055	0.00052
	(A2 * !B1 * !B2 * !X)	-0.00205	-0.00205	-0.00209
	(!A2 * !B1 * !B2 * !X)	0.00055	0.00055	0.00052
	(!A2 * !B1 * !B2 * !X)	-0.00205	-0.00205	-0.00209
	(!A1 * !A2 * B2 * !X)	0.00053	0.00053	0.00048
	(!A1 * !A2 * B2 * !X)	-0.00197	-0.00198	-0.00209
	(!A1 * !A2 * B1 * !B2 * !X)	0.00054	0.00053	0.00049
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00199	-0.00199	-0.00209
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00063	0.00064	0.00060
	(A2 * !B1 * !B2 * !X)	-0.00206	-0.00207	-0.00211
	(!A2 * !B1 * !B2 * !X)	0.00063	0.00064	0.00060
	(!A2 * !B1 * !B2 * !X)	-0.00206	-0.00207	-0.00211
	(!A1 * !A2 * B2 * !X)	0.00063	0.00063	0.00057
	(!A1 * !A2 * B2 * !X)	-0.00196	-0.00197	-0.00209
	(!A1 * !A2 * B1 * !B2 * !X)	0.00064	0.00064	0.00058
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00198	-0.00198	-0.00209
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00091	0.00092	0.00086
	(A2 * !B1 * !B2 * !X)	-0.00384	-0.00386	-0.00395
	(!A2 * !B1 * !B2 * !X)	0.00092	0.00092	0.00086
	(!A2 * !B1 * !B2 * !X)	-0.00384	-0.00386	-0.00395
	(!A1 * !A2 * B2 * !X)	0.00088	0.00089	0.00079
	(!A1 * !A2 * B2 * !X)	-0.00369	-0.00372	-0.00392
	(!A1 * !A2 * B1 * !B2 * !X)	0.00089	0.00090	0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00372	-0.00374	-0.00393

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)	-0.00051	-0.00052	-0.00051
	(A2 * !B1 * !B2 * !X)	0.00210	0.00213	0.00210
	(!A2 * !B1 * !B2 * !X)	-0.00051	-0.00051	-0.00051
	(!A2 * !B1 * !B2 * !X)	0.00210	0.00212	0.00210
	(!A1 * !A2 * B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1 * !A2 * B2 * !X)	0.00210	0.00214	0.00210
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * B1 * !B2 * !X)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(A2 * !B1 * !B2 * !X)	0.00211	0.00213	0.00211
	(!A2 * !B1 * !B2 * !X)	-0.00059	-0.00060	-0.00059
	(!A2 * !B1 * !B2 * !X)	0.00211	0.00213	0.00211
	(!A1 * !A2 * B2 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * B2 * !X)	0.00211	0.00213	0.00211
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * B1 * !B2 * !X)	0.00211	0.00213	0.00211
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00083	-0.00085	-0.00084
	(A2 * !B1 * !B2 * !X)	0.00394	0.00400	0.00397
	(!A2 * !B1 * !B2 * !X)	-0.00083	-0.00085	-0.00084
	(!A2 * !B1 * !B2 * !X)	0.00394	0.00399	0.00397
	(!A1 * !A2 * B2 * !X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B2 * !X)	0.00394	0.00399	0.00396
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00080	-0.00081	-0.00081
	(!A1 * !A2 * B1 * !B2 * !X)	0.00394	0.00399	0.00396

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22ai_1	9.59040
sky130_fd_sc_hs__o22ai_2	15.98400
sky130_fd_sc_hs__o22ai_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	Y
sky130_fd_sc_hs__o22ai_1	0.00268	0.00264	0.00272	0.00279	0.73608
sky130_fd_sc_hs__o22ai_2	0.00504	0.00519	0.00518	0.00509	1.28044
sky130_fd_sc_hs__o22ai_4	0.01038	0.00987	0.01077	0.01007	2.20247

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22ai_1	0.00000	0.03404	0.12588
sky130_fd_sc_hs__o22ai_2	0.00000	0.06809	0.25175
sky130_fd_sc_hs__o22ai_4	0.00000	0.13617	0.50351

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)	0.08607	0.86636	10.55330
	A2->Y (FR)	0.07528	0.85704	10.63430
	B1->Y (FR)	0.05436	0.83377	10.53020
	B2->Y (FR)	0.04404	0.82676	10.60230
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.08789	0.75489	10.38970
	A2->Y (FR)	0.07340	0.74730	10.50500
	B1->Y (FR)	0.05249	0.71778	10.30800
	B2->Y (FR)	0.03673	0.71027	10.42330
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.08618	0.64065	9.79201
	A2->Y (FR)	0.07301	0.64881	10.09970
	B1->Y (FR)	0.05172	0.61164	9.81176
	B2->Y (FR)	0.03671	0.61284	10.01840

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.03258	0.31605	3.62665
	A2->Y (RF)	0.02823	0.30838	3.60468
	B1->Y (RF)	0.02606	0.35031	4.18191
	B2->Y (RF)	0.02198	0.33864	4.10379
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.03362	0.26576	3.47747
	A2->Y (RF)	0.02759	0.25524	3.44078
	B1->Y (RF)	0.02657	0.30372	4.16322
	B2->Y (RF)	0.02030	0.28555	4.03408
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.02486	0.18982	3.00443
	A2->Y (RF)	0.02158	0.17856	2.97793
	B1->Y (RF)	0.01861	0.23009	3.79940
	B2->Y (RF)	0.01641	0.23542	4.06028

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00143	0.00145	0.00933
	A1	0.00935	0.00938	0.01694
	A2	0.00150	0.00262	0.01868
	A2	0.00817	0.00929	0.02543
	B1	-0.00036	-0.00026	0.00758
	B1	0.00521	0.00532	0.01327
	B2	-0.00037	0.00090	0.01679
	B2	0.00413	0.00540	0.02141
sky130_fd_sc_hs__o22ai_2	A1	0.00258	0.00259	0.01778
	A1	0.01837	0.01842	0.03255
	A2	0.00249	0.00484	0.03563
	A2	0.01583	0.01822	0.04915
	B1	-0.00092	-0.00069	0.01442
	B1	0.01013	0.01038	0.02552
	B2	-0.00112	0.00116	0.03241
	B2	0.00771	0.01000	0.04143
sky130_fd_sc_hs__o22ai_4	A1	0.00374	0.00431	0.04045
	A1	0.03489	0.03551	0.06928
	A2	0.00367	0.00797	0.07354
	A2	0.03037	0.03460	0.09737
	B1	-0.00214	-0.00120	0.03353
	B1	0.01982	0.02081	0.05560
	B2	-0.00206	0.00281	0.06755
	B2	0.01553	0.02042	0.08511

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.01023	0.01026	0.01518
	A1	0.00107	0.00111	0.00618
	A2	0.00699	0.00715	0.01203
	A2	0.00020	0.00033	0.00522
	B1	0.00851	0.00874	0.01482
	B1	0.00098	0.00121	0.00763
	B2	0.00470	0.00507	0.01162
	B2	0.00019	0.00054	0.00690
sky130_fd_sc_hs__o22ai_2	A1	0.02105	0.02102	0.03114
	A1	0.00483	0.00481	0.01461
	A2	0.01682	0.01710	0.02714
	A2	-0.00026	0.00007	0.00984
	B1	0.01318	0.01364	0.02662
	B1	0.00228	0.00268	0.01545
	B2	0.00848	0.00947	0.02219
	B2	-0.00033	0.00065	0.01313
sky130_fd_sc_hs__o22ai_4	A1	0.03963	0.03974	0.06202
	A1	0.00354	0.00366	0.02727
	A2	0.03161	0.03220	0.05330
	A2	-0.00033	0.00042	0.02303
	B1	0.03330	0.03402	0.05958
	B1	0.00351	0.00477	0.03189
	B2	0.01719	0.01916	0.04602
	B2	-0.00037	0.00157	0.02763

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00191	0.00172	0.00171
	(A2 * B2 * !Y)	-0.00160	-0.00182	-0.00182
	(A2 * B1 * !B2 * !Y)	0.00191	0.00172	0.00171
	(A2 * B1 * !B2 * !Y)	-0.00160	-0.00182	-0.00182
	(A2 * !B1 * !B2 * Y)	0.00171	0.00172	0.00171
	(A2 * !B1 * !B2 * Y)	-0.00178	-0.00182	-0.00181
	(!A2 * !B1 * !B2 * Y)	0.00162	0.00164	0.00163
	(!A2 * !B1 * !B2 * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00365	0.00320	0.00317
	(A2 * B2 * !Y)	-0.00305	-0.00357	-0.00359
	(A2 * B1 * !B2 * !Y)	0.00365	0.00320	0.00317
	(A2 * B1 * !B2 * !Y)	-0.00304	-0.00357	-0.00359
	(A2 * !B1 * !B2 * Y)	0.00316	0.00318	0.00316
	(A2 * !B1 * !B2 * Y)	-0.00349	-0.00360	-0.00360
	(!A2 * !B1 * !B2 * Y)	0.00303	0.00306	0.00305
	(!A2 * !B1 * !B2 * Y)	-0.00364	-0.00366	-0.00365
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00735	0.00650	0.00638
	(A2 * B2 * !Y)	-0.00598	-0.00711	-0.00709
	(A2 * B1 * !B2 * !Y)	0.00735	0.00650	0.00638
	(A2 * B1 * !B2 * !Y)	-0.00598	-0.00711	-0.00709
	(A2 * !B1 * !B2 * Y)	0.00616	0.00627	0.00619
	(A2 * !B1 * !B2 * Y)	-0.00706	-0.00730	-0.00726
	(!A2 * !B1 * !B2 * Y)	0.00587	0.00594	0.00587
	(!A2 * !B1 * !B2 * Y)	-0.00739	-0.00742	-0.00738

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00170	-0.00171	-0.00170
	(A2 * B2 * !Y)	0.00182	0.00183	0.00182
	(A2 * B1 * !B2 * !Y)	-0.00170	-0.00170	-0.00170
	(A2 * B1 * !B2 * !Y)	0.00182	0.00182	0.00182
	(A2 * !B1 * !B2 * Y)	-0.00170	-0.00171	-0.00170
	(A2 * !B1 * !B2 * Y)	0.00181	0.00183	0.00181
	(!A2 * !B1 * !B2 * Y)	-0.00155	-0.00164	-0.00163
	(!A2 * !B1 * !B2 * Y)	0.00185	0.00185	0.00184
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00316	-0.00318	-0.00316
	(A2 * B2 * !Y)	0.00357	0.00361	0.00359
	(A2 * B1 * !B2 * !Y)	-0.00316	-0.00318	-0.00316
	(A2 * B1 * !B2 * !Y)	0.00357	0.00361	0.00359
	(A2 * !B1 * !B2 * Y)	-0.00315	-0.00317	-0.00315
	(A2 * !B1 * !B2 * Y)	0.00359	0.00363	0.00360
	(!A2 * !B1 * !B2 * Y)	-0.00283	-0.00302	-0.00304
	(!A2 * !B1 * !B2 * Y)	0.00369	0.00369	0.00367
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00634	-0.00637	-0.00634
	(A2 * B2 * !Y)	0.00705	0.00712	0.00709
	(A2 * B1 * !B2 * !Y)	-0.00634	-0.00637	-0.00634
	(A2 * B1 * !B2 * !Y)	0.00705	0.00712	0.00709
	(A2 * !B1 * !B2 * Y)	-0.00615	-0.00619	-0.00617
	(A2 * !B1 * !B2 * Y)	0.00723	0.00730	0.00726
	(!A2 * !B1 * !B2 * Y)	-0.00553	-0.00594	-0.00587
	(!A2 * !B1 * !B2 * Y)	0.00741	0.00747	0.00740

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00168	0.00169	0.00168
	(A1 * B2 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * B1 * !B2 * !Y)	0.00169	0.00169	0.00168
	(A1 * B1 * !B2 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * !B1 * !B2 * Y)	0.00155	0.00157	0.00155
	(A1 * !B1 * !B2 * Y)	-0.00169	-0.00174	-0.00174
	(!A1 * !B1 * !B2 * Y)	0.00149	0.00150	0.00148
	(!A1 * !B1 * !B2 * Y)	-0.00176	-0.00177	-0.00176
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00361	0.00362	0.00360
	(A1 * B2 * !Y)	-0.00174	-0.00174	-0.00173
	(A1 * B1 * !B2 * !Y)	0.00361	0.00363	0.00360
	(A1 * B1 * !B2 * !Y)	-0.00174	-0.00174	-0.00173
	(A1 * !B1 * !B2 * Y)	0.00314	0.00317	0.00315
	(A1 * !B1 * !B2 * Y)	-0.00352	-0.00362	-0.00364
	(!A1 * !B1 * !B2 * Y)	0.00304	0.00306	0.00304
	(!A1 * !B1 * !B2 * Y)	-0.00370	-0.00371	-0.00370
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00666	0.00668	0.00663
	(A1 * B2 * !Y)	-0.00339	-0.00339	-0.00336
	(A1 * B1 * !B2 * !Y)	0.00665	0.00668	0.00663
	(A1 * B1 * !B2 * !Y)	-0.00339	-0.00339	-0.00336
	(A1 * !B1 * !B2 * Y)	0.00607	0.00608	0.00609
	(A1 * !B1 * !B2 * Y)	-0.00665	-0.00683	-0.00682
	(!A1 * !B1 * !B2 * Y)	0.00578	0.00582	0.00580
	(!A1 * !B1 * !B2 * Y)	-0.00696	-0.00698	-0.00697

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00163	-0.00164	-0.00167
	(A1 * B2 * !Y)	0.00092	0.00092	0.00089
	(A1 * B1 * !B2 * !Y)	-0.00163	-0.00164	-0.00167
	(A1 * B1 * !B2 * !Y)	0.00092	0.00092	0.00089
	(A1 * !B1 * !B2 * Y)	-0.00154	-0.00155	-0.00155
	(A1 * !B1 * !B2 * Y)	0.00172	0.00174	0.00174
	(!A1 * !B1 * !B2 * Y)	-0.00140	-0.00150	-0.00148
	(!A1 * !B1 * !B2 * Y)	0.00177	0.00177	0.00176
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00345	-0.00347	-0.00358
	(A1 * B2 * !Y)	0.00186	0.00186	0.00176
	(A1 * B1 * !B2 * !Y)	-0.00343	-0.00347	-0.00358
	(A1 * B1 * !B2 * !Y)	0.00184	0.00186	0.00176
	(A1 * !B1 * !B2 * Y)	-0.00314	-0.00314	-0.00315
	(A1 * !B1 * !B2 * Y)	0.00363	0.00362	0.00364
	(!A1 * !B1 * !B2 * Y)	-0.00283	-0.00302	-0.00304
	(!A1 * !B1 * !B2 * Y)	0.00373	0.00372	0.00371
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00639	-0.00643	-0.00660
	(A1 * B2 * !Y)	0.00355	0.00356	0.00341
	(A1 * B1 * !B2 * !Y)	-0.00641	-0.00643	-0.00660
	(A1 * B1 * !B2 * !Y)	0.00357	0.00356	0.00341
	(A1 * !B1 * !B2 * Y)	-0.00606	-0.00608	-0.00607
	(A1 * !B1 * !B2 * Y)	0.00679	0.00683	0.00682
	(!A1 * !B1 * !B2 * Y)	-0.00544	-0.00582	-0.00580
	(!A1 * !B1 * !B2 * Y)	0.00697	0.00704	0.00699

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00198	0.00179	0.00177
	(A2 * B2 * !Y)	-0.00155	-0.00176	-0.00178
	(A1 * !A2 * B2 * !Y)	0.00198	0.00179	0.00177
	(A1 * !A2 * B2 * !Y)	-0.00155	-0.00177	-0.00178
	(!A1 * !A2 * B2 * Y)	0.00059	0.00059	0.00059
	(!A1 * !A2 * B2 * Y)	-0.00214	-0.00219	-0.00219
	(!A1 * !A2 * !B2 * Y)	0.00065	0.00065	0.00061
	(!A1 * !A2 * !B2 * Y)	-0.00213	-0.00214	-0.00221
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00366	0.00318	0.00315
	(A2 * B2 * !Y)	-0.00307	-0.00363	-0.00365
	(A1 * !A2 * B2 * !Y)	0.00367	0.00318	0.00315
	(A1 * !A2 * B2 * !Y)	-0.00309	-0.00363	-0.00365
	(!A1 * !A2 * B2 * Y)	0.00098	0.00098	0.00098
	(!A1 * !A2 * B2 * Y)	-0.00421	-0.00433	-0.00433
	(!A1 * !A2 * !B2 * Y)	0.00109	0.00109	0.00102
	(!A1 * !A2 * !B2 * Y)	-0.00423	-0.00423	-0.00439
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00769	0.00676	0.00674
	(A2 * B2 * !Y)	-0.00582	-0.00687	-0.00690
	(A1 * !A2 * B2 * !Y)	0.00768	0.00676	0.00674
	(A1 * !A2 * B2 * !Y)	-0.00582	-0.00687	-0.00690
	(!A1 * !A2 * B2 * Y)	0.00183	0.00186	0.00184
	(!A1 * !A2 * B2 * Y)	-0.00859	-0.00888	-0.00882
	(!A1 * !A2 * !B2 * Y)	0.00204	0.00204	0.00191
	(!A1 * !A2 * !B2 * Y)	-0.00863	-0.00865	-0.00888

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00176	-0.00177	-0.00176
	(A2 * B2 * !Y)	0.00178	0.00178	0.00178
	(A1 * !A2 * B2 * !Y)	-0.00176	-0.00177	-0.00176
	(A1 * !A2 * B2 * !Y)	0.00178	0.00179	0.00178
	(!A1 * !A2 * B2 * Y)	-0.00058	-0.00058	-0.00059
	(!A1 * !A2 * B2 * Y)	0.00222	0.00223	0.00219
	(!A1 * !A2 * !B2 * Y)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * !B2 * Y)	0.00222	0.00225	0.00221
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00313	-0.00314	-0.00314
	(A2 * B2 * !Y)	0.00361	0.00364	0.00365
	(A1 * !A2 * B2 * !Y)	-0.00314	-0.00315	-0.00314
	(A1 * !A2 * B2 * !Y)	0.00365	0.00366	0.00365
	(!A1 * !A2 * B2 * Y)	-0.00095	-0.00096	-0.00097
	(!A1 * !A2 * B2 * Y)	0.00435	0.00440	0.00433
	(!A1 * !A2 * !B2 * Y)	-0.00100	-0.00101	-0.00099
	(!A1 * !A2 * !B2 * Y)	0.00441	0.00447	0.00440
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00670	-0.00673	-0.00672
	(A2 * B2 * !Y)	0.00685	0.00691	0.00690
	(A1 * !A2 * B2 * !Y)	-0.00670	-0.00673	-0.00671
	(A1 * !A2 * B2 * !Y)	0.00685	0.00692	0.00690
	(!A1 * !A2 * B2 * Y)	-0.00178	-0.00180	-0.00183
	(!A1 * !A2 * B2 * Y)	0.00887	0.00893	0.00882
	(!A1 * !A2 * !B2 * Y)	-0.00186	-0.00186	-0.00186
	(!A1 * !A2 * !B2 * Y)	0.00887	0.00890	0.00892

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00182	0.00182	0.00181
	(A2 * B1 * !Y)	-0.00085	-0.00085	-0.00084
	(A1 * !A2 * B1 * !Y)	0.00181	0.00182	0.00181
	(A1 * !A2 * B1 * !Y)	-0.00084	-0.00085	-0.00084
	(!A1 * !A2 * B1 * Y)	0.00048	0.00048	0.00048
	(!A1 * !A2 * B1 * Y)	-0.00212	-0.00218	-0.00217
	(!A1 * !A2 * !B1 * Y)	0.00054	0.00054	0.00050
	(!A1 * !A2 * !B1 * Y)	-0.00211	-0.00212	-0.00219
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00343	0.00347	0.00344
	(A2 * B1 * !Y)	-0.00173	-0.00175	-0.00173
	(A1 * !A2 * B1 * !Y)	0.00343	0.00347	0.00345
	(A1 * !A2 * B1 * !Y)	-0.00173	-0.00175	-0.00173
	(!A1 * !A2 * B1 * Y)	0.00093	0.00093	0.00092
	(!A1 * !A2 * B1 * Y)	-0.00415	-0.00427	-0.00425
	(!A1 * !A2 * !B1 * Y)	0.00104	0.00104	0.00096
	(!A1 * !A2 * !B1 * Y)	-0.00416	-0.00418	-0.00431
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00668	0.00677	0.00671
	(A2 * B1 * !Y)	-0.00338	-0.00343	-0.00339
	(A1 * !A2 * B1 * !Y)	0.00668	0.00682	0.00671
	(A1 * !A2 * B1 * !Y)	-0.00337	-0.00345	-0.00339
	(!A1 * !A2 * B1 * Y)	0.00174	0.00173	0.00173
	(!A1 * !A2 * B1 * Y)	-0.00820	-0.00833	-0.00832
	(!A1 * !A2 * !B1 * Y)	0.00191	0.00193	0.00180
	(!A1 * !A2 * !B1 * Y)	-0.00815	-0.00823	-0.00843

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00176	-0.00178	-0.00181
	(A2 * B1 * !Y)	0.00088	0.00088	0.00085
	(A1 * !A2 * B1 * !Y)	-0.00176	-0.00178	-0.00181
	(A1 * !A2 * B1 * !Y)	0.00087	0.00089	0.00085
	(!A1 * !A2 * B1 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * B1 * Y)	0.00218	0.00219	0.00217
	(!A1 * !A2 * !B1 * Y)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * !B1 * Y)	0.00220	0.00223	0.00220
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00329	-0.00330	-0.00343
	(A2 * B1 * !Y)	0.00186	0.00186	0.00177
	(A1 * !A2 * B1 * !Y)	-0.00328	-0.00332	-0.00343
	(A1 * !A2 * B1 * !Y)	0.00185	0.00187	0.00177
	(!A1 * !A2 * B1 * Y)	-0.00092	-0.00091	-0.00092
	(!A1 * !A2 * B1 * Y)	0.00427	0.00428	0.00425
	(!A1 * !A2 * !B1 * Y)	-0.00093	-0.00095	-0.00093
	(!A1 * !A2 * !B1 * Y)	0.00430	0.00439	0.00433
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00647	-0.00650	-0.00669
	(A2 * B1 * !Y)	0.00357	0.00358	0.00344
	(A1 * !A2 * B1 * !Y)	-0.00647	-0.00649	-0.00669
	(A1 * !A2 * B1 * !Y)	0.00356	0.00357	0.00344
	(!A1 * !A2 * B1 * Y)	-0.00170	-0.00170	-0.00172
	(!A1 * !A2 * B1 * Y)	0.00841	0.00844	0.00832
	(!A1 * !A2 * !B1 * Y)	-0.00176	-0.00178	-0.00175
	(!A1 * !A2 * !B1 * Y)	0.00845	0.00859	0.00846

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o22a_1	12.78720
sky130_fd_sc_hs__o22a_2	12.78720
sky130_fd_sc_hs__o22a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	B1	B2	X
sky130_fd_sc_hs__o22a_1	0.00232	0.00242	0.00250	0.00269	1.48188
sky130_fd_sc_hs__o22a_2	0.00249	0.00254	0.00265	0.00262	2.82995
sky130_fd_sc_hs__o22a_4	0.00486	0.00451	0.00499	0.00473	5.14390

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.08774	0.22593
sky130_fd_sc_hs__o22a_2	0.00000	0.11520	0.22694
sky130_fd_sc_hs__o22a_4	0.00000	0.23168	0.45387

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)	0.06343	0.45393	5.31626
	A2->X (RR)	0.05864	0.44156	5.35844
	B1->X (RR)	0.05761	0.44974	5.35787
	B2->X (RR)	0.05252	0.43470	5.40095
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.06493	0.38860	5.41406
	A2->X (RR)	0.05973	0.37786	5.43223
	B1->X (RR)	0.05934	0.39171	5.44966
	B2->X (RR)	0.05305	0.37326	5.43728
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.06887	0.32783	5.33700
	A2->X (RR)	0.06568	0.31579	5.39163
	B1->X (RR)	0.06126	0.32464	5.41825
	B2->X (RR)	0.05999	0.32295	5.46915

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.10098	0.50902	5.10851
	A2->X (FF)	0.09121	0.51102	5.16350
	B1->X (FF)	0.07964	0.46760	5.01074
	B2->X (FF)	0.06807	0.44699	5.09894
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.12130	0.51955	5.13914
	A2->X (FF)	0.11105	0.52409	5.17746
	B1->X (FF)	0.09923	0.47813	5.02676
	B2->X (FF)	0.08823	0.47974	5.08375
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.11857	0.48434	5.08673
	A2->X (FF)	0.10429	0.48296	5.13357
	B1->X (FF)	0.09989	0.44950	5.02421
	B2->X (FF)	0.08709	0.44591	5.02907

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.01087	0.01204	0.05056
	A1	0.00382	0.00502	0.04373
	A2	0.00925	0.01102	0.06512
	A2	0.00305	0.00483	0.05915
	B1	0.00873	0.01055	0.05086
	B1	0.00366	0.00551	0.04612
	B2	0.00758	0.01016	0.06509
	B2	0.00306	0.00565	0.06076
sky130_fd_sc_hs__o22a_2	A1	0.01384	0.01511	0.05117
	A1	0.00638	0.00773	0.04418
	A2	0.01213	0.01388	0.06541
	A2	0.00559	0.00739	0.05933
	B1	0.01154	0.01323	0.04809
	B1	0.00634	0.00809	0.04337
	B2	0.00986	0.01212	0.06069
	B2	0.00558	0.00791	0.05688
sky130_fd_sc_hs__o22a_4	A1	0.02713	0.02985	0.10624
	A1	0.01308	0.01589	0.09306
	A2	0.02317	0.02688	0.13303
	A2	0.01126	0.01501	0.12198
	B1	0.02318	0.02731	0.10632
	B1	0.01306	0.01724	0.09693
	B2	0.01929	0.02369	0.12660
	B2	0.01126	0.01580	0.11947

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00423	0.00525	0.04310
	A1	0.01146	0.01249	0.04956
	A2	0.00437	0.00690	0.06155
	A2	0.01058	0.01311	0.06626
	B1	0.00312	0.00436	0.04740
	B1	0.00819	0.00935	0.05120
	B2	0.00255	0.00590	0.06418
	B2	0.00707	0.01031	0.06759
sky130_fd_sc_hs__o22a_2	A1	0.00762	0.00819	0.04442
	A1	0.01517	0.01574	0.05051
	A2	0.00768	0.01004	0.06285
	A2	0.01432	0.01665	0.06763
	B1	0.00581	0.00667	0.04617
	B1	0.01197	0.01263	0.04859
	B2	0.00574	0.00866	0.06301
	B2	0.01099	0.01369	0.06467
sky130_fd_sc_hs__o22a_4	A1	0.01453	0.01570	0.09049
	A1	0.02904	0.03016	0.10257
	A2	0.01499	0.01930	0.12554
	A2	0.02733	0.03111	0.13540
	B1	0.01188	0.01362	0.09298
	B1	0.02395	0.02525	0.10269
	B2	0.01236	0.01709	0.12437
	B2	0.02235	0.02705	0.13122

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00162	0.00142	0.00140
	(A2 * B2 * X)	-0.00145	-0.00167	-0.00167
	(A2 * B1 * !B2 * X)	0.00162	0.00142	0.00140
	(A2 * B1 * !B2 * X)	-0.00145	-0.00167	-0.00167
	(A2 * !B1 * !B2 * !X)	0.00139	0.00140	0.00139
	(A2 * !B1 * !B2 * !X)	-0.00164	-0.00168	-0.00167
	(!A2 * !B1 * !B2 * !X)	0.00131	0.00133	0.00132
	(!A2 * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00185	0.00164	0.00163
	(A2 * B2 * X)	-0.00143	-0.00165	-0.00165
	(A2 * B1 * !B2 * X)	0.00185	0.00165	0.00163
	(A2 * B1 * !B2 * X)	-0.00143	-0.00165	-0.00165
	(A2 * !B1 * !B2 * !X)	0.00163	0.00164	0.00163
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00166	-0.00165
	(!A2 * !B1 * !B2 * !X)	0.00155	0.00156	0.00155
	(!A2 * !B1 * !B2 * !X)	-0.00166	-0.00167	-0.00167
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00352	0.00319	0.00313
	(A2 * B2 * X)	-0.00274	-0.00320	-0.00319
	(A2 * B1 * !B2 * X)	0.00352	0.00319	0.00314
	(A2 * B1 * !B2 * X)	-0.00274	-0.00320	-0.00319
	(A2 * !B1 * !B2 * !X)	0.00304	0.00309	0.00305
	(A2 * !B1 * !B2 * !X)	-0.00318	-0.00330	-0.00327
	(!A2 * !B1 * !B2 * !X)	0.00289	0.00293	0.00290
	(!A2 * !B1 * !B2 * !X)	-0.00331	-0.00334	-0.00332

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00138	-0.00140	-0.00139
	(A2 * B2 * X)	0.00166	0.00169	0.00168
	(A2 * B1 * !B2 * X)	-0.00138	-0.00140	-0.00139
	(A2 * B1 * !B2 * X)	0.00166	0.00169	0.00168
	(A2 * !B1 * !B2 * !X)	-0.00139	-0.00139	-0.00139
	(A2 * !B1 * !B2 * !X)	0.00168	0.00168	0.00167
	(!A2 * !B1 * !B2 * !X)	-0.00124	-0.00133	-0.00132
	(!A2 * !B1 * !B2 * !X)	0.00172	0.00171	0.00170
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00162	-0.00162	-0.00162
	(A2 * B2 * X)	0.00166	0.00166	0.00166
	(A2 * B1 * !B2 * X)	-0.00162	-0.00162	-0.00162
	(A2 * B1 * !B2 * X)	0.00166	0.00166	0.00166
	(A2 * !B1 * !B2 * !X)	-0.00162	-0.00163	-0.00162
	(A2 * !B1 * !B2 * !X)	0.00165	0.00166	0.00165
	(!A2 * !B1 * !B2 * !X)	-0.00148	-0.00156	-0.00155
	(!A2 * !B1 * !B2 * !X)	0.00168	0.00168	0.00167
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00312	-0.00313	-0.00312
	(A2 * B2 * X)	0.00318	0.00320	0.00319
	(A2 * B1 * !B2 * X)	-0.00312	-0.00313	-0.00312
	(A2 * B1 * !B2 * X)	0.00318	0.00320	0.00319
	(A2 * !B1 * !B2 * !X)	-0.00304	-0.00306	-0.00304
	(A2 * !B1 * !B2 * !X)	0.00326	0.00330	0.00327
	(!A2 * !B1 * !B2 * !X)	-0.00276	-0.00293	-0.00290
	(!A2 * !B1 * !B2 * !X)	0.00335	0.00334	0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00154	0.00156	0.00155
	(A1 * B2 * X)	-0.00081	-0.00082	-0.00082
	(A1 * B1 * !B2 * X)	0.00155	0.00156	0.00155
	(A1 * B1 * !B2 * X)	-0.00082	-0.00082	-0.00081
	(A1 * !B1 * !B2 * !X)	0.00135	0.00137	0.00135
	(A1 * !B1 * !B2 * !X)	-0.00163	-0.00167	-0.00167
	(!A1 * !B1 * !B2 * !X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !B2 * !X)	-0.00169	-0.00170	-0.00169
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00168	0.00168	0.00167
	(A1 * B2 * X)	-0.00083	-0.00083	-0.00083
	(A1 * B1 * !B2 * X)	0.00168	0.00168	0.00167
	(A1 * B1 * !B2 * X)	-0.00083	-0.00083	-0.00082
	(A1 * !B1 * !B2 * !X)	0.00156	0.00158	0.00156
	(A1 * !B1 * !B2 * !X)	-0.00156	-0.00159	-0.00159
	(!A1 * !B1 * !B2 * !X)	0.00150	0.00152	0.00150
	(!A1 * !B1 * !B2 * !X)	-0.00161	-0.00162	-0.00161
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00292	0.00294	0.00292
	(A1 * B2 * X)	-0.00163	-0.00164	-0.00163
	(A1 * B1 * !B2 * X)	0.00293	0.00294	0.00292
	(A1 * B1 * !B2 * X)	-0.00164	-0.00164	-0.00162
	(A1 * !B1 * !B2 * !X)	0.00262	0.00262	0.00261
	(A1 * !B1 * !B2 * !X)	-0.00319	-0.00326	-0.00326
	(!A1 * !B1 * !B2 * !X)	0.00245	0.00247	0.00246
	(!A1 * !B1 * !B2 * !X)	-0.00330	-0.00332	-0.00331

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00150	-0.00151	-0.00154
	(A1 * B2 * X)	0.00086	0.00086	0.00083
	(A1 * B1 * !B2 * X)	-0.00150	-0.00151	-0.00154
	(A1 * B1 * !B2 * X)	0.00086	0.00086	0.00083
	(A1 * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * !B2 * !X)	0.00167	0.00167	0.00167
	(!A1 * !B1 * !B2 * !X)	-0.00120	-0.00129	-0.00128
	(!A1 * !B1 * !B2 * !X)	0.00171	0.00170	0.00170
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00163	-0.00163	-0.00167
	(A1 * B2 * X)	0.00087	0.00087	0.00084
	(A1 * B1 * !B2 * X)	-0.00163	-0.00163	-0.00167
	(A1 * B1 * !B2 * X)	0.00087	0.00087	0.00084
	(A1 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !B1 * !B2 * !X)	0.00158	0.00159	0.00159
	(!A1 * !B1 * !B2 * !X)	-0.00141	-0.00151	-0.00150
	(!A1 * !B1 * !B2 * !X)	0.00163	0.00163	0.00162
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00281	-0.00283	-0.00291
	(A1 * B2 * X)	0.00172	0.00172	0.00165
	(A1 * B1 * !B2 * X)	-0.00282	-0.00283	-0.00291
	(A1 * B1 * !B2 * X)	0.00173	0.00172	0.00165
	(A1 * !B1 * !B2 * !X)	-0.00260	-0.00261	-0.00260
	(A1 * !B1 * !B2 * !X)	0.00326	0.00326	0.00326
	(!A1 * !B1 * !B2 * !X)	-0.00231	-0.00247	-0.00246
	(!A1 * !B1 * !B2 * !X)	0.00335	0.00334	0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00170	0.00150	0.00149
	(A2 * B2 * X)	-0.00148	-0.00170	-0.00171
	(A1 * !A2 * B2 * X)	0.00170	0.00150	0.00149
	(A1 * !A2 * B2 * X)	-0.00148	-0.00170	-0.00171
	(!A1 * !A2 * B2 * !X)	0.00041	0.00041	0.00040
	(!A1 * !A2 * B2 * !X)	-0.00211	-0.00214	-0.00214
	(!A1 * !A2 * !B2 * !X)	0.00045	0.00045	0.00042
	(!A1 * !A2 * !B2 * !X)	-0.00209	-0.00210	-0.00216
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00192	0.00173	0.00171
	(A2 * B2 * X)	-0.00137	-0.00159	-0.00160
	(A1 * !A2 * B2 * X)	0.00192	0.00173	0.00171
	(A1 * !A2 * B2 * X)	-0.00137	-0.00159	-0.00160
	(!A1 * !A2 * B2 * !X)	0.00049	0.00049	0.00049
	(!A1 * !A2 * B2 * !X)	-0.00205	-0.00208	-0.00208
	(!A1 * !A2 * !B2 * !X)	0.00055	0.00055	0.00051
	(!A1 * !A2 * !B2 * !X)	-0.00202	-0.00203	-0.00210
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00370	0.00335	0.00329
	(A2 * B2 * X)	-0.00270	-0.00318	-0.00318
	(A1 * !A2 * B2 * X)	0.00370	0.00335	0.00329
	(A1 * !A2 * B2 * X)	-0.00270	-0.00318	-0.00318
	(!A1 * !A2 * B2 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A2 * B2 * !X)	-0.00376	-0.00388	-0.00386
	(!A1 * !A2 * !B2 * !X)	0.00137	0.00138	0.00132
	(!A1 * !A2 * !B2 * !X)	-0.00377	-0.00380	-0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00148	-0.00148	-0.00148
	(A2 * B2 * X)	0.00170	0.00172	0.00171
	(A1 * !A2 * B2 * X)	-0.00148	-0.00148	-0.00147
	(A1 * !A2 * B2 * X)	0.00171	0.00172	0.00171
	(!A1 * !A2 * B2 * !X)	-0.00039	-0.00040	-0.00040
	(!A1 * !A2 * B2 * !X)	0.00214	0.00217	0.00214
	(!A1 * !A2 * !B2 * !X)	-0.00041	-0.00041	-0.00041
	(!A1 * !A2 * !B2 * !X)	0.00216	0.00219	0.00217
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00170	-0.00170	-0.00170
	(A2 * B2 * X)	0.00158	0.00160	0.00160
	(A1 * !A2 * B2 * X)	-0.00170	-0.00171	-0.00170
	(A1 * !A2 * B2 * X)	0.00158	0.00161	0.00160
	(!A1 * !A2 * B2 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * B2 * !X)	0.00209	0.00211	0.00208
	(!A1 * !A2 * !B2 * !X)	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !B2 * !X)	0.00210	0.00212	0.00211
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00328	-0.00329	-0.00327
	(A2 * B2 * X)	0.00316	0.00319	0.00318
	(A1 * !A2 * B2 * X)	-0.00328	-0.00329	-0.00327
	(A1 * !A2 * B2 * X)	0.00316	0.00319	0.00318
	(!A1 * !A2 * B2 * !X)	-0.00126	-0.00127	-0.00128
	(!A1 * !A2 * B2 * !X)	0.00390	0.00393	0.00386
	(!A1 * !A2 * !B2 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !B2 * !X)	0.00388	0.00392	0.00391

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00199	0.00202	0.00200
	(A2 * B1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B1 * X)	0.00200	0.00202	0.00200
	(A1 * !A2 * B1 * X)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B1 * !X)	0.00085	0.00085	0.00084
	(!A1 * !A2 * B1 * !X)	-0.00187	-0.00191	-0.00191
	(!A1 * !A2 * !B1 * !X)	0.00089	0.00089	0.00086
	(!A1 * !A2 * !B1 * !X)	-0.00186	-0.00187	-0.00192
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00172	0.00173	0.00172
	(A2 * B1 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A2 * B1 * X)	0.00172	0.00173	0.00172
	(A1 * !A2 * B1 * X)	-0.00081	-0.00081	-0.00080
	(!A1 * !A2 * B1 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * B1 * !X)	-0.00193	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * !X)	0.00053	0.00053	0.00049
	(!A1 * !A2 * !B1 * !X)	-0.00190	-0.00192	-0.00198
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00308	0.00311	0.00309
	(A2 * B1 * X)	-0.00162	-0.00163	-0.00161
	(A1 * !A2 * B1 * X)	0.00308	0.00311	0.00309
	(A1 * !A2 * B1 * X)	-0.00162	-0.00163	-0.00161
	(!A1 * !A2 * B1 * !X)	0.00074	0.00075	0.00074
	(!A1 * !A2 * B1 * !X)	-0.00384	-0.00394	-0.00394
	(!A1 * !A2 * !B1 * !X)	0.00083	0.00083	0.00078
	(!A1 * !A2 * !B1 * !X)	-0.00387	-0.00387	-0.00397

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00196	-0.00198	-0.00200
	(A2 * B1 * X)	0.00082	0.00083	0.00080
	(A1 * !A2 * B1 * X)	-0.00196	-0.00198	-0.00200
	(A1 * !A2 * B1 * X)	0.00082	0.00083	0.00080
	(!A1 * !A2 * B1 * !X)	-0.00082	-0.00083	-0.00083
	(!A1 * !A2 * B1 * !X)	0.00195	0.00196	0.00191
	(!A1 * !A2 * !B1 * !X)	-0.00084	-0.00086	-0.00085
	(!A1 * !A2 * !B1 * !X)	0.00192	0.00196	0.00193
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00168	-0.00168	-0.00171
	(A2 * B1 * X)	0.00084	0.00084	0.00081
	(A1 * !A2 * B1 * X)	-0.00168	-0.00168	-0.00171
	(A1 * !A2 * B1 * X)	0.00084	0.00084	0.00081
	(!A1 * !A2 * B1 * !X)	-0.00046	-0.00047	-0.00047
	(!A1 * !A2 * B1 * !X)	0.00197	0.00198	0.00196
	(!A1 * !A2 * !B1 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !B1 * !X)	0.00199	0.00200	0.00199
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00299	-0.00300	-0.00308
	(A2 * B1 * X)	0.00171	0.00171	0.00163
	(A1 * !A2 * B1 * X)	-0.00299	-0.00300	-0.00308
	(A1 * !A2 * B1 * X)	0.00171	0.00171	0.00164
	(!A1 * !A2 * B1 * !X)	-0.00071	-0.00071	-0.00073
	(!A1 * !A2 * B1 * !X)	0.00400	0.00399	0.00394
	(!A1 * !A2 * !B1 * !X)	-0.00075	-0.00076	-0.00075
	(!A1 * !A2 * !B1 * !X)	0.00397	0.00402	0.00399

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2ai_1	11.18880
sky130_fd_sc_hs__o2bb2ai_2	19.18080
sky130_fd_sc_hs__o2bb2ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	Y
sky130_fd_sc_hs__o2bb2ai_1	0.00218	0.00237	0.00262	0.00277	0.73959
sky130_fd_sc_hs__o2bb2ai_2	0.00497	0.00436	0.00532	0.00494	1.43160
sky130_fd_sc_hs__o2bb2ai_4	0.01008	0.01018	0.00991	0.01019	2.37599

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.28927	0.94418
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.57853	1.88835
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.33804	0.50752

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)	0.04770	0.28997	2.34917
	A2_N->Y (RR)	0.04529	0.28350	2.34748
	B1->Y (FR)	0.06654	0.84931	10.56010
	B2->Y (FR)	0.05707	0.84115	10.63700
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.04306	0.22224	2.28715
	A2_N->Y (RR)	0.03957	0.21440	2.32487
	B1->Y (FR)	0.05895	0.71561	10.44590
	B2->Y (FR)	0.04701	0.70839	10.51090
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.04834	0.17958	2.00307
	A2_N->Y (RR)	0.04500	0.18336	2.11065
	B1->Y (FR)	0.06555	0.63452	10.20800
	B2->Y (FR)	0.05224	0.64143	10.47130

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)	0.06893	0.43845	4.37190
	A2_N->Y (FF)	0.06048	0.41778	4.35265
	B1->Y (RF)	0.02635	0.30582	3.63376
	B2->Y (RF)	0.02164	0.29528	3.57675
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.05860	0.39004	4.36911
	A2_N->Y (FF)	0.05500	0.38188	4.44113
	B1->Y (RF)	0.02270	0.24188	3.49237
	B2->Y (RF)	0.01963	0.23633	3.51469
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.06497	0.38013	4.43990
	A2_N->Y (FF)	0.05556	0.35354	4.33088
	B1->Y (RF)	0.02695	0.20083	3.33641
	B2->Y (RF)	0.02025	0.18648	3.24361

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	0.00787	0.01095	0.08426
	A1_N	0.00454	0.00763	0.08095
	A2_N	0.00702	0.01012	0.07618
	A2_N	0.00453	0.00771	0.07376
	B1	0.00037	0.00046	0.00799
	B1	0.00551	0.00562	0.01324
	B2	0.00034	0.00151	0.01722
	B2	0.00465	0.00581	0.02164
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01464	0.02003	0.15123
	A1_N	0.00721	0.01264	0.14398
	A2_N	0.01239	0.01936	0.16232
	A2_N	0.00758	0.01460	0.15765
	B1	0.00044	0.00071	0.01595
	B1	0.01073	0.01102	0.02626
	B2	0.00044	0.00328	0.03206
	B2	0.00831	0.01119	0.04016
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.03192	0.03979	0.27192
	A1_N	0.01607	0.02404	0.25662
	A2_N	0.02717	0.03741	0.26024
	A2_N	0.01597	0.02628	0.24976
	B1	0.00049	0.00098	0.02888
	B1	0.02105	0.02159	0.04960
	B2	0.00028	0.00434	0.05963
	B2	0.01685	0.02099	0.07659

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00588	0.01005	0.08338
	A1_N	0.00818	0.01265	0.08564
	A2_N	0.00544	0.00953	0.08464
	A2_N	0.00698	0.01106	0.08582
	B1	0.00747	0.00754	0.01283
	B1	0.00230	0.00236	0.00737
	B2	0.00573	0.00589	0.01085
	B2	0.00135	0.00152	0.00631
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01062	0.01867	0.16011
	A1_N	0.01810	0.02606	0.16726
	A2_N	0.01002	0.01789	0.15967
	A2_N	0.01496	0.02278	0.16394
	B1	0.01455	0.01467	0.02540
	B1	0.00425	0.00436	0.01435
	B2	0.01034	0.01080	0.02081
	B2	0.00237	0.00278	0.01238
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02343	0.03569	0.27018
	A1_N	0.03952	0.05176	0.28522
	A2_N	0.02091	0.03363	0.26641
	A2_N	0.02745	0.04043	0.27286
	B1	0.03020	0.03044	0.05094
	B1	0.00961	0.00984	0.03042
	B2	0.02179	0.02277	0.04357
	B2	0.00495	0.00584	0.02563

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)	0.00687	0.00985	0.08289
	(A2_N * !B1 * !B2 * Y)	0.00227	0.00524	0.07829
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00137	0.00138	0.00137
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01340	0.01922	0.16240
	(A2_N * !B1 * !B2 * Y)	0.00350	0.00929	0.15250
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00269	0.00273	0.00270
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00347	-0.00351	-0.00348
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02925	0.03668	0.26865
	(A2_N * !B1 * !B2 * Y)	0.00808	0.01546	0.24747
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00601	0.00606	0.00604
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00726	-0.00730	-0.00728

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)	0.00034	0.00455	0.07740
	(A2_N * !B1 * !B2 * Y)	0.00497	0.00918	0.08201
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00130	-0.00138	-0.00137
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00150	0.00145	0.00144
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00045	0.00834	0.15135
	(A2_N * !B1 * !B2 * Y)	0.01042	0.01832	0.16125
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00252	-0.00270	-0.00269
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00358	0.00352	0.00349
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00145	0.01311	0.24603
	(A2_N * !B1 * !B2 * Y)	0.02270	0.03446	0.26717
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00557	-0.00597	-0.00601
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00752	0.00736	0.00730

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)	0.00608	0.00964	0.08664
	(A1_N * !B1 * !B2 * Y)	0.00228	0.00582	0.08282
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00045	0.00045	0.00044
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00180	-0.00181	-0.00182
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.01128	0.01804	0.15955
	(A1_N * !B1 * !B2 * Y)	0.00389	0.01062	0.15214
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00085	0.00085	0.00082
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00338	-0.00339	-0.00343
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.02481	0.03401	0.26792
	(A1_N * !B1 * !B2 * Y)	0.00799	0.01708	0.25113
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00191	0.00190	0.00184
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00856	-0.00854	-0.00869

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)	-0.00003	0.00416	0.08079
	(A1_N * !B1 * !B2 * Y)	0.00380	0.00800	0.08462
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00043	-0.00044	-0.00043
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00182	0.00184	0.00183
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00031	0.00739	0.14819
	(A1_N * !B1 * !B2 * Y)	0.00713	0.01483	0.15561
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00081	-0.00081	-0.00080
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00344	0.00347	0.00344
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00111	0.01094	0.24512
	(A1_N * !B1 * !B2 * Y)	0.01581	0.02786	0.26199
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00179	-0.00183	-0.00179
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00868	0.00885	0.00871

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)	0.00163	0.00164	0.00163
	(A1_N * A2_N * B2 * Y)	-0.00176	-0.00180	-0.00180
	(A1_N * A2_N * !B2 * Y)	0.00158	0.00159	0.00159
	(A1_N * A2_N * !B2 * Y)	-0.00181	-0.00182	-0.00181
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00185	0.00165	0.00163
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00158	-0.00180	-0.00180
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00324	0.00327	0.00324
	(A1_N * A2_N * B2 * Y)	-0.00359	-0.00369	-0.00369
	(A1_N * A2_N * !B2 * Y)	0.00317	0.00318	0.00318
	(A1_N * A2_N * !B2 * Y)	-0.00371	-0.00372	-0.00372
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00372	0.00331	0.00328
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00316	-0.00364	-0.00365
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00625	0.00625	0.00625
	(A1_N * A2_N * B2 * Y)	-0.00698	-0.00717	-0.00718
	(A1_N * A2_N * !B2 * Y)	0.00605	0.00608	0.00605
	(A1_N * A2_N * !B2 * Y)	-0.00729	-0.00730	-0.00728
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00731	0.00638	0.00626
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00606	-0.00719	-0.00719

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)	-0.00161	-0.00162	-0.00161
	(A1_N * A2_N * B2 * Y)	0.00180	0.00182	0.00181
	(A1_N * A2_N * !B2 * Y)	-0.00150	-0.00158	-0.00157
	(A1_N * A2_N * !B2 * Y)	0.00184	0.00185	0.00183
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00163	-0.00163	-0.00162
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00180	0.00180	0.00180
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00320	-0.00321	-0.00320
	(A1_N * A2_N * B2 * Y)	0.00369	0.00372	0.00370
	(A1_N * A2_N * !B2 * Y)	-0.00301	-0.00313	-0.00314
	(A1_N * A2_N * !B2 * Y)	0.00376	0.00378	0.00376
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00326	-0.00327	-0.00326
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00363	0.00367	0.00365
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00621	-0.00625	-0.00623
	(A1_N * A2_N * B2 * Y)	0.00715	0.00722	0.00718
	(A1_N * A2_N * !B2 * Y)	-0.00575	-0.00604	-0.00605
	(A1_N * A2_N * !B2 * Y)	0.00737	0.00735	0.00731
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00622	-0.00623	-0.00622
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00715	0.00719	0.00719

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)	0.00169	0.00170	0.00170
	(A1_N * A2_N * B1 * Y)	-0.00177	-0.00181	-0.00182
	(A1_N * A2_N * !B1 * Y)	0.00164	0.00167	0.00165
	(A1_N * A2_N * !B1 * Y)	-0.00182	-0.00184	-0.00183
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00181	0.00182	0.00181
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00097	-0.00097	-0.00096
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00302	0.00307	0.00303
	(A1_N * A2_N * B1 * Y)	-0.00331	-0.00344	-0.00343
	(A1_N * A2_N * !B1 * Y)	0.00296	0.00300	0.00297
	(A1_N * A2_N * !B1 * Y)	-0.00346	-0.00348	-0.00346
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00325	0.00330	0.00327
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00168	-0.00170	-0.00169
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00625	0.00635	0.00625
	(A1_N * A2_N * B1 * Y)	-0.00704	-0.00731	-0.00725
	(A1_N * A2_N * !B1 * Y)	0.00608	0.00612	0.00609
	(A1_N * A2_N * !B1 * Y)	-0.00734	-0.00737	-0.00734
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00704	0.00713	0.00707
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00347	-0.00352	-0.00348

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)	-0.00167	-0.00168	-0.00168
	(A1_N * A2_N * B1 * Y)	0.00182	0.00183	0.00182
	(A1_N * A2_N * !B1 * Y)	-0.00156	-0.00164	-0.00164
	(A1_N * A2_N * !B1 * Y)	0.00185	0.00187	0.00185
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00175	-0.00177	-0.00180
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00101	0.00101	0.00098
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00298	-0.00299	-0.00299
	(A1_N * A2_N * B1 * Y)	0.00343	0.00344	0.00344
	(A1_N * A2_N * !B1 * Y)	-0.00282	-0.00292	-0.00292
	(A1_N * A2_N * !B1 * Y)	0.00351	0.00352	0.00350
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00314	-0.00317	-0.00325
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00178	0.00180	0.00172
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00623	-0.00627	-0.00623
	(A1_N * A2_N * B1 * Y)	0.00724	0.00731	0.00725
	(A1_N * A2_N * !B1 * Y)	-0.00575	-0.00605	-0.00607
	(A1_N * A2_N * !B1 * Y)	0.00743	0.00741	0.00737
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00679	-0.00683	-0.00704
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00370	0.00371	0.00355

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o2bb2a_1	14.38560
sky130_fd_sc_hs__o2bb2a_2	14.38560
sky130_fd_sc_hs__o2bb2a_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1_N	A2_N	B1	B2	X
sky130_fd_sc_hs__o2bb2a_1	0.00218	0.00232	0.00233	0.00253	1.42844
sky130_fd_sc_hs__o2bb2a_2	0.00219	0.00241	0.00249	0.00258	2.57158
sky130_fd_sc_hs__o2bb2a_4	0.00217	0.00234	0.00466	0.00460	5.26284

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.56016	1.00814
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.38580	1.07006
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.93981	1.19897

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)	0.09747	0.67864	8.48807
	A2_N->X (FR)	0.08929	0.65739	8.34970
	B1->X (RR)	0.05837	0.44471	5.33399
	B2->X (RR)	0.05201	0.43117	5.36792
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.10723	0.61222	8.46525
	A2_N->X (FR)	0.09742	0.58931	8.31431
	B1->X (RR)	0.06087	0.37569	5.23039
	B2->X (RR)	0.05367	0.36315	5.23653
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.12571	0.57404	8.63572
	A2_N->X (FR)	0.11658	0.55351	8.48859
	B1->X (RR)	0.07022	0.32042	5.41973
	B2->X (RR)	0.06078	0.30284	5.43599

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)	0.07467	0.22148	1.43118
	A2_N->X (RF)	0.07248	0.21759	1.51928
	B1->X (FF)	0.09622	0.48551	4.97682
	B2->X (FF)	0.08724	0.48461	5.02836
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.08398	0.19886	1.17991
	A2_N->X (RF)	0.08195	0.19267	1.23221
	B1->X (FF)	0.11681	0.49488	4.83531
	B2->X (FF)	0.10732	0.49766	4.87052
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.09477	0.21573	1.58808
	A2_N->X (RF)	0.09264	0.21124	1.63309
	B1->X (FF)	0.12166	0.47576	5.09584
	B2->X (FF)	0.10637	0.47516	5.14193

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	0.00861	0.01303	0.09248
	A1_N	0.01094	0.01543	0.09625
	A2_N	0.00814	0.01265	0.09372
	A2_N	0.00957	0.01422	0.09627
	B1	0.00996	0.01123	0.04946
	B1	0.00514	0.00641	0.04486
	B2	0.00848	0.01038	0.06431
	B2	0.00431	0.00623	0.06036
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01178	0.01627	0.09550
	A1_N	0.01416	0.01878	0.09968
	A2_N	0.01108	0.01569	0.09256
	A2_N	0.01265	0.01737	0.09522
	B1	0.01322	0.01449	0.05059
	B1	0.00807	0.00940	0.04544
	B2	0.01163	0.01340	0.06518
	B2	0.00721	0.00904	0.06076
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02310	0.02800	0.11540
	A1_N	0.02251	0.02790	0.11918
	A2_N	0.02251	0.02744	0.10781
	A2_N	0.02105	0.02632	0.10914
	B1	0.02611	0.02835	0.09995
	B1	0.01635	0.01860	0.09140
	B2	0.02167	0.02507	0.12453
	B2	0.01381	0.01726	0.11788

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.01126	0.01421	0.09159
	A1_N	0.00804	0.01091	0.08714
	A2_N	0.01030	0.01401	0.09787
	A2_N	0.00713	0.01081	0.09458
	B1	0.00415	0.00537	0.04485
	B1	0.00894	0.01010	0.04750
	B2	0.00409	0.00686	0.06139
	B2	0.00822	0.01090	0.06460
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01429	0.01713	0.08878
	A1_N	0.01105	0.01378	0.08427
	A2_N	0.01340	0.01646	0.09384
	A2_N	0.01104	0.01392	0.09010
	B1	0.00732	0.00805	0.04407
	B1	0.01243	0.01315	0.04841
	B2	0.00732	0.01017	0.06165
	B2	0.01169	0.01430	0.06599
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.02215	0.02511	0.10810
	A1_N	0.02036	0.02309	0.10216
	A2_N	0.02123	0.02451	0.11518
	A2_N	0.01829	0.02158	0.11168
	B1	0.01438	0.01518	0.08476
	B1	0.02410	0.02467	0.09382
	B2	0.01443	0.01825	0.12012
	B2	0.02221	0.02578	0.12439

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)	0.00621	0.00933	0.08277
	(A2_N * !B1 * !B2 * !X)	0.00165	0.00474	0.07821
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00144	0.00145	0.00144
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00655	0.00950	0.08052
	(A2_N * !B1 * !B2 * !X)	0.00186	0.00479	0.07582
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00152	0.00153	0.00152
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00135	-0.00136	-0.00135
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00778	0.01035	0.08046
	(A2_N * !B1 * !B2 * !X)	0.00307	0.00563	0.07575
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00151	0.00152	0.00151
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00132	-0.00132	-0.00132

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)	0.00035	0.00463	0.07789
	(A2_N * !B1 * !B2 * !X)	0.00492	0.00923	0.08245
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00136	-0.00145	-0.00144
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00146	0.00141	0.00140
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00035	0.00431	0.07528
	(A2_N * !B1 * !B2 * !X)	0.00506	0.00904	0.07998
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00144	-0.00151	-0.00152
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00142	0.00138	0.00136
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00089	0.00471	0.07475
	(A2_N * !B1 * !B2 * !X)	0.00565	0.00947	0.07947
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00142	-0.00149	-0.00150
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00141	0.00135	0.00134

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)	0.00547	0.00917	0.08612
	(A1_N * !B1 * !B2 * !X)	0.00179	0.00548	0.08243
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00042	0.00042	0.00041
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00177	-0.00178	-0.00179
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00590	0.00934	0.08386
	(A1_N * !B1 * !B2 * !X)	0.00202	0.00544	0.07998
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00050	0.00050	0.00049
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00181	-0.00181	-0.00183
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00708	0.01012	0.08380
	(A1_N * !B1 * !B2 * !X)	0.00325	0.00627	0.07997
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00046	0.00045	0.00044
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00176	-0.00176	-0.00177

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)	-0.00011	0.00421	0.08091
	(A1_N * !B1 * !B2 * !X)	0.00359	0.00792	0.08460
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00040	-0.00040	-0.00039
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00180	0.00182	0.00181
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	-0.00016	0.00391	0.07811
	(A1_N * !B1 * !B2 * !X)	0.00374	0.00782	0.08200
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00048	-0.00049	-0.00048
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00183	0.00186	0.00183
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00049	0.00421	0.07753
	(A1_N * !B1 * !B2 * !X)	0.00435	0.00809	0.08138
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00042	-0.00043	-0.00042
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00179	0.00181	0.00179

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)	0.00144	0.00145	0.00144
	(A1_N * A2_N * B2 * !X)	-0.00159	-0.00162	-0.00162
	(A1_N * A2_N * !B2 * !X)	0.00139	0.00140	0.00140
	(A1_N * A2_N * !B2 * !X)	-0.00163	-0.00164	-0.00163
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00166	0.00146	0.00144
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00139	-0.00160	-0.00162
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00161	0.00162	0.00161
	(A1_N * A2_N * B2 * !X)	-0.00163	-0.00166	-0.00167
	(A1_N * A2_N * !B2 * !X)	0.00156	0.00157	0.00156
	(A1_N * A2_N * !B2 * !X)	-0.00167	-0.00168	-0.00168
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00182	0.00163	0.00160
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00144	-0.00167	-0.00167
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00289	0.00290	0.00290
	(A1_N * A2_N * B2 * !X)	-0.00322	-0.00332	-0.00334
	(A1_N * A2_N * !B2 * !X)	0.00280	0.00283	0.00280
	(A1_N * A2_N * !B2 * !X)	-0.00337	-0.00339	-0.00338
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00346	0.00294	0.00290
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00274	-0.00329	-0.00333

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)	-0.00142	-0.00142	-0.00142
	(A1_N * A2_N * B2 * !X)	0.00163	0.00163	0.00163
	(A1_N * A2_N * !B2 * !X)	-0.00132	-0.00138	-0.00138
	(A1_N * A2_N * !B2 * !X)	0.00166	0.00166	0.00165
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00141	-0.00142	-0.00142
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00162	0.00164	0.00163
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00159	-0.00159	-0.00159
	(A1_N * A2_N * B2 * !X)	0.00168	0.00169	0.00168
	(A1_N * A2_N * !B2 * !X)	-0.00149	-0.00156	-0.00155
	(A1_N * A2_N * !B2 * !X)	0.00170	0.00171	0.00170
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00159	-0.00160	-0.00159
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00167	0.00169	0.00168
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00286	-0.00288	-0.00287
	(A1_N * A2_N * B2 * !X)	0.00333	0.00337	0.00334
	(A1_N * A2_N * !B2 * !X)	-0.00263	-0.00279	-0.00280
	(A1_N * A2_N * !B2 * !X)	0.00345	0.00343	0.00341
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00287	-0.00288	-0.00287
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00332	0.00334	0.00334

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)	0.00154	0.00154	0.00154
	(A1_N * A2_N * B1 * !X)	-0.00162	-0.00165	-0.00166
	(A1_N * A2_N * !B1 * !X)	0.00148	0.00150	0.00149
	(A1_N * A2_N * !B1 * !X)	-0.00166	-0.00167	-0.00167
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00163	0.00165	0.00163
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00090	-0.00090	-0.00089
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00173	0.00175	0.00173
	(A1_N * A2_N * B1 * !X)	-0.00158	-0.00162	-0.00162
	(A1_N * A2_N * !B1 * !X)	0.00169	0.00171	0.00170
	(A1_N * A2_N * !B1 * !X)	-0.00162	-0.00164	-0.00163
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00172	0.00173	0.00171
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00097	-0.00097	-0.00096
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00280	0.00279	0.00280
	(A1_N * A2_N * B1 * !X)	-0.00320	-0.00330	-0.00332
	(A1_N * A2_N * !B1 * !X)	0.00272	0.00276	0.00273
	(A1_N * A2_N * !B1 * !X)	-0.00335	-0.00337	-0.00335
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00307	0.00308	0.00306
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00175	-0.00174	-0.00173

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)	-0.00152	-0.00152	-0.00152
	(A1_N * A2_N * B1 * !X)	0.00167	0.00167	0.00167
	(A1_N * A2_N * !B1 * !X)	-0.00141	-0.00148	-0.00148
	(A1_N * A2_N * !B1 * !X)	0.00172	0.00169	0.00169
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00159	-0.00159	-0.00162
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00094	0.00094	0.00091
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00170	-0.00171	-0.00171
	(A1_N * A2_N * B1 * !X)	0.00162	0.00163	0.00163
	(A1_N * A2_N * !B1 * !X)	-0.00160	-0.00168	-0.00167
	(A1_N * A2_N * !B1 * !X)	0.00165	0.00166	0.00165
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00167	-0.00168	-0.00171
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00101	0.00101	0.00098
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00278	-0.00279	-0.00278
	(A1_N * A2_N * B1 * !X)	0.00332	0.00332	0.00332
	(A1_N * A2_N * !B1 * !X)	-0.00256	-0.00271	-0.00271
	(A1_N * A2_N * !B1 * !X)	0.00341	0.00339	0.00338
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00291	-0.00292	-0.00303
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00187	0.00187	0.00178

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311ai_1	11.18880
sky130_fd_sc_hs__o311ai_2	19.18080
sky130_fd_sc_hs__o311ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	Y
sky130_fd_sc_hs__o311ai_1	0.00254	0.00269	0.00261	0.00271	0.00277	0.49592
sky130_fd_sc_hs__o311ai_2	0.00496	0.00509	0.00516	0.00516	0.00525	0.83036
sky130_fd_sc_hs__o311ai_4	0.00976	0.00980	0.01029	0.00792	0.00748	1.58616

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.03163	0.18882
sky130_fd_sc_hs__o311ai_2	0.00000	0.06326	0.37763
sky130_fd_sc_hs__o311ai_4	0.00000	0.07144	0.50351

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)	0.14278	0.98112	10.12820
	A2->Y (FR)	0.13543	1.00685	10.69710
	A3->Y (FR)	0.11256	0.97344	10.56840
	B1->Y (FR)	0.03332	0.52758	6.37532
	C1->Y (FR)	0.02743	0.52057	6.35892
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.16169	0.87686	9.93957
	A2->Y (FR)	0.14836	0.89388	10.49080
	A3->Y (FR)	0.12369	0.87369	10.57430
	B1->Y (FR)	0.03364	0.47318	6.18085
	C1->Y (FR)	0.02655	0.46558	6.18908
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.14399	0.74312	9.82772
	A2->Y (FR)	0.13487	0.77721	10.59960
	A3->Y (FR)	0.10534	0.74800	10.55210
	B1->Y (FR)	0.04548	0.55065	8.03770
	C1->Y (FR)	0.03155	0.54370	8.14234

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.03706	0.27627	2.57612
	A2->Y (RF)	0.03756	0.27976	2.66628
	A3->Y (RF)	0.03050	0.26728	2.62234
	B1->Y (RF)	0.03200	0.32195	3.29423
	C1->Y (RF)	0.02736	0.33093	3.43832
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.04479	0.24681	2.52050
	A2->Y (RF)	0.04186	0.23574	2.48878
	A3->Y (RF)	0.03474	0.22383	2.45050
	B1->Y (RF)	0.03905	0.29117	3.24794
	C1->Y (RF)	0.03311	0.33507	3.87711
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.04734	0.19856	2.44053
	A2->Y (RF)	0.04263	0.18990	2.43171
	A3->Y (RF)	0.03245	0.17521	2.38164
	B1->Y (RF)	0.04217	0.29835	3.99984
	C1->Y (RF)	0.03275	0.31491	4.38537

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00114	0.00103	0.00867
	A1	0.01001	0.00992	0.01755
	A2	0.00124	0.00120	0.00887
	A2	0.00917	0.00913	0.01683
	A3	0.00122	0.00203	0.01766
	A3	0.00814	0.00898	0.02463
	B1	-0.00002	0.00167	0.02610
	B1	0.00551	0.00721	0.03179
	C1	-0.00062	0.00109	0.02483
	C1	0.00403	0.00568	0.02971
sky130_fd_sc_hs__o311ai_2	A1	0.00276	0.00242	0.01682
	A1	0.02080	0.02048	0.03484
	A2	0.00279	0.00266	0.01719
	A2	0.01884	0.01872	0.03318
	A3	0.00275	0.00386	0.03101
	A3	0.01685	0.01795	0.04515
	B1	0.00007	0.00397	0.04812
	B1	0.01105	0.01492	0.05906
	C1	-0.00118	0.00254	0.04418
	C1	0.00779	0.01149	0.05488

sky130_fd_sc_hs__o311ai_4	**A1**	0.00373	0.00338	0.02788
	A1	0.03899	0.03872	0.06309
	A2	0.00399	0.00380	0.02775
	A2	0.03520	0.03503	0.05909
	A3	0.00396	0.00610	0.05131
	A3	0.03158	0.03374	0.07903
	B1	0.00004	0.00253	0.04778
	B1	0.01819	0.02074	0.06613
	C1	-0.00281	0.00027	0.04393
	C1	0.01083	0.01395	0.05806

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.01177	0.01174	0.01763
	A1	0.00281	0.00277	0.00860
	A2	0.01013	0.01014	0.01560
	A2	0.00207	0.00206	0.00756
	A3	0.00815	0.00830	0.01371
	A3	0.00106	0.00118	0.00654
	B1	0.00649	0.00666	0.01389
	B1	0.00092	0.00105	0.00828
	C1	0.00551	0.00592	0.01497
	C1	0.00087	0.00124	0.01030

sky130_fd_sc_hs__o311ai_2	**A1**	0.02421	0.02394	0.03536
	A1	0.00604	0.00578	0.01704
	A2	0.02001	0.02004	0.03118
	A2	0.00369	0.00368	0.01463
	A3	0.01627	0.01652	0.02696
	A3	0.00183	0.00202	0.01251
	B1	0.01263	0.01293	0.02806
	B1	0.00155	0.00185	0.01685
	C1	0.01042	0.01109	0.02779
	C1	0.00147	0.00215	0.01873
sky130_fd_sc_hs__o311ai_4	**A1**	0.04431	0.04417	0.06804
	A1	0.00880	0.00854	0.03260
	A2	0.03724	0.03713	0.05971
	A2	0.00549	0.00535	0.02757
	A3	0.02858	0.02934	0.05088
	A3	0.00033	0.00098	0.02239
	B1	0.02059	0.02103	0.03525
	B1	0.00224	0.00260	0.01643
	C1	0.01581	0.01677	0.03305
	C1	0.00223	0.00314	0.01946

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)**	0.00160	0.00161	0.00160
	(A2 * B1 * !C1 * Y)	-0.00176	-0.00181	-0.00180
	(A2 * A3 * B1 * C1 * !Y)	0.00161	0.00161	0.00160
	(A2 * A3 * B1 * C1 * !Y)	-0.00175	-0.00181	-0.00180
	(A2 * !B1 * Y)	0.00160	0.00161	0.00160
	(A2 * !B1 * Y)	-0.00176	-0.00181	-0.00180
	(A2 * !A3 * B1 * C1 * !Y)	0.00162	0.00161	0.00160
	(A2 * !A3 * B1 * C1 * !Y)	-0.00172	-0.00180	-0.00180
	(!A2 * A3 * B1 * C1 * !Y)	0.00162	0.00161	0.00160
	(!A2 * A3 * B1 * C1 * !Y)	-0.00161	-0.00176	-0.00175
	(!A2 * A3 * B1 * !C1 * Y)	0.00160	0.00161	0.00160
	(!A2 * A3 * B1 * !C1 * Y)	-0.00163	-0.00175	-0.00175
	(!A2 * A3 * !B1 * Y)	0.00160	0.00161	0.00160
	(!A2 * A3 * !B1 * Y)	-0.00163	-0.00175	-0.00175
	(!A2 * !A3 * B1 * !C1 * Y)	0.00154	0.00154	0.00154
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00182	-0.00182	-0.00182
	(!A2 * !A3 * !B1 * C1 * Y)	0.00153	0.00155	0.00154
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00182	-0.00183	-0.00182
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00153	0.00155	0.00154
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00312	0.00314	0.00313
	(A2 * B1 * !C1 * Y)	-0.00344	-0.00358	-0.00358
	(A2 * A3 * B1 * C1 * !Y)	0.00314	0.00314	0.00313
	(A2 * A3 * B1 * C1 * !Y)	-0.00341	-0.00357	-0.00357
	(A2 * !B1 * Y)	0.00312	0.00314	0.00313
	(A2 * !B1 * Y)	-0.00344	-0.00358	-0.00358
	(A2 * !A3 * B1 * C1 * !Y)	0.00318	0.00314	0.00313
	(A2 * !A3 * B1 * C1 * !Y)	-0.00335	-0.00357	-0.00357
	(!A2 * A3 * B1 * C1 * !Y)	0.00320	0.00316	0.00313
	(!A2 * A3 * B1 * C1 * !Y)	-0.00315	-0.00349	-0.00346
	(!A2 * A3 * B1 * !C1 * Y)	0.00313	0.00315	0.00312
	(!A2 * A3 * B1 * !C1 * Y)	-0.00321	-0.00350	-0.00347
	(!A2 * A3 * !B1 * Y)	0.00313	0.00315	0.00312
	(!A2 * A3 * !B1 * Y)	-0.00321	-0.00350	-0.00347
	(!A2 * !A3 * B1 * !C1 * Y)	0.00297	0.00300	0.00297
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00365	-0.00366	-0.00364
	(!A2 * !A3 * !B1 * C1 * Y)	0.00299	0.00301	0.00300
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00363	-0.00365	-0.00364
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00299	0.00301	0.00300
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00363	-0.00364	-0.00364

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00624	0.00629	0.00625
	(A2 * B1 * !C1 * Y)	-0.00688	-0.00714	-0.00713
	(A2 * A3 * B1 * C1 * !Y)	0.00626	0.00629	0.00626
	(A2 * A3 * B1 * C1 * !Y)	-0.00686	-0.00714	-0.00713
	(A2 * !B1 * Y)	0.00624	0.00629	0.00625
	(A2 * !B1 * Y)	-0.00688	-0.00714	-0.00713
	(A2 * !A3 * B1 * C1 * !Y)	0.00632	0.00629	0.00626
	(A2 * !A3 * B1 * C1 * !Y)	-0.00675	-0.00714	-0.00713
	(!A2 * A3 * B1 * C1 * !Y)	0.00636	0.00630	0.00626
	(!A2 * A3 * B1 * C1 * !Y)	-0.00640	-0.00699	-0.00692
	(!A2 * A3 * B1 * !C1 * Y)	0.00626	0.00628	0.00625
	(!A2 * A3 * B1 * !C1 * Y)	-0.00648	-0.00699	-0.00692
	(!A2 * A3 * !B1 * Y)	0.00626	0.00628	0.00625
	(!A2 * A3 * !B1 * Y)	-0.00648	-0.00699	-0.00692
	(!A2 * !A3 * B1 * !C1 * Y)	0.00590	0.00598	0.00592
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00726	-0.00732	-0.00727
	(!A2 * !A3 * !B1 * C1 * Y)	0.00594	0.00599	0.00593
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00728	-0.00732	-0.00728
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00593	0.00599	0.00592
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00728	-0.00732	-0.00728

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)**	-0.00160	-0.00161	-0.00160
	(A2 * B1 * !C1 * Y)	0.00180	0.00181	0.00180
	(A2 * A3 * B1 * C1 * !Y)	-0.00160	-0.00161	-0.00160
	(A2 * A3 * B1 * C1 * !Y)	0.00180	0.00181	0.00180
	(A2 * !B1 * Y)	-0.00160	-0.00161	-0.00160
	(A2 * !B1 * Y)	0.00180	0.00181	0.00180
	(A2 * !A3 * B1 * C1 * !Y)	-0.00160	-0.00160	-0.00160
	(A2 * !A3 * B1 * C1 * !Y)	0.00180	0.00181	0.00180
	(!A2 * A3 * B1 * C1 * !Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * B1 * C1 * !Y)	0.00175	0.00176	0.00175
	(!A2 * A3 * B1 * !C1 * Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * B1 * !C1 * Y)	0.00175	0.00175	0.00175
	(!A2 * A3 * !B1 * Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * !B1 * Y)	0.00175	0.00175	0.00175
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00142	-0.00154	-0.00154
	(!A2 * !A3 * B1 * !C1 * Y)	0.00182	0.00184	0.00182
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00147	-0.00155	-0.00154
	(!A2 * !A3 * !B1 * C1 * Y)	0.00183	0.00184	0.00183
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00147	-0.00155	-0.00154
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00183	0.00184	0.00182

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00311	-0.00312	-0.00312
	(A2 * B1 * !C1 * Y)	0.00356	0.00359	0.00358
	(A2 * A3 * B1 * C1 * !Y)	-0.00312	-0.00313	-0.00312
	(A2 * A3 * B1 * C1 * !Y)	0.00356	0.00358	0.00357
	(A2 * !B1 * Y)	-0.00311	-0.00312	-0.00312
	(A2 * !B1 * Y)	0.00356	0.00359	0.00358
	(A2 * !A3 * B1 * C1 * !Y)	-0.00312	-0.00312	-0.00312
	(A2 * !A3 * B1 * C1 * !Y)	0.00356	0.00358	0.00357
	(!A2 * A3 * B1 * C1 * !Y)	-0.00313	-0.00314	-0.00312
	(!A2 * A3 * B1 * C1 * !Y)	0.00346	0.00349	0.00346
	(!A2 * A3 * B1 * !C1 * Y)	-0.00312	-0.00313	-0.00312
	(!A2 * A3 * B1 * !C1 * Y)	0.00347	0.00350	0.00347
	(!A2 * A3 * !B1 * Y)	-0.00311	-0.00313	-0.00312
	(!A2 * A3 * !B1 * Y)	0.00345	0.00350	0.00347
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00268	-0.00293	-0.00297
	(!A2 * !A3 * B1 * !C1 * Y)	0.00366	0.00366	0.00365
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00276	-0.00297	-0.00300
	(!A2 * !A3 * !B1 * C1 * Y)	0.00363	0.00368	0.00365
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00276	-0.00298	-0.00300
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00363	0.00368	0.00365

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00624	-0.00626	-0.00624
	(A2 * B1 * !C1 * Y)	0.00713	0.00717	0.00713
	(A2 * A3 * B1 * C1 * !Y)	-0.00624	-0.00626	-0.00624
	(A2 * A3 * B1 * C1 * !Y)	0.00713	0.00717	0.00713
	(A2 * !B1 * Y)	-0.00624	-0.00626	-0.00624
	(A2 * !B1 * Y)	0.00713	0.00717	0.00713
	(A2 * !A3 * B1 * C1 * !Y)	-0.00624	-0.00626	-0.00624
	(A2 * !A3 * B1 * C1 * !Y)	0.00713	0.00717	0.00713
	(!A2 * A3 * B1 * C1 * !Y)	-0.00623	-0.00627	-0.00624
	(!A2 * A3 * B1 * C1 * !Y)	0.00689	0.00699	0.00692
	(!A2 * A3 * B1 * !C1 * Y)	-0.00623	-0.00627	-0.00624
	(!A2 * A3 * B1 * !C1 * Y)	0.00690	0.00699	0.00692
	(!A2 * A3 * !B1 * Y)	-0.00623	-0.00627	-0.00624
	(!A2 * A3 * !B1 * Y)	0.00690	0.00699	0.00692
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00548	-0.00585	-0.00592
	(!A2 * !A3 * B1 * !C1 * Y)	0.00728	0.00732	0.00729
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00561	-0.00595	-0.00593
	(!A2 * !A3 * !B1 * C1 * Y)	0.00728	0.00734	0.00730
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00562	-0.00596	-0.00592
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00728	0.00736	0.00730

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)**	0.00166	0.00170	0.00163
	(A1 * A3 * B1 * C1 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * A3 * B1 * !C1 * Y)	0.00153	0.00154	0.00152
	(A1 * A3 * B1 * !C1 * Y)	-0.00133	-0.00133	-0.00132
	(A1 * A3 * !B1 * Y)	0.00153	0.00154	0.00153
	(A1 * A3 * !B1 * Y)	-0.00133	-0.00133	-0.00132
	(A1 * !A3 * B1 * C1 * !Y)	0.00162	0.00163	0.00160
	(A1 * !A3 * B1 * C1 * !Y)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * B1 * !C1 * Y)	0.00152	0.00153	0.00152
	(A1 * !A3 * B1 * !C1 * Y)	-0.00179	-0.00183	-0.00183
	(A1 * !A3 * !B1 * C1 * Y)	0.00152	0.00153	0.00152
	(A1 * !A3 * !B1 * C1 * Y)	-0.00179	-0.00184	-0.00183
	(A1 * !A3 * !B1 * !C1 * Y)	0.00152	0.00155	0.00152
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00179	-0.00184	-0.00183
	(!A1 * A3 * B1 * C1 * !Y)	0.00190	0.00161	0.00160
	(!A1 * A3 * B1 * C1 * !Y)	-0.00143	-0.00175	-0.00176
	(!A1 * A3 * B1 * !C1 * Y)	0.00152	0.00153	0.00152
	(!A1 * A3 * B1 * !C1 * Y)	-0.00179	-0.00183	-0.00183
	(!A1 * A3 * !B1 * Y)	0.00152	0.00153	0.00152
	(!A1 * A3 * !B1 * Y)	-0.00178	-0.00183	-0.00183
	(!A1 * !A3 * B1 * !C1 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00185	-0.00186	-0.00185
	(!A1 * !A3 * !B1 * C1 * Y)	0.00146	0.00146	0.00146
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00185	-0.00185	-0.00185
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00148	0.00149	0.00148
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00185	-0.00186	-0.00185

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00331	0.00334	0.00325
	(A1 * A3 * B1 * C1 * !Y)	-0.00240	-0.00241	-0.00240
	(A1 * A3 * B1 * !C1 * Y)	0.00313	0.00318	0.00315
	(A1 * A3 * B1 * !C1 * Y)	-0.00267	-0.00267	-0.00266
	(A1 * A3 * !B1 * Y)	0.00313	0.00318	0.00315
	(A1 * A3 * !B1 * Y)	-0.00267	-0.00267	-0.00266
	(A1 * !A3 * B1 * C1 * !Y)	0.00322	0.00323	0.00319
	(A1 * !A3 * B1 * C1 * !Y)	-0.00205	-0.00204	-0.00204
	(A1 * !A3 * B1 * !C1 * Y)	0.00314	0.00318	0.00315
	(A1 * !A3 * B1 * !C1 * Y)	-0.00351	-0.00361	-0.00362
	(A1 * !A3 * !B1 * C1 * Y)	0.00315	0.00318	0.00315
	(A1 * !A3 * !B1 * C1 * Y)	-0.00351	-0.00363	-0.00362
	(A1 * !A3 * !B1 * !C1 * Y)	0.00314	0.00317	0.00315
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00351	-0.00365	-0.00363
	(!A1 * A3 * B1 * C1 * !Y)	0.00377	0.00318	0.00316
	(!A1 * A3 * B1 * C1 * !Y)	-0.00300	-0.00365	-0.00366
	(!A1 * A3 * B1 * !C1 * Y)	0.00315	0.00315	0.00315
	(!A1 * A3 * B1 * !C1 * Y)	-0.00357	-0.00366	-0.00366
	(!A1 * A3 * !B1 * Y)	0.00315	0.00315	0.00315
	(!A1 * A3 * !B1 * Y)	-0.00357	-0.00366	-0.00366
	(!A1 * !A3 * B1 * !C1 * Y)	0.00302	0.00305	0.00302
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00371	-0.00373	-0.00371
	(!A1 * !A3 * !B1 * C1 * Y)	0.00299	0.00302	0.00301
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00369	-0.00372	-0.00371
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00299	0.00299	0.00299
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00370	-0.00371	-0.00371

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00647	0.00659	0.00639
	(A1 * A3 * B1 * C1 * !Y)	-0.00458	-0.00461	-0.00459
	(A1 * A3 * B1 * !C1 * Y)	0.00617	0.00626	0.00619
	(A1 * A3 * B1 * !C1 * Y)	-0.00520	-0.00520	-0.00518
	(A1 * A3 * !B1 * Y)	0.00617	0.00626	0.00619
	(A1 * A3 * !B1 * Y)	-0.00520	-0.00520	-0.00518
	(A1 * !A3 * B1 * C1 * !Y)	0.00630	0.00637	0.00629
	(A1 * !A3 * B1 * C1 * !Y)	-0.00390	-0.00394	-0.00393
	(A1 * !A3 * B1 * !C1 * Y)	0.00616	0.00620	0.00618
	(A1 * !A3 * B1 * !C1 * Y)	-0.00693	-0.00712	-0.00710
	(A1 * !A3 * !B1 * C1 * Y)	0.00616	0.00620	0.00618
	(A1 * !A3 * !B1 * C1 * Y)	-0.00693	-0.00712	-0.00711
	(A1 * !A3 * !B1 * !C1 * Y)	0.00616	0.00624	0.00618
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00693	-0.00712	-0.00711
	(!A1 * A3 * B1 * C1 * !Y)	0.00759	0.00637	0.00627
	(!A1 * A3 * B1 * C1 * !Y)	-0.00569	-0.00712	-0.00711
	(!A1 * A3 * B1 * !C1 * Y)	0.00618	0.00626	0.00617
	(!A1 * A3 * B1 * !C1 * Y)	-0.00701	-0.00725	-0.00719
	(!A1 * A3 * !B1 * Y)	0.00618	0.00627	0.00617
	(!A1 * A3 * !B1 * Y)	-0.00701	-0.00725	-0.00719
	(!A1 * !A3 * B1 * !C1 * Y)	0.00582	0.00580	0.00581
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00731	-0.00728	-0.00729
	(!A1 * !A3 * !B1 * C1 * Y)	0.00588	0.00592	0.00590
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00727	-0.00730	-0.00729
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00589	0.00595	0.00591
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00727	-0.00732	-0.00729

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

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

sky130_fd_sc_hs__o311ai_1	**(A1 * A3 * B1 * C1 * !Y)**	-0.00159	-0.00159	-0.00159
	(A1 * A3 * B1 * C1 * !Y)	0.00115	0.00115	0.00114
	(A1 * A3 * B1 * !C1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * A3 * B1 * !C1 * Y)	0.00133	0.00133	0.00132
	(A1 * A3 * !B1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * A3 * !B1 * Y)	0.00133	0.00133	0.00132
	(A1 * !A3 * B1 * C1 * !Y)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * B1 * C1 * !Y)	0.00100	0.00100	0.00101
	(A1 * !A3 * B1 * !C1 * Y)	-0.00152	-0.00152	-0.00152
	(A1 * !A3 * B1 * !C1 * Y)	0.00182	0.00183	0.00183
	(A1 * !A3 * !B1 * C1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * !A3 * !B1 * C1 * Y)	0.00182	0.00184	0.00183
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00152	-0.00153	-0.00152
	(A1 * !A3 * !B1 * !C1 * Y)	0.00182	0.00184	0.00183
	(!A1 * A3 * B1 * C1 * !Y)	-0.00159	-0.00159	-0.00158
	(!A1 * A3 * B1 * C1 * !Y)	0.00176	0.00176	0.00176
	(!A1 * A3 * B1 * !C1 * Y)	-0.00152	-0.00153	-0.00152
	(!A1 * A3 * B1 * !C1 * Y)	0.00183	0.00184	0.00183
	(!A1 * A3 * !B1 * Y)	-0.00152	-0.00153	-0.00152
	(!A1 * A3 * !B1 * Y)	0.00182	0.00184	0.00183
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00132	-0.00144	-0.00143
	(!A1 * !A3 * B1 * !C1 * Y)	0.00185	0.00187	0.00186
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00138	-0.00146	-0.00146
	(!A1 * !A3 * !B1 * C1 * Y)	0.00186	0.00187	0.00186
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00148	-0.00147
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00186	0.00187	0.00186

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00319	-0.00320	-0.00320
	(A1 * A3 * B1 * C1 * !Y)	0.00240	0.00241	0.00240
	(A1 * A3 * B1 * !C1 * Y)	-0.00313	-0.00315	-0.00314
	(A1 * A3 * B1 * !C1 * Y)	0.00267	0.00267	0.00266
	(A1 * A3 * !B1 * Y)	-0.00313	-0.00315	-0.00314
	(A1 * A3 * !B1 * Y)	0.00267	0.00267	0.00266
	(A1 * !A3 * B1 * C1 * !Y)	-0.00315	-0.00316	-0.00314
	(A1 * !A3 * B1 * C1 * !Y)	0.00209	0.00210	0.00210
	(A1 * !A3 * B1 * !C1 * Y)	-0.00314	-0.00314	-0.00315
	(A1 * !A3 * B1 * !C1 * Y)	0.00361	0.00361	0.00362
	(A1 * !A3 * !B1 * C1 * Y)	-0.00314	-0.00315	-0.00314
	(A1 * !A3 * !B1 * C1 * Y)	0.00361	0.00363	0.00362
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00314	-0.00316	-0.00315
	(A1 * !A3 * !B1 * !C1 * Y)	0.00361	0.00365	0.00363
	(!A1 * A3 * B1 * C1 * !Y)	-0.00315	-0.00317	-0.00315
	(!A1 * A3 * B1 * C1 * !Y)	0.00365	0.00369	0.00366
	(!A1 * A3 * B1 * !C1 * Y)	-0.00315	-0.00314	-0.00314
	(!A1 * A3 * B1 * !C1 * Y)	0.00366	0.00366	0.00366
	(!A1 * A3 * !B1 * Y)	-0.00315	-0.00314	-0.00314
	(!A1 * A3 * !B1 * Y)	0.00366	0.00366	0.00366
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00269	-0.00299	-0.00300
	(!A1 * !A3 * B1 * !C1 * Y)	0.00373	0.00373	0.00372
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00277	-0.00299	-0.00301
	(!A1 * !A3 * !B1 * C1 * Y)	0.00370	0.00374	0.00372
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00277	-0.00299	-0.00299
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00370	0.00374	0.00372

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00628	-0.00631	-0.00629
	(A1 * A3 * B1 * C1 * !Y)	0.00458	0.00461	0.00459
	(A1 * A3 * B1 * !C1 * Y)	-0.00617	-0.00619	-0.00617
	(A1 * A3 * B1 * !C1 * Y)	0.00520	0.00520	0.00518
	(A1 * A3 * !B1 * Y)	-0.00617	-0.00619	-0.00617
	(A1 * A3 * !B1 * Y)	0.00520	0.00520	0.00518
	(A1 * !A3 * B1 * C1 * !Y)	-0.00619	-0.00625	-0.00618
	(A1 * !A3 * B1 * C1 * !Y)	0.00395	0.00401	0.00404
	(A1 * !A3 * B1 * !C1 * Y)	-0.00615	-0.00618	-0.00617
	(A1 * !A3 * B1 * !C1 * Y)	0.00707	0.00712	0.00710
	(A1 * !A3 * !B1 * C1 * Y)	-0.00616	-0.00618	-0.00617
	(A1 * !A3 * !B1 * C1 * Y)	0.00710	0.00712	0.00711
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00616	-0.00618	-0.00617
	(A1 * !A3 * !B1 * !C1 * Y)	0.00711	0.00712	0.00711
	(!A1 * A3 * B1 * C1 * !Y)	-0.00623	-0.00625	-0.00623
	(!A1 * A3 * B1 * C1 * !Y)	0.00707	0.00712	0.00711
	(!A1 * A3 * B1 * !C1 * Y)	-0.00614	-0.00619	-0.00616
	(!A1 * A3 * B1 * !C1 * Y)	0.00716	0.00725	0.00719
	(!A1 * A3 * !B1 * Y)	-0.00614	-0.00619	-0.00616
	(!A1 * A3 * !B1 * Y)	0.00716	0.00725	0.00719
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00537	-0.00580	-0.00581
	(!A1 * !A3 * B1 * !C1 * Y)	0.00733	0.00733	0.00731
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00553	-0.00587	-0.00590
	(!A1 * !A3 * !B1 * C1 * Y)	0.00733	0.00735	0.00731
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00553	-0.00588	-0.00591
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00733	0.00734	0.00731

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)**	0.00170	0.00172	0.00171
	(A2 * B1 * C1 * !Y)	-0.00084	-0.00085	-0.00085
	(A2 * B1 * !C1 * Y)	0.00155	0.00156	0.00155
	(A2 * B1 * !C1 * Y)	-0.00168	-0.00174	-0.00174
	(A2 * !B1 * C1 * Y)	0.00155	0.00158	0.00155
	(A2 * !B1 * C1 * Y)	-0.00168	-0.00174	-0.00174
	(A2 * !B1 * !C1 * Y)	0.00155	0.00158	0.00155
	(A2 * !B1 * !C1 * Y)	-0.00168	-0.00175	-0.00173
	(A1 * !A2 * B1 * C1 * !Y)	0.00170	0.00172	0.00171
	(A1 * !A2 * B1 * C1 * !Y)	-0.00084	-0.00085	-0.00084
	(A1 * !A2 * B1 * !C1 * Y)	0.00155	0.00155	0.00155
	(A1 * !A2 * B1 * !C1 * Y)	-0.00153	-0.00168	-0.00167
	(A1 * !A2 * !B1 * C1 * Y)	0.00155	0.00157	0.00155
	(A1 * !A2 * !B1 * C1 * Y)	-0.00153	-0.00168	-0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	0.00155	0.00157	0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00154	-0.00168	-0.00168
	(!A1 * !A2 * B1 * !C1 * Y)	0.00146	0.00147	0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00175	-0.00176	-0.00176
	(!A1 * !A2 * !B1 * C1 * Y)	0.00150	0.00152	0.00151
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00175	-0.00176	-0.00176
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00146	0.00149	0.00147
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00175	-0.00177	-0.00176

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00350	0.00354	0.00352
	(A2 * B1 * C1 * !Y)	-0.00174	-0.00176	-0.00175
	(A2 * B1 * !C1 * Y)	0.00311	0.00315	0.00311
	(A2 * B1 * !C1 * Y)	-0.00351	-0.00363	-0.00362
	(A2 * !B1 * C1 * Y)	0.00311	0.00315	0.00311
	(A2 * !B1 * C1 * Y)	-0.00352	-0.00363	-0.00362
	(A2 * !B1 * !C1 * Y)	0.00311	0.00312	0.00311
	(A2 * !B1 * !C1 * Y)	-0.00352	-0.00364	-0.00363
	(A1 * !A2 * B1 * C1 * !Y)	0.00350	0.00355	0.00352
	(A1 * !A2 * B1 * C1 * !Y)	-0.00174	-0.00176	-0.00174
	(A1 * !A2 * B1 * !C1 * Y)	0.00310	0.00315	0.00311
	(A1 * !A2 * B1 * !C1 * Y)	-0.00325	-0.00351	-0.00349
	(A1 * !A2 * !B1 * C1 * Y)	0.00311	0.00315	0.00311
	(A1 * !A2 * !B1 * C1 * Y)	-0.00327	-0.00352	-0.00350
	(A1 * !A2 * !B1 * !C1 * Y)	0.00311	0.00311	0.00311
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00328	-0.00354	-0.00351
	(!A1 * !A2 * B1 * !C1 * Y)	0.00296	0.00299	0.00296
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00366	-0.00369	-0.00367
	(!A1 * !A2 * !B1 * C1 * Y)	0.00297	0.00300	0.00298
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00366	-0.00368	-0.00367
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00297	0.00300	0.00298
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00366	-0.00368	-0.00367

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00711	0.00721	0.00715
	(A2 * B1 * C1 * !Y)	-0.00346	-0.00351	-0.00348
	(A2 * B1 * !C1 * Y)	0.00595	0.00601	0.00597
	(A2 * B1 * !C1 * Y)	-0.00731	-0.00759	-0.00758
	(A2 * !B1 * C1 * Y)	0.00594	0.00600	0.00597
	(A2 * !B1 * C1 * Y)	-0.00730	-0.00759	-0.00758
	(A2 * !B1 * !C1 * Y)	0.00595	0.00605	0.00596
	(A2 * !B1 * !C1 * Y)	-0.00732	-0.00761	-0.00759
	(A1 * !A2 * B1 * C1 * !Y)	0.00712	0.00722	0.00715
	(A1 * !A2 * B1 * C1 * !Y)	-0.00346	-0.00351	-0.00347
	(A1 * !A2 * B1 * !C1 * Y)	0.00595	0.00598	0.00597
	(A1 * !A2 * B1 * !C1 * Y)	-0.00666	-0.00724	-0.00722
	(A1 * !A2 * !B1 * C1 * Y)	0.00595	0.00598	0.00597
	(A1 * !A2 * !B1 * C1 * Y)	-0.00667	-0.00725	-0.00723
	(A1 * !A2 * !B1 * !C1 * Y)	0.00596	0.00605	0.00596
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00671	-0.00732	-0.00729
	(!A1 * !A2 * B1 * !C1 * Y)	0.00559	0.00562	0.00560
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00770	-0.00772	-0.00770
	(!A1 * !A2 * !B1 * C1 * Y)	0.00564	0.00574	0.00569
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00766	-0.00774	-0.00770
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00562	0.00571	0.00566
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00767	-0.00774	-0.00770

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)**	-0.00165	-0.00166	-0.00170
	(A2 * B1 * C1 * !Y)	0.00090	0.00090	0.00086
	(A2 * B1 * !C1 * Y)	-0.00155	-0.00156	-0.00155
	(A2 * B1 * !C1 * Y)	0.00173	0.00174	0.00174
	(A2 * !B1 * C1 * Y)	-0.00155	-0.00156	-0.00155
	(A2 * !B1 * C1 * Y)	0.00173	0.00174	0.00174
	(A2 * !B1 * !C1 * Y)	-0.00155	-0.00156	-0.00155
	(A2 * !B1 * !C1 * Y)	0.00172	0.00175	0.00173
	(A1 * !A2 * B1 * C1 * !Y)	-0.00160	-0.00161	-0.00169
	(A1 * !A2 * B1 * C1 * !Y)	0.00092	0.00092	0.00086
	(A1 * !A2 * B1 * !C1 * Y)	-0.00154	-0.00155	-0.00155
	(A1 * !A2 * B1 * !C1 * Y)	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * C1 * Y)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * !B1 * C1 * Y)	0.00166	0.00168	0.00167
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00155	-0.00155	-0.00155
	(A1 * !A2 * !B1 * !C1 * Y)	0.00167	0.00168	0.00168
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00134	-0.00147	-0.00146
	(!A1 * !A2 * B1 * !C1 * Y)	0.00175	0.00177	0.00176
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00141	-0.00151	-0.00149
	(!A1 * !A2 * !B1 * C1 * Y)	0.00176	0.00177	0.00176
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00141	-0.00149	-0.00147
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00176	0.00177	0.00176

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00338	-0.00340	-0.00350
	(A2 * B1 * C1 * !Y)	0.00184	0.00186	0.00178
	(A2 * B1 * !C1 * Y)	-0.00310	-0.00311	-0.00310
	(A2 * B1 * !C1 * Y)	0.00361	0.00363	0.00362
	(A2 * !B1 * C1 * Y)	-0.00310	-0.00311	-0.00310
	(A2 * !B1 * C1 * Y)	0.00361	0.00363	0.00362
	(A2 * !B1 * !C1 * Y)	-0.00309	-0.00311	-0.00310
	(A2 * !B1 * !C1 * Y)	0.00361	0.00364	0.00363
	(A1 * !A2 * B1 * C1 * !Y)	-0.00321	-0.00323	-0.00346
	(A1 * !A2 * B1 * C1 * !Y)	0.00194	0.00195	0.00179
	(A1 * !A2 * B1 * !C1 * Y)	-0.00310	-0.00312	-0.00310
	(A1 * !A2 * B1 * !C1 * Y)	0.00349	0.00351	0.00349
	(A1 * !A2 * !B1 * C1 * Y)	-0.00310	-0.00312	-0.00310
	(A1 * !A2 * !B1 * C1 * Y)	0.00349	0.00352	0.00350
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00310	-0.00311	-0.00310
	(A1 * !A2 * !B1 * !C1 * Y)	0.00350	0.00354	0.00351
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00263	-0.00293	-0.00296
	(!A1 * !A2 * B1 * !C1 * Y)	0.00366	0.00369	0.00368
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00274	-0.00295	-0.00298
	(!A1 * !A2 * !B1 * C1 * Y)	0.00366	0.00370	0.00368
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00275	-0.00295	-0.00298
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00366	0.00370	0.00368

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00688	-0.00689	-0.00711
	(A2 * B1 * C1 * !Y)	0.00375	0.00372	0.00355
	(A2 * B1 * !C1 * Y)	-0.00595	-0.00596	-0.00595
	(A2 * B1 * !C1 * Y)	0.00758	0.00759	0.00758
	(A2 * !B1 * C1 * Y)	-0.00594	-0.00597	-0.00595
	(A2 * !B1 * C1 * Y)	0.00758	0.00759	0.00758
	(A2 * !B1 * !C1 * Y)	-0.00595	-0.00596	-0.00595
	(A2 * !B1 * !C1 * Y)	0.00759	0.00761	0.00759
	(A1 * !A2 * B1 * C1 * !Y)	-0.00658	-0.00662	-0.00705
	(A1 * !A2 * B1 * C1 * !Y)	0.00383	0.00384	0.00354
	(A1 * !A2 * B1 * !C1 * Y)	-0.00594	-0.00597	-0.00595
	(A1 * !A2 * B1 * !C1 * Y)	0.00719	0.00724	0.00722
	(A1 * !A2 * !B1 * C1 * Y)	-0.00594	-0.00597	-0.00595
	(A1 * !A2 * !B1 * C1 * Y)	0.00721	0.00725	0.00723
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00594	-0.00597	-0.00595
	(A1 * !A2 * !B1 * !C1 * Y)	0.00727	0.00732	0.00729
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00521	-0.00561	-0.00560
	(!A1 * !A2 * B1 * !C1 * Y)	0.00774	0.00774	0.00772
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00537	-0.00569	-0.00569
	(!A1 * !A2 * !B1 * C1 * Y)	0.00773	0.00776	0.00772
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00538	-0.00570	-0.00566
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00773	0.00774	0.00772

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00146	0.00148	0.00147
	(A3 * !C1 * Y)	-0.00188	-0.00189	-0.00189
	(A2 * !A3 * !C1 * Y)	0.00146	0.00148	0.00147
	(A2 * !A3 * !C1 * Y)	-0.00188	-0.00189	-0.00189
	(A1 * !A2 * !A3 * !C1 * Y)	0.00147	0.00148	0.00147
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00188	-0.00189	-0.00189
	(!A1 * !A2 * !A3 * C1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00189	-0.00190	-0.00189
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00078	0.00078	0.00078
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00190	-0.00190	-0.00190
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00303	0.00306	0.00304
	(A3 * !C1 * Y)	-0.00369	-0.00372	-0.00370
	(A2 * !A3 * !C1 * Y)	0.00304	0.00305	0.00304
	(A2 * !A3 * !C1 * Y)	-0.00370	-0.00371	-0.00370
	(A1 * !A2 * !A3 * !C1 * Y)	0.00302	0.00307	0.00304
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00369	-0.00372	-0.00370
	(!A1 * !A2 * !A3 * C1 * Y)	0.00129	0.00130	0.00131
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00370	-0.00372	-0.00371
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00164	0.00165	0.00163
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00374	-0.00376	-0.00374
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00568	0.00572	0.00568
	(A3 * !C1 * Y)	-0.00427	-0.00429	-0.00427
	(A2 * !A3 * !C1 * Y)	0.00571	0.00574	0.00573
	(A2 * !A3 * !C1 * Y)	-0.00426	-0.00428	-0.00427
	(A1 * !A2 * !A3 * !C1 * Y)	0.00567	0.00570	0.00568
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00427	-0.00428	-0.00427
	(!A1 * !A2 * !A3 * C1 * Y)	0.00234	0.00235	0.00235
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00432	-0.00433	-0.00432
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00294	0.00298	0.00296
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00438	-0.00441	-0.00440

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00138	-0.00146	-0.00147
	(A3 * !C1 * Y)	0.00194	0.00190	0.00189
	(A2 * !A3 * !C1 * Y)	-0.00137	-0.00148	-0.00147
	(A2 * !A3 * !C1 * Y)	0.00195	0.00191	0.00189
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00135	-0.00148	-0.00147
	(A1 * !A2 * !A3 * !C1 * Y)	0.00196	0.00190	0.00189
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !A3 * C1 * Y)	0.00193	0.00194	0.00190
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00201	0.00199	0.00192
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00286	-0.00306	-0.00304
	(A3 * !C1 * Y)	0.00380	0.00374	0.00371
	(A2 * !A3 * !C1 * Y)	-0.00283	-0.00305	-0.00304
	(A2 * !A3 * !C1 * Y)	0.00383	0.00374	0.00371
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00277	-0.00307	-0.00304
	(A1 * !A2 * !A3 * !C1 * Y)	0.00388	0.00374	0.00371
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00124	-0.00126	-0.00127
	(!A1 * !A2 * !A3 * C1 * Y)	0.00378	0.00383	0.00374
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00164	-0.00165	-0.00163
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00390	0.00388	0.00376

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00514	-0.00572	-0.00568
	(A3 * !C1 * Y)	0.00468	0.00431	0.00428
	(A2 * !A3 * !C1 * Y)	-0.00502	-0.00572	-0.00573
	(A2 * !A3 * !C1 * Y)	0.00477	0.00429	0.00428
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00491	-0.00570	-0.00568
	(A1 * !A2 * !A3 * !C1 * Y)	0.00490	0.00429	0.00428
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00222	-0.00225	-0.00227
	(!A1 * !A2 * !A3 * C1 * Y)	0.00448	0.00452	0.00437
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00294	-0.00298	-0.00296
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00480	0.00469	0.00444

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00055	0.00055	0.00054
	(A3 * !B1 * Y)	-0.00224	-0.00225	-0.00226
	(A2 * !A3 * !B1 * Y)	0.00055	0.00055	0.00054
	(A2 * !A3 * !B1 * Y)	-0.00223	-0.00225	-0.00226
	(!A2 * !A3 * !B1 * Y)	0.00054	0.00055	0.00054
	(!A2 * !A3 * !B1 * Y)	-0.00222	-0.00225	-0.00226
	(!A1 * !A2 * !A3 * B1 * Y)	0.00057	0.00058	0.00053
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00215	-0.00217	-0.00225
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00106	0.00107	0.00103
	(A3 * !B1 * Y)	-0.00436	-0.00439	-0.00444
	(A2 * !A3 * !B1 * Y)	0.00106	0.00106	0.00103
	(A2 * !A3 * !B1 * Y)	-0.00437	-0.00437	-0.00444
	(!A2 * !A3 * !B1 * Y)	0.00106	0.00107	0.00103
	(!A2 * !A3 * !B1 * Y)	-0.00437	-0.00439	-0.00444
	(!A1 * !A2 * !A3 * B1 * Y)	0.00108	0.00108	0.00099
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00420	-0.00424	-0.00442
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00196	0.00195	0.00190
	(A3 * !B1 * Y)	-0.00489	-0.00489	-0.00504
	(A2 * !A3 * !B1 * Y)	0.00196	0.00197	0.00190
	(A2 * !A3 * !B1 * Y)	-0.00489	-0.00492	-0.00504
	(!A2 * !A3 * !B1 * Y)	0.00197	0.00197	0.00190
	(!A2 * !A3 * !B1 * Y)	-0.00490	-0.00492	-0.00504
	(!A1 * !A2 * !A3 * B1 * Y)	0.00200	0.00201	0.00184
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00458	-0.00461	-0.00498

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(A3 * !B1 * Y)	0.00227	0.00228	0.00226
	(A2 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(A2 * !A3 * !B1 * Y)	0.00227	0.00228	0.00226
	(!A2 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A2 * !A3 * !B1 * Y)	0.00227	0.00228	0.00226
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !A3 * B1 * Y)	0.00227	0.00229	0.00226
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00102	-0.00102	-0.00101
	(A3 * !B1 * Y)	0.00446	0.00449	0.00445
	(A2 * !A3 * !B1 * Y)	-0.00102	-0.00102	-0.00101
	(A2 * !A3 * !B1 * Y)	0.00446	0.00449	0.00445
	(!A2 * !A3 * !B1 * Y)	-0.00102	-0.00102	-0.00101
	(!A2 * !A3 * !B1 * Y)	0.00446	0.00449	0.00445
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00099	-0.00100	-0.00098
	(!A1 * !A2 * !A3 * B1 * Y)	0.00446	0.00450	0.00445
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00186	-0.00190	-0.00186
	(A3 * !B1 * Y)	0.00502	0.00512	0.00504
	(A2 * !A3 * !B1 * Y)	-0.00186	-0.00190	-0.00186
	(A2 * !A3 * !B1 * Y)	0.00503	0.00512	0.00504
	(!A2 * !A3 * !B1 * Y)	-0.00186	-0.00188	-0.00186
	(!A2 * !A3 * !B1 * Y)	0.00503	0.00508	0.00504
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00180	-0.00183	-0.00180
	(!A1 * !A2 * !A3 * B1 * Y)	0.00500	0.00508	0.00503

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o311a_1	14.38560
sky130_fd_sc_hs__o311a_2	14.38560
sky130_fd_sc_hs__o311a_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	C1	X
sky130_fd_sc_hs__o311a_1	0.00246	0.00294	0.00252	0.00247	0.00253	1.45037
sky130_fd_sc_hs__o311a_2	0.00271	0.00272	0.00270	0.00268	0.00267	2.82143
sky130_fd_sc_hs__o311a_4	0.00451	0.00495	0.00456	0.00556	0.00479	5.33047

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.10568	0.33840
sky130_fd_sc_hs__o311a_2	0.00000	0.15208	0.28988
sky130_fd_sc_hs__o311a_4	0.00000	0.31014	0.67880

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)	0.08103	0.48803	5.36470
	A2->X (RR)	0.07947	0.48737	5.31997
	A3->X (RR)	0.07257	0.47034	5.34876
	B1->X (RR)	0.07442	0.50028	5.87026
	C1->X (RR)	0.07026	0.49455	5.91126
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.08345	0.40937	5.36684
	A2->X (RR)	0.07983	0.40188	5.29941
	A3->X (RR)	0.06796	0.38508	5.29481
	B1->X (RR)	0.07904	0.43381	5.86069
	C1->X (RR)	0.07391	0.42970	5.89072
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.09194	0.35202	5.29125
	A2->X (RR)	0.08527	0.33893	5.20568
	A3->X (RR)	0.07684	0.32919	5.26110
	B1->X (RR)	0.08766	0.37947	5.83576
	C1->X (RR)	0.08005	0.36920	5.90565

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.19034	0.60097	5.12465
	A2->X (FF)	0.18318	0.62438	5.32923
	A3->X (FF)	0.14999	0.60348	5.30280
	B1->X (FF)	0.05698	0.44327	4.72221
	C1->X (FF)	0.05208	0.42732	4.70108
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.19126	0.59297	5.26861
	A2->X (FF)	0.17963	0.61428	5.49309
	A3->X (FF)	0.15992	0.60151	5.45672
	B1->X (FF)	0.06662	0.43090	4.88231
	C1->X (FF)	0.06057	0.41363	4.83253
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.23365	0.61260	5.41016
	A2->X (FF)	0.22145	0.62588	5.54285
	A3->X (FF)	0.18615	0.60484	5.51263
	B1->X (FF)	0.06175	0.39945	4.79855
	C1->X (FF)	0.05509	0.38422	4.78980

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01501	0.01499	0.03914
	A1	0.00639	0.00638	0.03074
	A2	0.01354	0.01389	0.03741
	A2	0.00558	0.00594	0.02967
	A3	0.01109	0.01191	0.04637
	A3	0.00423	0.00505	0.03973
	B1	0.00962	0.01168	0.07725
	B1	0.00413	0.00621	0.07190
	C1	0.01100	0.01319	0.08247
	C1	0.00410	0.00683	0.07706
sky130_fd_sc_hs__o311a_2	A1	0.01756	0.01733	0.03775
	A1	0.00832	0.00809	0.02898
	A2	0.01569	0.01636	0.03756
	A2	0.00742	0.00810	0.02973
	A3	0.01386	0.01480	0.04579
	A3	0.00653	0.00748	0.03891
	B1	0.01220	0.01399	0.07657
	B1	0.00645	0.00832	0.07128
	C1	0.01119	0.01350	0.07970
	C1	0.00641	0.00880	0.07528

sky130_fd_sc_hs__o311a_4	**A1**	0.03395	0.03490	0.09287
	A1	0.01775	0.01875	0.07746
	A2	0.03075	0.03206	0.08732
	A2	0.01580	0.01716	0.07238
	A3	0.02572	0.02790	0.10544
	A3	0.01270	0.01497	0.09368
	B1	0.02325	0.02682	0.14245
	B1	0.01241	0.01607	0.13274
	C1	0.02066	0.02590	0.16326
	C1	0.01244	0.01782	0.15578

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00523	0.00482	0.03136
	A1	0.01375	0.01335	0.03885
	A2	0.00529	0.00517	0.03267
	A2	0.01312	0.01299	0.03941
	A3	0.00528	0.00673	0.04746
	A3	0.01199	0.01345	0.05323
	B1	0.00338	0.00696	0.06886
	B1	0.00971	0.01315	0.07450
	C1	0.00295	0.00647	0.07182
	C1	0.00853	0.01202	0.07531

sky130_fd_sc_hs__o311a_2	**A1**	0.00858	0.00729	0.02963
	A1	0.01771	0.01645	0.03871
	A2	0.00860	0.00779	0.03570
	A2	0.01671	0.01590	0.04052
	A3	0.00865	0.00900	0.04685
	A3	0.01580	0.01620	0.05395
	B1	0.00627	0.00974	0.07223
	B1	0.01301	0.01630	0.07266
	C1	0.00576	0.00944	0.07274
	C1	0.01152	0.01505	0.07149
sky130_fd_sc_hs__o311a_4	**A1**	0.02017	0.01618	0.07285
	A1	0.03615	0.03214	0.08657
	A2	0.01982	0.01640	0.07167
	A2	0.03448	0.03122	0.08312
	A3	0.02009	0.01921	0.09987
	A3	0.03277	0.03187	0.10864
	B1	0.01223	0.01916	0.14917
	B1	0.02492	0.03115	0.15409
	C1	0.01120	0.01832	0.15387
	C1	0.02133	0.02817	0.15865

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)**	0.00142	0.00143	0.00142
	(A2 * B1 * !C1 * !X)	-0.00176	-0.00180	-0.00180
	(A2 * A3 * B1 * C1 * X)	0.00166	0.00166	0.00165
	(A2 * A3 * B1 * C1 * X)	-0.00152	-0.00157	-0.00157
	(A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(A2 * !B1 * !X)	-0.00176	-0.00180	-0.00180
	(A2 * !A3 * B1 * C1 * X)	0.00167	0.00166	0.00165
	(A2 * !A3 * B1 * C1 * X)	-0.00150	-0.00157	-0.00157
	(!A2 * A3 * B1 * C1 * X)	0.00167	0.00166	0.00165
	(!A2 * A3 * B1 * C1 * X)	-0.00141	-0.00154	-0.00153
	(!A2 * A3 * B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A2 * A3 * B1 * !C1 * !X)	-0.00166	-0.00177	-0.00176
	(!A2 * A3 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A2 * A3 * !B1 * !X)	-0.00166	-0.00177	-0.00176
	(!A2 * !A3 * B1 * !C1 * !X)	0.00134	0.00136	0.00135
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00180	-0.00182	-0.00181
	(!A2 * !A3 * !B1 * C1 * !X)	0.00137	0.00139	0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00181	-0.00182	-0.00181
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00137	0.00138	0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00150	0.00151	0.00150
	(A2 * B1 * !C1 * !X)	-0.00192	-0.00197	-0.00197
	(A2 * A3 * B1 * C1 * X)	0.00169	0.00170	0.00169
	(A2 * A3 * B1 * C1 * X)	-0.00172	-0.00177	-0.00177
	(A2 * !B1 * !X)	0.00150	0.00151	0.00150
	(A2 * !B1 * !X)	-0.00192	-0.00197	-0.00197
	(A2 * !A3 * B1 * C1 * X)	0.00172	0.00170	0.00170
	(A2 * !A3 * B1 * C1 * X)	-0.00168	-0.00177	-0.00177
	(!A2 * A3 * B1 * C1 * X)	0.00171	0.00170	0.00170
	(!A2 * A3 * B1 * C1 * X)	-0.00158	-0.00173	-0.00172
	(!A2 * A3 * B1 * !C1 * !X)	0.00150	0.00150	0.00150
	(!A2 * A3 * B1 * !C1 * !X)	-0.00179	-0.00193	-0.00191
	(!A2 * A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(!A2 * A3 * !B1 * !X)	-0.00179	-0.00192	-0.00191
	(!A2 * !A3 * B1 * !C1 * !X)	0.00141	0.00141	0.00140
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00200	-0.00199	-0.00199
	(!A2 * !A3 * !B1 * C1 * !X)	0.00143	0.00144	0.00144
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00198	-0.00199	-0.00199
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00143	0.00144	0.00143
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00198	-0.00199	-0.00199

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00259	0.00262	0.00259
	(A2 * B1 * !C1 * !X)	-0.00320	-0.00327	-0.00329
	(A2 * A3 * B1 * C1 * X)	0.00259	0.00263	0.00259
	(A2 * A3 * B1 * C1 * X)	-0.00319	-0.00327	-0.00329
	(A2 * !B1 * !X)	0.00259	0.00262	0.00259
	(A2 * !B1 * !X)	-0.00320	-0.00332	-0.00329
	(A2 * !A3 * B1 * C1 * X)	0.00267	0.00263	0.00259
	(A2 * !A3 * B1 * C1 * X)	-0.00309	-0.00331	-0.00329
	(!A2 * A3 * B1 * C1 * X)	0.00268	0.00263	0.00259
	(!A2 * A3 * B1 * C1 * X)	-0.00289	-0.00321	-0.00320
	(!A2 * A3 * B1 * !C1 * !X)	0.00259	0.00262	0.00259
	(!A2 * A3 * B1 * !C1 * !X)	-0.00295	-0.00321	-0.00319
	(!A2 * A3 * !B1 * !X)	0.00259	0.00262	0.00259
	(!A2 * A3 * !B1 * !X)	-0.00295	-0.00321	-0.00319
	(!A2 * !A3 * B1 * !C1 * !X)	0.00246	0.00247	0.00246
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00334	-0.00334	-0.00333
	(!A2 * !A3 * !B1 * C1 * !X)	0.00250	0.00252	0.00250
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00334	-0.00335	-0.00333
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00250	0.00252	0.00250
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00334	-0.00334	-0.00333

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)**	-0.00142	-0.00142	-0.00142
	(A2 * B1 * !C1 * !X)	0.00180	0.00180	0.00180
	(A2 * A3 * B1 * C1 * X)	-0.00165	-0.00165	-0.00164
	(A2 * A3 * B1 * C1 * X)	0.00157	0.00157	0.00157
	(A2 * !B1 * !X)	-0.00142	-0.00142	-0.00142
	(A2 * !B1 * !X)	0.00180	0.00180	0.00180
	(A2 * !A3 * B1 * C1 * X)	-0.00165	-0.00165	-0.00164
	(A2 * !A3 * B1 * C1 * X)	0.00157	0.00159	0.00157
	(!A2 * A3 * B1 * C1 * X)	-0.00164	-0.00165	-0.00164
	(!A2 * A3 * B1 * C1 * X)	0.00152	0.00154	0.00153
	(!A2 * A3 * B1 * !C1 * !X)	-0.00141	-0.00142	-0.00142
	(!A2 * A3 * B1 * !C1 * !X)	0.00175	0.00177	0.00176
	(!A2 * A3 * !B1 * !X)	-0.00141	-0.00142	-0.00142
	(!A2 * A3 * !B1 * !X)	0.00175	0.00177	0.00176
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00128	-0.00136	-0.00135
	(!A2 * !A3 * B1 * !C1 * !X)	0.00181	0.00183	0.00182
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00133	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	0.00181	0.00183	0.00182
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00138	-0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00181	0.00183	0.00182

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00149	-0.00149	-0.00149
	(A2 * B1 * !C1 * !X)	0.00196	0.00197	0.00197
	(A2 * A3 * B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(A2 * A3 * B1 * C1 * X)	0.00176	0.00177	0.00177
	(A2 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(A2 * !B1 * !X)	0.00196	0.00197	0.00197
	(A2 * !A3 * B1 * C1 * X)	-0.00168	-0.00169	-0.00169
	(A2 * !A3 * B1 * C1 * X)	0.00176	0.00179	0.00177
	(!A2 * A3 * B1 * C1 * X)	-0.00169	-0.00169	-0.00169
	(!A2 * A3 * B1 * C1 * X)	0.00172	0.00173	0.00172
	(!A2 * A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00149
	(!A2 * A3 * B1 * !C1 * !X)	0.00192	0.00193	0.00191
	(!A2 * A3 * !B1 * !X)	-0.00149	-0.00149	-0.00149
	(!A2 * A3 * !B1 * !X)	0.00192	0.00192	0.00191
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00131	-0.00141	-0.00140
	(!A2 * !A3 * B1 * !C1 * !X)	0.00200	0.00201	0.00199
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00136	-0.00144	-0.00144
	(!A2 * !A3 * !B1 * C1 * !X)	0.00201	0.00201	0.00200
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00136	-0.00144	-0.00143
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00201	0.00201	0.00200

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00257	-0.00257	-0.00258
	(A2 * B1 * !C1 * !X)	0.00327	0.00327	0.00329
	(A2 * A3 * B1 * C1 * X)	-0.00257	-0.00257	-0.00257
	(A2 * A3 * B1 * C1 * X)	0.00328	0.00327	0.00329
	(A2 * !B1 * !X)	-0.00257	-0.00259	-0.00258
	(A2 * !B1 * !X)	0.00327	0.00332	0.00329
	(A2 * !A3 * B1 * C1 * X)	-0.00257	-0.00258	-0.00257
	(A2 * !A3 * B1 * C1 * X)	0.00328	0.00331	0.00329
	(!A2 * A3 * B1 * C1 * X)	-0.00257	-0.00257	-0.00257
	(!A2 * A3 * B1 * C1 * X)	0.00320	0.00321	0.00320
	(!A2 * A3 * B1 * !C1 * !X)	-0.00258	-0.00258	-0.00258
	(!A2 * A3 * B1 * !C1 * !X)	0.00320	0.00321	0.00319
	(!A2 * A3 * !B1 * !X)	-0.00258	-0.00258	-0.00258
	(!A2 * A3 * !B1 * !X)	0.00320	0.00321	0.00319
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00228	-0.00247	-0.00246
	(!A2 * !A3 * B1 * !C1 * !X)	0.00334	0.00336	0.00335
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00235	-0.00250	-0.00249
	(!A2 * !A3 * !B1 * C1 * !X)	0.00336	0.00337	0.00335
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00235	-0.00250	-0.00249
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00336	0.00338	0.00335

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)**	0.00174	0.00177	0.00172
	(A1 * A3 * B1 * C1 * X)	-0.00111	-0.00112	-0.00111
	(A1 * A3 * B1 * !C1 * !X)	0.00143	0.00143	0.00142
	(A1 * A3 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * A3 * !B1 * !X)	0.00143	0.00143	0.00142
	(A1 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * B1 * C1 * X)	0.00171	0.00173	0.00171
	(A1 * !A3 * B1 * C1 * X)	-0.00092	-0.00094	-0.00094
	(A1 * !A3 * B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A3 * B1 * !C1 * !X)	-0.00188	-0.00191	-0.00191
	(A1 * !A3 * !B1 * C1 * !X)	0.00142	0.00143	0.00142
	(A1 * !A3 * !B1 * C1 * !X)	-0.00188	-0.00192	-0.00191
	(A1 * !A3 * !B1 * !C1 * !X)	0.00142	0.00144	0.00142
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00188	-0.00192	-0.00192
	(!A1 * A3 * B1 * C1 * X)	0.00201	0.00171	0.00170
	(!A1 * A3 * B1 * C1 * X)	-0.00130	-0.00163	-0.00164
	(!A1 * A3 * B1 * !C1 * !X)	0.00142	0.00142	0.00142
	(!A1 * A3 * B1 * !C1 * !X)	-0.00187	-0.00191	-0.00191
	(!A1 * A3 * !B1 * !X)	0.00142	0.00142	0.00142
	(!A1 * A3 * !B1 * !X)	-0.00187	-0.00191	-0.00191
	(!A1 * !A3 * B1 * !C1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * C1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00193	-0.00194	-0.00193
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00137	0.00138	0.00137
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00193	-0.00194	-0.00193

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00165	0.00166	0.00160
	(A1 * A3 * B1 * C1 * X)	-0.00121	-0.00121	-0.00120
	(A1 * A3 * B1 * !C1 * !X)	0.00150	0.00152	0.00150
	(A1 * A3 * B1 * !C1 * !X)	-0.00137	-0.00137	-0.00136
	(A1 * A3 * !B1 * !X)	0.00150	0.00152	0.00150
	(A1 * A3 * !B1 * !X)	-0.00137	-0.00137	-0.00136
	(A1 * !A3 * B1 * C1 * X)	0.00159	0.00159	0.00157
	(A1 * !A3 * B1 * C1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * !A3 * B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(A1 * !A3 * B1 * !C1 * !X)	-0.00183	-0.00187	-0.00187
	(A1 * !A3 * !B1 * C1 * !X)	0.00150	0.00151	0.00150
	(A1 * !A3 * !B1 * C1 * !X)	-0.00183	-0.00187	-0.00187
	(A1 * !A3 * !B1 * !C1 * !X)	0.00150	0.00152	0.00150
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00183	-0.00188	-0.00187
	(!A1 * A3 * B1 * C1 * X)	0.00186	0.00158	0.00156
	(!A1 * A3 * B1 * C1 * X)	-0.00148	-0.00180	-0.00181
	(!A1 * A3 * B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(!A1 * A3 * B1 * !C1 * !X)	-0.00183	-0.00187	-0.00187
	(!A1 * A3 * !B1 * !X)	0.00150	0.00151	0.00150
	(!A1 * A3 * !B1 * !X)	-0.00183	-0.00187	-0.00187
	(!A1 * !A3 * B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00190	-0.00190	-0.00189
	(!A1 * !A3 * !B1 * C1 * !X)	0.00144	0.00144	0.00144
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00190	-0.00189	-0.00190
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00144	0.00145	0.00143
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00190	-0.00191	-0.00190

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00304	0.00309	0.00300
	(A1 * A3 * B1 * C1 * X)	-0.00224	-0.00226	-0.00224
	(A1 * A3 * B1 * !C1 * !X)	0.00297	0.00300	0.00297
	(A1 * A3 * B1 * !C1 * !X)	-0.00246	-0.00250	-0.00248
	(A1 * A3 * !B1 * !X)	0.00297	0.00300	0.00297
	(A1 * A3 * !B1 * !X)	-0.00249	-0.00250	-0.00248
	(A1 * !A3 * B1 * C1 * X)	0.00301	0.00301	0.00298
	(A1 * !A3 * B1 * C1 * X)	-0.00190	-0.00190	-0.00190
	(A1 * !A3 * B1 * !C1 * !X)	0.00296	0.00299	0.00297
	(A1 * !A3 * B1 * !C1 * !X)	-0.00319	-0.00327	-0.00327
	(A1 * !A3 * !B1 * C1 * !X)	0.00296	0.00299	0.00297
	(A1 * !A3 * !B1 * C1 * !X)	-0.00319	-0.00327	-0.00327
	(A1 * !A3 * !B1 * !C1 * !X)	0.00296	0.00298	0.00297
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00319	-0.00328	-0.00327
	(!A1 * A3 * B1 * C1 * X)	0.00354	0.00302	0.00297
	(!A1 * A3 * B1 * C1 * X)	-0.00264	-0.00329	-0.00328
	(!A1 * A3 * B1 * !C1 * !X)	0.00296	0.00301	0.00297
	(!A1 * A3 * B1 * !C1 * !X)	-0.00317	-0.00330	-0.00327
	(!A1 * A3 * !B1 * !X)	0.00296	0.00301	0.00297
	(!A1 * A3 * !B1 * !X)	-0.00317	-0.00330	-0.00327
	(!A1 * !A3 * B1 * !C1 * !X)	0.00282	0.00282	0.00281
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00332	-0.00332	-0.00331
	(!A1 * !A3 * !B1 * C1 * !X)	0.00282	0.00286	0.00283
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00330	-0.00333	-0.00331
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00285	0.00283	0.00283
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00332	-0.00331	-0.00331

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)**	-0.00170	-0.00171	-0.00170
	(A1 * A3 * B1 * C1 * X)	0.00111	0.00112	0.00111
	(A1 * A3 * B1 * !C1 * !X)	-0.00141	-0.00142	-0.00142
	(A1 * A3 * B1 * !C1 * !X)	0.00151	0.00152	0.00151
	(A1 * A3 * !B1 * !X)	-0.00141	-0.00142	-0.00142
	(A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00151
	(A1 * !A3 * B1 * C1 * X)	-0.00169	-0.00169	-0.00168
	(A1 * !A3 * B1 * C1 * X)	0.00096	0.00096	0.00097
	(A1 * !A3 * B1 * !C1 * !X)	-0.00142	-0.00141	-0.00142
	(A1 * !A3 * B1 * !C1 * !X)	0.00192	0.00191	0.00191
	(A1 * !A3 * !B1 * C1 * !X)	-0.00142	-0.00142	-0.00142
	(A1 * !A3 * !B1 * C1 * !X)	0.00192	0.00192	0.00191
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00142	-0.00142	-0.00142
	(A1 * !A3 * !B1 * !C1 * !X)	0.00192	0.00192	0.00192
	(!A1 * A3 * B1 * C1 * X)	-0.00169	-0.00169	-0.00168
	(!A1 * A3 * B1 * C1 * X)	0.00165	0.00165	0.00164
	(!A1 * A3 * B1 * !C1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * A3 * B1 * !C1 * !X)	0.00192	0.00192	0.00191
	(!A1 * A3 * !B1 * !X)	-0.00142	-0.00142	-0.00142
	(!A1 * A3 * !B1 * !X)	0.00192	0.00192	0.00191
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00125	-0.00136	-0.00135
	(!A1 * !A3 * B1 * !C1 * !X)	0.00193	0.00194	0.00194
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00131	-0.00138	-0.00137
	(!A1 * !A3 * !B1 * C1 * !X)	0.00193	0.00195	0.00194
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00138	-0.00137
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00193	0.00195	0.00194

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00156	-0.00156	-0.00156
	(A1 * A3 * B1 * C1 * X)	0.00121	0.00121	0.00120
	(A1 * A3 * B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * A3 * B1 * !C1 * !X)	0.00137	0.00137	0.00136
	(A1 * A3 * !B1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * A3 * !B1 * !X)	0.00137	0.00137	0.00136
	(A1 * !A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00154
	(A1 * !A3 * B1 * C1 * X)	0.00106	0.00106	0.00106
	(A1 * !A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(A1 * !A3 * B1 * !C1 * !X)	0.00186	0.00187	0.00187
	(A1 * !A3 * !B1 * C1 * !X)	-0.00149	-0.00150	-0.00150
	(A1 * !A3 * !B1 * C1 * !X)	0.00186	0.00187	0.00187
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(A1 * !A3 * !B1 * !C1 * !X)	0.00186	0.00188	0.00187
	(!A1 * A3 * B1 * C1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * B1 * C1 * X)	0.00181	0.00182	0.00182
	(!A1 * A3 * B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(!A1 * A3 * B1 * !C1 * !X)	0.00186	0.00188	0.00187
	(!A1 * A3 * !B1 * !X)	-0.00149	-0.00150	-0.00150
	(!A1 * A3 * !B1 * !X)	0.00186	0.00188	0.00187
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00130	-0.00143	-0.00142
	(!A1 * !A3 * B1 * !C1 * !X)	0.00190	0.00191	0.00190
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00135	-0.00144	-0.00144
	(!A1 * !A3 * !B1 * C1 * !X)	0.00191	0.00191	0.00190
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00135	-0.00145	-0.00143
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00191	0.00191	0.00190

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00295	-0.00297	-0.00296
	(A1 * A3 * B1 * C1 * X)	0.00224	0.00226	0.00224
	(A1 * A3 * B1 * !C1 * !X)	-0.00294	-0.00297	-0.00296
	(A1 * A3 * B1 * !C1 * !X)	0.00246	0.00250	0.00248
	(A1 * A3 * !B1 * !X)	-0.00296	-0.00297	-0.00296
	(A1 * A3 * !B1 * !X)	0.00249	0.00250	0.00248
	(A1 * !A3 * B1 * C1 * X)	-0.00294	-0.00295	-0.00291
	(A1 * !A3 * B1 * C1 * X)	0.00193	0.00194	0.00196
	(A1 * !A3 * B1 * !C1 * !X)	-0.00295	-0.00297	-0.00296
	(A1 * !A3 * B1 * !C1 * !X)	0.00325	0.00327	0.00327
	(A1 * !A3 * !B1 * C1 * !X)	-0.00295	-0.00296	-0.00296
	(A1 * !A3 * !B1 * C1 * !X)	0.00326	0.00327	0.00327
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00295	-0.00297	-0.00296
	(A1 * !A3 * !B1 * !C1 * !X)	0.00326	0.00328	0.00327
	(!A1 * A3 * B1 * C1 * X)	-0.00294	-0.00296	-0.00294
	(!A1 * A3 * B1 * C1 * X)	0.00326	0.00330	0.00328
	(!A1 * A3 * B1 * !C1 * !X)	-0.00295	-0.00297	-0.00296
	(!A1 * A3 * B1 * !C1 * !X)	0.00326	0.00330	0.00327
	(!A1 * A3 * !B1 * !X)	-0.00295	-0.00297	-0.00296
	(!A1 * A3 * !B1 * !X)	0.00325	0.00330	0.00327
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00259	-0.00282	-0.00281
	(!A1 * !A3 * B1 * !C1 * !X)	0.00332	0.00335	0.00332
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00269	-0.00286	-0.00283
	(!A1 * !A3 * !B1 * C1 * !X)	0.00333	0.00334	0.00332
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00269	-0.00283	-0.00283
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00333	0.00335	0.00332

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)**	0.00158	0.00158	0.00157
	(A2 * B1 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A2 * B1 * !C1 * !X)	0.00140	0.00143	0.00141
	(A2 * B1 * !C1 * !X)	-0.00163	-0.00169	-0.00168
	(A2 * !B1 * C1 * !X)	0.00141	0.00141	0.00141
	(A2 * !B1 * C1 * !X)	-0.00163	-0.00169	-0.00168
	(A2 * !B1 * !C1 * !X)	0.00141	0.00143	0.00141
	(A2 * !B1 * !C1 * !X)	-0.00163	-0.00169	-0.00169
	(A1 * !A2 * B1 * C1 * X)	0.00158	0.00159	0.00157
	(A1 * !A2 * B1 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * !A2 * B1 * !C1 * !X)	0.00140	0.00140	0.00141
	(A1 * !A2 * B1 * !C1 * !X)	-0.00152	-0.00163	-0.00163
	(A1 * !A2 * !B1 * C1 * !X)	0.00140	0.00140	0.00141
	(A1 * !A2 * !B1 * C1 * !X)	-0.00153	-0.00163	-0.00163
	(A1 * !A2 * !B1 * !C1 * !X)	0.00140	0.00142	0.00141
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00153	-0.00164	-0.00164
	(!A1 * !A2 * B1 * !C1 * !X)	0.00134	0.00134	0.00134
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00170	-0.00170	-0.00170
	(!A1 * !A2 * !B1 * C1 * !X)	0.00137	0.00139	0.00138
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00169	-0.00171	-0.00170
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00136	0.00138	0.00137
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00170	-0.00171	-0.00170

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00173	0.00174	0.00173
	(A2 * B1 * C1 * X)	-0.00086	-0.00086	-0.00085
	(A2 * B1 * !C1 * !X)	0.00150	0.00153	0.00150
	(A2 * B1 * !C1 * !X)	-0.00177	-0.00181	-0.00181
	(A2 * !B1 * C1 * !X)	0.00150	0.00150	0.00150
	(A2 * !B1 * C1 * !X)	-0.00177	-0.00181	-0.00181
	(A2 * !B1 * !C1 * !X)	0.00150	0.00153	0.00150
	(A2 * !B1 * !C1 * !X)	-0.00177	-0.00181	-0.00181
	(A1 * !A2 * B1 * C1 * X)	0.00173	0.00174	0.00173
	(A1 * !A2 * B1 * C1 * X)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * B1 * !C1 * !X)	0.00150	0.00152	0.00150
	(A1 * !A2 * B1 * !C1 * !X)	-0.00162	-0.00175	-0.00175
	(A1 * !A2 * !B1 * C1 * !X)	0.00150	0.00152	0.00150
	(A1 * !A2 * !B1 * C1 * !X)	-0.00162	-0.00176	-0.00175
	(A1 * !A2 * !B1 * !C1 * !X)	0.00150	0.00151	0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00162	-0.00176	-0.00176
	(!A1 * !A2 * B1 * !C1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * C1 * !X)	0.00143	0.00145	0.00144
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00184	-0.00185	-0.00184
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00143	0.00143	0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00184	-0.00184	-0.00184

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00299	0.00302	0.00300
	(A2 * B1 * C1 * X)	-0.00168	-0.00171	-0.00169
	(A2 * B1 * !C1 * !X)	0.00263	0.00267	0.00263
	(A2 * B1 * !C1 * !X)	-0.00326	-0.00337	-0.00337
	(A2 * !B1 * C1 * !X)	0.00263	0.00267	0.00263
	(A2 * !B1 * C1 * !X)	-0.00326	-0.00337	-0.00337
	(A2 * !B1 * !C1 * !X)	0.00263	0.00267	0.00263
	(A2 * !B1 * !C1 * !X)	-0.00326	-0.00340	-0.00338
	(A1 * !A2 * B1 * C1 * X)	0.00299	0.00302	0.00300
	(A1 * !A2 * B1 * C1 * X)	-0.00168	-0.00170	-0.00169
	(A1 * !A2 * B1 * !C1 * !X)	0.00263	0.00263	0.00263
	(A1 * !A2 * B1 * !C1 * !X)	-0.00302	-0.00326	-0.00325
	(A1 * !A2 * !B1 * C1 * !X)	0.00263	0.00263	0.00263
	(A1 * !A2 * !B1 * C1 * !X)	-0.00302	-0.00327	-0.00325
	(A1 * !A2 * !B1 * !C1 * !X)	0.00263	0.00262	0.00263
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00303	-0.00328	-0.00326
	(!A1 * !A2 * B1 * !C1 * !X)	0.00252	0.00255	0.00252
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00341	-0.00343	-0.00341
	(!A1 * !A2 * !B1 * C1 * !X)	0.00254	0.00258	0.00255
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00340	-0.00343	-0.00341
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00254	0.00257	0.00255
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00340	-0.00343	-0.00341

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)**	-0.00150	-0.00151	-0.00156
	(A2 * B1 * C1 * X)	0.00093	0.00093	0.00088
	(A2 * B1 * !C1 * !X)	-0.00140	-0.00141	-0.00140
	(A2 * B1 * !C1 * !X)	0.00168	0.00169	0.00168
	(A2 * !B1 * C1 * !X)	-0.00139	-0.00141	-0.00140
	(A2 * !B1 * C1 * !X)	0.00167	0.00169	0.00168
	(A2 * !B1 * !C1 * !X)	-0.00140	-0.00141	-0.00140
	(A2 * !B1 * !C1 * !X)	0.00167	0.00169	0.00169
	(A1 * !A2 * B1 * C1 * X)	-0.00145	-0.00145	-0.00155
	(A1 * !A2 * B1 * C1 * X)	0.00096	0.00096	0.00088
	(A1 * !A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * B1 * !C1 * !X)	0.00162	0.00163	0.00163
	(A1 * !A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * !B1 * C1 * !X)	0.00162	0.00163	0.00163
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	0.00163	0.00164	0.00164
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00134	-0.00134
	(!A1 * !A2 * B1 * !C1 * !X)	0.00170	0.00172	0.00171
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00131	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * C1 * !X)	0.00171	0.00172	0.00171
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00131	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00171	0.00172	0.00171

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00167	-0.00168	-0.00172
	(A2 * B1 * C1 * X)	0.00090	0.00090	0.00087
	(A2 * B1 * !C1 * !X)	-0.00150	-0.00149	-0.00150
	(A2 * B1 * !C1 * !X)	0.00181	0.00181	0.00181
	(A2 * !B1 * C1 * !X)	-0.00149	-0.00150	-0.00150
	(A2 * !B1 * C1 * !X)	0.00180	0.00181	0.00181
	(A2 * !B1 * !C1 * !X)	-0.00149	-0.00150	-0.00150
	(A2 * !B1 * !C1 * !X)	0.00181	0.00181	0.00181
	(A1 * !A2 * B1 * C1 * X)	-0.00161	-0.00162	-0.00170
	(A1 * !A2 * B1 * C1 * X)	0.00093	0.00094	0.00087
	(A1 * !A2 * B1 * !C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * !A2 * B1 * !C1 * !X)	0.00174	0.00175	0.00175
	(A1 * !A2 * !B1 * C1 * !X)	-0.00149	-0.00151	-0.00150
	(A1 * !A2 * !B1 * C1 * !X)	0.00174	0.00176	0.00175
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00150	-0.00150	-0.00150
	(A1 * !A2 * !B1 * !C1 * !X)	0.00176	0.00176	0.00176
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00130	-0.00143	-0.00142
	(!A1 * !A2 * B1 * !C1 * !X)	0.00185	0.00185	0.00184
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00136	-0.00145	-0.00144
	(!A1 * !A2 * !B1 * C1 * !X)	0.00186	0.00186	0.00185
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00136	-0.00143	-0.00144
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00186	0.00186	0.00185

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00283	-0.00285	-0.00298
	(A2 * B1 * C1 * X)	0.00182	0.00184	0.00173
	(A2 * B1 * !C1 * !X)	-0.00261	-0.00263	-0.00262
	(A2 * B1 * !C1 * !X)	0.00336	0.00337	0.00337
	(A2 * !B1 * C1 * !X)	-0.00261	-0.00263	-0.00262
	(A2 * !B1 * C1 * !X)	0.00336	0.00337	0.00337
	(A2 * !B1 * !C1 * !X)	-0.00261	-0.00264	-0.00262
	(A2 * !B1 * !C1 * !X)	0.00336	0.00340	0.00338
	(A1 * !A2 * B1 * C1 * X)	-0.00272	-0.00274	-0.00295
	(A1 * !A2 * B1 * C1 * X)	0.00189	0.00190	0.00174
	(A1 * !A2 * B1 * !C1 * !X)	-0.00261	-0.00263	-0.00262
	(A1 * !A2 * B1 * !C1 * !X)	0.00324	0.00326	0.00325
	(A1 * !A2 * !B1 * C1 * !X)	-0.00261	-0.00263	-0.00262
	(A1 * !A2 * !B1 * C1 * !X)	0.00324	0.00327	0.00325
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00261	-0.00262	-0.00262
	(A1 * !A2 * !B1 * !C1 * !X)	0.00325	0.00328	0.00326
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00227	-0.00250	-0.00251
	(!A1 * !A2 * B1 * !C1 * !X)	0.00343	0.00343	0.00342
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00236	-0.00252	-0.00253
	(!A1 * !A2 * !B1 * C1 * !X)	0.00343	0.00344	0.00342
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00237	-0.00252	-0.00253
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00343	0.00344	0.00342

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00129	0.00130	0.00129
	(A3 * !C1 * !X)	-0.00174	-0.00174	-0.00173
	(A2 * !A3 * !C1 * !X)	0.00129	0.00130	0.00129
	(A2 * !A3 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(A1 * !A2 * !A3 * !C1 * !X)	0.00128	0.00130	0.00129
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00173	-0.00174	-0.00173
	(!A1 * !A2 * !A3 * C1 * !X)	0.00063	0.00063	0.00061
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00174	-0.00174	-0.00173
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00080	0.00080	0.00080
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00173	-0.00174	-0.00174
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00143	0.00145	0.00143
	(A3 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(A2 * !A3 * !C1 * !X)	0.00143	0.00144	0.00143
	(A2 * !A3 * !C1 * !X)	-0.00180	-0.00180	-0.00180
	(A1 * !A2 * !A3 * !C1 * !X)	0.00143	0.00144	0.00144
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00180	-0.00181	-0.00180
	(!A1 * !A2 * !A3 * C1 * !X)	0.00059	0.00059	0.00058
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00183	-0.00183	-0.00182
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00074	0.00074	0.00074
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00185	-0.00185	-0.00185
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00281	0.00284	0.00282
	(A3 * !C1 * !X)	-0.00388	-0.00390	-0.00389
	(A2 * !A3 * !C1 * !X)	0.00281	0.00284	0.00282
	(A2 * !A3 * !C1 * !X)	-0.00388	-0.00390	-0.00389
	(A1 * !A2 * !A3 * !C1 * !X)	0.00281	0.00283	0.00282
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00388	-0.00390	-0.00389
	(!A1 * !A2 * !A3 * C1 * !X)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00388	-0.00390	-0.00389
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00167	0.00169	0.00167
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00391	-0.00394	-0.00392

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00120	-0.00128	-0.00129
	(A3 * !C1 * !X)	0.00180	0.00176	0.00174
	(A2 * !A3 * !C1 * !X)	-0.00120	-0.00128	-0.00129
	(A2 * !A3 * !C1 * !X)	0.00180	0.00176	0.00174
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00118	-0.00130	-0.00129
	(A1 * !A2 * !A3 * !C1 * !X)	0.00182	0.00175	0.00174
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !A3 * C1 * !X)	0.00177	0.00178	0.00174
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00184	0.00181	0.00175
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00132	-0.00142	-0.00143
	(A3 * !C1 * !X)	0.00186	0.00182	0.00181
	(A2 * !A3 * !C1 * !X)	-0.00131	-0.00144	-0.00143
	(A2 * !A3 * !C1 * !X)	0.00188	0.00182	0.00181
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00129	-0.00143	-0.00143
	(A1 * !A2 * !A3 * !C1 * !X)	0.00190	0.00182	0.00181
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00055	-0.00056	-0.00056
	(!A1 * !A2 * !A3 * C1 * !X)	0.00186	0.00187	0.00183
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00196	0.00194	0.00187

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00261	-0.00284	-0.00282
	(A3 * !C1 * !X)	0.00402	0.00393	0.00390
	(A2 * !A3 * !C1 * !X)	-0.00258	-0.00283	-0.00282
	(A2 * !A3 * !C1 * !X)	0.00406	0.00393	0.00390
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00254	-0.00283	-0.00282
	(A1 * !A2 * !A3 * !C1 * !X)	0.00409	0.00393	0.00390
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00129	-0.00129	-0.00130
	(!A1 * !A2 * !A3 * C1 * !X)	0.00399	0.00401	0.00393
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00167	-0.00169	-0.00167
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00411	0.00407	0.00394

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00049	0.00049	0.00048
	(A3 * !B1 * !X)	-0.00205	-0.00206	-0.00207
	(A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00048
	(A2 * !A3 * !B1 * !X)	-0.00205	-0.00206	-0.00207
	(!A2 * !A3 * !B1 * !X)	0.00049	0.00049	0.00048
	(!A2 * !A3 * !B1 * !X)	-0.00205	-0.00205	-0.00207
	(!A1 * !A2 * !A3 * B1 * !X)	0.00056	0.00057	0.00051
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00195	-0.00197	-0.00206
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00055	0.00055	0.00053
	(A3 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00053
	(A2 * !A3 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A2 * !A3 * !B1 * !X)	0.00055	0.00055	0.00053
	(!A2 * !A3 * !B1 * !X)	-0.00207	-0.00209	-0.00210
	(!A1 * !A2 * !A3 * B1 * !X)	0.00057	0.00057	0.00053
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00200	-0.00201	-0.00210
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00099	0.00100	0.00096
	(A3 * !B1 * !X)	-0.00386	-0.00388	-0.00393
	(A2 * !A3 * !B1 * !X)	0.00099	0.00099	0.00096
	(A2 * !A3 * !B1 * !X)	-0.00386	-0.00386	-0.00393
	(!A2 * !A3 * !B1 * !X)	0.00099	0.00100	0.00096
	(!A2 * !A3 * !B1 * !X)	-0.00386	-0.00388	-0.00393
	(!A1 * !A2 * !A3 * B1 * !X)	0.00102	0.00103	0.00093
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00370	-0.00373	-0.00390

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(A3 * !B1 * !X)	0.00207	0.00209	0.00207
	(A2 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(A2 * !A3 * !B1 * !X)	0.00208	0.00209	0.00207
	(!A2 * !A3 * !B1 * !X)	-0.00047	-0.00047	-0.00047
	(!A2 * !A3 * !B1 * !X)	0.00208	0.00209	0.00207
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00047	-0.00047	-0.00046
	(!A1 * !A2 * !A3 * B1 * !X)	0.00207	0.00209	0.00207
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(A3 * !B1 * !X)	0.00210	0.00212	0.00210
	(A2 * !A3 * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(A2 * !A3 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A2 * !A3 * !B1 * !X)	-0.00053	-0.00053	-0.00052
	(!A2 * !A3 * !B1 * !X)	0.00210	0.00211	0.00210
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00052	-0.00052	-0.00051
	(!A1 * !A2 * !A3 * B1 * !X)	0.00210	0.00212	0.00210
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00094	-0.00095	-0.00094
	(A3 * !B1 * !X)	0.00393	0.00397	0.00394
	(A2 * !A3 * !B1 * !X)	-0.00094	-0.00095	-0.00094
	(A2 * !A3 * !B1 * !X)	0.00393	0.00397	0.00394
	(!A2 * !A3 * !B1 * !X)	-0.00094	-0.00095	-0.00094
	(!A2 * !A3 * !B1 * !X)	0.00393	0.00397	0.00394
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00089	-0.00091	-0.00089
	(!A1 * !A2 * !A3 * B1 * !X)	0.00393	0.00397	0.00394

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31ai_1	9.59040
sky130_fd_sc_hs__o31ai_2	15.98400
sky130_fd_sc_hs__o31ai_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	Y
sky130_fd_sc_hs__o31ai_1	0.00251	0.00297	0.00290	0.00262	0.50144
sky130_fd_sc_hs__o31ai_2	0.00514	0.00503	0.00530	0.00522	0.84907
sky130_fd_sc_hs__o31ai_4	0.00986	0.00986	0.01030	0.00774	1.53998

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31ai_1	0.00000	0.03531	0.12588
sky130_fd_sc_hs__o31ai_2	0.00000	0.07062	0.25175
sky130_fd_sc_hs__o31ai_4	0.00000	0.08617	0.37763

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)	0.11899	0.96029	10.18900
	A2->Y (FR)	0.11385	0.98772	10.75370
	A3->Y (FR)	0.09089	0.95633	10.63050
	B1->Y (FR)	0.02500	0.51852	6.37666
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.13134	0.85134	10.06310
	A2->Y (FR)	0.11752	0.86693	10.61330
	A3->Y (FR)	0.09306	0.85076	10.70470
	B1->Y (FR)	0.02257	0.46842	6.30559
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.12326	0.72587	9.84203
	A2->Y (FR)	0.11103	0.74886	10.50650
	A3->Y (FR)	0.08368	0.73654	10.64620
	B1->Y (FR)	0.02840	0.54115	8.09699

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.02659	0.25526	2.45903
	A2->Y (RF)	0.02749	0.25048	2.44442
	A3->Y (RF)	0.02249	0.23961	2.39965
	B1->Y (RF)	0.02236	0.29089	2.93971
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.02820	0.22103	2.39721
	A2->Y (RF)	0.02760	0.21174	2.36759
	A3->Y (RF)	0.02325	0.20195	2.34150
	B1->Y (RF)	0.02152	0.25721	2.97672
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.02988	0.17803	2.27187
	A2->Y (RF)	0.02777	0.16637	2.21895
	A3->Y (RF)	0.02081	0.14711	2.08185
	B1->Y (RF)	0.02303	0.25467	3.49913

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00057	0.00049	0.00857
	A1	0.00840	0.00835	0.01643
	A2	0.00058	0.00055	0.00864
	A2	0.00781	0.00779	0.01591
	A3	0.00053	0.00132	0.01809
	A3	0.00674	0.00754	0.02435
	B1	-0.00055	0.00148	0.02733
	B1	0.00399	0.00599	0.03211
sky130_fd_sc_hs__o31ai_2	A1	0.00118	0.00088	0.01624
	A1	0.01705	0.01674	0.03212
	A2	0.00125	0.00121	0.01683
	A2	0.01492	0.01488	0.03057
	A3	0.00111	0.00259	0.03197
	A3	0.01298	0.01443	0.04390
	B1	-0.00192	0.00224	0.04993
	B1	0.00661	0.01078	0.05846
sky130_fd_sc_hs__o31ai_4	A1	0.00157	0.00114	0.02919
	A1	0.03228	0.03187	0.05990
	A2	0.00163	0.00166	0.03036
	A2	0.02835	0.02837	0.05698
	A3	0.00135	0.00459	0.05829
	A3	0.02432	0.02756	0.08137
	B1	-0.00351	0.00185	0.05431
	B1	0.00951	0.01492	0.06791

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.01010	0.01013	0.01627
	A1	0.00225	0.00226	0.00843
	A2	0.00867	0.00873	0.01467
	A2	0.00138	0.00142	0.00738
	A3	0.00671	0.00692	0.01271
	A3	0.00040	0.00060	0.00638
	B1	0.00475	0.00526	0.01550
	B1	0.00021	0.00068	0.01095
sky130_fd_sc_hs__o31ai_2	A1	0.02084	0.02073	0.03295
	A1	0.00498	0.00483	0.01703
	A2	0.01654	0.01672	0.02856
	A2	0.00273	0.00289	0.01467
	A3	0.01283	0.01325	0.02456
	A3	0.00074	0.00117	0.01242
	B1	0.00895	0.01012	0.03086
	B1	0.00043	0.00155	0.02228
sky130_fd_sc_hs__o31ai_4	A1	0.03868	0.03855	0.06322
	A1	0.00795	0.00783	0.03256
	A2	0.03065	0.03100	0.05479
	A2	0.00370	0.00405	0.02772
	A3	0.02286	0.02404	0.04727
	A3	-0.00051	0.00058	0.02368
	B1	0.01436	0.01571	0.03723
	B1	0.00136	0.00267	0.02407

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)**	0.00159	0.00161	0.00160
	(A2 * A3 * B1 * !Y)	-0.00169	-0.00175	-0.00175
	(A2 * !B1 * Y)	0.00159	0.00161	0.00160
	(A2 * !B1 * Y)	-0.00169	-0.00175	-0.00175
	(A2 * !A3 * B1 * !Y)	0.00161	0.00161	0.00160
	(A2 * !A3 * B1 * !Y)	-0.00165	-0.00175	-0.00175
	(!A2 * A3 * B1 * !Y)	0.00163	0.00161	0.00160
	(!A2 * A3 * B1 * !Y)	-0.00156	-0.00170	-0.00170
	(!A2 * A3 * !B1 * Y)	0.00160	0.00161	0.00160
	(!A2 * A3 * !B1 * Y)	-0.00158	-0.00170	-0.00170
	(!A2 * !A3 * !B1 * Y)	0.00152	0.00154	0.00153
	(!A2 * !A3 * !B1 * Y)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00325	0.00323	0.00323
	(A2 * A3 * B1 * !Y)	-0.00347	-0.00362	-0.00362
	(A2 * !B1 * Y)	0.00323	0.00323	0.00323
	(A2 * !B1 * Y)	-0.00349	-0.00363	-0.00363
	(A2 * !A3 * B1 * !Y)	0.00330	0.00324	0.00324
	(A2 * !A3 * B1 * !Y)	-0.00339	-0.00360	-0.00362
	(!A2 * A3 * B1 * !Y)	0.00331	0.00327	0.00324
	(!A2 * A3 * B1 * !Y)	-0.00319	-0.00353	-0.00351
	(!A2 * A3 * !B1 * Y)	0.00323	0.00326	0.00323
	(!A2 * A3 * !B1 * Y)	-0.00325	-0.00354	-0.00351
	(!A2 * !A3 * !B1 * Y)	0.00311	0.00314	0.00312
	(!A2 * !A3 * !B1 * Y)	-0.00369	-0.00371	-0.00370

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00625	0.00633	0.00624
	(A2 * A3 * B1 * !Y)	-0.00687	-0.00719	-0.00716
	(A2 * !B1 * Y)	0.00622	0.00632	0.00623
	(A2 * !B1 * Y)	-0.00691	-0.00721	-0.00717
	(A2 * !A3 * B1 * !Y)	0.00632	0.00633	0.00624
	(A2 * !A3 * B1 * !Y)	-0.00672	-0.00719	-0.00715
	(!A2 * A3 * B1 * !Y)	0.00633	0.00632	0.00624
	(!A2 * A3 * B1 * !Y)	-0.00633	-0.00701	-0.00695
	(!A2 * A3 * !B1 * Y)	0.00621	0.00630	0.00623
	(!A2 * A3 * !B1 * Y)	-0.00643	-0.00703	-0.00696
	(!A2 * !A3 * !B1 * Y)	0.00588	0.00588	0.00588
	(!A2 * !A3 * !B1 * Y)	-0.00732	-0.00731	-0.00731

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)**	-0.00159	-0.00160	-0.00160
	(A2 * A3 * B1 * !Y)	0.00175	0.00175	0.00175
	(A2 * !B1 * Y)	-0.00159	-0.00160	-0.00160
	(A2 * !B1 * Y)	0.00175	0.00175	0.00175
	(A2 * !A3 * B1 * !Y)	-0.00160	-0.00160	-0.00160
	(A2 * !A3 * B1 * !Y)	0.00175	0.00175	0.00175
	(!A2 * A3 * B1 * !Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * B1 * !Y)	0.00169	0.00170	0.00170
	(!A2 * A3 * !B1 * Y)	-0.00160	-0.00160	-0.00160
	(!A2 * A3 * !B1 * Y)	0.00169	0.00170	0.00170
	(!A2 * !A3 * !B1 * Y)	-0.00147	-0.00154	-0.00153
	(!A2 * !A3 * !B1 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00322	-0.00323	-0.00323
	(A2 * A3 * B1 * !Y)	0.00360	0.00362	0.00362
	(A2 * !B1 * Y)	-0.00321	-0.00322	-0.00322
	(A2 * !B1 * Y)	0.00361	0.00363	0.00363
	(A2 * !A3 * B1 * !Y)	-0.00322	-0.00322	-0.00323
	(A2 * !A3 * B1 * !Y)	0.00360	0.00360	0.00362
	(!A2 * A3 * B1 * !Y)	-0.00322	-0.00324	-0.00323
	(!A2 * A3 * B1 * !Y)	0.00349	0.00353	0.00351
	(!A2 * A3 * !B1 * Y)	-0.00322	-0.00324	-0.00322
	(!A2 * A3 * !B1 * Y)	0.00350	0.00354	0.00351
	(!A2 * !A3 * !B1 * Y)	-0.00286	-0.00307	-0.00309
	(!A2 * !A3 * !B1 * Y)	0.00373	0.00374	0.00371
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00621	-0.00624	-0.00622
	(A2 * A3 * B1 * !Y)	0.00713	0.00719	0.00716
	(A2 * !B1 * Y)	-0.00620	-0.00624	-0.00622
	(A2 * !B1 * Y)	0.00713	0.00721	0.00717
	(A2 * !A3 * B1 * !Y)	-0.00621	-0.00624	-0.00622
	(A2 * !A3 * B1 * !Y)	0.00712	0.00719	0.00715
	(!A2 * A3 * B1 * !Y)	-0.00621	-0.00625	-0.00622
	(!A2 * A3 * B1 * !Y)	0.00692	0.00702	0.00695
	(!A2 * A3 * !B1 * Y)	-0.00620	-0.00625	-0.00622
	(!A2 * A3 * !B1 * Y)	0.00693	0.00703	0.00696
	(!A2 * !A3 * !B1 * Y)	-0.00552	-0.00588	-0.00588
	(!A2 * !A3 * !B1 * Y)	0.00734	0.00739	0.00733

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)**	0.00189	0.00193	0.00186
	(A1 * A3 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(A1 * A3 * !B1 * Y)	0.00159	0.00160	0.00159
	(A1 * A3 * !B1 * Y)	-0.00155	-0.00155	-0.00155
	(A1 * !A3 * B1 * !Y)	0.00184	0.00185	0.00183
	(A1 * !A3 * B1 * !Y)	-0.00103	-0.00104	-0.00104
	(A1 * !A3 * !B1 * Y)	0.00158	0.00160	0.00159
	(A1 * !A3 * !B1 * Y)	-0.00201	-0.00204	-0.00205
	(!A1 * A3 * B1 * !Y)	0.00213	0.00184	0.00183
	(!A1 * A3 * B1 * !Y)	-0.00149	-0.00181	-0.00182
	(!A1 * A3 * !B1 * Y)	0.00158	0.00160	0.00159
	(!A1 * A3 * !B1 * Y)	-0.00201	-0.00206	-0.00205
	(!A1 * !A3 * !B1 * Y)	0.00151	0.00152	0.00151
	(!A1 * !A3 * !B1 * Y)	-0.00208	-0.00208	-0.00208
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00331	0.00334	0.00325
	(A1 * A3 * B1 * !Y)	-0.00236	-0.00237	-0.00235
	(A1 * A3 * !B1 * Y)	0.00312	0.00317	0.00313
	(A1 * A3 * !B1 * Y)	-0.00264	-0.00265	-0.00263
	(A1 * !A3 * B1 * !Y)	0.00320	0.00324	0.00320
	(A1 * !A3 * B1 * !Y)	-0.00197	-0.00199	-0.00199
	(A1 * !A3 * !B1 * Y)	0.00312	0.00316	0.00313
	(A1 * !A3 * !B1 * Y)	-0.00347	-0.00360	-0.00359
	(!A1 * A3 * B1 * !Y)	0.00375	0.00323	0.00317
	(!A1 * A3 * B1 * !Y)	-0.00296	-0.00360	-0.00359
	(!A1 * A3 * !B1 * Y)	0.00312	0.00318	0.00313
	(!A1 * A3 * !B1 * Y)	-0.00354	-0.00364	-0.00363
	(!A1 * !A3 * !B1 * Y)	0.00300	0.00304	0.00302
	(!A1 * !A3 * !B1 * Y)	-0.00366	-0.00369	-0.00368

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00659	0.00665	0.00643
	(A1 * A3 * B1 * !Y)	-0.00466	-0.00471	-0.00468
	(A1 * A3 * !B1 * Y)	0.00621	0.00628	0.00620
	(A1 * A3 * !B1 * Y)	-0.00523	-0.00530	-0.00525
	(A1 * !A3 * B1 * !Y)	0.00636	0.00644	0.00633
	(A1 * !A3 * B1 * !Y)	-0.00393	-0.00398	-0.00397
	(A1 * !A3 * !B1 * Y)	0.00621	0.00623	0.00619
	(A1 * !A3 * !B1 * Y)	-0.00702	-0.00721	-0.00718
	(!A1 * A3 * B1 * !Y)	0.00758	0.00632	0.00629
	(!A1 * A3 * B1 * !Y)	-0.00580	-0.00714	-0.00716
	(!A1 * A3 * !B1 * Y)	0.00620	0.00619	0.00619
	(!A1 * A3 * !B1 * Y)	-0.00709	-0.00727	-0.00725
	(!A1 * !A3 * !B1 * Y)	0.00584	0.00589	0.00586
	(!A1 * !A3 * !B1 * Y)	-0.00736	-0.00738	-0.00736

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)**	-0.00182	-0.00183	-0.00182
	(A1 * A3 * B1 * !Y)	0.00120	0.00121	0.00120
	(A1 * A3 * !B1 * Y)	-0.00159	-0.00159	-0.00158
	(A1 * A3 * !B1 * Y)	0.00155	0.00155	0.00155
	(A1 * !A3 * B1 * !Y)	-0.00182	-0.00182	-0.00181
	(A1 * !A3 * B1 * !Y)	0.00106	0.00106	0.00107
	(A1 * !A3 * !B1 * Y)	-0.00158	-0.00158	-0.00158
	(A1 * !A3 * !B1 * Y)	0.00204	0.00204	0.00205
	(!A1 * A3 * B1 * !Y)	-0.00182	-0.00182	-0.00182
	(!A1 * A3 * B1 * !Y)	0.00182	0.00182	0.00182
	(!A1 * A3 * !B1 * Y)	-0.00158	-0.00159	-0.00158
	(!A1 * A3 * !B1 * Y)	0.00204	0.00206	0.00205
	(!A1 * !A3 * !B1 * Y)	-0.00143	-0.00152	-0.00151
	(!A1 * !A3 * !B1 * Y)	0.00209	0.00209	0.00208
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00320	-0.00322	-0.00320
	(A1 * A3 * B1 * !Y)	0.00236	0.00237	0.00235
	(A1 * A3 * !B1 * Y)	-0.00312	-0.00314	-0.00312
	(A1 * A3 * !B1 * Y)	0.00264	0.00265	0.00263
	(A1 * !A3 * B1 * !Y)	-0.00315	-0.00317	-0.00315
	(A1 * !A3 * B1 * !Y)	0.00202	0.00205	0.00205
	(A1 * !A3 * !B1 * Y)	-0.00311	-0.00313	-0.00312
	(A1 * !A3 * !B1 * Y)	0.00358	0.00360	0.00359
	(!A1 * A3 * B1 * !Y)	-0.00316	-0.00317	-0.00316
	(!A1 * A3 * B1 * !Y)	0.00359	0.00360	0.00359
	(!A1 * A3 * !B1 * Y)	-0.00312	-0.00313	-0.00312
	(!A1 * A3 * !B1 * Y)	0.00363	0.00364	0.00363
	(!A1 * !A3 * !B1 * Y)	-0.00276	-0.00298	-0.00300
	(!A1 * !A3 * !B1 * Y)	0.00368	0.00371	0.00369

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00632	-0.00637	-0.00634
	(A1 * A3 * B1 * !Y)	0.00466	0.00471	0.00468
	(A1 * A3 * !B1 * Y)	-0.00616	-0.00621	-0.00618
	(A1 * A3 * !B1 * Y)	0.00523	0.00530	0.00525
	(A1 * !A3 * B1 * !Y)	-0.00626	-0.00627	-0.00624
	(A1 * !A3 * B1 * !Y)	0.00404	0.00406	0.00408
	(A1 * !A3 * !B1 * Y)	-0.00618	-0.00621	-0.00618
	(A1 * !A3 * !B1 * Y)	0.00718	0.00721	0.00718
	(!A1 * A3 * B1 * !Y)	-0.00628	-0.00629	-0.00626
	(!A1 * A3 * B1 * !Y)	0.00715	0.00718	0.00716
	(!A1 * A3 * !B1 * Y)	-0.00618	-0.00619	-0.00618
	(!A1 * A3 * !B1 * Y)	0.00725	0.00727	0.00725
	(!A1 * !A3 * !B1 * Y)	-0.00547	-0.00589	-0.00586
	(!A1 * !A3 * !B1 * Y)	0.00739	0.00743	0.00738

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00196	0.00196	0.00195
	(A2 * B1 * !Y)	-0.00087	-0.00087	-0.00087
	(A2 * !B1 * Y)	0.00152	0.00153	0.00152
	(A2 * !B1 * Y)	-0.00197	-0.00202	-0.00203
	(A1 * !A2 * B1 * !Y)	0.00196	0.00196	0.00195
	(A1 * !A2 * B1 * !Y)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * !B1 * Y)	0.00152	0.00152	0.00152
	(A1 * !A2 * !B1 * Y)	-0.00181	-0.00197	-0.00196
	(!A1 * !A2 * !B1 * Y)	0.00146	0.00145	0.00145
	(!A1 * !A2 * !B1 * Y)	-0.00205	-0.00205	-0.00205

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00363	0.00368	0.00365
	(A2 * B1 * !Y)	-0.00172	-0.00174	-0.00172
	(A2 * !B1 * Y)	0.00305	0.00310	0.00306
	(A2 * !B1 * Y)	-0.00367	-0.00379	-0.00378
	(A1 * !A2 * B1 * !Y)	0.00363	0.00368	0.00365
	(A1 * !A2 * B1 * !Y)	-0.00172	-0.00174	-0.00172
	(A1 * !A2 * !B1 * Y)	0.00305	0.00310	0.00305
	(A1 * !A2 * !B1 * Y)	-0.00339	-0.00368	-0.00365
	(!A1 * !A2 * !B1 * Y)	0.00289	0.00292	0.00290
	(!A1 * !A2 * !B1 * Y)	-0.00383	-0.00385	-0.00384
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00714	0.00720	0.00714
	(A2 * B1 * !Y)	-0.00345	-0.00346	-0.00343
	(A2 * !B1 * Y)	0.00597	0.00602	0.00600
	(A2 * !B1 * Y)	-0.00722	-0.00752	-0.00748
	(A1 * !A2 * B1 * !Y)	0.00714	0.00726	0.00714
	(A1 * !A2 * B1 * !Y)	-0.00344	-0.00348	-0.00342
	(A1 * !A2 * !B1 * Y)	0.00598	0.00604	0.00600
	(A1 * !A2 * !B1 * Y)	-0.00664	-0.00719	-0.00717
	(!A1 * !A2 * !B1 * Y)	0.00568	0.00575	0.00570
	(!A1 * !A2 * !B1 * Y)	-0.00760	-0.00765	-0.00761

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00189	-0.00190	-0.00194
	(A2 * B1 * !Y)	0.00091	0.00092	0.00088
	(A2 * !B1 * Y)	-0.00152	-0.00152	-0.00152
	(A2 * !B1 * Y)	0.00202	0.00202	0.00203
	(A1 * !A2 * B1 * !Y)	-0.00183	-0.00185	-0.00193
	(A1 * !A2 * B1 * !Y)	0.00094	0.00094	0.00088
	(A1 * !A2 * !B1 * Y)	-0.00152	-0.00152	-0.00152
	(A1 * !A2 * !B1 * Y)	0.00195	0.00197	0.00196
	(!A1 * !A2 * !B1 * Y)	-0.00138	-0.00145	-0.00145
	(!A1 * !A2 * !B1 * Y)	0.00206	0.00207	0.00205
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00352	-0.00353	-0.00363
	(A2 * B1 * !Y)	0.00183	0.00183	0.00176
	(A2 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(A2 * !B1 * Y)	0.00378	0.00379	0.00378
	(A1 * !A2 * B1 * !Y)	-0.00336	-0.00337	-0.00359
	(A1 * !A2 * B1 * !Y)	0.00192	0.00192	0.00176
	(A1 * !A2 * !B1 * Y)	-0.00305	-0.00306	-0.00305
	(A1 * !A2 * !B1 * Y)	0.00365	0.00368	0.00365
	(!A1 * !A2 * !B1 * Y)	-0.00270	-0.00292	-0.00290
	(!A1 * !A2 * !B1 * Y)	0.00384	0.00387	0.00385
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00690	-0.00691	-0.00711
	(A2 * B1 * !Y)	0.00365	0.00363	0.00348
	(A2 * !B1 * Y)	-0.00597	-0.00601	-0.00598
	(A2 * !B1 * Y)	0.00748	0.00754	0.00748
	(A1 * !A2 * B1 * !Y)	-0.00659	-0.00660	-0.00703
	(A1 * !A2 * B1 * !Y)	0.00381	0.00380	0.00350
	(A1 * !A2 * !B1 * Y)	-0.00598	-0.00600	-0.00598
	(A1 * !A2 * !B1 * Y)	0.00717	0.00719	0.00717
	(!A1 * !A2 * !B1 * Y)	-0.00538	-0.00575	-0.00570
	(!A1 * !A2 * !B1 * Y)	0.00764	0.00768	0.00763

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	(!A1 * !A2 * !A3 * Y)	0.00056	0.00056	0.00053
	(!A1 * !A2 * !A3 * Y)	-0.00212	-0.00212	-0.00217
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00109	0.00109	0.00102
	(!A1 * !A2 * !A3 * Y)	-0.00419	-0.00419	-0.00434
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00193	0.00192	0.00182
	(!A1 * !A2 * !A3 * Y)	-0.00493	-0.00492	-0.00519

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)	-0.00052	-0.00053	-0.00052
	(!A1 * !A2 * !A3 * Y)	0.00218	0.00221	0.00218
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00101	-0.00102	-0.00100
	(!A1 * !A2 * !A3 * Y)	0.00436	0.00443	0.00435
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00176	-0.00180	-0.00177
	(!A1 * !A2 * !A3 * Y)	0.00519	0.00529	0.00521

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o31a_1	11.18880
sky130_fd_sc_hs__o31a_2	12.78720
sky130_fd_sc_hs__o31a_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A1	A2	A3	B1	X
sky130_fd_sc_hs__o31a_1	0.00249	0.00244	0.00244	0.00226	1.37369
sky130_fd_sc_hs__o31a_2	0.00264	0.00256	0.00258	0.00270	2.35982
sky130_fd_sc_hs__o31a_4	0.00451	0.00483	0.00479	0.00475	5.16766

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.25562	0.58506
sky130_fd_sc_hs__o31a_2	0.00000	0.13378	0.22694
sky130_fd_sc_hs__o31a_4	0.00000	0.26870	0.45387

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)	0.06000	0.45636	5.16454
	A2->X (RR)	0.05914	0.45065	5.10113
	A3->X (RR)	0.05204	0.43476	5.12095
	B1->X (RR)	0.05411	0.45875	5.64558
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.06307	0.39509	5.07050
	A2->X (RR)	0.06236	0.39056	5.01254
	A3->X (RR)	0.05464	0.37619	4.99899
	B1->X (RR)	0.05786	0.40401	5.55648
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.06683	0.32149	5.23534
	A2->X (RR)	0.06485	0.31175	5.14602
	A3->X (RR)	0.05668	0.29997	5.19424
	B1->X (RR)	0.06086	0.33443	5.69831

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.15075	0.53567	4.92238
	A2->X (FF)	0.13990	0.55564	5.13415
	A3->X (FF)	0.11772	0.54047	5.12426
	B1->X (FF)	0.05391	0.42756	4.77509
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.18828	0.56114	4.74210
	A2->X (FF)	0.17697	0.58420	4.93539
	A3->X (FF)	0.15445	0.56982	4.90606
	B1->X (FF)	0.05501	0.38411	4.32057
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.19463	0.55084	5.22922
	A2->X (FF)	0.18329	0.56745	5.35628
	A3->X (FF)	0.15170	0.54815	5.32918
	B1->X (FF)	0.05245	0.37658	4.77303

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.01206	0.01240	0.03555
	A1	0.00492	0.00527	0.02842
	A2	0.01049	0.01129	0.03416
	A2	0.00427	0.00507	0.02794
	A3	0.00880	0.01001	0.04349
	A3	0.00335	0.00459	0.03805
	B1	0.00719	0.01077	0.08772
	B1	0.00338	0.00698	0.08420
sky130_fd_sc_hs__o31a_2	A1	0.01517	0.01557	0.03325
	A1	0.00763	0.00804	0.02571
	A2	0.01351	0.01438	0.03184
	A2	0.00693	0.00781	0.02526
	A3	0.01183	0.01298	0.03831
	A3	0.00597	0.00716	0.03245
	B1	0.01013	0.01314	0.08459
	B1	0.00566	0.00871	0.08057
sky130_fd_sc_hs__o31a_4	A1	0.02921	0.03092	0.09284
	A1	0.01534	0.01708	0.07899
	A2	0.02626	0.02833	0.08717
	A2	0.01354	0.01567	0.07447
	A3	0.02164	0.02472	0.10666
	A3	0.01099	0.01420	0.09602
	B1	0.01830	0.02448	0.15558
	B1	0.01079	0.01701	0.14926

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00411	0.00410	0.03022
	A1	0.01120	0.01118	0.03694
	A2	0.00415	0.00458	0.03368
	A2	0.01029	0.01072	0.03906
	A3	0.00411	0.00603	0.04857
	A3	0.00946	0.01129	0.05312
	B1	0.00299	0.00716	0.07982
	B1	0.00681	0.01096	0.08361
sky130_fd_sc_hs__o31a_2	A1	0.00794	0.00661	0.03150
	A1	0.01542	0.01408	0.03785
	A2	0.00803	0.00715	0.03275
	A2	0.01452	0.01363	0.03858
	A3	0.00794	0.00855	0.04792
	A3	0.01368	0.01431	0.05230
	B1	0.00527	0.00917	0.07656
	B1	0.00973	0.01358	0.08082
sky130_fd_sc_hs__o31a_4	A1	0.01689	0.01455	0.07557
	A1	0.03071	0.02829	0.08645
	A2	0.01642	0.01471	0.07369
	A2	0.02902	0.02731	0.08238
	A3	0.01687	0.01778	0.10096
	A3	0.02731	0.02820	0.10872
	B1	0.01068	0.01815	0.15960
	B1	0.02044	0.02807	0.16211

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)**	0.00156	0.00156	0.00155
	(A2 * A3 * B1 * X)	-0.00152	-0.00156	-0.00157
	(A2 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !B1 * !X)	-0.00175	-0.00179	-0.00179
	(A2 * !A3 * B1 * X)	0.00160	0.00156	0.00155
	(A2 * !A3 * B1 * X)	-0.00146	-0.00156	-0.00157
	(!A2 * A3 * B1 * X)	0.00159	0.00156	0.00155
	(!A2 * A3 * B1 * X)	-0.00137	-0.00153	-0.00152
	(!A2 * A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A2 * A3 * !B1 * !X)	-0.00163	-0.00175	-0.00174
	(!A2 * !A3 * !B1 * !X)	0.00126	0.00128	0.00127
	(!A2 * !A3 * !B1 * !X)	-0.00180	-0.00181	-0.00180
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00170	0.00171	0.00170
	(A2 * A3 * B1 * X)	-0.00159	-0.00164	-0.00164
	(A2 * !B1 * !X)	0.00158	0.00159	0.00158
	(A2 * !B1 * !X)	-0.00172	-0.00176	-0.00176
	(A2 * !A3 * B1 * X)	0.00175	0.00170	0.00170
	(A2 * !A3 * B1 * X)	-0.00153	-0.00164	-0.00164
	(!A2 * A3 * B1 * X)	0.00173	0.00170	0.00170
	(!A2 * A3 * B1 * X)	-0.00145	-0.00160	-0.00159
	(!A2 * A3 * !B1 * !X)	0.00157	0.00158	0.00158
	(!A2 * A3 * !B1 * !X)	-0.00159	-0.00172	-0.00171
	(!A2 * !A3 * !B1 * !X)	0.00152	0.00154	0.00153
	(!A2 * !A3 * !B1 * !X)	-0.00177	-0.00178	-0.00177

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00262	0.00265	0.00261
	(A2 * A3 * B1 * X)	-0.00315	-0.00329	-0.00327
	(A2 * !B1 * !X)	0.00262	0.00265	0.00261
	(A2 * !B1 * !X)	-0.00318	-0.00330	-0.00328
	(A2 * !A3 * B1 * X)	0.00276	0.00265	0.00262
	(A2 * !A3 * B1 * X)	-0.00298	-0.00329	-0.00327
	(!A2 * A3 * B1 * X)	0.00273	0.00265	0.00261
	(!A2 * A3 * B1 * X)	-0.00283	-0.00320	-0.00318
	(!A2 * A3 * !B1 * !X)	0.00262	0.00264	0.00261
	(!A2 * A3 * !B1 * !X)	-0.00291	-0.00319	-0.00317
	(!A2 * !A3 * !B1 * !X)	0.00253	0.00256	0.00253
	(!A2 * !A3 * !B1 * !X)	-0.00335	-0.00337	-0.00335

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)**	-0.00154	-0.00155	-0.00154
	(A2 * A3 * B1 * X)	0.00157	0.00157	0.00157
	(A2 * !B1 * !X)	-0.00133	-0.00133	-0.00133
	(A2 * !B1 * !X)	0.00179	0.00179	0.00179
	(A2 * !A3 * B1 * X)	-0.00154	-0.00155	-0.00154
	(A2 * !A3 * B1 * X)	0.00157	0.00158	0.00157
	(!A2 * A3 * B1 * X)	-0.00154	-0.00154	-0.00154
	(!A2 * A3 * B1 * X)	0.00152	0.00153	0.00152
	(!A2 * A3 * !B1 * !X)	-0.00133	-0.00133	-0.00133
	(!A2 * A3 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A2 * !A3 * !B1 * !X)	-0.00121	-0.00128	-0.00127
	(!A2 * !A3 * !B1 * !X)	0.00182	0.00182	0.00181

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00169	-0.00170	-0.00169
	(A2 * A3 * B1 * X)	0.00164	0.00165	0.00164
	(A2 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A2 * !B1 * !X)	0.00176	0.00177	0.00176
	(A2 * !A3 * B1 * X)	-0.00169	-0.00169	-0.00169
	(A2 * !A3 * B1 * X)	0.00163	0.00164	0.00164
	(!A2 * A3 * B1 * X)	-0.00169	-0.00169	-0.00169
	(!A2 * A3 * B1 * X)	0.00160	0.00160	0.00159
	(!A2 * A3 * !B1 * !X)	-0.00157	-0.00157	-0.00157
	(!A2 * A3 * !B1 * !X)	0.00171	0.00172	0.00171
	(!A2 * !A3 * !B1 * !X)	-0.00145	-0.00153	-0.00152
	(!A2 * !A3 * !B1 * !X)	0.00179	0.00179	0.00178
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00260	-0.00261	-0.00260
	(A2 * A3 * B1 * X)	0.00326	0.00329	0.00327
	(A2 * !B1 * !X)	-0.00259	-0.00261	-0.00260
	(A2 * !B1 * !X)	0.00327	0.00330	0.00328
	(A2 * !A3 * B1 * X)	-0.00260	-0.00261	-0.00260
	(A2 * !A3 * B1 * X)	0.00326	0.00329	0.00327
	(!A2 * A3 * B1 * X)	-0.00260	-0.00261	-0.00260
	(!A2 * A3 * B1 * X)	0.00316	0.00320	0.00318
	(!A2 * A3 * !B1 * !X)	-0.00259	-0.00261	-0.00260
	(!A2 * A3 * !B1 * !X)	0.00316	0.00319	0.00317
	(!A2 * !A3 * !B1 * !X)	-0.00234	-0.00249	-0.00250
	(!A2 * !A3 * !B1 * !X)	0.00338	0.00338	0.00336

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)**	0.00154	0.00155	0.00149
	(A1 * A3 * B1 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(A1 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00116
	(A1 * !A3 * B1 * X)	0.00145	0.00147	0.00145
	(A1 * !A3 * B1 * X)	-0.00084	-0.00085	-0.00085
	(A1 * !A3 * !B1 * !X)	0.00137	0.00138	0.00137
	(A1 * !A3 * !B1 * !X)	-0.00157	-0.00161	-0.00160
	(!A1 * A3 * B1 * X)	0.00174	0.00145	0.00144
	(!A1 * A3 * B1 * X)	-0.00121	-0.00153	-0.00154
	(!A1 * A3 * !B1 * !X)	0.00137	0.00137	0.00137
	(!A1 * A3 * !B1 * !X)	-0.00157	-0.00161	-0.00161
	(!A1 * !A3 * !B1 * !X)	0.00131	0.00130	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00163	-0.00162	-0.00162
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00166	0.00169	0.00163
	(A1 * A3 * B1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A3 * !B1 * !X)	0.00151	0.00153	0.00152
	(A1 * A3 * !B1 * !X)	-0.00120	-0.00120	-0.00119
	(A1 * !A3 * B1 * X)	0.00159	0.00161	0.00158
	(A1 * !A3 * B1 * X)	-0.00086	-0.00088	-0.00088
	(A1 * !A3 * !B1 * !X)	0.00151	0.00153	0.00152
	(A1 * !A3 * !B1 * !X)	-0.00159	-0.00163	-0.00163
	(!A1 * A3 * B1 * X)	0.00188	0.00159	0.00158
	(!A1 * A3 * B1 * X)	-0.00125	-0.00156	-0.00157
	(!A1 * A3 * !B1 * !X)	0.00151	0.00152	0.00152
	(!A1 * A3 * !B1 * !X)	-0.00159	-0.00163	-0.00163
	(!A1 * !A3 * !B1 * !X)	0.00146	0.00148	0.00146
	(!A1 * !A3 * !B1 * !X)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00321	0.00327	0.00316
	(A1 * A3 * B1 * X)	-0.00211	-0.00213	-0.00212
	(A1 * A3 * !B1 * !X)	0.00308	0.00311	0.00310
	(A1 * A3 * !B1 * !X)	-0.00234	-0.00235	-0.00234
	(A1 * !A3 * B1 * X)	0.00313	0.00315	0.00311
	(A1 * !A3 * B1 * X)	-0.00180	-0.00182	-0.00183
	(A1 * !A3 * !B1 * !X)	0.00308	0.00310	0.00309
	(A1 * !A3 * !B1 * !X)	-0.00319	-0.00327	-0.00327
	(!A1 * A3 * B1 * X)	0.00368	0.00313	0.00310
	(!A1 * A3 * B1 * X)	-0.00259	-0.00322	-0.00324
	(!A1 * A3 * !B1 * !X)	0.00308	0.00311	0.00309
	(!A1 * A3 * !B1 * !X)	-0.00310	-0.00325	-0.00323
	(!A1 * !A3 * !B1 * !X)	0.00295	0.00296	0.00296
	(!A1 * !A3 * !B1 * !X)	-0.00331	-0.00331	-0.00332

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)**	-0.00144	-0.00144	-0.00144
	(A1 * A3 * B1 * X)	0.00100	0.00101	0.00100
	(A1 * A3 * !B1 * !X)	-0.00137	-0.00137	-0.00137
	(A1 * A3 * !B1 * !X)	0.00117	0.00117	0.00116
	(A1 * !A3 * B1 * X)	-0.00142	-0.00143	-0.00142
	(A1 * !A3 * B1 * X)	0.00087	0.00087	0.00088
	(A1 * !A3 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A3 * !B1 * !X)	0.00159	0.00161	0.00160
	(!A1 * A3 * B1 * X)	-0.00143	-0.00143	-0.00142
	(!A1 * A3 * B1 * X)	0.00155	0.00156	0.00155
	(!A1 * A3 * !B1 * !X)	-0.00137	-0.00137	-0.00137
	(!A1 * A3 * !B1 * !X)	0.00161	0.00161	0.00161
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00130	-0.00130
	(!A1 * !A3 * !B1 * !X)	0.00164	0.00164	0.00163
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00158	-0.00159	-0.00158
	(A1 * A3 * B1 * X)	0.00103	0.00103	0.00103
	(A1 * A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * A3 * !B1 * !X)	0.00120	0.00120	0.00119
	(A1 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00156
	(A1 * !A3 * B1 * X)	0.00090	0.00090	0.00090
	(A1 * !A3 * !B1 * !X)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * !B1 * !X)	0.00162	0.00163	0.00163
	(!A1 * A3 * B1 * X)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * B1 * X)	0.00157	0.00158	0.00158
	(!A1 * A3 * !B1 * !X)	-0.00151	-0.00151	-0.00151
	(!A1 * A3 * !B1 * !X)	0.00163	0.00163	0.00163
	(!A1 * !A3 * !B1 * !X)	-0.00138	-0.00147	-0.00146
	(!A1 * !A3 * !B1 * !X)	0.00166	0.00166	0.00165

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00310	-0.00312	-0.00311
	(A1 * A3 * B1 * X)	0.00211	0.00213	0.00212
	(A1 * A3 * !B1 * !X)	-0.00308	-0.00310	-0.00309
	(A1 * A3 * !B1 * !X)	0.00234	0.00235	0.00234
	(A1 * !A3 * B1 * X)	-0.00307	-0.00309	-0.00305
	(A1 * !A3 * B1 * X)	0.00186	0.00188	0.00188
	(A1 * !A3 * !B1 * !X)	-0.00307	-0.00310	-0.00308
	(A1 * !A3 * !B1 * !X)	0.00325	0.00328	0.00327
	(!A1 * A3 * B1 * X)	-0.00307	-0.00309	-0.00307
	(!A1 * A3 * B1 * X)	0.00322	0.00324	0.00324
	(!A1 * A3 * !B1 * !X)	-0.00307	-0.00309	-0.00308
	(!A1 * A3 * !B1 * !X)	0.00322	0.00325	0.00323
	(!A1 * !A3 * !B1 * !X)	-0.00283	-0.00296	-0.00296
	(!A1 * !A3 * !B1 * !X)	0.00333	0.00334	0.00333

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00155	0.00156	0.00155
	(A2 * B1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !X)	0.00135	0.00135	0.00136
	(A2 * !B1 * !X)	-0.00159	-0.00163	-0.00164
	(A1 * !A2 * B1 * X)	0.00155	0.00156	0.00155
	(A1 * !A2 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !X)	0.00135	0.00137	0.00136
	(A1 * !A2 * !B1 * !X)	-0.00146	-0.00158	-0.00158
	(!A1 * !A2 * !B1 * !X)	0.00128	0.00129	0.00129
	(!A1 * !A2 * !B1 * !X)	-0.00165	-0.00166	-0.00165

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00178	0.00179	0.00178
	(A2 * B1 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !X)	0.00156	0.00157	0.00156
	(A2 * !B1 * !X)	-0.00162	-0.00167	-0.00166
	(A1 * !A2 * B1 * X)	0.00178	0.00179	0.00178
	(A1 * !A2 * B1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * !B1 * !X)	0.00156	0.00158	0.00156
	(A1 * !A2 * !B1 * !X)	-0.00149	-0.00161	-0.00161
	(!A1 * !A2 * !B1 * !X)	0.00148	0.00149	0.00149
	(!A1 * !A2 * !B1 * !X)	-0.00167	-0.00167	-0.00168
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00307	0.00310	0.00308
	(A2 * B1 * X)	-0.00176	-0.00177	-0.00176
	(A2 * !B1 * !X)	0.00279	0.00279	0.00279
	(A2 * !B1 * !X)	-0.00325	-0.00339	-0.00340
	(A1 * !A2 * B1 * X)	0.00307	0.00310	0.00308
	(A1 * !A2 * B1 * X)	-0.00176	-0.00177	-0.00175
	(A1 * !A2 * !B1 * !X)	0.00279	0.00279	0.00279
	(A1 * !A2 * !B1 * !X)	-0.00301	-0.00328	-0.00327
	(!A1 * !A2 * !B1 * !X)	0.00265	0.00266	0.00265
	(!A1 * !A2 * !B1 * !X)	-0.00350	-0.00350	-0.00350

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00150	-0.00150	-0.00154
	(A2 * B1 * X)	0.00084	0.00084	0.00081
	(A2 * !B1 * !X)	-0.00135	-0.00135	-0.00135
	(A2 * !B1 * !X)	0.00164	0.00164	0.00164
	(A1 * !A2 * B1 * X)	-0.00145	-0.00145	-0.00153
	(A1 * !A2 * B1 * X)	0.00086	0.00086	0.00081
	(A1 * !A2 * !B1 * !X)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * !B1 * !X)	0.00157	0.00158	0.00158
	(!A1 * !A2 * !B1 * !X)	-0.00122	-0.00129	-0.00129
	(!A1 * !A2 * !B1 * !X)	0.00167	0.00167	0.00166
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00173	-0.00174	-0.00177
	(A2 * B1 * X)	0.00083	0.00083	0.00080
	(A2 * !B1 * !X)	-0.00156	-0.00156	-0.00156
	(A2 * !B1 * !X)	0.00166	0.00167	0.00166
	(A1 * !A2 * B1 * X)	-0.00168	-0.00169	-0.00176
	(A1 * !A2 * B1 * X)	0.00086	0.00086	0.00080
	(A1 * !A2 * !B1 * !X)	-0.00155	-0.00156	-0.00156
	(A1 * !A2 * !B1 * !X)	0.00160	0.00161	0.00161
	(!A1 * !A2 * !B1 * !X)	-0.00142	-0.00149	-0.00149
	(!A1 * !A2 * !B1 * !X)	0.00169	0.00169	0.00169
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00294	-0.00295	-0.00306
	(A2 * B1 * X)	0.00188	0.00188	0.00180
	(A2 * !B1 * !X)	-0.00279	-0.00279	-0.00278
	(A2 * !B1 * !X)	0.00340	0.00339	0.00340
	(A1 * !A2 * B1 * X)	-0.00283	-0.00284	-0.00303
	(A1 * !A2 * B1 * X)	0.00193	0.00193	0.00180
	(A1 * !A2 * !B1 * !X)	-0.00279	-0.00279	-0.00278
	(A1 * !A2 * !B1 * !X)	0.00328	0.00328	0.00327
	(!A1 * !A2 * !B1 * !X)	-0.00246	-0.00265	-0.00265
	(!A1 * !A2 * !B1 * !X)	0.00355	0.00352	0.00351

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)	0.00047	0.00047	0.00044
	(!A1 * !A2 * !A3 * !X)	-0.00170	-0.00171	-0.00176
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00061	0.00061	0.00057
	(!A1 * !A2 * !A3 * !X)	-0.00211	-0.00212	-0.00217
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00089	0.00089	0.00083
	(!A1 * !A2 * !A3 * !X)	-0.00396	-0.00398	-0.00410

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)	-0.00043	-0.00044	-0.00043
	(!A1 * !A2 * !A3 * !X)	0.00176	0.00179	0.00176
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * !X)	0.00219	0.00220	0.00218
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00080	-0.00082	-0.00080
	(!A1 * !A2 * !A3 * !X)	0.00411	0.00418	0.00412

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32ai_1	11.18880
sky130_fd_sc_hs__o32ai_2	20.77920
sky130_fd_sc_hs__o32ai_4	36.76320

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	Y
sky130_fd_sc_hs__o32ai_1	0.00251	0.00278	0.00271	0.00267	0.00277	0.49442
sky130_fd_sc_hs__o32ai_2	0.00533	0.00497	0.00541	0.00511	0.00519	0.85555
sky130_fd_sc_hs__o32ai_4	0.01003	0.01008	0.01020	0.01044	0.01012	1.53921

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.03090	0.12588
sky130_fd_sc_hs__o32ai_2	0.00000	0.06180	0.25175
sky130_fd_sc_hs__o32ai_4	0.00000	0.12360	0.50351

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)	0.14124	0.97857	10.12790
	A2->Y (FR)	0.13282	1.00331	10.70160
	A3->Y (FR)	0.10970	0.97132	10.57890
	B1->Y (FR)	0.05490	0.72018	8.32142
	B2->Y (FR)	0.04352	0.71472	8.46861
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.15232	0.85581	9.91070
	A2->Y (FR)	0.14284	0.89156	10.66330
	A3->Y (FR)	0.11302	0.85589	10.55560
	B1->Y (FR)	0.05770	0.66094	8.56775
	B2->Y (FR)	0.04035	0.65037	8.67306
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.15358	0.74890	9.75362
	A2->Y (FR)	0.14342	0.78330	10.52680
	A3->Y (FR)	0.11281	0.75742	10.52610
	B1->Y (FR)	0.05484	0.56806	8.26385
	B2->Y (FR)	0.03901	0.57039	8.49114

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.03281	0.26426	2.44071
	A2->Y (RF)	0.03377	0.26959	2.54809
	A3->Y (RF)	0.02880	0.26070	2.52321
	B1->Y (RF)	0.02598	0.29749	2.98900
	B2->Y (RF)	0.02195	0.28574	2.92632
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.03432	0.21669	2.21509
	A2->Y (RF)	0.03564	0.22796	2.41709
	A3->Y (RF)	0.02586	0.20822	2.38962
	B1->Y (RF)	0.02705	0.25538	2.92550
	B2->Y (RF)	0.02200	0.24978	2.97889
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.03975	0.19751	2.40659
	A2->Y (RF)	0.03576	0.18372	2.33479
	A3->Y (RF)	0.02720	0.16729	2.24926
	B1->Y (RF)	0.03886	0.27679	3.53406
	B2->Y (RF)	0.03261	0.28519	3.81301

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00148	0.00135	0.00964
	A1	0.01044	0.01035	0.01824
	A2	0.00161	0.00157	0.00995
	A2	0.00968	0.00965	0.01769
	A3	0.00158	0.00233	0.01928
	A3	0.00859	0.00932	0.02558
	B1	-0.00037	-0.00022	0.01009
	B1	0.00514	0.00531	0.01560
	B2	-0.00040	0.00110	0.02152
	B2	0.00411	0.00561	0.02608
sky130_fd_sc_hs__o32ai_2	A1	0.00264	0.00232	0.01896
	A1	0.02151	0.02123	0.03710
	A2	0.00294	0.00273	0.01796
	A2	0.01931	0.01915	0.03393
	A3	0.00276	0.00425	0.03530
	A3	0.01751	0.01894	0.04870
	B1	-0.00095	-0.00061	0.01860
	B1	0.01013	0.01029	0.02988
	B2	-0.00119	0.00167	0.03671
	B2	0.00811	0.01079	0.04610

sky130_fd_sc_hs__o32ai_4	**A1**	0.00527	0.00476	0.03977
	A1	0.04235	0.04188	0.07601
	A2	0.00542	0.00532	0.03889
	A2	0.03836	0.03832	0.07130
	A3	0.00539	0.00858	0.07088
	A3	0.03431	0.03754	0.09831
	B1	-0.00198	-0.00142	0.03255
	B1	0.02048	0.02109	0.05518
	B2	-0.00207	0.00174	0.05780
	B2	0.01635	0.02014	0.07638

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.01226	0.01227	0.01835
	A1	0.00309	0.00306	0.00919
	A2	0.01046	0.01052	0.01621
	A2	0.00212	0.00215	0.00788
	A3	0.00850	0.00866	0.01424
	A3	0.00019	0.00037	0.00611
	B1	0.01038	0.01062	0.01864
	B1	0.00099	0.00128	0.01015
	B2	0.00468	0.00512	0.01378
	B2	0.00018	0.00057	0.00925

sky130_fd_sc_hs__o32ai_2	**A1**	0.02577	0.02574	0.03821
	A1	0.00656	0.00648	0.01900
	A2	0.02198	0.02199	0.03325
	A2	0.00511	0.00511	0.01628
	A3	0.01776	0.01813	0.02908
	A3	0.00245	0.00281	0.01375
	B1	0.02156	0.02202	0.03700
	B1	0.00234	0.00301	0.02020
	B2	0.01371	0.01447	0.02963
	B2	-0.00015	0.00072	0.01655
sky130_fd_sc_hs__o32ai_4	**A1**	0.05022	0.05029	0.08257
	A1	0.01246	0.01253	0.04454
	A2	0.04292	0.04326	0.07350
	A2	0.00901	0.00933	0.03933
	A3	0.03436	0.03546	0.06485
	A3	0.00432	0.00538	0.03453
	B1	0.02623	0.02734	0.06044
	B1	0.00394	0.00497	0.03800
	B2	0.01787	0.01955	0.04860
	B2	-0.00048	0.00110	0.02962

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)**	0.00163	0.00164	0.00163
	(A2 * A3 * B2 * !Y)	-0.00173	-0.00178	-0.00177
	(A2 * A3 * B1 * !B2 * !Y)	0.00163	0.00164	0.00163
	(A2 * A3 * B1 * !B2 * !Y)	-0.00173	-0.00178	-0.00178
	(A2 * !B1 * !B2 * Y)	0.00163	0.00164	0.00163
	(A2 * !B1 * !B2 * Y)	-0.00173	-0.00178	-0.00177
	(A2 * !A3 * B2 * !Y)	0.00165	0.00164	0.00163
	(A2 * !A3 * B2 * !Y)	-0.00170	-0.00178	-0.00178
	(A2 * !A3 * B1 * !B2 * !Y)	0.00165	0.00164	0.00163
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00170	-0.00178	-0.00178
	(!A2 * A3 * B2 * !Y)	0.00165	0.00164	0.00163
	(!A2 * A3 * B2 * !Y)	-0.00159	-0.00172	-0.00173
	(!A2 * A3 * B1 * !B2 * !Y)	0.00165	0.00164	0.00163
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00159	-0.00172	-0.00173
	(!A2 * A3 * !B1 * !B2 * Y)	0.00163	0.00164	0.00163
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00161	-0.00172	-0.00172
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00155	0.00156	0.00156
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00179	-0.00180	-0.00179

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00339	0.00338	0.00337
	(A2 * A3 * B2 * !Y)	-0.00360	-0.00369	-0.00372
	(A2 * A3 * B1 * !B2 * !Y)	0.00339	0.00338	0.00337
	(A2 * A3 * B1 * !B2 * !Y)	-0.00360	-0.00369	-0.00372
	(A2 * !B1 * !B2 * Y)	0.00338	0.00338	0.00337
	(A2 * !B1 * !B2 * Y)	-0.00362	-0.00372	-0.00372
	(A2 * !A3 * B2 * !Y)	0.00343	0.00338	0.00337
	(A2 * !A3 * B2 * !Y)	-0.00355	-0.00372	-0.00372
	(A2 * !A3 * B1 * !B2 * !Y)	0.00343	0.00338	0.00337
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00355	-0.00372	-0.00372
	(!A2 * A3 * B2 * !Y)	0.00342	0.00339	0.00337
	(!A2 * A3 * B2 * !Y)	-0.00335	-0.00364	-0.00361
	(!A2 * A3 * B1 * !B2 * !Y)	0.00342	0.00339	0.00337
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00335	-0.00364	-0.00361
	(!A2 * A3 * !B1 * !B2 * Y)	0.00337	0.00338	0.00337
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00339	-0.00364	-0.00361
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00317	0.00319	0.00318
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00380	-0.00381	-0.00380

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00633	0.00636	0.00634
	(A2 * A3 * B2 * !Y)	-0.00693	-0.00723	-0.00722
	(A2 * A3 * B1 * !B2 * !Y)	0.00633	0.00636	0.00634
	(A2 * A3 * B1 * !B2 * !Y)	-0.00693	-0.00723	-0.00722
	(A2 * !B1 * !B2 * Y)	0.00631	0.00636	0.00634
	(A2 * !B1 * !B2 * Y)	-0.00696	-0.00723	-0.00722
	(A2 * !A3 * B2 * !Y)	0.00640	0.00636	0.00634
	(A2 * !A3 * B2 * !Y)	-0.00681	-0.00722	-0.00722
	(A2 * !A3 * B1 * !B2 * !Y)	0.00640	0.00636	0.00634
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00681	-0.00722	-0.00722
	(!A2 * A3 * B2 * !Y)	0.00642	0.00639	0.00635
	(!A2 * A3 * B2 * !Y)	-0.00645	-0.00703	-0.00700
	(!A2 * A3 * B1 * !B2 * !Y)	0.00642	0.00639	0.00635
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00645	-0.00703	-0.00700
	(!A2 * A3 * !B1 * !B2 * Y)	0.00632	0.00637	0.00634
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00654	-0.00704	-0.00701
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00600	0.00605	0.00602
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00737	-0.00739	-0.00738

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)**	-0.00163	-0.00163	-0.00163
	(A2 * A3 * B2 * !Y)	0.00178	0.00179	0.00177
	(A2 * A3 * B1 * !B2 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * A3 * B1 * !B2 * !Y)	0.00178	0.00179	0.00178
	(A2 * !B1 * !B2 * Y)	-0.00163	-0.00163	-0.00163
	(A2 * !B1 * !B2 * Y)	0.00178	0.00179	0.00177
	(A2 * !A3 * B2 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * !A3 * B2 * !Y)	0.00178	0.00178	0.00178
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00163	-0.00163	-0.00163
	(A2 * !A3 * B1 * !B2 * !Y)	0.00178	0.00178	0.00178
	(!A2 * A3 * B2 * !Y)	-0.00162	-0.00163	-0.00163
	(!A2 * A3 * B2 * !Y)	0.00172	0.00172	0.00173
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00162	-0.00162	-0.00163
	(!A2 * A3 * B1 * !B2 * !Y)	0.00172	0.00172	0.00173
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00162	-0.00163	-0.00163
	(!A2 * A3 * !B1 * !B2 * Y)	0.00172	0.00172	0.00172
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00148	-0.00156	-0.00156
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00180	0.00181	0.00180

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00336	-0.00335	-0.00336
	(A2 * A3 * B2 * !Y)	0.00372	0.00369	0.00372
	(A2 * A3 * B1 * !B2 * !Y)	-0.00336	-0.00335	-0.00336
	(A2 * A3 * B1 * !B2 * !Y)	0.00372	0.00369	0.00372
	(A2 * !B1 * !B2 * Y)	-0.00336	-0.00338	-0.00336
	(A2 * !B1 * !B2 * Y)	0.00372	0.00375	0.00372
	(A2 * !A3 * B2 * !Y)	-0.00336	-0.00337	-0.00336
	(A2 * !A3 * B2 * !Y)	0.00372	0.00373	0.00372
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00336	-0.00337	-0.00336
	(A2 * !A3 * B1 * !B2 * !Y)	0.00372	0.00373	0.00372
	(!A2 * A3 * B2 * !Y)	-0.00337	-0.00338	-0.00336
	(!A2 * A3 * B2 * !Y)	0.00362	0.00364	0.00361
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00337	-0.00338	-0.00336
	(!A2 * A3 * B1 * !B2 * !Y)	0.00362	0.00364	0.00361
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00337	-0.00338	-0.00336
	(!A2 * A3 * !B1 * !B2 * Y)	0.00362	0.00364	0.00361
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00300	-0.00319	-0.00318
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00384	0.00385	0.00381

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00631	-0.00635	-0.00633
	(A2 * A3 * B2 * !Y)	0.00719	0.00727	0.00722
	(A2 * A3 * B1 * !B2 * !Y)	-0.00631	-0.00635	-0.00633
	(A2 * A3 * B1 * !B2 * !Y)	0.00719	0.00727	0.00722
	(A2 * !B1 * !B2 * Y)	-0.00631	-0.00635	-0.00633
	(A2 * !B1 * !B2 * Y)	0.00719	0.00727	0.00722
	(A2 * !A3 * B2 * !Y)	-0.00631	-0.00634	-0.00633
	(A2 * !A3 * B2 * !Y)	0.00719	0.00725	0.00722
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00631	-0.00634	-0.00632
	(A2 * !A3 * B1 * !B2 * !Y)	0.00719	0.00725	0.00722
	(!A2 * A3 * B2 * !Y)	-0.00631	-0.00634	-0.00633
	(!A2 * A3 * B2 * !Y)	0.00696	0.00703	0.00700
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00631	-0.00634	-0.00633
	(!A2 * A3 * B1 * !B2 * !Y)	0.00696	0.00703	0.00700
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00631	-0.00634	-0.00633
	(!A2 * A3 * !B1 * !B2 * Y)	0.00697	0.00704	0.00701
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00561	-0.00604	-0.00602
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00738	0.00744	0.00740

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)**	0.00165	0.00168	0.00162
	(A1 * A3 * B2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A3 * B1 * !B2 * !Y)	0.00165	0.00168	0.00162
	(A1 * A3 * B1 * !B2 * !Y)	-0.00124	-0.00125	-0.00124
	(A1 * A3 * !B1 * !B2 * Y)	0.00158	0.00159	0.00157
	(A1 * A3 * !B1 * !B2 * Y)	-0.00137	-0.00137	-0.00137
	(A1 * !A3 * B2 * !Y)	0.00161	0.00162	0.00159
	(A1 * !A3 * B2 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * !A3 * B1 * !B2 * !Y)	0.00161	0.00162	0.00159
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00107	-0.00107	-0.00107
	(A1 * !A3 * !B1 * !B2 * Y)	0.00157	0.00159	0.00157
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00182	-0.00186	-0.00186
	(!A1 * A3 * B2 * !Y)	0.00189	0.00160	0.00159
	(!A1 * A3 * B2 * !Y)	-0.00152	-0.00184	-0.00185
	(!A1 * A3 * B1 * !B2 * !Y)	0.00189	0.00160	0.00159
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00152	-0.00184	-0.00185
	(!A1 * A3 * !B1 * !B2 * Y)	0.00157	0.00158	0.00157
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00182	-0.00187	-0.00186
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00149	0.00151	0.00149
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00189	-0.00190	-0.00189

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00319	0.00326	0.00318
	(A1 * A3 * B2 * !Y)	-0.00230	-0.00232	-0.00230
	(A1 * A3 * B1 * !B2 * !Y)	0.00319	0.00326	0.00318
	(A1 * A3 * B1 * !B2 * !Y)	-0.00230	-0.00232	-0.00230
	(A1 * A3 * !B1 * !B2 * Y)	0.00307	0.00311	0.00308
	(A1 * A3 * !B1 * !B2 * Y)	-0.00262	-0.00264	-0.00261
	(A1 * !A3 * B2 * !Y)	0.00313	0.00317	0.00313
	(A1 * !A3 * B2 * !Y)	-0.00195	-0.00197	-0.00197
	(A1 * !A3 * B1 * !B2 * !Y)	0.00313	0.00317	0.00313
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00195	-0.00197	-0.00197
	(A1 * !A3 * !B1 * !B2 * Y)	0.00307	0.00311	0.00308
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00345	-0.00355	-0.00354
	(!A1 * A3 * B2 * !Y)	0.00374	0.00317	0.00311
	(!A1 * A3 * B2 * !Y)	-0.00285	-0.00354	-0.00355
	(!A1 * A3 * B1 * !B2 * !Y)	0.00374	0.00317	0.00312
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00285	-0.00355	-0.00355
	(!A1 * A3 * !B1 * !B2 * Y)	0.00307	0.00312	0.00308
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00348	-0.00359	-0.00359
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00296	0.00299	0.00295
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00364	-0.00366	-0.00363

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00658	0.00671	0.00651
	(A1 * A3 * B2 * !Y)	-0.00466	-0.00469	-0.00467
	(A1 * A3 * B1 * !B2 * !Y)	0.00658	0.00671	0.00652
	(A1 * A3 * B1 * !B2 * !Y)	-0.00466	-0.00469	-0.00467
	(A1 * A3 * !B1 * !B2 * Y)	0.00636	0.00640	0.00634
	(A1 * A3 * !B1 * !B2 * Y)	-0.00525	-0.00524	-0.00522
	(A1 * !A3 * B2 * !Y)	0.00647	0.00649	0.00641
	(A1 * !A3 * B2 * !Y)	-0.00404	-0.00404	-0.00403
	(A1 * !A3 * B1 * !B2 * !Y)	0.00647	0.00649	0.00641
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00404	-0.00404	-0.00403
	(A1 * !A3 * !B1 * !B2 * Y)	0.00632	0.00641	0.00634
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00700	-0.00718	-0.00717
	(!A1 * A3 * B2 * !Y)	0.00773	0.00650	0.00639
	(!A1 * A3 * B2 * !Y)	-0.00581	-0.00729	-0.00725
	(!A1 * A3 * B1 * !B2 * !Y)	0.00773	0.00650	0.00639
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00581	-0.00729	-0.00725
	(!A1 * A3 * !B1 * !B2 * Y)	0.00634	0.00644	0.00634
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00711	-0.00730	-0.00729
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00606	0.00611	0.00604
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00740	-0.00743	-0.00739

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)**	-0.00158	-0.00159	-0.00159
	(A1 * A3 * B2 * !Y)	0.00124	0.00125	0.00124
	(A1 * A3 * B1 * !B2 * !Y)	-0.00158	-0.00159	-0.00159
	(A1 * A3 * B1 * !B2 * !Y)	0.00124	0.00125	0.00124
	(A1 * A3 * !B1 * !B2 * Y)	-0.00157	-0.00157	-0.00157
	(A1 * A3 * !B1 * !B2 * Y)	0.00137	0.00137	0.00137
	(A1 * !A3 * B2 * !Y)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * B2 * !Y)	0.00109	0.00109	0.00110
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00158	-0.00159	-0.00157
	(A1 * !A3 * B1 * !B2 * !Y)	0.00109	0.00110	0.00110
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00156	-0.00157	-0.00157
	(A1 * !A3 * !B1 * !B2 * Y)	0.00185	0.00186	0.00186
	(!A1 * A3 * B2 * !Y)	-0.00159	-0.00159	-0.00158
	(!A1 * A3 * B2 * !Y)	0.00185	0.00185	0.00185
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00159	-0.00159	-0.00158
	(!A1 * A3 * B1 * !B2 * !Y)	0.00185	0.00186	0.00185
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00157	-0.00158	-0.00157
	(!A1 * A3 * !B1 * !B2 * Y)	0.00186	0.00187	0.00186
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00140	-0.00151	-0.00149
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00189	0.00190	0.00189

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00313	-0.00315	-0.00313
	(A1 * A3 * B2 * !Y)	0.00230	0.00232	0.00230
	(A1 * A3 * B1 * !B2 * !Y)	-0.00313	-0.00315	-0.00313
	(A1 * A3 * B1 * !B2 * !Y)	0.00230	0.00232	0.00230
	(A1 * A3 * !B1 * !B2 * Y)	-0.00307	-0.00308	-0.00307
	(A1 * A3 * !B1 * !B2 * Y)	0.00262	0.00264	0.00261
	(A1 * !A3 * B2 * !Y)	-0.00308	-0.00310	-0.00307
	(A1 * !A3 * B2 * !Y)	0.00198	0.00199	0.00202
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00309	-0.00309	-0.00307
	(A1 * !A3 * B1 * !B2 * !Y)	0.00198	0.00199	0.00202
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00306	-0.00307	-0.00307
	(A1 * !A3 * !B1 * !B2 * Y)	0.00353	0.00355	0.00354
	(!A1 * A3 * B2 * !Y)	-0.00311	-0.00311	-0.00310
	(!A1 * A3 * B2 * !Y)	0.00354	0.00354	0.00355
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00311	-0.00311	-0.00310
	(!A1 * A3 * B1 * !B2 * !Y)	0.00354	0.00355	0.00355
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00306	-0.00307	-0.00307
	(!A1 * A3 * !B1 * !B2 * Y)	0.00357	0.00359	0.00359
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00271	-0.00293	-0.00295
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00366	0.00366	0.00364

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00640	-0.00643	-0.00641
	(A1 * A3 * B2 * !Y)	0.00466	0.00469	0.00467
	(A1 * A3 * B1 * !B2 * !Y)	-0.00640	-0.00643	-0.00641
	(A1 * A3 * B1 * !B2 * !Y)	0.00466	0.00469	0.00467
	(A1 * A3 * !B1 * !B2 * Y)	-0.00634	-0.00634	-0.00633
	(A1 * A3 * !B1 * !B2 * Y)	0.00525	0.00524	0.00522
	(A1 * !A3 * B2 * !Y)	-0.00636	-0.00637	-0.00631
	(A1 * !A3 * B2 * !Y)	0.00409	0.00410	0.00413
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00631	-0.00637	-0.00631
	(A1 * !A3 * B1 * !B2 * !Y)	0.00404	0.00410	0.00413
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00631	-0.00634	-0.00633
	(A1 * !A3 * !B1 * !B2 * Y)	0.00715	0.00718	0.00717
	(!A1 * A3 * B2 * !Y)	-0.00636	-0.00640	-0.00636
	(!A1 * A3 * B2 * !Y)	0.00721	0.00729	0.00725
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00636	-0.00640	-0.00636
	(!A1 * A3 * B1 * !B2 * !Y)	0.00721	0.00729	0.00725
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00631	-0.00634	-0.00633
	(!A1 * A3 * !B1 * !B2 * Y)	0.00726	0.00730	0.00729
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00560	-0.00603	-0.00604
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00744	0.00744	0.00740

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00170	0.00171	0.00170
	(A2 * B2 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * B1 * !B2 * !Y)	0.00170	0.00171	0.00170
	(A2 * B1 * !B2 * !Y)	-0.00088	-0.00088	-0.00088
	(A2 * !B1 * !B2 * Y)	0.00156	0.00159	0.00156
	(A2 * !B1 * !B2 * Y)	-0.00169	-0.00175	-0.00175
	(A1 * !A2 * B2 * !Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * B2 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A2 * B1 * !B2 * !Y)	0.00170	0.00171	0.00170
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00088	-0.00088	-0.00087
	(A1 * !A2 * !B1 * !B2 * Y)	0.00155	0.00157	0.00156
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00154	-0.00168	-0.00167
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00151	0.00152	0.00151
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00177	-0.00178	-0.00177
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00371	0.00376	0.00373
	(A2 * B2 * !Y)	-0.00173	-0.00175	-0.00174
	(A2 * B1 * !B2 * !Y)	0.00371	0.00376	0.00373
	(A2 * B1 * !B2 * !Y)	-0.00173	-0.00175	-0.00174
	(A2 * !B1 * !B2 * Y)	0.00305	0.00309	0.00306
	(A2 * !B1 * !B2 * Y)	-0.00373	-0.00387	-0.00386
	(A1 * !A2 * B2 * !Y)	0.00371	0.00376	0.00373
	(A1 * !A2 * B2 * !Y)	-0.00173	-0.00175	-0.00173
	(A1 * !A2 * B1 * !B2 * !Y)	0.00371	0.00376	0.00373
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00173	-0.00175	-0.00173
	(A1 * !A2 * !B1 * !B2 * Y)	0.00305	0.00305	0.00306
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00342	-0.00368	-0.00368
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00291	0.00293	0.00291
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00391	-0.00394	-0.00392

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00703	0.00712	0.00706
	(A2 * B2 * !Y)	-0.00342	-0.00346	-0.00343
	(A2 * B1 * !B2 * !Y)	0.00703	0.00712	0.00706
	(A2 * B1 * !B2 * !Y)	-0.00342	-0.00346	-0.00343
	(A2 * !B1 * !B2 * Y)	0.00594	0.00603	0.00597
	(A2 * !B1 * !B2 * Y)	-0.00717	-0.00744	-0.00743
	(A1 * !A2 * B2 * !Y)	0.00703	0.00712	0.00706
	(A1 * !A2 * B2 * !Y)	-0.00341	-0.00345	-0.00342
	(A1 * !A2 * B1 * !B2 * !Y)	0.00704	0.00713	0.00706
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00341	-0.00345	-0.00342
	(A1 * !A2 * !B1 * !B2 * Y)	0.00595	0.00598	0.00597
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00656	-0.00707	-0.00706
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00576	0.00580	0.00575
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00755	-0.00758	-0.00755

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00164	-0.00165	-0.00169
	(A2 * B2 * !Y)	0.00093	0.00093	0.00089
	(A2 * B1 * !B2 * !Y)	-0.00164	-0.00165	-0.00169
	(A2 * B1 * !B2 * !Y)	0.00093	0.00093	0.00089
	(A2 * !B1 * !B2 * Y)	-0.00156	-0.00156	-0.00156
	(A2 * !B1 * !B2 * Y)	0.00174	0.00175	0.00175
	(A1 * !A2 * B2 * !Y)	-0.00158	-0.00159	-0.00168
	(A1 * !A2 * B2 * !Y)	0.00096	0.00096	0.00089
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00158	-0.00159	-0.00168
	(A1 * !A2 * B1 * !B2 * !Y)	0.00096	0.00096	0.00089
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00155	-0.00157	-0.00156
	(A1 * !A2 * !B1 * !B2 * Y)	0.00166	0.00168	0.00167
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00139	-0.00152	-0.00150
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00177	0.00178	0.00177
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00357	-0.00359	-0.00371
	(A2 * B2 * !Y)	0.00187	0.00187	0.00177
	(A2 * B1 * !B2 * !Y)	-0.00357	-0.00359	-0.00371
	(A2 * B1 * !B2 * !Y)	0.00187	0.00187	0.00177
	(A2 * !B1 * !B2 * Y)	-0.00304	-0.00306	-0.00305
	(A2 * !B1 * !B2 * Y)	0.00384	0.00387	0.00386
	(A1 * !A2 * B2 * !Y)	-0.00343	-0.00345	-0.00368
	(A1 * !A2 * B2 * !Y)	0.00193	0.00193	0.00177
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00343	-0.00345	-0.00368
	(A1 * !A2 * B1 * !B2 * !Y)	0.00193	0.00193	0.00177
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00305	-0.00305	-0.00305
	(A1 * !A2 * !B1 * !B2 * Y)	0.00367	0.00368	0.00368
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00268	-0.00293	-0.00291
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00391	0.00395	0.00392

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00677	-0.00681	-0.00703
	(A2 * B2 * !Y)	0.00365	0.00367	0.00349
	(A2 * B1 * !B2 * !Y)	-0.00677	-0.00681	-0.00703
	(A2 * B1 * !B2 * !Y)	0.00366	0.00367	0.00349
	(A2 * !B1 * !B2 * Y)	-0.00594	-0.00596	-0.00595
	(A2 * !B1 * !B2 * Y)	0.00741	0.00744	0.00743
	(A1 * !A2 * B2 * !Y)	-0.00649	-0.00653	-0.00696
	(A1 * !A2 * B2 * !Y)	0.00378	0.00379	0.00349
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00649	-0.00653	-0.00696
	(A1 * !A2 * B1 * !B2 * !Y)	0.00378	0.00379	0.00349
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00595	-0.00597	-0.00595
	(A1 * !A2 * !B1 * !B2 * Y)	0.00706	0.00707	0.00706
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00527	-0.00572	-0.00574
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00755	0.00761	0.00757

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00195	0.00176	0.00174
	(A3 * B2 * !Y)	-0.00152	-0.00174	-0.00175
	(A2 * !A3 * B2 * !Y)	0.00195	0.00176	0.00174
	(A2 * !A3 * B2 * !Y)	-0.00152	-0.00174	-0.00175
	(A1 * !A2 * !A3 * B2 * !Y)	0.00195	0.00176	0.00174
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00152	-0.00175	-0.00175
	(!A1 * !A2 * !A3 * B2 * Y)	0.00056	0.00057	0.00057
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00209	-0.00214	-0.00214
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00063	0.00063	0.00059
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00207	-0.00208	-0.00215

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00363	0.00316	0.00315
	(A3 * B2 * !Y)	-0.00293	-0.00345	-0.00347
	(A2 * !A3 * B2 * !Y)	0.00363	0.00316	0.00315
	(A2 * !A3 * B2 * !Y)	-0.00293	-0.00345	-0.00347
	(A1 * !A2 * !A3 * B2 * !Y)	0.00363	0.00315	0.00315
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00293	-0.00344	-0.00347
	(!A1 * !A2 * !A3 * B2 * Y)	0.00089	0.00089	0.00089
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00415	-0.00424	-0.00425
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00102	0.00101	0.00093
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00410	-0.00411	-0.00427
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00761	0.00672	0.00661
	(A3 * B2 * !Y)	-0.00581	-0.00697	-0.00696
	(A2 * !A3 * B2 * !Y)	0.00761	0.00672	0.00661
	(A2 * !A3 * B2 * !Y)	-0.00581	-0.00697	-0.00696
	(A1 * !A2 * !A3 * B2 * !Y)	0.00761	0.00671	0.00661
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00581	-0.00701	-0.00696
	(!A1 * !A2 * !A3 * B2 * Y)	0.00178	0.00179	0.00178
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00859	-0.00883	-0.00882
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00204	0.00203	0.00186
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00856	-0.00860	-0.00889

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00172	-0.00173	-0.00173
	(A3 * B2 * !Y)	0.00173	0.00174	0.00175
	(A2 * !A3 * B2 * !Y)	-0.00173	-0.00174	-0.00173
	(A2 * !A3 * B2 * !Y)	0.00175	0.00176	0.00175
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00173	-0.00174	-0.00173
	(A1 * !A2 * !A3 * B2 * !Y)	0.00175	0.00176	0.00175
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00056	-0.00056	-0.00057
	(!A1 * !A2 * !A3 * B2 * Y)	0.00215	0.00217	0.00214
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00058	-0.00058	-0.00057
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00217	0.00218	0.00216
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00314	-0.00314	-0.00314
	(A3 * B2 * !Y)	0.00346	0.00345	0.00347
	(A2 * !A3 * B2 * !Y)	-0.00314	-0.00316	-0.00314
	(A2 * !A3 * B2 * !Y)	0.00346	0.00350	0.00347
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00314	-0.00313	-0.00314
	(A1 * !A2 * !A3 * B2 * !Y)	0.00346	0.00344	0.00347
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00088	-0.00089	-0.00089
	(!A1 * !A2 * !A3 * B2 * Y)	0.00425	0.00429	0.00425
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00090	-0.00092	-0.00090
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00428	0.00436	0.00429
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00657	-0.00661	-0.00659
	(A3 * B2 * !Y)	0.00690	0.00697	0.00696
	(A2 * !A3 * B2 * !Y)	-0.00660	-0.00660	-0.00659
	(A2 * !A3 * B2 * !Y)	0.00696	0.00697	0.00696
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00658	-0.00662	-0.00659
	(A1 * !A2 * !A3 * B2 * !Y)	0.00693	0.00702	0.00696
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00176	-0.00177	-0.00178
	(!A1 * !A2 * !A3 * B2 * Y)	0.00882	0.00887	0.00882
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00179	-0.00184	-0.00180
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00887	0.00907	0.00893

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00181	0.00182	0.00181
	(A3 * B1 * !Y)	-0.00086	-0.00085	-0.00085
	(A2 * !A3 * B1 * !Y)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * !Y)	-0.00086	-0.00085	-0.00085
	(A1 * !A2 * !A3 * B1 * !Y)	0.00181	0.00182	0.00181
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * !A2 * !A3 * B1 * Y)	0.00047	0.00048	0.00048
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00212	-0.00218	-0.00216
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00054	0.00054	0.00050
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00210	-0.00211	-0.00219
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00353	0.00357	0.00354
	(A3 * B1 * !Y)	-0.00174	-0.00177	-0.00175
	(A2 * !A3 * B1 * !Y)	0.00353	0.00357	0.00354
	(A2 * !A3 * B1 * !Y)	-0.00175	-0.00177	-0.00175
	(A1 * !A2 * !A3 * B1 * !Y)	0.00353	0.00357	0.00354
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00174	-0.00177	-0.00175
	(!A1 * !A2 * !A3 * B1 * Y)	0.00095	0.00095	0.00094
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00424	-0.00434	-0.00431
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00106	0.00107	0.00098
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00416	-0.00422	-0.00436

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00692	0.00701	0.00695
	(A3 * B1 * !Y)	-0.00345	-0.00350	-0.00346
	(A2 * !A3 * B1 * !Y)	0.00691	0.00706	0.00695
	(A2 * !A3 * B1 * !Y)	-0.00345	-0.00353	-0.00346
	(A1 * !A2 * !A3 * B1 * !Y)	0.00692	0.00706	0.00695
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00345	-0.00353	-0.00346
	(!A1 * !A2 * !A3 * B1 * Y)	0.00182	0.00181	0.00180
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00841	-0.00856	-0.00853
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00206	0.00206	0.00188
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00832	-0.00838	-0.00866

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00176	-0.00177	-0.00180
	(A3 * B1 * !Y)	0.00088	0.00089	0.00086
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00180
	(A2 * !A3 * B1 * !Y)	0.00088	0.00089	0.00086
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00176	-0.00177	-0.00180
	(A1 * !A2 * !A3 * B1 * !Y)	0.00088	0.00089	0.00086
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00047	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * B1 * Y)	0.00217	0.00218	0.00216
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00049	-0.00049	-0.00048
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00220	0.00223	0.00220

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00339	-0.00341	-0.00353
	(A3 * B1 * !Y)	0.00187	0.00188	0.00178
	(A2 * !A3 * B1 * !Y)	-0.00339	-0.00341	-0.00353
	(A2 * !A3 * B1 * !Y)	0.00187	0.00188	0.00178
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00339	-0.00343	-0.00353
	(A1 * !A2 * !A3 * B1 * !Y)	0.00187	0.00189	0.00178
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00094	-0.00094	-0.00094
	(!A1 * !A2 * !A3 * B1 * Y)	0.00433	0.00434	0.00431
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00095	-0.00097	-0.00095
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00436	0.00444	0.00438
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00668	-0.00671	-0.00692
	(A3 * B1 * !Y)	0.00367	0.00369	0.00352
	(A2 * !A3 * B1 * !Y)	-0.00667	-0.00669	-0.00692
	(A2 * !A3 * B1 * !Y)	0.00367	0.00367	0.00352
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00669	-0.00672	-0.00692
	(A1 * !A2 * !A3 * B1 * !Y)	0.00370	0.00370	0.00352
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00180	-0.00179	-0.00180
	(!A1 * !A2 * !A3 * B1 * Y)	0.00858	0.00858	0.00853
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00182	-0.00186	-0.00182
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00866	0.00882	0.00869

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o32a_1	12.78720
sky130_fd_sc_hs__o32a_2	15.98400
sky130_fd_sc_hs__o32a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	B1	B2	X
sky130_fd_sc_hs__o32a_1	0.00253	0.00246	0.00244	0.00246	0.00250	1.40258
sky130_fd_sc_hs__o32a_2	0.00264	0.00260	0.00264	0.00284	0.00265	2.68729
sky130_fd_sc_hs__o32a_4	0.00451	0.00484	0.00452	0.00611	0.00479	5.18417

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.07606	0.22593
sky130_fd_sc_hs__o32a_2	0.00000	0.09771	0.22694
sky130_fd_sc_hs__o32a_4	0.00000	0.19670	0.45387

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)	0.06941	0.47929	5.27632
	A2->X (RR)	0.06815	0.47539	5.21592
	A3->X (RR)	0.06185	0.46125	5.23721
	B1->X (RR)	0.06204	0.47582	5.45111
	B2->X (RR)	0.05633	0.46031	5.49383
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.07085	0.40444	5.23476
	A2->X (RR)	0.07028	0.40206	5.18312
	A3->X (RR)	0.06451	0.38986	5.18520
	B1->X (RR)	0.06408	0.40843	5.40490
	B2->X (RR)	0.05819	0.39268	5.40371
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.08251	0.35523	5.32005
	A2->X (RR)	0.07726	0.34296	5.23200
	A3->X (RR)	0.06834	0.32631	5.24180
	B1->X (RR)	0.07644	0.36440	5.49767
	B2->X (RR)	0.06617	0.34289	5.49793

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.16309	0.57520	5.04786
	A2->X (FF)	0.15212	0.59669	5.26365
	A3->X (FF)	0.12954	0.58393	5.26264
	B1->X (FF)	0.08584	0.47552	4.91832
	B2->X (FF)	0.07459	0.47356	4.98172
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.20091	0.60435	5.11874
	A2->X (FF)	0.19034	0.62915	5.32822
	A3->X (FF)	0.16870	0.61588	5.30771
	B1->X (FF)	0.11006	0.49258	4.92635
	B2->X (FF)	0.09791	0.49361	4.97285
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.20940	0.58787	5.32034
	A2->X (FF)	0.19643	0.60245	5.45401
	A3->X (FF)	0.16247	0.58440	5.45230
	B1->X (FF)	0.10398	0.45716	5.04687
	B2->X (FF)	0.08876	0.45436	5.10724

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01322	0.01350	0.03689
	A1	0.00486	0.00515	0.02884
	A2	0.01166	0.01241	0.03546
	A2	0.00424	0.00499	0.02805
	A3	0.00995	0.01108	0.04464
	A3	0.00332	0.00447	0.03802
	B1	0.01120	0.01268	0.05503
	B1	0.00405	0.00587	0.04979
	B2	0.00770	0.01033	0.06923
	B2	0.00325	0.00590	0.06500
sky130_fd_sc_hs__o32a_2	A1	0.01641	0.01682	0.03860
	A1	0.00737	0.00782	0.02957
	A2	0.01482	0.01570	0.03716
	A2	0.00672	0.00763	0.02906
	A3	0.01314	0.01430	0.04588
	A3	0.00580	0.00703	0.03854
	B1	0.01241	0.01403	0.05415
	B1	0.00636	0.00806	0.04847
	B2	0.01055	0.01283	0.06857
	B2	0.00572	0.00809	0.06439

sky130_fd_sc_hs__o32a_4	**A1**	0.03177	0.03330	0.09451
	A1	0.01553	0.01711	0.07951
	A2	0.02840	0.03023	0.08841
	A2	0.01359	0.01545	0.07360
	A3	0.02367	0.02665	0.10817
	A3	0.01107	0.01417	0.09558
	B1	0.02366	0.02757	0.10534
	B1	0.01239	0.01644	0.09410
	B2	0.01935	0.02450	0.12878
	B2	0.01098	0.01622	0.12040

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00465	0.00445	0.03022
	A1	0.01321	0.01300	0.03875
	A2	0.00469	0.00498	0.03406
	A2	0.01228	0.01258	0.04038
	A3	0.00467	0.00627	0.04855
	A3	0.01145	0.01305	0.05435
	B1	0.00301	0.00435	0.04319
	B1	0.00927	0.01041	0.04696
	B2	0.00301	0.00614	0.06071
	B2	0.00835	0.01118	0.06334

sky130_fd_sc_hs__o32a_2	**A1**	0.00943	0.00778	0.03527
	A1	0.01855	0.01697	0.04203
	A2	0.00947	0.00830	0.03447
	A2	0.01765	0.01654	0.04237
	A3	0.00947	0.00974	0.05025
	A3	0.01687	0.01713	0.05663
	B1	0.00654	0.00740	0.04226
	B1	0.01343	0.01407	0.04747
	B2	0.00653	0.00954	0.06127
	B2	0.01226	0.01463	0.06431
sky130_fd_sc_hs__o32a_4	**A1**	0.01869	0.01545	0.07220
	A1	0.03559	0.03234	0.08904
	A2	0.01875	0.01591	0.07581
	A2	0.03413	0.03139	0.08528
	A3	0.01871	0.01864	0.10408
	A3	0.03179	0.03171	0.11123
	B1	0.01211	0.01366	0.09338
	B1	0.02568	0.02660	0.10267
	B2	0.01209	0.01770	0.12883
	B2	0.02272	0.02739	0.13286

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)**	0.00158	0.00158	0.00157
	(A2 * A3 * B2 * X)	-0.00154	-0.00158	-0.00158
	(A2 * A3 * B1 * !B2 * X)	0.00158	0.00158	0.00157
	(A2 * A3 * B1 * !B2 * X)	-0.00154	-0.00158	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00135	0.00135	0.00135
	(A2 * !B1 * !B2 * !X)	-0.00177	-0.00181	-0.00181
	(A2 * !A3 * B2 * X)	0.00162	0.00158	0.00157
	(A2 * !A3 * B2 * X)	-0.00148	-0.00158	-0.00158
	(A2 * !A3 * B1 * !B2 * X)	0.00162	0.00158	0.00157
	(A2 * !A3 * B1 * !B2 * X)	-0.00148	-0.00158	-0.00158
	(!A2 * A3 * B2 * X)	0.00160	0.00158	0.00157
	(!A2 * A3 * B2 * X)	-0.00140	-0.00154	-0.00154
	(!A2 * A3 * B1 * !B2 * X)	0.00160	0.00158	0.00157
	(!A2 * A3 * B1 * !B2 * X)	-0.00140	-0.00154	-0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	0.00134	0.00135	0.00135
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00165	-0.00177	-0.00176
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00129	0.00129	0.00128
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00183	-0.00183	-0.00182

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00175	0.00175	0.00174
	(A2 * A3 * B2 * X)	-0.00154	-0.00158	-0.00158
	(A2 * A3 * B1 * !B2 * X)	0.00175	0.00175	0.00174
	(A2 * A3 * B1 * !B2 * X)	-0.00154	-0.00158	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00153	0.00154	0.00153
	(A2 * !B1 * !B2 * !X)	-0.00176	-0.00180	-0.00180
	(A2 * !A3 * B2 * X)	0.00179	0.00175	0.00174
	(A2 * !A3 * B2 * X)	-0.00148	-0.00158	-0.00158
	(A2 * !A3 * B1 * !B2 * X)	0.00179	0.00175	0.00174
	(A2 * !A3 * B1 * !B2 * X)	-0.00148	-0.00158	-0.00158
	(!A2 * A3 * B2 * X)	0.00178	0.00175	0.00174
	(!A2 * A3 * B2 * X)	-0.00140	-0.00154	-0.00154
	(!A2 * A3 * B1 * !B2 * X)	0.00178	0.00175	0.00174
	(!A2 * A3 * B1 * !B2 * X)	-0.00140	-0.00154	-0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	0.00152	0.00154	0.00153
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00164	-0.00176	-0.00175
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00147	0.00147	0.00146
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00182	-0.00182	-0.00182

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00272	0.00275	0.00271
	(A2 * A3 * B2 * X)	-0.00308	-0.00321	-0.00320
	(A2 * A3 * B1 * !B2 * X)	0.00272	0.00275	0.00271
	(A2 * A3 * B1 * !B2 * X)	-0.00308	-0.00322	-0.00320
	(A2 * !B1 * !B2 * !X)	0.00272	0.00275	0.00271
	(A2 * !B1 * !B2 * !X)	-0.00308	-0.00323	-0.00321
	(A2 * !A3 * B2 * X)	0.00280	0.00275	0.00271
	(A2 * !A3 * B2 * X)	-0.00297	-0.00321	-0.00320
	(A2 * !A3 * B1 * !B2 * X)	0.00280	0.00275	0.00271
	(A2 * !A3 * B1 * !B2 * X)	-0.00296	-0.00321	-0.00320
	(!A2 * A3 * B2 * X)	0.00280	0.00275	0.00271
	(!A2 * A3 * B2 * X)	-0.00279	-0.00313	-0.00312
	(!A2 * A3 * B1 * !B2 * X)	0.00280	0.00275	0.00271
	(!A2 * A3 * B1 * !B2 * X)	-0.00279	-0.00313	-0.00312
	(!A2 * A3 * !B1 * !B2 * !X)	0.00272	0.00275	0.00271
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00285	-0.00313	-0.00311
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00262	0.00265	0.00263
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00325	-0.00327	-0.00326

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * A3 * B2 * X)**	-0.00157	-0.00158	-0.00157
	(A2 * A3 * B2 * X)	0.00158	0.00159	0.00158
	(A2 * A3 * B1 * !B2 * X)	-0.00157	-0.00157	-0.00157
	(A2 * A3 * B1 * !B2 * X)	0.00158	0.00159	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00134	-0.00134
	(A2 * !B1 * !B2 * !X)	0.00181	0.00181	0.00181
	(A2 * !A3 * B2 * X)	-0.00157	-0.00157	-0.00157
	(A2 * !A3 * B2 * X)	0.00158	0.00159	0.00158
	(A2 * !A3 * B1 * !B2 * X)	-0.00157	-0.00157	-0.00157
	(A2 * !A3 * B1 * !B2 * X)	0.00158	0.00159	0.00158
	(!A2 * A3 * B2 * X)	-0.00157	-0.00157	-0.00157
	(!A2 * A3 * B2 * X)	0.00154	0.00154	0.00154
	(!A2 * A3 * B1 * !B2 * X)	-0.00157	-0.00157	-0.00157
	(!A2 * A3 * B1 * !B2 * X)	0.00154	0.00154	0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00134	-0.00135	-0.00134
	(!A2 * A3 * !B1 * !B2 * !X)	0.00176	0.00177	0.00176
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00121	-0.00129	-0.00128
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00174	-0.00174	-0.00174
	(A2 * A3 * B2 * X)	0.00158	0.00159	0.00158
	(A2 * A3 * B1 * !B2 * X)	-0.00174	-0.00174	-0.00174
	(A2 * A3 * B1 * !B2 * X)	0.00158	0.00159	0.00158
	(A2 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00152
	(A2 * !B1 * !B2 * !X)	0.00180	0.00181	0.00180
	(A2 * !A3 * B2 * X)	-0.00174	-0.00174	-0.00174
	(A2 * !A3 * B2 * X)	0.00158	0.00158	0.00158
	(A2 * !A3 * B1 * !B2 * X)	-0.00174	-0.00174	-0.00174
	(A2 * !A3 * B1 * !B2 * X)	0.00158	0.00158	0.00158
	(!A2 * A3 * B2 * X)	-0.00174	-0.00174	-0.00174
	(!A2 * A3 * B2 * X)	0.00154	0.00154	0.00154
	(!A2 * A3 * B1 * !B2 * X)	-0.00174	-0.00174	-0.00174
	(!A2 * A3 * B1 * !B2 * X)	0.00154	0.00154	0.00154
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00152	-0.00153	-0.00152
	(!A2 * A3 * !B1 * !B2 * !X)	0.00176	0.00176	0.00175
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00138	-0.00147	-0.00146
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00182	0.00184	0.00182

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00270	-0.00271	-0.00270
	(A2 * A3 * B2 * X)	0.00318	0.00321	0.00320
	(A2 * A3 * B1 * !B2 * X)	-0.00270	-0.00271	-0.00270
	(A2 * A3 * B1 * !B2 * X)	0.00319	0.00322	0.00320
	(A2 * !B1 * !B2 * !X)	-0.00270	-0.00271	-0.00270
	(A2 * !B1 * !B2 * !X)	0.00319	0.00323	0.00321
	(A2 * !A3 * B2 * X)	-0.00270	-0.00271	-0.00270
	(A2 * !A3 * B2 * X)	0.00318	0.00321	0.00320
	(A2 * !A3 * B1 * !B2 * X)	-0.00270	-0.00271	-0.00270
	(A2 * !A3 * B1 * !B2 * X)	0.00318	0.00321	0.00320
	(!A2 * A3 * B2 * X)	-0.00269	-0.00271	-0.00270
	(!A2 * A3 * B2 * X)	0.00310	0.00313	0.00312
	(!A2 * A3 * B1 * !B2 * X)	-0.00269	-0.00271	-0.00270
	(!A2 * A3 * B1 * !B2 * X)	0.00310	0.00313	0.00312
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00270	-0.00271	-0.00270
	(!A2 * A3 * !B1 * !B2 * !X)	0.00310	0.00313	0.00311
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00241	-0.00259	-0.00261
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00329	0.00329	0.00328

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)**	0.00153	0.00155	0.00149
	(A1 * A3 * B2 * X)	-0.00100	-0.00101	-0.00100
	(A1 * A3 * B1 * !B2 * X)	0.00153	0.00155	0.00149
	(A1 * A3 * B1 * !B2 * X)	-0.00101	-0.00101	-0.00100
	(A1 * A3 * !B1 * !B2 * !X)	0.00138	0.00139	0.00138
	(A1 * A3 * !B1 * !B2 * !X)	-0.00117	-0.00117	-0.00117
	(A1 * !A3 * B2 * X)	0.00145	0.00146	0.00144
	(A1 * !A3 * B2 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * B1 * !B2 * X)	0.00145	0.00146	0.00144
	(A1 * !A3 * B1 * !B2 * X)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00137	0.00139	0.00138
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00157	-0.00161	-0.00161
	(!A1 * A3 * B2 * X)	0.00174	0.00145	0.00144
	(!A1 * A3 * B2 * X)	-0.00123	-0.00154	-0.00155
	(!A1 * A3 * B1 * !B2 * X)	0.00174	0.00145	0.00144
	(!A1 * A3 * B1 * !B2 * X)	-0.00122	-0.00154	-0.00155
	(!A1 * A3 * !B1 * !B2 * !X)	0.00137	0.00138	0.00138
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00157	-0.00161	-0.00161
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00131	0.00133	0.00131
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00163	-0.00164	-0.00163

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00171	0.00174	0.00167
	(A1 * A3 * B2 * X)	-0.00100	-0.00102	-0.00101
	(A1 * A3 * B1 * !B2 * X)	0.00171	0.00174	0.00168
	(A1 * A3 * B1 * !B2 * X)	-0.00100	-0.00102	-0.00101
	(A1 * A3 * !B1 * !B2 * !X)	0.00156	0.00157	0.00156
	(A1 * A3 * !B1 * !B2 * !X)	-0.00119	-0.00119	-0.00118
	(A1 * !A3 * B2 * X)	0.00165	0.00165	0.00163
	(A1 * !A3 * B2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * B1 * !B2 * X)	0.00165	0.00165	0.00163
	(A1 * !A3 * B1 * !B2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * !X)	0.00155	0.00157	0.00156
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00158	-0.00162	-0.00162
	(!A1 * A3 * B2 * X)	0.00192	0.00163	0.00162
	(!A1 * A3 * B2 * X)	-0.00123	-0.00155	-0.00156
	(!A1 * A3 * B1 * !B2 * X)	0.00192	0.00163	0.00162
	(!A1 * A3 * B1 * !B2 * X)	-0.00123	-0.00155	-0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	0.00155	0.00156	0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00158	-0.00162	-0.00162
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00151	0.00152	0.00151
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00164	-0.00164	-0.00164

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00287	0.00295	0.00282
	(A1 * A3 * B2 * X)	-0.00225	-0.00225	-0.00225
	(A1 * A3 * B1 * !B2 * X)	0.00287	0.00295	0.00283
	(A1 * A3 * B1 * !B2 * X)	-0.00225	-0.00225	-0.00225
	(A1 * A3 * !B1 * !B2 * !X)	0.00278	0.00280	0.00278
	(A1 * A3 * !B1 * !B2 * !X)	-0.00248	-0.00247	-0.00246
	(A1 * !A3 * B2 * X)	0.00280	0.00283	0.00278
	(A1 * !A3 * B2 * X)	-0.00194	-0.00196	-0.00197
	(A1 * !A3 * B1 * !B2 * X)	0.00281	0.00283	0.00278
	(A1 * !A3 * B1 * !B2 * X)	-0.00194	-0.00196	-0.00197
	(A1 * !A3 * !B1 * !B2 * !X)	0.00280	0.00280	0.00278
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00335	-0.00341	-0.00340
	(!A1 * A3 * B2 * X)	0.00340	0.00283	0.00277
	(!A1 * A3 * B2 * X)	-0.00272	-0.00342	-0.00343
	(!A1 * A3 * B1 * !B2 * X)	0.00340	0.00283	0.00277
	(!A1 * A3 * B1 * !B2 * X)	-0.00272	-0.00342	-0.00343
	(!A1 * A3 * !B1 * !B2 * !X)	0.00276	0.00282	0.00277
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00329	-0.00343	-0.00342
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00264	0.00267	0.00263
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00348	-0.00350	-0.00348

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)**	-0.00144	-0.00145	-0.00144
	(A1 * A3 * B2 * X)	0.00100	0.00101	0.00100
	(A1 * A3 * B1 * !B2 * X)	-0.00144	-0.00145	-0.00144
	(A1 * A3 * B1 * !B2 * X)	0.00101	0.00101	0.00100
	(A1 * A3 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * A3 * !B1 * !B2 * !X)	0.00117	0.00117	0.00117
	(A1 * !A3 * B2 * X)	-0.00143	-0.00144	-0.00142
	(A1 * !A3 * B2 * X)	0.00087	0.00088	0.00088
	(A1 * !A3 * B1 * !B2 * X)	-0.00143	-0.00144	-0.00142
	(A1 * !A3 * B1 * !B2 * X)	0.00087	0.00088	0.00088
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00137
	(A1 * !A3 * !B1 * !B2 * !X)	0.00160	0.00161	0.00161
	(!A1 * A3 * B2 * X)	-0.00142	-0.00144	-0.00143
	(!A1 * A3 * B2 * X)	0.00154	0.00156	0.00155
	(!A1 * A3 * B1 * !B2 * X)	-0.00142	-0.00144	-0.00143
	(!A1 * A3 * B1 * !B2 * X)	0.00154	0.00156	0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00137	-0.00138	-0.00137
	(!A1 * A3 * !B1 * !B2 * !X)	0.00161	0.00162	0.00161
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00123	-0.00133	-0.00131
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00164	0.00164	0.00163

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00162	-0.00163	-0.00163
	(A1 * A3 * B2 * X)	0.00100	0.00102	0.00101
	(A1 * A3 * B1 * !B2 * X)	-0.00162	-0.00163	-0.00163
	(A1 * A3 * B1 * !B2 * X)	0.00100	0.00102	0.00101
	(A1 * A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * !B2 * !X)	0.00119	0.00119	0.00118
	(A1 * !A3 * B2 * X)	-0.00161	-0.00162	-0.00161
	(A1 * !A3 * B2 * X)	0.00088	0.00088	0.00089
	(A1 * !A3 * B1 * !B2 * X)	-0.00162	-0.00162	-0.00161
	(A1 * !A3 * B1 * !B2 * X)	0.00088	0.00088	0.00089
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * !B1 * !B2 * !X)	0.00161	0.00162	0.00162
	(!A1 * A3 * B2 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * B2 * X)	0.00154	0.00156	0.00156
	(!A1 * A3 * B1 * !B2 * X)	-0.00161	-0.00162	-0.00161
	(!A1 * A3 * B1 * !B2 * X)	0.00155	0.00156	0.00156
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00155	-0.00155	-0.00155
	(!A1 * A3 * !B1 * !B2 * !X)	0.00162	0.00163	0.00162
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00139	-0.00151	-0.00149
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00165	0.00165	0.00164

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00276	-0.00277	-0.00277
	(A1 * A3 * B2 * X)	0.00225	0.00225	0.00225
	(A1 * A3 * B1 * !B2 * X)	-0.00276	-0.00277	-0.00277
	(A1 * A3 * B1 * !B2 * X)	0.00225	0.00225	0.00225
	(A1 * A3 * !B1 * !B2 * !X)	-0.00277	-0.00277	-0.00276
	(A1 * A3 * !B1 * !B2 * !X)	0.00248	0.00247	0.00246
	(A1 * !A3 * B2 * X)	-0.00275	-0.00276	-0.00273
	(A1 * !A3 * B2 * X)	0.00200	0.00200	0.00202
	(A1 * !A3 * B1 * !B2 * X)	-0.00275	-0.00276	-0.00273
	(A1 * !A3 * B1 * !B2 * X)	0.00200	0.00201	0.00202
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00276	-0.00278	-0.00277
	(A1 * !A3 * !B1 * !B2 * !X)	0.00339	0.00341	0.00340
	(!A1 * A3 * B2 * X)	-0.00276	-0.00276	-0.00275
	(!A1 * A3 * B2 * X)	0.00342	0.00342	0.00343
	(!A1 * A3 * B1 * !B2 * X)	-0.00276	-0.00276	-0.00275
	(!A1 * A3 * B1 * !B2 * X)	0.00342	0.00342	0.00343
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00276	-0.00277	-0.00276
	(!A1 * A3 * !B1 * !B2 * !X)	0.00342	0.00343	0.00342
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00245	-0.00267	-0.00263
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00350	0.00351	0.00349

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00155	0.00156	0.00155
	(A2 * B2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * !B2 * X)	0.00155	0.00156	0.00155
	(A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00138	0.00140	0.00138
	(A2 * !B1 * !B2 * !X)	-0.00157	-0.00162	-0.00161
	(A1 * !A2 * B2 * X)	0.00155	0.00156	0.00155
	(A1 * !A2 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * B1 * !B2 * X)	0.00155	0.00156	0.00155
	(A1 * !A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	0.00137	0.00140	0.00138
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00143	-0.00155	-0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00163	-0.00164	-0.00163
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00178	0.00178	0.00177
	(A2 * B2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * B1 * !B2 * X)	0.00178	0.00178	0.00177
	(A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00079
	(A2 * !B1 * !B2 * !X)	0.00156	0.00158	0.00156
	(A2 * !B1 * !B2 * !X)	-0.00161	-0.00165	-0.00165
	(A1 * !A2 * B2 * X)	0.00178	0.00178	0.00177
	(A1 * !A2 * B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * B1 * !B2 * X)	0.00178	0.00178	0.00177
	(A1 * !A2 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00078
	(A1 * !A2 * !B1 * !B2 * !X)	0.00156	0.00158	0.00156
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00148	-0.00159	-0.00159
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00149	0.00150	0.00148
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00168	-0.00168	-0.00167

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00290	0.00293	0.00291
	(A2 * B2 * X)	-0.00158	-0.00159	-0.00158
	(A2 * B1 * !B2 * X)	0.00291	0.00293	0.00291
	(A2 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00158
	(A2 * !B1 * !B2 * !X)	0.00268	0.00269	0.00268
	(A2 * !B1 * !B2 * !X)	-0.00298	-0.00312	-0.00311
	(A1 * !A2 * B2 * X)	0.00290	0.00293	0.00291
	(A1 * !A2 * B2 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * B1 * !B2 * X)	0.00291	0.00293	0.00291
	(A1 * !A2 * B1 * !B2 * X)	-0.00158	-0.00159	-0.00158
	(A1 * !A2 * !B1 * !B2 * !X)	0.00269	0.00272	0.00268
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00274	-0.00297	-0.00296
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00255	0.00260	0.00257
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00316	-0.00319	-0.00317

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00150	-0.00151	-0.00155
	(A2 * B2 * X)	0.00083	0.00083	0.00080
	(A2 * B1 * !B2 * X)	-0.00150	-0.00151	-0.00154
	(A2 * B1 * !B2 * X)	0.00083	0.00083	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00138	-0.00139	-0.00138
	(A2 * !B1 * !B2 * !X)	0.00161	0.00162	0.00161
	(A1 * !A2 * B2 * X)	-0.00145	-0.00146	-0.00153
	(A1 * !A2 * B2 * X)	0.00085	0.00085	0.00080
	(A1 * !A2 * B1 * !B2 * X)	-0.00145	-0.00146	-0.00153
	(A1 * !A2 * B1 * !B2 * X)	0.00085	0.00085	0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00137	-0.00139	-0.00138
	(A1 * !A2 * !B1 * !B2 * !X)	0.00154	0.00155	0.00154
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00123	-0.00133	-0.00132
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00164	0.00164	0.00164
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00172	-0.00173	-0.00177
	(A2 * B2 * X)	0.00083	0.00083	0.00080
	(A2 * B1 * !B2 * X)	-0.00172	-0.00173	-0.00177
	(A2 * B1 * !B2 * X)	0.00083	0.00083	0.00080
	(A2 * !B1 * !B2 * !X)	-0.00156	-0.00155	-0.00155
	(A2 * !B1 * !B2 * !X)	0.00165	0.00165	0.00165
	(A1 * !A2 * B2 * X)	-0.00168	-0.00168	-0.00175
	(A1 * !A2 * B2 * X)	0.00085	0.00086	0.00080
	(A1 * !A2 * B1 * !B2 * X)	-0.00168	-0.00168	-0.00175
	(A1 * !A2 * B1 * !B2 * X)	0.00085	0.00086	0.00080
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00155	-0.00157	-0.00156
	(A1 * !A2 * !B1 * !B2 * !X)	0.00158	0.00159	0.00159
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00139	-0.00150	-0.00148
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00168	0.00169	0.00168

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00276	-0.00278	-0.00289
	(A2 * B2 * X)	0.00170	0.00170	0.00161
	(A2 * B1 * !B2 * X)	-0.00276	-0.00278	-0.00289
	(A2 * B1 * !B2 * X)	0.00170	0.00170	0.00161
	(A2 * !B1 * !B2 * !X)	-0.00268	-0.00269	-0.00267
	(A2 * !B1 * !B2 * !X)	0.00311	0.00312	0.00311
	(A1 * !A2 * B2 * X)	-0.00265	-0.00266	-0.00286
	(A1 * !A2 * B2 * X)	0.00176	0.00176	0.00161
	(A1 * !A2 * B1 * !B2 * X)	-0.00265	-0.00266	-0.00286
	(A1 * !A2 * B1 * !B2 * X)	0.00176	0.00176	0.00161
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00267	-0.00269	-0.00267
	(A1 * !A2 * !B1 * !B2 * !X)	0.00295	0.00297	0.00296
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00237	-0.00259	-0.00257
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00319	0.00320	0.00318

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00180	0.00160	0.00158
	(A3 * B2 * X)	-0.00140	-0.00162	-0.00163
	(A2 * !A3 * B2 * X)	0.00179	0.00160	0.00158
	(A2 * !A3 * B2 * X)	-0.00140	-0.00162	-0.00163
	(A1 * !A2 * !A3 * B2 * X)	0.00179	0.00160	0.00158
	(A1 * !A2 * !A3 * B2 * X)	-0.00140	-0.00162	-0.00163
	(!A1 * !A2 * !A3 * B2 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00199	-0.00202	-0.00203
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00058	0.00058	0.00054
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00196	-0.00197	-0.00204

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00213	0.00193	0.00191
	(A3 * B2 * X)	-0.00156	-0.00177	-0.00179
	(A2 * !A3 * B2 * X)	0.00212	0.00192	0.00191
	(A2 * !A3 * B2 * X)	-0.00156	-0.00177	-0.00179
	(A1 * !A2 * !A3 * B2 * X)	0.00212	0.00192	0.00191
	(A1 * !A2 * !A3 * B2 * X)	-0.00156	-0.00177	-0.00179
	(!A1 * !A2 * !A3 * B2 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00227	-0.00231	-0.00231
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00069	0.00069	0.00065
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00223	-0.00223	-0.00231
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00388	0.00344	0.00337
	(A3 * B2 * X)	-0.00324	-0.00382	-0.00382
	(A2 * !A3 * B2 * X)	0.00388	0.00343	0.00337
	(A2 * !A3 * B2 * X)	-0.00324	-0.00381	-0.00381
	(A1 * !A2 * !A3 * B2 * X)	0.00389	0.00343	0.00337
	(A1 * !A2 * !A3 * B2 * X)	-0.00323	-0.00381	-0.00381
	(!A1 * !A2 * !A3 * B2 * !X)	0.00092	0.00092	0.00092
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00490	-0.00499	-0.00500
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00102	0.00104	0.00095
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00488	-0.00493	-0.00504

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00158	-0.00158	-0.00157
	(A3 * B2 * X)	0.00163	0.00164	0.00163
	(A2 * !A3 * B2 * X)	-0.00158	-0.00158	-0.00157
	(A2 * !A3 * B2 * X)	0.00163	0.00164	0.00163
	(A1 * !A2 * !A3 * B2 * X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * !A3 * B2 * X)	0.00163	0.00164	0.00163
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00051	-0.00052	-0.00052
	(!A1 * !A2 * !A3 * B2 * !X)	0.00204	0.00205	0.00203
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00203	0.00206	0.00205
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00189	-0.00190	-0.00190
	(A3 * B2 * X)	0.00178	0.00179	0.00179
	(A2 * !A3 * B2 * X)	-0.00189	-0.00191	-0.00190
	(A2 * !A3 * B2 * X)	0.00178	0.00180	0.00179
	(A1 * !A2 * !A3 * B2 * X)	-0.00189	-0.00190	-0.00190
	(A1 * !A2 * !A3 * B2 * X)	0.00178	0.00179	0.00179
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * !A3 * B2 * !X)	0.00231	0.00235	0.00231
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00233	0.00234	0.00233
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00335	-0.00335	-0.00334
	(A3 * B2 * X)	0.00381	0.00383	0.00382
	(A2 * !A3 * B2 * X)	-0.00335	-0.00335	-0.00334
	(A2 * !A3 * B2 * X)	0.00380	0.00382	0.00381
	(A1 * !A2 * !A3 * B2 * X)	-0.00335	-0.00336	-0.00334
	(A1 * !A2 * !A3 * B2 * X)	0.00380	0.00384	0.00381
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00090	-0.00091	-0.00091
	(!A1 * !A2 * !A3 * B2 * !X)	0.00502	0.00505	0.00500
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00093	-0.00093	-0.00092
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00507	0.00508	0.00507

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00161	0.00163	0.00162
	(A3 * B1 * X)	-0.00080	-0.00080	-0.00079
	(A2 * !A3 * B1 * X)	0.00161	0.00163	0.00162
	(A2 * !A3 * B1 * X)	-0.00080	-0.00080	-0.00079
	(A1 * !A2 * !A3 * B1 * X)	0.00161	0.00163	0.00162
	(A1 * !A2 * !A3 * B1 * X)	-0.00080	-0.00080	-0.00079
	(!A1 * !A2 * !A3 * B1 * !X)	0.00043	0.00043	0.00043
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00195	-0.00199	-0.00199
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00048	0.00048	0.00045
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00193	-0.00194	-0.00200
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00180	0.00181	0.00180
	(A3 * B1 * X)	-0.00081	-0.00080	-0.00080
	(A2 * !A3 * B1 * X)	0.00180	0.00181	0.00180
	(A2 * !A3 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * !A2 * !A3 * B1 * X)	0.00180	0.00181	0.00180
	(A1 * !A2 * !A3 * B1 * X)	-0.00080	-0.00081	-0.00080
	(!A1 * !A2 * !A3 * B1 * !X)	0.00048	0.00048	0.00048
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00199	-0.00202	-0.00203
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00054	0.00055	0.00050
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00195	-0.00196	-0.00204

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00311	0.00315	0.00312
	(A3 * B1 * X)	-0.00160	-0.00163	-0.00161
	(A2 * !A3 * B1 * X)	0.00311	0.00315	0.00312
	(A2 * !A3 * B1 * X)	-0.00160	-0.00163	-0.00161
	(A1 * !A2 * !A3 * B1 * X)	0.00311	0.00314	0.00312
	(A1 * !A2 * !A3 * B1 * X)	-0.00160	-0.00163	-0.00161
	(!A1 * !A2 * !A3 * B1 * !X)	0.00089	0.00089	0.00088
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00380	-0.00390	-0.00387
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00099	0.00100	0.00091
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00378	-0.00381	-0.00393

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00157	-0.00158	-0.00161
	(A3 * B1 * X)	0.00084	0.00084	0.00081
	(A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00161
	(A2 * !A3 * B1 * X)	0.00084	0.00084	0.00081
	(A1 * !A2 * !A3 * B1 * X)	-0.00157	-0.00158	-0.00161
	(A1 * !A2 * !A3 * B1 * X)	0.00084	0.00084	0.00081
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00042	-0.00043	-0.00043
	(!A1 * !A2 * !A3 * B1 * !X)	0.00200	0.00200	0.00199
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00202	0.00204	0.00201

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00175	-0.00176	-0.00180
	(A3 * B1 * X)	0.00084	0.00084	0.00081
	(A2 * !A3 * B1 * X)	-0.00175	-0.00176	-0.00180
	(A2 * !A3 * B1 * X)	0.00084	0.00084	0.00081
	(A1 * !A2 * !A3 * B1 * X)	-0.00175	-0.00176	-0.00180
	(A1 * !A2 * !A3 * B1 * X)	0.00084	0.00084	0.00081
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * B1 * !X)	0.00204	0.00203	0.00203
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00206	0.00206	0.00205
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00301	-0.00302	-0.00311
	(A3 * B1 * X)	0.00169	0.00170	0.00163
	(A2 * !A3 * B1 * X)	-0.00301	-0.00302	-0.00311
	(A2 * !A3 * B1 * X)	0.00169	0.00170	0.00163
	(A1 * !A2 * !A3 * B1 * X)	-0.00300	-0.00303	-0.00311
	(A1 * !A2 * !A3 * B1 * X)	0.00169	0.00171	0.00163
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00087	-0.00088	-0.00088
	(!A1 * !A2 * !A3 * B1 * !X)	0.00388	0.00390	0.00387
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00088	-0.00091	-0.00088
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00393	0.00401	0.00395

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41ai_1	11.18880
sky130_fd_sc_hs__o41ai_2	20.77920
sky130_fd_sc_hs__o41ai_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	Y
sky130_fd_sc_hs__o41ai_1	0.00257	0.00263	0.00274	0.00272	0.00276	0.37628
sky130_fd_sc_hs__o41ai_2	0.00506	0.00516	0.00495	0.00506	0.00534	0.62961
sky130_fd_sc_hs__o41ai_4	0.00982	0.00976	0.00993	0.01013	0.00748	1.15393

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.03462	0.12588
sky130_fd_sc_hs__o41ai_2	0.00000	0.06924	0.25175
sky130_fd_sc_hs__o41ai_4	0.00000	0.07947	0.37763

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)	0.18194	1.08217	9.94520
	A2->Y (FR)	0.17237	1.09436	10.40410
	A3->Y (FR)	0.15115	1.10038	10.83590
	A4->Y (FR)	0.11660	1.05297	10.60920
	B1->Y (FR)	0.02364	0.48135	5.62787
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.19926	0.96237	9.73822
	A2->Y (FR)	0.18699	0.96423	10.17130
	A3->Y (FR)	0.16181	0.97592	10.77040
	A4->Y (FR)	0.10982	0.91709	10.54200
	B1->Y (FR)	0.01847	0.40894	5.23721
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.19000	0.82431	9.55855
	A2->Y (FR)	0.17797	0.83125	10.08240
	A3->Y (FR)	0.15284	0.84075	10.67220
	A4->Y (FR)	0.10153	0.78947	10.51970
	B1->Y (FR)	0.02429	0.49175	6.98440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.02731	0.24065	1.92866
	A2->Y (RF)	0.02795	0.23518	1.91345
	A3->Y (RF)	0.02760	0.22912	1.90325
	A4->Y (RF)	0.02306	0.21878	1.86975
	B1->Y (RF)	0.02082	0.26847	2.31450
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.02655	0.19879	1.74250
	A2->Y (RF)	0.02714	0.19294	1.72941
	A3->Y (RF)	0.02705	0.18441	1.69861
	A4->Y (RF)	0.02212	0.17201	1.67181
	B1->Y (RF)	0.01896	0.23295	2.26283
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.03034	0.16421	1.67039
	A2->Y (RF)	0.02924	0.15446	1.62085
	A3->Y (RF)	0.02733	0.14331	1.57464
	A4->Y (RF)	0.02013	0.12427	1.47116
	B1->Y (RF)	0.02229	0.24837	2.89951

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00116	0.00096	0.00909
	A1	0.01010	0.00986	0.01803
	A2	0.00121	0.00104	0.00887
	A2	0.00916	0.00898	0.01682
	A3	0.00119	0.00114	0.00957
	A3	0.00827	0.00821	0.01666
	A4	0.00114	0.00185	0.01850
	A4	0.00728	0.00800	0.02467
	B1	-0.00071	0.00155	0.03126
	B1	0.00370	0.00597	0.03601
sky130_fd_sc_hs__o41ai_2	A1	0.00166	0.00119	0.01657
	A1	0.01971	0.01928	0.03461
	A2	0.00173	0.00127	0.01654
	A2	0.01777	0.01733	0.03265
	A3	0.00182	0.00158	0.01698
	A3	0.01572	0.01548	0.03090
	A4	0.00166	0.00312	0.03309
	A4	0.01363	0.01510	0.04508
	B1	-0.00250	0.00248	0.06193
	B1	0.00608	0.01120	0.07101

sky130_fd_sc_hs__o41ai_4	**A1**	0.00268	0.00197	0.03039
	A1	0.03813	0.03738	0.06586
	A2	0.00281	0.00212	0.03033
	A2	0.03414	0.03341	0.06159
	A3	0.00283	0.00248	0.03142
	A3	0.03027	0.02995	0.05892
	A4	0.00253	0.00561	0.06195
	A4	0.02598	0.02881	0.08540
	B1	-0.00388	0.00211	0.06790
	B1	0.00848	0.01452	0.08058

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.01170	0.01163	0.01828
	A1	0.00277	0.00269	0.00939
	A2	0.00997	0.00994	0.01636
	A2	0.00196	0.00194	0.00839
	A3	0.00814	0.00827	0.01448
	A3	0.00096	0.00106	0.00730
	A4	0.00623	0.00649	0.01269
	A4	-0.00004	0.00019	0.00639
	B1	0.00415	0.00468	0.01720
	B1	-0.00027	0.00024	0.01276

sky130_fd_sc_hs__o41ai_2	**A1**	0.02464	0.02437	0.03759
	A1	0.00672	0.00643	0.01976
	A2	0.02058	0.02059	0.03342
	A2	0.00449	0.00444	0.01736
	A3	0.01689	0.01706	0.02928
	A3	0.00281	0.00295	0.01522
	A4	0.01207	0.01270	0.02506
	A4	-0.00016	0.00045	0.01280
	B1	0.00805	0.00966	0.03627
	B1	-0.00050	0.00103	0.02767
sky130_fd_sc_hs__o41ai_4	**A1**	0.04645	0.04600	0.07311
	A1	0.01129	0.01083	0.03802
	A2	0.03868	0.03863	0.06471
	A2	0.00729	0.00721	0.03342
	A3	0.03142	0.03188	0.05672
	A3	0.00359	0.00396	0.02897
	A4	0.02248	0.02403	0.04963
	A4	-0.00153	-0.00010	0.02555
	B1	0.01273	0.01462	0.04190
	B1	0.00040	0.00222	0.02953

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)**	0.00163	0.00163	0.00162
	(A2 * A4 * B1 * !Y)	-0.00177	-0.00180	-0.00180
	(A2 * A3 * !A4 * B1 * !Y)	0.00163	0.00163	0.00162
	(A2 * A3 * !A4 * B1 * !Y)	-0.00176	-0.00181	-0.00180
	(A2 * !B1 * Y)	0.00163	0.00163	0.00162
	(A2 * !B1 * Y)	-0.00177	-0.00180	-0.00180
	(A2 * !A3 * !A4 * B1 * !Y)	0.00162	0.00163	0.00162
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00174	-0.00181	-0.00180
	(!A2 * A3 * A4 * B1 * !Y)	0.00162	0.00163	0.00162
	(!A2 * A3 * A4 * B1 * !Y)	-0.00163	-0.00176	-0.00175
	(!A2 * A3 * !B1 * Y)	0.00162	0.00163	0.00162
	(!A2 * A3 * !B1 * Y)	-0.00163	-0.00176	-0.00175
	(!A2 * A3 * !A4 * B1 * !Y)	0.00162	0.00163	0.00162
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00163	-0.00176	-0.00175
	(!A2 * !A3 * A4 * B1 * !Y)	0.00162	0.00163	0.00162
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00161	-0.00175	-0.00174
	(!A2 * !A3 * A4 * !B1 * Y)	0.00162	0.00163	0.00162
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00161	-0.00175	-0.00173
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00153	0.00155	0.00154
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00182	-0.00183	-0.00182

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00321	0.00323	0.00322
	(A2 * A4 * B1 * !Y)	-0.00345	-0.00359	-0.00359
	(A2 * A3 * !A4 * B1 * !Y)	0.00321	0.00323	0.00322
	(A2 * A3 * !A4 * B1 * !Y)	-0.00344	-0.00359	-0.00359
	(A2 * !B1 * Y)	0.00321	0.00323	0.00321
	(A2 * !B1 * Y)	-0.00345	-0.00359	-0.00359
	(A2 * !A3 * !A4 * B1 * !Y)	0.00322	0.00323	0.00322
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00341	-0.00359	-0.00359
	(!A2 * A3 * A4 * B1 * !Y)	0.00322	0.00323	0.00322
	(!A2 * A3 * A4 * B1 * !Y)	-0.00321	-0.00349	-0.00347
	(!A2 * A3 * !B1 * Y)	0.00322	0.00323	0.00321
	(!A2 * A3 * !B1 * Y)	-0.00321	-0.00349	-0.00347
	(!A2 * A3 * !A4 * B1 * !Y)	0.00322	0.00323	0.00322
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00321	-0.00350	-0.00349
	(!A2 * !A3 * A4 * B1 * !Y)	0.00324	0.00324	0.00322
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00316	-0.00343	-0.00343
	(!A2 * !A3 * A4 * !B1 * Y)	0.00322	0.00323	0.00321
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00318	-0.00343	-0.00343
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00306	0.00309	0.00308
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00364	-0.00366	-0.00366

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00616	0.00628	0.00619
	(A2 * A4 * B1 * !Y)	-0.00686	-0.00723	-0.00716
	(A2 * A3 * !A4 * B1 * !Y)	0.00616	0.00628	0.00619
	(A2 * A3 * !A4 * B1 * !Y)	-0.00684	-0.00723	-0.00716
	(A2 * !B1 * Y)	0.00616	0.00619	0.00619
	(A2 * !B1 * Y)	-0.00687	-0.00716	-0.00716
	(A2 * !A3 * !A4 * B1 * !Y)	0.00617	0.00617	0.00619
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00672	-0.00714	-0.00716
	(!A2 * A3 * A4 * B1 * !Y)	0.00617	0.00625	0.00619
	(!A2 * A3 * A4 * B1 * !Y)	-0.00634	-0.00690	-0.00692
	(!A2 * A3 * !B1 * Y)	0.00617	0.00625	0.00619
	(!A2 * A3 * !B1 * Y)	-0.00635	-0.00692	-0.00691
	(!A2 * A3 * !A4 * B1 * !Y)	0.00618	0.00625	0.00619
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00635	-0.00692	-0.00691
	(!A2 * !A3 * A4 * B1 * !Y)	0.00621	0.00624	0.00620
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00627	-0.00689	-0.00682
	(!A2 * !A3 * A4 * !B1 * Y)	0.00618	0.00624	0.00619
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00630	-0.00688	-0.00681
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00592	0.00597	0.00593
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00727	-0.00732	-0.00730

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)**	-0.00161	-0.00161	-0.00162
	(A2 * A4 * B1 * !Y)	0.00179	0.00180	0.00180
	(A2 * A3 * !A4 * B1 * !Y)	-0.00161	-0.00162	-0.00162
	(A2 * A3 * !A4 * B1 * !Y)	0.00179	0.00182	0.00180
	(A2 * !B1 * Y)	-0.00162	-0.00162	-0.00162
	(A2 * !B1 * Y)	0.00180	0.00180	0.00180
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00161	-0.00162	-0.00162
	(A2 * !A3 * !A4 * B1 * !Y)	0.00179	0.00182	0.00180
	(!A2 * A3 * A4 * B1 * !Y)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * A4 * B1 * !Y)	0.00176	0.00176	0.00175
	(!A2 * A3 * !B1 * Y)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * !B1 * Y)	0.00176	0.00176	0.00175
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * !A4 * B1 * !Y)	0.00176	0.00176	0.00175
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00162	-0.00162	-0.00162
	(!A2 * !A3 * A4 * B1 * !Y)	0.00174	0.00175	0.00174
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00162	-0.00163	-0.00162
	(!A2 * !A3 * A4 * !B1 * Y)	0.00174	0.00175	0.00173
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00144	-0.00155	-0.00154
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00320	-0.00322	-0.00321
	(A2 * A4 * B1 * !Y)	0.00358	0.00362	0.00359
	(A2 * A3 * !A4 * B1 * !Y)	-0.00320	-0.00322	-0.00321
	(A2 * A3 * !A4 * B1 * !Y)	0.00357	0.00362	0.00359
	(A2 * !B1 * Y)	-0.00320	-0.00322	-0.00321
	(A2 * !B1 * Y)	0.00357	0.00362	0.00359
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00320	-0.00322	-0.00321
	(A2 * !A3 * !A4 * B1 * !Y)	0.00357	0.00362	0.00359
	(!A2 * A3 * A4 * B1 * !Y)	-0.00320	-0.00321	-0.00321
	(!A2 * A3 * A4 * B1 * !Y)	0.00346	0.00349	0.00347
	(!A2 * A3 * !B1 * Y)	-0.00320	-0.00321	-0.00321
	(!A2 * A3 * !B1 * Y)	0.00346	0.00349	0.00347
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00320	-0.00322	-0.00321
	(!A2 * A3 * !A4 * B1 * !Y)	0.00347	0.00350	0.00349
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00320	-0.00321	-0.00321
	(!A2 * !A3 * A4 * B1 * !Y)	0.00342	0.00343	0.00343
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00320	-0.00321	-0.00321
	(!A2 * !A3 * A4 * !B1 * Y)	0.00342	0.00343	0.00343
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00285	-0.00306	-0.00308
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00368	0.00369	0.00367

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00616	-0.00621	-0.00618
	(A2 * A4 * B1 * !Y)	0.00712	0.00723	0.00716
	(A2 * A3 * !A4 * B1 * !Y)	-0.00616	-0.00621	-0.00618
	(A2 * A3 * !A4 * B1 * !Y)	0.00712	0.00723	0.00716
	(A2 * !B1 * Y)	-0.00616	-0.00619	-0.00618
	(A2 * !B1 * Y)	0.00712	0.00723	0.00716
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00616	-0.00617	-0.00618
	(A2 * !A3 * !A4 * B1 * !Y)	0.00713	0.00722	0.00716
	(!A2 * A3 * A4 * B1 * !Y)	-0.00616	-0.00617	-0.00618
	(!A2 * A3 * A4 * B1 * !Y)	0.00688	0.00690	0.00692
	(!A2 * A3 * !B1 * Y)	-0.00616	-0.00619	-0.00618
	(!A2 * A3 * !B1 * Y)	0.00687	0.00692	0.00691
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00616	-0.00618	-0.00618
	(!A2 * A3 * !A4 * B1 * !Y)	0.00687	0.00692	0.00691
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00616	-0.00621	-0.00618
	(!A2 * !A3 * A4 * B1 * !Y)	0.00678	0.00689	0.00682
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00618	-0.00621	-0.00618
	(!A2 * !A3 * A4 * !B1 * Y)	0.00682	0.00688	0.00681
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00546	-0.00589	-0.00593
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00727	0.00736	0.00732

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)**	0.00157	0.00158	0.00157
	(A1 * A3 * A4 * B1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * A3 * !B1 * Y)	0.00157	0.00158	0.00157
	(A1 * A3 * !B1 * Y)	-0.00128	-0.00128	-0.00127
	(A1 * A3 * !A4 * B1 * !Y)	0.00157	0.00159	0.00157
	(A1 * A3 * !A4 * B1 * !Y)	-0.00117	-0.00118	-0.00118
	(A1 * !A3 * A4 * B1 * !Y)	0.00156	0.00160	0.00157
	(A1 * !A3 * A4 * B1 * !Y)	-0.00116	-0.00116	-0.00115
	(A1 * !A3 * A4 * !B1 * Y)	0.00156	0.00160	0.00157
	(A1 * !A3 * A4 * !B1 * Y)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	0.00157	0.00158	0.00157
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00100	-0.00100	-0.00099
	(A1 * !A3 * !A4 * !B1 * Y)	0.00156	0.00158	0.00157
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00171	-0.00176	-0.00175
	(!A1 * A3 * A4 * B1 * !Y)	0.00156	0.00157	0.00157
	(!A1 * A3 * A4 * B1 * !Y)	-0.00169	-0.00175	-0.00175
	(!A1 * A3 * !B1 * Y)	0.00156	0.00157	0.00157
	(!A1 * A3 * !B1 * Y)	-0.00169	-0.00175	-0.00175
	(!A1 * A3 * !A4 * B1 * !Y)	0.00165	0.00157	0.00157
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00159	-0.00176	-0.00175
	(!A1 * !A3 * A4 * B1 * !Y)	0.00161	0.00157	0.00157
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00150	-0.00170	-0.00169
	(!A1 * !A3 * A4 * !B1 * Y)	0.00156	0.00157	0.00157
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00153	-0.00170	-0.00169
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00152	0.00153	0.00152
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00178	-0.00178	-0.00178

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00322	0.00327	0.00323
	(A1 * A3 * A4 * B1 * !Y)	-0.00260	-0.00260	-0.00259
	(A1 * A3 * !B1 * Y)	0.00321	0.00326	0.00322
	(A1 * A3 * !B1 * Y)	-0.00266	-0.00266	-0.00265
	(A1 * A3 * !A4 * B1 * !Y)	0.00322	0.00326	0.00323
	(A1 * A3 * !A4 * B1 * !Y)	-0.00248	-0.00246	-0.00247
	(A1 * !A3 * A4 * B1 * !Y)	0.00324	0.00325	0.00324
	(A1 * !A3 * A4 * B1 * !Y)	-0.00243	-0.00243	-0.00243
	(A1 * !A3 * A4 * !B1 * Y)	0.00321	0.00328	0.00322
	(A1 * !A3 * A4 * !B1 * Y)	-0.00263	-0.00265	-0.00262
	(A1 * !A3 * !A4 * B1 * !Y)	0.00321	0.00325	0.00322
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00206	-0.00209	-0.00207
	(A1 * !A3 * !A4 * !B1 * Y)	0.00321	0.00322	0.00322
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00351	-0.00362	-0.00362
	(!A1 * A3 * A4 * B1 * !Y)	0.00322	0.00327	0.00322
	(!A1 * A3 * A4 * B1 * !Y)	-0.00353	-0.00367	-0.00367
	(!A1 * A3 * !B1 * Y)	0.00321	0.00327	0.00322
	(!A1 * A3 * !B1 * Y)	-0.00354	-0.00366	-0.00367
	(!A1 * A3 * !A4 * B1 * !Y)	0.00327	0.00327	0.00322
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00344	-0.00366	-0.00366
	(!A1 * !A3 * A4 * B1 * !Y)	0.00327	0.00327	0.00322
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00324	-0.00355	-0.00354
	(!A1 * !A3 * A4 * !B1 * Y)	0.00321	0.00326	0.00322
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00329	-0.00355	-0.00354
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00308	0.00312	0.00308
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00372	-0.00374	-0.00371

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00617	0.00621	0.00614
	(A1 * A3 * A4 * B1 * !Y)	-0.00489	-0.00492	-0.00488
	(A1 * A3 * !B1 * Y)	0.00615	0.00619	0.00614
	(A1 * A3 * !B1 * Y)	-0.00500	-0.00501	-0.00498
	(A1 * A3 * !A4 * B1 * !Y)	0.00614	0.00620	0.00614
	(A1 * A3 * !A4 * B1 * !Y)	-0.00467	-0.00469	-0.00465
	(A1 * !A3 * A4 * B1 * !Y)	0.00616	0.00619	0.00615
	(A1 * !A3 * A4 * B1 * !Y)	-0.00462	-0.00464	-0.00462
	(A1 * !A3 * A4 * !B1 * Y)	0.00613	0.00626	0.00614
	(A1 * !A3 * A4 * !B1 * Y)	-0.00499	-0.00502	-0.00498
	(A1 * !A3 * !A4 * B1 * !Y)	0.00616	0.00619	0.00613
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00397	-0.00397	-0.00393
	(A1 * !A3 * !A4 * !B1 * Y)	0.00611	0.00619	0.00613
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00690	-0.00710	-0.00709
	(!A1 * A3 * A4 * B1 * !Y)	0.00615	0.00622	0.00613
	(!A1 * A3 * A4 * B1 * !Y)	-0.00682	-0.00714	-0.00710
	(!A1 * A3 * !B1 * Y)	0.00614	0.00622	0.00613
	(!A1 * A3 * !B1 * Y)	-0.00686	-0.00714	-0.00711
	(!A1 * A3 * !A4 * B1 * !Y)	0.00643	0.00623	0.00613
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00650	-0.00713	-0.00711
	(!A1 * !A3 * A4 * B1 * !Y)	0.00630	0.00612	0.00613
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00618	-0.00688	-0.00686
	(!A1 * !A3 * A4 * !B1 * Y)	0.00614	0.00611	0.00613
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00629	-0.00688	-0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00577	0.00586	0.00581
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00723	-0.00731	-0.00727

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)**	-0.00157	-0.00157	-0.00156
	(A1 * A3 * A4 * B1 * !Y)	0.00125	0.00125	0.00124
	(A1 * A3 * !B1 * Y)	-0.00157	-0.00157	-0.00156
	(A1 * A3 * !B1 * Y)	0.00128	0.00128	0.00127
	(A1 * A3 * !A4 * B1 * !Y)	-0.00156	-0.00157	-0.00156
	(A1 * A3 * !A4 * B1 * !Y)	0.00117	0.00118	0.00118
	(A1 * !A3 * A4 * B1 * !Y)	-0.00156	-0.00157	-0.00156
	(A1 * !A3 * A4 * B1 * !Y)	0.00116	0.00116	0.00115
	(A1 * !A3 * A4 * !B1 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * !A3 * A4 * !B1 * Y)	0.00125	0.00125	0.00124
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00153	-0.00154	-0.00152
	(A1 * !A3 * !A4 * B1 * !Y)	0.00102	0.00103	0.00103
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00156	-0.00157	-0.00156
	(A1 * !A3 * !A4 * !B1 * Y)	0.00175	0.00176	0.00175
	(!A1 * A3 * A4 * B1 * !Y)	-0.00156	-0.00156	-0.00156
	(!A1 * A3 * A4 * B1 * !Y)	0.00175	0.00175	0.00175
	(!A1 * A3 * !B1 * Y)	-0.00156	-0.00157	-0.00156
	(!A1 * A3 * !B1 * Y)	0.00175	0.00175	0.00175
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00156	-0.00157	-0.00156
	(!A1 * A3 * !A4 * B1 * !Y)	0.00175	0.00177	0.00175
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00156	-0.00157	-0.00156
	(!A1 * !A3 * A4 * B1 * !Y)	0.00168	0.00170	0.00169
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00156	-0.00157	-0.00156
	(!A1 * !A3 * A4 * !B1 * Y)	0.00168	0.00170	0.00169
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00139	-0.00151	-0.00150
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00178	0.00179	0.00178

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00322	-0.00322	-0.00321
	(A1 * A3 * A4 * B1 * !Y)	0.00260	0.00260	0.00259
	(A1 * A3 * !B1 * Y)	-0.00321	-0.00322	-0.00321
	(A1 * A3 * !B1 * Y)	0.00266	0.00266	0.00265
	(A1 * A3 * !A4 * B1 * !Y)	-0.00322	-0.00320	-0.00321
	(A1 * A3 * !A4 * B1 * !Y)	0.00248	0.00246	0.00247
	(A1 * !A3 * A4 * B1 * !Y)	-0.00323	-0.00323	-0.00323
	(A1 * !A3 * A4 * B1 * !Y)	0.00243	0.00243	0.00243
	(A1 * !A3 * A4 * !B1 * Y)	-0.00321	-0.00323	-0.00321
	(A1 * !A3 * A4 * !B1 * Y)	0.00263	0.00265	0.00262
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00315	-0.00317	-0.00314
	(A1 * !A3 * !A4 * B1 * !Y)	0.00212	0.00215	0.00215
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00320	-0.00322	-0.00321
	(A1 * !A3 * !A4 * !B1 * Y)	0.00360	0.00362	0.00362
	(!A1 * A3 * A4 * B1 * !Y)	-0.00321	-0.00321	-0.00321
	(!A1 * A3 * A4 * B1 * !Y)	0.00366	0.00367	0.00367
	(!A1 * A3 * !B1 * Y)	-0.00321	-0.00321	-0.00321
	(!A1 * A3 * !B1 * Y)	0.00366	0.00366	0.00367
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00321	-0.00321	-0.00321
	(!A1 * A3 * !A4 * B1 * !Y)	0.00366	0.00366	0.00366
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00321	-0.00322	-0.00321
	(!A1 * !A3 * A4 * B1 * !Y)	0.00353	0.00355	0.00354
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00321	-0.00322	-0.00321
	(!A1 * !A3 * A4 * !B1 * Y)	0.00352	0.00355	0.00354
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00283	-0.00305	-0.00308
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00373	0.00374	0.00372

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00613	-0.00615	-0.00612
	(A1 * A3 * A4 * B1 * !Y)	0.00489	0.00492	0.00488
	(A1 * A3 * !B1 * Y)	-0.00613	-0.00614	-0.00612
	(A1 * A3 * !B1 * Y)	0.00500	0.00501	0.00498
	(A1 * A3 * !A4 * B1 * !Y)	-0.00613	-0.00615	-0.00612
	(A1 * A3 * !A4 * B1 * !Y)	0.00467	0.00469	0.00465
	(A1 * !A3 * A4 * B1 * !Y)	-0.00613	-0.00615	-0.00613
	(A1 * !A3 * A4 * B1 * !Y)	0.00462	0.00464	0.00462
	(A1 * !A3 * A4 * !B1 * Y)	-0.00612	-0.00615	-0.00612
	(A1 * !A3 * A4 * !B1 * Y)	0.00499	0.00502	0.00498
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00597	-0.00599	-0.00594
	(A1 * !A3 * !A4 * B1 * !Y)	0.00411	0.00412	0.00412
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00609	-0.00613	-0.00611
	(A1 * !A3 * !A4 * !B1 * Y)	0.00706	0.00710	0.00709
	(!A1 * A3 * A4 * B1 * !Y)	-0.00610	-0.00614	-0.00612
	(!A1 * A3 * A4 * B1 * !Y)	0.00706	0.00714	0.00710
	(!A1 * A3 * !B1 * Y)	-0.00610	-0.00614	-0.00612
	(!A1 * A3 * !B1 * Y)	0.00708	0.00714	0.00711
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00610	-0.00613	-0.00612
	(!A1 * A3 * !A4 * B1 * !Y)	0.00707	0.00713	0.00711
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00612	-0.00612	-0.00611
	(!A1 * !A3 * A4 * B1 * !Y)	0.00686	0.00688	0.00686
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00613	-0.00611	-0.00612
	(!A1 * !A3 * A4 * !B1 * Y)	0.00687	0.00688	0.00686
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00542	-0.00582	-0.00581
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00730	0.00733	0.00729

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)**	0.00168	0.00169	0.00164
	(A2 * A4 * B1 * !Y)	-0.00114	-0.00114	-0.00114
	(A2 * A4 * !B1 * Y)	0.00158	0.00158	0.00157
	(A2 * A4 * !B1 * Y)	-0.00131	-0.00131	-0.00130
	(A2 * !A4 * B1 * !Y)	0.00165	0.00165	0.00163
	(A2 * !A4 * B1 * !Y)	-0.00097	-0.00097	-0.00097
	(A2 * !A4 * !B1 * Y)	0.00157	0.00159	0.00157
	(A2 * !A4 * !B1 * Y)	-0.00174	-0.00180	-0.00180
	(A1 * !A2 * A4 * B1 * !Y)	0.00173	0.00167	0.00163
	(A1 * !A2 * A4 * B1 * !Y)	-0.00118	-0.00118	-0.00118
	(A1 * !A2 * A4 * !B1 * Y)	0.00157	0.00160	0.00157
	(A1 * !A2 * A4 * !B1 * Y)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A4 * B1 * !Y)	0.00166	0.00166	0.00163
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00096	-0.00096	-0.00096
	(A1 * !A2 * !A4 * !B1 * Y)	0.00156	0.00158	0.00157
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00158	-0.00174	-0.00173
	(!A1 * !A2 * A4 * B1 * !Y)	0.00195	0.00166	0.00163
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00140	-0.00175	-0.00175
	(!A1 * !A2 * A4 * !B1 * Y)	0.00157	0.00157	0.00157
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00176	-0.00180	-0.00180
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00149	0.00151	0.00149
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00183	-0.00184	-0.00183

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00308	0.00314	0.00308
	(A2 * A4 * B1 * !Y)	-0.00233	-0.00235	-0.00233
	(A2 * A4 * !B1 * Y)	0.00303	0.00308	0.00304
	(A2 * A4 * !B1 * Y)	-0.00263	-0.00264	-0.00262
	(A2 * !A4 * B1 * !Y)	0.00306	0.00309	0.00306
	(A2 * !A4 * B1 * !Y)	-0.00198	-0.00200	-0.00200
	(A2 * !A4 * !B1 * Y)	0.00303	0.00307	0.00304
	(A2 * !A4 * !B1 * Y)	-0.00345	-0.00357	-0.00356
	(A1 * !A2 * A4 * B1 * !Y)	0.00317	0.00308	0.00306
	(A1 * !A2 * A4 * B1 * !Y)	-0.00241	-0.00241	-0.00240
	(A1 * !A2 * A4 * !B1 * Y)	0.00303	0.00310	0.00304
	(A1 * !A2 * A4 * !B1 * Y)	-0.00257	-0.00257	-0.00256
	(A1 * !A2 * !A4 * B1 * !Y)	0.00307	0.00311	0.00306
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00196	-0.00198	-0.00198
	(A1 * !A2 * !A4 * !B1 * Y)	0.00303	0.00304	0.00304
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00317	-0.00341	-0.00340
	(!A1 * !A2 * A4 * B1 * !Y)	0.00373	0.00309	0.00305
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00280	-0.00355	-0.00355
	(!A1 * !A2 * A4 * !B1 * Y)	0.00303	0.00307	0.00304
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00344	-0.00356	-0.00355
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00293	0.00295	0.00292
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00361	-0.00364	-0.00362

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00637	0.00649	0.00632
	(A2 * A4 * B1 * !Y)	-0.00461	-0.00465	-0.00463
	(A2 * A4 * !B1 * Y)	0.00623	0.00632	0.00625
	(A2 * A4 * !B1 * Y)	-0.00514	-0.00517	-0.00512
	(A2 * !A4 * B1 * !Y)	0.00626	0.00633	0.00626
	(A2 * !A4 * B1 * !Y)	-0.00400	-0.00405	-0.00404
	(A2 * !A4 * !B1 * Y)	0.00626	0.00628	0.00624
	(A2 * !A4 * !B1 * Y)	-0.00696	-0.00719	-0.00718
	(A1 * !A2 * A4 * B1 * !Y)	0.00662	0.00632	0.00626
	(A1 * !A2 * A4 * B1 * !Y)	-0.00483	-0.00485	-0.00482
	(A1 * !A2 * A4 * !B1 * Y)	0.00624	0.00637	0.00624
	(A1 * !A2 * A4 * !B1 * Y)	-0.00509	-0.00512	-0.00507
	(A1 * !A2 * !A4 * B1 * !Y)	0.00629	0.00636	0.00626
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00397	-0.00401	-0.00401
	(A1 * !A2 * !A4 * !B1 * Y)	0.00626	0.00632	0.00623
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00634	-0.00678	-0.00680
	(!A1 * !A2 * A4 * B1 * !Y)	0.00771	0.00628	0.00624
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00572	-0.00722	-0.00728
	(!A1 * !A2 * A4 * !B1 * Y)	0.00627	0.00623	0.00624
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00711	-0.00727	-0.00726
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00597	0.00605	0.00599
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00737	-0.00742	-0.00738

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

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

sky130_fd_sc_hs__o41ai_1	**(A2 * A4 * B1 * !Y)**	-0.00163	-0.00163	-0.00163
	(A2 * A4 * B1 * !Y)	0.00114	0.00114	0.00114
	(A2 * A4 * !B1 * Y)	-0.00157	-0.00157	-0.00157
	(A2 * A4 * !B1 * Y)	0.00131	0.00131	0.00130
	(A2 * !A4 * B1 * !Y)	-0.00162	-0.00163	-0.00161
	(A2 * !A4 * B1 * !Y)	0.00099	0.00099	0.00099
	(A2 * !A4 * !B1 * Y)	-0.00156	-0.00157	-0.00157
	(A2 * !A4 * !B1 * Y)	0.00179	0.00180	0.00180
	(A1 * !A2 * A4 * B1 * !Y)	-0.00163	-0.00163	-0.00162
	(A1 * !A2 * A4 * B1 * !Y)	0.00118	0.00118	0.00118
	(A1 * !A2 * A4 * !B1 * Y)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * A4 * !B1 * Y)	0.00129	0.00130	0.00129
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00160	-0.00161	-0.00161
	(A1 * !A2 * !A4 * B1 * !Y)	0.00099	0.00099	0.00098
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00156	-0.00157	-0.00157
	(A1 * !A2 * !A4 * !B1 * Y)	0.00172	0.00174	0.00173
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00162	-0.00163	-0.00162
	(!A1 * !A2 * A4 * B1 * !Y)	0.00173	0.00175	0.00175
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00156	-0.00157	-0.00157
	(!A1 * !A2 * A4 * !B1 * Y)	0.00179	0.00181	0.00180
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00139	-0.00151	-0.00149
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00183	0.00184	0.00183

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00305	-0.00307	-0.00306
	(A2 * A4 * B1 * !Y)	0.00233	0.00235	0.00233
	(A2 * A4 * !B1 * Y)	-0.00303	-0.00305	-0.00303
	(A2 * A4 * !B1 * Y)	0.00263	0.00264	0.00262
	(A2 * !A4 * B1 * !Y)	-0.00302	-0.00303	-0.00301
	(A2 * !A4 * B1 * !Y)	0.00202	0.00203	0.00205
	(A2 * !A4 * !B1 * Y)	-0.00303	-0.00304	-0.00303
	(A2 * !A4 * !B1 * Y)	0.00356	0.00357	0.00356
	(A1 * !A2 * A4 * B1 * !Y)	-0.00306	-0.00307	-0.00306
	(A1 * !A2 * A4 * B1 * !Y)	0.00241	0.00241	0.00240
	(A1 * !A2 * A4 * !B1 * Y)	-0.00303	-0.00304	-0.00303
	(A1 * !A2 * A4 * !B1 * Y)	0.00257	0.00257	0.00256
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00298	-0.00300	-0.00300
	(A1 * !A2 * !A4 * B1 * !Y)	0.00200	0.00202	0.00202
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00303	-0.00304	-0.00303
	(A1 * !A2 * !A4 * !B1 * Y)	0.00339	0.00341	0.00340
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00303	-0.00305	-0.00303
	(!A1 * !A2 * A4 * B1 * !Y)	0.00353	0.00355	0.00355
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00302	-0.00304	-0.00303
	(!A1 * !A2 * A4 * !B1 * Y)	0.00353	0.00356	0.00355
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00266	-0.00290	-0.00292
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00361	0.00364	0.00363

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00624	-0.00627	-0.00625
	(A2 * A4 * B1 * !Y)	0.00461	0.00465	0.00463
	(A2 * A4 * !B1 * Y)	-0.00623	-0.00627	-0.00623
	(A2 * A4 * !B1 * Y)	0.00514	0.00517	0.00512
	(A2 * !A4 * B1 * !Y)	-0.00622	-0.00624	-0.00618
	(A2 * !A4 * B1 * !Y)	0.00409	0.00411	0.00413
	(A2 * !A4 * !B1 * Y)	-0.00623	-0.00624	-0.00622
	(A2 * !A4 * !B1 * Y)	0.00717	0.00719	0.00718
	(A1 * !A2 * A4 * B1 * !Y)	-0.00625	-0.00628	-0.00625
	(A1 * !A2 * A4 * B1 * !Y)	0.00483	0.00485	0.00482
	(A1 * !A2 * A4 * !B1 * Y)	-0.00623	-0.00626	-0.00623
	(A1 * !A2 * A4 * !B1 * Y)	0.00509	0.00512	0.00507
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00611	-0.00615	-0.00615
	(A1 * !A2 * !A4 * B1 * !Y)	0.00403	0.00408	0.00408
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00621	-0.00621	-0.00622
	(A1 * !A2 * !A4 * !B1 * Y)	0.00678	0.00678	0.00680
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00620	-0.00623	-0.00620
	(!A1 * !A2 * A4 * B1 * !Y)	0.00723	0.00727	0.00728
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00621	-0.00623	-0.00622
	(!A1 * !A2 * A4 * !B1 * Y)	0.00723	0.00728	0.00726
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00546	-0.00592	-0.00597
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00738	0.00744	0.00740

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00178	0.00179	0.00178
	(A3 * B1 * !Y)	-0.00086	-0.00086	-0.00086
	(A3 * !B1 * Y)	0.00156	0.00156	0.00156
	(A3 * !B1 * Y)	-0.00175	-0.00181	-0.00181
	(A2 * !A3 * B1 * !Y)	0.00178	0.00179	0.00178
	(A2 * !A3 * B1 * !Y)	-0.00086	-0.00086	-0.00085
	(A2 * !A3 * !B1 * Y)	0.00155	0.00156	0.00156
	(A2 * !A3 * !B1 * Y)	-0.00159	-0.00175	-0.00174
	(A1 * !A2 * !A3 * B1 * !Y)	0.00178	0.00179	0.00178
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00086	-0.00086	-0.00085
	(A1 * !A2 * !A3 * !B1 * Y)	0.00155	0.00158	0.00156
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00157	-0.00171	-0.00171
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00148	0.00150	0.00148
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00183	-0.00184	-0.00183
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00343	0.00348	0.00345
	(A3 * B1 * !Y)	-0.00176	-0.00178	-0.00177
	(A3 * !B1 * Y)	0.00307	0.00313	0.00308
	(A3 * !B1 * Y)	-0.00346	-0.00361	-0.00360
	(A2 * !A3 * B1 * !Y)	0.00343	0.00348	0.00345
	(A2 * !A3 * B1 * !Y)	-0.00176	-0.00178	-0.00176
	(A2 * !A3 * !B1 * Y)	0.00308	0.00313	0.00308
	(A2 * !A3 * !B1 * Y)	-0.00318	-0.00349	-0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	0.00343	0.00348	0.00345
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00175	-0.00178	-0.00176
	(A1 * !A2 * !A3 * !B1 * Y)	0.00307	0.00306	0.00308
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00311	-0.00340	-0.00339
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00295	0.00298	0.00294
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00367	-0.00369	-0.00366

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00706	0.00714	0.00708
	(A3 * B1 * !Y)	-0.00340	-0.00344	-0.00341
	(A3 * !B1 * Y)	0.00625	0.00628	0.00625
	(A3 * !B1 * Y)	-0.00689	-0.00718	-0.00716
	(A2 * !A3 * B1 * !Y)	0.00706	0.00714	0.00708
	(A2 * !A3 * B1 * !Y)	-0.00340	-0.00344	-0.00341
	(A2 * !A3 * !B1 * Y)	0.00623	0.00627	0.00625
	(A2 * !A3 * !B1 * Y)	-0.00621	-0.00684	-0.00683
	(A1 * !A2 * !A3 * B1 * !Y)	0.00706	0.00715	0.00708
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00340	-0.00344	-0.00341
	(A1 * !A2 * !A3 * !B1 * Y)	0.00626	0.00633	0.00624
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00614	-0.00667	-0.00664
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00600	0.00600	0.00598
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00727	-0.00729	-0.00728

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00172	-0.00173	-0.00177
	(A3 * B1 * !Y)	0.00089	0.00090	0.00087
	(A3 * !B1 * Y)	-0.00156	-0.00156	-0.00156
	(A3 * !B1 * Y)	0.00181	0.00182	0.00181
	(A2 * !A3 * B1 * !Y)	-0.00166	-0.00167	-0.00176
	(A2 * !A3 * B1 * !Y)	0.00093	0.00094	0.00087
	(A2 * !A3 * !B1 * Y)	-0.00155	-0.00156	-0.00156
	(A2 * !A3 * !B1 * Y)	0.00174	0.00175	0.00174
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00157	-0.00159	-0.00173
	(A1 * !A2 * !A3 * B1 * !Y)	0.00099	0.00099	0.00089
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00155	-0.00156	-0.00156
	(A1 * !A2 * !A3 * !B1 * Y)	0.00170	0.00171	0.00171
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00139	-0.00150	-0.00148
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00183	0.00184	0.00183
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00328	-0.00330	-0.00343
	(A3 * B1 * !Y)	0.00190	0.00190	0.00180
	(A3 * !B1 * Y)	-0.00307	-0.00308	-0.00308
	(A3 * !B1 * Y)	0.00358	0.00361	0.00360
	(A2 * !A3 * B1 * !Y)	-0.00315	-0.00317	-0.00339
	(A2 * !A3 * B1 * !Y)	0.00197	0.00197	0.00181
	(A2 * !A3 * !B1 * Y)	-0.00307	-0.00309	-0.00308
	(A2 * !A3 * !B1 * Y)	0.00345	0.00349	0.00347
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00294	-0.00295	-0.00332
	(A1 * !A2 * !A3 * B1 * !Y)	0.00209	0.00209	0.00185
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00307	-0.00306	-0.00308
	(A1 * !A2 * !A3 * !B1 * Y)	0.00339	0.00340	0.00339
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00272	-0.00294	-0.00294
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00368	0.00370	0.00367

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	-0.00680	-0.00683	-0.00705
	(A3 * B1 * !Y)	0.00364	0.00365	0.00348
	(A3 * !B1 * Y)	-0.00623	-0.00625	-0.00624
	(A3 * !B1 * Y)	0.00714	0.00718	0.00716
	(A2 * !A3 * B1 * !Y)	-0.00654	-0.00657	-0.00699
	(A2 * !A3 * B1 * !Y)	0.00375	0.00376	0.00347
	(A2 * !A3 * !B1 * Y)	-0.00622	-0.00625	-0.00623
	(A2 * !A3 * !B1 * Y)	0.00681	0.00684	0.00683
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00612	-0.00619	-0.00686
	(A1 * !A2 * !A3 * B1 * !Y)	0.00400	0.00403	0.00355
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00624	-0.00626	-0.00623
	(A1 * !A2 * !A3 * !B1 * Y)	0.00664	0.00667	0.00664
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00549	-0.00593	-0.00598
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00727	0.00734	0.00730

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)**	0.00062	0.00062	0.00058
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00218	-0.00219	-0.00227
sky130_fd_sc_hs__o41ai_2	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00145	0.00145	0.00137
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00415	-0.00417	-0.00433
sky130_fd_sc_hs__o41ai_4	**(!A1 * !A2 * !A3 * !A4 * Y)**	0.00205	0.00206	0.00191
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00464	-0.00467	-0.00498

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)	-0.00056	-0.00057	-0.00056
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00228	0.00232	0.00228
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00134	-0.00136	-0.00133
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00434	0.00442	0.00435
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00186	-0.00188	-0.00186
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00498	0.00504	0.00500

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__o41a_1	14.38560
sky130_fd_sc_hs__o41a_2	15.98400
sky130_fd_sc_hs__o41a_4	27.17280

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	A1	A2	A3	A4	B1	X
sky130_fd_sc_hs__o41a_1	0.00246	0.00255	0.00255	0.00259	0.00239	1.40734
sky130_fd_sc_hs__o41a_2	0.00260	0.00273	0.00280	0.00267	0.00270	2.86718
sky130_fd_sc_hs__o41a_4	0.00470	0.00509	0.00512	0.00478	0.00445	5.00918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.26064	0.53553
sky130_fd_sc_hs__o41a_2	0.00000	0.12565	0.17741
sky130_fd_sc_hs__o41a_4	0.00000	0.58909	1.07307

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)	0.06475	0.48105	5.32776
	A2->X (RR)	0.06330	0.46944	5.22589
	A3->X (RR)	0.05985	0.45493	5.14822
	A4->X (RR)	0.05276	0.43812	5.17048
	B1->X (RR)	0.05774	0.48033	5.67376
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.06469	0.39578	5.28681
	A2->X (RR)	0.06365	0.38705	5.20199
	A3->X (RR)	0.06100	0.37571	5.13335
	A4->X (RR)	0.05305	0.35960	5.13411
	B1->X (RR)	0.05811	0.40140	5.67452
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.07222	0.33964	5.21472
	A2->X (RR)	0.07141	0.33110	5.13246
	A3->X (RR)	0.06415	0.31550	5.04842
	A4->X (RR)	0.05818	0.29837	5.07174
	B1->X (RR)	0.06521	0.35696	5.70695

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.20298	0.60547	5.15894
	A2->X (FF)	0.19248	0.61094	5.28243
	A3->X (FF)	0.17012	0.61378	5.36298
	A4->X (FF)	0.13787	0.58863	5.31990
	B1->X (FF)	0.05032	0.43777	4.87481
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.24247	0.64037	5.37235
	A2->X (FF)	0.23362	0.65058	5.52095
	A3->X (FF)	0.21289	0.65585	5.61609
	A4->X (FF)	0.17651	0.63017	5.55452
	B1->X (FF)	0.05308	0.41823	4.89471
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.25739	0.62812	5.32810
	A2->X (FF)	0.24517	0.62859	5.45268
	A3->X (FF)	0.21450	0.62313	5.54240
	A4->X (FF)	0.17125	0.59101	5.47933
	B1->X (FF)	0.05937	0.39569	4.90422

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01444	0.01495	0.04400
	A1	0.00604	0.00656	0.03583
	A2	0.01262	0.01319	0.03979
	A2	0.00518	0.00576	0.03266
	A3	0.01070	0.01144	0.03717
	A3	0.00420	0.00494	0.03068
	A4	0.00894	0.01014	0.04707
	A4	0.00327	0.00449	0.04141
	B1	0.00708	0.01004	0.07197
	B1	0.00336	0.00634	0.06855
sky130_fd_sc_hs__o41a_2	A1	0.01758	0.01828	0.04535
	A1	0.00857	0.00932	0.03680
	A2	0.01590	0.01662	0.04135
	A2	0.00782	0.00860	0.03327
	A3	0.01402	0.01486	0.03881
	A3	0.00678	0.00765	0.03157
	A4	0.01197	0.01326	0.04824
	A4	0.00570	0.00705	0.04197
	B1	0.00988	0.01280	0.07870
	B1	0.00561	0.00866	0.07490

sky130_fd_sc_hs__o41a_4	**A1**	0.03446	0.03552	0.08931
	A1	0.01777	0.01888	0.07265
	A2	0.03148	0.03280	0.08263
	A2	0.01597	0.01735	0.06714
	A3	0.02695	0.02867	0.07696
	A3	0.01344	0.01517	0.06346
	A4	0.02228	0.02494	0.09374
	A4	0.01111	0.01390	0.08258
	B1	0.01847	0.02464	0.15918
	B1	0.01135	0.01756	0.15294

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00491	0.00463	0.03332
	A1	0.01329	0.01302	0.04034
	A2	0.00494	0.00478	0.02991
	A2	0.01232	0.01216	0.03725
	A3	0.00493	0.00518	0.02951
	A3	0.01133	0.01158	0.03581
	A4	0.00490	0.00635	0.04287
	A4	0.01044	0.01190	0.04813
	B1	0.00288	0.00699	0.08234
	B1	0.00659	0.01069	0.08556

sky130_fd_sc_hs__o41a_2	**A1**	0.00931	0.00734	0.03291
	A1	0.01827	0.01638	0.04183
	A2	0.00936	0.00760	0.03090
	A2	0.01736	0.01559	0.03885
	A3	0.00933	0.00791	0.03477
	A3	0.01645	0.01502	0.03763
	A4	0.00931	0.00919	0.04476
	A4	0.01542	0.01537	0.04996
	B1	0.00535	0.00930	0.08272
	B1	0.01062	0.01447	0.08388
sky130_fd_sc_hs__o41a_4	**A1**	0.01896	0.01487	0.06736
	A1	0.03568	0.03160	0.08061
	A2	0.01833	0.01438	0.06496
	A2	0.03377	0.02982	0.07553
	A3	0.01839	0.01514	0.06480
	A3	0.03168	0.02844	0.07279
	A4	0.01886	0.01820	0.08866
	A4	0.02975	0.02908	0.09584
	B1	0.01118	0.01904	0.16376
	B1	0.02023	0.02805	0.17224

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)**	0.00144	0.00144	0.00144
	(A2 * A4 * B1 * X)	-0.00178	-0.00183	-0.00183
	(A2 * A3 * !A4 * B1 * X)	0.00144	0.00144	0.00144
	(A2 * A3 * !A4 * B1 * X)	-0.00178	-0.00183	-0.00183
	(A2 * !B1 * !X)	0.00143	0.00144	0.00143
	(A2 * !B1 * !X)	-0.00178	-0.00184	-0.00183
	(A2 * !A3 * !A4 * B1 * X)	0.00144	0.00144	0.00144
	(A2 * !A3 * !A4 * B1 * X)	-0.00176	-0.00183	-0.00183
	(!A2 * A3 * A4 * B1 * X)	0.00143	0.00144	0.00144
	(!A2 * A3 * A4 * B1 * X)	-0.00165	-0.00178	-0.00178
	(!A2 * A3 * !B1 * !X)	0.00143	0.00144	0.00143
	(!A2 * A3 * !B1 * !X)	-0.00166	-0.00178	-0.00178
	(!A2 * A3 * !A4 * B1 * X)	0.00143	0.00144	0.00144
	(!A2 * A3 * !A4 * B1 * X)	-0.00165	-0.00178	-0.00178
	(!A2 * !A3 * A4 * B1 * X)	0.00144	0.00144	0.00144
	(!A2 * !A3 * A4 * B1 * X)	-0.00162	-0.00178	-0.00176
	(!A2 * !A3 * A4 * !B1 * !X)	0.00143	0.00143	0.00143
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00163	-0.00178	-0.00176
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00137	0.00137	0.00137
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00185	-0.00185	-0.00185

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00163	0.00163	0.00162
	(A2 * A4 * B1 * X)	-0.00175	-0.00180	-0.00179
	(A2 * A3 * !A4 * B1 * X)	0.00162	0.00163	0.00162
	(A2 * A3 * !A4 * B1 * X)	-0.00175	-0.00180	-0.00179
	(A2 * !B1 * !X)	0.00162	0.00163	0.00162
	(A2 * !B1 * !X)	-0.00175	-0.00180	-0.00179
	(A2 * !A3 * !A4 * B1 * X)	0.00162	0.00163	0.00162
	(A2 * !A3 * !A4 * B1 * X)	-0.00172	-0.00180	-0.00179
	(!A2 * A3 * A4 * B1 * X)	0.00162	0.00163	0.00162
	(!A2 * A3 * A4 * B1 * X)	-0.00162	-0.00175	-0.00174
	(!A2 * A3 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A2 * A3 * !B1 * !X)	-0.00162	-0.00175	-0.00174
	(!A2 * A3 * !A4 * B1 * X)	0.00162	0.00163	0.00162
	(!A2 * A3 * !A4 * B1 * X)	-0.00162	-0.00175	-0.00174
	(!A2 * !A3 * A4 * B1 * X)	0.00162	0.00163	0.00162
	(!A2 * !A3 * A4 * B1 * X)	-0.00159	-0.00174	-0.00172
	(!A2 * !A3 * A4 * !B1 * !X)	0.00162	0.00163	0.00162
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00160	-0.00174	-0.00172
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00153	0.00155	0.00154
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00180	-0.00181	-0.00181

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00265	0.00268	0.00264
	(A2 * A4 * B1 * X)	-0.00345	-0.00357	-0.00357
	(A2 * A3 * !A4 * B1 * X)	0.00266	0.00268	0.00264
	(A2 * A3 * !A4 * B1 * X)	-0.00344	-0.00355	-0.00357
	(A2 * !B1 * !X)	0.00264	0.00267	0.00263
	(A2 * !B1 * !X)	-0.00346	-0.00357	-0.00358
	(A2 * !A3 * !A4 * B1 * X)	0.00267	0.00268	0.00265
	(A2 * !A3 * !A4 * B1 * X)	-0.00337	-0.00358	-0.00356
	(!A2 * A3 * A4 * B1 * X)	0.00266	0.00268	0.00264
	(!A2 * A3 * A4 * B1 * X)	-0.00315	-0.00347	-0.00346
	(!A2 * A3 * !B1 * !X)	0.00264	0.00267	0.00263
	(!A2 * A3 * !B1 * !X)	-0.00317	-0.00347	-0.00346
	(!A2 * A3 * !A4 * B1 * X)	0.00266	0.00268	0.00264
	(!A2 * A3 * !A4 * B1 * X)	-0.00315	-0.00346	-0.00347
	(!A2 * !A3 * A4 * B1 * X)	0.00267	0.00268	0.00264
	(!A2 * !A3 * A4 * B1 * X)	-0.00308	-0.00339	-0.00340
	(!A2 * !A3 * A4 * !B1 * !X)	0.00264	0.00266	0.00263
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00311	-0.00339	-0.00340
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00251	0.00254	0.00251
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00364	-0.00366	-0.00364

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)**	-0.00142	-0.00143	-0.00142
	(A2 * A4 * B1 * X)	0.00183	0.00184	0.00183
	(A2 * A3 * !A4 * B1 * X)	-0.00142	-0.00143	-0.00142
	(A2 * A3 * !A4 * B1 * X)	0.00183	0.00184	0.00183
	(A2 * !B1 * !X)	-0.00142	-0.00143	-0.00143
	(A2 * !B1 * !X)	0.00182	0.00184	0.00183
	(A2 * !A3 * !A4 * B1 * X)	-0.00142	-0.00143	-0.00142
	(A2 * !A3 * !A4 * B1 * X)	0.00183	0.00184	0.00183
	(!A2 * A3 * A4 * B1 * X)	-0.00142	-0.00142	-0.00142
	(!A2 * A3 * A4 * B1 * X)	0.00178	0.00178	0.00178
	(!A2 * A3 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(!A2 * A3 * !B1 * !X)	0.00177	0.00178	0.00178
	(!A2 * A3 * !A4 * B1 * X)	-0.00142	-0.00142	-0.00142
	(!A2 * A3 * !A4 * B1 * X)	0.00178	0.00178	0.00178
	(!A2 * !A3 * A4 * B1 * X)	-0.00142	-0.00143	-0.00142
	(!A2 * !A3 * A4 * B1 * X)	0.00176	0.00178	0.00176
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00143	-0.00143	-0.00143
	(!A2 * !A3 * A4 * !B1 * !X)	0.00176	0.00178	0.00176
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00128	-0.00137	-0.00137
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00185	0.00187	0.00185

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00162	-0.00162	-0.00162
	(A2 * A4 * B1 * X)	0.00179	0.00181	0.00179
	(A2 * A3 * !A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(A2 * A3 * !A4 * B1 * X)	0.00179	0.00181	0.00179
	(A2 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(A2 * !B1 * !X)	0.00179	0.00181	0.00179
	(A2 * !A3 * !A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(A2 * !A3 * !A4 * B1 * X)	0.00179	0.00180	0.00179
	(!A2 * A3 * A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A2 * A3 * !B1 * !X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * !B1 * !X)	0.00174	0.00175	0.00174
	(!A2 * A3 * !A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A2 * A3 * !A4 * B1 * X)	0.00174	0.00175	0.00174
	(!A2 * !A3 * A4 * B1 * X)	-0.00162	-0.00162	-0.00162
	(!A2 * !A3 * A4 * B1 * X)	0.00173	0.00174	0.00172
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00162	-0.00163	-0.00162
	(!A2 * !A3 * A4 * !B1 * !X)	0.00173	0.00174	0.00172
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00144	-0.00155	-0.00154
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00182	0.00183	0.00182

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00261	-0.00262	-0.00262
	(A2 * A4 * B1 * X)	0.00355	0.00357	0.00358
	(A2 * A3 * !A4 * B1 * X)	-0.00261	-0.00261	-0.00262
	(A2 * A3 * !A4 * B1 * X)	0.00355	0.00355	0.00358
	(A2 * !B1 * !X)	-0.00261	-0.00262	-0.00262
	(A2 * !B1 * !X)	0.00355	0.00357	0.00358
	(A2 * !A3 * !A4 * B1 * X)	-0.00261	-0.00263	-0.00262
	(A2 * !A3 * !A4 * B1 * X)	0.00355	0.00360	0.00357
	(!A2 * A3 * A4 * B1 * X)	-0.00262	-0.00263	-0.00262
	(!A2 * A3 * A4 * B1 * X)	0.00344	0.00347	0.00346
	(!A2 * A3 * !B1 * !X)	-0.00262	-0.00263	-0.00262
	(!A2 * A3 * !B1 * !X)	0.00344	0.00347	0.00346
	(!A2 * A3 * !A4 * B1 * X)	-0.00262	-0.00262	-0.00262
	(!A2 * A3 * !A4 * B1 * X)	0.00345	0.00346	0.00347
	(!A2 * !A3 * A4 * B1 * X)	-0.00261	-0.00262	-0.00262
	(!A2 * !A3 * A4 * B1 * X)	0.00338	0.00339	0.00340
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00262	-0.00262	-0.00262
	(!A2 * !A3 * A4 * !B1 * !X)	0.00338	0.00339	0.00340
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00234	-0.00253	-0.00251
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00366	0.00368	0.00365

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)**	0.00139	0.00140	0.00138
	(A1 * A3 * A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(A1 * A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(A1 * A3 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(A1 * A3 * !A4 * B1 * X)	0.00140	0.00140	0.00138
	(A1 * A3 * !A4 * B1 * X)	-0.00122	-0.00122	-0.00121
	(A1 * !A3 * A4 * B1 * X)	0.00138	0.00141	0.00138
	(A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !A3 * A4 * !B1 * !X)	0.00138	0.00141	0.00138
	(A1 * !A3 * A4 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !A4 * B1 * X)	0.00138	0.00139	0.00138
	(A1 * !A3 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00101
	(A1 * !A3 * !A4 * !B1 * !X)	0.00138	0.00139	0.00138
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00174	-0.00179	-0.00178
	(!A1 * A3 * A4 * B1 * X)	0.00138	0.00139	0.00138
	(!A1 * A3 * A4 * B1 * X)	-0.00172	-0.00179	-0.00179
	(!A1 * A3 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A1 * A3 * !B1 * !X)	-0.00173	-0.00179	-0.00179
	(!A1 * A3 * !A4 * B1 * X)	0.00147	0.00139	0.00138
	(!A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00178	-0.00179
	(!A1 * !A3 * A4 * B1 * X)	0.00142	0.00138	0.00138
	(!A1 * !A3 * A4 * B1 * X)	-0.00153	-0.00173	-0.00173
	(!A1 * !A3 * A4 * !B1 * !X)	0.00137	0.00138	0.00138
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00157	-0.00173	-0.00172
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00132	0.00133	0.00132
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00181	-0.00181	-0.00180

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00156	0.00157	0.00156
	(A1 * A3 * A4 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * A3 * !B1 * !X)	0.00156	0.00157	0.00156
	(A1 * A3 * !B1 * !X)	-0.00128	-0.00128	-0.00127
	(A1 * A3 * !A4 * B1 * X)	0.00157	0.00158	0.00156
	(A1 * A3 * !A4 * B1 * X)	-0.00117	-0.00119	-0.00118
	(A1 * !A3 * A4 * B1 * X)	0.00155	0.00155	0.00156
	(A1 * !A3 * A4 * B1 * X)	-0.00117	-0.00116	-0.00117
	(A1 * !A3 * A4 * !B1 * !X)	0.00155	0.00159	0.00156
	(A1 * !A3 * A4 * !B1 * !X)	-0.00126	-0.00125	-0.00126
	(A1 * !A3 * !A4 * B1 * X)	0.00156	0.00157	0.00156
	(A1 * !A3 * !A4 * B1 * X)	-0.00102	-0.00102	-0.00101
	(A1 * !A3 * !A4 * !B1 * !X)	0.00155	0.00157	0.00156
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00175	-0.00178	-0.00178
	(!A1 * A3 * A4 * B1 * X)	0.00155	0.00156	0.00156
	(!A1 * A3 * A4 * B1 * X)	-0.00172	-0.00178	-0.00178
	(!A1 * A3 * !B1 * !X)	0.00155	0.00156	0.00156
	(!A1 * A3 * !B1 * !X)	-0.00172	-0.00178	-0.00178
	(!A1 * A3 * !A4 * B1 * X)	0.00163	0.00156	0.00156
	(!A1 * A3 * !A4 * B1 * X)	-0.00162	-0.00178	-0.00178
	(!A1 * !A3 * A4 * B1 * X)	0.00160	0.00156	0.00156
	(!A1 * !A3 * A4 * B1 * X)	-0.00153	-0.00173	-0.00172
	(!A1 * !A3 * A4 * !B1 * !X)	0.00155	0.00156	0.00156
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00156	-0.00173	-0.00172
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00147	0.00149	0.00147
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00181	-0.00182	-0.00181

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00333	0.00333	0.00333
	(A1 * A3 * A4 * B1 * X)	-0.00246	-0.00248	-0.00246
	(A1 * A3 * !B1 * !X)	0.00329	0.00328	0.00328
	(A1 * A3 * !B1 * !X)	-0.00255	-0.00256	-0.00255
	(A1 * A3 * !A4 * B1 * X)	0.00331	0.00334	0.00333
	(A1 * A3 * !A4 * B1 * X)	-0.00232	-0.00232	-0.00233
	(A1 * !A3 * A4 * B1 * X)	0.00329	0.00333	0.00331
	(A1 * !A3 * A4 * B1 * X)	-0.00229	-0.00231	-0.00229
	(A1 * !A3 * A4 * !B1 * !X)	0.00326	0.00329	0.00328
	(A1 * !A3 * A4 * !B1 * !X)	-0.00248	-0.00249	-0.00248
	(A1 * !A3 * !A4 * B1 * X)	0.00328	0.00330	0.00330
	(A1 * !A3 * !A4 * B1 * X)	-0.00193	-0.00194	-0.00194
	(A1 * !A3 * !A4 * !B1 * !X)	0.00326	0.00329	0.00328
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00342	-0.00352	-0.00351
	(!A1 * A3 * A4 * B1 * X)	0.00330	0.00331	0.00329
	(!A1 * A3 * A4 * B1 * X)	-0.00331	-0.00350	-0.00350
	(!A1 * A3 * !B1 * !X)	0.00327	0.00330	0.00328
	(!A1 * A3 * !B1 * !X)	-0.00335	-0.00351	-0.00350
	(!A1 * A3 * !A4 * B1 * X)	0.00338	0.00331	0.00329
	(!A1 * A3 * !A4 * B1 * X)	-0.00321	-0.00350	-0.00349
	(!A1 * !A3 * A4 * B1 * X)	0.00338	0.00331	0.00329
	(!A1 * !A3 * A4 * B1 * X)	-0.00302	-0.00339	-0.00338
	(!A1 * !A3 * A4 * !B1 * !X)	0.00329	0.00330	0.00328
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00309	-0.00339	-0.00337
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00316	0.00319	0.00316
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00356	-0.00358	-0.00357

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)**	-0.00137	-0.00138	-0.00137
	(A1 * A3 * A4 * B1 * X)	0.00128	0.00128	0.00127
	(A1 * A3 * !B1 * !X)	-0.00138	-0.00137	-0.00138
	(A1 * A3 * !B1 * !X)	0.00130	0.00130	0.00130
	(A1 * A3 * !A4 * B1 * X)	-0.00137	-0.00138	-0.00137
	(A1 * A3 * !A4 * B1 * X)	0.00122	0.00122	0.00121
	(A1 * !A3 * A4 * B1 * X)	-0.00137	-0.00138	-0.00137
	(A1 * !A3 * A4 * B1 * X)	0.00119	0.00119	0.00119
	(A1 * !A3 * A4 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(A1 * !A3 * A4 * !B1 * !X)	0.00127	0.00128	0.00127
	(A1 * !A3 * !A4 * B1 * X)	-0.00134	-0.00134	-0.00133
	(A1 * !A3 * !A4 * B1 * X)	0.00106	0.00106	0.00106
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00137	-0.00138	-0.00138
	(A1 * !A3 * !A4 * !B1 * !X)	0.00177	0.00179	0.00178
	(!A1 * A3 * A4 * B1 * X)	-0.00137	-0.00138	-0.00137
	(!A1 * A3 * A4 * B1 * X)	0.00179	0.00180	0.00179
	(!A1 * A3 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(!A1 * A3 * !B1 * !X)	0.00179	0.00179	0.00179
	(!A1 * A3 * !A4 * B1 * X)	-0.00137	-0.00138	-0.00137
	(!A1 * A3 * !A4 * B1 * X)	0.00179	0.00180	0.00179
	(!A1 * !A3 * A4 * B1 * X)	-0.00137	-0.00137	-0.00137
	(!A1 * !A3 * A4 * B1 * X)	0.00172	0.00173	0.00173
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00137	-0.00138	-0.00138
	(!A1 * !A3 * A4 * !B1 * !X)	0.00172	0.00173	0.00172
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00124	-0.00133	-0.00132
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00181	0.00182	0.00181

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00155	-0.00156	-0.00155
	(A1 * A3 * A4 * B1 * X)	0.00125	0.00125	0.00124
	(A1 * A3 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(A1 * A3 * !B1 * !X)	0.00128	0.00128	0.00127
	(A1 * A3 * !A4 * B1 * X)	-0.00154	-0.00156	-0.00155
	(A1 * A3 * !A4 * B1 * X)	0.00117	0.00119	0.00118
	(A1 * !A3 * A4 * B1 * X)	-0.00155	-0.00155	-0.00155
	(A1 * !A3 * A4 * B1 * X)	0.00117	0.00116	0.00117
	(A1 * !A3 * A4 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(A1 * !A3 * A4 * !B1 * !X)	0.00126	0.00125	0.00126
	(A1 * !A3 * !A4 * B1 * X)	-0.00154	-0.00155	-0.00154
	(A1 * !A3 * !A4 * B1 * X)	0.00103	0.00103	0.00103
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(A1 * !A3 * !A4 * !B1 * !X)	0.00178	0.00178	0.00178
	(!A1 * A3 * A4 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * A4 * B1 * X)	0.00178	0.00180	0.00178
	(!A1 * A3 * !B1 * !X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * !B1 * !X)	0.00178	0.00180	0.00178
	(!A1 * A3 * !A4 * B1 * X)	-0.00155	-0.00156	-0.00155
	(!A1 * A3 * !A4 * B1 * X)	0.00178	0.00179	0.00178
	(!A1 * !A3 * A4 * B1 * X)	-0.00154	-0.00155	-0.00155
	(!A1 * !A3 * A4 * B1 * X)	0.00171	0.00173	0.00172
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00155	-0.00155	-0.00155
	(!A1 * !A3 * A4 * !B1 * !X)	0.00171	0.00173	0.00172
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00138	-0.00149	-0.00147
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00181	0.00182	0.00181

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00330	-0.00331	-0.00329
	(A1 * A3 * A4 * B1 * X)	0.00246	0.00248	0.00246
	(A1 * A3 * !B1 * !X)	-0.00328	-0.00328	-0.00327
	(A1 * A3 * !B1 * !X)	0.00255	0.00256	0.00255
	(A1 * A3 * !A4 * B1 * X)	-0.00329	-0.00329	-0.00329
	(A1 * A3 * !A4 * B1 * X)	0.00232	0.00232	0.00233
	(A1 * !A3 * A4 * B1 * X)	-0.00328	-0.00330	-0.00328
	(A1 * !A3 * A4 * B1 * X)	0.00229	0.00231	0.00229
	(A1 * !A3 * A4 * !B1 * !X)	-0.00326	-0.00328	-0.00327
	(A1 * !A3 * A4 * !B1 * !X)	0.00248	0.00249	0.00248
	(A1 * !A3 * !A4 * B1 * X)	-0.00326	-0.00327	-0.00326
	(A1 * !A3 * !A4 * B1 * X)	0.00198	0.00199	0.00199
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00326	-0.00329	-0.00327
	(A1 * !A3 * !A4 * !B1 * !X)	0.00349	0.00353	0.00351
	(!A1 * A3 * A4 * B1 * X)	-0.00327	-0.00328	-0.00328
	(!A1 * A3 * A4 * B1 * X)	0.00348	0.00350	0.00350
	(!A1 * A3 * !B1 * !X)	-0.00326	-0.00328	-0.00327
	(!A1 * A3 * !B1 * !X)	0.00348	0.00351	0.00350
	(!A1 * A3 * !A4 * B1 * X)	-0.00327	-0.00328	-0.00327
	(!A1 * A3 * !A4 * B1 * X)	0.00348	0.00350	0.00349
	(!A1 * !A3 * A4 * B1 * X)	-0.00327	-0.00328	-0.00326
	(!A1 * !A3 * A4 * B1 * X)	0.00336	0.00339	0.00338
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00327	-0.00328	-0.00327
	(!A1 * !A3 * A4 * !B1 * !X)	0.00336	0.00339	0.00337
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00297	-0.00318	-0.00316
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00357	0.00359	0.00358

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)**	0.00143	0.00144	0.00139
	(A2 * A4 * B1 * X)	-0.00114	-0.00114	-0.00113
	(A2 * A4 * !B1 * !X)	0.00137	0.00138	0.00137
	(A2 * A4 * !B1 * !X)	-0.00124	-0.00124	-0.00123
	(A2 * !A4 * B1 * X)	0.00138	0.00139	0.00138
	(A2 * !A4 * B1 * X)	-0.00095	-0.00096	-0.00096
	(A2 * !A4 * !B1 * !X)	0.00137	0.00138	0.00137
	(A2 * !A4 * !B1 * !X)	-0.00168	-0.00174	-0.00173
	(A1 * !A2 * A4 * B1 * X)	0.00148	0.00141	0.00137
	(A1 * !A2 * A4 * B1 * X)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * A4 * !B1 * !X)	0.00137	0.00140	0.00137
	(A1 * !A2 * A4 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(A1 * !A2 * !A4 * B1 * X)	0.00139	0.00140	0.00138
	(A1 * !A2 * !A4 * B1 * X)	-0.00095	-0.00095	-0.00095
	(A1 * !A2 * !A4 * !B1 * !X)	0.00136	0.00138	0.00137
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00151	-0.00166	-0.00165
	(!A1 * !A2 * A4 * B1 * X)	0.00169	0.00140	0.00138
	(!A1 * !A2 * A4 * B1 * X)	-0.00140	-0.00174	-0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	0.00137	0.00139	0.00137
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00170	-0.00174	-0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00132	0.00130
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00176	-0.00177	-0.00176

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00168	0.00170	0.00165
	(A2 * A4 * B1 * X)	-0.00115	-0.00116	-0.00115
	(A2 * A4 * !B1 * !X)	0.00158	0.00159	0.00158
	(A2 * A4 * !B1 * !X)	-0.00134	-0.00134	-0.00133
	(A2 * !A4 * B1 * X)	0.00166	0.00167	0.00164
	(A2 * !A4 * B1 * X)	-0.00098	-0.00098	-0.00098
	(A2 * !A4 * !B1 * !X)	0.00157	0.00158	0.00158
	(A2 * !A4 * !B1 * !X)	-0.00176	-0.00182	-0.00182
	(A1 * !A2 * A4 * B1 * X)	0.00173	0.00168	0.00164
	(A1 * !A2 * A4 * B1 * X)	-0.00119	-0.00119	-0.00118
	(A1 * !A2 * A4 * !B1 * !X)	0.00157	0.00161	0.00158
	(A1 * !A2 * A4 * !B1 * !X)	-0.00131	-0.00132	-0.00130
	(A1 * !A2 * !A4 * B1 * X)	0.00167	0.00167	0.00165
	(A1 * !A2 * !A4 * B1 * X)	-0.00097	-0.00097	-0.00098
	(A1 * !A2 * !A4 * !B1 * !X)	0.00157	0.00158	0.00158
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00160	-0.00175	-0.00175
	(!A1 * !A2 * A4 * B1 * X)	0.00196	0.00167	0.00164
	(!A1 * !A2 * A4 * B1 * X)	-0.00141	-0.00176	-0.00176
	(!A1 * !A2 * A4 * !B1 * !X)	0.00157	0.00160	0.00158
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00178	-0.00183	-0.00182
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00149	0.00151	0.00149
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00185	-0.00185	-0.00184

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00335	0.00335	0.00330
	(A2 * A4 * B1 * X)	-0.00230	-0.00231	-0.00230
	(A2 * A4 * !B1 * !X)	0.00324	0.00323	0.00323
	(A2 * A4 * !B1 * !X)	-0.00255	-0.00256	-0.00255
	(A2 * !A4 * B1 * X)	0.00327	0.00329	0.00327
	(A2 * !A4 * B1 * X)	-0.00189	-0.00190	-0.00191
	(A2 * !A4 * !B1 * !X)	0.00321	0.00324	0.00323
	(A2 * !A4 * !B1 * !X)	-0.00333	-0.00348	-0.00347
	(A1 * !A2 * A4 * B1 * X)	0.00342	0.00331	0.00328
	(A1 * !A2 * A4 * B1 * X)	-0.00234	-0.00236	-0.00234
	(A1 * !A2 * A4 * !B1 * !X)	0.00321	0.00324	0.00323
	(A1 * !A2 * A4 * !B1 * !X)	-0.00248	-0.00249	-0.00248
	(A1 * !A2 * !A4 * B1 * X)	0.00328	0.00330	0.00327
	(A1 * !A2 * !A4 * B1 * X)	-0.00187	-0.00189	-0.00190
	(A1 * !A2 * !A4 * !B1 * !X)	0.00323	0.00325	0.00322
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00308	-0.00332	-0.00331
	(!A1 * !A2 * A4 * B1 * X)	0.00384	0.00329	0.00326
	(!A1 * !A2 * A4 * B1 * X)	-0.00283	-0.00346	-0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	0.00321	0.00324	0.00322
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00341	-0.00351	-0.00350
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00310	0.00315	0.00311
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00354	-0.00357	-0.00355

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)**	-0.00137	-0.00137	-0.00136
	(A2 * A4 * B1 * X)	0.00114	0.00114	0.00113
	(A2 * A4 * !B1 * !X)	-0.00137	-0.00137	-0.00137
	(A2 * A4 * !B1 * !X)	0.00124	0.00124	0.00123
	(A2 * !A4 * B1 * X)	-0.00136	-0.00136	-0.00135
	(A2 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(A2 * !A4 * !B1 * !X)	-0.00136	-0.00138	-0.00137
	(A2 * !A4 * !B1 * !X)	0.00172	0.00174	0.00173
	(A1 * !A2 * A4 * B1 * X)	-0.00136	-0.00137	-0.00136
	(A1 * !A2 * A4 * B1 * X)	0.00117	0.00118	0.00117
	(A1 * !A2 * A4 * !B1 * !X)	-0.00136	-0.00136	-0.00137
	(A1 * !A2 * A4 * !B1 * !X)	0.00122	0.00122	0.00122
	(A1 * !A2 * !A4 * B1 * X)	-0.00133	-0.00134	-0.00135
	(A1 * !A2 * !A4 * B1 * X)	0.00099	0.00099	0.00098
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !A4 * !B1 * !X)	0.00164	0.00166	0.00165
	(!A1 * !A2 * A4 * B1 * X)	-0.00136	-0.00136	-0.00136
	(!A1 * !A2 * A4 * B1 * X)	0.00174	0.00174	0.00174
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00136	-0.00137	-0.00137
	(!A1 * !A2 * A4 * !B1 * !X)	0.00173	0.00174	0.00173
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00123	-0.00132	-0.00130
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00176	0.00177	0.00176

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00164	-0.00164	-0.00164
	(A2 * A4 * B1 * X)	0.00115	0.00116	0.00115
	(A2 * A4 * !B1 * !X)	-0.00157	-0.00157	-0.00157
	(A2 * A4 * !B1 * !X)	0.00134	0.00134	0.00133
	(A2 * !A4 * B1 * X)	-0.00163	-0.00164	-0.00162
	(A2 * !A4 * B1 * X)	0.00100	0.00100	0.00101
	(A2 * !A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A2 * !A4 * !B1 * !X)	0.00181	0.00182	0.00182
	(A1 * !A2 * A4 * B1 * X)	-0.00164	-0.00164	-0.00164
	(A1 * !A2 * A4 * B1 * X)	0.00119	0.00119	0.00118
	(A1 * !A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * A4 * !B1 * !X)	0.00131	0.00132	0.00130
	(A1 * !A2 * !A4 * B1 * X)	-0.00162	-0.00163	-0.00162
	(A1 * !A2 * !A4 * B1 * X)	0.00099	0.00099	0.00099
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(A1 * !A2 * !A4 * !B1 * !X)	0.00174	0.00175	0.00175
	(!A1 * !A2 * A4 * B1 * X)	-0.00163	-0.00164	-0.00163
	(!A1 * !A2 * A4 * B1 * X)	0.00175	0.00176	0.00176
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00157	-0.00158	-0.00157
	(!A1 * !A2 * A4 * !B1 * !X)	0.00181	0.00183	0.00182
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00139	-0.00151	-0.00149
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00185	0.00186	0.00185

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00326	-0.00327	-0.00326
	(A2 * A4 * B1 * X)	0.00230	0.00231	0.00230
	(A2 * A4 * !B1 * !X)	-0.00322	-0.00323	-0.00322
	(A2 * A4 * !B1 * !X)	0.00255	0.00256	0.00255
	(A2 * !A4 * B1 * X)	-0.00323	-0.00324	-0.00321
	(A2 * !A4 * B1 * X)	0.00195	0.00196	0.00198
	(A2 * !A4 * !B1 * !X)	-0.00321	-0.00323	-0.00322
	(A2 * !A4 * !B1 * !X)	0.00346	0.00348	0.00347
	(A1 * !A2 * A4 * B1 * X)	-0.00325	-0.00327	-0.00325
	(A1 * !A2 * A4 * B1 * X)	0.00234	0.00236	0.00234
	(A1 * !A2 * A4 * !B1 * !X)	-0.00321	-0.00322	-0.00322
	(A1 * !A2 * A4 * !B1 * !X)	0.00248	0.00249	0.00248
	(A1 * !A2 * !A4 * B1 * X)	-0.00316	-0.00318	-0.00321
	(A1 * !A2 * !A4 * B1 * X)	0.00196	0.00197	0.00195
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00322	-0.00322	-0.00322
	(A1 * !A2 * !A4 * !B1 * !X)	0.00330	0.00332	0.00331
	(!A1 * !A2 * A4 * B1 * X)	-0.00322	-0.00324	-0.00322
	(!A1 * !A2 * A4 * B1 * X)	0.00347	0.00351	0.00349
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00321	-0.00323	-0.00321
	(!A1 * !A2 * A4 * !B1 * !X)	0.00348	0.00352	0.00350
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00290	-0.00313	-0.00310
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00355	0.00357	0.00356

Passive power(pJ) for A4 rising (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00157	0.00158	0.00157
	(A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(A3 * !B1 * !X)	-0.00172	-0.00177	-0.00177
	(A2 * !A3 * B1 * X)	0.00157	0.00158	0.00157
	(A2 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A2 * !A3 * !B1 * !X)	0.00139	0.00139	0.00139
	(A2 * !A3 * !B1 * !X)	-0.00157	-0.00171	-0.00170
	(A1 * !A2 * !A3 * B1 * X)	0.00157	0.00158	0.00157
	(A1 * !A2 * !A3 * B1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * !A2 * !A3 * !B1 * !X)	0.00139	0.00141	0.00139
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00154	-0.00166	-0.00166
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00180	-0.00179
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00174	0.00175	0.00173
	(A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(A3 * !B1 * !X)	0.00157	0.00158	0.00157
	(A3 * !B1 * !X)	-0.00171	-0.00176	-0.00176
	(A2 * !A3 * B1 * X)	0.00174	0.00175	0.00173
	(A2 * !A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(A2 * !A3 * !B1 * !X)	0.00156	0.00159	0.00157
	(A2 * !A3 * !B1 * !X)	-0.00157	-0.00170	-0.00170
	(A1 * !A2 * !A3 * B1 * X)	0.00174	0.00175	0.00173
	(A1 * !A2 * !A3 * B1 * X)	-0.00087	-0.00087	-0.00086
	(A1 * !A2 * !A3 * !B1 * !X)	0.00156	0.00158	0.00157
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00154	-0.00166	-0.00166
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00149	0.00151	0.00149
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00178	-0.00179	-0.00178

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00297	0.00299	0.00297
	(A3 * B1 * X)	-0.00174	-0.00175	-0.00173
	(A3 * !B1 * !X)	0.00265	0.00266	0.00265
	(A3 * !B1 * !X)	-0.00342	-0.00355	-0.00353
	(A2 * !A3 * B1 * X)	0.00298	0.00299	0.00297
	(A2 * !A3 * B1 * X)	-0.00174	-0.00174	-0.00172
	(A2 * !A3 * !B1 * !X)	0.00264	0.00265	0.00265
	(A2 * !A3 * !B1 * !X)	-0.00310	-0.00338	-0.00337
	(A1 * !A2 * !A3 * B1 * X)	0.00298	0.00299	0.00297
	(A1 * !A2 * !A3 * B1 * X)	-0.00174	-0.00174	-0.00172
	(A1 * !A2 * !A3 * !B1 * !X)	0.00265	0.00268	0.00264
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00305	-0.00329	-0.00329
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00248	0.00253	0.00250
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00358	-0.00361	-0.00359

Passive power(pJ) for A4 falling (conditional):

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00151	-0.00152	-0.00156
	(A3 * B1 * X)	0.00090	0.00090	0.00087
	(A3 * !B1 * !X)	-0.00139	-0.00139	-0.00139
	(A3 * !B1 * !X)	0.00177	0.00177	0.00177
	(A2 * !A3 * B1 * X)	-0.00145	-0.00146	-0.00154
	(A2 * !A3 * B1 * X)	0.00094	0.00094	0.00087
	(A2 * !A3 * !B1 * !X)	-0.00138	-0.00139	-0.00139
	(A2 * !A3 * !B1 * !X)	0.00169	0.00171	0.00170
	(A1 * !A2 * !A3 * B1 * X)	-0.00136	-0.00137	-0.00152
	(A1 * !A2 * !A3 * B1 * X)	0.00099	0.00099	0.00089
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00138	-0.00139	-0.00139
	(A1 * !A2 * !A3 * !B1 * !X)	0.00166	0.00166	0.00166
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00124	-0.00134	-0.00133
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00179	0.00180	0.00179
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00168	-0.00169	-0.00172
	(A3 * B1 * X)	0.00091	0.00091	0.00088
	(A3 * !B1 * !X)	-0.00156	-0.00158	-0.00157
	(A3 * !B1 * !X)	0.00175	0.00177	0.00176
	(A2 * !A3 * B1 * X)	-0.00161	-0.00162	-0.00171
	(A2 * !A3 * B1 * X)	0.00095	0.00095	0.00088
	(A2 * !A3 * !B1 * !X)	-0.00156	-0.00157	-0.00157
	(A2 * !A3 * !B1 * !X)	0.00169	0.00170	0.00170
	(A1 * !A2 * !A3 * B1 * X)	-0.00153	-0.00154	-0.00169
	(A1 * !A2 * !A3 * B1 * X)	0.00099	0.00100	0.00089
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00156	-0.00156	-0.00157
	(A1 * !A2 * !A3 * !B1 * !X)	0.00166	0.00166	0.00166
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00139	-0.00151	-0.00149
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00178	0.00179	0.00179

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	-0.00284	-0.00286	-0.00294
	(A3 * B1 * X)	0.00185	0.00185	0.00178
	(A3 * !B1 * !X)	-0.00263	-0.00265	-0.00263
	(A3 * !B1 * !X)	0.00352	0.00355	0.00353
	(A2 * !A3 * B1 * X)	-0.00267	-0.00269	-0.00290
	(A2 * !A3 * B1 * X)	0.00194	0.00194	0.00178
	(A2 * !A3 * !B1 * !X)	-0.00263	-0.00265	-0.00264
	(A2 * !A3 * !B1 * !X)	0.00336	0.00338	0.00337
	(A1 * !A2 * !A3 * B1 * X)	-0.00250	-0.00252	-0.00285
	(A1 * !A2 * !A3 * B1 * X)	0.00204	0.00204	0.00181
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00263	-0.00264	-0.00263
	(A1 * !A2 * !A3 * !B1 * !X)	0.00327	0.00329	0.00329
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00233	-0.00253	-0.00250
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00360	0.00362	0.00360

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)**	0.00050	0.00050	0.00046
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00181	-0.00181	-0.00188
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00055	0.00055	0.00051
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00206	-0.00206	-0.00214
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	0.00091	0.00092	0.00085
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00341	-0.00343	-0.00356

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)**	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00189	0.00191	0.00189
sky130_fd_sc_hs__o41a_2	**(!A1 * !A2 * !A3 * !A4 * !X)**	-0.00049	-0.00050	-0.00049
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00215	0.00217	0.00216
sky130_fd_sc_hs__o41a_4	**(!A1 * !A2 * !A3 * !A4 * !X)**	-0.00083	-0.00083	-0.00082
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00359	0.00361	0.00358

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	B_N	X
x	0	1
0	1	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2b_1	11.18880
sky130_fd_sc_hs__or2b_2	11.18880
sky130_fd_sc_hs__or2b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B_N	X
sky130_fd_sc_hs__or2b_1	0.00243	0.00228	1.45016
sky130_fd_sc_hs__or2b_2	0.00252	0.00220	2.31845
sky130_fd_sc_hs__or2b_4	0.00476	0.00272	5.14575

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.29205	0.53632
sky130_fd_sc_hs__or2b_2	0.00000	0.30910	0.60151
sky130_fd_sc_hs__or2b_4	0.00000	0.20296	0.37231

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)	0.04372	0.42753	5.31823
	B_N->X (FR)	0.07920	0.64390	8.30737
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.04390	0.34794	4.85572
	B_N->X (FR)	0.08758	0.58422	8.12929
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.04047	0.26449	5.08562
	B_N->X (FR)	0.08950	0.51575	8.28283

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.07856	0.45571	4.85313
	B_N->X (RF)	0.08150	0.24068	1.66421
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.10192	0.45880	4.55203
	B_N->X (RF)	0.10967	0.23154	1.26418
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.10167	0.43203	4.98641
	B_N->X (RF)	0.10506	0.21685	1.44217

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00737	0.00832	0.03678
	A	0.00363	0.00460	0.03327
	B_N	0.00656	0.01088	0.08590
	B_N	0.00974	0.01410	0.08909
sky130_fd_sc_hs__or2b_2	A	0.01029	0.01193	0.03971
	A	0.00634	0.00803	0.03579
	B_N	0.00946	0.01390	0.08306
	B_N	0.01263	0.01773	0.08653
sky130_fd_sc_hs__or2b_4	A	0.01963	0.02348	0.10445
	A	0.01229	0.01621	0.09714
	B_N	0.01800	0.02345	0.10757
	B_N	0.02151	0.02695	0.11120

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00424	0.00530	0.03223
	A	0.00796	0.00902	0.03488
	B_N	0.00982	0.01322	0.08893
	B_N	0.00663	0.01002	0.08559
sky130_fd_sc_hs__or2b_2	A	0.00706	0.00780	0.03911
	A	0.01100	0.01164	0.04258
	B_N	0.01347	0.01573	0.08333
	B_N	0.01030	0.01256	0.08010
sky130_fd_sc_hs__or2b_4	A	0.01460	0.01625	0.09397
	A	0.02195	0.02355	0.09918
	B_N	0.02270	0.02601	0.11149
	B_N	0.01920	0.02248	0.10786

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00163	0.00143	0.00141
	(!B_N * X)	-0.00154	-0.00175	-0.00176
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00174	0.00153	0.00151
	(!B_N * X)	-0.00163	-0.00185	-0.00186
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00336	0.00294	0.00291
	(!B_N * X)	-0.00294	-0.00337	-0.00339

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00140	-0.00141	-0.00140
	(!B_N * X)	0.00175	0.00177	0.00177
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00150	-0.00151	-0.00150
	(!B_N * X)	0.00186	0.00188	0.00187
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00289	-0.00290	-0.00289
	(!B_N * X)	0.00338	0.00340	0.00340

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00429	0.00753	0.07914
	(A * X)	0.00060	0.00382	0.07544
sky130_fd_sc_hs__or2b_2	(A * X)	0.00456	0.00756	0.07700
	(A * X)	0.00088	0.00386	0.07330
sky130_fd_sc_hs__or2b_4	(A * X)	0.00575	0.00882	0.08558
	(A * X)	0.00143	0.00449	0.08127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00108	0.00552	0.07683
	(A * X)	0.00477	0.00921	0.08052
sky130_fd_sc_hs__or2b_2	(A * X)	0.00113	0.00544	0.07457
	(A * X)	0.00483	0.00914	0.07827
sky130_fd_sc_hs__or2b_4	(A * X)	0.00310	0.00701	0.08325
	(A * X)	0.00740	0.01131	0.08755

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or2_1	7.99200
sky130_fd_sc_hs__or2_2	7.99200
sky130_fd_sc_hs__or2_4	14.38560

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__or2_1	0.00222	0.00212	1.42769
sky130_fd_sc_hs__or2_2	0.00273	0.00238	2.36251
sky130_fd_sc_hs__or2_4	0.00429	0.00370	5.14105

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.17108	0.47258
sky130_fd_sc_hs__or2_2	0.00000	0.07286	0.12992
sky130_fd_sc_hs__or2_4	0.00000	0.14420	0.25376

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)	0.04198	0.41817	5.17503
	B->X (RR)	0.03930	0.40948	5.27091
sky130_fd_sc_hs__or2_2	A->X (RR)	0.04492	0.35093	4.93883
	B->X (RR)	0.04136	0.34106	4.95616
sky130_fd_sc_hs__or2_4	A->X (RR)	0.05827	0.33956	5.68693
	B->X (RR)	0.04929	0.31465	5.66448

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.08477	0.47078	4.89046
	B->X (FF)	0.07315	0.46018	5.08834
sky130_fd_sc_hs__or2_2	A->X (FF)	0.10107	0.45791	4.51471
	B->X (FF)	0.08735	0.45491	4.74785
sky130_fd_sc_hs__or2_4	A->X (FF)	0.09414	0.42215	4.60911
	B->X (FF)	0.07987	0.41525	4.79001

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00790	0.00885	0.03748
	A	0.00361	0.00459	0.03320
	B	0.00673	0.00903	0.05609
	B	0.00314	0.00547	0.05271
sky130_fd_sc_hs__or2_2	A	0.01135	0.01268	0.03930
	A	0.00623	0.00763	0.03424
	B	0.00967	0.01184	0.04940
	B	0.00557	0.00779	0.04538
sky130_fd_sc_hs__or2_4	A	0.02051	0.02231	0.07690
	A	0.01224	0.01407	0.06930
	B	0.01651	0.02029	0.09994
	B	0.01042	0.01424	0.09455

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00311	0.00448	0.03101
	A	0.00740	0.00859	0.03518
	B	0.00295	0.00617	0.05968
	B	0.00652	0.00974	0.06325
sky130_fd_sc_hs__or2_2	A	0.00566	0.00637	0.03408
	A	0.01080	0.01137	0.03856
	B	0.00558	0.00790	0.06170
	B	0.00968	0.01191	0.06419
sky130_fd_sc_hs__or2_4	A	0.01275	0.01422	0.06209
	A	0.02108	0.02228	0.06695
	B	0.01265	0.01701	0.10912
	B	0.01873	0.02298	0.11137

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00163	0.00143	0.00140
	(B * X)	-0.00109	-0.00131	-0.00132
sky130_fd_sc_hs__or2_2	(B * X)	0.00193	0.00172	0.00170
	(B * X)	-0.00132	-0.00155	-0.00157
sky130_fd_sc_hs__or2_4	(B * X)	0.00251	0.00206	0.00203
	(B * X)	-0.00271	-0.00321	-0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00139	-0.00139	-0.00138
	(B * X)	0.00134	0.00135	0.00134
sky130_fd_sc_hs__or2_2	(B * X)	-0.00168	-0.00169	-0.00168
	(B * X)	0.00155	0.00157	0.00157
sky130_fd_sc_hs__or2_4	(B * X)	-0.00201	-0.00202	-0.00201
	(B * X)	0.00321	0.00323	0.00323

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00150	0.00151	0.00150
	(A * X)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__or2_2	(A * X)	0.00159	0.00160	0.00159
	(A * X)	-0.00078	-0.00079	-0.00078
sky130_fd_sc_hs__or2_4	(A * X)	0.00183	0.00186	0.00184
	(A * X)	-0.00157	-0.00159	-0.00158

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00146	-0.00147	-0.00149
	(A * X)	0.00068	0.00068	0.00065
sky130_fd_sc_hs__or2_2	(A * X)	-0.00155	-0.00156	-0.00159
	(A * X)	0.00082	0.00082	0.00079
sky130_fd_sc_hs__or2_4	(A * X)	-0.00174	-0.00175	-0.00183
	(A * X)	0.00167	0.00168	0.00160

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3b_1	12.78720
sky130_fd_sc_hs__or3b_2	12.78720
sky130_fd_sc_hs__or3b_4	19.18080

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C_N	X
sky130_fd_sc_hs__or3b_1	0.00238	0.00260	0.00221	1.43572
sky130_fd_sc_hs__or3b_2	0.00253	0.00245	0.00219	2.33760
sky130_fd_sc_hs__or3b_4	0.00442	0.00402	0.00254	5.12071

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3b_1	0.00000	0.26992	0.53722
sky130_fd_sc_hs__or3b_2	0.00000	0.27909	0.60353
sky130_fd_sc_hs__or3b_4	0.00000	0.14180	0.36723

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)	0.04796	0.44511	5.26174
	B->X (RR)	0.04720	0.43636	5.17686
	C_N->X (FR)	0.08202	0.64777	8.27350
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.04770	0.36340	4.86901
	B->X (RR)	0.04660	0.35639	4.79673
	C_N->X (FR)	0.08849	0.58242	8.13033
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.06222	0.35369	5.60131
	B->X (RR)	0.05912	0.33981	5.49352
	C_N->X (FR)	0.10111	0.52974	8.34161

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.12596	0.51018	4.96539
	B->X (FF)	0.11769	0.52815	5.23511
	C_N->X (RF)	0.11231	0.28532	1.69746
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.16002	0.52344	4.73306
	B->X (FF)	0.14805	0.54282	5.02623
	C_N->X (RF)	0.14453	0.29010	1.42563
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.14061	0.46798	4.71573
	B->X (FF)	0.12893	0.48296	4.97327
	C_N->X (RF)	0.12511	0.24485	1.54444

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00907	0.00964	0.03475
	A	0.00437	0.00496	0.03036
	B	0.00790	0.00905	0.03479
	B	0.00372	0.00490	0.03062
	C_N	0.00686	0.01127	0.08548
	C_N	0.00955	0.01399	0.08822
sky130_fd_sc_hs__or3b_2	A	0.01201	0.01302	0.03703
	A	0.00717	0.00827	0.03223
	B	0.01056	0.01221	0.03623
	B	0.00652	0.00824	0.03224
	C_N	0.00948	0.01399	0.08162
	C_N	0.01239	0.01689	0.08482
sky130_fd_sc_hs__or3b_4	A	0.02235	0.02353	0.07317
	A	0.01398	0.01521	0.06590
	B	0.01895	0.02117	0.07037
	B	0.01245	0.01473	0.06508
	C_N	0.01645	0.02141	0.10143
	C_N	0.01973	0.02468	0.10470

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00508	0.00540	0.02989
	A	0.00980	0.01010	0.03336
	B	0.00488	0.00561	0.03551
	B	0.00907	0.00979	0.03854
	C_N	0.01066	0.01384	0.08810
	C_N	0.00796	0.01115	0.08537
sky130_fd_sc_hs__or3b_2	A	0.00823	0.00745	0.03187
	A	0.01309	0.01231	0.03636
	B	0.00807	0.00790	0.03825
	B	0.01212	0.01192	0.04160
	C_N	0.01447	0.01614	0.08077
	C_N	0.01157	0.01320	0.07786
sky130_fd_sc_hs__or3b_4	A	0.01585	0.01497	0.05835
	A	0.02431	0.02341	0.06339
	B	0.01586	0.01631	0.06596
	B	0.02237	0.02236	0.07243
	C_N	0.02353	0.02557	0.10665
	C_N	0.02025	0.02222	0.10274

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)	0.00143	0.00136	0.00135
	(B * C_N * X)	-0.00149	-0.00160	-0.00160
	(B * !C_N * X)	0.00135	0.00135	0.00135
	(B * !C_N * X)	-0.00157	-0.00160	-0.00160
	(!B * !C_N * X)	0.00138	0.00136	0.00135
	(!B * !C_N * X)	-0.00143	-0.00157	-0.00156
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00164	0.00157	0.00156
	(B * C_N * X)	-0.00151	-0.00161	-0.00162
	(B * !C_N * X)	0.00149	0.00150	0.00150
	(B * !C_N * X)	-0.00164	-0.00167	-0.00167
	(!B * !C_N * X)	0.00153	0.00150	0.00150
	(!B * !C_N * X)	-0.00150	-0.00164	-0.00164
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00238	0.00227	0.00225
	(B * C_N * X)	-0.00298	-0.00319	-0.00317
	(B * !C_N * X)	0.00203	0.00203	0.00201
	(B * !C_N * X)	-0.00332	-0.00342	-0.00341
	(!B * !C_N * X)	0.00208	0.00202	0.00201
	(!B * !C_N * X)	-0.00308	-0.00335	-0.00334

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)	-0.00134	-0.00135	-0.00134
	(B * C_N * X)	0.00161	0.00162	0.00161
	(B * !C_N * X)	-0.00135	-0.00135	-0.00135
	(B * !C_N * X)	0.00160	0.00161	0.00160
	(!B * !C_N * X)	-0.00134	-0.00135	-0.00134
	(!B * !C_N * X)	0.00155	0.00157	0.00156
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00155	-0.00155	-0.00155
	(B * C_N * X)	0.00162	0.00162	0.00162
	(B * !C_N * X)	-0.00149	-0.00149	-0.00149
	(B * !C_N * X)	0.00167	0.00167	0.00167
	(!B * !C_N * X)	-0.00149	-0.00149	-0.00149
	(!B * !C_N * X)	0.00163	0.00164	0.00164
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00225	-0.00226	-0.00225
	(B * C_N * X)	0.00317	0.00321	0.00317
	(B * !C_N * X)	-0.00201	-0.00202	-0.00201
	(B * !C_N * X)	0.00340	0.00342	0.00341
	(!B * !C_N * X)	-0.00200	-0.00201	-0.00200
	(!B * !C_N * X)	0.00333	0.00335	0.00334

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)	0.00162	0.00164	0.00161
	(A * C_N * X)	-0.00091	-0.00092	-0.00092
	(A * !C_N * X)	0.00153	0.00154	0.00148
	(A * !C_N * X)	-0.00124	-0.00126	-0.00125
	(!A * !C_N * X)	0.00174	0.00144	0.00143
	(!A * !C_N * X)	-0.00147	-0.00178	-0.00179
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00165	0.00166	0.00164
	(A * C_N * X)	-0.00085	-0.00085	-0.00085
	(A * !C_N * X)	0.00145	0.00147	0.00141
	(A * !C_N * X)	-0.00129	-0.00129	-0.00128
	(!A * !C_N * X)	0.00166	0.00138	0.00137
	(!A * !C_N * X)	-0.00149	-0.00180	-0.00181
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00204	0.00206	0.00203
	(A * C_N * X)	-0.00178	-0.00180	-0.00181
	(A * !C_N * X)	0.00186	0.00188	0.00177
	(A * !C_N * X)	-0.00247	-0.00248	-0.00247
	(!A * !C_N * X)	0.00224	0.00168	0.00166
	(!A * !C_N * X)	-0.00295	-0.00354	-0.00356

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)	-0.00159	-0.00159	-0.00159
	(A * C_N * X)	0.00095	0.00095	0.00096
	(A * !C_N * X)	-0.00142	-0.00143	-0.00143
	(A * !C_N * X)	0.00124	0.00126	0.00125
	(!A * !C_N * X)	-0.00142	-0.00143	-0.00142
	(!A * !C_N * X)	0.00180	0.00181	0.00180
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00162	-0.00162	-0.00162
	(A * C_N * X)	0.00088	0.00088	0.00089
	(A * !C_N * X)	-0.00137	-0.00137	-0.00136
	(A * !C_N * X)	0.00129	0.00129	0.00128
	(!A * !C_N * X)	-0.00135	-0.00137	-0.00136
	(!A * !C_N * X)	0.00180	0.00183	0.00182
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00200	-0.00201	-0.00200
	(A * C_N * X)	0.00184	0.00185	0.00185
	(A * !C_N * X)	-0.00168	-0.00169	-0.00169
	(A * !C_N * X)	0.00247	0.00248	0.00247
	(!A * !C_N * X)	-0.00164	-0.00166	-0.00164
	(!A * !C_N * X)	0.00354	0.00359	0.00357

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00417	0.00741	0.07837
	(B * X)	0.00059	0.00381	0.07478
	(A * !B * X)	0.00423	0.00747	0.07841
	(A * !B * X)	0.00061	0.00383	0.07480
sky130_fd_sc_hs__or3b_2	(B * X)	0.00469	0.00769	0.07710
	(B * X)	0.00098	0.00397	0.07338
	(A * !B * X)	0.00474	0.00775	0.07714
	(A * !B * X)	0.00100	0.00398	0.07338
sky130_fd_sc_hs__or3b_4	(B * X)	0.00586	0.00912	0.08424
	(B * X)	0.00143	0.00468	0.07981
	(A * !B * X)	0.00598	0.00924	0.08433
	(A * !B * X)	0.00147	0.00472	0.07982

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00093	0.00541	0.07602
	(B * X)	0.00451	0.00900	0.07961
	(A * !B * X)	0.00093	0.00541	0.07602
	(A * !B * X)	0.00452	0.00900	0.07962
sky130_fd_sc_hs__or3b_2	(B * X)	0.00099	0.00530	0.07440
	(B * X)	0.00471	0.00902	0.07812
	(A * !B * X)	0.00099	0.00531	0.07440
	(A * !B * X)	0.00471	0.00904	0.07812
sky130_fd_sc_hs__or3b_4	(B * X)	0.00133	0.00537	0.08005
	(B * X)	0.00574	0.00981	0.08448
	(A * !B * X)	0.00133	0.00538	0.08005
	(A * !B * X)	0.00575	0.00982	0.08449

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or3_1	9.59040
sky130_fd_sc_hs__or3_2	11.18880
sky130_fd_sc_hs__or3_4	17.58240

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__or3_1	0.00246	0.00243	0.00238	1.48392
sky130_fd_sc_hs__or3_2	0.00250	0.00252	0.00260	2.75035
sky130_fd_sc_hs__or3_4	0.00463	0.00409	0.00399	5.11576

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or3_1	0.00000	0.03368	0.11347
sky130_fd_sc_hs__or3_2	0.00000	0.04285	0.13195
sky130_fd_sc_hs__or3_4	0.00000	0.08456	0.25477

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)	0.04765	0.44470	5.33663
	B->X (RR)	0.04675	0.43579	5.25156
	C->X (RR)	0.04324	0.42170	5.28870
sky130_fd_sc_hs__or3_2	A->X (RR)	0.04665	0.35258	5.11581
	B->X (RR)	0.04529	0.34438	5.03357
	C->X (RR)	0.04248	0.33380	5.06479
sky130_fd_sc_hs__or3_4	A->X (RR)	0.06268	0.35427	5.59176
	B->X (RR)	0.05940	0.34025	5.48850
	C->X (RR)	0.05329	0.32272	5.52713

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.12805	0.51643	5.03918
	B->X (FF)	0.11733	0.53368	5.32261
	C->X (FF)	0.09612	0.51805	5.30400
sky130_fd_sc_hs__or3_2	A->X (FF)	0.15487	0.52618	5.09475
	B->X (FF)	0.14300	0.54729	5.39085
	C->X (FF)	0.12369	0.53556	5.39545
sky130_fd_sc_hs__or3_4	A->X (FF)	0.14057	0.46918	4.71512
	B->X (FF)	0.12852	0.48346	4.96981
	C->X (FF)	0.10534	0.46531	4.93257

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.01061	0.01111	0.03776
	A	0.00461	0.00511	0.03198
	B	0.00904	0.01020	0.03750
	B	0.00394	0.00512	0.03261
	C	0.00744	0.00912	0.04788
	C	0.00308	0.00478	0.04375
sky130_fd_sc_hs__or3_2	A	0.01322	0.01435	0.04503
	A	0.00719	0.00837	0.03900
	B	0.01151	0.01327	0.04367
	B	0.00634	0.00818	0.03852
	C	0.01004	0.01225	0.05376
	C	0.00558	0.00782	0.04930
sky130_fd_sc_hs__or3_4	A	0.02463	0.02576	0.07493
	A	0.01403	0.01520	0.06549
	B	0.02074	0.02294	0.07208
	B	0.01244	0.01471	0.06499
	C	0.01712	0.02048	0.08928
	C	0.01032	0.01374	0.08367

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00378	0.00407	0.02843
	A	0.00985	0.01013	0.03351
	B	0.00383	0.00458	0.03367
	B	0.00894	0.00969	0.03877
	C	0.00373	0.00591	0.04858
	C	0.00808	0.01024	0.05282
sky130_fd_sc_hs__or3_2	A	0.00733	0.00700	0.03417
	A	0.01342	0.01297	0.03893
	B	0.00740	0.00756	0.03980
	B	0.01258	0.01263	0.04442
	C	0.00727	0.00867	0.05466
	C	0.01172	0.01309	0.05870
sky130_fd_sc_hs__or3_4	A	0.01367	0.01375	0.05629
	A	0.02440	0.02354	0.06357
	B	0.01417	0.01416	0.06496
	B	0.02251	0.02247	0.07252
	C	0.01386	0.01633	0.09158
	C	0.02064	0.02303	0.09772

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00146	0.00146	0.00146
	(B * C * X)	-0.00155	-0.00160	-0.00159
	(B * !C * X)	0.00150	0.00146	0.00146
	(B * !C * X)	-0.00150	-0.00159	-0.00159
	(!B * C * X)	0.00149	0.00147	0.00146
	(!B * C * X)	-0.00141	-0.00155	-0.00155
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00152	0.00153	0.00152
	(B * C * X)	-0.00157	-0.00161	-0.00161
	(B * !C * X)	0.00156	0.00153	0.00152
	(B * !C * X)	-0.00152	-0.00161	-0.00161
	(!B * C * X)	0.00155	0.00153	0.00152
	(!B * C * X)	-0.00143	-0.00157	-0.00156
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00240	0.00239	0.00237
	(B * C * X)	-0.00308	-0.00319	-0.00318
	(B * !C * X)	0.00245	0.00239	0.00237
	(B * !C * X)	-0.00300	-0.00319	-0.00318
	(!B * C * X)	0.00245	0.00238	0.00237
	(!B * C * X)	-0.00284	-0.00312	-0.00310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00146	-0.00146	-0.00146
	(B * C * X)	0.00159	0.00160	0.00159
	(B * !C * X)	-0.00146	-0.00146	-0.00146
	(B * !C * X)	0.00159	0.00161	0.00159
	(!B * C * X)	-0.00145	-0.00145	-0.00145
	(!B * C * X)	0.00154	0.00155	0.00155
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00151	-0.00152	-0.00151
	(B * C * X)	0.00161	0.00161	0.00161
	(B * !C * X)	-0.00151	-0.00151	-0.00151
	(B * !C * X)	0.00161	0.00161	0.00161
	(!B * C * X)	-0.00151	-0.00151	-0.00151
	(!B * C * X)	0.00156	0.00157	0.00156
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00237	-0.00238	-0.00237
	(B * C * X)	0.00317	0.00319	0.00318
	(B * !C * X)	-0.00237	-0.00238	-0.00237
	(B * !C * X)	0.00317	0.00319	0.00318
	(!B * C * X)	-0.00236	-0.00238	-0.00236
	(!B * C * X)	0.00308	0.00312	0.00310

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00146	0.00146	0.00140
	(A * C * X)	-0.00102	-0.00103	-0.00102
	(A * !C * X)	0.00137	0.00138	0.00135
	(A * !C * X)	-0.00086	-0.00086	-0.00087
	(!A * C * X)	0.00165	0.00136	0.00135
	(!A * C * X)	-0.00124	-0.00155	-0.00156
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00147	0.00147	0.00141
	(A * C * X)	-0.00114	-0.00114	-0.00113
	(A * !C * X)	0.00139	0.00139	0.00137
	(A * !C * X)	-0.00098	-0.00098	-0.00098
	(!A * C * X)	0.00167	0.00138	0.00137
	(!A * C * X)	-0.00134	-0.00167	-0.00168
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00186	0.00188	0.00177
	(A * C * X)	-0.00213	-0.00214	-0.00213
	(A * !C * X)	0.00170	0.00172	0.00169
	(A * !C * X)	-0.00179	-0.00182	-0.00182
	(!A * C * X)	0.00226	0.00168	0.00166
	(!A * C * X)	-0.00262	-0.00323	-0.00325

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00135	-0.00136	-0.00135
	(A * C * X)	0.00102	0.00103	0.00102
	(A * !C * X)	-0.00134	-0.00135	-0.00134
	(A * !C * X)	0.00089	0.00089	0.00089
	(!A * C * X)	-0.00133	-0.00134	-0.00134
	(!A * C * X)	0.00155	0.00156	0.00156
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00137	-0.00137	-0.00136
	(A * C * X)	0.00114	0.00114	0.00113
	(A * !C * X)	-0.00136	-0.00136	-0.00135
	(A * !C * X)	0.00099	0.00100	0.00100
	(!A * C * X)	-0.00136	-0.00137	-0.00136
	(!A * C * X)	0.00167	0.00169	0.00168
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00168	-0.00169	-0.00169
	(A * C * X)	0.00213	0.00214	0.00213
	(A * !C * X)	-0.00167	-0.00167	-0.00164
	(A * !C * X)	0.00186	0.00186	0.00187
	(!A * C * X)	-0.00165	-0.00166	-0.00164
	(!A * C * X)	0.00325	0.00327	0.00326

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00150	0.00151	0.00150
	(B * X)	-0.00080	-0.00081	-0.00080
	(A * !B * X)	0.00150	0.00151	0.00150
	(A * !B * X)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__or3_2	(B * X)	0.00166	0.00168	0.00167
	(B * X)	-0.00081	-0.00082	-0.00081
	(A * !B * X)	0.00166	0.00168	0.00167
	(A * !B * X)	-0.00081	-0.00082	-0.00081
sky130_fd_sc_hs__or3_4	(B * X)	0.00209	0.00211	0.00209
	(B * X)	-0.00160	-0.00163	-0.00161
	(A * !B * X)	0.00209	0.00211	0.00210
	(A * !B * X)	-0.00160	-0.00162	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00146	-0.00147	-0.00149
	(B * X)	0.00084	0.00084	0.00081
	(A * !B * X)	-0.00140	-0.00141	-0.00148
	(A * !B * X)	0.00087	0.00087	0.00081
sky130_fd_sc_hs__or3_2	(B * X)	-0.00162	-0.00163	-0.00166
	(B * X)	0.00085	0.00085	0.00083
	(A * !B * X)	-0.00157	-0.00158	-0.00165
	(A * !B * X)	0.00088	0.00088	0.00083
sky130_fd_sc_hs__or3_4	(B * X)	-0.00199	-0.00200	-0.00209
	(B * X)	0.00169	0.00170	0.00164
	(A * !B * X)	-0.00187	-0.00189	-0.00206
	(A * !B * X)	0.00174	0.00176	0.00163

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4bb_1	15.98400
sky130_fd_sc_hs__or4bb_2	15.98400
sky130_fd_sc_hs__or4bb_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C_N	D_N	X
sky130_fd_sc_hs__or4bb_1	0.00242	0.00238	0.00226	0.00229	1.44961
sky130_fd_sc_hs__or4bb_2	0.00239	0.00253	0.00222	0.00220	2.32309
sky130_fd_sc_hs__or4bb_4	0.00373	0.00380	0.00244	0.00242	4.35109

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4bb_1	0.00000	0.49278	1.00970
sky130_fd_sc_hs__or4bb_2	0.00000	0.49794	1.07715
sky130_fd_sc_hs__or4bb_4	0.00000	0.16464	0.48070

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)	0.04867	0.45965	5.32867
	B->X (RR)	0.04896	0.45320	5.24291
	C_N->X (FR)	0.09490	0.67138	8.40126
	D_N->X (FR)	0.08530	0.65556	8.38940
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.04865	0.37619	4.97244
	B->X (RR)	0.04962	0.37091	4.88523
	C_N->X (FR)	0.08725	0.57803	8.06107
	D_N->X (FR)	0.08791	0.58117	8.13304
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.06763	0.38530	5.45541
	B->X (RR)	0.06975	0.37880	5.37136
	C_N->X (FR)	0.12195	0.57146	8.36484
	D_N->X (FR)	0.12180	0.57528	8.40192

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.17982	0.57219	5.10104
	B->X (FF)	0.16663	0.57954	5.37863
	C_N->X (RF)	0.16789	0.36496	1.80411
	D_N->X (RF)	0.13004	0.32181	1.75442
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.21605	0.58186	4.95815
	B->X (FF)	0.20814	0.59521	5.08213
	C_N->X (RF)	0.20416	0.36434	1.35280
	D_N->X (RF)	0.17520	0.33499	1.39189
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.24209	0.58140	4.65327
	B->X (FF)	0.23141	0.58365	4.78660
	C_N->X (RF)	0.22950	0.36302	1.28603
	D_N->X (RF)	0.18166	0.31803	1.21930

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00981	0.01001	0.03284
	A	0.00527	0.00547	0.02851
	B	0.00844	0.00936	0.03223
	B	0.00453	0.00546	0.02851
	C_N	0.00770	0.01188	0.08324
	C_N	0.01079	0.01497	0.08636
	D_N	0.00669	0.01102	0.08296
	D_N	0.00940	0.01375	0.08780
sky130_fd_sc_hs__or4bb_2	A	0.01231	0.01376	0.05047
	A	0.00772	0.00923	0.05519
	B	0.01115	0.01268	0.04572
	B	0.00706	0.00864	0.04164
	C_N	0.00984	0.01466	0.08835
	C_N	0.01282	0.01763	0.09173
	D_N	0.00954	0.01339	0.08234
	D_N	0.01227	0.01611	0.08536
sky130_fd_sc_hs__or4bb_4	A	0.02507	0.02654	0.07938
	A	0.01699	0.01863	0.07214
	B	0.02129	0.02294	0.07144
	B	0.01494	0.01668	0.06591
	C_N	0.02066	0.02557	0.09621
	C_N	0.02340	0.02836	0.09897
	D_N	0.01818	0.02302	0.09807
	D_N	0.02096	0.02580	0.10749

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00649	0.00617	0.02732
	A	0.01107	0.01077	0.03178
	B	0.00626	0.00628	0.03136
	B	0.01019	0.01019	0.03526
	C_N	0.01267	0.01522	0.08568
	C_N	0.00958	0.01213	0.08242
	D_N	0.01113	0.01409	0.08605
	D_N	0.00840	0.01135	0.08316
sky130_fd_sc_hs__or4bb_2	A	0.01034	0.00894	0.04113
	A	0.01495	0.01356	0.04554
	B	0.01005	0.00879	0.03734
	B	0.01413	0.01292	0.04130
	C_N	0.01622	0.01768	0.08932
	C_N	0.01324	0.01463	0.08623
	D_N	0.01548	0.01659	0.07880
	D_N	0.01275	0.01386	0.07596
sky130_fd_sc_hs__or4bb_4	A	0.02240	0.01899	0.06603
	A	0.03059	0.02717	0.07262
	B	0.02257	0.01934	0.06271
	B	0.02896	0.02572	0.06702
	C_N	0.02972	0.02897	0.09494
	C_N	0.02697	0.02622	0.09198
	D_N	0.02875	0.02782	0.09864
	D_N	0.02596	0.02496	0.09585

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)**	0.00143	0.00140	0.00139
	(B * C_N * D_N * X)	-0.00153	-0.00160	-0.00160
	(B * !D_N * X)	0.00141	0.00140	0.00139
	(B * !D_N * X)	-0.00155	-0.00161	-0.00161
	(B * !C_N * D_N * X)	0.00139	0.00140	0.00139
	(B * !C_N * D_N * X)	-0.00156	-0.00161	-0.00161
	(!B * C_N * !D_N * X)	0.00148	0.00142	0.00141
	(!B * C_N * !D_N * X)	-0.00142	-0.00156	-0.00155
	(!B * !C_N * D_N * X)	0.00139	0.00140	0.00139
	(!B * !C_N * D_N * X)	-0.00146	-0.00157	-0.00157
	(!B * !C_N * !D_N * X)	0.00138	0.00139	0.00139
	(!B * !C_N * !D_N * X)	-0.00146	-0.00157	-0.00156
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00151	0.00148	0.00147
	(B * C_N * D_N * X)	-0.00152	-0.00158	-0.00159
	(B * !D_N * X)	0.00149	0.00147	0.00146
	(B * !D_N * X)	-0.00154	-0.00159	-0.00159
	(B * !C_N * D_N * X)	0.00131	0.00131	0.00131
	(B * !C_N * D_N * X)	-0.00171	-0.00174	-0.00175
	(!B * C_N * !D_N * X)	0.00155	0.00150	0.00148
	(!B * C_N * !D_N * X)	-0.00141	-0.00154	-0.00153
	(!B * !C_N * D_N * X)	0.00131	0.00131	0.00131
	(!B * !C_N * D_N * X)	-0.00160	-0.00171	-0.00171
	(!B * !C_N * !D_N * X)	0.00130	0.00131	0.00130
	(!B * !C_N * !D_N * X)	-0.00160	-0.00171	-0.00170

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00185	0.00178	0.00177
	(B * C_N * D_N * X)	-0.00310	-0.00328	-0.00329
	(B * !D_N * X)	0.00182	0.00178	0.00177
	(B * !D_N * X)	-0.00314	-0.00329	-0.00329
	(B * !C_N * D_N * X)	0.00178	0.00178	0.00177
	(B * !C_N * D_N * X)	-0.00317	-0.00329	-0.00329
	(!B * C_N * !D_N * X)	0.00198	0.00186	0.00182
	(!B * C_N * !D_N * X)	-0.00291	-0.00317	-0.00315
	(!B * !C_N * D_N * X)	0.00179	0.00178	0.00177
	(!B * !C_N * D_N * X)	-0.00297	-0.00318	-0.00319
	(!B * !C_N * !D_N * X)	0.00178	0.00178	0.00177
	(!B * !C_N * !D_N * X)	-0.00296	-0.00319	-0.00319

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)**	-0.00138	-0.00137	-0.00137
	(B * C_N * D_N * X)	0.00161	0.00160	0.00161
	(B * !D_N * X)	-0.00138	-0.00138	-0.00138
	(B * !D_N * X)	0.00161	0.00161	0.00161
	(B * !C_N * D_N * X)	-0.00138	-0.00138	-0.00138
	(B * !C_N * D_N * X)	0.00161	0.00161	0.00161
	(!B * C_N * !D_N * X)	-0.00141	-0.00142	-0.00141
	(!B * C_N * !D_N * X)	0.00154	0.00156	0.00155
	(!B * !C_N * D_N * X)	-0.00137	-0.00138	-0.00138
	(!B * !C_N * D_N * X)	0.00156	0.00157	0.00157
	(!B * !C_N * !D_N * X)	-0.00138	-0.00139	-0.00138
	(!B * !C_N * !D_N * X)	0.00155	0.00157	0.00156

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00144	-0.00145	-0.00145
	(B * C_N * D_N * X)	0.00158	0.00161	0.00160
	(B * !D_N * X)	-0.00145	-0.00145	-0.00145
	(B * !D_N * X)	0.00160	0.00160	0.00159
	(B * !C_N * D_N * X)	-0.00130	-0.00130	-0.00130
	(B * !C_N * D_N * X)	0.00175	0.00176	0.00175
	(!B * C_N * !D_N * X)	-0.00149	-0.00149	-0.00148
	(!B * C_N * !D_N * X)	0.00153	0.00154	0.00153
	(!B * !C_N * D_N * X)	-0.00129	-0.00130	-0.00130
	(!B * !C_N * D_N * X)	0.00170	0.00171	0.00171
	(!B * !C_N * !D_N * X)	-0.00130	-0.00131	-0.00130
	(!B * !C_N * !D_N * X)	0.00170	0.00171	0.00170
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00176	-0.00177	-0.00177
	(B * C_N * D_N * X)	0.00327	0.00331	0.00329
	(B * !D_N * X)	-0.00177	-0.00178	-0.00177
	(B * !D_N * X)	0.00327	0.00331	0.00329
	(B * !C_N * D_N * X)	-0.00176	-0.00177	-0.00177
	(B * !C_N * D_N * X)	0.00327	0.00332	0.00329
	(!B * C_N * !D_N * X)	-0.00185	-0.00186	-0.00182
	(!B * C_N * !D_N * X)	0.00314	0.00317	0.00315
	(!B * !C_N * D_N * X)	-0.00176	-0.00177	-0.00177
	(!B * !C_N * D_N * X)	0.00317	0.00318	0.00319
	(!B * !C_N * !D_N * X)	-0.00176	-0.00177	-0.00177
	(!B * !C_N * !D_N * X)	0.00317	0.00319	0.00319

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)**	0.00150	0.00151	0.00150
	(A * C_N * D_N * X)	-0.00097	-0.00097	-0.00097
	(A * C_N * !D_N * X)	0.00166	0.00174	0.00171
	(A * C_N * !D_N * X)	-0.00114	-0.00114	-0.00113
	(A * !C_N * D_N * X)	0.00125	0.00126	0.00121
	(A * !C_N * D_N * X)	-0.00145	-0.00145	-0.00144
	(A * !C_N * !D_N * X)	0.00120	0.00121	0.00120
	(A * !C_N * !D_N * X)	-0.00150	-0.00150	-0.00149
	(!A * C_N * !D_N * X)	0.00169	0.00152	0.00150
	(!A * C_N * !D_N * X)	-0.00144	-0.00162	-0.00163
	(!A * !C_N * D_N * X)	0.00134	0.00121	0.00120
	(!A * !C_N * D_N * X)	-0.00179	-0.00194	-0.00194
	(!A * !C_N * !D_N * X)	0.00119	0.00120	0.00120
	(!A * !C_N * !D_N * X)	-0.00193	-0.00195	-0.00195
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00180	0.00182	0.00180
	(A * C_N * D_N * X)	-0.00086	-0.00087	-0.00086
	(A * C_N * !D_N * X)	0.00197	0.00203	0.00202
	(A * C_N * !D_N * X)	-0.00102	-0.00103	-0.00103
	(A * !C_N * D_N * X)	0.00166	0.00169	0.00162
	(A * !C_N * D_N * X)	-0.00123	-0.00123	-0.00123
	(A * !C_N * !D_N * X)	0.00161	0.00163	0.00160
	(A * !C_N * !D_N * X)	-0.00128	-0.00130	-0.00128
	(!A * C_N * !D_N * X)	0.00201	0.00184	0.00181
	(!A * C_N * !D_N * X)	-0.00134	-0.00151	-0.00152
	(!A * !C_N * D_N * X)	0.00175	0.00163	0.00161
	(!A * !C_N * D_N * X)	-0.00159	-0.00175	-0.00174
	(!A * !C_N * !D_N * X)	0.00161	0.00163	0.00160
	(!A * !C_N * !D_N * X)	-0.00173	-0.00175	-0.00174

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00182	0.00184	0.00182
	(A * C_N * D_N * X)	-0.00186	-0.00188	-0.00186
	(A * C_N * !D_N * X)	0.00211	0.00222	0.00222
	(A * C_N * !D_N * X)	-0.00223	-0.00223	-0.00223
	(A * !C_N * D_N * X)	0.00177	0.00178	0.00175
	(A * !C_N * D_N * X)	-0.00234	-0.00234	-0.00233
	(A * !C_N * !D_N * X)	0.00174	0.00175	0.00174
	(A * !C_N * !D_N * X)	-0.00245	-0.00245	-0.00243
	(!A * C_N * !D_N * X)	0.00215	0.00188	0.00182
	(!A * C_N * !D_N * X)	-0.00289	-0.00320	-0.00319
	(!A * !C_N * D_N * X)	0.00193	0.00174	0.00172
	(!A * !C_N * D_N * X)	-0.00311	-0.00335	-0.00335
	(!A * !C_N * !D_N * X)	0.00173	0.00174	0.00171
	(!A * !C_N * !D_N * X)	-0.00328	-0.00336	-0.00335

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)**	-0.00145	-0.00145	-0.00145
	(A * C_N * D_N * X)	0.00102	0.00102	0.00102
	(A * C_N * !D_N * X)	-0.00162	-0.00163	-0.00162
	(A * C_N * !D_N * X)	0.00114	0.00114	0.00113
	(A * !C_N * D_N * X)	-0.00119	-0.00120	-0.00119
	(A * !C_N * D_N * X)	0.00145	0.00145	0.00144
	(A * !C_N * !D_N * X)	-0.00120	-0.00120	-0.00120
	(A * !C_N * !D_N * X)	0.00150	0.00150	0.00149
	(!A * C_N * !D_N * X)	-0.00152	-0.00152	-0.00150
	(!A * C_N * !D_N * X)	0.00162	0.00163	0.00163
	(!A * !C_N * D_N * X)	-0.00119	-0.00119	-0.00119
	(!A * !C_N * D_N * X)	0.00195	0.00195	0.00195
	(!A * !C_N * !D_N * X)	-0.00119	-0.00120	-0.00120
	(!A * !C_N * !D_N * X)	0.00195	0.00195	0.00195
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00176	-0.00177	-0.00176
	(A * C_N * D_N * X)	0.00090	0.00091	0.00091
	(A * C_N * !D_N * X)	-0.00193	-0.00194	-0.00193
	(A * C_N * !D_N * X)	0.00102	0.00103	0.00103
	(A * !C_N * D_N * X)	-0.00159	-0.00160	-0.00160
	(A * !C_N * D_N * X)	0.00123	0.00123	0.00123
	(A * !C_N * !D_N * X)	-0.00160	-0.00161	-0.00160
	(A * !C_N * !D_N * X)	0.00128	0.00130	0.00128
	(!A * C_N * !D_N * X)	-0.00182	-0.00183	-0.00181
	(!A * C_N * !D_N * X)	0.00151	0.00151	0.00152
	(!A * !C_N * D_N * X)	-0.00160	-0.00160	-0.00159
	(!A * !C_N * D_N * X)	0.00175	0.00176	0.00175
	(!A * !C_N * !D_N * X)	-0.00160	-0.00161	-0.00160
	(!A * !C_N * !D_N * X)	0.00174	0.00175	0.00174

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	-0.00171	-0.00172	-0.00172
	(A * C_N * D_N * X)	0.00197	0.00199	0.00198
	(A * C_N * !D_N * X)	-0.00208	-0.00209	-0.00208
	(A * C_N * !D_N * X)	0.00223	0.00223	0.00223
	(A * !C_N * D_N * X)	-0.00173	-0.00174	-0.00173
	(A * !C_N * D_N * X)	0.00234	0.00234	0.00233
	(A * !C_N * !D_N * X)	-0.00173	-0.00174	-0.00173
	(A * !C_N * !D_N * X)	0.00245	0.00245	0.00243
	(!A * C_N * !D_N * X)	-0.00190	-0.00188	-0.00182
	(!A * C_N * !D_N * X)	0.00319	0.00320	0.00319
	(!A * !C_N * D_N * X)	-0.00171	-0.00172	-0.00171
	(!A * !C_N * D_N * X)	0.00335	0.00335	0.00335
	(!A * !C_N * !D_N * X)	-0.00172	-0.00172	-0.00171
	(!A * !C_N * !D_N * X)	0.00334	0.00336	0.00335

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4bb_1	**(B * X)**	0.00483	0.00777	0.07701
	(B * X)	0.00102	0.00395	0.07320
	(A * !B * X) + (!A * !B * !D_N * X)	0.00488	0.00782	0.07703
	(A * !B * X) + (!A * !B * !D_N * X)	0.00101	0.00394	0.07317
sky130_fd_sc_hs__or4bb_2	**(B * X)**	0.00438	0.00757	0.07869
	(B * X)	0.00071	0.00388	0.07501
	(A * !B * X) + (!A * !B * !D_N * X)	0.00443	0.00761	0.07857
	(A * !B * X) + (!A * !B * !D_N * X)	0.00070	0.00386	0.07484
sky130_fd_sc_hs__or4bb_4	**(B * X)**	0.00524	0.00844	0.08204
	(B * X)	0.00137	0.00455	0.07817
	(A * !B * X) + (!A * !B * !D_N * X)	0.00535	0.00855	0.08211
	(A * !B * X) + (!A * !B * !D_N * X)	0.00138	0.00456	0.07815

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00113	0.00515	0.07428
	(B * X)	0.00494	0.00897	0.07809
	(A * !B * X) + (!A * !B * !D_N * X)	0.00114	0.00516	0.07429
	(A * !B * X) + (!A * !B * !D_N * X)	0.00495	0.00898	0.07810
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00097	0.00542	0.07622
	(B * X)	0.00464	0.00910	0.07990
	(A * !B * X) + (!A * !B * !D_N * X)	0.00098	0.00541	0.07606
	(A * !B * X) + (!A * !B * !D_N * X)	0.00466	0.00909	0.07975
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00191	0.00578	0.07886
	(B * X)	0.00575	0.00966	0.08271
	(A * !B * X) + (!A * !B * !D_N * X)	0.00193	0.00580	0.07886
	(A * !B * X) + (!A * !B * !D_N * X)	0.00578	0.00967	0.08273

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)	0.00415	0.00726	0.07647
	(B * C_N * X)	0.00073	0.00383	0.07304
	(A * !B * C_N * X)	0.00423	0.00734	0.07653
	(A * !B * C_N * X)	0.00077	0.00387	0.07307
	(!C_N * X)	0.00427	0.00737	0.07658
	(!C_N * X)	0.00085	0.00394	0.07316
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00426	0.00729	0.07678
	(B * C_N * X)	0.00085	0.00388	0.07337
	(A * !B * C_N * X)	0.00433	0.00737	0.07683
	(A * !B * C_N * X)	0.00089	0.00391	0.07340
	(!C_N * X)	0.00438	0.00742	0.07692
	(!C_N * X)	0.00099	0.00401	0.07352
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00599	0.00908	0.08331
	(B * C_N * X)	0.00212	0.00521	0.07945
	(A * !B * C_N * X)	0.00618	0.00927	0.08346
	(A * !B * C_N * X)	0.00224	0.00533	0.07954
	(!C_N * X)	0.00638	0.00948	0.08372
	(!C_N * X)	0.00254	0.00563	0.07988

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)	0.00112	0.00546	0.07434
	(B * C_N * X)	0.00455	0.00889	0.07776
	(A * !B * C_N * X)	0.00112	0.00521	0.07434
	(A * !B * C_N * X)	0.00455	0.00864	0.07776
	(!C_N * X)	0.00096	0.00506	0.07420
	(!C_N * X)	0.00439	0.00850	0.07762
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00136	0.00566	0.07487
	(B * C_N * X)	0.00477	0.00908	0.07827
	(A * !B * C_N * X)	0.00136	0.00567	0.07487
	(A * !B * C_N * X)	0.00477	0.00908	0.07827
	(!C_N * X)	0.00120	0.00549	0.07471
	(!C_N * X)	0.00460	0.00890	0.07810
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00230	0.00604	0.07984
	(B * C_N * X)	0.00615	0.00990	0.08369
	(A * !B * C_N * X)	0.00230	0.00604	0.07985
	(A * !B * C_N * X)	0.00615	0.00991	0.08369
	(!C_N * X)	0.00184	0.00559	0.07938
	(!C_N * X)	0.00568	0.00942	0.08323

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4b_1	14.38560
sky130_fd_sc_hs__or4b_2	14.38560
sky130_fd_sc_hs__or4b_4	23.97600

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D_N	X
sky130_fd_sc_hs__or4b_1	0.00247	0.00235	0.00244	0.00231	1.37441
sky130_fd_sc_hs__or4b_2	0.00254	0.00244	0.00245	0.00219	2.33931
sky130_fd_sc_hs__or4b_4	0.00368	0.00420	0.00423	0.00239	5.27534

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.25654	0.53811
sky130_fd_sc_hs__or4b_2	0.00000	0.26170	0.60556
sky130_fd_sc_hs__or4b_4	0.00000	0.10739	0.36823

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)	0.05120	0.46729	5.23203
	B->X (RR)	0.05138	0.46118	5.15032
	C->X (RR)	0.04947	0.44845	5.07472
	D_N->X (FR)	0.08538	0.65582	8.22515
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.04897	0.37434	4.87303
	B->X (RR)	0.04940	0.36982	4.80007
	C->X (RR)	0.04780	0.35994	4.73586
	D_N->X (FR)	0.09215	0.58874	8.14195
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.06908	0.38062	5.67187
	B->X (RR)	0.06905	0.37076	5.58336
	C->X (RR)	0.06332	0.35103	5.48560
	D_N->X (FR)	0.10666	0.54022	8.45686

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.18743	0.58001	4.99557
	B->X (FF)	0.17408	0.58761	5.26640
	C->X (FF)	0.15531	0.59455	5.33756
	D_N->X (RF)	0.13218	0.32820	1.67013
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.22772	0.59719	4.84387
	B->X (FF)	0.21469	0.60621	5.13506
	C->X (FF)	0.19181	0.61228	5.21571
	D_N->X (RF)	0.17926	0.34702	1.44139
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.23190	0.58781	5.12101
	B->X (FF)	0.22164	0.58994	5.24022
	C->X (FF)	0.18922	0.58215	5.32254
	D_N->X (RF)	0.16820	0.31289	1.74913

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.01127	0.01142	0.03251
	A	0.00545	0.00559	0.02669
	B	0.00967	0.01053	0.03166
	B	0.00483	0.00570	0.02683
	C	0.00828	0.00928	0.02971
	C	0.00399	0.00501	0.02544
	D_N	0.00722	0.01158	0.08449
	D_N	0.00971	0.01409	0.08706
sky130_fd_sc_hs__or4b_2	A	0.01402	0.01466	0.03667
	A	0.00812	0.00880	0.03080
	B	0.01242	0.01374	0.03553
	B	0.00749	0.00887	0.03069
	C	0.01093	0.01243	0.03312
	C	0.00656	0.00813	0.02877
	D_N	0.01006	0.01454	0.08160
	D_N	0.01273	0.01719	0.08454
sky130_fd_sc_hs__or4b_4	A	0.02640	0.02775	0.07910
	A	0.01645	0.01783	0.06985
	B	0.02361	0.02512	0.07341
	B	0.01479	0.01633	0.06574
	C	0.01967	0.02179	0.06896
	C	0.01230	0.01446	0.06276
	D_N	0.01765	0.02252	0.09721
	D_N	0.02006	0.02497	0.09986

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00547	0.00503	0.02673
	A	0.01137	0.01093	0.03154
	B	0.00551	0.00541	0.03106
	B	0.01038	0.01029	0.03465
	C	0.00536	0.00570	0.02941
	C	0.00965	0.01000	0.03350
	D_N	0.01090	0.01406	0.08762
	D_N	0.00840	0.01157	0.08496
sky130_fd_sc_hs__or4b_2	A	0.00927	0.00715	0.02905
	A	0.01523	0.01315	0.03499
	B	0.00929	0.00734	0.03448
	B	0.01426	0.01255	0.03821
	C	0.00898	0.00730	0.03403
	C	0.01337	0.01220	0.03669
	D_N	0.01564	0.01647	0.07941
	D_N	0.01297	0.01377	0.07671
sky130_fd_sc_hs__or4b_4	A	0.02074	0.01716	0.06155
	A	0.03092	0.02733	0.07165
	B	0.02069	0.01701	0.05859
	B	0.02963	0.02593	0.06747
	C	0.02019	0.01721	0.06031
	C	0.02759	0.02458	0.06544
	D_N	0.02791	0.02735	0.10208
	D_N	0.02551	0.02490	0.09886

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)**	0.00145	0.00146	0.00145
	(B * C * D_N * X)	-0.00153	-0.00159	-0.00158
	(B * !D_N * X)	0.00145	0.00145	0.00144
	(B * !D_N * X)	-0.00154	-0.00159	-0.00158
	(B * !C * D_N * X)	0.00146	0.00146	0.00145
	(B * !C * D_N * X)	-0.00151	-0.00158	-0.00158
	(!B * C * D_N * X)	0.00145	0.00145	0.00145
	(!B * C * D_N * X)	-0.00142	-0.00155	-0.00154
	(!B * C * !D_N * X)	0.00144	0.00145	0.00144
	(!B * C * !D_N * X)	-0.00142	-0.00154	-0.00154
	(!B * !C * !D_N * X)	0.00145	0.00144	0.00144
	(!B * !C * !D_N * X)	-0.00140	-0.00153	-0.00152
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00157	0.00157	0.00157
	(B * C * D_N * X)	-0.00156	-0.00160	-0.00161
	(B * !D_N * X)	0.00151	0.00152	0.00151
	(B * !D_N * X)	-0.00162	-0.00165	-0.00166
	(B * !C * D_N * X)	0.00158	0.00157	0.00157
	(B * !C * D_N * X)	-0.00154	-0.00160	-0.00160
	(!B * C * D_N * X)	0.00156	0.00156	0.00156
	(!B * C * D_N * X)	-0.00143	-0.00157	-0.00156
	(!B * C * !D_N * X)	0.00150	0.00151	0.00151
	(!B * C * !D_N * X)	-0.00149	-0.00161	-0.00161
	(!B * !C * !D_N * X)	0.00151	0.00152	0.00151
	(!B * !C * !D_N * X)	-0.00148	-0.00160	-0.00160

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00155	0.00156	0.00153
	(B * C * D_N * X)	-0.00314	-0.00327	-0.00325
	(B * !D_N * X)	0.00153	0.00155	0.00153
	(B * !D_N * X)	-0.00316	-0.00328	-0.00326
	(B * !C * D_N * X)	0.00157	0.00156	0.00154
	(B * !C * D_N * X)	-0.00307	-0.00326	-0.00325
	(!B * C * D_N * X)	0.00156	0.00156	0.00153
	(!B * C * D_N * X)	-0.00288	-0.00316	-0.00315
	(!B * C * !D_N * X)	0.00153	0.00155	0.00153
	(!B * C * !D_N * X)	-0.00290	-0.00317	-0.00315
	(!B * !C * !D_N * X)	0.00155	0.00155	0.00153
	(!B * !C * !D_N * X)	-0.00286	-0.00312	-0.00312

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)**	-0.00144	-0.00144	-0.00144
	(B * C * D_N * X)	0.00159	0.00159	0.00159
	(B * !D_N * X)	-0.00144	-0.00145	-0.00144
	(B * !D_N * X)	0.00159	0.00160	0.00158
	(B * !C * D_N * X)	-0.00144	-0.00144	-0.00144
	(B * !C * D_N * X)	0.00159	0.00159	0.00159
	(!B * C * D_N * X)	-0.00143	-0.00144	-0.00144
	(!B * C * D_N * X)	0.00154	0.00155	0.00154
	(!B * C * !D_N * X)	-0.00144	-0.00144	-0.00144
	(!B * C * !D_N * X)	0.00153	0.00154	0.00154
	(!B * !C * !D_N * X)	-0.00143	-0.00144	-0.00144
	(!B * !C * !D_N * X)	0.00152	0.00153	0.00152

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00156	-0.00155	-0.00155
	(B * C * D_N * X)	0.00161	0.00160	0.00161
	(B * !D_N * X)	-0.00151	-0.00150	-0.00151
	(B * !D_N * X)	0.00166	0.00165	0.00166
	(B * !C * D_N * X)	-0.00156	-0.00156	-0.00155
	(B * !C * D_N * X)	0.00161	0.00161	0.00161
	(!B * C * D_N * X)	-0.00155	-0.00156	-0.00155
	(!B * C * D_N * X)	0.00156	0.00157	0.00156
	(!B * C * !D_N * X)	-0.00150	-0.00151	-0.00151
	(!B * C * !D_N * X)	0.00160	0.00161	0.00161
	(!B * !C * !D_N * X)	-0.00150	-0.00151	-0.00150
	(!B * !C * !D_N * X)	0.00159	0.00160	0.00160
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00153	-0.00153	-0.00153
	(B * C * D_N * X)	0.00324	0.00327	0.00325
	(B * !D_N * X)	-0.00152	-0.00153	-0.00153
	(B * !D_N * X)	0.00324	0.00328	0.00326
	(B * !C * D_N * X)	-0.00152	-0.00153	-0.00153
	(B * !C * D_N * X)	0.00323	0.00326	0.00325
	(!B * C * D_N * X)	-0.00153	-0.00154	-0.00153
	(!B * C * D_N * X)	0.00313	0.00316	0.00315
	(!B * C * !D_N * X)	-0.00152	-0.00153	-0.00153
	(!B * C * !D_N * X)	0.00314	0.00317	0.00315
	(!B * !C * !D_N * X)	-0.00152	-0.00152	-0.00152
	(!B * !C * !D_N * X)	0.00311	0.00312	0.00312

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)**	0.00132	0.00133	0.00129
	(A * C * D_N * X)	-0.00102	-0.00103	-0.00102
	(A * C * !D_N * X)	0.00127	0.00128	0.00127
	(A * C * !D_N * X)	-0.00107	-0.00108	-0.00107
	(A * !C * D_N * X)	0.00127	0.00128	0.00127
	(A * !C * D_N * X)	-0.00085	-0.00086	-0.00085
	(A * !C * !D_N * X)	0.00127	0.00129	0.00127
	(A * !C * !D_N * X)	-0.00101	-0.00102	-0.00101
	(!A * C * D_N * X)	0.00141	0.00126	0.00126
	(!A * C * D_N * X)	-0.00135	-0.00154	-0.00154
	(!A * C * !D_N * X)	0.00126	0.00126	0.00126
	(!A * C * !D_N * X)	-0.00149	-0.00153	-0.00154
	(!A * !C * !D_N * X)	0.00133	0.00126	0.00126
	(!A * !C * !D_N * X)	-0.00131	-0.00150	-0.00150
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00145	0.00146	0.00143
	(A * C * D_N * X)	-0.00102	-0.00104	-0.00103
	(A * C * !D_N * X)	0.00136	0.00137	0.00136
	(A * C * !D_N * X)	-0.00114	-0.00114	-0.00113
	(A * !C * D_N * X)	0.00141	0.00142	0.00141
	(A * !C * D_N * X)	-0.00088	-0.00088	-0.00087
	(A * !C * !D_N * X)	0.00135	0.00139	0.00136
	(A * !C * !D_N * X)	-0.00108	-0.00108	-0.00108
	(!A * C * D_N * X)	0.00153	0.00140	0.00140
	(!A * C * D_N * X)	-0.00138	-0.00156	-0.00156
	(!A * C * !D_N * X)	0.00135	0.00136	0.00136
	(!A * C * !D_N * X)	-0.00156	-0.00161	-0.00160
	(!A * !C * !D_N * X)	0.00141	0.00136	0.00136
	(!A * !C * !D_N * X)	-0.00138	-0.00156	-0.00156

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00198	0.00201	0.00198
	(A * C * D_N * X)	-0.00219	-0.00220	-0.00218
	(A * C * !D_N * X)	0.00193	0.00193	0.00192
	(A * C * !D_N * X)	-0.00236	-0.00237	-0.00235
	(A * !C * D_N * X)	0.00193	0.00195	0.00193
	(A * !C * D_N * X)	-0.00187	-0.00188	-0.00187
	(A * !C * !D_N * X)	0.00191	0.00195	0.00191
	(A * !C * !D_N * X)	-0.00221	-0.00222	-0.00221
	(!A * C * D_N * X)	0.00218	0.00195	0.00191
	(!A * C * D_N * X)	-0.00290	-0.00326	-0.00327
	(!A * C * !D_N * X)	0.00191	0.00193	0.00190
	(!A * C * !D_N * X)	-0.00315	-0.00329	-0.00328
	(!A * !C * !D_N * X)	0.00203	0.00193	0.00190
	(!A * !C * !D_N * X)	-0.00283	-0.00319	-0.00318

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)**	-0.00126	-0.00127	-0.00126
	(A * C * D_N * X)	0.00102	0.00103	0.00102
	(A * C * !D_N * X)	-0.00127	-0.00127	-0.00127
	(A * C * !D_N * X)	0.00107	0.00108	0.00107
	(A * !C * D_N * X)	-0.00123	-0.00123	-0.00122
	(A * !C * D_N * X)	0.00090	0.00090	0.00090
	(A * !C * !D_N * X)	-0.00126	-0.00127	-0.00126
	(A * !C * !D_N * X)	0.00101	0.00102	0.00101
	(!A * C * D_N * X)	-0.00125	-0.00126	-0.00125
	(!A * C * D_N * X)	0.00154	0.00156	0.00154
	(!A * C * !D_N * X)	-0.00126	-0.00125	-0.00126
	(!A * C * !D_N * X)	0.00154	0.00153	0.00154
	(!A * !C * !D_N * X)	-0.00125	-0.00126	-0.00125
	(!A * !C * !D_N * X)	0.00148	0.00150	0.00150
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00139	-0.00141	-0.00140
	(A * C * D_N * X)	0.00102	0.00104	0.00103
	(A * C * !D_N * X)	-0.00136	-0.00136	-0.00135
	(A * C * !D_N * X)	0.00114	0.00114	0.00113
	(A * !C * D_N * X)	-0.00138	-0.00138	-0.00137
	(A * !C * D_N * X)	0.00090	0.00090	0.00091
	(A * !C * !D_N * X)	-0.00135	-0.00136	-0.00135
	(A * !C * !D_N * X)	0.00108	0.00108	0.00108
	(!A * C * D_N * X)	-0.00139	-0.00140	-0.00139
	(!A * C * D_N * X)	0.00157	0.00158	0.00157
	(!A * C * !D_N * X)	-0.00135	-0.00136	-0.00135
	(!A * C * !D_N * X)	0.00160	0.00161	0.00160
	(!A * !C * !D_N * X)	-0.00135	-0.00135	-0.00135
	(!A * !C * !D_N * X)	0.00155	0.00156	0.00156

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	-0.00195	-0.00196	-0.00195
	(A * C * D_N * X)	0.00219	0.00220	0.00218
	(A * C * !D_N * X)	-0.00191	-0.00192	-0.00191
	(A * C * !D_N * X)	0.00236	0.00237	0.00235
	(A * !C * D_N * X)	-0.00191	-0.00191	-0.00191
	(A * !C * D_N * X)	0.00190	0.00191	0.00190
	(A * !C * !D_N * X)	-0.00190	-0.00191	-0.00190
	(A * !C * !D_N * X)	0.00221	0.00222	0.00221
	(!A * C * D_N * X)	-0.00192	-0.00192	-0.00191
	(!A * C * D_N * X)	0.00326	0.00326	0.00327
	(!A * C * !D_N * X)	-0.00191	-0.00191	-0.00190
	(!A * C * !D_N * X)	0.00328	0.00329	0.00328
	(!A * !C * !D_N * X)	-0.00189	-0.00190	-0.00189
	(!A * !C * !D_N * X)	0.00316	0.00319	0.00318

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)**	0.00151	0.00152	0.00151
	(B * D_N * X)	-0.00084	-0.00085	-0.00085
	(B * !D_N * X)	0.00146	0.00147	0.00141
	(B * !D_N * X)	-0.00111	-0.00112	-0.00111
	(A * !B * D_N * X)	0.00152	0.00153	0.00151
	(A * !B * D_N * X)	-0.00083	-0.00084	-0.00084
	(A * !B * !D_N * X)	0.00151	0.00142	0.00139
	(A * !B * !D_N * X)	-0.00115	-0.00116	-0.00115
	(!A * !B * !D_N * X)	0.00169	0.00139	0.00138
	(!A * !B * !D_N * X)	-0.00134	-0.00165	-0.00166

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00165	0.00166	0.00164
	(B * D_N * X)	-0.00087	-0.00088	-0.00087
	(B * !D_N * X)	0.00139	0.00141	0.00136
	(B * !D_N * X)	-0.00133	-0.00134	-0.00133
	(A * !B * D_N * X)	0.00166	0.00167	0.00165
	(A * !B * D_N * X)	-0.00086	-0.00087	-0.00087
	(A * !B * !D_N * X)	0.00144	0.00138	0.00134
	(A * !B * !D_N * X)	-0.00136	-0.00136	-0.00136
	(!A * !B * !D_N * X)	0.00165	0.00135	0.00135
	(!A * !B * !D_N * X)	-0.00153	-0.00184	-0.00185
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00240	0.00242	0.00240
	(B * D_N * X)	-0.00180	-0.00181	-0.00180
	(B * !D_N * X)	0.00202	0.00201	0.00196
	(B * !D_N * X)	-0.00264	-0.00265	-0.00263
	(A * !B * D_N * X)	0.00242	0.00244	0.00240
	(A * !B * D_N * X)	-0.00178	-0.00179	-0.00179
	(A * !B * !D_N * X)	0.00212	0.00199	0.00194
	(A * !B * !D_N * X)	-0.00265	-0.00265	-0.00265
	(!A * !B * !D_N * X)	0.00253	0.00196	0.00194
	(!A * !B * !D_N * X)	-0.00303	-0.00364	-0.00365

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)**	-0.00149	-0.00149	-0.00149
	(B * D_N * X)	0.00087	0.00087	0.00087
	(B * !D_N * X)	-0.00138	-0.00139	-0.00138
	(B * !D_N * X)	0.00111	0.00112	0.00111
	(A * !B * D_N * X)	-0.00145	-0.00146	-0.00148
	(A * !B * D_N * X)	0.00087	0.00087	0.00086
	(A * !B * !D_N * X)	-0.00138	-0.00139	-0.00138
	(A * !B * !D_N * X)	0.00115	0.00116	0.00115
	(!A * !B * !D_N * X)	-0.00137	-0.00137	-0.00136
	(!A * !B * !D_N * X)	0.00166	0.00166	0.00167
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00163	-0.00163	-0.00162
	(B * D_N * X)	0.00090	0.00090	0.00090
	(B * !D_N * X)	-0.00134	-0.00135	-0.00134
	(B * !D_N * X)	0.00133	0.00134	0.00133
	(A * !B * D_N * X)	-0.00160	-0.00160	-0.00162
	(A * !B * D_N * X)	0.00089	0.00089	0.00089
	(A * !B * !D_N * X)	-0.00134	-0.00134	-0.00134
	(A * !B * !D_N * X)	0.00136	0.00136	0.00136
	(!A * !B * !D_N * X)	-0.00134	-0.00134	-0.00133
	(!A * !B * !D_N * X)	0.00186	0.00186	0.00186
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00237	-0.00238	-0.00237
	(B * D_N * X)	0.00183	0.00184	0.00185
	(B * !D_N * X)	-0.00195	-0.00195	-0.00194
	(B * !D_N * X)	0.00264	0.00265	0.00263
	(A * !B * D_N * X)	-0.00227	-0.00229	-0.00236
	(A * !B * D_N * X)	0.00185	0.00185	0.00183
	(A * !B * !D_N * X)	-0.00194	-0.00194	-0.00194
	(A * !B * !D_N * X)	0.00265	0.00265	0.00265
	(!A * !B * !D_N * X)	-0.00193	-0.00193	-0.00191
	(!A * !B * !D_N * X)	0.00366	0.00369	0.00367

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00432	0.00752	0.07853
	(C * X)	0.00064	0.00382	0.07484
	(B * !C * X)	0.00438	0.00757	0.07851
	(B * !C * X)	0.00066	0.00384	0.07479
	(A * !B * !C * X)	0.00445	0.00765	0.07856
	(A * !B * !C * X)	0.00071	0.00388	0.07482
sky130_fd_sc_hs__or4b_2	(C * X)	0.00487	0.00780	0.07718
	(C * X)	0.00108	0.00400	0.07339
	(B * !C * X)	0.00493	0.00786	0.07722
	(B * !C * X)	0.00110	0.00402	0.07340
	(A * !B * !C * X)	0.00501	0.00793	0.07727
	(A * !B * !C * X)	0.00114	0.00406	0.07343
sky130_fd_sc_hs__or4b_4	(C * X)	0.00569	0.00893	0.08437
	(C * X)	0.00158	0.00480	0.08028
	(B * !C * X)	0.00586	0.00909	0.08450
	(B * !C * X)	0.00164	0.00487	0.08031
	(A * !B * !C * X)	0.00601	0.00924	0.08461
	(A * !B * !C * X)	0.00172	0.00494	0.08037

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00092	0.00516	0.07603
	(C * X)	0.00461	0.00886	0.07972
	(B * !C * X)	0.00092	0.00521	0.07602
	(B * !C * X)	0.00462	0.00892	0.07971
	(A * !B * !C * X)	0.00092	0.00521	0.07601
	(A * !B * !C * X)	0.00462	0.00891	0.07970
sky130_fd_sc_hs__or4b_2	(C * X)	0.00113	0.00541	0.07448
	(C * X)	0.00491	0.00920	0.07826
	(B * !C * X)	0.00113	0.00541	0.07448
	(B * !C * X)	0.00492	0.00920	0.07827
	(A * !B * !C * X)	0.00113	0.00542	0.07448
	(A * !B * !C * X)	0.00492	0.00922	0.07827
sky130_fd_sc_hs__or4b_4	(C * X)	0.00174	0.00556	0.08076
	(C * X)	0.00585	0.00967	0.08486
	(B * !C * X)	0.00174	0.00556	0.08076
	(B * !C * X)	0.00586	0.00969	0.08487
	(A * !B * !C * X)	0.00174	0.00556	0.08076
	(A * !B * !C * X)	0.00586	0.00970	0.08488

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage 1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__or4_1	11.18880
sky130_fd_sc_hs__or4_2	12.78720
sky130_fd_sc_hs__or4_4	22.37760

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	A	B	C	D	X
sky130_fd_sc_hs__or4_1	0.00245	0.00232	0.00238	0.00231	1.37674
sky130_fd_sc_hs__or4_2	0.00254	0.00250	0.00261	0.00260	2.78633
sky130_fd_sc_hs__or4_4	0.00364	0.00424	0.00429	0.00403	5.30791

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4_1	0.00000	0.02030	0.11347
sky130_fd_sc_hs__or4_2	0.00000	0.02545	0.13397
sky130_fd_sc_hs__or4_4	0.00000	0.05015	0.25577

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)	0.04940	0.46659	5.28474
	B->X (RR)	0.05008	0.46099	5.20297
	C->X (RR)	0.04838	0.44762	5.12339
	D->X (RR)	0.04406	0.43124	5.14623
sky130_fd_sc_hs__or4_2	A->X (RR)	0.04735	0.36353	5.17010
	B->X (RR)	0.04767	0.35795	5.08586
	C->X (RR)	0.04639	0.34830	5.02019
	D->X (RR)	0.04327	0.33760	5.04458
sky130_fd_sc_hs__or4_4	A->X (RR)	0.06263	0.36645	5.68998
	B->X (RR)	0.06513	0.36253	5.63206
	C->X (RR)	0.05979	0.34047	5.51174
	D->X (RR)	0.05518	0.32594	5.54742

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.18110	0.56888	4.94467
	B->X (FF)	0.16832	0.57593	5.22240
	C->X (FF)	0.14659	0.58040	5.29422
	D->X (FF)	0.11217	0.55562	5.25748
sky130_fd_sc_hs__or4_2	A->X (FF)	0.21908	0.59762	5.24270
	B->X (FF)	0.20616	0.60818	5.53909
	C->X (FF)	0.18738	0.61872	5.62221
	D->X (FF)	0.15473	0.59651	5.59691
sky130_fd_sc_hs__or4_4	A->X (FF)	0.22272	0.57508	5.12856
	B->X (FF)	0.21419	0.57694	5.12603
	C->X (FF)	0.18235	0.57157	5.32472
	D->X (FF)	0.13975	0.54042	5.25747

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.01247	0.01264	0.03404
	A	0.00550	0.00566	0.02728
	B	0.01087	0.01170	0.03306
	B	0.00484	0.00567	0.02704
	C	0.00919	0.01018	0.03082
	C	0.00392	0.00492	0.02555
	D	0.00757	0.00901	0.03866
	D	0.00302	0.00449	0.03413
sky130_fd_sc_hs__or4_2	A	0.01513	0.01580	0.04363
	A	0.00784	0.00857	0.03636
	B	0.01345	0.01482	0.04203
	B	0.00707	0.00850	0.03565
	C	0.01193	0.01348	0.03943
	C	0.00629	0.00794	0.03381
	D	0.01032	0.01234	0.04822
	D	0.00541	0.00747	0.04331
sky130_fd_sc_hs__or4_4	A	0.02882	0.03035	0.08244
	A	0.01677	0.01831	0.07105
	B	0.02599	0.02680	0.07162
	B	0.01503	0.01584	0.06154
	C	0.02184	0.02390	0.07090
	C	0.01261	0.01476	0.06285
	D	0.01809	0.02117	0.08805
	D	0.01055	0.01380	0.08165

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00376	0.00336	0.02497
	A	0.01083	0.01043	0.03111
	B	0.00381	0.00371	0.02854
	B	0.00990	0.00982	0.03452
	C	0.00380	0.00418	0.02887
	C	0.00910	0.00953	0.03328
	D	0.00370	0.00540	0.04240
	D	0.00823	0.00994	0.04541
sky130_fd_sc_hs__or4_2	A	0.00805	0.00633	0.02986
	A	0.01543	0.01375	0.03721
	B	0.00810	0.00649	0.03582
	B	0.01453	0.01317	0.04071
	C	0.00807	0.00709	0.03564
	C	0.01372	0.01273	0.03896
	D	0.00797	0.00824	0.04893
	D	0.01288	0.01319	0.05182
sky130_fd_sc_hs__or4_4	A	0.01688	0.01369	0.05901
	A	0.02918	0.02599	0.07117
	B	0.01674	0.01331	0.04845
	B	0.02786	0.02467	0.05940
	C	0.01694	0.01412	0.05725
	C	0.02619	0.02341	0.06507
	D	0.01631	0.01642	0.07997
	D	0.02385	0.02393	0.08744

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00142	0.00143	0.00142
	(B * D * X)	-0.00156	-0.00161	-0.00160
	(B * C * !D * X)	0.00142	0.00143	0.00142
	(B * C * !D * X)	-0.00156	-0.00161	-0.00160
	(B * !C * !D * X)	0.00142	0.00143	0.00142
	(B * !C * !D * X)	-0.00154	-0.00160	-0.00160
	(!B * C * D * X)	0.00142	0.00143	0.00142
	(!B * C * D * X)	-0.00145	-0.00156	-0.00155
	(!B * C * !D * X)	0.00142	0.00143	0.00142
	(!B * C * !D * X)	-0.00144	-0.00156	-0.00155
	(!B * !C * D * X)	0.00142	0.00143	0.00142
	(!B * !C * D * X)	-0.00142	-0.00154	-0.00154
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00154	0.00155	0.00154
	(B * D * X)	-0.00159	-0.00163	-0.00163
	(B * C * !D * X)	0.00154	0.00155	0.00154
	(B * C * !D * X)	-0.00158	-0.00163	-0.00163
	(B * !C * !D * X)	0.00154	0.00155	0.00154
	(B * !C * !D * X)	-0.00157	-0.00163	-0.00163
	(!B * C * D * X)	0.00153	0.00155	0.00154
	(!B * C * D * X)	-0.00147	-0.00159	-0.00158
	(!B * C * !D * X)	0.00154	0.00155	0.00154
	(!B * C * !D * X)	-0.00147	-0.00159	-0.00158
	(!B * !C * D * X)	0.00154	0.00155	0.00154
	(!B * !C * D * X)	-0.00144	-0.00157	-0.00157

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00155	0.00156	0.00154
	(B * D * X)	-0.00312	-0.00323	-0.00322
	(B * C * !D * X)	0.00155	0.00156	0.00154
	(B * C * !D * X)	-0.00311	-0.00323	-0.00321
	(B * !C * !D * X)	0.00156	0.00156	0.00154
	(B * !C * !D * X)	-0.00305	-0.00322	-0.00321
	(!B * C * D * X)	0.00155	0.00156	0.00154
	(!B * C * D * X)	-0.00286	-0.00314	-0.00312
	(!B * C * !D * X)	0.00155	0.00156	0.00154
	(!B * C * !D * X)	-0.00286	-0.00313	-0.00311
	(!B * !C * D * X)	0.00157	0.00156	0.00154
	(!B * !C * D * X)	-0.00280	-0.00308	-0.00307

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00142	-0.00142	-0.00142
	(B * D * X)	0.00160	0.00161	0.00160
	(B * C * !D * X)	-0.00142	-0.00142	-0.00142
	(B * C * !D * X)	0.00160	0.00161	0.00160
	(B * !C * !D * X)	-0.00142	-0.00142	-0.00142
	(B * !C * !D * X)	0.00160	0.00161	0.00160
	(!B * C * D * X)	-0.00141	-0.00142	-0.00142
	(!B * C * D * X)	0.00155	0.00156	0.00155
	(!B * C * !D * X)	-0.00141	-0.00142	-0.00142
	(!B * C * !D * X)	0.00155	0.00156	0.00155
	(!B * !C * D * X)	-0.00141	-0.00142	-0.00142
	(!B * !C * D * X)	0.00153	0.00154	0.00154

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00154	-0.00154	-0.00154
	(B * D * X)	0.00163	0.00163	0.00163
	(B * C * !D * X)	-0.00154	-0.00154	-0.00154
	(B * C * !D * X)	0.00163	0.00163	0.00163
	(B * !C * !D * X)	-0.00154	-0.00154	-0.00154
	(B * !C * !D * X)	0.00163	0.00163	0.00163
	(!B * C * D * X)	-0.00153	-0.00154	-0.00154
	(!B * C * D * X)	0.00158	0.00159	0.00158
	(!B * C * !D * X)	-0.00154	-0.00154	-0.00154
	(!B * C * !D * X)	0.00158	0.00159	0.00158
	(!B * !C * D * X)	-0.00153	-0.00154	-0.00153
	(!B * !C * D * X)	0.00156	0.00157	0.00157
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00153	-0.00154	-0.00154
	(B * D * X)	0.00320	0.00323	0.00322
	(B * C * !D * X)	-0.00153	-0.00154	-0.00154
	(B * C * !D * X)	0.00320	0.00323	0.00321
	(B * !C * !D * X)	-0.00153	-0.00154	-0.00154
	(B * !C * !D * X)	0.00319	0.00322	0.00321
	(!B * C * D * X)	-0.00153	-0.00154	-0.00154
	(!B * C * D * X)	0.00311	0.00314	0.00312
	(!B * C * !D * X)	-0.00153	-0.00154	-0.00154
	(!B * C * !D * X)	0.00310	0.00313	0.00311
	(!B * !C * D * X)	-0.00153	-0.00154	-0.00153
	(!B * !C * D * X)	0.00306	0.00308	0.00307

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)**	0.00127	0.00128	0.00127
	(A * C * D * X)	-0.00113	-0.00113	-0.00112
	(A * C * !D * X)	0.00129	0.00129	0.00127
	(A * C * !D * X)	-0.00107	-0.00108	-0.00107
	(A * !C * D * X)	0.00126	0.00129	0.00126
	(A * !C * D * X)	-0.00105	-0.00105	-0.00104
	(A * !C * !D * X)	0.00126	0.00127	0.00126
	(A * !C * !D * X)	-0.00089	-0.00090	-0.00089
	(!A * C * D * X)	0.00125	0.00126	0.00126
	(!A * C * D * X)	-0.00151	-0.00158	-0.00158
	(!A * C * !D * X)	0.00137	0.00126	0.00126
	(!A * C * !D * X)	-0.00140	-0.00158	-0.00158
	(!A * !C * D * X)	0.00132	0.00125	0.00126
	(!A * !C * D * X)	-0.00134	-0.00153	-0.00153
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00137	0.00139	0.00137
	(A * C * D * X)	-0.00119	-0.00120	-0.00119
	(A * C * !D * X)	0.00142	0.00142	0.00138
	(A * C * !D * X)	-0.00115	-0.00115	-0.00114
	(A * !C * D * X)	0.00137	0.00140	0.00137
	(A * !C * D * X)	-0.00112	-0.00112	-0.00112
	(A * !C * !D * X)	0.00137	0.00138	0.00137
	(A * !C * !D * X)	-0.00098	-0.00098	-0.00097
	(!A * C * D * X)	0.00137	0.00137	0.00137
	(!A * C * D * X)	-0.00161	-0.00167	-0.00166
	(!A * C * !D * X)	0.00150	0.00138	0.00137
	(!A * C * !D * X)	-0.00148	-0.00166	-0.00166
	(!A * !C * D * X)	0.00144	0.00137	0.00137
	(!A * !C * D * X)	-0.00141	-0.00162	-0.00161

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00200	0.00200	0.00199
	(A * C * D * X)	-0.00232	-0.00234	-0.00232
	(A * C * !D * X)	0.00199	0.00201	0.00199
	(A * C * !D * X)	-0.00220	-0.00221	-0.00219
	(A * !C * D * X)	0.00197	0.00201	0.00197
	(A * !C * D * X)	-0.00217	-0.00217	-0.00216
	(A * !C * !D * X)	0.00196	0.00198	0.00197
	(A * !C * !D * X)	-0.00187	-0.00188	-0.00187
	(!A * C * D * X)	0.00197	0.00199	0.00196
	(!A * C * D * X)	-0.00310	-0.00326	-0.00326
	(!A * C * !D * X)	0.00214	0.00199	0.00196
	(!A * C * !D * X)	-0.00291	-0.00326	-0.00326
	(!A * !C * D * X)	0.00208	0.00199	0.00196
	(!A * !C * D * X)	-0.00277	-0.00315	-0.00315

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)**	-0.00126	-0.00127	-0.00126
	(A * C * D * X)	0.00113	0.00113	0.00112
	(A * C * !D * X)	-0.00126	-0.00127	-0.00126
	(A * C * !D * X)	0.00107	0.00108	0.00107
	(A * !C * D * X)	-0.00126	-0.00127	-0.00126
	(A * !C * D * X)	0.00105	0.00105	0.00104
	(A * !C * !D * X)	-0.00122	-0.00122	-0.00121
	(A * !C * !D * X)	0.00093	0.00093	0.00094
	(!A * C * D * X)	-0.00125	-0.00126	-0.00126
	(!A * C * D * X)	0.00158	0.00158	0.00158
	(!A * C * !D * X)	-0.00126	-0.00126	-0.00126
	(!A * C * !D * X)	0.00158	0.00158	0.00158
	(!A * !C * D * X)	-0.00126	-0.00125	-0.00125
	(!A * !C * D * X)	0.00153	0.00153	0.00153
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00137	-0.00138	-0.00137
	(A * C * D * X)	0.00119	0.00120	0.00119
	(A * C * !D * X)	-0.00137	-0.00138	-0.00137
	(A * C * !D * X)	0.00115	0.00115	0.00114
	(A * !C * D * X)	-0.00137	-0.00138	-0.00137
	(A * !C * D * X)	0.00112	0.00112	0.00112
	(A * !C * !D * X)	-0.00133	-0.00133	-0.00132
	(A * !C * !D * X)	0.00101	0.00102	0.00102
	(!A * C * D * X)	-0.00137	-0.00137	-0.00137
	(!A * C * D * X)	0.00166	0.00168	0.00166
	(!A * C * !D * X)	-0.00137	-0.00138	-0.00137
	(!A * C * !D * X)	0.00166	0.00168	0.00166
	(!A * !C * D * X)	-0.00136	-0.00137	-0.00137
	(!A * !C * D * X)	0.00160	0.00162	0.00161

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	-0.00198	-0.00199	-0.00198
	(A * C * D * X)	0.00232	0.00234	0.00232
	(A * C * !D * X)	-0.00198	-0.00199	-0.00198
	(A * C * !D * X)	0.00220	0.00221	0.00219
	(A * !C * D * X)	-0.00197	-0.00197	-0.00197
	(A * !C * D * X)	0.00217	0.00217	0.00216
	(A * !C * !D * X)	-0.00195	-0.00196	-0.00195
	(A * !C * !D * X)	0.00189	0.00190	0.00189
	(!A * C * D * X)	-0.00196	-0.00197	-0.00196
	(!A * C * D * X)	0.00326	0.00326	0.00326
	(!A * C * !D * X)	-0.00196	-0.00196	-0.00196
	(!A * C * !D * X)	0.00325	0.00326	0.00326
	(!A * !C * D * X)	-0.00195	-0.00196	-0.00195
	(!A * !C * D * X)	0.00313	0.00315	0.00315

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00136	0.00136	0.00131
	(B * D * X)	-0.00104	-0.00104	-0.00103
	(B * !D * X)	0.00129	0.00130	0.00129
	(B * !D * X)	-0.00088	-0.00088	-0.00088
	(A * !B * D * X)	0.00140	0.00132	0.00129
	(A * !B * D * X)	-0.00106	-0.00107	-0.00107
	(A * !B * !D * X)	0.00130	0.00131	0.00129
	(A * !B * !D * X)	-0.00087	-0.00087	-0.00088
	(!A * !B * D * X)	0.00159	0.00129	0.00128
	(!A * !B * D * X)	-0.00124	-0.00156	-0.00157

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00154	0.00155	0.00150
	(B * D * X)	-0.00103	-0.00103	-0.00103
	(B * !D * X)	0.00148	0.00149	0.00147
	(B * !D * X)	-0.00089	-0.00090	-0.00090
	(A * !B * D * X)	0.00160	0.00148	0.00147
	(A * !B * D * X)	-0.00106	-0.00108	-0.00107
	(A * !B * !D * X)	0.00149	0.00150	0.00147
	(A * !B * !D * X)	-0.00088	-0.00089	-0.00089
	(!A * !B * D * X)	0.00179	0.00148	0.00147
	(!A * !B * D * X)	-0.00125	-0.00158	-0.00159
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00211	0.00210	0.00204
	(B * D * X)	-0.00219	-0.00220	-0.00218
	(B * !D * X)	0.00202	0.00204	0.00201
	(B * !D * X)	-0.00182	-0.00185	-0.00184
	(A * !B * D * X)	0.00219	0.00207	0.00202
	(A * !B * D * X)	-0.00223	-0.00223	-0.00221
	(A * !B * !D * X)	0.00203	0.00205	0.00202
	(A * !B * !D * X)	-0.00180	-0.00183	-0.00183
	(!A * !B * D * X)	0.00261	0.00203	0.00200
	(!A * !B * D * X)	-0.00261	-0.00325	-0.00327

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00129	-0.00129	-0.00128
	(B * D * X)	0.00104	0.00104	0.00103
	(B * !D * X)	-0.00128	-0.00128	-0.00127
	(B * !D * X)	0.00090	0.00090	0.00090
	(A * !B * D * X)	-0.00129	-0.00129	-0.00128
	(A * !B * D * X)	0.00107	0.00107	0.00107
	(A * !B * !D * X)	-0.00125	-0.00126	-0.00127
	(A * !B * !D * X)	0.00090	0.00090	0.00089
	(!A * !B * D * X)	-0.00128	-0.00127	-0.00127
	(!A * !B * D * X)	0.00157	0.00156	0.00157
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00146	-0.00147	-0.00146
	(B * D * X)	0.00103	0.00103	0.00103
	(B * !D * X)	-0.00146	-0.00146	-0.00145
	(B * !D * X)	0.00091	0.00091	0.00092
	(A * !B * D * X)	-0.00146	-0.00147	-0.00146
	(A * !B * D * X)	0.00108	0.00108	0.00107
	(A * !B * !D * X)	-0.00144	-0.00145	-0.00145
	(A * !B * !D * X)	0.00091	0.00091	0.00091
	(!A * !B * D * X)	-0.00146	-0.00146	-0.00145
	(!A * !B * D * X)	0.00159	0.00159	0.00160
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00202	-0.00203	-0.00202
	(B * D * X)	0.00219	0.00220	0.00218
	(B * !D * X)	-0.00200	-0.00200	-0.00198
	(B * !D * X)	0.00188	0.00188	0.00189
	(A * !B * D * X)	-0.00201	-0.00202	-0.00201
	(A * !B * D * X)	0.00223	0.00223	0.00221
	(A * !B * !D * X)	-0.00193	-0.00194	-0.00197
	(A * !B * !D * X)	0.00189	0.00189	0.00186
	(!A * !B * D * X)	-0.00199	-0.00199	-0.00198
	(!A * !B * D * X)	0.00326	0.00326	0.00327

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00142	0.00144	0.00143
	(C * X)	-0.00083	-0.00084	-0.00083
	(B * !C * X)	0.00142	0.00144	0.00143
	(B * !C * X)	-0.00083	-0.00083	-0.00083
	(A * !B * !C * X)	0.00142	0.00144	0.00143
	(A * !B * !C * X)	-0.00083	-0.00083	-0.00083
sky130_fd_sc_hs__or4_2	(C * X)	0.00168	0.00168	0.00167
	(C * X)	-0.00083	-0.00083	-0.00082
	(B * !C * X)	0.00168	0.00168	0.00167
	(B * !C * X)	-0.00083	-0.00083	-0.00082
	(A * !B * !C * X)	0.00168	0.00168	0.00167
	(A * !B * !C * X)	-0.00083	-0.00083	-0.00082
sky130_fd_sc_hs__or4_4	(C * X)	0.00228	0.00232	0.00228
	(C * X)	-0.00161	-0.00164	-0.00161
	(B * !C * X)	0.00228	0.00232	0.00228
	(B * !C * X)	-0.00160	-0.00164	-0.00160
	(A * !B * !C * X)	0.00228	0.00232	0.00228
	(A * !B * !C * X)	-0.00160	-0.00164	-0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00139	-0.00139	-0.00142
	(C * X)	0.00087	0.00087	0.00084
	(B * !C * X)	-0.00133	-0.00134	-0.00141
	(B * !C * X)	0.00090	0.00090	0.00084
	(A * !B * !C * X)	-0.00125	-0.00126	-0.00139
	(A * !B * !C * X)	0.00095	0.00095	0.00086
sky130_fd_sc_hs__or4_2	(C * X)	-0.00163	-0.00164	-0.00167
	(C * X)	0.00086	0.00086	0.00083
	(B * !C * X)	-0.00158	-0.00159	-0.00166
	(B * !C * X)	0.00089	0.00089	0.00083
	(A * !B * !C * X)	-0.00150	-0.00151	-0.00163
	(A * !B * !C * X)	0.00094	0.00094	0.00085
sky130_fd_sc_hs__or4_4	(C * X)	-0.00218	-0.00219	-0.00227
	(C * X)	0.00170	0.00170	0.00164
	(B * !C * X)	-0.00203	-0.00204	-0.00224
	(B * !C * X)	0.00179	0.00179	0.00165
	(A * !B * !C * X)	-0.00188	-0.00190	-0.00219
	(A * !B * !C * X)	0.00188	0.00189	0.00167

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**F**	**0**	**1**
0	**1**	**0**	**1**	**1**	**F**	**0**	**1**
x	**1**	**1**	**1**	**1**	**F**	**1**	**0**
1	**x**	**0**	**1**	**1**	**F**	**1**	**0**
1	**0**	**1**	**1**	**1**	**F**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbn_1	55.94400
sky130_fd_sc_hs__sdfbbn_2	60.73920

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK_N**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbn_1	0.00193	0.00174	0.00408	0.00178	0.00534	0.00284	1.40986	1.40973
sky130_fd_sc_hs__sdfbbn_2	0.00195	0.00175	0.00413	0.00165	0.00527	0.00281	2.82164	2.87033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbn_1	0.00000	1.36335	2.57869
sky130_fd_sc_hs__sdfbbn_2	0.00000	1.21227	2.46759

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)	0.26260	0.85812	8.57679
	SET_B->Q (FR)	0.13077	0.74821	8.58142
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.29687	0.79356	8.58795
	SET_B->Q (FR)	0.15461	0.68728	8.60909

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)	0.26851	0.63495	4.71445
	RESET_B->Q (FF)	0.17144	0.56242	4.64027
	SET_B->Q (RF)	0.09880	0.28525	1.51165
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.28665	0.62020	4.75880
	RESET_B->Q (FF)	0.19139	0.55222	4.70847
	SET_B->Q (RF)	0.11846	0.28664	1.64385

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)	0.24574	0.84847	8.59571
	RESET_B->Q_N (FR)	0.14941	0.77984	8.52488
	SET_B->Q_N (RR)	0.07633	0.50515	5.68421
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.24386	0.75672	8.60063
	RESET_B->Q_N (FR)	0.15029	0.69054	8.55568
	SET_B->Q_N (RR)	0.07715	0.42741	5.73860

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)**	0.22103	0.64638	4.83851
	SET_B->Q_N (FF)	0.09221	0.54732	5.08551
sky130_fd_sc_hs__sdfbbn_2	**CLK_N->Q_N (FF)**	0.23408	0.63415	4.82450
	SET_B->Q_N (FF)	0.09748	0.52882	5.09081

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)	-0.01760	0.04759	2.85219
	setup	CLK_N (F)	0.10497	0.02139	-2.84379
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.01977	0.04559	2.84194
	setup	CLK_N (F)	0.10521	0.02501	-2.83427

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)	-0.13872	-0.16536	-0.45247
	setup	CLK_N (F)	0.15910	0.18025	0.46342
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15161	-0.17888	-0.50062
	setup	CLK_N (F)	0.17562	0.19552	0.51339

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)	-0.01760	0.04759	2.85219
	setup	CLK_N (F)	0.10497	0.02139	-2.84379
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.01977	0.04559	2.84194
	setup	CLK_N (F)	0.10521	0.02501	-2.83427

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)	-0.13872	-0.16536	-0.45247
	setup	CLK_N (F)	0.15910	0.18025	0.46342
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.15161	-0.17888	-0.50062
	setup	CLK_N (F)	0.17562	0.19552	0.51339

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)	-0.03174	0.03334	2.78230
	setup	CLK_N (F)	0.11799	0.03958	-2.76815
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03479	0.03156	2.77580
	setup	CLK_N (F)	0.12067	0.04005	-2.75758

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)	-0.17188	-0.20000	-0.61844
	setup	CLK_N (F)	0.21020	0.22606	0.65609
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.18986	-0.21421	-0.67000
	setup	CLK_N (F)	0.22453	0.24328	0.70911

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)	-0.03174	0.03334	2.78230
	hold	CLK_N (F)	-0.03386	0.03047	2.77805
	setup	CLK_N (F)	0.11733	0.03255	-2.77631
	setup	CLK_N (F)	0.11799	0.03958	-2.76815
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.03479	0.03156	2.77580
	hold	CLK_N (F)	-0.03552	0.02756	2.76600
	setup	CLK_N (F)	0.11589	0.03693	-2.76812
	setup	CLK_N (F)	0.12067	0.04005	-2.75758

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)	-0.18478	-0.20963	-0.64753
	hold	CLK_N (F)	-0.17188	-0.20000	-0.61844
	setup	CLK_N (F)	0.21020	0.22606	0.65609
	setup	CLK_N (F)	0.19906	0.21576	0.63167
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20055	-0.22531	-0.69801
	hold	CLK_N (F)	-0.18986	-0.21421	-0.67000
	setup	CLK_N (F)	0.22453	0.24328	0.70911
	setup	CLK_N (F)	0.21550	0.23176	0.67945

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)	-0.02486	0.03404	2.75975
	setup	CLK_N (F)	0.20321	0.10357	-2.63808
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02713	0.03191	2.75380
	setup	CLK_N (F)	0.22073	0.12000	-2.61786

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)	-0.06545	-0.05933	0.02257
	setup	CLK_N (F)	0.16468	0.17776	0.51752
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06615	-0.06408	0.01169
	setup	CLK_N (F)	0.17980	0.19562	0.56891

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)	-0.17826	-0.08600	2.64728
	hold	CLK_N (F)	-0.02486	0.03404	2.75975
	setup	CLK_N (F)	0.20321	0.10357	-2.63808
	setup	CLK_N (F)	0.10838	0.03428	-2.75030
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.19518	-0.10284	2.62668
	hold	CLK_N (F)	-0.02713	0.03191	2.75380
	setup	CLK_N (F)	0.22073	0.12000	-2.61786
	setup	CLK_N (F)	0.11032	0.03716	-2.74153

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)	-0.06545	-0.05933	0.02257
	hold	CLK_N (F)	-0.13906	-0.16255	-0.50797
	setup	CLK_N (F)	0.14814	0.12875	-0.01733
	setup	CLK_N (F)	0.16468	0.17776	0.51752
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.06615	-0.06408	0.01169
	hold	CLK_N (F)	-0.15472	-0.17800	-0.55684
	setup	CLK_N (F)	0.15123	0.13000	-0.00666
	setup	CLK_N (F)	0.17980	0.19562	0.56891

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)	0.07989	-0.01766	-2.94852
	removal	CLK_N (F)	0.01176	0.09419	2.96732
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.07772	-0.01851	-2.94715
	removal	CLK_N (F)	0.01532	0.09823	2.96906

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)	0.07621	-0.01801	-2.95225
	recovery	CLK_N (F)	0.07989	-0.01766	-2.94860
	recovery	CLK_N (F)	0.07601	-0.01774	-2.94852
	removal	CLK_N (F)	0.01176	0.09419	2.96732
	removal	CLK_N (F)	0.01176	0.09419	2.96732
	removal	CLK_N (F)	0.01176	0.09419	2.96732
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.07772	-0.01858	-2.95013
	recovery	CLK_N (F)	0.07761	-0.01851	-2.94715
	recovery	CLK_N (F)	0.07751	-0.01945	-2.95052
	removal	CLK_N (F)	0.01532	0.09760	2.96889
	removal	CLK_N (F)	0.01532	0.09760	2.96889
	removal	CLK_N (F)	0.01276	0.09823	2.96906

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 ()	0.14340	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.12574	0.58716	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.14782	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.13015	0.58716	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)	-0.02194	-0.13097	-2.88715
	removal	CLK_N (F)	0.03091	0.14288	3.13831
	hold	RESET_B (R)	-0.03642	-0.06546	-0.36882
	setup	RESET_B (R)	0.07164	0.09990	0.49723
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02021	-0.12700	-2.72042
	removal	CLK_N (F)	0.02646	0.13891	3.12180
	hold	RESET_B (R)	-0.04518	-0.08189	-0.43938
	setup	RESET_B (R)	0.07615	0.11291	0.58466

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)	-0.02198	-0.13097	-2.88974
	recovery	CLK_N (F)	-0.02194	-0.13097	-2.88715
	recovery	CLK_N (F)	-0.02197	-0.13097	-2.88978
	removal	CLK_N (F)	0.03091	0.14288	3.13831
	removal	CLK_N (F)	0.03091	0.14288	3.13831
	removal	CLK_N (F)	0.03091	0.14288	3.13724
	hold	RESET_B (R)	-0.03642	-0.06563	-0.36882
	hold	RESET_B (R)	-0.03651	-0.06546	-0.37041
	setup	RESET_B (R)	0.07164	0.09990	0.49401
	setup	RESET_B (R)	0.05144	0.08429	0.49723
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02021	-0.12700	-2.72044
	recovery	CLK_N (F)	-0.02021	-0.12700	-2.72053
	recovery	CLK_N (F)	-0.02021	-0.12700	-2.72042
	removal	CLK_N (F)	0.02646	0.13891	3.12180
	removal	CLK_N (F)	0.02646	0.13891	3.12073
	removal	CLK_N (F)	0.02646	0.13891	3.12180
	hold	RESET_B (R)	-0.04518	-0.08581	-0.44405
	hold	RESET_B (R)	-0.04622	-0.08189	-0.43938
	setup	RESET_B (R)	0.07615	0.11291	0.58288
	setup	RESET_B (R)	0.05657	0.10613	0.58466

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 ()	0.11028	0.58716	16.50020
	min_pulse_width	SET_B ()	0.09262	0.58716	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.12353	0.58716	16.50020
	min_pulse_width	SET_B ()	0.10587	0.58716	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 ()	0.13236	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.09924	0.58716	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.13457	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.10366	0.58716	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 ()	0.11691	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.14340	0.58716	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.13015	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.14561	0.58716	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	0.01372	0.01568	0.05111
	CLK_N	0.01591	0.01789	0.05330
	SET_B	0.01428	0.01740	0.08364
	SET_B	0.01844	0.02154	0.08778
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01697	0.01846	0.05395
	CLK_N	0.01907	0.02060	0.05604
	SET_B	0.01733	0.02037	0.08672
	SET_B	0.02137	0.02432	0.09075

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01434	0.01649	0.05041
	CLK_N	0.01623	0.01838	0.05230
	RESET_B	0.01729	0.01851	0.03964
	RESET_B	0.01851	0.01973	0.04067
	SET_B	0.01825	0.01933	0.08254
	SET_B	0.01409	0.01516	0.07838
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01697	0.01926	0.05416
	CLK_N	0.01891	0.02119	0.05529
	RESET_B	0.02033	0.02168	0.04322
	RESET_B	0.02159	0.02294	0.04444
	SET_B	0.02118	0.02233	0.08515
	SET_B	0.01712	0.01827	0.08120

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01436	0.01650	0.05112
	CLK_N	0.01625	0.01839	0.05285
	RESET_B	0.01731	0.01853	0.03972
	RESET_B	0.01853	0.01974	0.04094
	SET_B	0.01826	0.01937	0.08282
	SET_B	0.01410	0.01518	0.07871
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01699	0.01930	0.05375
	CLK_N	0.01892	0.02122	0.05568
	RESET_B	0.02035	0.02178	0.04344
	RESET_B	0.02160	0.02299	0.04469
	SET_B	0.02119	0.02232	0.08546
	SET_B	0.01714	0.01827	0.08145

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01370	0.01566	0.05135
	CLK_N	0.01589	0.01786	0.05318
	SET_B	0.01424	0.01735	0.08299
	SET_B	0.01840	0.02148	0.08711
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01695	0.01843	0.05417
	CLK_N	0.01904	0.02058	0.05558
	SET_B	0.01729	0.02026	0.08665
	SET_B	0.02133	0.02426	0.09007

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)**	0.00128	0.00129	0.00128
	(CLK_N * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01189	0.01258	0.04730
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00920	0.00987	0.04460
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00819	0.00880	0.04010
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00503	0.00563	0.03694
	(CLK_N * !SCD * SCE)	0.00051	0.00052	0.00051
	(CLK_N * !SCD * SCE)	-0.00141	-0.00144	-0.00145
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00691	0.00751	0.03876
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00379	0.00437	0.03563
	(!CLK_N * SCD * SCE)	0.00128	0.00130	0.00129
	(!CLK_N * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(!CLK_N * !SCE)	0.00465	0.00569	0.03835
	(!CLK_N * !SCE)	0.00153	0.00255	0.03522
	(!CLK_N * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK_N * !SCD * SCE)	-0.00141	-0.00144	-0.00146

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00131	0.00133	0.00131
	(CLK_N * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01204	0.01270	0.04696
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00926	0.00991	0.04418
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00835	0.00893	0.03979
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00514	0.00571	0.03657
	(CLK_N * !SCD * SCE)	0.00054	0.00055	0.00053
	(CLK_N * !SCD * SCE)	-0.00141	-0.00145	-0.00145
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00698	0.00755	0.03836
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00380	0.00436	0.03518
	(!CLK_N * SCD * SCE)	0.00131	0.00133	0.00131
	(!CLK_N * SCD * SCE)	-0.00057	-0.00057	-0.00057
	(!CLK_N * !SCE)	0.00459	0.00559	0.03788
	(!CLK_N * !SCE)	0.00142	0.00240	0.03470
	(!CLK_N * !SCD * SCE)	0.00053	0.00054	0.00053
	(!CLK_N * !SCD * SCE)	-0.00142	-0.00145	-0.00146

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)**	-0.00121	-0.00124	-0.00126
	(CLK_N * SCD * SCE)	0.00062	0.00062	0.00060
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01117	0.01249	0.04774
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01387	0.01518	0.05044
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00335	0.00455	0.03585
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00653	0.00772	0.03902
	(CLK_N * !SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK_N * !SCD * SCE)	0.00148	0.00149	0.00149
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00453	0.00578	0.03719
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00766	0.00891	0.04032
	(!CLK_N * SCD * SCE)	-0.00120	-0.00123	-0.00125
	(!CLK_N * SCD * SCE)	0.00062	0.00063	0.00060
	(!CLK_N * !SCE)	0.00214	0.00357	0.03616
	(!CLK_N * !SCE)	0.00525	0.00669	0.03930
	(!CLK_N * !SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK_N * !SCD * SCE)	0.00148	0.00149	0.00148

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00125	-0.00128	-0.00129
	(CLK_N * SCD * SCE)	0.00061	0.00062	0.00059
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01200	0.01329	0.04806
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01479	0.01606	0.05084
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00363	0.00479	0.03564
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00686	0.00802	0.03886
	(CLK_N * !SCD * SCE)	-0.00048	-0.00049	-0.00049
	(CLK_N * !SCD * SCE)	0.00148	0.00149	0.00149
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00490	0.00612	0.03708
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00809	0.00930	0.04026
	(!CLK_N * SCD * SCE)	-0.00124	-0.00128	-0.00129
	(!CLK_N * SCD * SCE)	0.00061	0.00062	0.00060
	(!CLK_N * !SCE)	0.00235	0.00377	0.03595
	(!CLK_N * !SCE)	0.00554	0.00695	0.03914
	(!CLK_N * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK_N * !SCD * SCE)	0.00147	0.00148	0.00148

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)**	0.01001	0.01029	0.02996
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00576	0.00603	0.02573
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01369	0.01403	0.03587
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00991	0.01026	0.03210
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00873	0.00900	0.02859
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00452	0.00478	0.02439
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01070	0.01094	0.03031
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00635	0.00658	0.02598
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01439	0.01472	0.03624
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01050	0.01082	0.03237
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00942	0.00966	0.02895
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00510	0.00533	0.02464
	(!CLK_N * D * SCE)	0.00648	0.00684	0.02737
	(!CLK_N * D * SCE)	0.00227	0.00262	0.02316
	(!CLK_N * !D * SCE)	0.00717	0.00748	0.02766
	(!CLK_N * !D * SCE)	0.00285	0.00315	0.02336
	!SCE	0.00115	0.00100	0.00098
	!SCE	-0.00102	-0.00120	-0.00121

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.01011	0.01038	0.02978
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00589	0.00615	0.02556
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01378	0.01412	0.03567
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00999	0.01032	0.03189
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00874	0.00901	0.02832
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00456	0.00481	0.02413
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.01080	0.01103	0.03012
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00647	0.00669	0.02581
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01447	0.01478	0.03604
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01057	0.01088	0.03216
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00943	0.00965	0.02867
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00513	0.00535	0.02439
	(!CLK_N * D * SCE)	0.00636	0.00671	0.02698
	(!CLK_N * D * SCE)	0.00217	0.00252	0.02280
	(!CLK_N * !D * SCE)	0.00704	0.00734	0.02728
	(!CLK_N * !D * SCE)	0.00275	0.00305	0.02299
	!SCE	0.00114	0.00099	0.00097
	!SCE	-0.00102	-0.00121	-0.00123

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)**	0.00480	0.00502	0.02443
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00904	0.00929	0.02867
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01261	0.01290	0.03535
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01640	0.01669	0.03912
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00598	0.00621	0.02577
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01018	0.01044	0.02996
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00439	0.00464	0.02426
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00873	0.00899	0.02860
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01224	0.01255	0.03498
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01612	0.01644	0.03885
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00556	0.00583	0.02560
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00987	0.01015	0.02990
	(!CLK_N * D * SCE)	0.00360	0.00390	0.02417
	(!CLK_N * D * SCE)	0.00781	0.00812	0.02837
	(!CLK_N * !D * SCE)	0.00319	0.00352	0.02405
	(!CLK_N * !D * SCE)	0.00749	0.00783	0.02835
	!SCE	-0.00093	-0.00096	-0.00096
	!SCE	0.00123	0.00124	0.00124

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00508	0.00530	0.02441
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00931	0.00953	0.02861
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01351	0.01376	0.03585
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01729	0.01755	0.03963
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00635	0.00659	0.02583
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01055	0.01078	0.03000
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00467	0.00492	0.02422
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00900	0.00925	0.02854
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01312	0.01341	0.03594
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01700	0.01730	0.03982
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00594	0.00620	0.02566
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01023	0.01050	0.02993
	(!CLK_N * D * SCE)	0.00383	0.00413	0.02412
	(!CLK_N * D * SCE)	0.00803	0.00833	0.02829
	(!CLK_N * !D * SCE)	0.00342	0.00374	0.02399
	(!CLK_N * !D * SCE)	0.00771	0.00804	0.02827
	!SCE	-0.00093	-0.00095	-0.00095
	!SCE	0.00124	0.00125	0.00125

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)	0.00511	0.00678	0.04978
	(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)	-0.00048	0.00116	0.04416
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01820	0.01980	0.06472
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01386	0.01540	0.06032
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01037	0.01199	0.05657
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00649	0.00808	0.05264
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01156	0.01318	0.05780
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00765	0.00921	0.05383
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01274	0.01508	0.08036
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00573	0.00804	0.07336
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01643	0.01886	0.08694
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00988	0.01229	0.08040
	(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)	0.00500	0.00677	0.04967
	(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)	-0.00019	0.00155	0.04446
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01146	0.01379	0.07899
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00448	0.00678	0.07202
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00523	0.00691	0.04988
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00036	0.00128	0.04426
	(!CLK_N * D * !SCD)	0.00941	0.01092	0.05568
	(!CLK_N * D * !SCD)	0.00550	0.00696	0.05170
	(!CLK_N * !D * SCD)	0.00932	0.01179	0.07794
	(!CLK_N * !D * SCD)	0.00234	0.00479	0.07097

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)	0.00519	0.00688	0.04997
	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00047	0.00117	0.04428
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01909	0.02074	0.06569
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01474	0.01634	0.06126
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01070	0.01236	0.05693
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00678	0.00838	0.05294
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01198	0.01364	0.05832
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00803	0.00963	0.05429
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01295	0.01527	0.08035
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00585	0.00814	0.07325
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01663	0.01902	0.08695
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00996	0.01234	0.08028
	(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)	0.00506	0.00684	0.04984
	(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)	-0.00020	0.00154	0.04456
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01158	0.01389	0.07889
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00451	0.00680	0.07183
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00530	0.00699	0.05007
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00036	0.00129	0.04437
	(!CLK_N * D * !SCD)	0.00970	0.01123	0.05609
	(!CLK_N * D * !SCD)	0.00574	0.00722	0.05207
	(!CLK_N * !D * SCD)	0.00931	0.01180	0.07775
	(!CLK_N * !D * SCD)	0.00224	0.00469	0.07069

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	-0.00066	0.00188	0.04470
	(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)	0.00491	0.00747	0.05027
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01113	0.01355	0.05686
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01553	0.01795	0.06108
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00744	0.00985	0.05311
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01137	0.01379	0.05689
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00616	0.00857	0.05183
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01013	0.01256	0.05563
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00331	0.00593	0.06985
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01032	0.01295	0.07687
sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.01111	0.01377	0.08025
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01764	0.02030	0.08678
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00032	0.00196	0.04481
	(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)	0.00488	0.00720	0.05002
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00449	0.00713	0.07120
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01146	0.01412	0.07819
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00076	0.00160	0.04460
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00481	0.00722	0.05018
	(!CLK_N * D * !SCD)	0.00383	0.00615	0.05000
	(!CLK_N * D * !SCD)	0.00779	0.01014	0.05381
	(!CLK_N * !D * SCD)	0.00198	0.00475	0.07010
	(!CLK_N * !D * SCD)	0.00894	0.01174	0.07710

	(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)	-0.00074	0.00179	0.04471
	(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)	0.00491	0.00748	0.05037
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01118	0.01359	0.05694
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01559	0.01800	0.06118
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00750	0.00993	0.05319
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.01147	0.01389	0.05701
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00613	0.00855	0.05182
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01014	0.01257	0.05567
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00355	0.00617	0.06977
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01064	0.01329	0.07688
sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)**	0.01190	0.01453	0.08073
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01856	0.02121	0.08741
	(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)	-0.00039	0.00191	0.04483
	(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)	0.00489	0.00721	0.05011
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00482	0.00746	0.07120
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01188	0.01454	0.07827
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00086	0.00150	0.04460
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00479	0.00719	0.05026
	(!CLK_N * D * !SCD)	0.00366	0.00601	0.04988
	(!CLK_N * D * !SCD)	0.00767	0.01003	0.05372
	(!CLK_N * !D * SCD)	0.00215	0.00493	0.07000
	(!CLK_N * !D * SCD)	0.00921	0.01201	0.07709

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)	0.01197	0.01284	0.05569
	(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)	0.00923	0.01008	0.05294
	(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)	0.00701	0.00807	0.04923
	(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)	0.00384	0.00488	0.04605
	(!SET_B * Q * !Q_N)	0.00702	0.00820	0.04979
	(!SET_B * Q * !Q_N)	0.00376	0.00495	0.04653

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)**	0.01174	0.01258	0.05536
	(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)	0.00906	0.00990	0.05268
	(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)	0.00673	0.00779	0.04889
	(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)	0.00365	0.00470	0.04581
	(!SET_B * Q * !Q_N)	0.00690	0.00808	0.04963
	(!SET_B * Q * !Q_N)	0.00376	0.00492	0.04648

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)**	0.01034	0.01238	0.05548
	(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)	0.01308	0.01512	0.05823
	(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)	0.00341	0.00522	0.04630
	(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)	0.00658	0.00840	0.04948
	(!SET_B * Q * !Q_N)	0.00221	0.00410	0.04548
	(!SET_B * Q * !Q_N)	0.00547	0.00736	0.04874

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)**	0.01093	0.01300	0.05594
	(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)	0.01361	0.01568	0.05863
	(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)	0.00359	0.00561	0.04641
	(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)	0.00668	0.00870	0.04950
	(!SET_B * Q * !Q_N)	0.00223	0.00412	0.04544
	(!SET_B * Q * !Q_N)	0.00541	0.00729	0.04860

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)**	0.00330	0.00335	0.00331
	(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)	-0.00385	-0.00388	-0.00385
	(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)	0.01111	0.01236	0.07395
	(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)	0.00339	0.00458	0.06618

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)**	0.00339	0.00344	0.00341
	(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)	-0.00371	-0.00374	-0.00372
	(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)	0.01167	0.01287	0.07419
	(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)	0.00401	0.00515	0.06649

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)**	-0.00322	-0.00330	-0.00328
	(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)	0.00388	0.00392	0.00388
	(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)	0.00154	0.00455	0.06753
	(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)	0.00925	0.01234	0.07528

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)**	-0.00335	-0.00340	-0.00338
	(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)	0.00377	0.00378	0.00375
	(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)	0.00137	0.00438	0.06722
	(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)	0.00906	0.01208	0.07491

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)	0.01972	0.02210	0.09362
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01606	0.01843	0.08994
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01210	0.01419	0.08355
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00801	0.01007	0.07945
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01982	0.02220	0.09355
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01615	0.01852	0.08987
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01218	0.01427	0.08363
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00809	0.01015	0.07953
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02098	0.02307	0.09467
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01647	0.01855	0.09017
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01179	0.01389	0.08368
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00770	0.00978	0.07959
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01304	0.01516	0.08669
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00896	0.01108	0.08264
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01474	0.01710	0.08855
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01064	0.01299	0.08445
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01482	0.01718	0.08863
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01072	0.01307	0.08454
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01973	0.02211	0.09362
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01606	0.01843	0.08994
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01210	0.01419	0.08355
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00801	0.01007	0.07945
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02104	0.02314	0.09461
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01652	0.01859	0.09008
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02098	0.02307	0.09454
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01646	0.01854	0.09002
	(!D * !SCE * SET_B * !Q * Q_N)	0.01187	0.01397	0.08362
	(!D * !SCE * SET_B * !Q * Q_N)	0.00778	0.00986	0.07953
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01312	0.01524	0.08667
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00904	0.01116	0.08259
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01179	0.01389	0.08368
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00770	0.00978	0.07960
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01304	0.01517	0.08673
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00897	0.01109	0.08265
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01474	0.01710	0.08855
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01064	0.01299	0.08445

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02001	0.02238	0.09379
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01638	0.01873	0.09015
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01204	0.01413	0.08352
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00801	0.01007	0.07949
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.02009	0.02247	0.09370
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01647	0.01882	0.09008
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01212	0.01420	0.08359
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00808	0.01014	0.07956
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02143	0.02353	0.09507
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01701	0.01910	0.09065
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01178	0.01388	0.08360
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00776	0.00984	0.07957
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01295	0.01507	0.08658
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00894	0.01105	0.08258
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01490	0.01726	0.08863
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01087	0.01321	0.08459
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01497	0.01733	0.08853
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01095	0.01328	0.08449
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.02001	0.02239	0.09379
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01638	0.01874	0.09015
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01205	0.01413	0.08351
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00801	0.01007	0.07948
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02149	0.02355	0.09497
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01705	0.01913	0.09054
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02143	0.02352	0.09492
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01700	0.01907	0.09049
	(!D * !SCE * SET_B * !Q * Q_N)	0.01186	0.01396	0.08353
	(!D * !SCE * SET_B * !Q * Q_N)	0.00783	0.00991	0.07951
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01303	0.01515	0.08653
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00901	0.01113	0.08251
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01178	0.01389	0.08360
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00776	0.00984	0.07957
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01296	0.01509	0.08661
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00894	0.01106	0.08261
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01490	0.01726	0.08861
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01087	0.01321	0.08458

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)**	0.00936	0.01247	0.08137
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01346	0.01658	0.08547
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00928	0.01239	0.08128
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01338	0.01650	0.08539
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00978	0.01282	0.08162
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01385	0.01693	0.08571
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01295	0.01605	0.08680
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01700	0.02013	0.09087
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01303	0.01604	0.08455
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01713	0.02014	0.08865
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01295	0.01596	0.08448
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01705	0.02006	0.08858
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00936	0.01247	0.08137
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01346	0.01658	0.08547
	(!D * !SCE * SET_B * !Q * Q_N)	0.00969	0.01273	0.08154
	(!D * !SCE * SET_B * !Q * Q_N)	0.01376	0.01685	0.08562
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01286	0.01596	0.08671
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01692	0.02004	0.09078
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00978	0.01282	0.08163
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01385	0.01693	0.08571
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01294	0.01605	0.08677
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01699	0.02013	0.09084
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01304	0.01605	0.08455
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01714	0.02014	0.08865

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00937	0.01244	0.08125
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01341	0.01650	0.08528
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00929	0.01237	0.08117
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01333	0.01642	0.08521
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00972	0.01273	0.08147
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01376	0.01678	0.08550
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01295	0.01603	0.08673
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01697	0.02006	0.09074
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01322	0.01619	0.08459
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01726	0.02023	0.08864
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01315	0.01612	0.08452
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01719	0.02016	0.08856
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00937	0.01244	0.08125
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01341	0.01650	0.08528
	(!D * !SCE * SET_B * !Q * Q_N)	0.00964	0.01266	0.08139
	(!D * !SCE * SET_B * !Q * Q_N)	0.01368	0.01671	0.08542
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01287	0.01595	0.08664
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01689	0.01998	0.09066
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00972	0.01273	0.08147
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01376	0.01678	0.08550
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01294	0.01603	0.08670
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01696	0.02006	0.09071
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01323	0.01619	0.08459
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01726	0.02024	0.08863

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT						OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**0**	**1**	**x**	**0**	**1**
x	**x**	**x**	**1**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfbbp_1	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)						Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfbbp_1	0.00193	0.00175	0.00398	0.00166	0.00606	0.00279	1.38497	1.29622

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbp_1	0.00000	1.36335	2.57869

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)	0.25724	0.65687	5.51523
	SET_B->Q (FR)	0.12019	0.74000	8.60316

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.20549	0.36574	1.47310
	RESET_B->Q (FF)	0.16695	0.55190	4.58658
	SET_B->Q (RF)	0.10151	0.27505	1.43265

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)	0.18325	0.59774	5.49529
	RESET_B->Q_N (FR)	0.14558	0.79007	8.61806
	SET_B->Q_N (RR)	0.07968	0.51466	5.72996

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)	0.21497	0.42442	1.48523
	SET_B->Q_N (FF)	0.08209	0.51204	4.81899

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)	-0.05624	-0.11446	-0.70683
	setup	CLK (R)	0.08177	0.12869	0.72019

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)	-0.13060	-0.26133	-3.72098
	setup	CLK (R)	0.16150	0.28956	3.72811

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)	-0.05624	-0.11446	-0.70683
	setup	CLK (R)	0.08177	0.12869	0.72019

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)	-0.13060	-0.26133	-3.72098
	setup	CLK (R)	0.16150	0.28956	3.72811

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)	-0.06874	-0.13006	-0.68188
	setup	CLK (R)	0.09934	0.14790	0.70333

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)	-0.17166	-0.30581	-3.87295
	setup	CLK (R)	0.21651	0.34216	3.88096

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)	-0.06874	-0.13006	-0.68639
	hold	CLK (R)	-0.06977	-0.13423	-0.68188
	setup	CLK (R)	0.09590	0.14441	0.70333
	setup	CLK (R)	0.09934	0.14790	0.69489

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)	-0.18290	-0.31470	-3.87295
	hold	CLK (R)	-0.17166	-0.30581	-3.87310
	setup	CLK (R)	0.21651	0.34216	3.88039
	setup	CLK (R)	0.20692	0.33553	3.88096

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)	-0.06125	-0.13011	-0.39074
	setup	CLK (R)	0.20906	0.21910	0.73666

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)	-0.10327	-0.23192	-3.39159
	setup	CLK (R)	0.16587	0.28841	3.72397

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)	-0.17613	-0.18956	-0.39074
	hold	CLK (R)	-0.06125	-0.13011	-0.72290
	setup	CLK (R)	0.20906	0.21910	0.40347
	setup	CLK (R)	0.09005	0.14236	0.73666

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)	-0.10327	-0.23192	-3.39159
	hold	CLK (R)	-0.13327	-0.25859	-3.71500
	setup	CLK (R)	0.13280	0.24669	3.40500
	setup	CLK (R)	0.16587	0.28841	3.72397

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)	0.05567	0.06731	0.18885
	removal	CLK (R)	-0.02569	-0.03868	-0.14864

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)	0.05567	0.06725	0.18885
	recovery	CLK (R)	0.05545	0.06731	0.18878
	recovery	CLK (R)	0.05551	0.06731	0.18879
	removal	CLK (R)	-0.02569	-0.03868	-0.14864
	removal	CLK (R)	-0.02569	-0.03868	-0.14864
	removal	CLK (R)	-0.02569	-0.03868	-0.14864

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 ()	0.12574	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.13236	0.58716	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)	0.00107	0.00661	0.65692
	removal	CLK (R)	0.04932	0.06747	0.05126
	hold	RESET_B (R)	-0.03683	-0.07173	-0.43524
	setup	RESET_B (R)	0.06755	0.10080	0.58134

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)	0.00036	0.00400	0.65649
	recovery	CLK (R)	0.00107	0.00661	0.65674
	recovery	CLK (R)	0.00030	0.00400	0.65692
	removal	CLK (R)	0.04932	0.06747	0.05126
	removal	CLK (R)	0.04932	0.06747	0.05126
	removal	CLK (R)	0.04932	0.06747	0.05126
	hold	RESET_B (R)	-0.03872	-0.07173	-0.44116
	hold	RESET_B (R)	-0.03683	-0.07272	-0.43524
	setup	RESET_B (R)	0.06304	0.09265	0.58134
	setup	RESET_B (R)	0.06755	0.10080	0.54770

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 ()	0.08158	0.58716	16.50020
	min_pulse_width	SET_B ()	0.09483	0.58716	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 ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.09041	0.58716	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 ()	0.11691	0.58716	16.50020
	min_pulse_width	CLK ()	0.15665	0.58716	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	0.01591	0.01717	0.05231
	CLK	0.01383	0.01501	0.05028
	SET_B	0.01389	0.01730	0.08582
	SET_B	0.01834	0.02174	0.09026

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01551	0.01682	0.05336
	CLK	0.01321	0.01453	0.05113
	RESET_B	0.01585	0.01701	0.03801
	RESET_B	0.01696	0.01812	0.03865
	SET_B	0.01729	0.01831	0.08364
	SET_B	0.01282	0.01383	0.07920

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01553	0.01683	0.05374
	CLK	0.01323	0.01455	0.05153
	RESET_B	0.01587	0.01705	0.03801
	RESET_B	0.01698	0.01815	0.03896
	SET_B	0.01731	0.01832	0.08400
	SET_B	0.01284	0.01385	0.07958

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01589	0.01705	0.05191
	CLK	0.01380	0.01498	0.04988
	SET_B	0.01385	0.01723	0.08522
	SET_B	0.01830	0.02167	0.08959

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00129	0.00131	0.00130
	(CLK * SCD * SCE)	-0.00055	-0.00056	-0.00055
	(CLK * !SCE)	0.00452	0.00562	0.03837
	(CLK * !SCE)	0.00138	0.00246	0.03522
	(CLK * !SCD * SCE)	0.00051	0.00052	0.00051
	(CLK * !SCD * SCE)	-0.00141	-0.00144	-0.00145
	(!CLK * SCD * SCE)	0.00129	0.00130	0.00129
	(!CLK * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01184	0.01256	0.04724
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00890	0.00962	0.04429
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00782	0.00846	0.03956
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00439	0.00502	0.03614
	(!CLK * !SCD * SCE)	0.00052	0.00053	0.00051
	(!CLK * !SCD * SCE)	-0.00140	-0.00144	-0.00145
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00669	0.00731	0.03838
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00329	0.00390	0.03498

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00121	-0.00124	-0.00126
	(CLK * SCD * SCE)	0.00062	0.00062	0.00060
	(CLK * !SCE)	0.00102	0.00254	0.03515
	(CLK * !SCE)	0.00418	0.00569	0.03829
	(CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !SCD * SCE)	0.00147	0.00149	0.00148
	(!CLK * SCD * SCE)	-0.00123	-0.00125	-0.00127
	(!CLK * SCD * SCE)	0.00061	0.00062	0.00059
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00903	0.01041	0.04575
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01198	0.01335	0.04870
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00321	0.00443	0.03548
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00665	0.00785	0.03891
	(!CLK * !SCD * SCE)	-0.00046	-0.00046	-0.00046
	(!CLK * !SCD * SCE)	0.00148	0.00148	0.00148
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00420	0.00547	0.03665
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00762	0.00888	0.04004

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00637	0.00676	0.02724
	(CLK * D * SCE)	0.00214	0.00253	0.02302
	(CLK * !D * SCE)	0.00706	0.00740	0.02754
	(CLK * !D * SCE)	0.00273	0.00305	0.02323
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00966	0.00993	0.02943
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00515	0.00542	0.02494
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01366	0.01401	0.03575
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00965	0.00999	0.03175
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00853	0.00880	0.02821
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00405	0.00431	0.02373
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01035	0.01057	0.02977
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00574	0.00598	0.02518
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01436	0.01469	0.03615
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01023	0.01056	0.03203
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00922	0.00944	0.02855
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00463	0.00486	0.02398
	!SCE	0.00117	0.00101	0.00100
	!SCE	-0.00101	-0.00119	-0.00121

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00249	0.00281	0.02304
	(CLK * D * SCE)	0.00672	0.00705	0.02725
	(CLK * !D * SCE)	0.00208	0.00245	0.02295
	(CLK * !D * SCE)	0.00641	0.00677	0.02726
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00463	0.00486	0.02406
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00914	0.00936	0.02855
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01050	0.01081	0.03333
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01452	0.01484	0.03732
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00562	0.00586	0.02522
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.01011	0.01034	0.02968
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00423	0.00448	0.02390
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00884	0.00909	0.02848
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01014	0.01052	0.03296
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01425	0.01464	0.03707
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00522	0.00549	0.02506
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00981	0.01007	0.02962
	!SCE	-0.00093	-0.00095	-0.00096
	!SCE	0.00125	0.00126	0.00126

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)	0.00508	0.00669	0.04906
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00043	0.00117	0.04354
	(CLK * D * !SCD)	0.00818	0.00963	0.05381
	(CLK * D * !SCD)	0.00440	0.00579	0.04994
	(CLK * !D * SCD)	0.00906	0.01155	0.07701
	(CLK * !D * SCD)	0.00216	0.00461	0.07013
	(!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)	0.00528	0.00689	0.04925
	(!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)	-0.00023	0.00136	0.04373
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01622	0.01779	0.06217
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01222	0.01375	0.05810
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01036	0.01196	0.05588
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00685	0.00839	0.05231
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.01137	0.01296	0.05696
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00783	0.00937	0.05337
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01255	0.01483	0.07933
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00538	0.00764	0.07216
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01657	0.01894	0.08630
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00987	0.01222	0.07961
	(!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)	0.00518	0.00690	0.04918
	(!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)	0.00009	0.00178	0.04406
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01143	0.01370	0.07813
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00427	0.00651	0.07098

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)	-0.00056	0.00193	0.04414
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00494	0.00745	0.04962
	(CLK * D * !SCD)	0.00391	0.00617	0.04949
	(CLK * D * !SCD)	0.00774	0.01000	0.05317
	(CLK * !D * SCD)	0.00108	0.00392	0.06879
	(CLK * !D * SCD)	0.00796	0.01083	0.07569
	(!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)	-0.00077	0.00171	0.04392
	(!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)	0.00473	0.00723	0.04940
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01097	0.01332	0.05604
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01502	0.01737	0.05992
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00695	0.00930	0.05193
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01052	0.01288	0.05533
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00583	0.00818	0.05078
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00941	0.01176	0.05421
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00306	0.00568	0.06880
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01022	0.01287	0.07598
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00886	0.01156	0.07740
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01553	0.01826	0.08407
	(!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)	-0.00044	0.00181	0.04400
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	0.00467	0.00694	0.04912
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00405	0.00670	0.06998
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.01119	0.01384	0.07713

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)	0.00592	0.00708	0.04809
	(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)	0.00329	0.00443	0.04544
	(!SET_B * Q * !Q_N)	0.00646	0.00777	0.04914
	(!SET_B * Q * !Q_N)	0.00375	0.00505	0.04644
	(!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)	0.01129	0.01217	0.05482
	(!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)	0.00913	0.01001	0.05265

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)	0.00322	0.00527	0.04580
	(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)	0.00586	0.00790	0.04844
	(!SET_B * Q * !Q_N)	0.00149	0.00363	0.04447
	(!SET_B * Q * !Q_N)	0.00421	0.00635	0.04719
	(!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)	0.00847	0.01047	0.05319
	(!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)	0.01064	0.01264	0.05535

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)	0.00345	0.00349	0.00346
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SCE * Q * !Q_N)	-0.00462	-0.00465	-0.00464
	(!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)	0.00896	0.01048	0.07380
	(!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)	0.00026	0.00172	0.06508

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)	-0.00339	-0.00345	-0.00344
	(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)	0.00470	0.00469	0.00467
	(!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)	0.00202	0.00537	0.06963
	(!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)	0.01074	0.01413	0.07837

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)**	0.01397	0.01591	0.08494
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00961	0.01152	0.08056
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01419	0.01614	0.08517
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00983	0.01175	0.08079
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01384	0.01580	0.08499
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00948	0.01141	0.08062
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01771	0.01969	0.08892
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01308	0.01503	0.08428
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01682	0.01867	0.08881
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01272	0.01454	0.08469
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01706	0.01903	0.08904
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01296	0.01489	0.08492
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01396	0.01591	0.08494
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00961	0.01152	0.08056
	(!D * !SCE * SET_B * !Q * Q_N)	0.01407	0.01603	0.08522
	(!D * !SCE * SET_B * !Q * Q_N)	0.00971	0.01164	0.08085
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01794	0.01992	0.08915
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01330	0.01526	0.08450
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01384	0.01581	0.08499
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00948	0.01141	0.08062
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01772	0.01969	0.08891
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01309	0.01503	0.08426
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01683	0.01880	0.08881
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01273	0.01467	0.08469

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)	0.01502	0.01799	0.08803
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01959	0.02258	0.09262
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00755	0.01065	0.07925
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01191	0.01503	0.08362
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01480	0.01777	0.08781
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01937	0.02237	0.09239
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00731	0.01041	0.07902
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01168	0.01480	0.08339
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01663	0.01991	0.08978
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02083	0.02412	0.09400
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00776	0.01080	0.07931
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01213	0.01518	0.08367
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01072	0.01402	0.08350
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01535	0.01867	0.08815
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00955	0.01260	0.08245
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01366	0.01673	0.08657
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00932	0.01236	0.08222
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01343	0.01649	0.08633
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01502	0.01799	0.08807
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01959	0.02258	0.09266
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00755	0.01065	0.07925
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01191	0.01503	0.08362
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01638	0.01965	0.08955
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.02056	0.02385	0.09374
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01664	0.01991	0.08979
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.02083	0.02413	0.09400
	(!D * !SCE * SET_B * !Q * Q_N)	0.00753	0.01057	0.07908
	(!D * !SCE * SET_B * !Q * Q_N)	0.01190	0.01494	0.08344
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01049	0.01379	0.08321
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01513	0.01845	0.08786
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00776	0.01080	0.07930
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01213	0.01518	0.08368
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01074	0.01404	0.08345
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01538	0.01868	0.08809
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00955	0.01259	0.08245
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01366	0.01673	0.08656

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**0**	**1**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrbp_1	46.35360
sky130_fd_sc_hs__sdfrbp_2	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfrbp_1	0.00184	0.00189	0.00416	0.00573	0.00293	1.42762	1.44767
sky130_fd_sc_hs__sdfrbp_2	0.00186	0.00192	0.00427	0.00581	0.00287	2.85836	2.85787

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.73304	1.49196
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.67802	1.19678

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)	0.15666	0.54590	5.36612
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.17902	0.48671	5.73035

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.14821	0.30830	1.42065
	RESET_B->Q (FF)	0.21221	0.63668	5.01206
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.16768	0.30082	1.58122
	RESET_B->Q (FF)	0.23423	0.63413	5.19811

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)	0.12531	0.52043	5.30734
	RESET_B->Q_N (FR)	0.18912	0.84543	8.89095
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.12690	0.43558	5.30867
	RESET_B->Q_N (FR)	0.19342	0.76627	8.92156

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)	0.11728	0.33703	1.71367
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.12185	0.31090	1.59165

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)	-0.05884	-0.14088	-0.99093
	setup	CLK (R)	0.10058	0.16843	1.00262
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06281	-0.14685	-1.01717
	setup	CLK (R)	0.10114	0.17463	1.02860

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)	-0.08807	-0.22419	-3.67199
	setup	CLK (R)	0.15464	0.29009	3.70790
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09675	-0.23337	-3.70749
	setup	CLK (R)	0.16168	0.29916	3.74072

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)	-0.05884	-0.14088	-0.99093
	hold	CLK (R)	-0.05898	-0.14088	-0.99102
	setup	CLK (R)	0.10053	0.16824	1.00262
	setup	CLK (R)	0.10058	0.16843	1.00243
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06281	-0.14685	-1.01717
	hold	CLK (R)	-0.06284	-0.14685	-1.01726
	setup	CLK (R)	0.10076	0.17463	1.02860
	setup	CLK (R)	0.10114	0.17463	1.02860

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)	-0.08807	-0.22419	-3.67199
	hold	CLK (R)	-0.08813	-0.22419	-3.67201
	setup	CLK (R)	0.15464	0.29009	3.70786
	setup	CLK (R)	0.15464	0.29009	3.70790
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.09675	-0.23346	-3.70749
	hold	CLK (R)	-0.09683	-0.23337	-3.70758
	setup	CLK (R)	0.16168	0.29916	3.74070
	setup	CLK (R)	0.16168	0.29916	3.74072

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)	-0.07347	-0.15170	-0.91241
	setup	CLK (R)	0.11352	0.18063	0.93212
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07339	-0.15465	-0.94086
	setup	CLK (R)	0.11303	0.18256	0.95990

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)	-0.11245	-0.25608	-3.87559
	setup	CLK (R)	0.19817	0.33414	3.90326
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12186	-0.26510	-3.91094
	setup	CLK (R)	0.20624	0.34195	3.93923

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)	-0.07347	-0.15170	-0.92295
	hold	CLK (R)	-0.07361	-0.15675	-0.91241
	setup	CLK (R)	0.11100	0.17663	0.93212
	setup	CLK (R)	0.11352	0.18063	0.92545
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07339	-0.15465	-0.94778
	hold	CLK (R)	-0.07764	-0.15875	-0.94086
	setup	CLK (R)	0.11069	0.18190	0.95990
	setup	CLK (R)	0.11303	0.18256	0.95063

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)	-0.12397	-0.26629	-3.88132
	hold	CLK (R)	-0.11245	-0.25608	-3.87559
	setup	CLK (R)	0.19817	0.33414	3.90326
	setup	CLK (R)	0.18837	0.32633	3.89807
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13084	-0.27440	-3.91333
	hold	CLK (R)	-0.12186	-0.26510	-3.91094
	setup	CLK (R)	0.20624	0.34195	3.93828
	setup	CLK (R)	0.19400	0.33758	3.93923

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)	-0.06120	-0.14288	-0.44638
	setup	CLK (R)	0.19787	0.22156	0.91603
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.06009	-0.14685	-0.47055
	setup	CLK (R)	0.20641	0.22497	0.94657

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)	-0.09866	-0.23187	-3.54799
	setup	CLK (R)	0.16536	0.29600	3.77333
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.10216	-0.23923	-3.56532
	setup	CLK (R)	0.17100	0.30533	3.80717

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)	-0.12544	-0.15417	-0.44638
	hold	CLK (R)	-0.06120	-0.14288	-0.90336
	setup	CLK (R)	0.19787	0.22156	0.46196
	setup	CLK (R)	0.09972	0.16849	0.91603
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13097	-0.16200	-0.47055
	hold	CLK (R)	-0.06009	-0.14685	-0.93648
	setup	CLK (R)	0.20641	0.22497	0.49161
	setup	CLK (R)	0.09930	0.17463	0.94657

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)	-0.11190	-0.25850	-3.54799
	hold	CLK (R)	-0.09866	-0.23187	-3.74756
	setup	CLK (R)	0.15160	0.28112	3.55404
	setup	CLK (R)	0.16536	0.29600	3.77333
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11153	-0.25685	-3.56532
	hold	CLK (R)	-0.10216	-0.23923	-3.77648
	setup	CLK (R)	0.15365	0.28112	3.57672
	setup	CLK (R)	0.17100	0.30533	3.80717

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)	0.12613	0.18184	1.27229
	removal	CLK (R)	-0.09987	-0.15081	-1.23137
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.12880	0.18353	1.28904
	removal	CLK (R)	-0.10469	-0.15478	-1.25452

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)	0.12613	0.17663	1.27229
	recovery	CLK (R)	0.12475	0.17066	1.25302
	recovery	CLK (R)	0.12102	0.16286	1.23619
	recovery	CLK (R)	0.12463	0.18184	1.26028
	removal	CLK (R)	-0.10365	-0.16272	-1.26814
	removal	CLK (R)	-0.10355	-0.15875	-1.24899
	removal	CLK (R)	-0.09987	-0.15081	-1.23137
	removal	CLK (R)	-0.10533	-0.16669	-1.25617
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.12576	0.17753	1.28904
	recovery	CLK (R)	0.12375	0.17463	1.27751
	recovery	CLK (R)	0.12068	0.16631	1.25738
	recovery	CLK (R)	0.12880	0.18353	1.28478
	removal	CLK (R)	-0.10738	-0.16669	-1.28835
	removal	CLK (R)	-0.10564	-0.16272	-1.27214
	removal	CLK (R)	-0.10469	-0.15478	-1.25452
	removal	CLK (R)	-0.10738	-0.17066	-1.27931

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 ()	0.11249	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.10145	0.58716	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.11470	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.11028	0.58716	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 ()	0.08821	0.58716	16.50020
	min_pulse_width	CLK ()	0.05950	0.58716	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	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 ()	0.11911	0.58716	16.50020
	min_pulse_width	CLK ()	0.14340	0.58716	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.11911	0.58716	16.50020
	min_pulse_width	CLK ()	0.14340	0.58716	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	0.01442	0.01549	0.05099
	CLK	0.01218	0.01317	0.04881
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01750	0.01856	0.05431
	CLK	0.01520	0.01625	0.05207

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01453	0.01580	0.05051
	CLK	0.01233	0.01360	0.04836
	RESET_B	0.01236	0.01409	0.04998
	RESET_B	0.01785	0.01954	0.05496
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01711	0.01869	0.05383
	CLK	0.01505	0.01663	0.05178
	RESET_B	0.01483	0.01668	0.05253
	RESET_B	0.02065	0.02248	0.05791

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01454	0.01587	0.05079
	CLK	0.01234	0.01362	0.04867
	RESET_B	0.01238	0.01412	0.05094
	RESET_B	0.01788	0.01958	0.05554
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01712	0.01870	0.05420
	CLK	0.01506	0.01664	0.05224
	RESET_B	0.01506	0.01694	0.05495
	RESET_B	0.02068	0.02252	0.05863

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01440	0.01538	0.05079
	CLK	0.01217	0.01314	0.04860
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01749	0.01853	0.05415
	CLK	0.01519	0.01623	0.05198

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	0.00126	0.00127	0.00126
	(CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * RESET_B * SCD * !SCE)	0.00523	0.00617	0.03722
	(CLK * RESET_B * SCD * !SCE)	0.00175	0.00268	0.03374
	(CLK * RESET_B * !SCD * !SCE)	0.00523	0.00618	0.03722
	(CLK * RESET_B * !SCD * !SCE)	0.00175	0.00268	0.03374
	(CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(CLK * !SCD * SCE)	-0.00125	-0.00127	-0.00129
	(CLK * !RESET_B * SCD * SCE)	0.00062	0.00062	0.00061
	(CLK * !RESET_B * SCD * SCE)	-0.00126	-0.00129	-0.00129
	(CLK * !RESET_B * SCD * !SCE)	0.00040	0.00041	0.00037
	(CLK * !RESET_B * SCD * !SCE)	-0.00146	-0.00148	-0.00153
	(CLK * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00037
	(CLK * !RESET_B * !SCD * !SCE)	-0.00151	-0.00151	-0.00155
	(!CLK * RESET_B * SCD * SCE)	0.00126	0.00127	0.00127
	(!CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01186	0.01277	0.04831
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00819	0.00910	0.04463
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01187	0.01277	0.04830
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00819	0.00910	0.04463
	(!CLK * !SCD * SCE)	0.00064	0.00065	0.00063
	(!CLK * !SCD * SCE)	-0.00124	-0.00127	-0.00129
	(!CLK * !RESET_B * SCD * SCE)	0.00062	0.00062	0.00061
	(!CLK * !RESET_B * SCD * SCE)	-0.00126	-0.00129	-0.00129
	(!CLK * !RESET_B * SCD * !SCE)	0.00040	0.00041	0.00037
	(!CLK * !RESET_B * SCD * !SCE)	-0.00146	-0.00148	-0.00153
	(!CLK * !RESET_B * !SCD * !SCE)	0.00041	0.00040	0.00037
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00151	-0.00150	-0.00155

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	0.00129	0.00130	0.00129
	(CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * RESET_B * SCD * !SCE)	0.00553	0.00644	0.03736
	(CLK * RESET_B * SCD * !SCE)	0.00198	0.00288	0.03381
	(CLK * RESET_B * !SCD * !SCE)	0.00553	0.00644	0.03737
	(CLK * RESET_B * !SCD * !SCE)	0.00198	0.00288	0.03381
	(CLK * !SCD * SCE)	0.00064	0.00065	0.00063
	(CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00131
	(CLK * !RESET_B * SCD * SCE)	0.00062	0.00063	0.00062
	(CLK * !RESET_B * SCD * SCE)	-0.00128	-0.00131	-0.00131
	(CLK * !RESET_B * SCD * !SCE)	0.00039	0.00040	0.00036
	(CLK * !RESET_B * SCD * !SCE)	-0.00150	-0.00152	-0.00157
	(CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00039	0.00036
	(CLK * !RESET_B * !SCD * !SCE)	-0.00155	-0.00155	-0.00159
	(!CLK * RESET_B * SCD * SCE)	0.00129	0.00130	0.00129
	(!CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01219	0.01309	0.04852
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00845	0.00933	0.04478
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01219	0.01309	0.04852
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00845	0.00933	0.04478
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(!CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00130
	(!CLK * !RESET_B * SCD * SCE)	0.00062	0.00063	0.00062
	(!CLK * !RESET_B * SCD * SCE)	-0.00128	-0.00131	-0.00131
	(!CLK * !RESET_B * SCD * !SCE)	0.00039	0.00040	0.00036
	(!CLK * !RESET_B * SCD * !SCE)	-0.00150	-0.00152	-0.00157
	(!CLK * !RESET_B * !SCD * !SCE)	0.00040	0.00039	0.00036
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00155	-0.00154	-0.00159

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * RESET_B * SCD * SCE)**	-0.00120	-0.00122	-0.00124
	(CLK * RESET_B * SCD * SCE)	0.00058	0.00059	0.00057
	(CLK * RESET_B * SCD * !SCE)	0.00055	0.00199	0.03316
	(CLK * RESET_B * SCD * !SCE)	0.00402	0.00548	0.03664
	(CLK * RESET_B * !SCD * !SCE)	0.00055	0.00193	0.03316
	(CLK * RESET_B * !SCD * !SCE)	0.00402	0.00541	0.03664
	(CLK * !SCD * SCE)	-0.00060	-0.00062	-0.00061
	(CLK * !SCD * SCE)	0.00128	0.00131	0.00129
	(CLK * !RESET_B * SCD * SCE)	-0.00059	-0.00059	-0.00059
	(CLK * !RESET_B * SCD * SCE)	0.00129	0.00129	0.00130
	(CLK * !RESET_B * SCD * !SCE)	-0.00036	-0.00035	-0.00035
	(CLK * !RESET_B * SCD * !SCE)	0.00155	0.00156	0.00155
	(CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00036	-0.00035
	(CLK * !RESET_B * !SCD * !SCE)	0.00155	0.00156	0.00155
	(!CLK * RESET_B * SCD * SCE)	-0.00120	-0.00122	-0.00124
	(!CLK * RESET_B * SCD * SCE)	0.00059	0.00060	0.00057
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00748	0.00942	0.04675
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01116	0.01310	0.05043
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00749	0.00942	0.04676
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01117	0.01310	0.05043
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * !SCD * SCE)	0.00129	0.00130	0.00130
	(!CLK * !RESET_B * SCD * SCE)	-0.00059	-0.00060	-0.00059
	(!CLK * !RESET_B * SCD * SCE)	0.00129	0.00130	0.00130
	(!CLK * !RESET_B * SCD * !SCE)	-0.00036	-0.00035	-0.00035
	(!CLK * !RESET_B * SCD * !SCE)	0.00155	0.00156	0.00155
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00036	-0.00035
	(!CLK * !RESET_B * !SCD * !SCE)	0.00155	0.00156	0.00155

sky130_fd_sc_hs__sdfrbp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00123	-0.00125	-0.00127
	(CLK * RESET_B * SCD * SCE)	0.00058	0.00059	0.00057
	(CLK * RESET_B * SCD * !SCE)	0.00064	0.00205	0.03310
	(CLK * RESET_B * SCD * !SCE)	0.00419	0.00561	0.03665
	(CLK * RESET_B * !SCD * !SCE)	0.00064	0.00199	0.03311
	(CLK * RESET_B * !SCD * !SCE)	0.00419	0.00554	0.03665
	(CLK * !SCD * SCE)	-0.00061	-0.00063	-0.00062
	(CLK * !SCD * SCE)	0.00130	0.00132	0.00131
	(CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(CLK * !RESET_B * SCD * SCE)	0.00131	0.00133	0.00131
	(CLK * !RESET_B * SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B * SCD * !SCE)	0.00159	0.00160	0.00160
	(CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(CLK * !RESET_B * !SCD * !SCE)	0.00160	0.00161	0.00160
	(!CLK * RESET_B * SCD * SCE)	-0.00123	-0.00125	-0.00127
	(!CLK * RESET_B * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00761	0.00949	0.04680
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.01137	0.01324	0.05054
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00762	0.00949	0.04681
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01137	0.01324	0.05054
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00061
	(!CLK * !SCD * SCE)	0.00130	0.00131	0.00131
	(!CLK * !RESET_B * SCD * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * !RESET_B * SCD * SCE)	0.00131	0.00131	0.00131
	(!CLK * !RESET_B * SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(!CLK * !RESET_B * SCD * !SCE)	0.00159	0.00160	0.00160
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00034	-0.00034	-0.00033
	(!CLK * !RESET_B * !SCD * !SCE)	0.00160	0.00160	0.00160

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00684	0.00717	0.02702
	(CLK * D * RESET_B * SCE)	0.00230	0.00262	0.02248
	(CLK * D * RESET_B * !SCE)	0.00123	0.00108	0.00106
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00119	-0.00121
	(CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * D * !RESET_B * SCE)	-0.00132	-0.00133	-0.00132
	(CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00040
	(CLK * D * !RESET_B * !SCE)	-0.00144	-0.00146	-0.00145
	(CLK * !D * RESET_B * SCE)	0.00753	0.00780	0.02731
	(CLK * !D * RESET_B * SCE)	0.00289	0.00315	0.02267
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * !D * !RESET_B * SCE)	-0.00132	-0.00133	-0.00132
	(!D * RESET_B * !SCE)	0.00085	0.00086	0.00085
	(!D * RESET_B * !SCE)	-0.00141	-0.00142	-0.00142
	(!D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * !RESET_B * !SCE)	-0.00152	-0.00154	-0.00153
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01346	0.01398	0.03708
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00874	0.00924	0.03235
	(!CLK * D * RESET_B * !SCE)	0.00124	0.00109	0.00106
	(!CLK * D * RESET_B * !SCE)	-0.00103	-0.00120	-0.00121
	(!CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * D * !RESET_B * SCE)	-0.00132	-0.00133	-0.00132
	(!CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00040
	(!CLK * D * !RESET_B * !SCE)	-0.00144	-0.00146	-0.00145
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01416	0.01464	0.03715
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00934	0.00979	0.03232
	(!CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * !D * !RESET_B * SCE)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCE)**	0.00705	0.00737	0.02716
	(CLK * D * RESET_B * SCE)	0.00244	0.00275	0.02255
	(CLK * D * RESET_B * !SCE)	0.00126	0.00111	0.00109
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00120	-0.00121
	(CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00056
	(CLK * D * !RESET_B * SCE)	-0.00134	-0.00133	-0.00133
	(CLK * D * !RESET_B * !SCE)	0.00041	0.00042	0.00041
	(CLK * D * !RESET_B * !SCE)	-0.00146	-0.00148	-0.00147
	(CLK * !D * RESET_B * SCE)	0.00774	0.00801	0.02745
	(CLK * !D * RESET_B * SCE)	0.00304	0.00329	0.02274
	(CLK * !D * !RESET_B * SCE)	0.00058	0.00058	0.00056
	(CLK * !D * !RESET_B * SCE)	-0.00134	-0.00133	-0.00132
	(!D * RESET_B * !SCE)	0.00087	0.00087	0.00087
	(!D * RESET_B * !SCE)	-0.00142	-0.00143	-0.00143
	(!D * !RESET_B * !SCE)	0.00048	0.00048	0.00047
	(!D * !RESET_B * !SCE)	-0.00154	-0.00155	-0.00155
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01370	0.01423	0.03729
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00891	0.00941	0.03248
	(!CLK * D * RESET_B * !SCE)	0.00126	0.00111	0.00109
	(!CLK * D * RESET_B * !SCE)	-0.00103	-0.00120	-0.00121
	(!CLK * D * !RESET_B * SCE)	0.00058	0.00058	0.00056
	(!CLK * D * !RESET_B * SCE)	-0.00134	-0.00133	-0.00133
	(!CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00041
	(!CLK * D * !RESET_B * !SCE)	-0.00146	-0.00146	-0.00147
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01440	0.01489	0.03739
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00950	0.00997	0.03248
	(!CLK * !D * !RESET_B * SCE)	0.00057	0.00058	0.00056
	(!CLK * !D * !RESET_B * SCE)	-0.00133	-0.00133	-0.00132

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00187	0.00218	0.02185
	(CLK * D * RESET_B * SCE)	0.00642	0.00674	0.02638
	(CLK * D * RESET_B * !SCE)	-0.00101	-0.00104	-0.00104
	(CLK * D * RESET_B * !SCE)	0.00123	0.00124	0.00124
	(CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(CLK * D * !RESET_B * SCE)	0.00135	0.00136	0.00134
	(CLK * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(CLK * D * !RESET_B * !SCE)	0.00147	0.00148	0.00146
	(CLK * !D * RESET_B * SCE)	0.00139	0.00176	0.02169
	(CLK * !D * RESET_B * SCE)	0.00604	0.00641	0.02632
	(CLK * !D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(CLK * !D * !RESET_B * SCE)	0.00135	0.00136	0.00134
	(!D * RESET_B * !SCE)	-0.00080	-0.00085	-0.00085
	(!D * RESET_B * !SCE)	0.00146	0.00143	0.00142
	(!D * !RESET_B * !SCE)	-0.00047	-0.00047	-0.00047
	(!D * !RESET_B * !SCE)	0.00155	0.00156	0.00156
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00896	0.00956	0.03375
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01370	0.01430	0.03848
	(!CLK * D * RESET_B * !SCE)	-0.00100	-0.00104	-0.00104
	(!CLK * D * RESET_B * !SCE)	0.00123	0.00124	0.00124
	(!CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * D * !RESET_B * SCE)	0.00135	0.00136	0.00134
	(!CLK * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(!CLK * D * !RESET_B * !SCE)	0.00147	0.00147	0.00146
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00851	0.00917	0.03384
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01334	0.01400	0.03866
	(!CLK * !D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * !D * !RESET_B * SCE)	0.00135	0.00136	0.00134

	(CLK * D * RESET_B * SCE)	0.00194	0.00224	0.02187
	(CLK * D * RESET_B * SCE)	0.00656	0.00687	0.02646
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00106	-0.00107
	(CLK * D * RESET_B * !SCE)	0.00123	0.00123	0.00124
	(CLK * D * !RESET_B * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * D * !RESET_B * SCE)	0.00136	0.00137	0.00134
	(CLK * D * !RESET_B * !SCE)	-0.00039	-0.00040	-0.00040
	(CLK * D * !RESET_B * !SCE)	0.00148	0.00149	0.00148
	(CLK * !D * RESET_B * SCE)	0.00152	0.00187	0.02173
	(CLK * !D * RESET_B * SCE)	0.00623	0.00660	0.02643
	(CLK * !D * !RESET_B * SCE)	-0.00053	-0.00053	-0.00053
	(CLK * !D * !RESET_B * SCE)	0.00136	0.00137	0.00134
	(!D * RESET_B * !SCE)	-0.00081	-0.00086	-0.00087
	(!D * RESET_B * !SCE)	0.00148	0.00144	0.00144
	(!D * !RESET_B * !SCE)	-0.00048	-0.00048	-0.00047
	(!D * !RESET_B * !SCE)	0.00157	0.00158	0.00158
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00913	0.00965	0.03386
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01393	0.01447	0.03865
	(!CLK * D * RESET_B * !SCE)	-0.00103	-0.00107	-0.00107
	(!CLK * D * RESET_B * !SCE)	0.00123	0.00124	0.00124
	(!CLK * D * !RESET_B * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * D * !RESET_B * SCE)	0.00136	0.00137	0.00134
	(!CLK * D * !RESET_B * !SCE)	-0.00039	-0.00040	-0.00040
	(!CLK * D * !RESET_B * !SCE)	0.00148	0.00149	0.00148
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00873	0.00933	0.03385
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01363	0.01425	0.03874
	(!CLK * !D * !RESET_B * SCE)	-0.00053	-0.00053	-0.00053
	(!CLK * !D * !RESET_B * SCE)	0.00136	0.00137	0.00134

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)**	0.00609	0.00744	0.05043
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00006	0.00137	0.04439
	(CLK * D * RESET_B * !SCD)	0.00855	0.00979	0.05457
	(CLK * D * RESET_B * !SCD)	0.00463	0.00582	0.05058
	(CLK * !D * RESET_B * SCD)	0.01102	0.01316	0.07754
	(CLK * !D * RESET_B * SCD)	0.00322	0.00534	0.06975
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00609	0.00743	0.05044
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00006	0.00138	0.04439
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01550	0.01680	0.06234
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01175	0.01301	0.05852
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00594	0.00752	0.05055
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00025	0.00177	0.04482
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01763	0.01999	0.08859
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00964	0.01201	0.08060

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00572	0.00712	0.05016
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00052	0.00086	0.04392
	(CLK * D * RESET_B * !SCD)	0.00831	0.00960	0.05446
	(CLK * D * RESET_B * !SCD)	0.00423	0.00545	0.05030
	(CLK * !D * RESET_B * SCD)	0.01089	0.01304	0.07754
	(CLK * !D * RESET_B * SCD)	0.00283	0.00499	0.06953
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00572	0.00712	0.05016
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00051	0.00086	0.04392
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01535	0.01665	0.06220
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01145	0.01270	0.05823
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00563	0.00722	0.05032
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00028	0.00132	0.04439
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01754	0.01992	0.08852
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00929	0.01166	0.08029

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)**	-0.00047	0.00187	0.04474
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00554	0.00792	0.05078
	(CLK * D * RESET_B * !SCD)	0.00480	0.00690	0.05114
	(CLK * D * RESET_B * !SCD)	0.00878	0.01089	0.05495
	(CLK * !D * RESET_B * SCD)	0.00090	0.00340	0.06720
	(CLK * !D * RESET_B * SCD)	0.00868	0.01120	0.07501
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00046	0.00188	0.04474
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00555	0.00793	0.05078
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01141	0.01359	0.05771
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01520	0.01739	0.06134
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00046	0.00180	0.04462
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00526	0.00752	0.05029
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00780	0.01059	0.07800
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01577	0.01859	0.08599

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00043	0.00194	0.04483
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00579	0.00817	0.05107
	(CLK * D * RESET_B * !SCD)	0.00513	0.00725	0.05145
	(CLK * D * RESET_B * !SCD)	0.00928	0.01139	0.05541
	(CLK * !D * RESET_B * SCD)	0.00097	0.00349	0.06736
	(CLK * !D * RESET_B * SCD)	0.00901	0.01154	0.07541
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00043	0.00195	0.04483
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00579	0.00818	0.05107
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01177	0.01398	0.05810
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01573	0.01792	0.06187
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00046	0.00182	0.04466
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00547	0.00773	0.05056
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00791	0.01071	0.07824
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01612	0.01895	0.08648

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01009	0.01054	0.04675
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00048	-0.00005	0.03615
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00979	0.01029	0.04698
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00041	0.00011	0.03679
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00351	0.00353	0.00351
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00427	-0.00428	-0.00427
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00927	0.00991	0.04682
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00040	0.00019	0.03713
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01079	0.01119	0.04704
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00012	0.00046	0.03634
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00348	0.00350	0.00348
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00428	-0.00430	-0.00429
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00351	0.00353	0.00351
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00427	-0.00428	-0.00427
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00348	0.00351	0.00349
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00429	-0.00430	-0.00429
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01739	0.01762	0.06338
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00665	0.00683	0.05260
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01709	0.01736	0.06395
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00673	0.00696	0.05359
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00352	0.00355	0.00352
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00428	-0.00429	-0.00426
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01657	0.01691	0.06357
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00675	0.00704	0.05373
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01809	0.01827	0.06337
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00725	0.00739	0.05250
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00348	0.00353	0.00349
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00428	-0.00431	-0.00428
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00349	0.00352	0.00350
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00426	-0.00427	-0.00426
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00349	0.00352	0.00349
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00428	-0.00431	-0.00429

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.01015	0.01061	0.04665
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00044	-0.00004	0.03602
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00995	0.01046	0.04694
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00024	0.00020	0.03672
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00339	0.00341	0.00339
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00437	-0.00438	-0.00437
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00945	0.01005	0.04677
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00025	0.00030	0.03707
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01085	0.01124	0.04692
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00016	0.00048	0.03619
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00336	0.00338	0.00337
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00438	-0.00440	-0.00438
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00339	0.00341	0.00339
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00437	-0.00438	-0.00437
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00337	0.00339	0.00337
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00439	-0.00440	-0.00439
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01747	0.01769	0.06333
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00669	0.00686	0.05252
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01728	0.01754	0.06398
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00689	0.00709	0.05356
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00337	0.00343	0.00339
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00436	-0.00440	-0.00437
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01677	0.01710	0.06360
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00689	0.00716	0.05370
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01816	0.01834	0.06329
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00727	0.00740	0.05242
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00334	0.00339	0.00336
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00438	-0.00442	-0.00439
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00337	0.00343	0.00339
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00436	-0.00441	-0.00437
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00335	0.00341	0.00337
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00438	-0.00442	-0.00439

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfrbp_1	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00029	0.00190	0.03946
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01087	0.01253	0.05006
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00066	0.00094	0.03837
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00956	0.01117	0.04858
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00341	-0.00352	-0.00350
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00431	0.00431	0.00429
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00094	0.00072	0.03837
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00872	0.01044	0.04805
	(CLK * !D * SCD * SCE * !Q * Q_N)	-0.00018	0.00153	0.03928
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01049	0.01221	0.04998
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00335	-0.00350	-0.00348
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00434	0.00432	0.00429
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00341	-0.00352	-0.00350
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00431	0.00431	0.00429
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00337	-0.00350	-0.00349
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00435	0.00433	0.00430
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00721	0.00877	0.05956
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01801	0.01955	0.07034
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00627	0.00772	0.05826
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01669	0.01814	0.06865
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00342	-0.00353	-0.00350
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00430	0.00430	0.00428
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00597	0.00746	0.05820
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01587	0.01736	0.06807
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00674	0.00835	0.05949
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01764	0.01925	0.07037
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00335	-0.00351	-0.00349
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00433	0.00431	0.00429
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00342	-0.00352	-0.00350
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00430	0.00430	0.00428
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00337	-0.00352	-0.00349
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00434	0.00431	0.00429

sky130_fd_sc_hs__sdfrbp_2	(CLK * D * SCD * SCE * !Q * Q_N)	0.00046	0.00205	0.03953
	(CLK * D * SCD * SCE * !Q * Q_N)	0.01110	0.01267	0.05015
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00053	0.00103	0.03839
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00972	0.01130	0.04862
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00329	-0.00340	-0.00338
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00441	0.00440	0.00439
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00082	0.00082	0.03838
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00890	0.01056	0.04811
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00004	0.00170	0.03938
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.01078	0.01246	0.05011
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00322	-0.00338	-0.00336
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00444	0.00441	0.00439
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00329	-0.00340	-0.00338
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00441	0.00440	0.00439
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00324	-0.00339	-0.00336
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00445	0.00441	0.00440
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00741	0.00918	0.05968
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01826	0.01997	0.07049
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00643	0.00804	0.05833
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01689	0.01850	0.06875
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00328	-0.00340	-0.00337
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00441	0.00441	0.00439
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00613	0.00778	0.05827
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01607	0.01772	0.06819
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00700	0.00859	0.05964
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01794	0.01947	0.07056
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00322	-0.00338	-0.00335
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00444	0.00442	0.00440
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00328	-0.00340	-0.00337
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00441	0.00441	0.00439
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00324	-0.00339	-0.00336
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00445	0.00442	0.00441

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)**	0.01354	0.01541	0.08252
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00908	0.01094	0.07807
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01354	0.01540	0.08252
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00908	0.01094	0.07807
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01354	0.01541	0.08240
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00908	0.01094	0.07795
	(D * !SCD * SCE * !Q * Q_N)	0.01397	0.01584	0.08291
	(D * !SCD * SCE * !Q * Q_N)	0.00952	0.01137	0.07848
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01397	0.01584	0.08290
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00952	0.01138	0.07846
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01397	0.01584	0.08290
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00952	0.01138	0.07846
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01397	0.01584	0.08290
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00952	0.01138	0.07846
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01354	0.01541	0.08252
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00908	0.01094	0.07807
	(!D * !SCE * !Q * Q_N)	0.01397	0.01583	0.08291
	(!D * !SCE * !Q * Q_N)	0.00952	0.01137	0.07847
	(!D * !SCD * SCE * !Q * Q_N)	0.01397	0.01583	0.08291
	(!D * !SCD * SCE * !Q * Q_N)	0.00952	0.01137	0.07848
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01397	0.01584	0.08290
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00952	0.01138	0.07846

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01364	0.01542	0.08312
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00928	0.01105	0.07876
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01364	0.01542	0.08312
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00928	0.01105	0.07876
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01364	0.01542	0.08301
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00928	0.01105	0.07866
	(D * !SCD * SCE * !Q * Q_N)	0.01400	0.01577	0.08346
	(D * !SCD * SCE * !Q * Q_N)	0.00964	0.01140	0.07911
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01400	0.01578	0.08345
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00964	0.01140	0.07909
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01399	0.01577	0.08345
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00964	0.01140	0.07909
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01399	0.01577	0.08345
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00964	0.01140	0.07909
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01364	0.01542	0.08312
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00928	0.01105	0.07876
	(!D * !SCE * !Q * Q_N)	0.01399	0.01577	0.08346
	(!D * !SCE * !Q * Q_N)	0.00964	0.01139	0.07911
	(!D * !SCD * SCE * !Q * Q_N)	0.01400	0.01577	0.08346
	(!D * !SCD * SCE * !Q * Q_N)	0.00964	0.01140	0.07911
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01400	0.01578	0.08345
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00965	0.01140	0.07909

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)**	0.00727	0.01034	0.07703
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01171	0.01481	0.08149
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01339	0.01647	0.08522
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01764	0.02074	0.08948
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00727	0.01034	0.07703
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01171	0.01481	0.08149
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01337	0.01644	0.08516
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01762	0.02072	0.08942
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01486	0.01814	0.08613
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01951	0.02280	0.09079
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00727	0.01034	0.07703
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01171	0.01481	0.08149
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01337	0.01644	0.08517
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01762	0.02072	0.08942
	(D * !SCD * SCE * !Q * Q_N)	0.00672	0.00977	0.07656
	(D * !SCD * SCE * !Q * Q_N)	0.01115	0.01423	0.08101
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00672	0.00977	0.07654
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01116	0.01423	0.08100
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00671	0.00977	0.07653
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01115	0.01423	0.08099
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00671	0.00976	0.07653
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01115	0.01423	0.08099
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00727	0.01034	0.07703
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01171	0.01481	0.08149
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01342	0.01650	0.08524
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01766	0.02076	0.08948
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01482	0.01811	0.08611
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01945	0.02274	0.09076
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01483	0.01813	0.08603
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01947	0.02278	0.09068
	(!D * !SCE * !Q * Q_N)	0.00671	0.00976	0.07655
	(!D * !SCE * !Q * Q_N)	0.01115	0.01422	0.08101
	(!D * !SCD * SCE * !Q * Q_N)	0.00672	0.00977	0.07656
	(!D * !SCD * SCE * !Q * Q_N)	0.01115	0.01423	0.08101
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00672	0.00977	0.07654
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01116	0.01423	0.08099

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.00722	0.01035	0.07838
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.01156	0.01472	0.08274
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01342	0.01663	0.08682
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01757	0.02081	0.09098
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00722	0.01034	0.07838
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01156	0.01471	0.08274
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01340	0.01662	0.08675
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01755	0.02078	0.09092
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01478	0.01810	0.08758
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01933	0.02268	0.09217
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00722	0.01035	0.07838
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01156	0.01472	0.08274
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01340	0.01661	0.08675
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01755	0.02079	0.09092
	(D * !SCD * SCE * !Q * Q_N)	0.00675	0.00994	0.07802
	(D * !SCD * SCE * !Q * Q_N)	0.01109	0.01430	0.08238
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00675	0.00993	0.07800
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01110	0.01430	0.08236
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00675	0.00993	0.07800
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01109	0.01430	0.08236
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00675	0.00993	0.07800
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01109	0.01430	0.08236
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00722	0.01034	0.07838
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01156	0.01471	0.08274
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01345	0.01667	0.08684
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01759	0.02083	0.09099
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01474	0.01807	0.08693
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01928	0.02263	0.09151
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01474	0.01808	0.08703
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01929	0.02266	0.09159
	(!D * !SCE * !Q * Q_N)	0.00675	0.00993	0.07801
	(!D * !SCE * !Q * Q_N)	0.01109	0.01429	0.08238
	(!D * !SCD * SCE * !Q * Q_N)	0.00675	0.00993	0.07802
	(!D * !SCD * SCE * !Q * Q_N)	0.01109	0.01430	0.08238
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00675	0.00993	0.07800
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01110	0.01430	0.08236

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	RESET_B	CLK_N	Q
0	0	x	1	F	0
0	1	0	1	F	0
x	1	1	1	F	1
1	x	0	1	F	1
1	0	1	1	F	0
x	x	x	0	x	0
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtn_1	46.35360

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	RESET_B	CLK_N	Q
sky130_fd_sc_hs__sdfrtn_1	0.00194	0.00188	0.00410	0.00571	0.00275	1.41420

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.71139	1.42902

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)	0.17506	0.77987	8.55127

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)	0.14918	0.52521	4.65542
	RESET_B->Q (FF)	0.20278	0.62369	4.96184

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)	-0.01017	0.04633	2.63843
	setup	CLK_N (F)	0.07597	0.01013	-2.58429

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)	-0.08364	-0.11312	-0.23408
	setup	CLK_N (F)	0.18489	0.17916	0.27396

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)	-0.01034	0.04633	2.63835
	hold	CLK_N (F)	-0.01017	0.04619	2.63843
	setup	CLK_N (F)	0.07280	0.00916	-2.58429
	setup	CLK_N (F)	0.07597	0.01013	-2.58527

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)	-0.08483	-0.11312	-0.23514
	hold	CLK_N (F)	-0.08364	-0.11458	-0.23408
	setup	CLK_N (F)	0.18489	0.17884	0.27370
	setup	CLK_N (F)	0.18275	0.17916	0.27396

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)	-0.01966	0.03517	2.60781
	setup	CLK_N (F)	0.08687	0.01588	-2.55531

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)	-0.11089	-0.13874	-0.44860
	setup	CLK_N (F)	0.22151	0.21944	0.51748

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)	-0.01966	0.03517	2.60781
	hold	CLK_N (F)	-0.02607	0.03175	2.59431
	setup	CLK_N (F)	0.08410	0.01329	-2.56911
	setup	CLK_N (F)	0.08687	0.01588	-2.55531

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)	-0.12049	-0.15024	-0.47933
	hold	CLK_N (F)	-0.11089	-0.13874	-0.44860
	setup	CLK_N (F)	0.22151	0.21944	0.51748
	setup	CLK_N (F)	0.21710	0.20912	0.48431

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)	-0.00857	0.04129	2.78320
	setup	CLK_N (F)	0.22265	0.10513	-2.60137

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)	-0.06205	-0.06784	-0.06417
	setup	CLK_N (F)	0.19839	0.19075	0.43475

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)	-0.11934	-0.03559	2.78320
	hold	CLK_N (F)	-0.00857	0.04129	2.64127
	setup	CLK_N (F)	0.22265	0.10513	-2.76089
	setup	CLK_N (F)	0.07136	0.00885	-2.60137

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)	-0.06205	-0.06784	-0.06417
	hold	CLK_N (F)	-0.09799	-0.12510	-0.40010
	setup	CLK_N (F)	0.12690	0.11195	0.08389
	setup	CLK_N (F)	0.19839	0.19075	0.43475

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)	0.10024	0.01588	-2.32310
	removal	CLK_N (F)	-0.06631	0.01984	2.37440

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)	0.09770	0.01106	-2.32680
	recovery	CLK_N (F)	0.09565	0.00497	-2.35693
	recovery	CLK_N (F)	0.09334	0.00000	-2.37402
	recovery	CLK_N (F)	0.10024	0.01588	-2.32310
	removal	CLK_N (F)	-0.06969	0.00397	2.33098
	removal	CLK_N (F)	-0.06921	0.01191	2.36293
	removal	CLK_N (F)	-0.06631	0.01984	2.37440
	removal	CLK_N (F)	-0.07107	0.00000	2.33017

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 ()	0.09483	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.11249	0.58716	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 ()	0.09483	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.12795	0.58716	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 ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK_N ()	0.09704	0.58716	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	0.02305	0.02666	0.09803
	CLK_N	0.02756	0.03119	0.10254

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.02119	0.02506	0.09594
	CLK_N	0.02512	0.02897	0.09902
	RESET_B	0.02263	0.02552	0.09605
	RESET_B	0.03309	0.03593	0.10636

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)**	0.00130	0.00131	0.00130
	(CLK_N * RESET_B * SCD * SCE)	-0.00064	-0.00064	-0.00064
	(CLK_N * RESET_B * SCD * !SCE)	0.01246	0.01326	0.04786
	(CLK_N * RESET_B * SCD * !SCE)	0.00888	0.00967	0.04427
	(CLK_N * RESET_B * !SCD * !SCE)	0.01246	0.01327	0.04786
	(CLK_N * RESET_B * !SCD * !SCE)	0.00887	0.00967	0.04427
	(CLK_N * !SCD * SCE)	0.00071	0.00072	0.00071
	(CLK_N * !SCD * SCE)	-0.00130	-0.00133	-0.00134
	(CLK_N * !RESET_B * SCD * SCE)	0.00069	0.00070	0.00069
	(CLK_N * !RESET_B * SCD * SCE)	-0.00132	-0.00135	-0.00135
	(CLK_N * !RESET_B * SCD * !SCE)	0.00035	0.00035	0.00031
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00167	-0.00168	-0.00173
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00034	0.00034	0.00032
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00170	-0.00171	-0.00175
	(!CLK_N * RESET_B * SCD * SCE)	0.00129	0.00131	0.00130
	(!CLK_N * RESET_B * SCD * SCE)	-0.00064	-0.00065	-0.00064
	(!CLK_N * RESET_B * SCD * !SCE)	0.00544	0.00621	0.03678
	(!CLK_N * RESET_B * SCD * !SCE)	0.00182	0.00258	0.03315
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00545	0.00621	0.03678
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00182	0.00258	0.03315
	(!CLK_N * !SCD * SCE)	0.00071	0.00071	0.00070
	(!CLK_N * !SCD * SCE)	-0.00131	-0.00133	-0.00135
	(!CLK_N * !RESET_B * SCD * SCE)	0.00069	0.00070	0.00069
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00132	-0.00135	-0.00135
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00034	0.00035	0.00031
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00167	-0.00168	-0.00173
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00035	0.00034	0.00032
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00171	-0.00171	-0.00175

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)**	-0.00124	-0.00125	-0.00128
	(CLK_N * RESET_B * SCD * SCE)	0.00069	0.00068	0.00067
	(CLK_N * RESET_B * SCD * !SCE)	0.00872	0.01045	0.04713
	(CLK_N * RESET_B * SCD * !SCE)	0.01232	0.01404	0.05072
	(CLK_N * RESET_B * !SCD * !SCE)	0.00872	0.01051	0.04713
	(CLK_N * RESET_B * !SCD * !SCE)	0.01233	0.01411	0.05072
	(CLK_N * !SCD * SCE)	-0.00068	-0.00069	-0.00068
	(CLK_N * !SCD * SCE)	0.00135	0.00136	0.00135
	(CLK_N * !RESET_B * SCD * SCE)	-0.00067	-0.00068	-0.00068
	(CLK_N * !RESET_B * SCD * SCE)	0.00135	0.00135	0.00135
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(CLK_N * !RESET_B * SCD * !SCE)	0.00175	0.00176	0.00175
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00175	0.00176	0.00175
	(!CLK_N * RESET_B * SCD * SCE)	-0.00124	-0.00127	-0.00128
	(!CLK_N * RESET_B * SCD * SCE)	0.00069	0.00069	0.00066
	(!CLK_N * RESET_B * SCD * !SCE)	0.00109	0.00252	0.03308
	(!CLK_N * RESET_B * SCD * !SCE)	0.00470	0.00615	0.03671
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00109	0.00252	0.03309
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00471	0.00614	0.03671
	(!CLK_N * !SCD * SCE)	-0.00068	-0.00069	-0.00069
	(!CLK_N * !SCD * SCE)	0.00134	0.00135	0.00135
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00067	-0.00068	-0.00068
	(!CLK_N * !RESET_B * SCD * SCE)	0.00135	0.00135	0.00135
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00175	0.00176	0.00175
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00175	0.00176	0.00175

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)**	0.01405	0.01456	0.03722
	(CLK_N * D * RESET_B * SCE)	0.00952	0.01001	0.03268
	(CLK_N * D * RESET_B * !SCE)	0.00117	0.00102	0.00100
	(CLK_N * D * RESET_B * !SCE)	-0.00111	-0.00128	-0.00130
	(CLK_N * D * !RESET_B * SCE)	0.00063	0.00063	0.00062
	(CLK_N * D * !RESET_B * SCE)	-0.00127	-0.00127	-0.00126
	(CLK_N * D * !RESET_B * !SCE)	0.00040	0.00041	0.00040
	(CLK_N * D * !RESET_B * !SCE)	-0.00146	-0.00148	-0.00147
	(CLK_N * !D * RESET_B * SCE)	0.01473	0.01520	0.03733
	(CLK_N * !D * RESET_B * SCE)	0.01010	0.01056	0.03270
	(CLK_N * !D * !RESET_B * SCE)	0.00063	0.00063	0.00062
	(CLK_N * !D * !RESET_B * SCE)	-0.00127	-0.00127	-0.00126
	(!D * RESET_B * !SCE)	0.00087	0.00088	0.00087
	(!D * RESET_B * !SCE)	-0.00141	-0.00142	-0.00142
	(!D * !RESET_B * !SCE)	0.00046	0.00046	0.00046
	(!D * !RESET_B * !SCE)	-0.00154	-0.00156	-0.00156
	(!CLK_N * D * RESET_B * SCE)	0.00703	0.00736	0.02701
	(!CLK_N * D * RESET_B * SCE)	0.00247	0.00279	0.02244
	(!CLK_N * D * RESET_B * !SCE)	0.00117	0.00102	0.00100
	(!CLK_N * D * RESET_B * !SCE)	-0.00112	-0.00128	-0.00130
	(!CLK_N * D * !RESET_B * SCE)	0.00063	0.00063	0.00062
	(!CLK_N * D * !RESET_B * SCE)	-0.00127	-0.00127	-0.00126
	(!CLK_N * D * !RESET_B * !SCE)	0.00040	0.00041	0.00040
	(!CLK_N * D * !RESET_B * !SCE)	-0.00146	-0.00148	-0.00147
	(!CLK_N * !D * RESET_B * SCE)	0.00772	0.00800	0.02729
	(!CLK_N * !D * RESET_B * SCE)	0.00304	0.00331	0.02262
	(!CLK_N * !D * !RESET_B * SCE)	0.00063	0.00063	0.00062
	(!CLK_N * !D * !RESET_B * SCE)	-0.00127	-0.00127	-0.00126

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)**	0.01000	0.01079	0.03437
	(CLK_N * D * RESET_B * SCE)	0.01453	0.01534	0.03890
	(CLK_N * D * RESET_B * !SCE)	-0.00094	-0.00097	-0.00097
	(CLK_N * D * RESET_B * !SCE)	0.00132	0.00133	0.00133
	(CLK_N * D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(CLK_N * D * !RESET_B * SCE)	0.00128	0.00130	0.00128
	(CLK_N * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(CLK_N * D * !RESET_B * !SCE)	0.00148	0.00150	0.00148
	(CLK_N * !D * RESET_B * SCE)	0.00962	0.01050	0.03443
	(CLK_N * !D * RESET_B * SCE)	0.01426	0.01514	0.03906
	(CLK_N * !D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(CLK_N * !D * !RESET_B * SCE)	0.00128	0.00130	0.00128
	(!D * RESET_B * !SCE)	-0.00081	-0.00086	-0.00086
	(!D * RESET_B * !SCE)	0.00147	0.00144	0.00144
	(!D * !RESET_B * !SCE)	-0.00046	-0.00046	-0.00046
	(!D * !RESET_B * !SCE)	0.00157	0.00159	0.00159
	(!CLK_N * D * RESET_B * SCE)	0.00225	0.00258	0.02205
	(!CLK_N * D * RESET_B * SCE)	0.00682	0.00716	0.02661
	(!CLK_N * D * RESET_B * !SCE)	-0.00095	-0.00098	-0.00098
	(!CLK_N * D * RESET_B * !SCE)	0.00132	0.00133	0.00133
	(!CLK_N * D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK_N * D * !RESET_B * SCE)	0.00128	0.00130	0.00128
	(!CLK_N * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(!CLK_N * D * !RESET_B * !SCE)	0.00148	0.00150	0.00148
	(!CLK_N * !D * RESET_B * SCE)	0.00185	0.00222	0.02193
	(!CLK_N * !D * RESET_B * SCE)	0.00652	0.00690	0.02659
	(!CLK_N * !D * !RESET_B * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK_N * !D * !RESET_B * SCE)	0.00128	0.00130	0.00128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	(CLK_N * D * RESET_B * SCD)	0.00565	0.00704	0.04944
	(CLK_N * D * RESET_B * SCD)	-0.00044	0.00094	0.04335
	(CLK_N * D * RESET_B * !SCD)	0.01616	0.01753	0.06233
	(CLK_N * D * RESET_B * !SCD)	0.01215	0.01347	0.05828
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00551	0.00711	0.04957
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00025	0.00134	0.04379
	(CLK_N * !D * RESET_B * SCD)	0.01781	0.02012	0.08663
	(CLK_N * !D * RESET_B * SCD)	0.00998	0.01229	0.07881
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00564	0.00704	0.04944
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00045	0.00093	0.04334
	(!CLK_N * D * RESET_B * !SCD)	0.00855	0.00985	0.05393
	(!CLK_N * D * RESET_B * !SCD)	0.00458	0.00583	0.04991
	(!CLK_N * !D * RESET_B * SCD)	0.01081	0.01290	0.07560
	(!CLK_N * !D * RESET_B * SCD)	0.00295	0.00502	0.06777

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)	-0.00042	0.00193	0.04416
	(CLK_N * D * RESET_B * SCD)	0.00563	0.00801	0.05025
	(CLK_N * D * RESET_B * !SCD)	0.01216	0.01436	0.05775
	(CLK_N * D * RESET_B * !SCD)	0.01620	0.01842	0.06164
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00044	0.00182	0.04401
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00531	0.00758	0.04974
	(CLK_N * !D * RESET_B * SCD)	0.00899	0.01164	0.07706
	(CLK_N * !D * RESET_B * SCD)	0.01679	0.01947	0.08488
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00043	0.00192	0.04416
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00562	0.00801	0.05024
	(!CLK_N * D * RESET_B * !SCD)	0.00516	0.00727	0.05075
	(!CLK_N * D * RESET_B * !SCD)	0.00917	0.01130	0.05459
	(!CLK_N * !D * RESET_B * SCD)	0.00139	0.00380	0.06573
	(!CLK_N * !D * RESET_B * SCD)	0.00923	0.01167	0.07359

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01840	0.01854	0.06348
	(CLK_N * D * SCD * SCE * !Q)	0.00783	0.00793	0.05287
	(CLK_N * D * SCD * !SCE * !Q)	0.01824	0.01838	0.06410
	(CLK_N * D * SCD * !SCE * !Q)	0.00805	0.00815	0.05388
	(CLK_N * D * !SCD * SCE * !Q)	0.00397	0.00402	0.00397
	(CLK_N * D * !SCD * SCE * !Q)	-0.00383	-0.00386	-0.00383
	(CLK_N * D * !SCD * !SCE * !Q)	0.01772	0.01798	0.06373
	(CLK_N * D * !SCD * !SCE * !Q)	0.00804	0.00826	0.05404
	(CLK_N * !D * SCD * SCE * !Q)	0.01909	0.01918	0.06352
	(CLK_N * !D * SCD * SCE * !Q)	0.00841	0.00844	0.05281
	(CLK_N * !D * SCD * !SCE * !Q)	0.00394	0.00396	0.00394
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00385	-0.00386	-0.00385
	(CLK_N * !D * !SCD * SCE * !Q)	0.00397	0.00401	0.00397
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00383	-0.00386	-0.00383
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00394	0.00398	0.00395
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00386	-0.00388	-0.00386
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.01068	0.01109	0.04684
	(!CLK_N * D * SCD * SCE * !Q)	0.00005	0.00041	0.03622
	(!CLK_N * D * SCD * !SCE * !Q)	0.01050	0.01097	0.04719
	(!CLK_N * D * SCD * !SCE * !Q)	0.00026	0.00068	0.03693
	(!CLK_N * D * !SCD * SCE * !Q)	0.00386	0.00390	0.00388
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00392	-0.00395	-0.00394
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00998	0.01055	0.04701
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00027	0.00077	0.03727
	(!CLK_N * !D * SCD * SCE * !Q)	0.01137	0.01170	0.04711
	(!CLK_N * !D * SCD * SCE * !Q)	0.00063	0.00093	0.03635
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00384	0.00386	0.00384
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00395	-0.00397	-0.00395
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00390	0.00394	0.00389
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00395	-0.00396	-0.00393
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00384	0.00386	0.00384
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00396	-0.00397	-0.00396

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00783	0.00918	0.05949
	(CLK_N * D * SCD * SCE * !Q)	0.01846	0.01981	0.07008
	(CLK_N * D * SCD * !SCE * !Q)	0.00683	0.00813	0.05815
	(CLK_N * D * SCD * !SCE * !Q)	0.01708	0.01836	0.06836
	(CLK_N * D * !SCD * SCE * !Q)	-0.00388	-0.00397	-0.00397
	(CLK_N * D * !SCD * SCE * !Q)	0.00386	0.00386	0.00385
	(CLK_N * D * !SCD * !SCE * !Q)	0.00653	0.00789	0.05809
	(CLK_N * D * !SCD * !SCE * !Q)	0.01625	0.01762	0.06778
	(CLK_N * !D * SCD * SCE * !Q)	0.00743	0.00885	0.05945
	(CLK_N * !D * SCD * SCE * !Q)	0.01817	0.01958	0.07016
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00380	-0.00395	-0.00394
	(CLK_N * !D * SCD * !SCE * !Q)	0.00389	0.00387	0.00386
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00387	-0.00400	-0.00397
	(CLK_N * !D * !SCD * SCE * !Q)	0.00386	0.00390	0.00385
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00382	-0.00395	-0.00395
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00390	0.00388	0.00387
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00023	0.00183	0.03906
	(!CLK_N * D * SCD * SCE * !Q)	0.01083	0.01249	0.04968
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00077	0.00080	0.03793
	(!CLK_N * D * SCD * !SCE * !Q)	0.00944	0.01110	0.04818
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00378	-0.00389	-0.00387
	(!CLK_N * D * !SCD * SCE * !Q)	0.00396	0.00399	0.00395
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00107	0.00045	0.03793
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00863	0.01023	0.04767
	(!CLK_N * !D * SCD * SCE * !Q)	-0.00017	0.00137	0.03892
	(!CLK_N * !D * SCD * SCE * !Q)	0.01053	0.01214	0.04966
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00370	-0.00386	-0.00384
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00399	0.00400	0.00396
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00378	-0.00389	-0.00387
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00396	0.00399	0.00395
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00372	-0.00386	-0.00384
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00401	0.00401	0.00397

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)**	0.01266	0.01459	0.08300
	(D * RESET_B * SCD * SCE * Q)	0.00843	0.01035	0.07878
	(D * RESET_B * SCD * SCE * !Q)	0.02013	0.02218	0.09142
	(D * RESET_B * SCD * SCE * !Q)	0.01593	0.01796	0.08722
	(D * RESET_B * SCD * !SCE * Q)	0.01266	0.01459	0.08301
	(D * RESET_B * SCD * !SCE * Q)	0.00843	0.01035	0.07878
	(D * RESET_B * SCD * !SCE * !Q)	0.02012	0.02217	0.09139
	(D * RESET_B * SCD * !SCE * !Q)	0.01593	0.01795	0.08720
	(D * RESET_B * !SCD * SCE * Q)	0.01940	0.02118	0.09100
	(D * RESET_B * !SCD * SCE * Q)	0.01515	0.01692	0.08674
	(D * RESET_B * !SCD * !SCE * Q)	0.01266	0.01459	0.08285
	(D * RESET_B * !SCD * !SCE * Q)	0.00843	0.01035	0.07862
	(D * RESET_B * !SCD * !SCE * !Q)	0.02013	0.02217	0.09139
	(D * RESET_B * !SCD * !SCE * !Q)	0.01593	0.01795	0.08720
	(D * !SCD * SCE * !Q)	0.01245	0.01439	0.08281
	(D * !SCD * SCE * !Q)	0.00822	0.01015	0.07858
	(D * !RESET_B * SCD * SCE * !Q)	0.01245	0.01440	0.08260
	(D * !RESET_B * SCD * SCE * !Q)	0.00822	0.01015	0.07837
	(D * !RESET_B * SCD * !SCE * !Q)	0.01245	0.01439	0.08277
	(D * !RESET_B * SCD * !SCE * !Q)	0.00822	0.01015	0.07855
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01245	0.01439	0.08277
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00822	0.01015	0.07855
	(!D * RESET_B * SCD * SCE * Q)	0.01266	0.01459	0.08301
	(!D * RESET_B * SCD * SCE * Q)	0.00843	0.01035	0.07878
	(!D * RESET_B * SCD * SCE * !Q)	0.02017	0.02222	0.09146
	(!D * RESET_B * SCD * SCE * !Q)	0.01596	0.01799	0.08725
	(!D * RESET_B * !SCE * Q)	0.01938	0.02116	0.09098
	(!D * RESET_B * !SCE * Q)	0.01512	0.01688	0.08670
	(!D * RESET_B * !SCD * SCE * Q)	0.01938	0.02117	0.09100
	(!D * RESET_B * !SCD * SCE * Q)	0.01513	0.01689	0.08673
	(!D * !SCE * !Q)	0.01244	0.01439	0.08281
	(!D * !SCE * !Q)	0.00821	0.01015	0.07857
	(!D * !SCD * SCE * !Q)	0.01245	0.01439	0.08262
	(!D * !SCD * SCE * !Q)	0.00822	0.01015	0.07839
	(!D * !RESET_B * SCD * SCE * !Q)	0.01245	0.01440	0.08278
	(!D * !RESET_B * SCD * SCE * !Q)	0.00822	0.01015	0.07856

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)	0.00919	0.01217	0.08018
	(D * RESET_B * SCD * SCE * Q)	0.01341	0.01641	0.08442
	(D * RESET_B * SCD * !SCE * Q)	0.00919	0.01217	0.08018
	(D * RESET_B * SCD * !SCE * Q)	0.01341	0.01639	0.08441
	(D * RESET_B * !SCD * !SCE * Q)	0.00920	0.01210	0.08018
	(D * RESET_B * !SCD * !SCE * Q)	0.01342	0.01633	0.08442
	(D * !SCD * SCE * !Q)	0.00924	0.01216	0.08021
	(D * !SCD * SCE * !Q)	0.01346	0.01640	0.08444
	(D * !RESET_B * SCD * SCE * !Q)	0.00925	0.01216	0.08019
	(D * !RESET_B * SCD * SCE * !Q)	0.01347	0.01640	0.08442
	(D * !RESET_B * SCD * !SCE * !Q)	0.00925	0.01216	0.08019
	(D * !RESET_B * SCD * !SCE * !Q)	0.01347	0.01640	0.08442
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00925	0.01216	0.08019
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01346	0.01640	0.08442
	(!D * RESET_B * SCD * SCE * Q)	0.00920	0.01210	0.08018
	(!D * RESET_B * SCD * SCE * Q)	0.01342	0.01633	0.08442
	(!D * !SCE * !Q)	0.00924	0.01215	0.08020
	(!D * !SCE * !Q)	0.01346	0.01639	0.08444
	(!D * !SCD * SCE * !Q)	0.00924	0.01215	0.08021
	(!D * !SCD * SCE * !Q)	0.01346	0.01640	0.08444
	(!D * !RESET_B * SCD * SCE * !Q)	0.00925	0.01216	0.08019
	(!D * !RESET_B * SCD * SCE * !Q)	0.01347	0.01640	0.08443

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT
D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**
0	**0**	**x**	**1**	**R**	**0**
0	**1**	**0**	**1**	**R**	**0**
x	**1**	**1**	**1**	**R**	**1**
1	**x**	**0**	**1**	**R**	**1**
1	**0**	**1**	**1**	**R**	**0**
x	**x**	**x**	**0**	**x**	**0**
x	**x**	**x**	**1**	**x**	**IQ**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfrtp_1	44.75520
sky130_fd_sc_hs__sdfrtp_2	47.95200
sky130_fd_sc_hs__sdfrtp_4	49.55040

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	**SCD**	**SCE**	**RESET_B**	**CLK**	**Q**
sky130_fd_sc_hs__sdfrtp_1	0.00186	0.00193	0.00411	0.00564	0.00294	1.43403
sky130_fd_sc_hs__sdfrtp_2	0.00180	0.00194	0.00419	0.00572	0.00294	2.84612
sky130_fd_sc_hs__sdfrtp_4	0.00181	0.00192	0.00422	0.00563	0.00293	5.19983

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.71139	1.42902
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.63422	1.16399
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.99520	1.90260

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)**	0.13877	0.52658	5.31755
sky130_fd_sc_hs__sdfrtp_2	**CLK->Q (RR)**	0.14670	0.44350	5.33774
sky130_fd_sc_hs__sdfrtp_4	**CLK->Q (RR)**	0.17041	0.40301	5.31101

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	**CLK->Q (RF)**	0.14159	0.30144	1.41286
	RESET_B->Q (FF)	0.20324	0.62502	4.99793
sky130_fd_sc_hs__sdfrtp_2	**CLK->Q (RF)**	0.14538	0.27484	1.42450
	RESET_B->Q (FF)	0.20955	0.60355	5.02670
sky130_fd_sc_hs__sdfrtp_4	**CLK->Q (RF)**	0.15216	0.25346	1.29805
	RESET_B->Q (FF)	0.21485	0.58134	4.89863

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)	-0.06523	-0.15399	-1.02346
	setup	CLK (R)	0.11774	0.18562	1.03293
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06511	-0.14685	-1.01343
	setup	CLK (R)	0.11332	0.18008	1.02084
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06418	-0.14685	-1.01474
	setup	CLK (R)	0.10740	0.17463	1.02224

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)	-0.08748	-0.22092	-3.71153
	setup	CLK (R)	0.16362	0.30289	3.74457
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08756	-0.22203	-3.69195
	setup	CLK (R)	0.15569	0.29413	3.72161
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09073	-0.22792	-3.68812
	setup	CLK (R)	0.15479	0.29413	3.71616

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)	-0.06523	-0.15399	-1.02346
	hold	CLK (R)	-0.06761	-0.15475	-1.02557
	setup	CLK (R)	0.11774	0.18556	1.03287
	setup	CLK (R)	0.11760	0.18562	1.03293
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06511	-0.14685	-1.01343
	hold	CLK (R)	-0.06522	-0.14685	-1.01343
	setup	CLK (R)	0.11221	0.17997	1.02081
	setup	CLK (R)	0.11332	0.18008	1.02084
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06418	-0.14685	-1.01474
	hold	CLK (R)	-0.06593	-0.14685	-1.01474
	setup	CLK (R)	0.10740	0.17463	1.02214
	setup	CLK (R)	0.10623	0.17463	1.02224

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)	-0.08924	-0.22092	-3.71172
	hold	CLK (R)	-0.08748	-0.22401	-3.71153
	setup	CLK (R)	0.16362	0.30289	3.74386
	setup	CLK (R)	0.16038	0.30211	3.74457
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08756	-0.22203	-3.69195
	hold	CLK (R)	-0.08757	-0.22203	-3.69197
	setup	CLK (R)	0.15564	0.29413	3.72150
	setup	CLK (R)	0.15569	0.29413	3.72161
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09120	-0.22792	-3.68817
	hold	CLK (R)	-0.09073	-0.22798	-3.68812
	setup	CLK (R)	0.15479	0.29413	3.71613
	setup	CLK (R)	0.15342	0.29413	3.71616

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)	-0.07646	-0.16272	-0.95056
	setup	CLK (R)	0.12771	0.19450	0.96847
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07492	-0.15875	-0.93423
	setup	CLK (R)	0.12599	0.19050	0.95344
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07737	-0.15875	-0.92731
	setup	CLK (R)	0.11678	0.18650	0.94376

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)	-0.11067	-0.25208	-3.91007
	setup	CLK (R)	0.20595	0.34452	3.93321
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11819	-0.25633	-3.89412
	setup	CLK (R)	0.20264	0.34109	3.91836
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12107	-0.26227	-3.89465
	setup	CLK (R)	0.19912	0.34070	3.92111

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)	-0.07646	-0.16272	-0.95800
	hold	CLK (R)	-0.07990	-0.16669	-0.95056
	setup	CLK (R)	0.12606	0.19050	0.96847
	setup	CLK (R)	0.12771	0.19450	0.96545
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07492	-0.15875	-0.94111
	hold	CLK (R)	-0.08131	-0.16272	-0.93423
	setup	CLK (R)	0.12599	0.18650	0.95344
	setup	CLK (R)	0.12485	0.19050	0.94244
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07737	-0.15875	-0.93537
	hold	CLK (R)	-0.07823	-0.16272	-0.92731
	setup	CLK (R)	0.11507	0.18194	0.94376
	setup	CLK (R)	0.11678	0.18650	0.93390

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)	-0.12150	-0.26392	-3.91228
	hold	CLK (R)	-0.11067	-0.25208	-3.91007
	setup	CLK (R)	0.20595	0.34452	3.93321
	setup	CLK (R)	0.19495	0.33559	3.92993
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12468	-0.26653	-3.89806
	hold	CLK (R)	-0.11819	-0.25633	-3.89412
	setup	CLK (R)	0.20264	0.34109	3.91836
	setup	CLK (R)	0.19214	0.33263	3.91815
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12961	-0.27088	-3.89769
	hold	CLK (R)	-0.12107	-0.26227	-3.89465
	setup	CLK (R)	0.19912	0.34070	3.92111
	setup	CLK (R)	0.18998	0.33263	3.91655

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)	-0.06686	-0.14811	-0.46191
	setup	CLK (R)	0.20735	0.22657	0.95260
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.06754	-0.14765	-0.45287
	setup	CLK (R)	0.20190	0.22159	0.95205
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.06517	-0.14685	-0.45068
	setup	CLK (R)	0.19936	0.22134	0.94719

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)	-0.09924	-0.23076	-3.55608
	setup	CLK (R)	0.17147	0.30441	3.80468
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09816	-0.22680	-3.53643
	setup	CLK (R)	0.16146	0.29616	3.76883
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10057	-0.23194	-3.53331
	setup	CLK (R)	0.16046	0.29690	3.76386

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)	-0.12252	-0.14811	-0.46191
	hold	CLK (R)	-0.06686	-0.15353	-0.94251
	setup	CLK (R)	0.20735	0.22657	0.47262
	setup	CLK (R)	0.11466	0.18487	0.95260
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12464	-0.14765	-0.45287
	hold	CLK (R)	-0.06754	-0.15081	-0.94177
	setup	CLK (R)	0.20190	0.22159	0.46582
	setup	CLK (R)	0.11125	0.18113	0.95205
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12951	-0.15416	-0.45068
	hold	CLK (R)	-0.06517	-0.14685	-0.93396
	setup	CLK (R)	0.19936	0.22134	0.46696
	setup	CLK (R)	0.10355	0.17463	0.94719

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)	-0.11791	-0.26281	-3.55608
	hold	CLK (R)	-0.09924	-0.23076	-3.78274
	setup	CLK (R)	0.16697	0.28750	3.56411
	setup	CLK (R)	0.17147	0.30441	3.80468
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11164	-0.25651	-3.53643
	hold	CLK (R)	-0.09816	-0.22680	-3.74514
	setup	CLK (R)	0.15993	0.28300	3.54041
	setup	CLK (R)	0.16146	0.29616	3.76883
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.11252	-0.25679	-3.53331
	hold	CLK (R)	-0.10057	-0.23194	-3.74364
	setup	CLK (R)	0.15505	0.27783	3.53964
	setup	CLK (R)	0.16046	0.29690	3.76386

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)	0.14254	0.19305	1.28878
	removal	CLK (R)	-0.10421	-0.15875	-1.25299
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.13794	0.18850	1.28187
	removal	CLK (R)	-0.10418	-0.15478	-1.24496
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.13063	0.18650	1.27890
	removal	CLK (R)	-0.10263	-0.15478	-1.24311

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)	0.13688	0.18850	1.28878
	recovery	CLK (R)	0.13919	0.18209	1.27343
	recovery	CLK (R)	0.13506	0.17663	1.25369
	recovery	CLK (R)	0.14254	0.19305	1.27930
	removal	CLK (R)	-0.10707	-0.17066	-1.28283
	removal	CLK (R)	-0.10710	-0.16272	-1.26950
	removal	CLK (R)	-0.10421	-0.15875	-1.25299
	removal	CLK (R)	-0.10919	-0.17463	-1.27964
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.13667	0.18650	1.28187
	recovery	CLK (R)	0.13794	0.17939	1.26254
	recovery	CLK (R)	0.13225	0.17255	1.24775
	recovery	CLK (R)	0.13782	0.18850	1.27664
	removal	CLK (R)	-0.10691	-0.16669	-1.27772
	removal	CLK (R)	-0.10783	-0.16272	-1.26258
	removal	CLK (R)	-0.10418	-0.15478	-1.24496
	removal	CLK (R)	-0.10992	-0.17066	-1.27161
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.12813	0.18128	1.27890
	recovery	CLK (R)	0.12807	0.17463	1.26262
	recovery	CLK (R)	0.12880	0.16868	1.24366
	recovery	CLK (R)	0.13063	0.18650	1.26903
	removal	CLK (R)	-0.10496	-0.16669	-1.27294
	removal	CLK (R)	-0.10431	-0.15875	-1.26070
	removal	CLK (R)	-0.10263	-0.15478	-1.24311
	removal	CLK (R)	-0.10623	-0.17066	-1.26683

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 ()	0.11028	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09041	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.11470	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09262	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.11249	0.58716	16.50020
	min_pulse_width	RESET_B ()	0.09483	0.58716	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 ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.07496	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.08821	0.58716	16.50020
	min_pulse_width	CLK ()	0.05730	0.58716	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 ()	0.12574	0.58716	16.50020
	min_pulse_width	CLK ()	0.14119	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.13236	0.58716	16.50020
	min_pulse_width	CLK ()	0.14561	0.58716	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.12353	0.58716	16.50020
	min_pulse_width	CLK ()	0.14340	0.58716	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	0.02550	0.02770	0.09890
	CLK	0.02103	0.02323	0.09465
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02882	0.03129	0.10260
	CLK	0.02420	0.02671	0.09845
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03483	0.03717	0.10852
	CLK	0.03032	0.03271	0.10486

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02651	0.02884	0.09822
	CLK	0.02213	0.02445	0.09381
	RESET_B	0.02213	0.02535	0.09688
	RESET_B	0.03308	0.03622	0.10693
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02933	0.03202	0.10156
	CLK	0.02502	0.02764	0.09708
	RESET_B	0.02531	0.02873	0.10108
	RESET_B	0.03632	0.03966	0.11053
sky130_fd_sc_hs__sdfrtp_4	CLK	0.03664	0.03971	0.10974
	CLK	0.03224	0.03525	0.10478
	RESET_B	0.03266	0.03634	0.11250
	RESET_B	0.04355	0.04716	0.11830

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)**	0.00130	0.00132	0.00130
	(CLK * RESET_B * SCD * SCE)	-0.00058	-0.00059	-0.00058
	(CLK * RESET_B * SCD * !SCE)	0.00605	0.00692	0.03771
	(CLK * RESET_B * SCD * !SCE)	0.00247	0.00333	0.03414
	(CLK * RESET_B * !SCD * !SCE)	0.00605	0.00692	0.03771
	(CLK * RESET_B * !SCD * !SCE)	0.00248	0.00333	0.03414
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(CLK * !SCD * SCE)	-0.00130	-0.00133	-0.00134
	(CLK * !RESET_B * SCD * SCE)	0.00063	0.00063	0.00062
	(CLK * !RESET_B * SCD * SCE)	-0.00132	-0.00135	-0.00135
	(CLK * !RESET_B * SCD * !SCE)	0.00042	0.00042	0.00038
	(CLK * !RESET_B * SCD * !SCE)	-0.00152	-0.00153	-0.00159
	(CLK * !RESET_B * !SCD * !SCE)	0.00042	0.00042	0.00039
	(CLK * !RESET_B * !SCD * !SCE)	-0.00155	-0.00156	-0.00160
	(!CLK * RESET_B * SCD * SCE)	0.00130	0.00130	0.00130
	(!CLK * RESET_B * SCD * SCE)	-0.00058	-0.00058	-0.00058
	(!CLK * RESET_B * SCD * !SCE)	0.01274	0.01360	0.04894
	(!CLK * RESET_B * SCD * !SCE)	0.00897	0.00982	0.04516
	(!CLK * RESET_B * !SCD * !SCE)	0.01274	0.01360	0.04894
	(!CLK * RESET_B * !SCD * !SCE)	0.00897	0.00982	0.04516
	(!CLK * !SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00130	-0.00133	-0.00134
	(!CLK * !RESET_B * SCD * SCE)	0.00063	0.00063	0.00062
	(!CLK * !RESET_B * SCD * SCE)	-0.00132	-0.00135	-0.00135
	(!CLK * !RESET_B * SCD * !SCE)	0.00042	0.00042	0.00038
	(!CLK * !RESET_B * SCD * !SCE)	-0.00152	-0.00153	-0.00159
	(!CLK * !RESET_B * !SCD * !SCE)	0.00042	0.00042	0.00039
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00156	-0.00156	-0.00160

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00123	0.00124	0.00123
	(CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * RESET_B * SCD * !SCE)	0.00519	0.00615	0.03739
	(CLK * RESET_B * SCD * !SCE)	0.00178	0.00272	0.03397
	(CLK * RESET_B * !SCD * !SCE)	0.00520	0.00615	0.03739
	(CLK * RESET_B * !SCD * !SCE)	0.00178	0.00272	0.03398
	(CLK * !SCD * SCE)	0.00063	0.00063	0.00062
	(CLK * !SCD * SCE)	-0.00122	-0.00125	-0.00126
	(CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00060
	(CLK * !RESET_B * SCD * SCE)	-0.00124	-0.00127	-0.00127
	(CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00037
	(CLK * !RESET_B * SCD * !SCE)	-0.00143	-0.00145	-0.00150
	(CLK * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00038
	(CLK * !RESET_B * !SCD * !SCE)	-0.00148	-0.00148	-0.00152
	(!CLK * RESET_B * SCD * SCE)	0.00123	0.00124	0.00124
	(!CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(!CLK * RESET_B * SCD * !SCE)	0.01210	0.01302	0.04823
	(!CLK * RESET_B * SCD * !SCE)	0.00850	0.00940	0.04462
	(!CLK * RESET_B * !SCD * !SCE)	0.01211	0.01302	0.04823
	(!CLK * RESET_B * !SCD * !SCE)	0.00850	0.00940	0.04462
	(!CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(!CLK * !SCD * SCE)	-0.00122	-0.00125	-0.00126
	(!CLK * !RESET_B * SCD * SCE)	0.00061	0.00061	0.00060
	(!CLK * !RESET_B * SCD * SCE)	-0.00124	-0.00127	-0.00127
	(!CLK * !RESET_B * SCD * !SCE)	0.00041	0.00041	0.00037
	(!CLK * !RESET_B * SCD * !SCE)	-0.00143	-0.00145	-0.00150
	(!CLK * !RESET_B * !SCD * !SCE)	0.00041	0.00041	0.00038
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00148	-0.00147	-0.00152

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00123	0.00124	0.00124
	(CLK * RESET_B * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * RESET_B * SCD * !SCE)	0.00527	0.00621	0.03741
	(CLK * RESET_B * SCD * !SCE)	0.00181	0.00274	0.03396
	(CLK * RESET_B * !SCD * !SCE)	0.00527	0.00621	0.03741
	(CLK * RESET_B * !SCD * !SCE)	0.00181	0.00274	0.03396
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00061
	(CLK * !SCD * SCE)	-0.00123	-0.00126	-0.00128
	(CLK * !RESET_B * SCD * SCE)	0.00060	0.00061	0.00059
	(CLK * !RESET_B * SCD * SCE)	-0.00124	-0.00127	-0.00128
	(CLK * !RESET_B * SCD * !SCE)	0.00042	0.00041	0.00038
	(CLK * !RESET_B * SCD * !SCE)	-0.00144	-0.00144	-0.00149
	(CLK * !RESET_B * !SCD * !SCE)	0.00042	0.00041	0.00038
	(CLK * !RESET_B * !SCD * !SCE)	-0.00147	-0.00147	-0.00151
	(!CLK * RESET_B * SCD * SCE)	0.00124	0.00124	0.00124
	(!CLK * RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00054
	(!CLK * RESET_B * SCD * !SCE)	0.01223	0.01316	0.04871
	(!CLK * RESET_B * SCD * !SCE)	0.00857	0.00950	0.04505
	(!CLK * RESET_B * !SCD * !SCE)	0.01223	0.01316	0.04871
	(!CLK * RESET_B * !SCD * !SCE)	0.00857	0.00951	0.04505
	(!CLK * !SCD * SCE)	0.00063	0.00064	0.00062
	(!CLK * !SCD * SCE)	-0.00123	-0.00126	-0.00127
	(!CLK * !RESET_B * SCD * SCE)	0.00060	0.00061	0.00059
	(!CLK * !RESET_B * SCD * SCE)	-0.00124	-0.00127	-0.00128
	(!CLK * !RESET_B * SCD * !SCE)	0.00042	0.00041	0.00038
	(!CLK * !RESET_B * SCD * !SCE)	-0.00144	-0.00144	-0.00149
	(!CLK * !RESET_B * !SCD * !SCE)	0.00042	0.00042	0.00038
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00147	-0.00148	-0.00151

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)**	-0.00123	-0.00126	-0.00128
	(CLK * RESET_B * SCD * SCE)	0.00062	0.00063	0.00061
	(CLK * RESET_B * SCD * !SCE)	0.00061	0.00199	0.03296
	(CLK * RESET_B * SCD * !SCE)	0.00418	0.00557	0.03654
	(CLK * RESET_B * !SCD * !SCE)	0.00061	0.00191	0.03296
	(CLK * RESET_B * !SCD * !SCE)	0.00418	0.00549	0.03654
	(CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00134	0.00134	0.00134
	(CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(CLK * !RESET_B * SCD * SCE)	0.00134	0.00135	0.00135
	(CLK * !RESET_B * SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !RESET_B * SCD * !SCE)	0.00161	0.00162	0.00161
	(CLK * !RESET_B * !SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !RESET_B * !SCD * !SCE)	0.00161	0.00162	0.00161
	(!CLK * RESET_B * SCD * SCE)	-0.00123	-0.00126	-0.00128
	(!CLK * RESET_B * SCD * SCE)	0.00063	0.00063	0.00061
	(!CLK * RESET_B * SCD * !SCE)	0.00770	0.00992	0.04695
	(!CLK * RESET_B * SCD * !SCE)	0.01148	0.01369	0.05072
	(!CLK * RESET_B * !SCD * !SCE)	0.00771	0.00957	0.04695
	(!CLK * RESET_B * !SCD * !SCE)	0.01149	0.01334	0.05072
	(!CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK * !SCD * SCE)	0.00135	0.00135	0.00135
	(!CLK * !RESET_B * SCD * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK * !RESET_B * SCD * SCE)	0.00134	0.00135	0.00135
	(!CLK * !RESET_B * SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B * SCD * !SCE)	0.00161	0.00162	0.00161
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B * !SCD * !SCE)	0.00161	0.00162	0.00161

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00117	-0.00119	-0.00122
	(CLK * RESET_B * SCD * SCE)	0.00059	0.00059	0.00057
	(CLK * RESET_B * SCD * !SCE)	0.00066	0.00211	0.03349
	(CLK * RESET_B * SCD * !SCE)	0.00407	0.00555	0.03691
	(CLK * RESET_B * !SCD * !SCE)	0.00066	0.00205	0.03349
	(CLK * RESET_B * !SCD * !SCE)	0.00408	0.00548	0.03691
	(CLK * !SCD * SCE)	-0.00060	-0.00060	-0.00060
	(CLK * !SCD * SCE)	0.00126	0.00126	0.00127
	(CLK * !RESET_B * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(CLK * !RESET_B * SCD * SCE)	0.00126	0.00127	0.00127
	(CLK * !RESET_B * SCD * !SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !RESET_B * SCD * !SCE)	0.00152	0.00153	0.00152
	(CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00035	-0.00035
	(CLK * !RESET_B * !SCD * !SCE)	0.00153	0.00153	0.00153
	(!CLK * RESET_B * SCD * SCE)	-0.00117	-0.00120	-0.00122
	(!CLK * RESET_B * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * RESET_B * SCD * !SCE)	0.00818	0.00996	0.04696
	(!CLK * RESET_B * SCD * !SCE)	0.01180	0.01357	0.05057
	(!CLK * RESET_B * !SCD * !SCE)	0.00819	0.00995	0.04697
	(!CLK * RESET_B * !SCD * !SCE)	0.01180	0.01357	0.05057
	(!CLK * !SCD * SCE)	-0.00060	-0.00061	-0.00060
	(!CLK * !SCD * SCE)	0.00126	0.00127	0.00127
	(!CLK * !RESET_B * SCD * SCE)	-0.00058	-0.00059	-0.00059
	(!CLK * !RESET_B * SCD * SCE)	0.00127	0.00127	0.00127
	(!CLK * !RESET_B * SCD * !SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !RESET_B * SCD * !SCE)	0.00152	0.00153	0.00152
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00036	-0.00035	-0.00035
	(!CLK * !RESET_B * !SCD * !SCE)	0.00153	0.00153	0.00153

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00117	-0.00120	-0.00122
	(CLK * RESET_B * SCD * SCE)	0.00059	0.00059	0.00057
	(CLK * RESET_B * SCD * !SCE)	0.00060	0.00205	0.03340
	(CLK * RESET_B * SCD * !SCE)	0.00406	0.00552	0.03685
	(CLK * RESET_B * !SCD * !SCE)	0.00061	0.00199	0.03340
	(CLK * RESET_B * !SCD * !SCE)	0.00406	0.00546	0.03685
	(CLK * !SCD * SCE)	-0.00059	-0.00060	-0.00059
	(CLK * !SCD * SCE)	0.00127	0.00130	0.00128
	(CLK * !RESET_B * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00128
	(CLK * !RESET_B * SCD * !SCE)	-0.00036	-0.00036	-0.00036
	(CLK * !RESET_B * SCD * !SCE)	0.00151	0.00152	0.00152
	(CLK * !RESET_B * !SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(CLK * !RESET_B * !SCD * !SCE)	0.00152	0.00153	0.00152
	(!CLK * RESET_B * SCD * SCE)	-0.00117	-0.00119	-0.00121
	(!CLK * RESET_B * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK * RESET_B * SCD * !SCE)	0.00787	0.00968	0.04702
	(!CLK * RESET_B * SCD * !SCE)	0.01153	0.01335	0.05067
	(!CLK * RESET_B * !SCD * !SCE)	0.00788	0.00971	0.04702
	(!CLK * RESET_B * !SCD * !SCE)	0.01154	0.01337	0.05067
	(!CLK * !SCD * SCE)	-0.00058	-0.00059	-0.00058
	(!CLK * !SCD * SCE)	0.00128	0.00129	0.00129
	(!CLK * !RESET_B * SCD * SCE)	-0.00057	-0.00058	-0.00058
	(!CLK * !RESET_B * SCD * SCE)	0.00128	0.00129	0.00129
	(!CLK * !RESET_B * SCD * !SCE)	-0.00036	-0.00036	-0.00036
	(!CLK * !RESET_B * SCD * !SCE)	0.00151	0.00152	0.00152
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B * !SCD * !SCE)	0.00152	0.00152	0.00152

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)**	0.00752	0.00783	0.02751
	(CLK * D * RESET_B * SCE)	0.00291	0.00320	0.02289
	(CLK * D * RESET_B * !SCE)	0.00127	0.00112	0.00109
	(CLK * D * RESET_B * !SCE)	-0.00105	-0.00122	-0.00123
	(CLK * D * !RESET_B * SCE)	0.00059	0.00059	0.00058
	(CLK * D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(CLK * D * !RESET_B * !SCE)	0.00042	0.00042	0.00042
	(CLK * D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00149
	(CLK * !D * RESET_B * SCE)	0.00822	0.00847	0.02780
	(CLK * !D * RESET_B * SCE)	0.00351	0.00375	0.02308
	(CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00058
	(CLK * !D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(!D * RESET_B * !SCE)	0.00087	0.00088	0.00088
	(!D * RESET_B * !SCE)	-0.00143	-0.00145	-0.00145
	(!D * !RESET_B * !SCE)	0.00048	0.00048	0.00048
	(!D * !RESET_B * !SCE)	-0.00156	-0.00157	-0.00157
	(!CLK * D * RESET_B * SCE)	0.01421	0.01473	0.03770
	(!CLK * D * RESET_B * SCE)	0.00940	0.00990	0.03289
	(!CLK * D * RESET_B * !SCE)	0.00127	0.00112	0.00110
	(!CLK * D * RESET_B * !SCE)	-0.00105	-0.00122	-0.00123
	(!CLK * D * !RESET_B * SCE)	0.00059	0.00060	0.00057
	(!CLK * D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(!CLK * D * !RESET_B * !SCE)	0.00042	0.00041	0.00042
	(!CLK * D * !RESET_B * !SCE)	-0.00148	-0.00148	-0.00149
	(!CLK * !D * RESET_B * SCE)	0.01490	0.01537	0.03781
	(!CLK * !D * RESET_B * SCE)	0.00999	0.01045	0.03290
	(!CLK * !D * !RESET_B * SCE)	0.00059	0.00059	0.00057
	(!CLK * !D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00686	0.00718	0.02701
	(CLK * D * RESET_B * SCE)	0.00232	0.00262	0.02246
	(CLK * D * RESET_B * !SCE)	0.00128	0.00112	0.00111
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00119	-0.00121
	(CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * D * !RESET_B * SCE)	-0.00136	-0.00137	-0.00136
	(CLK * D * !RESET_B * !SCE)	0.00040	0.00041	0.00040
	(CLK * D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00149
	(CLK * !D * RESET_B * SCE)	0.00756	0.00782	0.02729
	(CLK * !D * RESET_B * SCE)	0.00291	0.00316	0.02264
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * !D * !RESET_B * SCE)	-0.00136	-0.00137	-0.00136
	(!D * RESET_B * !SCE)	0.00086	0.00087	0.00086
	(!D * RESET_B * !SCE)	-0.00144	-0.00146	-0.00145
	(!D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * !RESET_B * !SCE)	-0.00156	-0.00158	-0.00157
	(!CLK * D * RESET_B * SCE)	0.01377	0.01427	0.03700
	(!CLK * D * RESET_B * SCE)	0.00904	0.00953	0.03227
	(!CLK * D * RESET_B * !SCE)	0.00128	0.00113	0.00111
	(!CLK * D * RESET_B * !SCE)	-0.00103	-0.00120	-0.00121
	(!CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * D * !RESET_B * SCE)	-0.00136	-0.00137	-0.00136
	(!CLK * D * !RESET_B * !SCE)	0.00041	0.00041	0.00040
	(!CLK * D * !RESET_B * !SCE)	-0.00148	-0.00149	-0.00149
	(!CLK * !D * RESET_B * SCE)	0.01446	0.01489	0.03712
	(!CLK * !D * RESET_B * SCE)	0.00962	0.01004	0.03228
	(!CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * !D * !RESET_B * SCE)	-0.00136	-0.00137	-0.00136

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00689	0.00722	0.02707
	(CLK * D * RESET_B * SCE)	0.00233	0.00264	0.02251
	(CLK * D * RESET_B * !SCE)	0.00125	0.00109	0.00108
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00119	-0.00121
	(CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00040
	(CLK * D * !RESET_B * !SCE)	-0.00145	-0.00147	-0.00146
	(CLK * !D * RESET_B * SCE)	0.00759	0.00785	0.02736
	(CLK * !D * RESET_B * SCE)	0.00293	0.00317	0.02269
	(CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(CLK * !D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(!D * RESET_B * !SCE)	0.00086	0.00087	0.00086
	(!D * RESET_B * !SCE)	-0.00141	-0.00143	-0.00142
	(!D * !RESET_B * !SCE)	0.00047	0.00047	0.00047
	(!D * !RESET_B * !SCE)	-0.00153	-0.00155	-0.00154
	(!CLK * D * RESET_B * SCE)	0.01384	0.01437	0.03742
	(!CLK * D * RESET_B * SCE)	0.00909	0.00961	0.03265
	(!CLK * D * RESET_B * !SCE)	0.00126	0.00111	0.00109
	(!CLK * D * RESET_B * !SCE)	-0.00102	-0.00119	-0.00120
	(!CLK * D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133
	(!CLK * D * !RESET_B * !SCE)	0.00040	0.00040	0.00040
	(!CLK * D * !RESET_B * !SCE)	-0.00145	-0.00147	-0.00146
	(!CLK * !D * RESET_B * SCE)	0.01453	0.01501	0.03750
	(!CLK * !D * RESET_B * SCE)	0.00968	0.01015	0.03264
	(!CLK * !D * !RESET_B * SCE)	0.00055	0.00056	0.00054
	(!CLK * !D * !RESET_B * SCE)	-0.00133	-0.00134	-0.00133

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)	0.00194	0.00222	0.02175
	(CLK * D * RESET_B * SCE)	0.00656	0.00685	0.02635
	(CLK * D * RESET_B * !SCE)	-0.00104	-0.00107	-0.00107
	(CLK * D * RESET_B * !SCE)	0.00125	0.00126	0.00126
	(CLK * D * !RESET_B * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(CLK * D * !RESET_B * !SCE)	-0.00040	-0.00040	-0.00040
	(CLK * D * !RESET_B * !SCE)	0.00150	0.00151	0.00150
	(CLK * !D * RESET_B * SCE)	0.00152	0.00185	0.02162
	(CLK * !D * RESET_B * SCE)	0.00623	0.00658	0.02633
	(CLK * !D * !RESET_B * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(!D * RESET_B * !SCE)	-0.00082	-0.00087	-0.00088
	(!D * RESET_B * !SCE)	0.00149	0.00146	0.00145
	(!D * !RESET_B * !SCE)	-0.00048	-0.00048	-0.00048
	(!D * !RESET_B * !SCE)	0.00159	0.00160	0.00160
	(!CLK * D * RESET_B * SCE)	0.00923	0.00999	0.03399
	(!CLK * D * RESET_B * SCE)	0.01404	0.01482	0.03879
	(!CLK * D * RESET_B * !SCE)	-0.00104	-0.00107	-0.00107
	(!CLK * D * RESET_B * !SCE)	0.00125	0.00126	0.00126
	(!CLK * D * !RESET_B * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * D * !RESET_B * SCE)	0.00137	0.00137	0.00135
	(!CLK * D * !RESET_B * !SCE)	-0.00040	-0.00040	-0.00040
	(!CLK * D * !RESET_B * !SCE)	0.00150	0.00151	0.00150
	(!CLK * !D * RESET_B * SCE)	0.00883	0.00944	0.03397
	(!CLK * !D * RESET_B * SCE)	0.01374	0.01436	0.03887
	(!CLK * !D * !RESET_B * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * !D * !RESET_B * SCE)	0.00137	0.00137	0.00135

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00192	0.00221	0.02187
	(CLK * D * RESET_B * SCE)	0.00647	0.00678	0.02641
	(CLK * D * RESET_B * !SCE)	-0.00105	-0.00108	-0.00109
	(CLK * D * RESET_B * !SCE)	0.00123	0.00124	0.00124
	(CLK * D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * D * !RESET_B * SCE)	0.00139	0.00140	0.00138
	(CLK * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(CLK * D * !RESET_B * !SCE)	0.00150	0.00150	0.00150
	(CLK * !D * RESET_B * SCE)	0.00149	0.00184	0.02174
	(CLK * !D * RESET_B * SCE)	0.00614	0.00650	0.02638
	(CLK * !D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !D * !RESET_B * SCE)	0.00140	0.00140	0.00138
	(!D * RESET_B * !SCE)	-0.00081	-0.00086	-0.00086
	(!D * RESET_B * !SCE)	0.00150	0.00146	0.00146
	(!D * !RESET_B * !SCE)	-0.00047	-0.00047	-0.00047
	(!D * !RESET_B * !SCE)	0.00159	0.00160	0.00160
	(!CLK * D * RESET_B * SCE)	0.00960	0.01010	0.03383
	(!CLK * D * RESET_B * SCE)	0.01434	0.01484	0.03855
	(!CLK * D * RESET_B * !SCE)	-0.00105	-0.00109	-0.00109
	(!CLK * D * RESET_B * !SCE)	0.00123	0.00125	0.00124
	(!CLK * D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * D * !RESET_B * SCE)	0.00139	0.00140	0.00138
	(!CLK * D * !RESET_B * !SCE)	-0.00039	-0.00039	-0.00039
	(!CLK * D * !RESET_B * !SCE)	0.00150	0.00151	0.00150
	(!CLK * !D * RESET_B * SCE)	0.00921	0.00978	0.03386
	(!CLK * !D * RESET_B * SCE)	0.01405	0.01463	0.03869
	(!CLK * !D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * !D * !RESET_B * SCE)	0.00140	0.00140	0.00138

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00194	0.00224	0.02190
	(CLK * D * RESET_B * SCE)	0.00651	0.00682	0.02645
	(CLK * D * RESET_B * !SCE)	-0.00103	-0.00106	-0.00106
	(CLK * D * RESET_B * !SCE)	0.00123	0.00125	0.00124
	(CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(CLK * D * !RESET_B * SCE)	0.00136	0.00138	0.00135
	(CLK * D * !RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(CLK * D * !RESET_B * !SCE)	0.00148	0.00149	0.00148
	(CLK * !D * RESET_B * SCE)	0.00146	0.00181	0.02173
	(CLK * !D * RESET_B * SCE)	0.00611	0.00648	0.02638
	(CLK * !D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(CLK * !D * !RESET_B * SCE)	0.00137	0.00138	0.00135
	(!D * RESET_B * !SCE)	-0.00081	-0.00086	-0.00086
	(!D * RESET_B * !SCE)	0.00147	0.00144	0.00143
	(!D * !RESET_B * !SCE)	-0.00047	-0.00047	-0.00047
	(!D * !RESET_B * !SCE)	0.00157	0.00157	0.00158
	(!CLK * D * RESET_B * SCE)	0.00941	0.00992	0.03389
	(!CLK * D * RESET_B * SCE)	0.01417	0.01469	0.03864
	(!CLK * D * RESET_B * !SCE)	-0.00102	-0.00106	-0.00105
	(!CLK * D * RESET_B * !SCE)	0.00124	0.00126	0.00124
	(!CLK * D * !RESET_B * SCE)	-0.00050	-0.00051	-0.00051
	(!CLK * D * !RESET_B * SCE)	0.00136	0.00138	0.00135
	(!CLK * D * !RESET_B * !SCE)	-0.00038	-0.00039	-0.00039
	(!CLK * D * !RESET_B * !SCE)	0.00148	0.00148	0.00148
	(!CLK * !D * RESET_B * SCE)	0.00893	0.00953	0.03388
	(!CLK * !D * RESET_B * SCE)	0.01378	0.01439	0.03873
	(!CLK * !D * !RESET_B * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK * !D * !RESET_B * SCE)	0.00137	0.00138	0.00135

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)	0.00559	0.00701	0.05010
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00043	0.00098	0.04407
	(CLK * D * RESET_B * !SCD)	0.00820	0.00953	0.05436
	(CLK * D * RESET_B * !SCD)	0.00431	0.00560	0.05041
	(CLK * !D * RESET_B * SCD)	0.01121	0.01341	0.07775
	(CLK * !D * RESET_B * SCD)	0.00340	0.00558	0.06995
	(!CLK * D * RESET_B * SCD)	0.00559	0.00701	0.05010
	(!CLK * D * RESET_B * SCD)	-0.00043	0.00098	0.04408
	(!CLK * D * RESET_B * !SCD)	0.01533	0.01669	0.06231
	(!CLK * D * RESET_B * !SCD)	0.01163	0.01296	0.05855
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00553	0.00719	0.05030
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00016	0.00145	0.04459
	(!CLK * !D * RESET_B * SCD)	0.01788	0.02034	0.08879
	(!CLK * !D * RESET_B * SCD)	0.00987	0.01232	0.08082

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00560	0.00708	0.05060
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00049	0.00097	0.04450
	(CLK * D * RESET_B * !SCD)	0.00811	0.00948	0.05482
	(CLK * D * RESET_B * !SCD)	0.00410	0.00542	0.05073
	(CLK * !D * RESET_B * SCD)	0.01052	0.01282	0.07829
	(CLK * !D * RESET_B * SCD)	0.00268	0.00499	0.07050
	(!CLK * D * RESET_B * SCD)	0.00560	0.00708	0.05060
	(!CLK * D * RESET_B * SCD)	-0.00049	0.00097	0.04450
	(!CLK * D * RESET_B * !SCD)	0.01567	0.01706	0.06305
	(!CLK * D * RESET_B * !SCD)	0.01184	0.01321	0.05916
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00547	0.00722	0.05073
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00028	0.00142	0.04496
	(!CLK * !D * RESET_B * SCD)	0.01741	0.01996	0.08907
	(!CLK * !D * RESET_B * SCD)	0.00940	0.01194	0.08108

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00562	0.00710	0.05062
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00049	0.00097	0.04451
	(CLK * D * RESET_B * !SCD)	0.00813	0.00948	0.05490
	(CLK * D * RESET_B * !SCD)	0.00414	0.00547	0.05084
	(CLK * !D * RESET_B * SCD)	0.01058	0.01287	0.07838
	(CLK * !D * RESET_B * SCD)	0.00270	0.00499	0.07054
	(!CLK * D * RESET_B * SCD)	0.00562	0.00710	0.05063
	(!CLK * D * RESET_B * SCD)	-0.00049	0.00098	0.04452
	(!CLK * D * RESET_B * !SCD)	0.01545	0.01684	0.06290
	(!CLK * D * RESET_B * !SCD)	0.01165	0.01302	0.05904
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00546	0.00721	0.05073
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00030	0.00141	0.04495
	(!CLK * !D * RESET_B * SCD)	0.01752	0.02010	0.08975
	(!CLK * !D * RESET_B * SCD)	0.00945	0.01201	0.08168

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)**	-0.00039	0.00200	0.04493
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00560	0.00801	0.05095
	(CLK * D * RESET_B * !SCD)	0.00565	0.00779	0.05196
	(CLK * D * RESET_B * !SCD)	0.00959	0.01171	0.05573
	(CLK * !D * RESET_B * SCD)	0.00098	0.00349	0.06714
	(CLK * !D * RESET_B * SCD)	0.00876	0.01129	0.07495
	(!CLK * D * RESET_B * SCD)	-0.00039	0.00201	0.04493
	(!CLK * D * RESET_B * SCD)	0.00561	0.00802	0.05095
	(!CLK * D * RESET_B * !SCD)	0.01232	0.01453	0.05867
	(!CLK * D * RESET_B * !SCD)	0.01606	0.01827	0.06225
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00047	0.00184	0.04472
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00523	0.00751	0.05040
	(!CLK * !D * RESET_B * SCD)	0.00803	0.01085	0.07831
	(!CLK * !D * RESET_B * SCD)	0.01601	0.01886	0.08631

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00051	0.00192	0.04531
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00556	0.00802	0.05137
	(CLK * D * RESET_B * !SCD)	0.00474	0.00691	0.05165
	(CLK * D * RESET_B * !SCD)	0.00881	0.01100	0.05555
	(CLK * !D * RESET_B * SCD)	0.00096	0.00357	0.06850
	(CLK * !D * RESET_B * SCD)	0.00877	0.01140	0.07633
	(!CLK * D * RESET_B * SCD)	-0.00051	0.00193	0.04531
	(!CLK * D * RESET_B * SCD)	0.00556	0.00802	0.05137
	(!CLK * D * RESET_B * !SCD)	0.01163	0.01389	0.05847
	(!CLK * D * RESET_B * !SCD)	0.01552	0.01779	0.06219
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00051	0.00183	0.04516
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00527	0.00759	0.05091
	(!CLK * !D * RESET_B * SCD)	0.00845	0.01128	0.07937
	(!CLK * !D * RESET_B * SCD)	0.01645	0.01929	0.08738

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00055	0.00189	0.04528
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00554	0.00800	0.05136
	(CLK * D * RESET_B * !SCD)	0.00476	0.00695	0.05168
	(CLK * D * RESET_B * !SCD)	0.00881	0.01100	0.05555
	(CLK * !D * RESET_B * SCD)	0.00090	0.00351	0.06846
	(CLK * !D * RESET_B * SCD)	0.00875	0.01137	0.07634
	(!CLK * D * RESET_B * SCD)	-0.00054	0.00191	0.04529
	(!CLK * D * RESET_B * SCD)	0.00555	0.00801	0.05136
	(!CLK * D * RESET_B * !SCD)	0.01171	0.01398	0.05859
	(!CLK * D * RESET_B * !SCD)	0.01556	0.01783	0.06228
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00052	0.00183	0.04516
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00527	0.00760	0.05092
	(!CLK * !D * RESET_B * SCD)	0.00813	0.01098	0.07935
	(!CLK * !D * RESET_B * SCD)	0.01618	0.01906	0.08741

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)**	0.01067	0.01108	0.04693
	(CLK * D * SCD * SCE * !Q)	0.00015	0.00049	0.03639
	(CLK * D * SCD * !SCE * !Q)	0.01049	0.01095	0.04724
	(CLK * D * SCD * !SCE * !Q)	0.00038	0.00076	0.03709
	(CLK * D * !SCD * SCE * !Q)	0.00342	0.00347	0.00343
	(CLK * D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00426
	(CLK * D * !SCD * !SCE * !Q)	0.00999	0.01053	0.04708
	(CLK * D * !SCD * !SCE * !Q)	0.00037	0.00086	0.03744
	(CLK * !D * SCD * SCE * !Q)	0.01136	0.01170	0.04720
	(CLK * !D * SCD * SCE * !Q)	0.00075	0.00103	0.03654
	(CLK * !D * SCD * !SCE * !Q)	0.00338	0.00343	0.00340
	(CLK * !D * SCD * !SCE * !Q)	-0.00426	-0.00430	-0.00427
	(CLK * !D * !SCD * SCE * !Q)	0.00341	0.00347	0.00343
	(CLK * !D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00426
	(CLK * !D * !SCD * !SCE * !Q)	0.00339	0.00344	0.00341
	(CLK * !D * !SCD * !SCE * !Q)	-0.00427	-0.00430	-0.00428
	(!CLK * D * SCD * SCE * !Q)	0.01803	0.01822	0.06358
	(!CLK * D * SCD * SCE * !Q)	0.00733	0.00744	0.05288
	(!CLK * D * SCD * !SCE * !Q)	0.01787	0.01802	0.06424
	(!CLK * D * SCD * !SCE * !Q)	0.00756	0.00770	0.05392
	(!CLK * D * !SCD * SCE * !Q)	0.00345	0.00346	0.00344
	(!CLK * D * !SCD * SCE * !Q)	-0.00425	-0.00425	-0.00424
	(!CLK * D * !SCD * !SCE * !Q)	0.01736	0.01760	0.06389
	(!CLK * D * !SCD * !SCE * !Q)	0.00756	0.00778	0.05407
	(!CLK * !D * SCD * SCE * !Q)	0.01874	0.01886	0.06360
	(!CLK * !D * SCD * SCE * !Q)	0.00793	0.00801	0.05277
	(!CLK * !D * SCD * !SCE * !Q)	0.00340	0.00341	0.00341
	(!CLK * !D * SCD * !SCE * !Q)	-0.00425	-0.00425	-0.00426
	(!CLK * !D * !SCD * SCE * !Q)	0.00344	0.00346	0.00345
	(!CLK * !D * !SCD * SCE * !Q)	-0.00424	-0.00424	-0.00424
	(!CLK * !D * !SCD * !SCE * !Q)	0.00341	0.00342	0.00342
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00426	-0.00426	-0.00426

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00998	0.01047	0.04661
	(CLK * D * SCD * SCE * !Q)	-0.00050	-0.00009	0.03610
	(CLK * D * SCD * !SCE * !Q)	0.00966	0.01018	0.04685
	(CLK * D * SCD * !SCE * !Q)	-0.00042	0.00008	0.03673
	(CLK * D * !SCD * SCE * !Q)	0.00342	0.00345	0.00343
	(CLK * D * !SCD * SCE * !Q)	-0.00427	-0.00429	-0.00428
	(CLK * D * !SCD * !SCE * !Q)	0.00916	0.00980	0.04667
	(CLK * D * !SCD * !SCE * !Q)	-0.00043	0.00016	0.03708
	(CLK * !D * SCD * SCE * !Q)	0.01068	0.01108	0.04688
	(CLK * !D * SCD * SCE * !Q)	0.00010	0.00045	0.03626
	(CLK * !D * SCD * !SCE * !Q)	0.00339	0.00344	0.00341
	(CLK * !D * SCD * !SCE * !Q)	-0.00429	-0.00432	-0.00430
	(CLK * !D * !SCD * SCE * !Q)	0.00342	0.00345	0.00343
	(CLK * !D * !SCD * SCE * !Q)	-0.00427	-0.00429	-0.00428
	(CLK * !D * !SCD * !SCE * !Q)	0.00340	0.00345	0.00341
	(CLK * !D * !SCD * !SCE * !Q)	-0.00430	-0.00433	-0.00430
	(!CLK * D * SCD * SCE * !Q)	0.01763	0.01782	0.06304
	(!CLK * D * SCD * SCE * !Q)	0.00697	0.00711	0.05235
	(!CLK * D * SCD * !SCE * !Q)	0.01732	0.01752	0.06358
	(!CLK * D * SCD * !SCE * !Q)	0.00705	0.00723	0.05328
	(!CLK * D * !SCD * SCE * !Q)	0.00343	0.00347	0.00343
	(!CLK * D * !SCD * SCE * !Q)	-0.00430	-0.00432	-0.00429
	(!CLK * D * !SCD * !SCE * !Q)	0.01681	0.01708	0.06323
	(!CLK * D * !SCD * !SCE * !Q)	0.00706	0.00731	0.05346
	(!CLK * !D * SCD * SCE * !Q)	0.01833	0.01846	0.06305
	(!CLK * !D * SCD * SCE * !Q)	0.00757	0.00766	0.05226
	(!CLK * !D * SCD * !SCE * !Q)	0.00337	0.00344	0.00340
	(!CLK * !D * SCD * !SCE * !Q)	-0.00428	-0.00433	-0.00431
	(!CLK * !D * !SCD * SCE * !Q)	0.00342	0.00344	0.00343
	(!CLK * !D * !SCD * SCE * !Q)	-0.00429	-0.00430	-0.00429
	(!CLK * !D * !SCD * !SCE * !Q)	0.00340	0.00344	0.00340
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00431	-0.00434	-0.00431

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.01002	0.01047	0.04664
	(CLK * D * SCD * SCE * !Q)	-0.00043	-0.00000	0.03615
	(CLK * D * SCD * !SCE * !Q)	0.00970	0.01024	0.04685
	(CLK * D * SCD * !SCE * !Q)	-0.00035	0.00012	0.03677
	(CLK * D * !SCD * SCE * !Q)	0.00337	0.00343	0.00339
	(CLK * D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00426
	(CLK * D * !SCD * !SCE * !Q)	0.00920	0.00983	0.04668
	(CLK * D * !SCD * !SCE * !Q)	-0.00036	0.00022	0.03710
	(CLK * !D * SCD * SCE * !Q)	0.01072	0.01112	0.04693
	(CLK * !D * SCD * SCE * !Q)	0.00017	0.00051	0.03634
	(CLK * !D * SCD * !SCE * !Q)	0.00335	0.00339	0.00336
	(CLK * !D * SCD * !SCE * !Q)	-0.00426	-0.00430	-0.00427
	(CLK * !D * !SCD * SCE * !Q)	0.00337	0.00342	0.00339
	(CLK * !D * !SCD * SCE * !Q)	-0.00425	-0.00428	-0.00426
	(CLK * !D * !SCD * !SCE * !Q)	0.00335	0.00340	0.00337
	(CLK * !D * !SCD * !SCE * !Q)	-0.00427	-0.00430	-0.00428
	(!CLK * D * SCD * SCE * !Q)	0.01761	0.01784	0.06333
	(!CLK * D * SCD * SCE * !Q)	0.00698	0.00716	0.05268
	(!CLK * D * SCD * !SCE * !Q)	0.01731	0.01753	0.06389
	(!CLK * D * SCD * !SCE * !Q)	0.00707	0.00726	0.05362
	(!CLK * D * !SCD * SCE * !Q)	0.00338	0.00339	0.00337
	(!CLK * D * !SCD * SCE * !Q)	-0.00428	-0.00428	-0.00427
	(!CLK * D * !SCD * !SCE * !Q)	0.01680	0.01711	0.06350
	(!CLK * D * !SCD * !SCE * !Q)	0.00706	0.00733	0.05375
	(!CLK * !D * SCD * SCE * !Q)	0.01832	0.01848	0.06336
	(!CLK * !D * SCD * SCE * !Q)	0.00757	0.00770	0.05260
	(!CLK * !D * SCD * !SCE * !Q)	0.00335	0.00334	0.00334
	(!CLK * !D * SCD * !SCE * !Q)	-0.00430	-0.00428	-0.00429
	(!CLK * !D * !SCD * SCE * !Q)	0.00338	0.00342	0.00337
	(!CLK * !D * !SCD * SCE * !Q)	-0.00428	-0.00430	-0.00427
	(!CLK * !D * !SCD * !SCE * !Q)	0.00336	0.00335	0.00335
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00431	-0.00429	-0.00429

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)**	0.00047	0.00206	0.03945
	(CLK * D * SCD * SCE * !Q)	0.01100	0.01260	0.04999
	(CLK * D * SCD * !SCE * !Q)	-0.00054	0.00100	0.03829
	(CLK * D * SCD * !SCE * !Q)	0.00960	0.01118	0.04844
	(CLK * D * !SCD * SCE * !Q)	-0.00332	-0.00343	-0.00341
	(CLK * D * !SCD * SCE * !Q)	0.00430	0.00432	0.00427
	(CLK * D * !SCD * !SCE * !Q)	-0.00083	0.00069	0.03828
	(CLK * D * !SCD * !SCE * !Q)	0.00878	0.01037	0.04792
	(CLK * !D * SCD * SCE * !Q)	0.00006	0.00163	0.03930
	(CLK * !D * SCD * SCE * !Q)	0.01068	0.01228	0.04994
	(CLK * !D * SCD * !SCE * !Q)	-0.00326	-0.00341	-0.00340
	(CLK * !D * SCD * !SCE * !Q)	0.00433	0.00433	0.00428
	(CLK * !D * !SCD * SCE * !Q)	-0.00332	-0.00343	-0.00341
	(CLK * !D * !SCD * SCE * !Q)	0.00430	0.00432	0.00427
	(CLK * !D * !SCD * !SCE * !Q)	-0.00328	-0.00341	-0.00340
	(CLK * !D * !SCD * !SCE * !Q)	0.00434	0.00433	0.00429
	(!CLK * D * SCD * SCE * !Q)	0.00752	0.00918	0.05973
	(!CLK * D * SCD * SCE * !Q)	0.01828	0.01993	0.07046
	(!CLK * D * SCD * !SCE * !Q)	0.00650	0.00809	0.05837
	(!CLK * D * SCD * !SCE * !Q)	0.01688	0.01845	0.06872
	(!CLK * D * !SCD * SCE * !Q)	-0.00334	-0.00345	-0.00343
	(!CLK * D * !SCD * SCE * !Q)	0.00427	0.00428	0.00426
	(!CLK * D * !SCD * !SCE * !Q)	0.00621	0.00766	0.05831
	(!CLK * D * !SCD * !SCE * !Q)	0.01606	0.01750	0.06814
	(!CLK * !D * SCD * SCE * !Q)	0.00710	0.00882	0.05974
	(!CLK * !D * SCD * SCE * !Q)	0.01796	0.01967	0.07059
	(!CLK * !D * SCD * !SCE * !Q)	-0.00327	-0.00341	-0.00341
	(!CLK * !D * SCD * !SCE * !Q)	0.00431	0.00429	0.00427
	(!CLK * !D * !SCD * SCE * !Q)	-0.00334	-0.00345	-0.00343
	(!CLK * !D * !SCD * SCE * !Q)	0.00427	0.00430	0.00426
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00330	-0.00342	-0.00342
	(!CLK * !D * !SCD * !SCE * !Q)	0.00432	0.00430	0.00427

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00036	0.00197	0.03952
	(CLK * D * SCD * SCE * !Q)	0.01086	0.01252	0.05003
	(CLK * D * SCD * !SCE * !Q)	-0.00057	0.00103	0.03845
	(CLK * D * SCD * !SCE * !Q)	0.00956	0.01117	0.04857
	(CLK * D * !SCD * SCE * !Q)	-0.00333	-0.00344	-0.00342
	(CLK * D * !SCD * SCE * !Q)	0.00432	0.00432	0.00430
	(CLK * D * !SCD * !SCE * !Q)	-0.00085	0.00081	0.03845
	(CLK * D * !SCD * !SCE * !Q)	0.00873	0.01045	0.04805
	(CLK * !D * SCD * SCE * !Q)	-0.00006	0.00163	0.03937
	(CLK * !D * SCD * SCE * !Q)	0.01054	0.01226	0.04999
	(CLK * !D * SCD * !SCE * !Q)	-0.00326	-0.00342	-0.00340
	(CLK * !D * SCD * !SCE * !Q)	0.00436	0.00433	0.00431
	(CLK * !D * !SCD * SCE * !Q)	-0.00333	-0.00344	-0.00342
	(CLK * !D * !SCD * SCE * !Q)	0.00432	0.00432	0.00430
	(CLK * !D * !SCD * !SCE * !Q)	-0.00328	-0.00343	-0.00341
	(CLK * !D * !SCD * !SCE * !Q)	0.00437	0.00434	0.00432
	(!CLK * D * SCD * SCE * !Q)	0.00794	0.00935	0.05952
	(!CLK * D * SCD * SCE * !Q)	0.01866	0.02005	0.07021
	(!CLK * D * SCD * !SCE * !Q)	0.00702	0.00856	0.05824
	(!CLK * D * SCD * !SCE * !Q)	0.01735	0.01890	0.06853
	(!CLK * D * !SCD * SCE * !Q)	-0.00332	-0.00344	-0.00341
	(!CLK * D * !SCD * SCE * !Q)	0.00433	0.00432	0.00431
	(!CLK * D * !SCD * !SCE * !Q)	0.00673	0.00809	0.05822
	(!CLK * D * !SCD * !SCE * !Q)	0.01654	0.01790	0.06799
	(!CLK * !D * SCD * SCE * !Q)	0.00753	0.00900	0.05948
	(!CLK * !D * SCD * SCE * !Q)	0.01835	0.01980	0.07028
	(!CLK * !D * SCD * !SCE * !Q)	-0.00326	-0.00342	-0.00339
	(!CLK * !D * SCD * !SCE * !Q)	0.00436	0.00433	0.00432
	(!CLK * !D * !SCD * SCE * !Q)	-0.00332	-0.00343	-0.00341
	(!CLK * !D * !SCD * SCE * !Q)	0.00433	0.00433	0.00431
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00328	-0.00343	-0.00340
	(!CLK * !D * !SCD * !SCE * !Q)	0.00437	0.00434	0.00432

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00038	0.00200	0.03953
	(CLK * D * SCD * SCE * !Q)	0.01085	0.01252	0.05000
	(CLK * D * SCD * !SCE * !Q)	-0.00055	0.00105	0.03844
	(CLK * D * SCD * !SCE * !Q)	0.00955	0.01113	0.04853
	(CLK * D * !SCD * SCE * !Q)	-0.00328	-0.00338	-0.00337
	(CLK * D * !SCD * SCE * !Q)	0.00430	0.00432	0.00428
	(CLK * D * !SCD * !SCE * !Q)	-0.00085	0.00075	0.03844
	(CLK * D * !SCD * !SCE * !Q)	0.00873	0.01034	0.04800
	(CLK * !D * SCD * SCE * !Q)	-0.00009	0.00160	0.03934
	(CLK * !D * SCD * SCE * !Q)	0.01047	0.01220	0.04992
	(CLK * !D * SCD * !SCE * !Q)	-0.00321	-0.00336	-0.00335
	(CLK * !D * SCD * !SCE * !Q)	0.00433	0.00433	0.00429
	(CLK * !D * !SCD * SCE * !Q)	-0.00328	-0.00338	-0.00337
	(CLK * !D * !SCD * SCE * !Q)	0.00430	0.00432	0.00428
	(CLK * !D * !SCD * !SCE * !Q)	-0.00323	-0.00337	-0.00336
	(CLK * !D * !SCD * !SCE * !Q)	0.00435	0.00434	0.00429
	(!CLK * D * SCD * SCE * !Q)	0.00769	0.00932	0.05964
	(!CLK * D * SCD * SCE * !Q)	0.01838	0.02002	0.07030
	(!CLK * D * SCD * !SCE * !Q)	0.00676	0.00813	0.05834
	(!CLK * D * SCD * !SCE * !Q)	0.01707	0.01844	0.06861
	(!CLK * D * !SCD * SCE * !Q)	-0.00327	-0.00338	-0.00335
	(!CLK * D * !SCD * SCE * !Q)	0.00431	0.00431	0.00429
	(!CLK * D * !SCD * !SCE * !Q)	0.00647	0.00789	0.05828
	(!CLK * D * !SCD * !SCE * !Q)	0.01625	0.01767	0.06804
	(!CLK * !D * SCD * SCE * !Q)	0.00722	0.00891	0.05957
	(!CLK * !D * SCD * SCE * !Q)	0.01801	0.01969	0.07032
	(!CLK * !D * SCD * !SCE * !Q)	-0.00320	-0.00334	-0.00334
	(!CLK * !D * SCD * !SCE * !Q)	0.00434	0.00432	0.00430
	(!CLK * !D * !SCD * SCE * !Q)	-0.00326	-0.00337	-0.00335
	(!CLK * !D * !SCD * SCE * !Q)	0.00431	0.00433	0.00429
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00322	-0.00335	-0.00334
	(!CLK * !D * !SCD * !SCE * !Q)	0.00435	0.00433	0.00430

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)	0.01374	0.01560	0.08265
	(D * RESET_B * SCD * SCE * Q)	0.00930	0.01116	0.07822
	(D * RESET_B * SCD * !SCE * Q)	0.01374	0.01560	0.08265
	(D * RESET_B * SCD * !SCE * Q)	0.00930	0.01116	0.07822
	(D * RESET_B * !SCD * !SCE * Q)	0.01374	0.01560	0.08253
	(D * RESET_B * !SCD * !SCE * Q)	0.00930	0.01116	0.07810
	(D * !SCD * SCE * !Q)	0.01416	0.01602	0.08305
	(D * !SCD * SCE * !Q)	0.00972	0.01157	0.07861
	(D * !RESET_B * SCD * SCE * !Q)	0.01416	0.01603	0.08303
	(D * !RESET_B * SCD * SCE * !Q)	0.00972	0.01158	0.07860
	(D * !RESET_B * SCD * !SCE * !Q)	0.01416	0.01602	0.08302
	(D * !RESET_B * SCD * !SCE * !Q)	0.00972	0.01158	0.07860
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01416	0.01602	0.08302
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00972	0.01158	0.07860
	(!D * RESET_B * SCD * SCE * Q)	0.01374	0.01560	0.08265
	(!D * RESET_B * SCD * SCE * Q)	0.00930	0.01116	0.07822
	(!D * !SCE * !Q)	0.01416	0.01602	0.08304
	(!D * !SCE * !Q)	0.00972	0.01157	0.07861
	(!D * !SCD * SCE * !Q)	0.01416	0.01602	0.08304
	(!D * !SCD * SCE * !Q)	0.00972	0.01157	0.07861
	(!D * !RESET_B * SCD * SCE * !Q)	0.01416	0.01603	0.08303
	(!D * !RESET_B * SCD * SCE * !Q)	0.00972	0.01158	0.07860

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01370	0.01556	0.08267
	(D * RESET_B * SCD * SCE * Q)	0.00923	0.01109	0.07821
	(D * RESET_B * SCD * !SCE * Q)	0.01370	0.01556	0.08267
	(D * RESET_B * SCD * !SCE * Q)	0.00923	0.01109	0.07821
	(D * RESET_B * !SCD * !SCE * Q)	0.01370	0.01557	0.08256
	(D * RESET_B * !SCD * !SCE * Q)	0.00923	0.01109	0.07809
	(D * !SCD * SCE * !Q)	0.01420	0.01605	0.08312
	(D * !SCD * SCE * !Q)	0.00972	0.01157	0.07866
	(D * !RESET_B * SCD * SCE * !Q)	0.01420	0.01606	0.08310
	(D * !RESET_B * SCD * SCE * !Q)	0.00973	0.01158	0.07865
	(D * !RESET_B * SCD * !SCE * !Q)	0.01419	0.01605	0.08311
	(D * !RESET_B * SCD * !SCE * !Q)	0.00972	0.01157	0.07864
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01419	0.01605	0.08311
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00972	0.01157	0.07864
	(!D * RESET_B * SCD * SCE * Q)	0.01370	0.01557	0.08268
	(!D * RESET_B * SCD * SCE * Q)	0.00923	0.01109	0.07821
	(!D * !SCE * !Q)	0.01419	0.01605	0.08313
	(!D * !SCE * !Q)	0.00972	0.01156	0.07865
	(!D * !SCD * SCE * !Q)	0.01420	0.01605	0.08313
	(!D * !SCD * SCE * !Q)	0.00972	0.01157	0.07865
	(!D * !RESET_B * SCD * SCE * !Q)	0.01420	0.01606	0.08310
	(!D * !RESET_B * SCD * SCE * !Q)	0.00973	0.01157	0.07865

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01352	0.01540	0.08248
	(D * RESET_B * SCD * SCE * Q)	0.00905	0.01092	0.07802
	(D * RESET_B * SCD * !SCE * Q)	0.01351	0.01539	0.08248
	(D * RESET_B * SCD * !SCE * Q)	0.00905	0.01092	0.07802
	(D * RESET_B * !SCD * !SCE * Q)	0.01352	0.01540	0.08237
	(D * RESET_B * !SCD * !SCE * Q)	0.00905	0.01092	0.07790
	(D * !SCD * SCE * !Q)	0.01397	0.01584	0.08291
	(D * !SCD * SCE * !Q)	0.00950	0.01136	0.07845
	(D * !RESET_B * SCD * SCE * !Q)	0.01397	0.01585	0.08290
	(D * !RESET_B * SCD * SCE * !Q)	0.00951	0.01137	0.07843
	(D * !RESET_B * SCD * !SCE * !Q)	0.01397	0.01585	0.08288
	(D * !RESET_B * SCD * !SCE * !Q)	0.00950	0.01137	0.07843
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01397	0.01585	0.08288
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00950	0.01137	0.07843
	(!D * RESET_B * SCD * SCE * Q)	0.01352	0.01540	0.08248
	(!D * RESET_B * SCD * SCE * Q)	0.00905	0.01092	0.07802
	(!D * !SCE * !Q)	0.01397	0.01584	0.08291
	(!D * !SCE * !Q)	0.00950	0.01136	0.07844
	(!D * !SCD * SCE * !Q)	0.01397	0.01584	0.08291
	(!D * !SCD * SCE * !Q)	0.00951	0.01136	0.07844
	(!D * !RESET_B * SCD * SCE * !Q)	0.01397	0.01585	0.08288
	(!D * !RESET_B * SCD * SCE * !Q)	0.00951	0.01137	0.07844

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)**	0.00727	0.01032	0.07697
	(D * RESET_B * SCD * SCE * Q)	0.01169	0.01477	0.08141
	(D * RESET_B * SCD * SCE * !Q)	0.01343	0.01656	0.08513
	(D * RESET_B * SCD * SCE * !Q)	0.01765	0.02080	0.08937
	(D * RESET_B * SCD * !SCE * Q)	0.00727	0.01032	0.07697
	(D * RESET_B * SCD * !SCE * Q)	0.01168	0.01477	0.08141
	(D * RESET_B * SCD * !SCE * !Q)	0.01340	0.01654	0.08510
	(D * RESET_B * SCD * !SCE * !Q)	0.01762	0.02079	0.08933
	(D * RESET_B * !SCD * SCE * Q)	0.01497	0.01821	0.08617
	(D * RESET_B * !SCD * SCE * Q)	0.01961	0.02287	0.09083
	(D * RESET_B * !SCD * !SCE * Q)	0.00727	0.01033	0.07697
	(D * RESET_B * !SCD * !SCE * Q)	0.01169	0.01477	0.08141
	(D * RESET_B * !SCD * !SCE * !Q)	0.01341	0.01654	0.08510
	(D * RESET_B * !SCD * !SCE * !Q)	0.01763	0.02079	0.08934
	(D * !SCD * SCE * !Q)	0.00673	0.00984	0.07654
	(D * !SCD * SCE * !Q)	0.01115	0.01428	0.08098
	(D * !RESET_B * SCD * SCE * !Q)	0.00674	0.00984	0.07645
	(D * !RESET_B * SCD * SCE * !Q)	0.01115	0.01428	0.08089
	(D * !RESET_B * SCD * !SCE * !Q)	0.00673	0.00983	0.07651
	(D * !RESET_B * SCD * !SCE * !Q)	0.01115	0.01428	0.08094
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00673	0.00983	0.07651
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01115	0.01428	0.08094
	(!D * RESET_B * SCD * SCE * Q)	0.00727	0.01032	0.07697
	(!D * RESET_B * SCD * SCE * Q)	0.01169	0.01477	0.08141
	(!D * RESET_B * SCD * SCE * !Q)	0.01346	0.01659	0.08516
	(!D * RESET_B * SCD * SCE * !Q)	0.01767	0.02083	0.08939
	(!D * RESET_B * !SCE * Q)	0.01494	0.01818	0.08610
	(!D * RESET_B * !SCE * Q)	0.01955	0.02283	0.09073
	(!D * RESET_B * !SCD * SCE * Q)	0.01493	0.01820	0.08602
	(!D * RESET_B * !SCD * SCE * Q)	0.01956	0.02284	0.09067
	(!D * !SCE * !Q)	0.00673	0.00983	0.07654
	(!D * !SCE * !Q)	0.01115	0.01428	0.08098
	(!D * !SCD * SCE * !Q)	0.00673	0.00984	0.07654
	(!D * !SCD * SCE * !Q)	0.01115	0.01428	0.08098
	(!D * !RESET_B * SCD * SCE * !Q)	0.00674	0.00984	0.07645
	(!D * !RESET_B * SCD * SCE * !Q)	0.01115	0.01428	0.08089

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00728	0.01034	0.07710
	(D * RESET_B * SCD * SCE * Q)	0.01173	0.01481	0.08157
	(D * RESET_B * SCD * SCE * !Q)	0.01374	0.01688	0.08552
	(D * RESET_B * SCD * SCE * !Q)	0.01800	0.02115	0.08981
	(D * RESET_B * SCD * !SCE * Q)	0.00728	0.01034	0.07710
	(D * RESET_B * SCD * !SCE * Q)	0.01173	0.01481	0.08157
	(D * RESET_B * SCD * !SCE * !Q)	0.01371	0.01685	0.08550
	(D * RESET_B * SCD * !SCE * !Q)	0.01798	0.02113	0.08978
	(D * RESET_B * !SCD * SCE * Q)	0.01553	0.01876	0.08682
	(D * RESET_B * !SCD * SCE * Q)	0.02018	0.02344	0.09149
	(D * RESET_B * !SCD * !SCE * Q)	0.00728	0.01034	0.07711
	(D * RESET_B * !SCD * !SCE * Q)	0.01173	0.01482	0.08157
	(D * RESET_B * !SCD * !SCE * !Q)	0.01372	0.01685	0.08550
	(D * RESET_B * !SCD * !SCE * !Q)	0.01798	0.02113	0.08978
	(D * !SCD * SCE * !Q)	0.00676	0.00986	0.07666
	(D * !SCD * SCE * !Q)	0.01121	0.01434	0.08113
	(D * !RESET_B * SCD * SCE * !Q)	0.00676	0.00986	0.07662
	(D * !RESET_B * SCD * SCE * !Q)	0.01121	0.01434	0.08110
	(D * !RESET_B * SCD * !SCE * !Q)	0.00676	0.00986	0.07663
	(D * !RESET_B * SCD * !SCE * !Q)	0.01121	0.01434	0.08109
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00676	0.00986	0.07663
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01121	0.01434	0.08109
	(!D * RESET_B * SCD * SCE * Q)	0.00728	0.01034	0.07710
	(!D * RESET_B * SCD * SCE * Q)	0.01173	0.01482	0.08157
	(!D * RESET_B * SCD * SCE * !Q)	0.01377	0.01691	0.08556
	(!D * RESET_B * SCD * SCE * !Q)	0.01802	0.02117	0.08985
	(!D * RESET_B * !SCE * Q)	0.01548	0.01871	0.08673
	(!D * RESET_B * !SCE * Q)	0.02011	0.02336	0.09140
	(!D * RESET_B * !SCD * SCE * Q)	0.01550	0.01875	0.08665
	(!D * RESET_B * !SCD * SCE * Q)	0.02015	0.02343	0.09130
	(!D * !SCE * !Q)	0.00676	0.00986	0.07666
	(!D * !SCE * !Q)	0.01121	0.01434	0.08113
	(!D * !SCD * SCE * !Q)	0.00676	0.00986	0.07666
	(!D * !SCD * SCE * !Q)	0.01121	0.01434	0.08113
	(!D * !RESET_B * SCD * SCE * !Q)	0.00676	0.00986	0.07662
	(!D * !RESET_B * SCD * SCE * !Q)	0.01121	0.01434	0.08110

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00725	0.01031	0.07697
	(D * RESET_B * SCD * SCE * Q)	0.01169	0.01478	0.08144
	(D * RESET_B * SCD * SCE * !Q)	0.01362	0.01676	0.08537
	(D * RESET_B * SCD * SCE * !Q)	0.01786	0.02103	0.08964
	(D * RESET_B * SCD * !SCE * Q)	0.00725	0.01031	0.07697
	(D * RESET_B * SCD * !SCE * Q)	0.01169	0.01478	0.08144
	(D * RESET_B * SCD * !SCE * !Q)	0.01359	0.01674	0.08532
	(D * RESET_B * SCD * !SCE * !Q)	0.01784	0.02102	0.08959
	(D * RESET_B * !SCD * SCE * Q)	0.01521	0.01845	0.08637
	(D * RESET_B * !SCD * SCE * Q)	0.01986	0.02312	0.09103
	(D * RESET_B * !SCD * !SCE * Q)	0.00725	0.01031	0.07697
	(D * RESET_B * !SCD * !SCE * Q)	0.01169	0.01479	0.08144
	(D * RESET_B * !SCD * !SCE * !Q)	0.01359	0.01674	0.08533
	(D * RESET_B * !SCD * !SCE * !Q)	0.01784	0.02102	0.08959
	(D * !SCD * SCE * !Q)	0.00667	0.00979	0.07647
	(D * !SCD * SCE * !Q)	0.01112	0.01426	0.08094
	(D * !RESET_B * SCD * SCE * !Q)	0.00668	0.00979	0.07645
	(D * !RESET_B * SCD * SCE * !Q)	0.01112	0.01426	0.08092
	(D * !RESET_B * SCD * !SCE * !Q)	0.00667	0.00978	0.07644
	(D * !RESET_B * SCD * !SCE * !Q)	0.01112	0.01426	0.08092
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00667	0.00978	0.07644
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01112	0.01426	0.08092
	(!D * RESET_B * SCD * SCE * Q)	0.00725	0.01031	0.07697
	(!D * RESET_B * SCD * SCE * Q)	0.01169	0.01479	0.08144
	(!D * RESET_B * SCD * SCE * !Q)	0.01365	0.01679	0.08540
	(!D * RESET_B * SCD * SCE * !Q)	0.01788	0.02106	0.08965
	(!D * RESET_B * !SCE * Q)	0.01516	0.01840	0.08638
	(!D * RESET_B * !SCE * Q)	0.01979	0.02307	0.09106
	(!D * RESET_B * !SCD * SCE * Q)	0.01518	0.01843	0.08631
	(!D * RESET_B * !SCD * SCE * Q)	0.01983	0.02311	0.09097
	(!D * !SCE * !Q)	0.00667	0.00979	0.07646
	(!D * !SCE * !Q)	0.01112	0.01426	0.08093
	(!D * !SCD * SCE * !Q)	0.00667	0.00979	0.07647
	(!D * !SCD * SCE * !Q)	0.01112	0.01426	0.08094
	(!D * !RESET_B * SCD * SCE * !Q)	0.00668	0.00979	0.07645
	(!D * !RESET_B * SCD * SCE * !Q)	0.01112	0.01426	0.08092

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT	
D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
0	**0**	**x**	**1**	**R**	**0**	**1**
0	**1**	**0**	**1**	**R**	**0**	**1**
x	**1**	**1**	**1**	**R**	**1**	**0**
1	**x**	**0**	**1**	**R**	**1**	**0**
1	**0**	**1**	**1**	**R**	**0**	**1**
x	**x**	**x**	**0**	**x**	**1**	**0**
x	**x**	**x**	**1**	**x**	**IQ**	**IQ_N**

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfsbp_1	47.95200
sky130_fd_sc_hs__sdfsbp_2	59.14080

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	**SCD**	**SCE**	**SET_B**	**CLK**	**Q**	**Q_N**
sky130_fd_sc_hs__sdfsbp_1	0.00187	0.00206	0.00396	0.00344	0.00283	1.38606	1.29996
sky130_fd_sc_hs__sdfsbp_2	0.00193	0.00199	0.00415	0.00346	0.00287	2.80719	2.82758

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.77901	1.18397
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.71479	1.71889

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)	0.19413	0.58256	5.41038
	SET_B->Q (FR)	0.18356	0.86095	9.05525
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.21975	0.51558	5.40560
	SET_B->Q (FR)	0.24780	0.83602	9.14608

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.16295	0.31862	1.34977
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.18131	0.31980	1.50312

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)	0.14130	0.56011	5.42387
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.13988	0.46011	5.39460

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)	0.15331	0.36395	1.30102
	SET_B->Q_N (FF)	0.14157	0.64654	4.97024
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.15879	0.34793	1.65894
	SET_B->Q_N (FF)	0.17385	0.68434	5.43849

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)	-0.05660	-0.13097	-0.85143
	setup	CLK (R)	0.08448	0.14763	0.84132
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.07343	-0.14871	-0.88256
	setup	CLK (R)	0.10304	0.17066	0.87272

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)	-0.07782	-0.21316	-3.82976
	setup	CLK (R)	0.17145	0.30950	3.83635
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10365	-0.23394	-3.78905
	setup	CLK (R)	0.20390	0.33575	3.84243

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)	-0.05660	-0.13097	-0.85143
	setup	CLK (R)	0.08448	0.14763	0.84132
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.07343	-0.14871	-0.88256
	setup	CLK (R)	0.10304	0.17066	0.87272

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)	-0.07782	-0.21316	-3.82976
	setup	CLK (R)	0.17145	0.30950	3.83635
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10365	-0.23394	-3.78905
	setup	CLK (R)	0.20390	0.33575	3.84243

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)	-0.06828	-0.14088	-0.81936
	setup	CLK (R)	0.09842	0.16224	0.81628
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08257	-0.15675	-0.83523
	setup	CLK (R)	0.11588	0.18193	0.82916

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)	-0.10056	-0.24406	-3.96496
	setup	CLK (R)	0.21063	0.34844	3.97495
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12736	-0.26262	-3.93784
	setup	CLK (R)	0.24800	0.38053	3.98775

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)	-0.06828	-0.14088	-0.82278
	hold	CLK (R)	-0.07049	-0.14288	-0.81936
	setup	CLK (R)	0.09541	0.15875	0.81628
	setup	CLK (R)	0.09842	0.16224	0.80823
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08257	-0.15675	-0.84058
	hold	CLK (R)	-0.08472	-0.15875	-0.83523
	setup	CLK (R)	0.11547	0.17663	0.82916
	setup	CLK (R)	0.11588	0.18193	0.82595

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)	-0.10906	-0.25500	-3.96496
	hold	CLK (R)	-0.10056	-0.24406	-3.96643
	setup	CLK (R)	0.21063	0.34844	3.96966
	setup	CLK (R)	0.20214	0.34223	3.97495
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13522	-0.27425	-3.93784
	hold	CLK (R)	-0.12736	-0.26262	-3.94263
	setup	CLK (R)	0.24800	0.38053	3.98775
	setup	CLK (R)	0.23711	0.37498	3.98774

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)	-0.06097	-0.13317	-0.45954
	setup	CLK (R)	0.21001	0.22822	0.80597
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.07520	-0.14937	-0.40763
	setup	CLK (R)	0.24384	0.25644	0.84810

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)	-0.09428	-0.22585	-3.53379
	setup	CLK (R)	0.18517	0.31838	3.88689
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11378	-0.24062	-3.48601
	setup	CLK (R)	0.21163	0.34375	3.87701

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)	-0.10618	-0.13317	-0.45954
	hold	CLK (R)	-0.06097	-0.13803	-0.81297
	setup	CLK (R)	0.21001	0.22822	0.46600
	setup	CLK (R)	0.08703	0.15875	0.80597
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13082	-0.14937	-0.40763
	hold	CLK (R)	-0.07520	-0.15675	-0.85686
	setup	CLK (R)	0.24384	0.25644	0.44848
	setup	CLK (R)	0.10684	0.17863	0.84810

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)	-0.10467	-0.24418	-3.53379
	hold	CLK (R)	-0.09428	-0.22585	-3.87774
	setup	CLK (R)	0.13176	0.26121	3.52783
	setup	CLK (R)	0.18517	0.31838	3.88689
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.11672	-0.25302	-3.48601
	hold	CLK (R)	-0.11378	-0.24062	-3.82867
	setup	CLK (R)	0.14690	0.27261	3.47708
	setup	CLK (R)	0.21163	0.34375	3.87701

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)	-0.06410	-0.08914	-0.23797
	removal	CLK (R)	0.08301	0.10716	0.33265
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.09104	-0.13494	-0.38068
	removal	CLK (R)	0.10500	0.15478	2.19208

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)	-0.06411	-0.08914	-0.23800
	recovery	CLK (R)	-0.06410	-0.08914	-0.23800
	recovery	CLK (R)	-0.06431	-0.08920	-0.23797
	removal	CLK (R)	0.08301	0.10716	0.33265
	removal	CLK (R)	0.08301	0.10716	0.33265
	removal	CLK (R)	0.08301	0.10716	0.33158
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.09104	-0.13494	-0.38468
	recovery	CLK (R)	-0.09104	-0.13494	-0.38468
	recovery	CLK (R)	-0.09104	-0.13494	-0.38068
	removal	CLK (R)	0.10500	0.15478	2.18405
	removal	CLK (R)	0.10500	0.15478	2.17870
	removal	CLK (R)	0.10500	0.15478	2.19208

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 ()	0.15002	0.58716	16.50020
	min_pulse_width	SET_B ()	0.14782	0.58716	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.17210	0.58716	16.50020
	min_pulse_width	SET_B ()	0.19639	0.58716	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 ()	0.12132	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.12574	0.58716	16.50020
	min_pulse_width	CLK ()	0.07496	0.58716	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 ()	0.11691	0.58716	16.50020
	min_pulse_width	CLK ()	0.17652	0.58716	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.14561	0.58716	16.50020
	min_pulse_width	CLK ()	0.21626	0.58716	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	0.01514	0.01589	0.05150
	CLK	0.01304	0.01378	0.04950
	SET_B	0.00881	0.00969	0.03022
	SET_B	0.01149	0.01239	0.03242
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02118	0.02187	0.05946
	CLK	0.01900	0.01965	0.05739
	SET_B	0.01316	0.01297	0.03308
	SET_B	0.01585	0.01568	0.03571

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01530	0.01645	0.05056
	CLK	0.01307	0.01418	0.04839
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02057	0.02202	0.05726
	CLK	0.01837	0.01982	0.05508

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01532	0.01647	0.05094
	CLK	0.01309	0.01421	0.04882
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02060	0.02204	0.05778
	CLK	0.01840	0.01984	0.05574

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01512	0.01585	0.05105
	CLK	0.01302	0.01376	0.04906
	SET_B	0.00880	0.00966	0.02970
	SET_B	0.01148	0.01239	0.03200
sky130_fd_sc_hs__sdfsbp_2	CLK	0.02115	0.02183	0.05923
	CLK	0.01897	0.01961	0.05717
	SET_B	0.01315	0.01294	0.03264
	SET_B	0.01584	0.01568	0.03529

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00127	0.00130	0.00128
	(CLK * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * !SCE)	0.00417	0.00541	0.03829
	(CLK * !SCE)	0.00098	0.00221	0.03510
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00131
	(!CLK * SCD * SCE)	0.00127	0.00128	0.00127
	(!CLK * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01106	0.01172	0.04338
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00752	0.00817	0.03983
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00886	0.00949	0.03995
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00520	0.00582	0.03629
	(!CLK * !SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00126	-0.00130	-0.00131

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00135	0.00136	0.00135
	(CLK * SCD * SCE)	-0.00054	-0.00055	-0.00054
	(CLK * !SCE)	0.00437	0.00555	0.03880
	(CLK * !SCE)	0.00112	0.00230	0.03555
	(CLK * !SCD * SCE)	0.00069	0.00069	0.00068
	(CLK * !SCD * SCE)	-0.00128	-0.00131	-0.00133
	(!CLK * SCD * SCE)	0.00135	0.00136	0.00135
	(!CLK * SCD * SCE)	-0.00054	-0.00055	-0.00055
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01240	0.01307	0.04425
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00895	0.00960	0.04081
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.01025	0.01087	0.04080
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00667	0.00729	0.03721
	(!CLK * !SCD * SCE)	0.00069	0.00069	0.00068
	(!CLK * !SCD * SCE)	-0.00129	-0.00132	-0.00133

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00121	-0.00123	-0.00125
	(CLK * SCD * SCE)	0.00062	0.00061	0.00060
	(CLK * !SCE)	0.00068	0.00228	0.03507
	(CLK * !SCE)	0.00386	0.00548	0.03825
	(CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00131	0.00132	0.00131
	(!CLK * SCD * SCE)	-0.00121	-0.00123	-0.00125
	(!CLK * SCD * SCE)	0.00061	0.00062	0.00060
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00742	0.00877	0.04123
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01098	0.01232	0.04478
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00424	0.00544	0.03596
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00790	0.00911	0.03962
	(!CLK * !SCD * SCE)	-0.00062	-0.00063	-0.00062
	(!CLK * !SCD * SCE)	0.00131	0.00132	0.00131

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00129	-0.00131	-0.00134
	(CLK * SCD * SCE)	0.00059	0.00059	0.00057
	(CLK * !SCE)	0.00080	0.00237	0.03547
	(CLK * !SCE)	0.00405	0.00562	0.03872
	(CLK * !SCD * SCE)	-0.00066	-0.00066	-0.00066
	(CLK * !SCD * SCE)	0.00133	0.00134	0.00133
	(!CLK * SCD * SCE)	-0.00130	-0.00131	-0.00134
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00953	0.01101	0.04302
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.01299	0.01446	0.04647
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00613	0.00743	0.03745
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00971	0.01101	0.04104
	(!CLK * !SCD * SCE)	-0.00066	-0.00066	-0.00066
	(!CLK * !SCD * SCE)	0.00133	0.00133	0.00133

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00601	0.00644	0.02736
	(CLK * D * SCE)	0.00147	0.00190	0.02283
	(CLK * !D * SCE)	0.00671	0.00707	0.02765
	(CLK * !D * SCE)	0.00207	0.00242	0.02302
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01275	0.01305	0.03332
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00785	0.00815	0.02843
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01054	0.01083	0.03032
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00553	0.00581	0.02531
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01345	0.01371	0.03366
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00845	0.00870	0.02867
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01124	0.01149	0.03067
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00612	0.00637	0.02556
	!SCE	0.00156	0.00140	0.00139
	!SCE	-0.00103	-0.00119	-0.00121

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00605	0.00650	0.02738
	(CLK * D * SCE)	0.00158	0.00202	0.02292
	(CLK * !D * SCE)	0.00674	0.00714	0.02768
	(CLK * !D * SCE)	0.00218	0.00255	0.02311
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01395	0.01429	0.03420
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00928	0.00962	0.02954
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01180	0.01211	0.03117
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00701	0.00730	0.02638
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01465	0.01494	0.03456
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00988	0.01017	0.02980
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01250	0.01276	0.03155
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00760	0.00786	0.02665
	!SCE	0.00148	0.00133	0.00130
	!SCE	-0.00104	-0.00121	-0.00122

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00174	0.00216	0.02273
	(CLK * D * SCE)	0.00628	0.00671	0.02725
	(CLK * !D * SCE)	0.00132	0.00181	0.02263
	(CLK * !D * SCE)	0.00595	0.00645	0.02725
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00863	0.00896	0.02939
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01352	0.01386	0.03427
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00540	0.00566	0.02474
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01042	0.01068	0.02974
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00822	0.00859	0.02926
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01321	0.01359	0.03424
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00499	0.00528	0.02455
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01011	0.01039	0.02965
	!SCE	-0.00133	-0.00136	-0.00137
	!SCE	0.00123	0.00124	0.00124

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00193	0.00236	0.02287
	(CLK * D * SCE)	0.00639	0.00684	0.02732
	(CLK * !D * SCE)	0.00151	0.00200	0.02276
	(CLK * !D * SCE)	0.00607	0.00657	0.02731
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01079	0.01111	0.03136
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01546	0.01578	0.03601
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00733	0.00757	0.02619
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.01214	0.01239	0.03098
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01038	0.01073	0.03121
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01515	0.01549	0.03596
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00691	0.00718	0.02598
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.01182	0.01209	0.03087
	!SCE	-0.00125	-0.00128	-0.00128
	!SCE	0.00124	0.00125	0.00125

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)**	0.00529	0.00676	0.04927
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00046	0.00100	0.04352
	(CLK * D * !SCD)	0.00793	0.00927	0.05383
	(CLK * D * !SCD)	0.00396	0.00525	0.04979
	(CLK * !D * SCD)	0.00915	0.01144	0.07544
	(CLK * !D * SCD)	0.00195	0.00425	0.06828
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00529	0.00676	0.04927
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00046	0.00100	0.04352
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01442	0.01592	0.06033
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01080	0.01227	0.05665
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01120	0.01274	0.05682
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00771	0.00919	0.05326
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01603	0.01829	0.08181
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00849	0.01074	0.07430
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01383	0.01607	0.07850
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00616	0.00840	0.07087
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00512	0.00675	0.04912
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00023	0.00138	0.04377

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00552	0.00701	0.05012
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00044	0.00104	0.04416
	(CLK * D * !SCD)	0.00826	0.00965	0.05468
	(CLK * D * !SCD)	0.00409	0.00542	0.05044
	(CLK * !D * SCD)	0.00949	0.01182	0.07737
	(CLK * !D * SCD)	0.00208	0.00442	0.07000
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00552	0.00701	0.05012
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00044	0.00104	0.04416
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01675	0.01830	0.06314
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01277	0.01427	0.05909
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01328	0.01487	0.05951
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00945	0.01099	0.05562
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01750	0.01985	0.08444
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00990	0.01225	0.07687
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01536	0.01769	0.08118
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00762	0.00993	0.07347
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00527	0.00691	0.04988
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00028	0.00136	0.04432

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)**	-0.00044	0.00198	0.04431
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00530	0.00774	0.05004
	(CLK * D * !SCD)	0.00388	0.00602	0.04971
	(CLK * D * !SCD)	0.00790	0.01005	0.05357
	(CLK * !D * SCD)	0.00097	0.00363	0.06698
	(CLK * !D * SCD)	0.00813	0.01082	0.07416
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00044	0.00199	0.04431
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00531	0.00774	0.05003
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01073	0.01296	0.05565
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01440	0.01664	0.05916
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00853	0.01076	0.05349
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01208	0.01430	0.05688
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00771	0.01020	0.07228
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01524	0.01775	0.07981
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00454	0.00694	0.06781
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01218	0.01457	0.07547
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00001	0.00217	0.04451
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00537	0.00754	0.04986

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00062	0.00183	0.04476
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00531	0.00777	0.05072
	(CLK * D * !SCD)	0.00378	0.00595	0.05023
	(CLK * D * !SCD)	0.00800	0.01018	0.05428
	(CLK * !D * SCD)	0.00109	0.00377	0.06866
	(CLK * !D * SCD)	0.00845	0.01116	0.07605
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00061	0.00183	0.04476
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00531	0.00778	0.05071
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01176	0.01403	0.05720
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01578	0.01805	0.06106
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00961	0.01188	0.05506
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01350	0.01578	0.05880
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00982	0.01230	0.07545
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01739	0.01989	0.08302
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00642	0.00881	0.07061
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01411	0.01654	0.07833
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00010	0.00211	0.04505
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00546	0.00768	0.05060

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)	0.00271	0.00275	0.00272
	(CLK * Q * !Q_N)	-0.00226	-0.00228	-0.00226
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00289	0.00293	0.00290
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00209	-0.00211	-0.00210
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00531	0.00587	0.02485
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00013	0.00066	0.01966
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00277	0.00279	0.00277
	(CLK * Q * !Q_N)	-0.00235	-0.00236	-0.00235
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00288	0.00291	0.00288
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00224	-0.00225	-0.00223
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00559	0.00610	0.02496
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00027	0.00078	0.01962

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)	-0.00267	-0.00272	-0.00270
	(CLK * Q * !Q_N)	0.00231	0.00231	0.00229
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00284	-0.00288	-0.00287
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00215	0.00213	0.00212
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00017	0.00068	0.01964
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00503	0.00584	0.02483
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00270	-0.00276	-0.00276
	(CLK * Q * !Q_N)	0.00237	0.00238	0.00237
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00281	-0.00288	-0.00287
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00226	0.00227	0.00225
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00039	0.00039	0.01926
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00497	0.00576	0.02460

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)	0.01391	0.01568	0.08321
	(D * SCD * SCE * Q * !Q_N)	0.00958	0.01133	0.07887
	(D * !SCE * Q * !Q_N)	0.01390	0.01568	0.08321
	(D * !SCE * Q * !Q_N)	0.00957	0.01133	0.07887
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01383	0.01559	0.08310
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00950	0.01124	0.07877
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02626	0.02826	0.09728
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02146	0.02345	0.09248
	(!D * SCD * SCE * Q * !Q_N)	0.01391	0.01568	0.08321
	(!D * SCD * SCE * Q * !Q_N)	0.00957	0.01133	0.07888
	(!D * !SCE * SET_B * !Q * Q_N)	0.01383	0.01559	0.08310
	(!D * !SCE * SET_B * !Q * Q_N)	0.00949	0.01124	0.07876
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02625	0.02825	0.09727
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02144	0.02343	0.09246
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01383	0.01559	0.08310
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00950	0.01124	0.07877
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02630	0.02826	0.09711
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02149	0.02344	0.09230

sky130_fd_sc_hs__sdfsbp_2	(D * SCD * SCE * Q * !Q_N)	0.01819	0.01982	0.08909
	(D * SCD * SCE * Q * !Q_N)	0.01381	0.01543	0.08471
	(D * !SCE * Q * !Q_N)	0.01819	0.01981	0.08910
	(D * !SCE * Q * !Q_N)	0.01381	0.01542	0.08471
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01804	0.01965	0.08883
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01366	0.01525	0.08445
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04478	0.04725	0.12065
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04008	0.04253	0.11595
	(!D * SCD * SCE * Q * !Q_N)	0.01819	0.01982	0.08910
	(!D * SCD * SCE * Q * !Q_N)	0.01381	0.01543	0.08471
	(!D * !SCE * SET_B * !Q * Q_N)	0.01804	0.01965	0.08882
	(!D * !SCE * SET_B * !Q * Q_N)	0.01366	0.01525	0.08444
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04478	0.04726	0.12068
	(!D * !SCE * !SET_B * Q * !Q_N)	0.04006	0.04252	0.11598
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01805	0.01965	0.08882
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01366	0.01526	0.08444
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04489	0.04727	0.12064
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.04018	0.04254	0.11593

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01445	0.01752	0.08720
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01844	0.02151	0.09118
	(D * SCD * SCE * Q * !Q_N)	0.00786	0.01092	0.07887
	(D * SCD * SCE * Q * !Q_N)	0.01220	0.01526	0.08321
	(D * !SCE * SET_B * !Q * Q_N)	0.01443	0.01749	0.08717
	(D * !SCE * SET_B * !Q * Q_N)	0.01842	0.02149	0.09115
	(D * !SCE * Q * !Q_N)	0.00786	0.01092	0.07887
	(D * !SCE * Q * !Q_N)	0.01220	0.01526	0.08321
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01631	0.01950	0.08856
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02102	0.02421	0.09326
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00797	0.01106	0.07908
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01231	0.01541	0.08343
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01311	0.01628	0.08477
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01793	0.02112	0.08959
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01448	0.01755	0.08671
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01846	0.02153	0.09068
	(!D * SCD * SCE * Q * !Q_N)	0.00786	0.01092	0.07887
	(!D * SCD * SCE * Q * !Q_N)	0.01220	0.01526	0.08321
	(!D * !SCE * SET_B * Q * !Q_N)	0.01629	0.01948	0.08854
	(!D * !SCE * SET_B * Q * !Q_N)	0.02099	0.02416	0.09322
	(!D * !SCE * SET_B * !Q * Q_N)	0.00797	0.01106	0.07908
	(!D * !SCE * SET_B * !Q * Q_N)	0.01231	0.01541	0.08342
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01310	0.01628	0.08478
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01792	0.02110	0.08959
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01630	0.01950	0.08807
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02100	0.02422	0.09276
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00797	0.01106	0.07908
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01231	0.01541	0.08341
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01311	0.01629	0.08479
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01790	0.02111	0.08959

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01749	0.02045	0.09140
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.02167	0.02464	0.09560
	(D * SCD * SCE * Q * !Q_N)	0.00959	0.01253	0.08193
	(D * SCD * SCE * Q * !Q_N)	0.01396	0.01692	0.08632
	(D * !SCE * SET_B * !Q * Q_N)	0.01747	0.02042	0.09134
	(D * !SCE * SET_B * !Q * Q_N)	0.02165	0.02462	0.09554
	(D * !SCE * Q * !Q_N)	0.00959	0.01253	0.08193
	(D * !SCE * Q * !Q_N)	0.01396	0.01692	0.08632
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02074	0.02380	0.09445
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.02532	0.02838	0.09905
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00985	0.01282	0.08181
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.01721	0.08619
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01720	0.02026	0.09014
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02191	0.02498	0.09487
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01752	0.02048	0.09143
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.02169	0.02466	0.09561
	(!D * SCD * SCE * Q * !Q_N)	0.00959	0.01253	0.08193
	(!D * SCD * SCE * Q * !Q_N)	0.01396	0.01692	0.08632
	(!D * !SCE * SET_B * Q * !Q_N)	0.02071	0.02378	0.09442
	(!D * !SCE * SET_B * Q * !Q_N)	0.02528	0.02834	0.09900
	(!D * !SCE * SET_B * !Q * Q_N)	0.00984	0.01281	0.08180
	(!D * !SCE * SET_B * !Q * Q_N)	0.01422	0.01721	0.08619
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01720	0.02024	0.09013
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02191	0.02497	0.09485
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02073	0.02378	0.09376
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.02531	0.02836	0.09835
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00985	0.01282	0.08181
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01422	0.01721	0.08619
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01721	0.02027	0.09016
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02192	0.02500	0.09488

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT
D	SCD	SCE	SET_B	CLK	Q
0	0	x	1	R	0
0	1	0	1	R	0
x	1	1	1	R	1
1	x	0	1	R	1
1	0	1	1	R	0
x	x	x	0	x	1
x	x	x	1	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfstp_1	46.35360
sky130_fd_sc_hs__sdfstp_2	49.55040
sky130_fd_sc_hs__sdfstp_4	52.74720

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	SCD	SCE	SET_B	CLK	Q
sky130_fd_sc_hs__sdfstp_1	0.00186	0.00206	0.00394	0.00335	0.00282	1.38986
sky130_fd_sc_hs__sdfstp_2	0.00185	0.00202	0.00394	0.00345	0.00283	2.77503
sky130_fd_sc_hs__sdfstp_4	0.00186	0.00207	0.00400	0.00346	0.00282	5.21033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.73672	1.12103
sky130_fd_sc_hs__sdfstp_2	0.00000	0.63020	1.71688
sky130_fd_sc_hs__sdfstp_4	0.00000	1.22697	1.84174

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)	0.16071	0.55152	5.35682
	SET_B->Q (FR)	0.15836	0.82626	8.95577
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.15157	0.44706	5.21892
	SET_B->Q (FR)	0.17999	0.75960	8.92506
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.17684	0.40884	5.26686
	SET_B->Q (FR)	0.21392	0.73637	9.00194

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.15456	0.31084	1.35843
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.16465	0.29645	1.41190
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.16945	0.28131	1.47112

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)	-0.05776	-0.13097	-0.84454
	setup	CLK (R)	0.08435	0.14975	0.83563
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07048	-0.14685	-0.89258
	setup	CLK (R)	0.10386	0.16864	0.88491
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.06992	-0.14685	-0.89737
	setup	CLK (R)	0.10123	0.16842	0.88592

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)	-0.06749	-0.20095	-3.81627
	setup	CLK (R)	0.16750	0.30731	3.82520
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07875	-0.20647	-3.83289
	setup	CLK (R)	0.18939	0.32616	3.88283
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08255	-0.21749	-3.85014
	setup	CLK (R)	0.19077	0.32616	3.88874

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)	-0.05776	-0.13097	-0.84454
	setup	CLK (R)	0.08435	0.14975	0.83563
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07048	-0.14685	-0.89258
	setup	CLK (R)	0.10386	0.16864	0.88491
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.06992	-0.14685	-0.89737
	setup	CLK (R)	0.10123	0.16842	0.88592

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)	-0.06749	-0.20095	-3.81627
	setup	CLK (R)	0.16750	0.30731	3.82520
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07875	-0.20647	-3.83289
	setup	CLK (R)	0.18939	0.32616	3.88283
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08255	-0.21749	-3.85014
	setup	CLK (R)	0.19077	0.32616	3.88874

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)	-0.06731	-0.14288	-0.81434
	setup	CLK (R)	0.09953	0.16275	0.81118
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08377	-0.15675	-0.85879
	setup	CLK (R)	0.11687	0.18195	0.85210
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08239	-0.15875	-0.86331
	setup	CLK (R)	0.11445	0.18001	0.85614

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)	-0.08935	-0.23070	-3.95348
	setup	CLK (R)	0.20502	0.34598	3.96280
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09762	-0.23586	-3.96998
	setup	CLK (R)	0.23148	0.36667	4.01562
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10452	-0.24641	-3.98384
	setup	CLK (R)	0.22967	0.36549	4.01890

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)	-0.06731	-0.14288	-0.82078
	hold	CLK (R)	-0.07258	-0.14685	-0.81434
	setup	CLK (R)	0.09869	0.15875	0.81118
	setup	CLK (R)	0.09953	0.16275	0.80513
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08493	-0.15675	-0.86327
	hold	CLK (R)	-0.08377	-0.15875	-0.85879
	setup	CLK (R)	0.11595	0.17663	0.85210
	setup	CLK (R)	0.11687	0.18195	0.84963
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08239	-0.15875	-0.86552
	hold	CLK (R)	-0.08568	-0.15875	-0.86331
	setup	CLK (R)	0.11281	0.17663	0.85614
	setup	CLK (R)	0.11445	0.18001	0.85194

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)	-0.09793	-0.23820	-3.95348
	hold	CLK (R)	-0.08935	-0.23070	-3.95679
	setup	CLK (R)	0.20502	0.34598	3.95951
	setup	CLK (R)	0.19734	0.33717	3.96280
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10595	-0.24616	-3.96998
	hold	CLK (R)	-0.09762	-0.23586	-3.97210
	setup	CLK (R)	0.23148	0.36667	4.01281
	setup	CLK (R)	0.22245	0.35958	4.01562
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10941	-0.25493	-3.98384
	hold	CLK (R)	-0.10452	-0.24641	-3.98573
	setup	CLK (R)	0.22967	0.36549	4.01614
	setup	CLK (R)	0.21934	0.36192	4.01890

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)	-0.06087	-0.12269	-0.44739
	setup	CLK (R)	0.20223	0.22273	0.79984
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07638	-0.12673	-0.43939
	setup	CLK (R)	0.22658	0.24359	0.84915
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07629	-0.13263	-0.44676
	setup	CLK (R)	0.22608	0.24340	0.84844

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)	-0.08130	-0.21511	-3.53171
	setup	CLK (R)	0.18034	0.31216	3.87492
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08946	-0.22004	-3.54292
	setup	CLK (R)	0.20231	0.33499	3.93366
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09400	-0.22841	-3.54561
	setup	CLK (R)	0.20339	0.33516	3.94079

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)	-0.09463	-0.12269	-0.44739
	hold	CLK (R)	-0.06087	-0.14088	-0.81015
	setup	CLK (R)	0.20223	0.22273	0.46101
	setup	CLK (R)	0.09013	0.15875	0.79984
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10023	-0.12673	-0.43939
	hold	CLK (R)	-0.07638	-0.15675	-0.85756
	setup	CLK (R)	0.22658	0.24359	0.47815
	setup	CLK (R)	0.10762	0.17863	0.84915
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10714	-0.13263	-0.44676
	hold	CLK (R)	-0.07629	-0.15675	-0.86003
	setup	CLK (R)	0.22608	0.24340	0.47871
	setup	CLK (R)	0.10467	0.17663	0.84844

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)	-0.10624	-0.24663	-3.53171
	hold	CLK (R)	-0.08130	-0.21511	-3.86518
	setup	CLK (R)	0.13372	0.26042	3.52881
	setup	CLK (R)	0.18034	0.31216	3.87492
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.11748	-0.25851	-3.54292
	hold	CLK (R)	-0.08946	-0.22004	-3.88504
	setup	CLK (R)	0.15025	0.27491	3.53476
	setup	CLK (R)	0.20231	0.33499	3.93366
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.12002	-0.25897	-3.54561
	hold	CLK (R)	-0.09400	-0.22841	-3.90409
	setup	CLK (R)	0.14690	0.27491	3.53532
	setup	CLK (R)	0.20339	0.33516	3.94079

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)	-0.06679	-0.09922	-0.27117
	removal	CLK (R)	0.08245	0.11113	0.45029
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09691	-0.12700	-0.27558
	removal	CLK (R)	0.13939	0.34528	5.91741
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.09397	-0.12700	-0.30591
	removal	CLK (R)	0.11937	0.28575	4.59241

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)	-0.06679	-0.09922	-0.27117
	recovery	CLK (R)	-0.06679	-0.09922	-0.27117
	recovery	CLK (R)	-0.06693	-0.09922	-0.27117
	removal	CLK (R)	0.08245	0.11113	0.45029
	removal	CLK (R)	0.08245	0.11113	0.45029
	removal	CLK (R)	0.08245	0.11113	0.45029
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.09787	-0.12700	-0.27558
	recovery	CLK (R)	-0.09787	-0.12700	-0.27558
	recovery	CLK (R)	-0.09691	-0.12700	-0.27558
	removal	CLK (R)	0.13939	0.34528	5.88079
	removal	CLK (R)	0.13939	0.34528	5.88524
	removal	CLK (R)	0.13844	0.34528	5.91741
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.09397	-0.12700	-0.30698
	recovery	CLK (R)	-0.09397	-0.12700	-0.30698
	recovery	CLK (R)	-0.09397	-0.12700	-0.30591
	removal	CLK (R)	0.11937	0.28575	4.59241
	removal	CLK (R)	0.11937	0.28575	4.58755
	removal	CLK (R)	0.11937	0.28575	4.57135

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 ()	0.13678	0.58716	16.50020
	min_pulse_width	SET_B ()	0.12132	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.14561	0.58716	16.50020
	min_pulse_width	SET_B ()	0.13678	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.15002	0.58716	16.50020
	min_pulse_width	SET_B ()	0.15223	0.58716	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 ()	0.08600	0.58716	16.50020
	min_pulse_width	CLK ()	0.05950	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.07496	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.08821	0.58716	16.50020
	min_pulse_width	CLK ()	0.06613	0.58716	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 ()	0.11691	0.58716	16.50020
	min_pulse_width	CLK ()	0.17210	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.14561	0.58716	16.50020
	min_pulse_width	CLK ()	0.20301	0.58716	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.14119	0.58716	16.50020
	min_pulse_width	CLK ()	0.19859	0.58716	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	0.02615	0.02787	0.09907
	CLK	0.02207	0.02380	0.09522
	SET_B	0.02492	0.02576	0.05746
	SET_B	0.02966	0.03052	0.06243
sky130_fd_sc_hs__sdfstp_2	CLK	0.03211	0.03409	0.10635
	CLK	0.02807	0.03009	0.10232
	SET_B	0.03241	0.03313	0.06462
	SET_B	0.03724	0.03794	0.06980
sky130_fd_sc_hs__sdfstp_4	CLK	0.03818	0.04048	0.11264
	CLK	0.03421	0.03663	0.10992
	SET_B	0.03841	0.03955	0.07145
	SET_B	0.04331	0.04444	0.07733

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02790	0.02979	0.09801
	CLK	0.02344	0.02529	0.09351
sky130_fd_sc_hs__sdfstp_2	CLK	0.03439	0.03645	0.10427
	CLK	0.03001	0.03205	0.09971
sky130_fd_sc_hs__sdfstp_4	CLK	0.04134	0.04398	0.11252
	CLK	0.03687	0.03941	0.10731

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00126	0.00129	0.00127
	(CLK * SCD * SCE)	-0.00057	-0.00058	-0.00056
	(CLK * !SCE)	0.00422	0.00547	0.03837
	(CLK * !SCE)	0.00105	0.00229	0.03520
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(CLK * !SCD * SCE)	-0.00126	-0.00128	-0.00130
	(!CLK * SCD * SCE)	0.00126	0.00129	0.00127
	(!CLK * SCD * SCE)	-0.00057	-0.00058	-0.00056
	(!CLK * !SCE * SET_B)	0.01074	0.01141	0.04313
	(!CLK * !SCE * SET_B)	0.00729	0.00795	0.03967
	(!CLK * !SCE * !SET_B * Q)	0.00867	0.00931	0.03980
	(!CLK * !SCE * !SET_B * Q)	0.00511	0.00574	0.03625
	(!CLK * !SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00130
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00126	0.00129	0.00126
	(CLK * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(CLK * !SCE)	0.00417	0.00542	0.03831
	(CLK * !SCE)	0.00100	0.00223	0.03514
	(CLK * !SCD * SCE)	0.00064	0.00064	0.00063
	(CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00130
	(!CLK * SCD * SCE)	0.00126	0.00128	0.00126
	(!CLK * SCD * SCE)	-0.00057	-0.00058	-0.00057
	(!CLK * !SCE * SET_B)	0.01223	0.01286	0.04414
	(!CLK * !SCE * SET_B)	0.00864	0.00925	0.04055
	(!CLK * !SCE * !SET_B * Q)	0.01002	0.01060	0.04041
	(!CLK * !SCE * !SET_B * Q)	0.00633	0.00690	0.03672
	(!CLK * !SCD * SCE)	0.00064	0.00065	0.00063
	(!CLK * !SCD * SCE)	-0.00126	-0.00129	-0.00130

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00126	0.00129	0.00127
	(CLK * SCD * SCE)	-0.00056	-0.00058	-0.00056
	(CLK * !SCE)	0.00432	0.00554	0.03837
	(CLK * !SCE)	0.00116	0.00236	0.03520
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(CLK * !SCD * SCE)	-0.00125	-0.00127	-0.00129
	(!CLK * SCD * SCE)	0.00127	0.00129	0.00127
	(!CLK * SCD * SCE)	-0.00057	-0.00057	-0.00056
	(!CLK * !SCE * SET_B)	0.01212	0.01274	0.04383
	(!CLK * !SCE * SET_B)	0.00862	0.00924	0.04033
	(!CLK * !SCE * !SET_B * Q)	0.00995	0.01053	0.04033
	(!CLK * !SCE * !SET_B * Q)	0.00635	0.00693	0.03674
	(!CLK * !SCD * SCE)	0.00065	0.00066	0.00064
	(!CLK * !SCD * SCE)	-0.00125	-0.00128	-0.00129

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00120	-0.00122	-0.00125
	(CLK * SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * !SCE)	0.00058	0.00219	0.03500
	(CLK * !SCE)	0.00375	0.00537	0.03817
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00130	0.00131	0.00130
	(!CLK * SCD * SCE)	-0.00120	-0.00123	-0.00125
	(!CLK * SCD * SCE)	0.00061	0.00061	0.00059
	(!CLK * !SCE * SET_B)	0.00737	0.00872	0.04121
	(!CLK * !SCE * SET_B)	0.01083	0.01217	0.04467
	(!CLK * !SCE * !SET_B * Q)	0.00435	0.00556	0.03610
	(!CLK * !SCE * !SET_B * Q)	0.00790	0.00912	0.03966
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(!CLK * !SCD * SCE)	0.00130	0.00131	0.00130
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00120	-0.00122	-0.00125
	(CLK * SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * !SCE)	0.00064	0.00224	0.03505
	(CLK * !SCE)	0.00380	0.00542	0.03821
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00130	0.00130	0.00130
	(!CLK * SCD * SCE)	-0.00120	-0.00122	-0.00125
	(!CLK * SCD * SCE)	0.00060	0.00061	0.00059
	(!CLK * !SCE * SET_B)	0.00865	0.01021	0.04193
	(!CLK * !SCE * SET_B)	0.01225	0.01380	0.04552
	(!CLK * !SCE * !SET_B * Q)	0.00547	0.00660	0.03662
	(!CLK * !SCE * !SET_B * Q)	0.00916	0.01029	0.04031
	(!CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK * !SCD * SCE)	0.00130	0.00131	0.00130

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00120	-0.00121	-0.00124
	(CLK * SCD * SCE)	0.00061	0.00061	0.00059
	(CLK * !SCE)	0.00073	0.00232	0.03504
	(CLK * !SCE)	0.00389	0.00549	0.03820
	(CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00129	0.00130	0.00130
	(!CLK * SCD * SCE)	-0.00119	-0.00121	-0.00124
	(!CLK * SCD * SCE)	0.00061	0.00062	0.00060
	(!CLK * !SCE * SET_B)	0.00874	0.01031	0.04201
	(!CLK * !SCE * SET_B)	0.01225	0.01381	0.04551
	(!CLK * !SCE * !SET_B * Q)	0.00559	0.00672	0.03672
	(!CLK * !SCE * !SET_B * Q)	0.00919	0.01034	0.04033
	(!CLK * !SCD * SCE)	-0.00061	-0.00062	-0.00061
	(!CLK * !SCD * SCE)	0.00130	0.00130	0.00130

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00604	0.00647	0.02739
	(CLK * D * SCE)	0.00151	0.00194	0.02286
	(CLK * !D * SCE)	0.00675	0.00711	0.02769
	(CLK * !D * SCE)	0.00210	0.00245	0.02305
	(!CLK * D * SCE * SET_B)	0.01241	0.01274	0.03302
	(!CLK * D * SCE * SET_B)	0.00761	0.00790	0.02820
	(!CLK * D * SCE * !SET_B * Q)	0.01034	0.01064	0.03013
	(!CLK * D * SCE * !SET_B * Q)	0.00543	0.00571	0.02521
	(!CLK * !D * SCE * SET_B)	0.01312	0.01339	0.03337
	(!CLK * !D * SCE * SET_B)	0.00820	0.00845	0.02845
	(!CLK * !D * SCE * !SET_B * Q)	0.01104	0.01130	0.03048
	(!CLK * !D * SCE * !SET_B * Q)	0.00603	0.00626	0.02546
	!SCE	0.00155	0.00141	0.00138
	!SCE	-0.00105	-0.00121	-0.00123
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00596	0.00639	0.02731
	(CLK * D * SCE)	0.00147	0.00189	0.02282
	(CLK * !D * SCE)	0.00666	0.00702	0.02760
	(CLK * !D * SCE)	0.00206	0.00242	0.02301
	(!CLK * D * SCE * SET_B)	0.01388	0.01418	0.03418
	(!CLK * D * SCE * SET_B)	0.00896	0.00926	0.02927
	(!CLK * D * SCE * !SET_B * Q)	0.01167	0.01195	0.03108
	(!CLK * D * SCE * !SET_B * Q)	0.00665	0.00692	0.02608
	(!CLK * !D * SCE * SET_B)	0.01458	0.01485	0.03452
	(!CLK * !D * SCE * SET_B)	0.00956	0.00981	0.02950
	(!CLK * !D * SCE * !SET_B * Q)	0.01237	0.01260	0.03145
	(!CLK * !D * SCE * !SET_B * Q)	0.00724	0.00748	0.02634
	!SCE	0.00152	0.00137	0.00134
	!SCE	-0.00105	-0.00121	-0.00123

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00615	0.00658	0.02745
	(CLK * D * SCE)	0.00162	0.00203	0.02292
	(CLK * !D * SCE)	0.00685	0.00720	0.02775
	(CLK * !D * SCE)	0.00221	0.00255	0.02311
	(!CLK * D * SCE * SET_B)	0.01381	0.01411	0.03409
	(!CLK * D * SCE * SET_B)	0.00894	0.00923	0.02923
	(!CLK * D * SCE * !SET_B * Q)	0.01163	0.01191	0.03104
	(!CLK * D * SCE * !SET_B * Q)	0.00666	0.00693	0.02608
	(!CLK * !D * SCE * SET_B)	0.01451	0.01477	0.03446
	(!CLK * !D * SCE * SET_B)	0.00953	0.00978	0.02949
	(!CLK * !D * SCE * !SET_B * Q)	0.01233	0.01257	0.03141
	(!CLK * !D * SCE * !SET_B * Q)	0.00725	0.00749	0.02634
	!SCE	0.00155	0.00141	0.00138
	!SCE	-0.00105	-0.00122	-0.00123

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00166	0.00208	0.02265
	(CLK * D * SCE)	0.00620	0.00663	0.02717
	(CLK * !D * SCE)	0.00124	0.00173	0.02255
	(CLK * !D * SCE)	0.00587	0.00637	0.02717
	(!CLK * D * SCE * SET_B)	0.00857	0.00892	0.02937
	(!CLK * D * SCE * SET_B)	0.01340	0.01374	0.03418
	(!CLK * D * SCE * !SET_B * Q)	0.00552	0.00577	0.02485
	(!CLK * D * SCE * !SET_B * Q)	0.01045	0.01071	0.02977
	(!CLK * !D * SCE * SET_B)	0.00817	0.00854	0.02922
	(!CLK * !D * SCE * SET_B)	0.01309	0.01347	0.03413
	(!CLK * !D * SCE * !SET_B * Q)	0.00511	0.00539	0.02466
	(!CLK * !D * SCE * !SET_B * Q)	0.01013	0.01043	0.02968
	!SCE	-0.00132	-0.00135	-0.00136
	!SCE	0.00124	0.00125	0.00125
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00177	0.00220	0.02276
	(CLK * D * SCE)	0.00627	0.00671	0.02724
	(CLK * !D * SCE)	0.00135	0.00185	0.02266
	(CLK * !D * SCE)	0.00594	0.00645	0.02724
	(!CLK * D * SCE * SET_B)	0.00992	0.01023	0.03059
	(!CLK * D * SCE * SET_B)	0.01484	0.01515	0.03548
	(!CLK * D * SCE * !SET_B * Q)	0.00669	0.00693	0.02566
	(!CLK * D * SCE * !SET_B * Q)	0.01172	0.01195	0.03066
	(!CLK * !D * SCE * SET_B)	0.00951	0.00986	0.03045
	(!CLK * !D * SCE * SET_B)	0.01453	0.01488	0.03546
	(!CLK * !D * SCE * !SET_B * Q)	0.00628	0.00654	0.02545
	(!CLK * !D * SCE * !SET_B * Q)	0.01140	0.01167	0.03057
	!SCE	-0.00130	-0.00132	-0.00133
	!SCE	0.00124	0.00125	0.00125

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00180	0.00222	0.02273
	(CLK * D * SCE)	0.00634	0.00676	0.02725
	(CLK * !D * SCE)	0.00138	0.00186	0.02263
	(CLK * !D * SCE)	0.00602	0.00650	0.02725
	(!CLK * D * SCE * SET_B)	0.00996	0.01027	0.03062
	(!CLK * D * SCE * SET_B)	0.01483	0.01515	0.03547
	(!CLK * D * SCE * !SET_B * Q)	0.00676	0.00699	0.02572
	(!CLK * D * SCE * !SET_B * Q)	0.01174	0.01198	0.03068
	(!CLK * !D * SCE * SET_B)	0.00955	0.00989	0.03049
	(!CLK * !D * SCE * SET_B)	0.01452	0.01486	0.03545
	(!CLK * !D * SCE * !SET_B * Q)	0.00635	0.00661	0.02552
	(!CLK * !D * SCE * !SET_B * Q)	0.01143	0.01169	0.03057
	!SCE	-0.00132	-0.00135	-0.00135
	!SCE	0.00125	0.00126	0.00126

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00530	0.00677	0.04927
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00044	0.00102	0.04354
	(CLK * D * !SCD)	0.00786	0.00921	0.05364
	(CLK * D * !SCD)	0.00389	0.00519	0.04962
	(CLK * !D * SCD)	0.00920	0.01151	0.07550
	(CLK * !D * SCD)	0.00203	0.00433	0.06836
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00530	0.00677	0.04927
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00044	0.00102	0.04354
	(!CLK * D * !SCD * SET_B)	0.01438	0.01590	0.06018
	(!CLK * D * !SCD * SET_B)	0.01072	0.01218	0.05645
	(!CLK * D * !SCD * !SET_B * Q)	0.01134	0.01287	0.05708
	(!CLK * D * !SCD * !SET_B * Q)	0.00777	0.00926	0.05345
	(!CLK * !D * SCD * SET_B)	0.01572	0.01799	0.08153
	(!CLK * !D * SCD * SET_B)	0.00826	0.01054	0.07411
	(!CLK * !D * SCD * !SET_B * Q)	0.01365	0.01590	0.07833
	(!CLK * !D * SCD * !SET_B * Q)	0.00609	0.00834	0.07080
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00514	0.00677	0.04913
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00020	0.00142	0.04380

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00531	0.00677	0.04923
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00044	0.00101	0.04349
	(CLK * D * !SCD)	0.00796	0.00930	0.05376
	(CLK * D * !SCD)	0.00398	0.00527	0.04971
	(CLK * !D * SCD)	0.00916	0.01145	0.07539
	(CLK * !D * SCD)	0.00198	0.00426	0.06825
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00531	0.00676	0.04923
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00043	0.00101	0.04349
	(!CLK * D * !SCD * SET_B)	0.01572	0.01722	0.06148
	(!CLK * D * !SCD * SET_B)	0.01218	0.01364	0.05787
	(!CLK * D * !SCD * !SET_B * Q)	0.01248	0.01402	0.05806
	(!CLK * D * !SCD * !SET_B * Q)	0.00903	0.01053	0.05455
	(!CLK * !D * SCD * SET_B)	0.01722	0.01950	0.08264
	(!CLK * !D * SCD * SET_B)	0.00962	0.01193	0.07506
	(!CLK * !D * SCD * !SET_B * Q)	0.01500	0.01728	0.07924
	(!CLK * !D * SCD * !SET_B * Q)	0.00730	0.00957	0.07157
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00516	0.00678	0.04910
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00019	0.00142	0.04376

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00536	0.00682	0.04932
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00044	0.00101	0.04352
	(CLK * D * !SCD)	0.00804	0.00937	0.05392
	(CLK * D * !SCD)	0.00401	0.00529	0.04983
	(CLK * !D * SCD)	0.00937	0.01162	0.07560
	(CLK * !D * SCD)	0.00213	0.00439	0.06839
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00536	0.00682	0.04932
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00044	0.00101	0.04353
	(!CLK * D * !SCD * SET_B)	0.01583	0.01731	0.06155
	(!CLK * D * !SCD * SET_B)	0.01214	0.01359	0.05780
	(!CLK * D * !SCD * !SET_B * Q)	0.01260	0.01415	0.05815
	(!CLK * D * !SCD * !SET_B * Q)	0.00903	0.01051	0.05451
	(!CLK * !D * SCD * SET_B)	0.01716	0.01944	0.08264
	(!CLK * !D * SCD * SET_B)	0.00959	0.01187	0.07509
	(!CLK * !D * SCD * !SET_B * Q)	0.01499	0.01724	0.07927
	(!CLK * !D * SCD * !SET_B * Q)	0.00732	0.00957	0.07163
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00520	0.00682	0.04918
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00020	0.00141	0.04379

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00041	0.00200	0.04431
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00532	0.00774	0.05002
	(CLK * D * !SCD)	0.00396	0.00608	0.04978
	(CLK * D * !SCD)	0.00796	0.01010	0.05363
	(CLK * !D * SCD)	0.00089	0.00354	0.06690
	(CLK * !D * SCD)	0.00802	0.01071	0.07406
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00040	0.00199	0.04431
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00533	0.00774	0.05002
	(!CLK * D * !SCD * SET_B)	0.01045	0.01265	0.05534
	(!CLK * D * !SCD * SET_B)	0.01416	0.01638	0.05890
	(!CLK * D * !SCD * !SET_B * Q)	0.00838	0.01058	0.05331
	(!CLK * D * !SCD * !SET_B * Q)	0.01198	0.01421	0.05677
	(!CLK * !D * SCD * SET_B)	0.00767	0.01016	0.07230
	(!CLK * !D * SCD * SET_B)	0.01510	0.01762	0.07975
	(!CLK * !D * SCD * !SET_B * Q)	0.00467	0.00706	0.06794
	(!CLK * !D * SCD * !SET_B * Q)	0.01219	0.01458	0.07548
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00003	0.00217	0.04450
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00536	0.00752	0.04984

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00040	0.00199	0.04427
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00530	0.00774	0.04999
	(CLK * D * !SCD)	0.00389	0.00602	0.04968
	(CLK * D * !SCD)	0.00792	0.01005	0.05355
	(CLK * !D * SCD)	0.00094	0.00360	0.06690
	(CLK * !D * SCD)	0.00808	0.01073	0.07406
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00040	0.00199	0.04427
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00531	0.00774	0.04999
	(!CLK * D * !SCD * SET_B)	0.01191	0.01413	0.05670
	(!CLK * D * !SCD * SET_B)	0.01551	0.01775	0.06012
	(!CLK * D * !SCD * !SET_B * Q)	0.00970	0.01192	0.05449
	(!CLK * D * !SCD * !SET_B * Q)	0.01320	0.01543	0.05783
	(!CLK * !D * SCD * SET_B)	0.00895	0.01140	0.07304
	(!CLK * !D * SCD * SET_B)	0.01652	0.01899	0.08062
	(!CLK * !D * SCD * !SET_B * Q)	0.00577	0.00813	0.06845
	(!CLK * !D * SCD * !SET_B * Q)	0.01344	0.01583	0.07614
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00001	0.00215	0.04445
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00536	0.00752	0.04980

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00045	0.00195	0.04427
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00531	0.00775	0.05004
	(CLK * D * !SCD)	0.00400	0.00614	0.04979
	(CLK * D * !SCD)	0.00808	0.01021	0.05369
	(CLK * !D * SCD)	0.00099	0.00363	0.06689
	(CLK * !D * SCD)	0.00819	0.01085	0.07410
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00044	0.00195	0.04427
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00532	0.00776	0.05004
	(!CLK * D * !SCD * SET_B)	0.01177	0.01399	0.05656
	(!CLK * D * !SCD * SET_B)	0.01551	0.01773	0.06014
	(!CLK * D * !SCD * !SET_B * Q)	0.00959	0.01182	0.05440
	(!CLK * D * !SCD * !SET_B * Q)	0.01323	0.01545	0.05788
	(!CLK * !D * SCD * SET_B)	0.00899	0.01145	0.07313
	(!CLK * !D * SCD * SET_B)	0.01654	0.01901	0.08067
	(!CLK * !D * SCD * !SET_B * Q)	0.00585	0.00821	0.06856
	(!CLK * !D * SCD * !SET_B * Q)	0.01349	0.01587	0.07622
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00002	0.00213	0.04446
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00538	0.00754	0.04985

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00251	0.00253	0.00252
	(CLK * Q)	-0.00228	-0.00229	-0.00229
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00273	0.00275	0.00274
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00207	-0.00208	-0.00207
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00510	0.00568	0.02471
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00011	0.00066	0.01971
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00278	0.00282	0.00278
	(CLK * Q)	-0.00223	-0.00225	-0.00223
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00303	0.00306	0.00304
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00198	-0.00199	-0.00198
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00534	0.00589	0.02499
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00015	0.00069	0.01978

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00259	0.00262	0.00260
	(CLK * Q)	-0.00233	-0.00234	-0.00233
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00284	0.00287	0.00285
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00208	-0.00210	-0.00208
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00521	0.00578	0.02467
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00011	0.00064	0.01955

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00247	-0.00252	-0.00251
	(CLK * Q)	0.00234	0.00233	0.00231
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00269	-0.00273	-0.00272
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00212	0.00211	0.00209
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00018	0.00082	0.01965
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00477	0.00584	0.02464

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00274	-0.00278	-0.00278
	(CLK * Q)	0.00228	0.00226	0.00225
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00299	-0.00304	-0.00303
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00203	0.00201	0.00200
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00027	0.00057	0.01967
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00495	0.00578	0.02485
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00254	-0.00258	-0.00257
	(CLK * Q)	0.00239	0.00238	0.00236
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00279	-0.00284	-0.00282
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00215	0.00213	0.00212
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00015	0.00098	0.01954
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00493	0.00607	0.02466

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)**	0.01400	0.01576	0.08324
	(D * SCD * SCE * Q)	0.00974	0.01151	0.07898
	(D * !SCE * Q)	0.01399	0.01576	0.08324
	(D * !SCE * Q)	0.00973	0.01151	0.07898
	(D * !SCD * SCE * SET_B * !Q)	0.01380	0.01557	0.08302
	(D * !SCD * SCE * SET_B * !Q)	0.00954	0.01129	0.07875
	(D * !SCD * SCE * !SET_B * Q)	0.02635	0.02830	0.09726
	(D * !SCD * SCE * !SET_B * Q)	0.02171	0.02366	0.09261
	(!D * SCD * SCE * Q)	0.01399	0.01577	0.08324
	(!D * SCD * SCE * Q)	0.00974	0.01151	0.07898
	(!D * !SCE * SET_B * !Q)	0.01380	0.01557	0.08302
	(!D * !SCE * SET_B * !Q)	0.00953	0.01129	0.07875
	(!D * !SCE * !SET_B * Q)	0.02634	0.02835	0.09724
	(!D * !SCE * !SET_B * Q)	0.02169	0.02369	0.09259
	(!D * !SCD * SCE * SET_B * !Q)	0.01380	0.01557	0.08302
	(!D * !SCD * SCE * SET_B * !Q)	0.00954	0.01129	0.07876
	(!D * !SCD * SCE * !SET_B * Q)	0.02640	0.02830	0.09722
	(!D * !SCD * SCE * !SET_B * Q)	0.02175	0.02365	0.09257

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01610	0.01769	0.08433
	(D * SCD * SCE * Q)	0.01189	0.01345	0.08011
	(D * !SCE * Q)	0.01610	0.01769	0.08432
	(D * !SCE * Q)	0.01188	0.01345	0.08010
	(D * !SCD * SCE * SET_B * !Q)	0.01644	0.01801	0.08463
	(D * !SCD * SCE * SET_B * !Q)	0.01221	0.01374	0.08038
	(D * !SCD * SCE * !SET_B * Q)	0.03996	0.04198	0.11222
	(D * !SCD * SCE * !SET_B * Q)	0.03527	0.03728	0.10752
	(!D * SCD * SCE * Q)	0.01610	0.01769	0.08433
	(!D * SCD * SCE * Q)	0.01189	0.01345	0.08011
	(!D * !SCE * SET_B * !Q)	0.01644	0.01800	0.08463
	(!D * !SCE * SET_B * !Q)	0.01220	0.01374	0.08038
	(!D * !SCE * !SET_B * Q)	0.03995	0.04196	0.11221
	(!D * !SCE * !SET_B * Q)	0.03525	0.03725	0.10751
	(!D * !SCD * SCE * SET_B * !Q)	0.01645	0.01801	0.08463
	(!D * !SCD * SCE * SET_B * !Q)	0.01221	0.01375	0.08038
	(!D * !SCD * SCE * !SET_B * Q)	0.04004	0.04199	0.11217
	(!D * !SCD * SCE * !SET_B * Q)	0.03535	0.03729	0.10747

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01589	0.01751	0.08422
	(D * SCD * SCE * Q)	0.01167	0.01326	0.07999
	(D * !SCE * Q)	0.01589	0.01751	0.08422
	(D * !SCE * Q)	0.01166	0.01326	0.07999
	(D * !SCD * SCE * SET_B * !Q)	0.01629	0.01789	0.08460
	(D * !SCD * SCE * SET_B * !Q)	0.01205	0.01362	0.08036
	(D * !SCD * SCE * !SET_B * Q)	0.04006	0.04220	0.11281
	(D * !SCD * SCE * !SET_B * Q)	0.03544	0.03756	0.10819
	(!D * SCD * SCE * Q)	0.01589	0.01751	0.08422
	(!D * SCD * SCE * Q)	0.01167	0.01326	0.07999
	(!D * !SCE * SET_B * !Q)	0.01629	0.01789	0.08460
	(!D * !SCE * SET_B * !Q)	0.01205	0.01362	0.08036
	(!D * !SCE * !SET_B * Q)	0.04005	0.04219	0.11279
	(!D * !SCE * !SET_B * Q)	0.03541	0.03753	0.10816
	(!D * !SCD * SCE * SET_B * !Q)	0.01630	0.01789	0.08460
	(!D * !SCD * SCE * SET_B * !Q)	0.01206	0.01362	0.08036
	(!D * !SCD * SCE * !SET_B * Q)	0.04015	0.04220	0.11278
	(!D * !SCD * SCE * !SET_B * Q)	0.03552	0.03758	0.10815

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)**	0.01416	0.01722	0.08684
	(D * SCD * SCE * SET_B * !Q)	0.01815	0.02122	0.09083
	(D * SCD * SCE * Q)	0.00781	0.01086	0.07873
	(D * SCD * SCE * Q)	0.01208	0.01514	0.08300
	(D * !SCE * SET_B * !Q)	0.01413	0.01719	0.08682
	(D * !SCE * SET_B * !Q)	0.01813	0.02120	0.09080
	(D * !SCE * Q)	0.00781	0.01086	0.07873
	(D * !SCE * Q)	0.01208	0.01514	0.08300
	(D * !SCD * SCE * SET_B * Q)	0.01639	0.01956	0.08854
	(D * !SCD * SCE * SET_B * Q)	0.02096	0.02414	0.09311
	(D * !SCD * SCE * SET_B * !Q)	0.00805	0.01114	0.07907
	(D * !SCD * SCE * SET_B * !Q)	0.01231	0.01540	0.08332
	(D * !SCD * SCE * !SET_B * Q)	0.01334	0.01660	0.08495
	(D * !SCD * SCE * !SET_B * Q)	0.01800	0.02127	0.08962
	(!D * SCD * SCE * SET_B * !Q)	0.01419	0.01725	0.08634
	(!D * SCD * SCE * SET_B * !Q)	0.01817	0.02124	0.09031
	(!D * SCD * SCE * Q)	0.00781	0.01087	0.07874
	(!D * SCD * SCE * Q)	0.01208	0.01514	0.08300
	(!D * !SCE * SET_B * Q)	0.01638	0.01954	0.08852
	(!D * !SCE * SET_B * Q)	0.02093	0.02410	0.09307
	(!D * !SCE * SET_B * !Q)	0.00804	0.01114	0.07907
	(!D * !SCE * SET_B * !Q)	0.01231	0.01540	0.08332
	(!D * !SCE * !SET_B * Q)	0.01334	0.01658	0.08490
	(!D * !SCE * !SET_B * Q)	0.01800	0.02124	0.08956
	(!D * !SCD * SCE * SET_B * Q)	0.01638	0.01956	0.08802
	(!D * !SCD * SCE * SET_B * Q)	0.02094	0.02413	0.09258
	(!D * !SCD * SCE * SET_B * !Q)	0.00805	0.01114	0.07907
	(!D * !SCD * SCE * SET_B * !Q)	0.01231	0.01540	0.08332
	(!D * !SCD * SCE * !SET_B * Q)	0.01334	0.01651	0.08492
	(!D * !SCD * SCE * !SET_B * Q)	0.01798	0.02117	0.08956

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01672	0.01968	0.08891
	(D * SCD * SCE * SET_B * !Q)	0.02054	0.02348	0.09273
	(D * SCD * SCE * Q)	0.00913	0.01209	0.07919
	(D * SCD * SCE * Q)	0.01336	0.01632	0.08341
	(D * !SCE * SET_B * !Q)	0.01670	0.01965	0.08888
	(D * !SCE * SET_B * !Q)	0.02052	0.02345	0.09270
	(D * !SCE * Q)	0.00913	0.01209	0.07919
	(D * !SCE * Q)	0.01336	0.01632	0.08341
	(D * !SCD * SCE * SET_B * Q)	0.01942	0.02251	0.09095
	(D * !SCD * SCE * SET_B * Q)	0.02403	0.02711	0.09556
	(D * !SCD * SCE * SET_B * !Q)	0.00891	0.01188	0.07916
	(D * !SCD * SCE * SET_B * !Q)	0.01315	0.01612	0.08341
	(D * !SCD * SCE * !SET_B * Q)	0.01614	0.01923	0.08701
	(D * !SCD * SCE * !SET_B * Q)	0.02085	0.02394	0.09172
	(!D * SCD * SCE * SET_B * !Q)	0.01675	0.01971	0.08893
	(!D * SCD * SCE * SET_B * !Q)	0.02056	0.02350	0.09274
	(!D * SCD * SCE * Q)	0.00913	0.01209	0.07919
	(!D * SCD * SCE * Q)	0.01336	0.01632	0.08341
	(!D * !SCE * SET_B * Q)	0.01941	0.02249	0.09093
	(!D * !SCE * SET_B * Q)	0.02400	0.02707	0.09552
	(!D * !SCE * SET_B * !Q)	0.00890	0.01188	0.07916
	(!D * !SCE * SET_B * !Q)	0.01315	0.01612	0.08340
	(!D * !SCE * !SET_B * Q)	0.01613	0.01922	0.08700
	(!D * !SCE * !SET_B * Q)	0.02084	0.02393	0.09170
	(!D * !SCD * SCE * SET_B * Q)	0.01941	0.02251	0.09038
	(!D * !SCD * SCE * SET_B * Q)	0.02401	0.02711	0.09497
	(!D * !SCD * SCE * SET_B * !Q)	0.00891	0.01188	0.07916
	(!D * !SCD * SCE * SET_B * !Q)	0.01315	0.01612	0.08341
	(!D * !SCD * SCE * !SET_B * Q)	0.01615	0.01924	0.08701
	(!D * !SCD * SCE * !SET_B * Q)	0.02086	0.02396	0.09172

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01627	0.01924	0.08854
	(D * SCD * SCE * SET_B * !Q)	0.02018	0.02315	0.09245
	(D * SCD * SCE * Q)	0.00894	0.01191	0.07908
	(D * SCD * SCE * Q)	0.01317	0.01615	0.08331
	(D * !SCE * SET_B * !Q)	0.01624	0.01921	0.08852
	(D * !SCE * SET_B * !Q)	0.02016	0.02312	0.09243
	(D * !SCE * Q)	0.00894	0.01191	0.07908
	(D * !SCE * Q)	0.01317	0.01615	0.08331
	(D * !SCD * SCE * SET_B * Q)	0.01905	0.02214	0.09068
	(D * !SCD * SCE * SET_B * Q)	0.02360	0.02669	0.09521
	(D * !SCD * SCE * SET_B * !Q)	0.00865	0.01164	0.07897
	(D * !SCD * SCE * SET_B * !Q)	0.01289	0.01588	0.08322
	(D * !SCD * SCE * !SET_B * Q)	0.01579	0.01889	0.08676
	(D * !SCD * SCE * !SET_B * Q)	0.02043	0.02353	0.09141
	(!D * SCD * SCE * SET_B * !Q)	0.01630	0.01927	0.08857
	(!D * SCD * SCE * SET_B * !Q)	0.02020	0.02316	0.09247
	(!D * SCD * SCE * Q)	0.00894	0.01191	0.07908
	(!D * SCD * SCE * Q)	0.01317	0.01615	0.08331
	(!D * !SCE * SET_B * Q)	0.01904	0.02213	0.09066
	(!D * !SCE * SET_B * Q)	0.02357	0.02666	0.09517
	(!D * !SCE * SET_B * !Q)	0.00865	0.01164	0.07897
	(!D * !SCE * SET_B * !Q)	0.01289	0.01588	0.08322
	(!D * !SCE * !SET_B * Q)	0.01578	0.01888	0.08675
	(!D * !SCE * !SET_B * Q)	0.02043	0.02353	0.09139
	(!D * !SCD * SCE * SET_B * Q)	0.01904	0.02215	0.09010
	(!D * !SCD * SCE * SET_B * Q)	0.02358	0.02669	0.09463
	(!D * !SCD * SCE * SET_B * !Q)	0.00865	0.01164	0.07897
	(!D * !SCD * SCE * SET_B * !Q)	0.01290	0.01588	0.08322
	(!D * !SCD * SCE * !SET_B * Q)	0.01580	0.01890	0.08676
	(!D * !SCD * SCE * !SET_B * Q)	0.02044	0.02354	0.09140

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT	
D	SCD	SCE	CLK	Q	Q_N
0	0	x	R	0	1
0	1	0	R	0	1
x	1	1	R	1	0
1	x	0	R	1	0
1	0	1	R	0	1
x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxbp_1	41.55840
sky130_fd_sc_hs__sdfxbp_2	44.75520

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)	
	D	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sdfxbp_1	0.00186	0.00188	0.00400	0.00282	1.45806	1.38272
sky130_fd_sc_hs__sdfxbp_2	0.00184	0.00185	0.00406	0.00282	2.81438	2.77889

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	1.06835	1.64405
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.95278	1.52724

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)**	0.14758	0.53650	5.39779
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RR)**	0.14364	0.44117	5.30056

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	**CLK->Q (RF)**	0.15534	0.32889	1.51197
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q (RF)**	0.16446	0.30932	1.43244

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)**	0.18458	0.57746	5.39113
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RR)**	0.21370	0.50375	5.33069

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)**	0.16993	0.32566	1.38253
sky130_fd_sc_hs__sdfxbp_2	**CLK->Q_N (RF)**	0.18174	0.30933	1.50674

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)	-0.03916	-0.10319	-0.73372
	setup	CLK (R)	0.08917	0.13644	0.74400
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04128	-0.10319	-0.74646
	setup	CLK (R)	0.08975	0.13725	0.75570

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)	-0.06689	-0.20107	-3.73301
	setup	CLK (R)	0.13866	0.27567	3.75853
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06756	-0.20193	-3.75708
	setup	CLK (R)	0.14015	0.27917	3.78368

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)	-0.03916	-0.10319	-0.73372
	setup	CLK (R)	0.08917	0.13644	0.74400
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04128	-0.10319	-0.74646
	setup	CLK (R)	0.08975	0.13725	0.75570

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)	-0.06689	-0.20107	-3.73301
	setup	CLK (R)	0.13866	0.27567	3.75853
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06756	-0.20193	-3.75708
	setup	CLK (R)	0.14015	0.27917	3.78368

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)	-0.05405	-0.11509	-0.70000
	setup	CLK (R)	0.10616	0.15463	0.71411
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05101	-0.11509	-0.69622
	setup	CLK (R)	0.10400	0.15263	0.71374

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)	-0.09472	-0.23849	-3.92794
	setup	CLK (R)	0.18044	0.32022	3.94729
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09253	-0.23574	-3.96753
	setup	CLK (R)	0.18141	0.32105	3.98863

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)	-0.05488	-0.11509	-0.70614
	hold	CLK (R)	-0.05405	-0.11906	-0.70000
	setup	CLK (R)	0.10549	0.15132	0.71411
	setup	CLK (R)	0.10616	0.15463	0.70652
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05101	-0.11509	-0.70567
	hold	CLK (R)	-0.05408	-0.11906	-0.69622
	setup	CLK (R)	0.10207	0.14822	0.71374
	setup	CLK (R)	0.10400	0.15263	0.70603

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)	-0.10174	-0.24864	-3.93043
	hold	CLK (R)	-0.09472	-0.23849	-3.92794
	setup	CLK (R)	0.18044	0.32022	3.94729
	setup	CLK (R)	0.17423	0.31310	3.94600
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10142	-0.24971	-3.97040
	hold	CLK (R)	-0.09253	-0.23574	-3.96753
	setup	CLK (R)	0.18141	0.32105	3.98863
	setup	CLK (R)	0.17328	0.31653	3.98574

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)	-0.04661	-0.11113	-0.45354
	setup	CLK (R)	0.17595	0.19700	0.73840
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04742	-0.11113	-0.47241
	setup	CLK (R)	0.17872	0.20100	0.73937

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)	-0.08025	-0.20922	-3.43295
	setup	CLK (R)	0.15285	0.28317	3.73606
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08184	-0.21236	-3.45585
	setup	CLK (R)	0.15513	0.28841	3.77823

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)	-0.09479	-0.13070	-0.45354
	hold	CLK (R)	-0.04661	-0.11113	-0.72898
	setup	CLK (R)	0.17595	0.19700	0.46244
	setup	CLK (R)	0.09847	0.14881	0.73840
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09798	-0.13269	-0.47241
	hold	CLK (R)	-0.04742	-0.11113	-0.72980
	setup	CLK (R)	0.17872	0.20100	0.48444
	setup	CLK (R)	0.09328	0.14698	0.73937

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)	-0.08718	-0.22225	-3.43295
	hold	CLK (R)	-0.08025	-0.20922	-3.71400
	setup	CLK (R)	0.13419	0.24999	3.43979
	setup	CLK (R)	0.15285	0.28317	3.73606
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.09014	-0.22622	-3.45585
	hold	CLK (R)	-0.08184	-0.21236	-3.75806
	setup	CLK (R)	0.13811	0.25400	3.45998
	setup	CLK (R)	0.15513	0.28841	3.77823

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 ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	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 ()	0.12132	0.58716	16.50020
	min_pulse_width	CLK ()	0.14340	0.58716	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.12132	0.58716	16.50020
	min_pulse_width	CLK ()	0.14782	0.58716	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	0.01424	0.01559	0.05221
	CLK	0.01210	0.01341	0.05017
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01719	0.01882	0.05578
	CLK	0.01506	0.01668	0.05371

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01472	0.01612	0.05178
	CLK	0.01259	0.01396	0.04971
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01771	0.01924	0.05508
	CLK	0.01557	0.01710	0.05314

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01474	0.01611	0.05234
	CLK	0.01260	0.01398	0.05028
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01772	0.01947	0.05563
	CLK	0.01559	0.01723	0.05366

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01423	0.01554	0.05199
	CLK	0.01209	0.01339	0.04995
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01718	0.01877	0.05542
	CLK	0.01505	0.01664	0.05336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00135	0.00137	0.00136
	(CLK * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(CLK * !SCE)	0.00432	0.00555	0.03879
	(CLK * !SCE)	0.00100	0.00222	0.03547
	(CLK * !SCD * SCE)	0.00075	0.00076	0.00075
	(CLK * !SCD * SCE)	-0.00124	-0.00126	-0.00128
	(!CLK * SCD * SCE)	0.00135	0.00136	0.00135
	(!CLK * SCD * SCE)	-0.00056	-0.00057	-0.00056
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00995	0.01104	0.04841
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00663	0.00772	0.04510
	(!CLK * !SCD * SCE)	0.00075	0.00077	0.00075
	(!CLK * !SCD * SCE)	-0.00123	-0.00127	-0.00128
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00136	0.00138	0.00137
	(CLK * SCD * SCE)	-0.00054	-0.00055	-0.00055
	(CLK * !SCE)	0.00422	0.00545	0.03868
	(CLK * !SCE)	0.00094	0.00215	0.03539
	(CLK * !SCD * SCE)	0.00078	0.00078	0.00077
	(CLK * !SCD * SCE)	-0.00121	-0.00124	-0.00125
	(!CLK * SCD * SCE)	0.00136	0.00137	0.00137
	(!CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01000	0.01109	0.04839
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00671	0.00780	0.04511
	(!CLK * !SCD * SCE)	0.00078	0.00079	0.00078
	(!CLK * !SCD * SCE)	-0.00121	-0.00124	-0.00125

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00129	-0.00131	-0.00133
	(CLK * SCD * SCE)	0.00061	0.00062	0.00059
	(CLK * !SCE)	0.00080	0.00239	0.03553
	(CLK * !SCE)	0.00412	0.00571	0.03885
	(CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00072
	(CLK * !SCD * SCE)	0.00129	0.00129	0.00129
	(!CLK * SCD * SCE)	-0.00130	-0.00132	-0.00134
	(!CLK * SCD * SCE)	0.00061	0.00061	0.00058
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00738	0.00922	0.04714
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01070	0.01254	0.05046
	(!CLK * !SCD * SCE)	-0.00071	-0.00072	-0.00072
	(!CLK * !SCD * SCE)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00131	-0.00133	-0.00135
	(CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00091	0.00250	0.03563
	(CLK * !SCE)	0.00420	0.00579	0.03891
	(CLK * !SCD * SCE)	-0.00074	-0.00076	-0.00075
	(CLK * !SCD * SCE)	0.00126	0.00128	0.00126
	(!CLK * SCD * SCE)	-0.00131	-0.00134	-0.00135
	(!CLK * SCD * SCE)	0.00059	0.00059	0.00057
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00740	0.00924	0.04710
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.01069	0.01253	0.05038
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00074
	(!CLK * !SCD * SCE)	0.00126	0.00127	0.00127

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00604	0.00647	0.02730
	(CLK * D * SCE)	0.00171	0.00213	0.02298
	(CLK * !D * SCE)	0.00674	0.00711	0.02761
	(CLK * !D * SCE)	0.00231	0.00266	0.02317
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01167	0.01224	0.03572
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00733	0.00790	0.03139
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01237	0.01287	0.03580
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00793	0.00843	0.03136
	!SCE	0.00129	0.00113	0.00112
	!SCE	-0.00104	-0.00121	-0.00122
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00592	0.00637	0.02726
	(CLK * D * SCE)	0.00165	0.00209	0.02299
	(CLK * !D * SCE)	0.00662	0.00700	0.02756
	(CLK * !D * SCE)	0.00224	0.00261	0.02318
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01169	0.01228	0.03576
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00742	0.00800	0.03150
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01239	0.01293	0.03585
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00801	0.00856	0.03147
	!SCE	0.00125	0.00111	0.00108
	!SCE	-0.00106	-0.00123	-0.00124

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00198	0.00240	0.02287
	(CLK * D * SCE)	0.00631	0.00674	0.02719
	(CLK * !D * SCE)	0.00155	0.00203	0.02277
	(CLK * !D * SCE)	0.00599	0.00648	0.02718
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00872	0.00931	0.03306
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01305	0.01366	0.03739
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00837	0.00902	0.03316
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01281	0.01346	0.03759
	!SCE	-0.00106	-0.00109	-0.00109
	!SCE	0.00125	0.00126	0.00126
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00207	0.00251	0.02304
	(CLK * D * SCE)	0.00634	0.00679	0.02730
	(CLK * !D * SCE)	0.00165	0.00215	0.02293
	(CLK * !D * SCE)	0.00601	0.00653	0.02728
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00874	0.00938	0.03309
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.01301	0.01366	0.03736
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00840	0.00911	0.03329
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.01277	0.01348	0.03766
	!SCE	-0.00103	-0.00106	-0.00105
	!SCE	0.00127	0.00128	0.00127

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)**	0.00556	0.00709	0.05022
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00040	0.00110	0.04423
	(CLK * D * !SCD)	0.00815	0.00956	0.05465
	(CLK * D * !SCD)	0.00399	0.00536	0.05043
	(CLK * !D * SCD)	0.00965	0.01202	0.07757
	(CLK * !D * SCD)	0.00218	0.00453	0.07012
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00556	0.00708	0.05021
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00040	0.00108	0.04422
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01470	0.01618	0.06179
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01054	0.01198	0.05757
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01527	0.01780	0.08680
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00780	0.01030	0.07934
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00529	0.00692	0.04994
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00028	0.00132	0.04436

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00577	0.00727	0.05037
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00032	0.00113	0.04425
	(CLK * D * !SCD)	0.00844	0.00981	0.05489
	(CLK * D * !SCD)	0.00413	0.00545	0.05052
	(CLK * !D * SCD)	0.00978	0.01212	0.07767
	(CLK * !D * SCD)	0.00222	0.00454	0.07012
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00577	0.00724	0.05037
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00032	0.00113	0.04425
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01489	0.01638	0.06195
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01057	0.01203	0.05757
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01555	0.01806	0.08703
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00799	0.01046	0.07947
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00548	0.00706	0.05008
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00022	0.00136	0.04436

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)**	-0.00060	0.00180	0.04473
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00536	0.00777	0.05071
	(CLK * D * !SCD)	0.00385	0.00598	0.05025
	(CLK * D * !SCD)	0.00804	0.01018	0.05428
	(CLK * !D * SCD)	0.00104	0.00367	0.06853
	(CLK * !D * SCD)	0.00849	0.01115	0.07600
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00060	0.00179	0.04472
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00535	0.00777	0.05071
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00945	0.01166	0.05547
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01363	0.01585	0.05951
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00763	0.01040	0.07765
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01508	0.01785	0.08512
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00005	0.00211	0.04505
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00553	0.00771	0.05063

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00065	0.00172	0.04463
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00544	0.00783	0.05074
	(CLK * D * !SCD)	0.00374	0.00582	0.05010
	(CLK * D * !SCD)	0.00809	0.01020	0.05428
	(CLK * !D * SCD)	0.00112	0.00371	0.06856
	(CLK * !D * SCD)	0.00867	0.01129	0.07613
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00065	0.00171	0.04463
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00544	0.00782	0.05074
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00948	0.01165	0.05546
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01382	0.01601	0.05967
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00762	0.01035	0.07753
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01517	0.01794	0.08510
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00008	0.00205	0.04497
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00564	0.00778	0.05069

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)	0.01317	0.01535	0.08391
	(D * SCD * SCE * Q * !Q_N)	0.00889	0.01105	0.07963
	(D * !SCE * Q * !Q_N)	0.01314	0.01534	0.08385
	(D * !SCE * Q * !Q_N)	0.00886	0.01104	0.07956
	(D * !SCD * SCE * !Q * Q_N)	0.01303	0.01519	0.08391
	(D * !SCD * SCE * !Q * Q_N)	0.00874	0.01089	0.07963
	(!D * SCD * SCE * Q * !Q_N)	0.01317	0.01535	0.08391
	(!D * SCD * SCE * Q * !Q_N)	0.00889	0.01105	0.07963
	(!D * !SCE * !Q * Q_N)	0.01302	0.01519	0.08370
	(!D * !SCE * !Q * Q_N)	0.00874	0.01090	0.07943
	(!D * !SCD * SCE * !Q * Q_N)	0.01304	0.01519	0.08389
	(!D * !SCD * SCE * !Q * Q_N)	0.00875	0.01089	0.07962
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01343	0.01560	0.08453
	(D * SCD * SCE * Q * !Q_N)	0.00915	0.01130	0.08025
	(D * !SCE * Q * !Q_N)	0.01341	0.01559	0.08449
	(D * !SCE * Q * !Q_N)	0.00913	0.01130	0.08021
	(D * !SCD * SCE * !Q * Q_N)	0.01331	0.01546	0.08456
	(D * !SCD * SCE * !Q * Q_N)	0.00903	0.01116	0.08029
	(!D * SCD * SCE * Q * !Q_N)	0.01343	0.01560	0.08453
	(!D * SCD * SCE * Q * !Q_N)	0.00915	0.01131	0.08025
	(!D * !SCE * !Q * Q_N)	0.01331	0.01547	0.08448
	(!D * !SCE * !Q * Q_N)	0.00903	0.01117	0.08020
	(!D * !SCD * SCE * !Q * Q_N)	0.01332	0.01546	0.08454
	(!D * !SCD * SCE * !Q * Q_N)	0.00904	0.01116	0.08026

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)**	0.00755	0.01055	0.07873
	(D * SCD * SCE * Q * !Q_N)	0.01182	0.01485	0.08300
	(D * SCD * SCE * !Q * Q_N)	0.01286	0.01586	0.08551
	(D * SCD * SCE * !Q * Q_N)	0.01713	0.02015	0.08978
	(D * !SCE * Q * !Q_N)	0.00755	0.01054	0.07868
	(D * !SCE * Q * !Q_N)	0.01182	0.01483	0.08295
	(D * !SCE * !Q * Q_N)	0.01283	0.01583	0.08622
	(D * !SCE * !Q * Q_N)	0.01710	0.02013	0.09051
	(D * !SCD * SCE * Q * !Q_N)	0.01540	0.01846	0.08869
	(D * !SCD * SCE * Q * !Q_N)	0.01969	0.02277	0.09299
	(D * !SCD * SCE * !Q * Q_N)	0.00761	0.01059	0.07893
	(D * !SCD * SCE * !Q * Q_N)	0.01188	0.01488	0.08322
	(!D * SCD * SCE * Q * !Q_N)	0.00755	0.01055	0.07873
	(!D * SCD * SCE * Q * !Q_N)	0.01182	0.01485	0.08300
	(!D * SCD * SCE * !Q * Q_N)	0.01289	0.01589	0.08554
	(!D * SCD * SCE * !Q * Q_N)	0.01714	0.02016	0.08981
	(!D * !SCE * Q * !Q_N)	0.01533	0.01840	0.08805
	(!D * !SCE * Q * !Q_N)	0.01959	0.02269	0.09233
	(!D * !SCE * !Q * Q_N)	0.00760	0.01060	0.07884
	(!D * !SCE * !Q * Q_N)	0.01186	0.01488	0.08310
	(!D * !SCD * SCE * Q * !Q_N)	0.01541	0.01846	0.08868
	(!D * !SCD * SCE * Q * !Q_N)	0.01969	0.02276	0.09298
	(!D * !SCD * SCE * !Q * Q_N)	0.00761	0.01059	0.07893
	(!D * !SCD * SCE * !Q * Q_N)	0.01188	0.01488	0.08321

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00766	0.01069	0.07910
	(D * SCD * SCE * Q * !Q_N)	0.01192	0.01498	0.08338
	(D * SCD * SCE * !Q * Q_N)	0.01309	0.01613	0.08630
	(D * SCD * SCE * !Q * Q_N)	0.01735	0.02042	0.09058
	(D * !SCE * Q * !Q_N)	0.00766	0.01069	0.07908
	(D * !SCE * Q * !Q_N)	0.01192	0.01498	0.08336
	(D * !SCE * !Q * Q_N)	0.01306	0.01611	0.08738
	(D * !SCE * !Q * Q_N)	0.01732	0.02039	0.09166
	(D * !SCD * SCE * Q * !Q_N)	0.01541	0.01850	0.08897
	(D * !SCD * SCE * Q * !Q_N)	0.01969	0.02280	0.09325
	(D * !SCD * SCE * !Q * Q_N)	0.00769	0.01071	0.07929
	(D * !SCD * SCE * !Q * Q_N)	0.01195	0.01499	0.08357
	(!D * SCD * SCE * Q * !Q_N)	0.00766	0.01069	0.07910
	(!D * SCD * SCE * Q * !Q_N)	0.01192	0.01498	0.08338
	(!D * SCD * SCE * !Q * Q_N)	0.01312	0.01615	0.08633
	(!D * SCD * SCE * !Q * Q_N)	0.01736	0.02043	0.09060
	(!D * !SCE * Q * !Q_N)	0.01532	0.01843	0.08899
	(!D * !SCE * Q * !Q_N)	0.01958	0.02272	0.09326
	(!D * !SCE * !Q * Q_N)	0.00767	0.01071	0.07921
	(!D * !SCE * !Q * Q_N)	0.01193	0.01499	0.08348
	(!D * !SCD * SCE * Q * !Q_N)	0.01542	0.01851	0.08895
	(!D * !SCD * SCE * Q * !Q_N)	0.01969	0.02281	0.09323
	(!D * !SCD * SCE * !Q * Q_N)	0.00769	0.01071	0.07929
	(!D * !SCD * SCE * !Q * Q_N)	0.01195	0.01499	0.08356

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT				OUTPUT
D	SCD	SCE	CLK	Q
0	0	x	R	0
0	1	0	R	0
x	1	1	R	1
1	x	0	R	1
1	0	1	R	0
x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdfxtp_1	36.76320
sky130_fd_sc_hs__sdfxtp_2	39.96000
sky130_fd_sc_hs__sdfxtp_4	41.55840

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sdfxtp_1	0.00188	0.00198	0.00415	0.00280	1.43160
sky130_fd_sc_hs__sdfxtp_2	0.00191	0.00194	0.00402	0.00282	2.73157
sky130_fd_sc_hs__sdfxtp_4	0.00189	0.00192	0.00414	0.00280	5.17511

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.97913	1.75748
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.83159	1.39934
sky130_fd_sc_hs__sdfxtp_4	0.00000	1.31090	2.23211

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)**	0.13578	0.52675	5.35658
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.13935	0.43846	5.22508
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.16459	0.39824	5.35496

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.14850	0.31403	1.44001
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.15250	0.28856	1.38027
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.15368	0.26274	1.43121

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)	-0.04304	-0.10319	-0.73670
	setup	CLK (R)	0.08968	0.13579	0.74757
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04251	-0.10611	-0.73834
	setup	CLK (R)	0.09263	0.13852	0.74937
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04265	-0.10319	-0.73033
	setup	CLK (R)	0.08231	0.13417	0.73792

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)	-0.06972	-0.20390	-3.74439
	setup	CLK (R)	0.13953	0.28267	3.76766
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07524	-0.20947	-3.75854
	setup	CLK (R)	0.14687	0.28841	3.78755
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07341	-0.20800	-3.73319
	setup	CLK (R)	0.14015	0.28194	3.76265

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)	-0.04304	-0.10319	-0.73670
	setup	CLK (R)	0.08968	0.13579	0.74757
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04251	-0.10611	-0.73834
	setup	CLK (R)	0.09263	0.13852	0.74937
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04265	-0.10319	-0.73033
	setup	CLK (R)	0.08231	0.13417	0.73792

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)	-0.06972	-0.20390	-3.74439
	setup	CLK (R)	0.13953	0.28267	3.76766
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07524	-0.20947	-3.75854
	setup	CLK (R)	0.14687	0.28841	3.78755
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07341	-0.20800	-3.73319
	setup	CLK (R)	0.14015	0.28194	3.76265

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)	-0.05463	-0.11509	-0.70524
	setup	CLK (R)	0.10832	0.15475	0.72343
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05575	-0.11906	-0.70910
	setup	CLK (R)	0.11303	0.15875	0.72764
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05190	-0.11509	-0.69591
	setup	CLK (R)	0.10086	0.15251	0.71540

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)	-0.09636	-0.24158	-3.93317
	setup	CLK (R)	0.18571	0.32628	3.95331
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09985	-0.24569	-3.94884
	setup	CLK (R)	0.19396	0.33331	3.97193
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10433	-0.24304	-3.92571
	setup	CLK (R)	0.18734	0.32544	3.94829

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)	-0.05524	-0.11509	-0.71465
	hold	CLK (R)	-0.05463	-0.11906	-0.70524
	setup	CLK (R)	0.10501	0.15384	0.72343
	setup	CLK (R)	0.10832	0.15475	0.71281
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05733	-0.11906	-0.71921
	hold	CLK (R)	-0.05575	-0.12246	-0.70910
	setup	CLK (R)	0.10928	0.15675	0.72764
	setup	CLK (R)	0.11303	0.15875	0.72116
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05190	-0.11509	-0.70591
	hold	CLK (R)	-0.05681	-0.11906	-0.69591
	setup	CLK (R)	0.09629	0.14887	0.71540
	setup	CLK (R)	0.10086	0.15251	0.70521

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)	-0.10373	-0.25251	-3.93411
	hold	CLK (R)	-0.09636	-0.24158	-3.93317
	setup	CLK (R)	0.18571	0.32628	3.95171
	setup	CLK (R)	0.17884	0.31932	3.95331
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11094	-0.25597	-3.95142
	hold	CLK (R)	-0.09985	-0.24569	-3.94884
	setup	CLK (R)	0.19396	0.33331	3.97193
	setup	CLK (R)	0.18345	0.32439	3.96862
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11096	-0.25400	-3.93005
	hold	CLK (R)	-0.10433	-0.24304	-3.92571
	setup	CLK (R)	0.18734	0.32544	3.94780
	setup	CLK (R)	0.17954	0.31948	3.94829

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)	-0.04863	-0.11113	-0.45917
	setup	CLK (R)	0.18443	0.20500	0.74647
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04806	-0.11509	-0.46163
	setup	CLK (R)	0.18924	0.20836	0.74790
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04540	-0.11113	-0.45920
	setup	CLK (R)	0.18390	0.20223	0.73886

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)	-0.08605	-0.21394	-3.44656
	setup	CLK (R)	0.15555	0.28871	3.73744
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08894	-0.21724	-3.44122
	setup	CLK (R)	0.16318	0.29497	3.75611
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08936	-0.21700	-3.43829
	setup	CLK (R)	0.15343	0.28603	3.73710

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)	-0.09881	-0.13469	-0.45917
	hold	CLK (R)	-0.04863	-0.11113	-0.73781
	setup	CLK (R)	0.18443	0.20500	0.47100
	setup	CLK (R)	0.09724	0.15134	0.74647
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10242	-0.13644	-0.46163
	hold	CLK (R)	-0.04806	-0.11509	-0.74128
	setup	CLK (R)	0.18924	0.20836	0.47076
	setup	CLK (R)	0.10267	0.15421	0.74790
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10527	-0.13742	-0.45920
	hold	CLK (R)	-0.04540	-0.11113	-0.72822
	setup	CLK (R)	0.18390	0.20223	0.46886
	setup	CLK (R)	0.09010	0.14661	0.73886

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)	-0.09002	-0.23019	-3.44656
	hold	CLK (R)	-0.08605	-0.21394	-3.71618
	setup	CLK (R)	0.13871	0.25400	3.45013
	setup	CLK (R)	0.15555	0.28871	3.73744
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.08903	-0.22622	-3.44122
	hold	CLK (R)	-0.08894	-0.21724	-3.73390
	setup	CLK (R)	0.14038	0.25400	3.45061
	setup	CLK (R)	0.16318	0.29497	3.75611
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.08936	-0.22622	-3.43829
	hold	CLK (R)	-0.09059	-0.21700	-3.71345
	setup	CLK (R)	0.13140	0.25000	3.44330
	setup	CLK (R)	0.15343	0.28603	3.73710

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 ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.06834	0.58716	16.50020
	min_pulse_width	CLK ()	0.05288	0.58716	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.08600	0.58716	16.50020
	min_pulse_width	CLK ()	0.05509	0.58716	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 ()	0.12353	0.58716	16.50020
	min_pulse_width	CLK ()	0.14561	0.58716	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.12795	0.58716	16.50020
	min_pulse_width	CLK ()	0.15002	0.58716	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.11470	0.58716	16.50020
	min_pulse_width	CLK ()	0.14782	0.58716	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	0.02205	0.02456	0.09775
	CLK	0.01782	0.02034	0.09375
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02528	0.02798	0.10100
	CLK	0.02101	0.02374	0.09739
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03166	0.03431	0.10746
	CLK	0.02741	0.03015	0.10410

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.02337	0.02604	0.09730
	CLK	0.01914	0.02174	0.09308
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02659	0.02941	0.10075
	CLK	0.02232	0.02511	0.09635
sky130_fd_sc_hs__sdfxtp_4	CLK	0.03340	0.03658	0.10855
	CLK	0.02915	0.03235	0.10371

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00139	0.00140	0.00139
	(CLK * SCD * SCE)	-0.00055	-0.00056	-0.00056
	(CLK * !SCE)	0.00433	0.00554	0.03872
	(CLK * !SCE)	0.00093	0.00212	0.03532
	(CLK * !SCD * SCE)	0.00078	0.00079	0.00078
	(CLK * !SCD * SCE)	-0.00124	-0.00126	-0.00128
	(!CLK * SCD * SCE)	0.00139	0.00140	0.00139
	(!CLK * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(!CLK * !SCE)	0.01017	0.01126	0.04856
	(!CLK * !SCE)	0.00677	0.00785	0.04516
	(!CLK * !SCD * SCE)	0.00079	0.00080	0.00078
	(!CLK * !SCD * SCE)	-0.00123	-0.00126	-0.00127
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00143	0.00144	0.00144
	(CLK * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(CLK * !SCE)	0.00466	0.00582	0.03891
	(CLK * !SCE)	0.00119	0.00234	0.03545
	(CLK * !SCD * SCE)	0.00082	0.00082	0.00081
	(CLK * !SCD * SCE)	-0.00126	-0.00128	-0.00129
	(!CLK * SCD * SCE)	0.00143	0.00143	0.00143
	(!CLK * SCD * SCE)	-0.00056	-0.00056	-0.00056
	(!CLK * !SCE)	0.01094	0.01199	0.04904
	(!CLK * !SCE)	0.00748	0.00851	0.04557
	(!CLK * !SCD * SCE)	0.00081	0.00083	0.00081
	(!CLK * !SCD * SCE)	-0.00124	-0.00128	-0.00129

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00141	0.00142	0.00141
	(CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(CLK * !SCE)	0.00434	0.00556	0.03878
	(CLK * !SCE)	0.00095	0.00215	0.03538
	(CLK * !SCD * SCE)	0.00081	0.00082	0.00080
	(CLK * !SCD * SCE)	-0.00123	-0.00125	-0.00127
	(!CLK * SCD * SCE)	0.00141	0.00142	0.00142
	(!CLK * SCD * SCE)	-0.00055	-0.00055	-0.00055
	(!CLK * !SCE)	0.01019	0.01127	0.04854
	(!CLK * !SCE)	0.00680	0.00787	0.04515
	(!CLK * !SCD * SCE)	0.00082	0.00083	0.00081
	(!CLK * !SCD * SCE)	-0.00122	-0.00125	-0.00126

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00133	-0.00134	-0.00137
	(CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00088	0.00246	0.03554
	(CLK * !SCE)	0.00429	0.00587	0.03894
	(CLK * !SCD * SCE)	-0.00075	-0.00075	-0.00075
	(CLK * !SCD * SCE)	0.00128	0.00128	0.00129
	(!CLK * SCD * SCE)	-0.00133	-0.00135	-0.00137
	(!CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK * !SCE)	0.00723	0.00907	0.04697
	(!CLK * !SCE)	0.01065	0.01249	0.05037
	(!CLK * !SCD * SCE)	-0.00074	-0.00075	-0.00075
	(!CLK * !SCD * SCE)	0.00129	0.00130	0.00129

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00137	-0.00140	-0.00142
	(CLK * SCD * SCE)	0.00060	0.00061	0.00058
	(CLK * !SCE)	0.00093	0.00250	0.03548
	(CLK * !SCE)	0.00441	0.00596	0.03895
	(CLK * !SCD * SCE)	-0.00078	-0.00078	-0.00078
	(CLK * !SCD * SCE)	0.00130	0.00130	0.00130
	(!CLK * SCD * SCE)	-0.00138	-0.00140	-0.00142
	(!CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK * !SCE)	0.00739	0.00918	0.04684
	(!CLK * !SCE)	0.01085	0.01266	0.05031
	(!CLK * !SCD * SCE)	-0.00077	-0.00078	-0.00078
	(!CLK * !SCD * SCE)	0.00130	0.00130	0.00130
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00135	-0.00138	-0.00139
	(CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(CLK * !SCE)	0.00084	0.00242	0.03554
	(CLK * !SCE)	0.00424	0.00583	0.03893
	(CLK * !SCD * SCE)	-0.00078	-0.00078	-0.00078
	(CLK * !SCD * SCE)	0.00128	0.00127	0.00128
	(!CLK * SCD * SCE)	-0.00135	-0.00137	-0.00139
	(!CLK * SCD * SCE)	0.00060	0.00060	0.00058
	(!CLK * !SCE)	0.00754	0.00936	0.04717
	(!CLK * !SCE)	0.01094	0.01277	0.05056
	(!CLK * !SCD * SCE)	-0.00076	-0.00078	-0.00077
	(!CLK * !SCD * SCE)	0.00128	0.00129	0.00129

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00616	0.00657	0.02733
	(CLK * D * SCE)	0.00168	0.00208	0.02286
	(CLK * !D * SCE)	0.00686	0.00721	0.02763
	(CLK * !D * SCE)	0.00227	0.00261	0.02305
	(!CLK * D * SCE)	0.01199	0.01256	0.03594
	(!CLK * D * SCE)	0.00751	0.00807	0.03146
	(!CLK * !D * SCE)	0.01269	0.01319	0.03627
	(!CLK * !D * SCE)	0.00811	0.00859	0.03168
	!SCE	0.00131	0.00116	0.00114
	!SCE	-0.00111	-0.00129	-0.00130
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00631	0.00672	0.02743
	(CLK * D * SCE)	0.00187	0.00226	0.02299
	(CLK * !D * SCE)	0.00701	0.00735	0.02774
	(CLK * !D * SCE)	0.00246	0.00279	0.02319
	(!CLK * D * SCE)	0.01258	0.01314	0.03645
	(!CLK * D * SCE)	0.00815	0.00868	0.03200
	(!CLK * !D * SCE)	0.01329	0.01378	0.03673
	(!CLK * !D * SCE)	0.00874	0.00922	0.03218
	!SCE	0.00132	0.00118	0.00115
	!SCE	-0.00105	-0.00122	-0.00123
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00611	0.00654	0.02736
	(CLK * D * SCE)	0.00172	0.00214	0.02297
	(CLK * !D * SCE)	0.00681	0.00718	0.02766
	(CLK * !D * SCE)	0.00232	0.00267	0.02317
	(!CLK * D * SCE)	0.01195	0.01252	0.03590
	(!CLK * D * SCE)	0.00756	0.00812	0.03151
	(!CLK * !D * SCE)	0.01266	0.01319	0.03602
	(!CLK * !D * SCE)	0.00816	0.00867	0.03152
	!SCE	0.00128	0.00113	0.00111
	!SCE	-0.00108	-0.00124	-0.00126

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00199	0.00239	0.02278
	(CLK * D * SCE)	0.00647	0.00687	0.02725
	(CLK * !D * SCE)	0.00157	0.00201	0.02267
	(CLK * !D * SCE)	0.00614	0.00661	0.02725
	(!CLK * D * SCE)	0.00854	0.00909	0.03282
	(!CLK * D * SCE)	0.01303	0.01358	0.03727
	(!CLK * !D * SCE)	0.00820	0.00879	0.03291
	(!CLK * !D * SCE)	0.01278	0.01337	0.03747
	!SCE	-0.00109	-0.00112	-0.00112
	!SCE	0.00132	0.00133	0.00133
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00215	0.00255	0.02290
	(CLK * D * SCE)	0.00659	0.00699	0.02732
	(CLK * !D * SCE)	0.00173	0.00218	0.02277
	(CLK * !D * SCE)	0.00627	0.00673	0.02731
	(!CLK * D * SCE)	0.00878	0.00935	0.03293
	(!CLK * D * SCE)	0.01323	0.01379	0.03735
	(!CLK * !D * SCE)	0.00843	0.00906	0.03326
	(!CLK * !D * SCE)	0.01297	0.01360	0.03779
	!SCE	-0.00110	-0.00113	-0.00113
	!SCE	0.00125	0.00126	0.00126

sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00197	0.00238	0.02284
	(CLK * D * SCE)	0.00637	0.00679	0.02722
	(CLK * !D * SCE)	0.00155	0.00202	0.02274
	(CLK * !D * SCE)	0.00604	0.00652	0.02721
	(!CLK * D * SCE)	0.00885	0.00941	0.03309
	(!CLK * D * SCE)	0.01323	0.01381	0.03747
	(!CLK * !D * SCE)	0.00848	0.00911	0.03319
	(!CLK * !D * SCE)	0.01296	0.01361	0.03766
	!SCE	-0.00106	-0.00109	-0.00109
	!SCE	0.00129	0.00130	0.00130

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)**	0.00587	0.00733	0.05044
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00041	0.00101	0.04413
	(CLK * D * !SCD)	0.00854	0.00990	0.05493
	(CLK * D * !SCD)	0.00412	0.00542	0.05044
	(CLK * !D * SCD)	0.00997	0.01227	0.07774
	(CLK * !D * SCD)	0.00213	0.00441	0.06991
	(!CLK * D * SCD)	0.00587	0.00733	0.05044
	(!CLK * D * SCD)	-0.00041	0.00101	0.04413
	(!CLK * D * !SCD)	0.01485	0.01631	0.06185
	(!CLK * D * !SCD)	0.01042	0.01185	0.05736
	(!CLK * !D * SCD)	0.01581	0.01829	0.08723
	(!CLK * !D * SCD)	0.00797	0.01041	0.07938
	(!CLK * !D * !SCD)	0.00559	0.00717	0.05017
	(!CLK * !D * !SCD)	-0.00030	0.00124	0.04425

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00565	0.00716	0.05027
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00041	0.00107	0.04419
	(CLK * D * !SCD)	0.00843	0.00983	0.05495
	(CLK * D * !SCD)	0.00426	0.00562	0.05071
	(CLK * !D * SCD)	0.01001	0.01232	0.07777
	(CLK * !D * SCD)	0.00237	0.00470	0.07014
	(!CLK * D * SCD)	0.00565	0.00715	0.05027
	(!CLK * D * SCD)	-0.00041	0.00107	0.04419
	(!CLK * D * !SCD)	0.01484	0.01633	0.06190
	(!CLK * D * !SCD)	0.01067	0.01211	0.05767
	(!CLK * !D * SCD)	0.01628	0.01876	0.08758
	(!CLK * !D * SCD)	0.00864	0.01112	0.07995
	(!CLK * !D * !SCD)	0.00541	0.00703	0.05003
	(!CLK * !D * !SCD)	-0.00025	0.00133	0.04436
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00587	0.00732	0.05037
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00040	0.00102	0.04407
	(CLK * D * !SCD)	0.00849	0.00981	0.05484
	(CLK * D * !SCD)	0.00405	0.00534	0.05033
	(CLK * !D * SCD)	0.00999	0.01228	0.07772
	(CLK * !D * SCD)	0.00219	0.00445	0.06993
	(!CLK * D * SCD)	0.00587	0.00731	0.05037
	(!CLK * D * SCD)	-0.00039	0.00101	0.04407
	(!CLK * D * !SCD)	0.01514	0.01657	0.06206
	(!CLK * D * !SCD)	0.01070	0.01210	0.05756
	(!CLK * !D * SCD)	0.01583	0.01828	0.08712
	(!CLK * !D * SCD)	0.00803	0.01045	0.07932
	(!CLK * !D * !SCD)	0.00558	0.00714	0.05009
	(!CLK * !D * !SCD)	-0.00029	0.00123	0.04419

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)	-0.00064	0.00171	0.04461
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00566	0.00801	0.05092
	(CLK * D * !SCD)	0.00388	0.00592	0.05017
	(CLK * D * !SCD)	0.00833	0.01039	0.05448
	(CLK * !D * SCD)	0.00109	0.00364	0.06839
	(CLK * !D * SCD)	0.00892	0.01151	0.07625
	(!CLK * D * SCD)	-0.00063	0.00171	0.04461
	(!CLK * D * SCD)	0.00566	0.00801	0.05092
	(!CLK * D * !SCD)	0.00968	0.01183	0.05560
	(!CLK * D * !SCD)	0.01413	0.01629	0.05991
	(!CLK * !D * SCD)	0.00745	0.01016	0.07734
	(!CLK * !D * SCD)	0.01529	0.01802	0.08516
	(!CLK * !D * !SCD)	-0.00007	0.00226	0.04494
	(!CLK * !D * !SCD)	0.00583	0.00819	0.05085

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00061	0.00177	0.04468
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00544	0.00785	0.05075
	(CLK * D * !SCD)	0.00415	0.00626	0.05044
	(CLK * D * !SCD)	0.00835	0.01049	0.05450
	(CLK * !D * SCD)	0.00116	0.00374	0.06840
	(CLK * !D * SCD)	0.00879	0.01140	0.07604
	(!CLK * D * SCD)	-0.00061	0.00177	0.04468
	(!CLK * D * SCD)	0.00543	0.00784	0.05075
	(!CLK * D * !SCD)	0.01040	0.01260	0.05633
	(!CLK * D * !SCD)	0.01459	0.01682	0.06038
	(!CLK * !D * SCD)	0.00761	0.01033	0.07734
	(!CLK * !D * SCD)	0.01524	0.01797	0.08498
	(!CLK * !D * !SCD)	-0.00009	0.00207	0.04497
	(!CLK * !D * !SCD)	0.00558	0.00776	0.05065
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00060	0.00174	0.04460
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00567	0.00804	0.05089
	(CLK * D * !SCD)	0.00391	0.00597	0.05017
	(CLK * D * !SCD)	0.00837	0.01046	0.05449
	(CLK * !D * SCD)	0.00108	0.00365	0.06838
	(CLK * !D * SCD)	0.00887	0.01146	0.07618
	(!CLK * D * SCD)	-0.00060	0.00174	0.04460
	(!CLK * D * SCD)	0.00567	0.00803	0.05089
	(!CLK * D * !SCD)	0.00972	0.01188	0.05561
	(!CLK * D * !SCD)	0.01418	0.01638	0.05993
	(!CLK * !D * SCD)	0.00779	0.01048	0.07755
	(!CLK * !D * SCD)	0.01558	0.01831	0.08536
	(!CLK * !D * !SCD)	-0.00003	0.00208	0.04494
	(!CLK * !D * !SCD)	0.00585	0.00799	0.05084

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)	0.01303	0.01520	0.08365
	(D * SCD * SCE * Q)	0.00879	0.01095	0.07941
	(D * !SCE * Q)	0.01300	0.01519	0.08358
	(D * !SCE * Q)	0.00876	0.01094	0.07934
	(D * !SCD * SCE * !Q)	0.01301	0.01517	0.08379
	(D * !SCD * SCE * !Q)	0.00877	0.01092	0.07956
	(!D * SCD * SCE * Q)	0.01303	0.01521	0.08365
	(!D * SCD * SCE * Q)	0.00879	0.01095	0.07941
	(!D * !SCE * !Q)	0.01301	0.01518	0.08370
	(!D * !SCE * !Q)	0.00877	0.01093	0.07946
	(!D * !SCD * SCE * !Q)	0.01303	0.01517	0.08376
	(!D * !SCD * SCE * !Q)	0.00879	0.01092	0.07953
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01328	0.01539	0.08366
	(D * SCD * SCE * Q)	0.00900	0.01109	0.07938
	(D * !SCE * Q)	0.01325	0.01537	0.08360
	(D * !SCE * Q)	0.00897	0.01108	0.07932
	(D * !SCD * SCE * !Q)	0.01340	0.01549	0.08396
	(D * !SCD * SCE * !Q)	0.00912	0.01119	0.07967
	(!D * SCD * SCE * Q)	0.01328	0.01539	0.08367
	(!D * SCD * SCE * Q)	0.00900	0.01109	0.07939
	(!D * !SCE * !Q)	0.01340	0.01550	0.08374
	(!D * !SCE * !Q)	0.00912	0.01121	0.07945
	(!D * !SCD * SCE * !Q)	0.01341	0.01549	0.08394
	(!D * !SCD * SCE * !Q)	0.00913	0.01120	0.07966

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01319	0.01535	0.08378
	(D * SCD * SCE * Q)	0.00894	0.01108	0.07953
	(D * !SCE * Q)	0.01316	0.01533	0.08371
	(D * !SCE * Q)	0.00891	0.01107	0.07946
	(D * !SCD * SCE * !Q)	0.01313	0.01522	0.08387
	(D * !SCD * SCE * !Q)	0.00887	0.01094	0.07961
	(!D * SCD * SCE * Q)	0.01319	0.01535	0.08378
	(!D * SCD * SCE * Q)	0.00894	0.01108	0.07953
	(!D * !SCE * !Q)	0.01312	0.01527	0.08378
	(!D * !SCE * !Q)	0.00886	0.01100	0.07952
	(!D * !SCD * SCE * !Q)	0.01313	0.01526	0.08385
	(!D * !SCD * SCE * !Q)	0.00887	0.01099	0.07959

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)**	0.00769	0.01069	0.07877
	(D * SCD * SCE * Q)	0.01191	0.01494	0.08301
	(D * SCD * SCE * !Q)	0.01307	0.01608	0.08564
	(D * SCD * SCE * !Q)	0.01729	0.02032	0.08988
	(D * !SCE * Q)	0.00769	0.01070	0.07873
	(D * !SCE * Q)	0.01191	0.01495	0.08297
	(D * !SCE * !Q)	0.01304	0.01607	0.08642
	(D * !SCE * !Q)	0.01727	0.02032	0.09066
	(D * !SCD * SCE * Q)	0.01526	0.01832	0.08830
	(D * !SCD * SCE * Q)	0.01950	0.02259	0.09256
	(D * !SCD * SCE * !Q)	0.00760	0.01059	0.07883
	(D * !SCD * SCE * !Q)	0.01182	0.01483	0.08307
	(!D * SCD * SCE * Q)	0.00769	0.01070	0.07877
	(!D * SCD * SCE * Q)	0.01191	0.01496	0.08301
	(!D * SCD * SCE * !Q)	0.01310	0.01612	0.08568
	(!D * SCD * SCE * !Q)	0.01731	0.02036	0.08991
	(!D * !SCE * Q)	0.01518	0.01826	0.08773
	(!D * !SCE * Q)	0.01940	0.02251	0.09197
	(!D * !SCE * !Q)	0.00759	0.01059	0.07872
	(!D * !SCE * !Q)	0.01181	0.01484	0.08295
	(!D * !SCD * SCE * Q)	0.01526	0.01830	0.08827
	(!D * !SCD * SCE * Q)	0.01950	0.02256	0.09252
	(!D * !SCD * SCE * !Q)	0.00760	0.01058	0.07883
	(!D * !SCD * SCE * !Q)	0.01182	0.01483	0.08307

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00803	0.01103	0.07892
	(D * SCD * SCE * Q)	0.01229	0.01532	0.08320
	(D * SCD * SCE * !Q)	0.01379	0.01682	0.08619
	(D * SCD * SCE * !Q)	0.01805	0.02109	0.09046
	(D * !SCE * Q)	0.00803	0.01103	0.07888
	(D * !SCE * Q)	0.01229	0.01532	0.08317
	(D * !SCE * !Q)	0.01377	0.01680	0.08694
	(D * !SCE * !Q)	0.01802	0.02109	0.09122
	(D * !SCD * SCE * Q)	0.01564	0.01873	0.08863
	(D * !SCD * SCE * Q)	0.01992	0.02301	0.09291
	(D * !SCD * SCE * !Q)	0.00780	0.01080	0.07886
	(D * !SCD * SCE * !Q)	0.01206	0.01509	0.08314
	(!D * SCD * SCE * Q)	0.00803	0.01103	0.07892
	(!D * SCD * SCE * Q)	0.01229	0.01532	0.08320
	(!D * SCD * SCE * !Q)	0.01383	0.01684	0.08623
	(!D * SCD * SCE * !Q)	0.01807	0.02112	0.09048
	(!D * !SCE * Q)	0.01557	0.01868	0.08799
	(!D * !SCE * Q)	0.01983	0.02297	0.09227
	(!D * !SCE * !Q)	0.00779	0.01081	0.07876
	(!D * !SCE * !Q)	0.01204	0.01509	0.08304
	(!D * !SCD * SCE * Q)	0.01564	0.01872	0.08861
	(!D * !SCD * SCE * Q)	0.01991	0.02302	0.09290
	(!D * !SCD * SCE * !Q)	0.00781	0.01080	0.07886
	(!D * !SCD * SCE * !Q)	0.01206	0.01508	0.08314

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00764	0.01059	0.07872
	(D * SCD * SCE * Q)	0.01188	0.01485	0.08298
	(D * SCD * SCE * !Q)	0.01308	0.01611	0.08560
	(D * SCD * SCE * !Q)	0.01732	0.02036	0.08985
	(D * !SCE * Q)	0.00764	0.01066	0.07868
	(D * !SCE * Q)	0.01188	0.01493	0.08294
	(D * !SCE * !Q)	0.01305	0.01609	0.08631
	(D * !SCE * !Q)	0.01728	0.02035	0.09057
	(D * !SCD * SCE * Q)	0.01560	0.01870	0.08879
	(D * !SCD * SCE * Q)	0.01986	0.02297	0.09306
	(D * !SCD * SCE * !Q)	0.00760	0.01061	0.07883
	(D * !SCD * SCE * !Q)	0.01184	0.01488	0.08309
	(!D * SCD * SCE * Q)	0.00764	0.01059	0.07872
	(!D * SCD * SCE * Q)	0.01188	0.01485	0.08298
	(!D * SCD * SCE * !Q)	0.01311	0.01615	0.08563
	(!D * SCD * SCE * !Q)	0.01733	0.02039	0.08987
	(!D * !SCE * Q)	0.01552	0.01865	0.08813
	(!D * !SCE * Q)	0.01976	0.02291	0.09239
	(!D * !SCE * !Q)	0.00759	0.01061	0.07873
	(!D * !SCE * !Q)	0.01182	0.01488	0.08297
	(!D * !SCD * SCE * Q)	0.01561	0.01870	0.08879
	(!D * !SCD * SCE * Q)	0.01986	0.02297	0.09305
	(!D * !SCD * SCE * !Q)	0.00760	0.01062	0.07883
	(!D * !SCD * SCE * !Q)	0.01184	0.01488	0.08309

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT			OUTPUT
GATE	SCE	CLK	GCLK
x	x	x	-

Footprint

Cell Name	Area
sky130_fd_sc_hs__sdlclkp_1	25.57440
sky130_fd_sc_hs__sdlclkp_2	27.17280
sky130_fd_sc_hs__sdlclkp_4	31.96800

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	GATE	SCE	CLK	GCLK
sky130_fd_sc_hs__sdlclkp_1	0.00229	0.00210	0.00449	1.38314
sky130_fd_sc_hs__sdlclkp_2	0.00228	0.00208	0.00474	2.67087
sky130_fd_sc_hs__sdlclkp_4	0.00217	0.00197	0.00482	5.21115

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	1.17374	1.90183
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.97611	1.60669
sky130_fd_sc_hs__sdlclkp_4	0.00000	1.02768	1.73257

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)**	0.04883	0.43047	5.51711
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (RR)**	0.05033	0.35283	5.34195
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (RR)**	0.06545	0.33239	5.54493

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	**CLK->GCLK (FF)**	0.06208	0.43575	4.83776
sky130_fd_sc_hs__sdlclkp_2	**CLK->GCLK (FF)**	0.06839	0.43052	4.78947
sky130_fd_sc_hs__sdlclkp_4	**CLK->GCLK (FF)**	0.08791	0.46416	5.00684

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)	-0.02967	-0.07541	-0.58693
	setup	CLK (R)	0.10114	0.19554	0.64105
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02734	-0.07541	-0.58061
	setup	CLK (R)	0.09729	0.17150	0.62512
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02605	-0.07541	-0.58693
	setup	CLK (R)	0.09484	0.15021	0.63827

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)	-0.08367	-0.22096	-3.80706
	setup	CLK (R)	0.11232	0.26266	4.10895
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08410	-0.21972	-3.80353
	setup	CLK (R)	0.10984	0.26188	4.09866
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08928	-0.22267	-3.80489
	setup	CLK (R)	0.11019	0.26419	4.10418

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)	-0.02967	-0.07541	-0.58693
	setup	CLK (R)	0.10114	0.19554	0.64105
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.02734	-0.07541	-0.58061
	setup	CLK (R)	0.09729	0.17150	0.62512
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.02605	-0.07541	-0.58693
	setup	CLK (R)	0.09484	0.15021	0.63827

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)	-0.08367	-0.22096	-3.80706
	setup	CLK (R)	0.11232	0.26266	4.10895
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.08410	-0.21972	-3.80353
	setup	CLK (R)	0.10984	0.26188	4.09866
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.08928	-0.22267	-3.80489
	setup	CLK (R)	0.11019	0.26419	4.10418

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)	-0.02999	-0.08334	-0.53732
	setup	CLK (R)	0.10167	0.20241	0.59579
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03034	-0.08334	-0.53254
	setup	CLK (R)	0.09963	0.17801	0.57912
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03020	-0.08334	-0.53732
	setup	CLK (R)	0.09889	0.15716	0.59895

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)	-0.09391	-0.22559	-3.82334
	setup	CLK (R)	0.11731	0.26497	3.91709
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09134	-0.22497	-3.81420
	setup	CLK (R)	0.11781	0.26336	3.89441
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09670	-0.22791	-3.81707
	setup	CLK (R)	0.11986	0.26649	3.89932

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)	-0.02999	-0.08334	-0.53732
	setup	CLK (R)	0.10167	0.20241	0.59579
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03034	-0.08334	-0.53254
	setup	CLK (R)	0.09963	0.17801	0.57912
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03020	-0.08334	-0.53732
	setup	CLK (R)	0.09889	0.15716	0.59895

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)	-0.09391	-0.22559	-3.82334
	setup	CLK (R)	0.11731	0.26497	3.91709
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.09134	-0.22497	-3.81420
	setup	CLK (R)	0.11781	0.26336	3.89441
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.09670	-0.22791	-3.81707
	setup	CLK (R)	0.11986	0.26649	3.89932

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 ()	0.03301	0.58716	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.03743	0.58716	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.05288	0.58716	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** ()	0.14340	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12132	0.58716	16.50020
sky130_fd_sc_hs__sdlclkp_2	**min_pulse_width**	**CLK** ()	0.13898	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12132	0.58716	16.50020
sky130_fd_sc_hs__sdlclkp_4	**min_pulse_width**	**CLK** ()	0.13898	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12353	0.58716	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	0.01641	0.02221	0.16651
	CLK	0.00961	0.01542	0.15999
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01953	0.02477	0.16198
	CLK	0.01236	0.01764	0.15525
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02542	0.03024	0.16090
	CLK	0.01810	0.02293	0.15475

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01957	0.02768	0.16272
	CLK	0.02591	0.03386	0.16820
sky130_fd_sc_hs__sdlclkp_2	CLK	0.02202	0.02954	0.15974
	CLK	0.02870	0.03615	0.16551
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01914	0.02572	0.15871
	CLK	0.02642	0.03291	0.16380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00151	0.00151	0.00150
	(CLK * SCE)	-0.00070	-0.00070	-0.00069
	(CLK * !SCE)	0.00461	0.00714	0.06311
	(CLK * !SCE)	0.00104	0.00356	0.05954
	(!CLK * SCE * !GCLK)	0.00147	0.00147	0.00146
	(!CLK * SCE * !GCLK)	-0.00075	-0.00074	-0.00074
	(!CLK * !SCE * !GCLK)	0.01151	0.01325	0.07158
	(!CLK * !SCE * !GCLK)	0.00835	0.01006	0.06842
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00151	0.00151	0.00150
	(CLK * SCE)	-0.00070	-0.00070	-0.00069
	(CLK * !SCE)	0.00456	0.00710	0.06308
	(CLK * !SCE)	0.00102	0.00354	0.05953
	(!CLK * SCE * !GCLK)	0.00146	0.00147	0.00146
	(!CLK * SCE * !GCLK)	-0.00075	-0.00074	-0.00073
	(!CLK * !SCE * !GCLK)	0.01134	0.01308	0.07165
	(!CLK * !SCE * !GCLK)	0.00822	0.00996	0.06854
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00144	0.00145	0.00144
	(CLK * SCE)	-0.00066	-0.00067	-0.00066
	(CLK * !SCE)	0.00442	0.00695	0.06277
	(CLK * !SCE)	0.00104	0.00355	0.05938
	(!CLK * SCE * !GCLK)	0.00141	0.00142	0.00141
	(!CLK * SCE * !GCLK)	-0.00069	-0.00070	-0.00069
	(!CLK * !SCE * !GCLK)	0.01139	0.01311	0.07138
	(!CLK * !SCE * !GCLK)	0.00841	0.01012	0.06839

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00144	-0.00146	-0.00148
	(CLK * SCE)	0.00074	0.00074	0.00072
	(CLK * !SCE)	0.00059	0.00390	0.05948
	(CLK * !SCE)	0.00417	0.00748	0.06306
	(!CLK * SCE * !GCLK)	-0.00142	-0.00142	-0.00145
	(!CLK * SCE * !GCLK)	0.00078	0.00078	0.00075
	(!CLK * !SCE * !GCLK)	0.01000	0.01315	0.07233
	(!CLK * !SCE * !GCLK)	0.01317	0.01632	0.07550
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00144	-0.00145	-0.00147
	(CLK * SCE)	0.00074	0.00074	0.00072
	(CLK * !SCE)	0.00062	0.00393	0.05952
	(CLK * !SCE)	0.00418	0.00749	0.06307
	(!CLK * SCE * !GCLK)	-0.00141	-0.00142	-0.00144
	(!CLK * SCE * !GCLK)	0.00078	0.00078	0.00076
	(!CLK * !SCE * !GCLK)	0.01000	0.01317	0.07254
	(!CLK * !SCE * !GCLK)	0.01313	0.01630	0.07567
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00138	-0.00139	-0.00141
	(CLK * SCE)	0.00072	0.00072	0.00070
	(CLK * !SCE)	0.00088	0.00414	0.05960
	(CLK * !SCE)	0.00428	0.00754	0.06299
	(!CLK * SCE * !GCLK)	-0.00136	-0.00137	-0.00140
	(!CLK * SCE * !GCLK)	0.00074	0.00074	0.00071
	(!CLK * !SCE * !GCLK)	0.01029	0.01341	0.07261
	(!CLK * !SCE * !GCLK)	0.01329	0.01641	0.07560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00150	0.00130	0.00127
	(CLK * GATE)	-0.00120	-0.00142	-0.00144
	(CLK * !GATE)	0.00581	0.00721	0.04436
	(CLK * !GATE)	0.00161	0.00300	0.04018
	(!CLK * GATE * !GCLK)	0.00150	0.00130	0.00127
	(!CLK * GATE * !GCLK)	-0.00121	-0.00142	-0.00144
	(!CLK * !GATE * !GCLK)	0.01271	0.01388	0.05302
	(!CLK * !GATE * !GCLK)	0.00892	0.01009	0.04925
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00149	0.00129	0.00126
	(CLK * GATE)	-0.00120	-0.00142	-0.00144
	(CLK * !GATE)	0.00576	0.00716	0.04432
	(CLK * !GATE)	0.00158	0.00298	0.04017
	(!CLK * GATE * !GCLK)	0.00149	0.00129	0.00126
	(!CLK * GATE * !GCLK)	-0.00120	-0.00142	-0.00144
	(!CLK * !GATE * !GCLK)	0.01253	0.01371	0.05302
	(!CLK * !GATE * !GCLK)	0.00879	0.00997	0.04930
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00144	0.00124	0.00121
	(CLK * GATE)	-0.00117	-0.00139	-0.00141
	(CLK * !GATE)	0.00564	0.00702	0.04413
	(CLK * !GATE)	0.00162	0.00301	0.04014
	(!CLK * GATE * !GCLK)	0.00143	0.00123	0.00120
	(!CLK * GATE * !GCLK)	-0.00117	-0.00139	-0.00141
	(!CLK * !GATE * !GCLK)	0.01259	0.01377	0.05298
	(!CLK * !GATE * !GCLK)	0.00898	0.01017	0.04940

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00123	-0.00124	-0.00123
	(CLK * GATE)	0.00147	0.00147	0.00147
	(CLK * !GATE)	0.00069	0.00197	0.03857
	(CLK * !GATE)	0.00487	0.00615	0.04277
	(!CLK * GATE * !GCLK)	-0.00124	-0.00124	-0.00124
	(!CLK * GATE * !GCLK)	0.00146	0.00147	0.00147
	(!CLK * !GATE * !GCLK)	0.01005	0.01125	0.04893
	(!CLK * !GATE * !GCLK)	0.01382	0.01505	0.05272
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00122	-0.00123	-0.00122
	(CLK * GATE)	0.00146	0.00147	0.00147
	(CLK * !GATE)	0.00072	0.00200	0.03861
	(CLK * !GATE)	0.00487	0.00616	0.04278
	(!CLK * GATE * !GCLK)	-0.00123	-0.00123	-0.00122
	(!CLK * GATE * !GCLK)	0.00146	0.00147	0.00147
	(!CLK * !GATE * !GCLK)	0.01006	0.01131	0.04907
	(!CLK * !GATE * !GCLK)	0.01378	0.01504	0.05280
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00117	-0.00117	-0.00116
	(CLK * GATE)	0.00144	0.00145	0.00145
	(CLK * !GATE)	0.00098	0.00224	0.03877
	(CLK * !GATE)	0.00498	0.00626	0.04279
	(!CLK * GATE * !GCLK)	-0.00117	-0.00117	-0.00117
	(!CLK * GATE * !GCLK)	0.00144	0.00144	0.00144
	(!CLK * !GATE * !GCLK)	0.01033	0.01152	0.04924
	(!CLK * !GATE * !GCLK)	0.01393	0.01513	0.05285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.01025	0.01353	0.09494
	(!GATE * !SCE * !GCLK)	0.00382	0.00703	0.08848
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.01036	0.01370	0.09530
	(!GATE * !SCE * !GCLK)	0.00359	0.00686	0.08850
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.01053	0.01381	0.09540
	(!GATE * !SCE * !GCLK)	0.00362	0.00685	0.08847

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.01123	0.01578	0.10817
	(GATE * SCE * !GCLK)	0.01821	0.02281	0.11517
	(GATE * !SCE * !GCLK)	0.01122	0.01573	0.10786
	(GATE * !SCE * !GCLK)	0.01820	0.02276	0.11486
	(!GATE * SCE * !GCLK)	0.01126	0.01581	0.10810
	(!GATE * SCE * !GCLK)	0.01823	0.02283	0.11509
	(!GATE * !SCE * !GCLK)	0.00443	0.00880	0.08899
	(!GATE * !SCE * !GCLK)	0.01087	0.01529	0.09547
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.01086	0.01547	0.10668
	(GATE * SCE * !GCLK)	0.01823	0.02284	0.11406
	(GATE * !SCE * !GCLK)	0.01085	0.01541	0.10639
	(GATE * !SCE * !GCLK)	0.01821	0.02282	0.11378
	(!GATE * SCE * !GCLK)	0.01089	0.01549	0.10663
	(!GATE * SCE * !GCLK)	0.01825	0.02289	0.11400
	(!GATE * !SCE * !GCLK)	0.00418	0.00857	0.08897
	(!GATE * !SCE * !GCLK)	0.01096	0.01536	0.09579
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.01126	0.01583	0.10697
	(GATE * SCE * !GCLK)	0.01873	0.02332	0.11446
	(GATE * !SCE * !GCLK)	0.01125	0.01577	0.10666
	(GATE * !SCE * !GCLK)	0.01872	0.02330	0.11416
	(!GATE * SCE * !GCLK)	0.01129	0.01585	0.10691
	(!GATE * SCE * !GCLK)	0.01875	0.02336	0.11439
	(!GATE * !SCE * !GCLK)	0.00439	0.00873	0.08913
	(!GATE * !SCE * !GCLK)	0.01129	0.01569	0.09608

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT	
D	DE	SCD	SCE	CLK	Q	Q_N
x	0	x	0	R	IQ	IQ_N
x	x	0	1	R	0	1
x	x	1	1	R	1	0
0	1	0	x	R	0	1
0	1	1	0	R	0	1
1	1	x	0	R	1	0
x	x	x	x	x	IQ	IQ_N

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxbp_1	54.34560
sky130_fd_sc_hs__sedfxbp_2	57.54240

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)	
	D	DE	SCD	SCE	CLK	Q	Q_N
sky130_fd_sc_hs__sedfxbp_1	0.00196	0.00376	0.00173	0.00379	0.00267	1.43325	1.42840
sky130_fd_sc_hs__sedfxbp_2	0.00205	0.00380	0.00176	0.00386	0.00267	2.37297	2.44353

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxbp_1	0.00000	1.02551	1.91988
sky130_fd_sc_hs__sedfxbp_2	0.00000	1.06418	1.93430

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)	0.13642	0.53265	5.36426
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.13948	0.45826	5.18935

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.12241	0.33041	1.61576
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.13571	0.30455	1.11958

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)	0.18630	0.57152	5.41850
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.22192	0.51625	5.22823

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)	0.18794	0.36824	1.53205
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.20413	0.34022	1.20381

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)	-0.10346	-0.18724	-1.01498
	setup	CLK (R)	0.12556	0.20189	1.02025
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10194	-0.18852	-1.03897
	setup	CLK (R)	0.12564	0.20392	1.04211

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)	-0.20017	-0.35724	-4.04349
	setup	CLK (R)	0.25395	0.39975	4.05670
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19942	-0.35612	-4.06829
	setup	CLK (R)	0.25433	0.40013	4.08189

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)	-0.10346	-0.18724	-1.01498
	setup	CLK (R)	0.12556	0.20189	1.02025
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10194	-0.18852	-1.03897
	setup	CLK (R)	0.12564	0.20392	1.04211

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)	-0.20017	-0.35724	-4.04349
	setup	CLK (R)	0.25395	0.39975	4.05670
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.19942	-0.35612	-4.06829
	setup	CLK (R)	0.25433	0.40013	4.08189

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)	-0.02558	-0.04226	0.01532
	setup	CLK (R)	0.28089	0.31224	0.90475
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.02693	-0.04428	-0.01196
	setup	CLK (R)	0.27730	0.31101	0.92618

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)	-0.15139	-0.28856	-3.55104
	setup	CLK (R)	0.23426	0.38624	4.14168
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15055	-0.29101	-3.57682
	setup	CLK (R)	0.23256	0.38789	4.16700

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)	-0.02558	-0.04226	0.01532
	hold	CLK (R)	-0.11277	-0.14119	-0.43719
	setup	CLK (R)	0.12545	0.18997	0.90475
	setup	CLK (R)	0.28089	0.31224	0.58168
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.02693	-0.04428	-0.01196
	hold	CLK (R)	-0.11539	-0.14276	-0.46104
	setup	CLK (R)	0.12635	0.19199	0.92618
	setup	CLK (R)	0.27730	0.31101	0.60357

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)	-0.21793	-0.37494	-4.13827
	hold	CLK (R)	-0.15139	-0.28856	-3.55104
	setup	CLK (R)	0.23426	0.38624	4.14168
	setup	CLK (R)	0.16129	0.29685	3.55570
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21915	-0.37612	-4.16489
	hold	CLK (R)	-0.15055	-0.29101	-3.57682
	setup	CLK (R)	0.23256	0.38789	4.16700
	setup	CLK (R)	0.16394	0.29781	3.58135

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)	-0.06228	-0.12722	-0.72167
	setup	CLK (R)	0.07553	0.13891	0.73299
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.06384	-0.12946	-0.74807
	setup	CLK (R)	0.07881	0.14288	0.75720

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)	-0.15549	-0.29272	-3.88484
	setup	CLK (R)	0.19025	0.33053	3.89756
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15529	-0.29500	-3.91300
	setup	CLK (R)	0.18962	0.33197	3.92587

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)	-0.06228	-0.12722	-0.72167
	setup	CLK (R)	0.07553	0.13891	0.73299
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.06384	-0.12946	-0.74807
	setup	CLK (R)	0.07881	0.14288	0.75720

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)	-0.15549	-0.29272	-3.88484
	setup	CLK (R)	0.19025	0.33053	3.89756
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.15529	-0.29500	-3.91300
	setup	CLK (R)	0.18962	0.33197	3.92587

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)	0.00242	0.01588	0.38687
	setup	CLK (R)	0.20238	0.22369	0.69687
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00340	0.01588	0.35761
	setup	CLK (R)	0.20322	0.22715	0.72323

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)	-0.10222	-0.24660	-3.55513
	setup	CLK (R)	0.15279	0.28919	3.95699
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.10199	-0.25461	-3.59042
	setup	CLK (R)	0.15066	0.29374	3.98397

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)	-0.16562	-0.18389	-0.39310
	hold	CLK (R)	0.00242	0.01588	0.38687
	hold	CLK (R)	-0.05146	-0.11901	-0.67060
	hold	CLK (R)	-0.08173	-0.10708	-0.29505
	setup	CLK (R)	0.20088	0.22366	0.41265
	setup	CLK (R)	0.06818	0.13097	0.69687
	setup	CLK (R)	0.06818	0.13097	0.69687
	setup	CLK (R)	0.20238	0.22369	0.41266
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.16497	-0.18959	-0.42921
	hold	CLK (R)	0.00340	0.01588	0.35761
	hold	CLK (R)	-0.05443	-0.12070	-0.69296
	hold	CLK (R)	-0.08099	-0.10998	-0.32710
	setup	CLK (R)	0.20070	0.22705	0.44642
	setup	CLK (R)	0.06821	0.13494	0.71923
	setup	CLK (R)	0.06664	0.13494	0.72323
	setup	CLK (R)	0.20322	0.22715	0.44637

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)	-0.10855	-0.25794	-3.57560
	hold	CLK (R)	-0.10930	-0.25228	-3.92852
	hold	CLK (R)	-0.10483	-0.25225	-3.95156
	hold	CLK (R)	-0.10222	-0.24660	-3.55513
	setup	CLK (R)	0.12832	0.27053	3.58821
	setup	CLK (R)	0.12518	0.26378	3.93203
	setup	CLK (R)	0.15279	0.28919	3.95699
	setup	CLK (R)	0.11624	0.25480	3.55725
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.11288	-0.26120	-3.61337
	hold	CLK (R)	-0.10789	-0.25711	-3.95557
	hold	CLK (R)	-0.10199	-0.25630	-3.97928
	hold	CLK (R)	-0.10502	-0.25461	-3.59042
	setup	CLK (R)	0.13212	0.27295	3.62428
	setup	CLK (R)	0.12520	0.26824	3.96140
	setup	CLK (R)	0.15066	0.29374	3.98397
	setup	CLK (R)	0.11994	0.26120	3.59485

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 ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.09924	0.58716	16.50020
	min_pulse_width	CLK ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.09924	0.58716	16.50020
	min_pulse_width	CLK ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.09704	0.58716	16.50020
	min_pulse_width	CLK ()	0.09704	0.58716	16.50020
	min_pulse_width	CLK ()	0.06392	0.58716	16.50020
	min_pulse_width	CLK ()	0.09924	0.58716	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.07054	0.58716	16.50020
	min_pulse_width	CLK ()	0.07054	0.58716	16.50020
	min_pulse_width	CLK ()	0.13015	0.58716	16.50020
	min_pulse_width	CLK ()	0.07054	0.58716	16.50020
	min_pulse_width	CLK ()	0.13236	0.58716	16.50020
	min_pulse_width	CLK ()	0.07054	0.58716	16.50020
	min_pulse_width	CLK ()	0.13015	0.58716	16.50020
	min_pulse_width	CLK ()	0.13015	0.58716	16.50020
	min_pulse_width	CLK ()	0.07054	0.58716	16.50020
	min_pulse_width	CLK ()	0.13236	0.58716	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 ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15885	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.15665	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10366	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	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	0.01769	0.01896	0.05354
	CLK	0.01512	0.01628	0.05103
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02040	0.02152	0.05663
	CLK	0.01786	0.01897	0.05409

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01614	0.01696	0.05278
	CLK	0.01462	0.01545	0.05129
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01930	0.01988	0.05571
	CLK	0.01777	0.01835	0.05425

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01616	0.01701	0.05319
	CLK	0.01465	0.01548	0.05175
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01932	0.01989	0.05627
	CLK	0.01779	0.01837	0.05474

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01764	0.01888	0.05323
	CLK	0.01508	0.01624	0.05076
sky130_fd_sc_hs__sedfxbp_2	CLK	0.02037	0.02149	0.05602
	CLK	0.01783	0.01893	0.05356

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00504	0.00609	0.03881
	(DE * SCE)	0.00189	0.00293	0.03566
	(CLK * DE * !SCE)	0.01025	0.01083	0.04157
	(CLK * DE * !SCE)	0.00614	0.00671	0.03747
	(CLK * !DE * !SCE)	0.00120	0.00122	0.00121
	(CLK * !DE * !SCE)	-0.00079	-0.00080	-0.00079
	(!DE * SCE)	0.00121	0.00122	0.00121
	(!DE * SCE)	-0.00079	-0.00080	-0.00079
	(!CLK * DE * !SCE * Q * !Q_N)	0.01771	0.01847	0.05309
	(!CLK * DE * !SCE * Q * !Q_N)	0.01361	0.01436	0.04898
	(!CLK * DE * !SCE * !Q * Q_N)	0.01720	0.01790	0.05216
	(!CLK * DE * !SCE * !Q * Q_N)	0.01305	0.01375	0.04800
	(!CLK * !DE * !SCE)	0.00121	0.00121	0.00121
	(!CLK * !DE * !SCE)	-0.00080	-0.00080	-0.00080
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00511	0.00616	0.03891
	(DE * SCE)	0.00183	0.00288	0.03563
	(CLK * DE * !SCE)	0.01044	0.01100	0.04171
	(CLK * DE * !SCE)	0.00618	0.00673	0.03746
	(CLK * !DE * !SCE)	0.00126	0.00127	0.00126
	(CLK * !DE * !SCE)	-0.00084	-0.00084	-0.00083
	(!DE * SCE)	0.00126	0.00128	0.00126
	(!DE * SCE)	-0.00083	-0.00085	-0.00083
	(!CLK * DE * !SCE * Q * !Q_N)	0.01782	0.01858	0.05317
	(!CLK * DE * !SCE * Q * !Q_N)	0.01357	0.01431	0.04891
	(!CLK * DE * !SCE * !Q * Q_N)	0.01728	0.01797	0.05222
	(!CLK * DE * !SCE * !Q * Q_N)	0.01298	0.01365	0.04791
	(!CLK * !DE * !SCE)	0.00126	0.00127	0.00126
	(!CLK * !DE * !SCE)	-0.00084	-0.00084	-0.00083

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00168	0.00323	0.03575
	(DE * SCE)	0.00488	0.00643	0.03894
	(CLK * DE * !SCE)	0.00310	0.00430	0.03520
	(CLK * DE * !SCE)	0.00726	0.00846	0.03935
	(CLK * !DE * !SCE)	-0.00034	-0.00035	-0.00034
	(CLK * !DE * !SCE)	0.00172	0.00175	0.00172
	(!DE * SCE)	-0.00034	-0.00034	-0.00034
	(!DE * SCE)	0.00172	0.00174	0.00173
	(!CLK * DE * !SCE * Q * !Q_N)	0.01116	0.01292	0.04998
	(!CLK * DE * !SCE * Q * !Q_N)	0.01527	0.01702	0.05409
	(!CLK * DE * !SCE * !Q * Q_N)	0.01200	0.01379	0.05133
	(!CLK * DE * !SCE * !Q * Q_N)	0.01615	0.01795	0.05548
	(!CLK * !DE * !SCE)	-0.00034	-0.00035	-0.00034
	(!CLK * !DE * !SCE)	0.00172	0.00173	0.00172
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00144	0.00301	0.03555
	(DE * SCE)	0.00477	0.00632	0.03887
	(CLK * DE * !SCE)	0.00295	0.00416	0.03502
	(CLK * DE * !SCE)	0.00727	0.00848	0.03933
	(CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00036
	(CLK * !DE * !SCE)	0.00179	0.00181	0.00180
	(!DE * SCE)	-0.00035	-0.00035	-0.00035
	(!DE * SCE)	0.00180	0.00181	0.00181
	(!CLK * DE * !SCE * Q * !Q_N)	0.01102	0.01274	0.04976
	(!CLK * DE * !SCE * Q * !Q_N)	0.01528	0.01699	0.05402
	(!CLK * DE * !SCE * !Q * Q_N)	0.01185	0.01369	0.05111
	(!CLK * DE * !SCE * !Q * Q_N)	0.01616	0.01800	0.05542
	(!CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00036
	(!CLK * !DE * !SCE)	0.00180	0.00181	0.00180

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00931	0.01130	0.07288
	SCE	0.00237	0.00432	0.06592
	(CLK * !SCE)	0.01434	0.01615	0.07651
	(CLK * !SCE)	0.00643	0.00821	0.06859
	(!CLK * D * !SCE * Q * !Q_N)	0.00581	0.00718	0.04927
	(!CLK * D * !SCE * Q * !Q_N)	0.00010	0.00146	0.04356
	(!CLK * D * !SCE * !Q * Q_N)	0.02178	0.02376	0.08699
	(!CLK * D * !SCE * !Q * Q_N)	0.01387	0.01582	0.07908
	(!CLK * !D * !SCE * Q * !Q_N)	0.01793	0.01941	0.06268
	(!CLK * !D * !SCE * Q * !Q_N)	0.01440	0.01584	0.05914
	(!CLK * !D * !SCE * !Q * Q_N)	0.00569	0.00721	0.04933
	(!CLK * !D * !SCE * !Q * Q_N)	0.00004	0.00153	0.04366
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00934	0.01135	0.07295
	SCE	0.00227	0.00424	0.06588
	(CLK * !SCE)	0.01449	0.01632	0.07667
	(CLK * !SCE)	0.00643	0.00823	0.06859
	(!CLK * D * !SCE * Q * !Q_N)	0.00577	0.00717	0.04927
	(!CLK * D * !SCE * Q * !Q_N)	-0.00000	0.00136	0.04347
	(!CLK * D * !SCE * !Q * Q_N)	0.02177	0.02378	0.08699
	(!CLK * D * !SCE * !Q * Q_N)	0.01371	0.01569	0.07895
	(!CLK * !D * !SCE * Q * !Q_N)	0.01778	0.01925	0.06254
	(!CLK * !D * !SCE * Q * !Q_N)	0.01422	0.01567	0.05898
	(!CLK * !D * !SCE * !Q * Q_N)	0.00569	0.00723	0.04936
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00005	0.00146	0.04361

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00242	0.00492	0.06625
	SCE	0.00938	0.01188	0.07319
	(CLK * !SCE)	0.00379	0.00613	0.06624
	(CLK * !SCE)	0.01170	0.01407	0.07415
	(!CLK * D * !SCE * Q * !Q_N)	-0.00017	0.00201	0.04377
	(!CLK * D * !SCE * Q * !Q_N)	0.00551	0.00773	0.04948
	(!CLK * D * !SCE * !Q * Q_N)	0.01255	0.01513	0.07967
	(!CLK * D * !SCE * !Q * Q_N)	0.02046	0.02305	0.08758
	(!CLK * !D * !SCE * Q * !Q_N)	0.01753	0.01965	0.06154
	(!CLK * !D * !SCE * Q * !Q_N)	0.02104	0.02320	0.06510
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00032	0.00176	0.04371
	(!CLK * !D * !SCE * !Q * Q_N)	0.00531	0.00744	0.04939
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00219	0.00470	0.06606
	SCE	0.00926	0.01180	0.07313
	(CLK * !SCE)	0.00365	0.00599	0.06610
	(CLK * !SCE)	0.01171	0.01406	0.07416
	(!CLK * D * !SCE * Q * !Q_N)	-0.00021	0.00198	0.04374
	(!CLK * D * !SCE * Q * !Q_N)	0.00557	0.00779	0.04954
	(!CLK * D * !SCE * !Q * Q_N)	0.01237	0.01495	0.07950
	(!CLK * D * !SCE * !Q * Q_N)	0.02043	0.02301	0.08756
	(!CLK * !D * !SCE * Q * !Q_N)	0.01754	0.01963	0.06157
	(!CLK * !D * !SCE * Q * !Q_N)	0.02107	0.02321	0.06516
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00039	0.00169	0.04365
	(!CLK * !D * !SCE * !Q * Q_N)	0.00533	0.00746	0.04942

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00565	0.00610	0.02673
	(CLK * SCE)	0.00228	0.00272	0.02336
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01304	0.01364	0.03701
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00968	0.01025	0.03363
	!SCE	0.00116	0.00101	0.00098
	!SCE	-0.00106	-0.00122	-0.00124
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00578	0.00622	0.02683
	(CLK * SCE)	0.00234	0.00277	0.02339
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01302	0.01362	0.03698
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00958	0.01016	0.03353
	!SCE	0.00115	0.00101	0.00098
	!SCE	-0.00111	-0.00128	-0.00129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00276	0.00324	0.02369
	(CLK * SCE)	0.00612	0.00663	0.02705
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01078	0.01155	0.03580
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01415	0.01493	0.03916
	!SCE	-0.00093	-0.00095	-0.00096
	!SCE	0.00127	0.00128	0.00128
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00272	0.00321	0.02364
	(CLK * SCE)	0.00617	0.00667	0.02708
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01071	0.01152	0.03569
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01416	0.01497	0.03913
	!SCE	-0.00092	-0.00095	-0.00095
	!SCE	0.00132	0.00132	0.00133

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00844	0.01105	0.08107
	(CLK * D)	0.00244	0.00502	0.07506
	(CLK * !D)	0.00882	0.01140	0.08075
	(CLK * !D)	0.00282	0.00537	0.07476
	(!CLK * D * SCD * Q * !Q_N)	0.00503	0.00667	0.04884
	(!CLK * D * SCD * Q * !Q_N)	-0.00001	0.00161	0.04379
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00484	0.00648	0.04865
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00020	0.00142	0.04360
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01683	0.01792	0.07457
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01275	0.01381	0.07045
	(!CLK * D * !SCD * Q * !Q_N)	0.01683	0.01792	0.07466
	(!CLK * D * !SCD * Q * !Q_N)	0.01274	0.01381	0.07053
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01583	0.01845	0.09235
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00983	0.01243	0.08634
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00547	0.00710	0.04928
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00041	0.00201	0.04421
	(!CLK * !D * SCD * !Q * Q_N)	0.01583	0.01846	0.09166
	(!CLK * !D * SCD * !Q * Q_N)	0.00983	0.01243	0.08564
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01625	0.01884	0.09202
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01025	0.01281	0.08601
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00566	0.00729	0.04947
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00060	0.00220	0.04440
	(!CLK * !D * !SCD * !Q * Q_N)	0.00547	0.00710	0.04928
	(!CLK * !D * !SCD * !Q * Q_N)	0.00041	0.00202	0.04421
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00502	0.00667	0.04884
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00001	0.00160	0.04378
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01686	0.01790	0.07470
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01277	0.01379	0.07058

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00858	0.01117	0.08114
	(CLK * D)	0.00240	0.00496	0.07495
	(CLK * !D)	0.00892	0.01149	0.08078
	(CLK * !D)	0.00274	0.00528	0.07459
	(!CLK * D * SCD * Q * !Q_N)	0.00513	0.00672	0.04882
	(!CLK * D * SCD * Q * !Q_N)	-0.00006	0.00151	0.04363
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00495	0.00655	0.04865
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00023	0.00134	0.04346
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01695	0.01802	0.07454
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01274	0.01380	0.07030
	(!CLK * D * !SCD * Q * !Q_N)	0.01690	0.01794	0.07453
	(!CLK * D * !SCD * Q * !Q_N)	0.01270	0.01373	0.07029
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01582	0.01840	0.09228
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00964	0.01222	0.08609
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00564	0.00723	0.04934
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00044	0.00200	0.04412
	(!CLK * !D * SCD * !Q * Q_N)	0.01581	0.01840	0.09160
	(!CLK * !D * SCD * !Q * Q_N)	0.00964	0.01223	0.08541
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01627	0.01883	0.09200
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01009	0.01263	0.08581
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00581	0.00741	0.04951
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00061	0.00217	0.04429
	(!CLK * !D * !SCD * !Q * Q_N)	0.00564	0.00724	0.04934
	(!CLK * !D * !SCD * !Q * Q_N)	0.00044	0.00200	0.04412
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00512	0.00672	0.04882
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00006	0.00151	0.04362
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01692	0.01793	0.07458
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01273	0.01371	0.07034

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00094	0.00484	0.07431
	(CLK * D)	0.00694	0.01087	0.08031
	(CLK * !D)	0.00094	0.00475	0.07363
	(CLK * !D)	0.00695	0.01078	0.07964
	(!CLK * D * SCD * Q * !Q_N)	-0.00007	0.00218	0.04428
	(!CLK * D * SCD * Q * !Q_N)	0.00497	0.00724	0.04932
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00012	0.00237	0.04447
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00516	0.00743	0.04952
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01258	0.01618	0.07745
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01668	0.02030	0.08140
	(!CLK * D * !SCD * Q * !Q_N)	0.01260	0.01620	0.07742
	(!CLK * D * !SCD * Q * !Q_N)	0.01670	0.02033	0.08137
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00941	0.01333	0.08789
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01541	0.01934	0.09389
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00040	0.00175	0.04384
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00464	0.00683	0.04889
	(!CLK * !D * SCD * !Q * Q_N)	0.00945	0.01335	0.08717
	(!CLK * !D * SCD * !Q * Q_N)	0.01545	0.01935	0.09318
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00907	0.01294	0.08678
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01508	0.01895	0.09278
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00059	0.00156	0.04365
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00446	0.00664	0.04870
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00040	0.00175	0.04384
	(!CLK * !D * !SCD * !Q * Q_N)	0.00465	0.00683	0.04889
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00007	0.00218	0.04428
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00497	0.00724	0.04932
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01259	0.01617	0.07749
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01669	0.02028	0.08143

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00099	0.00485	0.07423
	(CLK * D)	0.00717	0.01105	0.08040
	(CLK * !D)	0.00100	0.00478	0.07354
	(CLK * !D)	0.00718	0.01098	0.07972
	(!CLK * D * SCD * Q * !Q_N)	0.00004	0.00226	0.04426
	(!CLK * D * SCD * Q * !Q_N)	0.00522	0.00745	0.04945
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00021	0.00243	0.04443
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00540	0.00762	0.04962
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01268	0.01621	0.07733
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01689	0.02044	0.08140
	(!CLK * D * !SCD * Q * !Q_N)	0.01276	0.01629	0.07752
	(!CLK * D * !SCD * Q * !Q_N)	0.01697	0.02053	0.08157
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00942	0.01330	0.08785
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01559	0.01948	0.09404
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00038	0.00192	0.04373
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00482	0.00715	0.04895
	(!CLK * !D * SCD * !Q * Q_N)	0.00945	0.01332	0.08711
	(!CLK * !D * SCD * !Q * Q_N)	0.01563	0.01948	0.09327
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00905	0.01290	0.08644
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01523	0.01907	0.09262
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00055	0.00175	0.04356
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00465	0.00698	0.04879
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00038	0.00192	0.04373
	(!CLK * !D * !SCD * !Q * Q_N)	0.00482	0.00715	0.04896
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00003	0.00225	0.04426
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00522	0.00745	0.04944
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01274	0.01628	0.07757
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01697	0.02051	0.08164

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)	0.01421	0.01622	0.08442
	(SCD * SCE * Q * !Q_N)	0.01010	0.01212	0.08030
	(D * !SCE * Q * !Q_N)	0.01419	0.01631	0.08441
	(D * !SCE * Q * !Q_N)	0.01009	0.01218	0.08030
	(D * !DE * !SCE * !Q * Q_N)	0.01418	0.01629	0.08462
	(D * !DE * !SCE * !Q * Q_N)	0.01007	0.01218	0.08052
	(!SCD * SCE * !Q * Q_N)	0.01420	0.01631	0.08463
	(!SCD * SCE * !Q * Q_N)	0.01009	0.01220	0.08053
	(!D * !SCE * !Q * Q_N)	0.01418	0.01629	0.08462
	(!D * !SCE * !Q * Q_N)	0.01007	0.01218	0.08052
	(!D * !DE * !SCE * Q * !Q_N)	0.01419	0.01631	0.08441
	(!D * !DE * !SCE * Q * !Q_N)	0.01009	0.01218	0.08030
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01413	0.01619	0.08529
	(SCD * SCE * Q * !Q_N)	0.01004	0.01207	0.08118
	(D * !SCE * Q * !Q_N)	0.01411	0.01617	0.08527
	(D * !SCE * Q * !Q_N)	0.01002	0.01205	0.08117
	(D * !DE * !SCE * !Q * Q_N)	0.01422	0.01638	0.08547
	(D * !DE * !SCE * !Q * Q_N)	0.01013	0.01227	0.08137
	(!SCD * SCE * !Q * Q_N)	0.01425	0.01640	0.08550
	(!SCD * SCE * !Q * Q_N)	0.01016	0.01230	0.08139
	(!D * !SCE * !Q * Q_N)	0.01422	0.01638	0.08548
	(!D * !SCE * !Q * Q_N)	0.01013	0.01227	0.08137
	(!D * !DE * !SCE * Q * !Q_N)	0.01410	0.01617	0.08527
	(!D * !DE * !SCE * Q * !Q_N)	0.01002	0.01205	0.08116

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)	0.00788	0.01081	0.07888
	(SCD * SCE * Q * !Q_N)	0.01198	0.01491	0.08299
	(SCD * SCE * !Q * Q_N)	0.01513	0.01801	0.08772
	(SCD * SCE * !Q * Q_N)	0.01923	0.02212	0.09183
	(D * DE * !SCE * !Q * Q_N)	0.01510	0.01797	0.08770
	(D * DE * !SCE * !Q * Q_N)	0.01919	0.02207	0.09180
	(D * !SCE * Q * !Q_N)	0.00788	0.01081	0.07889
	(D * !SCE * Q * !Q_N)	0.01198	0.01492	0.08299
	(D * !DE * !SCE * !Q * Q_N)	0.00785	0.01073	0.07866
	(D * !DE * !SCE * !Q * Q_N)	0.01195	0.01484	0.08278
	(!SCD * SCE * Q * !Q_N)	0.01698	0.02010	0.08935
	(!SCD * SCE * Q * !Q_N)	0.02109	0.02421	0.09348
	(!SCD * SCE * !Q * Q_N)	0.00786	0.01073	0.07866
	(!SCD * SCE * !Q * Q_N)	0.01195	0.01484	0.08278
	(!D * DE * !SCE * Q * !Q_N)	0.01718	0.02030	0.08951
	(!D * DE * !SCE * Q * !Q_N)	0.02128	0.02442	0.09362
	(!D * !SCE * !Q * Q_N)	0.00785	0.01073	0.07867
	(!D * !SCE * !Q * Q_N)	0.01195	0.01484	0.08278
	(!D * !DE * !SCE * Q * !Q_N)	0.00788	0.01086	0.07890
	(!D * !DE * !SCE * Q * !Q_N)	0.01198	0.01499	0.08300

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00800	0.01099	0.07964
	(SCD * SCE * Q * !Q_N)	0.01209	0.01510	0.08375
	(SCD * SCE * !Q * Q_N)	0.01500	0.01796	0.08890
	(SCD * SCE * !Q * Q_N)	0.01909	0.02206	0.09299
	(D * DE * !SCE * !Q * Q_N)	0.01498	0.01793	0.08883
	(D * DE * !SCE * !Q * Q_N)	0.01907	0.02204	0.09292
	(D * !SCE * Q * !Q_N)	0.00801	0.01100	0.07967
	(D * !SCE * Q * !Q_N)	0.01210	0.01511	0.08378
	(D * !DE * !SCE * !Q * Q_N)	0.00786	0.01081	0.07985
	(D * !DE * !SCE * !Q * Q_N)	0.01195	0.01491	0.08395
	(!SCD * SCE * Q * !Q_N)	0.01701	0.02020	0.09064
	(!SCD * SCE * Q * !Q_N)	0.02111	0.02430	0.09476
	(!SCD * SCE * !Q * Q_N)	0.00785	0.01081	0.07932
	(!SCD * SCE * !Q * Q_N)	0.01195	0.01491	0.08342
	(!D * DE * !SCE * Q * !Q_N)	0.01721	0.02045	0.09022
	(!D * DE * !SCE * Q * !Q_N)	0.02130	0.02455	0.09433
	(!D * !SCE * !Q * Q_N)	0.00786	0.01081	0.07985
	(!D * !SCE * !Q * Q_N)	0.01195	0.01492	0.08395
	(!D * !DE * !SCE * Q * !Q_N)	0.00801	0.01101	0.07966
	(!D * !DE * !SCE * Q * !Q_N)	0.01210	0.01512	0.08377

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT					OUTPUT
D	DE	SCD	SCE	CLK	Q
x	0	x	0	R	IQ
x	x	0	1	R	0
x	x	1	1	R	1
0	1	0	x	R	0
0	1	1	0	R	0
1	1	x	0	R	1
x	x	x	x	x	IQ

Footprint

Cell Name	Area
sky130_fd_sc_hs__sedfxtp_1	51.14880
sky130_fd_sc_hs__sedfxtp_2	54.34560
sky130_fd_sc_hs__sedfxtp_4	55.94400

Pin Capacitance Information

Cell Name	Pin Cap(pf)					Max Cap(pf)
	D	DE	SCD	SCE	CLK	Q
sky130_fd_sc_hs__sedfxtp_1	0.00197	0.00382	0.00178	0.00374	0.00265	1.42145
sky130_fd_sc_hs__sedfxtp_2	0.00207	0.00385	0.00180	0.00379	0.00267	2.81045
sky130_fd_sc_hs__sedfxtp_4	0.00208	0.00383	0.00180	0.00377	0.00277	5.26148

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sedfxtp_1	0.00000	1.07443	2.08244
sky130_fd_sc_hs__sedfxtp_2	0.00000	1.10640	2.14538
sky130_fd_sc_hs__sedfxtp_4	0.00000	1.17035	2.27126

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)**	0.13331	0.52564	5.30420
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.13655	0.44497	5.35035
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.15408	0.40017	5.33581

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.11503	0.30797	1.47986
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.12995	0.30847	1.54953
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.17194	0.34397	1.67854

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)	-0.10044	-0.18743	-1.01897
	setup	CLK (R)	0.12494	0.20189	1.02340
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10287	-0.18846	-1.02031
	setup	CLK (R)	0.12442	0.20392	1.02321
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10589	-0.18936	-1.02289
	setup	CLK (R)	0.12582	0.20189	1.02740

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)	-0.20140	-0.35994	-4.05080
	setup	CLK (R)	0.25187	0.40053	4.06379
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.19764	-0.35665	-4.04824
	setup	CLK (R)	0.25175	0.39961	4.05877
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.19936	-0.35994	-4.05146
	setup	CLK (R)	0.24734	0.39653	4.06493

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)	-0.02266	-0.04226	0.01345
	setup	CLK (R)	0.27777	0.31081	0.90669
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.02467	-0.04226	0.01346
	setup	CLK (R)	0.27583	0.31230	0.91153
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02467	-0.04226	0.01053
	setup	CLK (R)	0.27457	0.30830	0.91260

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)	-0.15344	-0.29032	-3.55969
	setup	CLK (R)	0.23698	0.38789	4.15251
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15141	-0.29127	-3.56029
	setup	CLK (R)	0.23440	0.38789	4.14558
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15205	-0.29106	-3.55729
	setup	CLK (R)	0.23516	0.38931	4.15072

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)	-0.02266	-0.04226	0.01345
	hold	CLK (R)	-0.11450	-0.14276	-0.44366
	setup	CLK (R)	0.12563	0.18997	0.90669
	setup	CLK (R)	0.27777	0.31081	0.58429
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.02467	-0.04226	0.01346
	hold	CLK (R)	-0.11232	-0.13674	-0.43785
	setup	CLK (R)	0.12535	0.19197	0.91153
	setup	CLK (R)	0.27583	0.31230	0.57841
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02467	-0.04226	0.01053
	hold	CLK (R)	-0.11169	-0.13975	-0.44280
	setup	CLK (R)	0.12619	0.19197	0.91260
	setup	CLK (R)	0.27457	0.30830	0.58596

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)	-0.22056	-0.37472	-4.14799
	hold	CLK (R)	-0.15344	-0.29032	-3.55969
	setup	CLK (R)	0.23698	0.38789	4.15251
	setup	CLK (R)	0.16183	0.29857	3.56336
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.21974	-0.37548	-4.14558
	hold	CLK (R)	-0.15141	-0.29127	-3.56029
	setup	CLK (R)	0.23440	0.38789	4.14558
	setup	CLK (R)	0.16643	0.29798	3.56549
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21862	-0.37689	-4.14994
	hold	CLK (R)	-0.15205	-0.29106	-3.55729
	setup	CLK (R)	0.23516	0.38931	4.15072
	setup	CLK (R)	0.16377	0.29853	3.56251

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)	-0.06276	-0.12827	-0.72761
	setup	CLK (R)	0.07504	0.13891	0.73986
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.06089	-0.13004	-0.72927
	setup	CLK (R)	0.07521	0.13891	0.73845
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.06071	-0.13122	-0.73463
	setup	CLK (R)	0.07524	0.14288	0.74343

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)	-0.15328	-0.29607	-3.89464
	setup	CLK (R)	0.19119	0.33166	3.90785
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.15441	-0.29100	-3.89093
	setup	CLK (R)	0.18915	0.33081	3.90262
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.15436	-0.29500	-3.90185
	setup	CLK (R)	0.18733	0.33124	3.91487

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)	0.00527	0.01588	0.37594
	setup	CLK (R)	0.20526	0.22784	0.70272
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00294	0.01588	0.37994
	setup	CLK (R)	0.20462	0.22522	0.70165
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00577	0.01588	0.37302
	setup	CLK (R)	0.20012	0.22347	0.70672

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)	-0.10317	-0.25230	-3.57319
	setup	CLK (R)	0.15251	0.29111	3.96612
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.10173	-0.25225	-3.57331
	setup	CLK (R)	0.15173	0.29039	3.96330
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.10399	-0.25337	-3.57336
	setup	CLK (R)	0.14706	0.28849	3.96848

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)	-0.16599	-0.18894	-0.40549
	hold	CLK (R)	0.00527	0.01588	0.37594
	hold	CLK (R)	-0.05430	-0.12026	-0.67412
	hold	CLK (R)	-0.08283	-0.10954	-0.30633
	setup	CLK (R)	0.20308	0.22707	0.42612
	setup	CLK (R)	0.06818	0.13097	0.70272
	setup	CLK (R)	0.06818	0.13097	0.70272
	setup	CLK (R)	0.20526	0.22784	0.42691
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.16612	-0.18632	-0.40515
	hold	CLK (R)	0.00294	0.01588	0.37994
	hold	CLK (R)	-0.05141	-0.11944	-0.67236
	hold	CLK (R)	-0.08219	-0.10708	-0.29989
	setup	CLK (R)	0.20462	0.22522	0.42359
	setup	CLK (R)	0.06559	0.13097	0.69872
	setup	CLK (R)	0.06559	0.13097	0.70165
	setup	CLK (R)	0.20438	0.22520	0.42361
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.16766	-0.18894	-0.40904
	hold	CLK (R)	0.00577	0.01588	0.37302
	hold	CLK (R)	-0.05206	-0.12160	-0.67559
	hold	CLK (R)	-0.08219	-0.10708	-0.30592
	setup	CLK (R)	0.20012	0.22345	0.43019
	setup	CLK (R)	0.06800	0.13097	0.70272
	setup	CLK (R)	0.06800	0.13097	0.70672
	setup	CLK (R)	0.20011	0.22347	0.43029

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)	-0.11107	-0.26016	-3.59663
	hold	CLK (R)	-0.10876	-0.25447	-3.93747
	hold	CLK (R)	-0.10317	-0.25230	-3.95909
	hold	CLK (R)	-0.10707	-0.25312	-3.57319
	setup	CLK (R)	0.13099	0.27278	3.60900
	setup	CLK (R)	0.12570	0.26806	3.93842
	setup	CLK (R)	0.15251	0.29111	3.96612
	setup	CLK (R)	0.11581	0.25928	3.57787
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.11356	-0.26126	-3.59550
	hold	CLK (R)	-0.10743	-0.25260	-3.93251
	hold	CLK (R)	-0.10173	-0.25225	-3.95532
	hold	CLK (R)	-0.10589	-0.25317	-3.57331
	setup	CLK (R)	0.13212	0.27278	3.60500
	setup	CLK (R)	0.12334	0.26670	3.93322
	setup	CLK (R)	0.15173	0.29039	3.96330
	setup	CLK (R)	0.11814	0.25889	3.57582
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.11315	-0.26197	-3.59816
	hold	CLK (R)	-0.10702	-0.25447	-3.94062
	hold	CLK (R)	-0.10399	-0.25337	-3.96150
	hold	CLK (R)	-0.10742	-0.25465	-3.57336
	setup	CLK (R)	0.13261	0.27278	3.60900
	setup	CLK (R)	0.12515	0.26806	3.94146
	setup	CLK (R)	0.14706	0.28849	3.96848
	setup	CLK (R)	0.11560	0.26064	3.58033

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** ()	0.06171	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.06171	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.09483	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.06392	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.09704	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.06171	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.09483	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.09483	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.06392	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.09704	0.58716	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK** ()	0.06834	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.06834	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12574	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.07054	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12574	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.07054	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12353	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12353	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.07054	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.12574	0.58716	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.08600	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.08600	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.17872	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.08600	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.18093	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.08600	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.17872	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.17872	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.08600	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.18093	0.58716	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 ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.11028	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15665	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15223	0.58716	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.10808	0.58716	16.50020
	min_pulse_width	CLK ()	0.15002	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15002	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15444	0.58716	16.50020
	min_pulse_width	CLK ()	0.15002	0.58716	16.50020
	min_pulse_width	CLK ()	0.10145	0.58716	16.50020
	min_pulse_width	CLK ()	0.15002	0.58716	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK** ()	0.10145	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.10808	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.14561	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.10145	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.14561	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.10145	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.15002	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.14561	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.10145	0.58716	16.50020
	min_pulse_width	**CLK** ()	0.14561	0.58716	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	0.03070	0.03320	0.10284
	CLK	0.02573	0.02824	0.09809
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03373	0.03639	0.10602
	CLK	0.02871	0.03138	0.10151
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03961	0.04250	0.11258
	CLK	0.03445	0.03749	0.10839

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02790	0.03009	0.10210
	CLK	0.02480	0.02700	0.09895
sky130_fd_sc_hs__sedfxtp_2	CLK	0.03183	0.03346	0.10542
	CLK	0.02874	0.03036	0.10229
sky130_fd_sc_hs__sedfxtp_4	CLK	0.04072	0.03918	0.11116
	CLK	0.03748	0.03587	0.10759

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00497	0.00604	0.03879
	(DE * SCE)	0.00182	0.00287	0.03564
	(CLK * DE * !SCE)	0.01024	0.01083	0.04159
	(CLK * DE * !SCE)	0.00611	0.00668	0.03746
	(CLK * !DE * !SCE)	0.00121	0.00122	0.00122
	(CLK * !DE * !SCE)	-0.00080	-0.00081	-0.00080
	(!DE * SCE)	0.00121	0.00124	0.00122
	(!DE * SCE)	-0.00080	-0.00082	-0.00080
	(!CLK * DE * !SCE * Q)	0.01775	0.01850	0.05314
	(!CLK * DE * !SCE * Q)	0.01361	0.01437	0.04900
	(!CLK * DE * !SCE * !Q)	0.01721	0.01791	0.05218
	(!CLK * DE * !SCE * !Q)	0.01303	0.01372	0.04800
	(!CLK * !DE * !SCE)	0.00121	0.00122	0.00122
	(!CLK * !DE * !SCE)	-0.00080	-0.00081	-0.00080
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00514	0.00617	0.03890
	(DE * SCE)	0.00182	0.00285	0.03558
	(CLK * DE * !SCE)	0.01040	0.01097	0.04168
	(CLK * DE * !SCE)	0.00611	0.00666	0.03739
	(CLK * !DE * !SCE)	0.00127	0.00129	0.00127
	(CLK * !DE * !SCE)	-0.00085	-0.00087	-0.00085
	(!DE * SCE)	0.00127	0.00129	0.00127
	(!DE * SCE)	-0.00085	-0.00086	-0.00085
	(!CLK * DE * !SCE * Q)	0.01787	0.01862	0.05323
	(!CLK * DE * !SCE * Q)	0.01358	0.01431	0.04893
	(!CLK * DE * !SCE * !Q)	0.01739	0.01808	0.05233
	(!CLK * DE * !SCE * !Q)	0.01305	0.01373	0.04798
	(!CLK * !DE * !SCE)	0.00126	0.00128	0.00127
	(!CLK * !DE * !SCE)	-0.00085	-0.00087	-0.00085

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00515	0.00620	0.03894
	(DE * SCE)	0.00183	0.00286	0.03562
	(CLK * DE * !SCE)	0.01048	0.01104	0.04170
	(CLK * DE * !SCE)	0.00618	0.00673	0.03740
	(CLK * !DE * !SCE)	0.00127	0.00129	0.00127
	(CLK * !DE * !SCE)	-0.00085	-0.00087	-0.00085
	(!DE * SCE)	0.00127	0.00127	0.00127
	(!DE * SCE)	-0.00085	-0.00085	-0.00085
	(!CLK * DE * !SCE * Q)	0.01776	0.01850	0.05312
	(!CLK * DE * !SCE * Q)	0.01346	0.01421	0.04882
	(!CLK * DE * !SCE * !Q)	0.01722	0.01792	0.05217
	(!CLK * DE * !SCE * !Q)	0.01288	0.01356	0.04782
	(!CLK * !DE * !SCE)	0.00127	0.00129	0.00127
	(!CLK * !DE * !SCE)	-0.00085	-0.00087	-0.00085

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00158	0.00314	0.03570
	(DE * SCE)	0.00478	0.00634	0.03890
	(CLK * DE * !SCE)	0.00302	0.00423	0.03513
	(CLK * DE * !SCE)	0.00721	0.00840	0.03932
	(CLK * !DE * !SCE)	-0.00035	-0.00035	-0.00035
	(CLK * !DE * !SCE)	0.00173	0.00173	0.00173
	(!DE * SCE)	-0.00034	-0.00035	-0.00034
	(!DE * SCE)	0.00173	0.00175	0.00174
	(!CLK * DE * !SCE * Q)	0.01098	0.01275	0.04981
	(!CLK * DE * !SCE * Q)	0.01512	0.01688	0.05395
	(!CLK * DE * !SCE * !Q)	0.01183	0.01363	0.05116
	(!CLK * DE * !SCE * !Q)	0.01601	0.01781	0.05535
	(!CLK * !DE * !SCE)	-0.00035	-0.00035	-0.00035
	(!CLK * !DE * !SCE)	0.00173	0.00174	0.00173
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00152	0.00307	0.03559
	(DE * SCE)	0.00487	0.00643	0.03895
	(CLK * DE * !SCE)	0.00293	0.00414	0.03501
	(CLK * DE * !SCE)	0.00729	0.00849	0.03935
	(CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !DE * !SCE)	0.00182	0.00184	0.00183
	(!DE * SCE)	-0.00034	-0.00035	-0.00034
	(!DE * SCE)	0.00182	0.00184	0.00184
	(!CLK * DE * !SCE * Q)	0.01095	0.01268	0.04970
	(!CLK * DE * !SCE * Q)	0.01525	0.01697	0.05401
	(!CLK * DE * !SCE * !Q)	0.01173	0.01357	0.05100
	(!CLK * DE * !SCE * !Q)	0.01607	0.01792	0.05535
	(!CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !DE * !SCE)	0.00182	0.00184	0.00183

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00146	0.00302	0.03556
	(DE * SCE)	0.00483	0.00639	0.03892
	(CLK * DE * !SCE)	0.00310	0.00430	0.03511
	(CLK * DE * !SCE)	0.00746	0.00865	0.03946
	(CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00035
	(CLK * !DE * !SCE)	0.00183	0.00184	0.00184
	(!DE * SCE)	-0.00035	-0.00035	-0.00034
	(!DE * SCE)	0.00185	0.00185	0.00184
	(!CLK * DE * !SCE * Q)	0.01104	0.01277	0.04977
	(!CLK * DE * !SCE * Q)	0.01534	0.01706	0.05407
	(!CLK * DE * !SCE * !Q)	0.01187	0.01371	0.05112
	(!CLK * DE * !SCE * !Q)	0.01621	0.01806	0.05548
	(!CLK * !DE * !SCE)	-0.00035	-0.00036	-0.00035
	(!CLK * !DE * !SCE)	0.00183	0.00184	0.00184

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00932	0.01133	0.07295
	SCE	0.00228	0.00425	0.06590
	(CLK * !SCE)	0.01440	0.01623	0.07662
	(CLK * !SCE)	0.00637	0.00818	0.06858
	(!CLK * D * !SCE * Q)	0.00584	0.00722	0.04937
	(!CLK * D * !SCE * Q)	0.00006	0.00140	0.04356
	(!CLK * D * !SCE * !Q)	0.02183	0.02383	0.08709
	(!CLK * D * !SCE * !Q)	0.01380	0.01578	0.07907
	(!CLK * !D * !SCE * Q)	0.01782	0.01926	0.06263
	(!CLK * !D * !SCE * Q)	0.01420	0.01563	0.05899
	(!CLK * !D * !SCE * !Q)	0.00574	0.00731	0.04943
	(!CLK * !D * !SCE * !Q)	-0.00002	0.00152	0.04366

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00945	0.01145	0.07305
	SCE	0.00227	0.00424	0.06587
	(CLK * !SCE)	0.01459	0.01641	0.07678
	(CLK * !SCE)	0.00642	0.00822	0.06859
	(!CLK * D * !SCE * Q)	0.00587	0.00725	0.04940
	(!CLK * D * !SCE * Q)	0.00001	0.00135	0.04351
	(!CLK * D * !SCE * !Q)	0.02197	0.02397	0.08723
	(!CLK * D * !SCE * !Q)	0.01380	0.01577	0.07905
	(!CLK * !D * !SCE * Q)	0.01781	0.01928	0.06261
	(!CLK * !D * !SCE * Q)	0.01417	0.01562	0.05897
	(!CLK * !D * !SCE * !Q)	0.00577	0.00732	0.04946
	(!CLK * !D * !SCE * !Q)	-0.00007	0.00148	0.04361
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00944	0.01144	0.07306
	SCE	0.00228	0.00426	0.06590
	(CLK * !SCE)	0.01461	0.01645	0.07678
	(CLK * !SCE)	0.00648	0.00828	0.06863
	(!CLK * D * !SCE * Q)	0.00586	0.00725	0.04939
	(!CLK * D * !SCE * Q)	0.00002	0.00136	0.04353
	(!CLK * D * !SCE * !Q)	0.02179	0.02379	0.08706
	(!CLK * D * !SCE * !Q)	0.01365	0.01562	0.07891
	(!CLK * !D * !SCE * Q)	0.01789	0.01937	0.06272
	(!CLK * !D * !SCE * Q)	0.01427	0.01572	0.05909
	(!CLK * !D * !SCE * !Q)	0.00575	0.00733	0.04946
	(!CLK * !D * !SCE * !Q)	-0.00004	0.00149	0.04364

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00233	0.00481	0.06617
	SCE	0.00937	0.01188	0.07321
	(CLK * !SCE)	0.00372	0.00604	0.06617
	(CLK * !SCE)	0.01174	0.01410	0.07419
	(!CLK * D * !SCE * Q)	-0.00020	0.00197	0.04376
	(!CLK * D * !SCE * Q)	0.00559	0.00778	0.04956
	(!CLK * D * !SCE * !Q)	0.01239	0.01494	0.07949
	(!CLK * D * !SCE * !Q)	0.02042	0.02296	0.08751
	(!CLK * !D * !SCE * Q)	0.01752	0.01959	0.06157
	(!CLK * !D * !SCE * Q)	0.02111	0.02322	0.06522
	(!CLK * !D * !SCE * !Q)	-0.00034	0.00169	0.04370
	(!CLK * !D * !SCE * !Q)	0.00539	0.00747	0.04948
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00232	0.00480	0.06613
	SCE	0.00951	0.01200	0.07331
	(CLK * !SCE)	0.00369	0.00599	0.06612
	(CLK * !SCE)	0.01186	0.01419	0.07427
	(!CLK * D * !SCE * Q)	-0.00023	0.00193	0.04373
	(!CLK * D * !SCE * Q)	0.00563	0.00785	0.04962
	(!CLK * D * !SCE * !Q)	0.01231	0.01486	0.07940
	(!CLK * D * !SCE * !Q)	0.02049	0.02305	0.08756
	(!CLK * !D * !SCE * Q)	0.01752	0.01958	0.06160
	(!CLK * !D * !SCE * Q)	0.02113	0.02324	0.06527
	(!CLK * !D * !SCE * !Q)	-0.00037	0.00166	0.04367
	(!CLK * !D * !SCE * !Q)	0.00545	0.00752	0.04953

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00228	0.00476	0.06610
	SCE	0.00944	0.01192	0.07325
	(CLK * !SCE)	0.00386	0.00616	0.06623
	(CLK * !SCE)	0.01201	0.01433	0.07437
	(!CLK * D * !SCE * Q)	-0.00022	0.00194	0.04374
	(!CLK * D * !SCE * Q)	0.00561	0.00781	0.04960
	(!CLK * D * !SCE * !Q)	0.01247	0.01501	0.07954
	(!CLK * D * !SCE * !Q)	0.02061	0.02314	0.08768
	(!CLK * !D * !SCE * Q)	0.01741	0.01949	0.06151
	(!CLK * !D * !SCE * Q)	0.02100	0.02312	0.06513
	(!CLK * !D * !SCE * !Q)	-0.00036	0.00167	0.04368
	(!CLK * !D * !SCE * !Q)	0.00542	0.00750	0.04951

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00566	0.00612	0.02672
	(CLK * SCE)	0.00221	0.00265	0.02326
	(!CLK * SCE)	0.01305	0.01363	0.03683
	(!CLK * SCE)	0.00960	0.01016	0.03337
	!SCE	0.00114	0.00098	0.00097
	!SCE	-0.00114	-0.00130	-0.00132
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00578	0.00623	0.02684
	(CLK * SCE)	0.00229	0.00273	0.02334
	(!CLK * SCE)	0.01313	0.01373	0.03707
	(!CLK * SCE)	0.00963	0.01022	0.03357
	!SCE	0.00117	0.00101	0.00099
	!SCE	-0.00115	-0.00131	-0.00133
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00580	0.00624	0.02680
	(CLK * SCE)	0.00232	0.00275	0.02331
	(!CLK * SCE)	0.01292	0.01350	0.03687
	(!CLK * SCE)	0.00945	0.01000	0.03338
	!SCE	0.00116	0.00100	0.00099
	!SCE	-0.00115	-0.00130	-0.00132

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00279	0.00328	0.02372
	(CLK * SCE)	0.00624	0.00675	0.02717
	(!CLK * SCE)	0.01073	0.01152	0.03577
	(!CLK * SCE)	0.01419	0.01499	0.03922
	!SCE	-0.00091	-0.00093	-0.00094
	!SCE	0.00135	0.00136	0.00136
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00269	0.00319	0.02362
	(CLK * SCE)	0.00619	0.00670	0.02711
	(!CLK * SCE)	0.01058	0.01145	0.03560
	(!CLK * SCE)	0.01408	0.01497	0.03909
	!SCE	-0.00093	-0.00096	-0.00096
	!SCE	0.00136	0.00137	0.00137
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00297	0.00345	0.02382
	(CLK * SCE)	0.00645	0.00694	0.02730
	(!CLK * SCE)	0.01083	0.01161	0.03584
	(!CLK * SCE)	0.01432	0.01510	0.03932
	!SCE	-0.00092	-0.00095	-0.00095
	!SCE	0.00136	0.00137	0.00137

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00832	0.01095	0.08094
	(CLK * D)	0.00233	0.00493	0.07494
	(CLK * !D)	0.00866	0.01126	0.08059
	(CLK * !D)	0.00267	0.00524	0.07459
	(!CLK * D * SCD * Q)	0.00489	0.00654	0.04866
	(!CLK * D * SCD * Q)	-0.00010	0.00150	0.04365
	(!CLK * D * DE * SCD * !Q)	0.00474	0.00639	0.04851
	(!CLK * D * DE * SCD * !Q)	-0.00025	0.00136	0.04350
	(!CLK * D * DE * !SCD * !Q)	0.01680	0.01791	0.07443
	(!CLK * D * DE * !SCD * !Q)	0.01278	0.01387	0.07037
	(!CLK * D * !SCD * Q)	0.01676	0.01783	0.07442
	(!CLK * D * !SCD * Q)	0.01273	0.01379	0.07036
	(!CLK * D * !DE * SCD * !Q)	0.01571	0.01835	0.09221
	(!CLK * D * !DE * SCD * !Q)	0.00972	0.01233	0.08621
	(!CLK * D * !DE * !SCD * !Q)	0.00546	0.00709	0.04922
	(!CLK * D * !DE * !SCD * !Q)	0.00044	0.00205	0.04420
	(!CLK * !D * SCD * !Q)	0.01571	0.01835	0.09150
	(!CLK * !D * SCD * !Q)	0.00972	0.01233	0.08550
	(!CLK * !D * DE * SCD * Q)	0.01612	0.01873	0.09187
	(!CLK * !D * DE * SCD * Q)	0.01014	0.01271	0.08587
	(!CLK * !D * DE * !SCD * Q)	0.00561	0.00725	0.04938
	(!CLK * !D * DE * !SCD * Q)	0.00059	0.00220	0.04435
	(!CLK * !D * !SCD * !Q)	0.00546	0.00710	0.04923
	(!CLK * !D * !SCD * !Q)	0.00045	0.00205	0.04420
	(!CLK * !D * !DE * SCD * Q)	0.00489	0.00654	0.04866
	(!CLK * !D * !DE * SCD * Q)	-0.00011	0.00151	0.04365
	(!CLK * !D * !DE * !SCD * Q)	0.01679	0.01780	0.07445
	(!CLK * !D * !DE * !SCD * Q)	0.01277	0.01376	0.07039

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00846	0.01108	0.08107
	(CLK * D)	0.00239	0.00497	0.07498
	(CLK * !D)	0.00872	0.01131	0.08062
	(CLK * !D)	0.00265	0.00521	0.07456
	(!CLK * D * SCD * Q)	0.00496	0.00658	0.04869
	(!CLK * D * SCD * Q)	-0.00012	0.00148	0.04360
	(!CLK * D * DE * SCD * !Q)	0.00482	0.00645	0.04855
	(!CLK * D * DE * SCD * !Q)	-0.00026	0.00134	0.04346
	(!CLK * D * DE * !SCD * !Q)	0.01675	0.01784	0.07443
	(!CLK * D * DE * !SCD * !Q)	0.01265	0.01373	0.07030
	(!CLK * D * !SCD * Q)	0.01674	0.01780	0.07438
	(!CLK * D * !SCD * Q)	0.01264	0.01368	0.07025
	(!CLK * D * !DE * SCD * !Q)	0.01581	0.01843	0.09230
	(!CLK * D * !DE * SCD * !Q)	0.00973	0.01233	0.08621
	(!CLK * D * !DE * !SCD * !Q)	0.00552	0.00714	0.04925
	(!CLK * D * !DE * !SCD * !Q)	0.00042	0.00201	0.04414
	(!CLK * !D * SCD * !Q)	0.01580	0.01843	0.09161
	(!CLK * !D * SCD * !Q)	0.00973	0.01233	0.08553
	(!CLK * !D * DE * SCD * Q)	0.01616	0.01875	0.09192
	(!CLK * !D * DE * SCD * Q)	0.01009	0.01265	0.08583
	(!CLK * !D * DE * !SCD * Q)	0.00566	0.00728	0.04939
	(!CLK * !D * DE * !SCD * Q)	0.00056	0.00215	0.04428
	(!CLK * !D * !SCD * !Q)	0.00553	0.00714	0.04925
	(!CLK * !D * !SCD * !Q)	0.00043	0.00202	0.04414
	(!CLK * !D * !DE * SCD * Q)	0.00496	0.00659	0.04869
	(!CLK * !D * !DE * SCD * Q)	-0.00012	0.00147	0.04359
	(!CLK * !D * !DE * !SCD * Q)	0.01678	0.01779	0.07441
	(!CLK * !D * !DE * !SCD * Q)	0.01268	0.01367	0.07027

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00848	0.01108	0.08104
	(CLK * D)	0.00246	0.00502	0.07500
	(CLK * !D)	0.00876	0.01133	0.08062
	(CLK * !D)	0.00273	0.00527	0.07458
	(!CLK * D * SCD * Q)	0.00492	0.00657	0.04872
	(!CLK * D * SCD * Q)	-0.00012	0.00149	0.04366
	(!CLK * D * DE * SCD * !Q)	0.00478	0.00642	0.04858
	(!CLK * D * DE * SCD * !Q)	-0.00025	0.00136	0.04353
	(!CLK * D * DE * !SCD * !Q)	0.01695	0.01804	0.07462
	(!CLK * D * DE * !SCD * !Q)	0.01289	0.01397	0.07051
	(!CLK * D * !SCD * Q)	0.01690	0.01798	0.07459
	(!CLK * D * !SCD * Q)	0.01283	0.01389	0.07049
	(!CLK * D * !DE * SCD * !Q)	0.01561	0.01824	0.09216
	(!CLK * D * !DE * SCD * !Q)	0.00958	0.01218	0.08611
	(!CLK * D * !DE * !SCD * !Q)	0.00549	0.00712	0.04928
	(!CLK * D * !DE * !SCD * !Q)	0.00043	0.00204	0.04421
	(!CLK * !D * SCD * !Q)	0.01561	0.01822	0.09144
	(!CLK * !D * SCD * !Q)	0.00958	0.01220	0.08539
	(!CLK * !D * DE * SCD * Q)	0.01601	0.01861	0.09178
	(!CLK * !D * DE * SCD * Q)	0.00998	0.01255	0.08574
	(!CLK * !D * DE * !SCD * Q)	0.00564	0.00727	0.04943
	(!CLK * !D * DE * !SCD * Q)	0.00058	0.00218	0.04436
	(!CLK * !D * !SCD * !Q)	0.00550	0.00713	0.04929
	(!CLK * !D * !SCD * !Q)	0.00044	0.00204	0.04422
	(!CLK * !D * !DE * SCD * Q)	0.00492	0.00657	0.04872
	(!CLK * !D * !DE * SCD * Q)	-0.00012	0.00149	0.04366
	(!CLK * !D * !DE * !SCD * Q)	0.01693	0.01796	0.07463
	(!CLK * !D * !DE * !SCD * Q)	0.01286	0.01387	0.07052

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00105	0.00493	0.07436
	(CLK * D)	0.00704	0.01094	0.08033
	(CLK * !D)	0.00106	0.00493	0.07367
	(CLK * !D)	0.00704	0.01094	0.07965
	(!CLK * D * SCD * Q)	0.00015	0.00240	0.04443
	(!CLK * D * SCD * Q)	0.00515	0.00742	0.04943
	(!CLK * D * DE * SCD * !Q)	0.00031	0.00256	0.04458
	(!CLK * D * DE * SCD * !Q)	0.00531	0.00757	0.04959
	(!CLK * D * DE * !SCD * !Q)	0.01283	0.01638	0.07759
	(!CLK * D * DE * !SCD * !Q)	0.01688	0.02044	0.08147
	(!CLK * D * !SCD * Q)	0.01293	0.01648	0.07762
	(!CLK * D * !SCD * Q)	0.01696	0.02053	0.08150
	(!CLK * D * !DE * SCD * !Q)	0.00943	0.01332	0.08758
	(!CLK * D * !DE * SCD * !Q)	0.01542	0.01930	0.09358
	(!CLK * D * !DE * !SCD * !Q)	-0.00032	0.00202	0.04386
	(!CLK * D * !DE * !SCD * !Q)	0.00471	0.00706	0.04887
	(!CLK * !D * SCD * !Q)	0.00947	0.01329	0.08716
	(!CLK * !D * SCD * !Q)	0.01546	0.01926	0.09315
	(!CLK * !D * DE * SCD * Q)	0.00909	0.01297	0.08675
	(!CLK * !D * DE * SCD * Q)	0.01508	0.01897	0.09273
	(!CLK * !D * DE * !SCD * Q)	-0.00047	0.00187	0.04371
	(!CLK * !D * DE * !SCD * Q)	0.00455	0.00691	0.04872
	(!CLK * !D * !SCD * !Q)	-0.00031	0.00202	0.04386
	(!CLK * !D * !SCD * !Q)	0.00470	0.00706	0.04887
	(!CLK * !D * !DE * SCD * Q)	0.00015	0.00240	0.04443
	(!CLK * !D * !DE * SCD * Q)	0.00515	0.00741	0.04943
	(!CLK * !D * !DE * !SCD * Q)	0.01291	0.01647	0.07780
	(!CLK * !D * !DE * !SCD * Q)	0.01694	0.02052	0.08169

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00099	0.00487	0.07429
	(CLK * D)	0.00707	0.01096	0.08035
	(CLK * !D)	0.00099	0.00480	0.07359
	(CLK * !D)	0.00707	0.01090	0.07966
	(!CLK * D * SCD * Q)	0.00011	0.00237	0.04436
	(!CLK * D * SCD * Q)	0.00520	0.00745	0.04945
	(!CLK * D * DE * SCD * !Q)	0.00026	0.00251	0.04451
	(!CLK * D * DE * SCD * !Q)	0.00534	0.00760	0.04959
	(!CLK * D * DE * !SCD * !Q)	0.01280	0.01635	0.07753
	(!CLK * D * DE * !SCD * !Q)	0.01692	0.02048	0.08148
	(!CLK * D * !SCD * Q)	0.01285	0.01640	0.07753
	(!CLK * D * !SCD * Q)	0.01696	0.02053	0.08149
	(!CLK * D * !DE * SCD * !Q)	0.00931	0.01319	0.08779
	(!CLK * D * !DE * SCD * !Q)	0.01538	0.01928	0.09387
	(!CLK * D * !DE * !SCD * !Q)	-0.00034	0.00197	0.04380
	(!CLK * D * !DE * !SCD * !Q)	0.00475	0.00710	0.04889
	(!CLK * !D * SCD * !Q)	0.00935	0.01315	0.08705
	(!CLK * !D * SCD * !Q)	0.01542	0.01924	0.09311
	(!CLK * !D * DE * SCD * Q)	0.00903	0.01290	0.08667
	(!CLK * !D * DE * SCD * Q)	0.01511	0.01898	0.09274
	(!CLK * !D * DE * !SCD * Q)	-0.00049	0.00183	0.04366
	(!CLK * !D * DE * !SCD * Q)	0.00462	0.00696	0.04875
	(!CLK * !D * !SCD * !Q)	-0.00034	0.00198	0.04380
	(!CLK * !D * !SCD * !Q)	0.00475	0.00710	0.04889
	(!CLK * !D * !DE * SCD * Q)	0.00011	0.00235	0.04436
	(!CLK * !D * !DE * SCD * Q)	0.00520	0.00745	0.04945
	(!CLK * !D * !DE * !SCD * Q)	0.01284	0.01638	0.07769
	(!CLK * !D * !DE * !SCD * Q)	0.01694	0.02051	0.08165

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00126	0.00511	0.07449
	(CLK * D)	0.00729	0.01116	0.08052
	(CLK * !D)	0.00127	0.00511	0.07380
	(CLK * !D)	0.00730	0.01116	0.07983
	(!CLK * D * SCD * Q)	0.00014	0.00240	0.04444
	(!CLK * D * SCD * Q)	0.00518	0.00746	0.04949
	(!CLK * D * DE * SCD * !Q)	0.00029	0.00255	0.04459
	(!CLK * D * DE * SCD * !Q)	0.00533	0.00761	0.04964
	(!CLK * D * DE * !SCD * !Q)	0.01264	0.01619	0.07744
	(!CLK * D * DE * !SCD * !Q)	0.01672	0.02029	0.08136
	(!CLK * D * !SCD * Q)	0.01273	0.01628	0.07749
	(!CLK * D * !SCD * Q)	0.01680	0.02036	0.08141
	(!CLK * D * !DE * SCD * !Q)	0.00956	0.01344	0.08772
	(!CLK * D * !DE * SCD * !Q)	0.01558	0.01946	0.09376
	(!CLK * D * !DE * !SCD * !Q)	-0.00033	0.00201	0.04388
	(!CLK * D * !DE * !SCD * !Q)	0.00474	0.00709	0.04893
	(!CLK * !D * SCD * !Q)	0.00960	0.01341	0.08728
	(!CLK * !D * SCD * !Q)	0.01563	0.01943	0.09331
	(!CLK * !D * DE * SCD * Q)	0.00923	0.01310	0.08690
	(!CLK * !D * DE * SCD * Q)	0.01526	0.01914	0.09294
	(!CLK * !D * DE * !SCD * Q)	-0.00047	0.00186	0.04373
	(!CLK * !D * DE * !SCD * Q)	0.00459	0.00695	0.04878
	(!CLK * !D * !SCD * !Q)	-0.00032	0.00201	0.04388
	(!CLK * !D * !SCD * !Q)	0.00473	0.00709	0.04893
	(!CLK * !D * !DE * SCD * Q)	0.00014	0.00239	0.04444
	(!CLK * !D * !DE * SCD * Q)	0.00518	0.00744	0.04949
	(!CLK * !D * !DE * !SCD * Q)	0.01272	0.01628	0.07765
	(!CLK * !D * !DE * !SCD * Q)	0.01679	0.02037	0.08158

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01385	0.01590	0.08446
	(SCD * SCE * Q)	0.00980	0.01182	0.08040
	(D * !SCE * Q)	0.01383	0.01587	0.08445
	(D * !SCE * Q)	0.00978	0.01180	0.08038
	(D * !DE * !SCE * !Q)	0.01408	0.01621	0.08476
	(D * !DE * !SCE * !Q)	0.01002	0.01214	0.08070
	(!SCD * SCE * !Q)	0.01410	0.01623	0.08478
	(!SCD * SCE * !Q)	0.01004	0.01217	0.08072
	(!D * !SCE * !Q)	0.01408	0.01621	0.08477
	(!D * !SCE * !Q)	0.01002	0.01215	0.08070
	(!D * !DE * !SCE * Q)	0.01383	0.01588	0.08445
	(!D * !DE * !SCE * Q)	0.00978	0.01180	0.08038
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01400	0.01613	0.08463
	(SCD * SCE * Q)	0.00991	0.01203	0.08054
	(D * !SCE * Q)	0.01399	0.01611	0.08462
	(D * !SCE * Q)	0.00989	0.01201	0.08053
	(D * !DE * !SCE * !Q)	0.01424	0.01624	0.08493
	(D * !DE * !SCE * !Q)	0.01014	0.01212	0.08084
	(!SCD * SCE * !Q)	0.01426	0.01626	0.08510
	(!SCD * SCE * !Q)	0.01016	0.01214	0.08101
	(!D * !SCE * !Q)	0.01424	0.01624	0.08493
	(!D * !SCE * !Q)	0.01015	0.01213	0.08085
	(!D * !DE * !SCE * Q)	0.01399	0.01611	0.08462
	(!D * !DE * !SCE * Q)	0.00989	0.01201	0.08053

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01402	0.01614	0.08457
	(SCD * SCE * Q)	0.00979	0.01189	0.08034
	(D * !SCE * Q)	0.01400	0.01612	0.08455
	(D * !SCE * Q)	0.00977	0.01187	0.08032
	(D * !DE * !SCE * !Q)	0.01412	0.01625	0.08473
	(D * !DE * !SCE * !Q)	0.00989	0.01200	0.08051
	(!SCD * SCE * !Q)	0.01415	0.01628	0.08475
	(!SCD * SCE * !Q)	0.00992	0.01202	0.08053
	(!D * !SCE * !Q)	0.01412	0.01625	0.08474
	(!D * !SCE * !Q)	0.00990	0.01200	0.08051
	(!D * !DE * !SCE * Q)	0.01400	0.01612	0.08455
	(!D * !DE * !SCE * Q)	0.00977	0.01187	0.08032

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00795	0.01098	0.07919
	(SCD * SCE * Q)	0.01201	0.01506	0.08325
	(SCD * SCE * !Q)	0.01496	0.01788	0.08851
	(SCD * SCE * !Q)	0.01901	0.02195	0.09257
	(D * DE * !SCE * !Q)	0.01494	0.01786	0.08778
	(D * DE * !SCE * !Q)	0.01899	0.02192	0.09185
	(D * !SCE * Q)	0.00796	0.01093	0.07921
	(D * !SCE * Q)	0.01202	0.01500	0.08327
	(D * !DE * !SCE * !Q)	0.00768	0.01060	0.07873
	(D * !DE * !SCE * !Q)	0.01174	0.01467	0.08278
	(!SCD * SCE * Q)	0.01692	0.02016	0.08955
	(!SCD * SCE * Q)	0.02099	0.02425	0.09362
	(!SCD * SCE * !Q)	0.00768	0.01060	0.07871
	(!SCD * SCE * !Q)	0.01173	0.01467	0.08278
	(!D * DE * !SCE * Q)	0.01713	0.02037	0.08960
	(!D * DE * !SCE * Q)	0.02118	0.02444	0.09366
	(!D * !SCE * !Q)	0.00768	0.01060	0.07873
	(!D * !SCE * !Q)	0.01174	0.01467	0.08279
	(!D * !DE * !SCE * Q)	0.00796	0.01093	0.07920
	(!D * !DE * !SCE * Q)	0.01202	0.01500	0.08326

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00803	0.01097	0.07926
	(SCD * SCE * Q)	0.01211	0.01507	0.08335
	(SCD * SCE * !Q)	0.01498	0.01788	0.08855
	(SCD * SCE * !Q)	0.01906	0.02198	0.09262
	(D * DE * !SCE * !Q)	0.01495	0.01785	0.08779
	(D * DE * !SCE * !Q)	0.01903	0.02195	0.09188
	(D * !SCE * Q)	0.00803	0.01098	0.07927
	(D * !SCE * Q)	0.01212	0.01507	0.08336
	(D * !DE * !SCE * !Q)	0.00775	0.01066	0.07879
	(D * !DE * !SCE * !Q)	0.01183	0.01476	0.08288
	(!SCD * SCE * Q)	0.01699	0.02011	0.08947
	(!SCD * SCE * Q)	0.02108	0.02422	0.09358
	(!SCD * SCE * !Q)	0.00775	0.01066	0.07879
	(!SCD * SCE * !Q)	0.01184	0.01476	0.08287
	(!D * DE * !SCE * Q)	0.01718	0.02030	0.08973
	(!D * DE * !SCE * Q)	0.02126	0.02441	0.09382
	(!D * !SCE * !Q)	0.00775	0.01066	0.07880
	(!D * !SCE * !Q)	0.01184	0.01476	0.08288
	(!D * !DE * !SCE * Q)	0.00803	0.01098	0.07926
	(!D * !DE * !SCE * Q)	0.01211	0.01507	0.08336

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00778	0.01080	0.07897
	(SCD * SCE * Q)	0.01200	0.01503	0.08319
	(SCD * SCE * !Q)	0.01470	0.01765	0.08745
	(SCD * SCE * !Q)	0.01891	0.02189	0.09166
	(D * DE * !SCE * !Q)	0.01468	0.01763	0.08745
	(D * DE * !SCE * !Q)	0.01889	0.02186	0.09168
	(D * !SCE * Q)	0.00779	0.01081	0.07898
	(D * !SCE * Q)	0.01201	0.01504	0.08321
	(D * !DE * !SCE * !Q)	0.00765	0.01059	0.07863
	(D * !DE * !SCE * !Q)	0.01187	0.01483	0.08286
	(!SCD * SCE * Q)	0.01666	0.01988	0.08925
	(!SCD * SCE * Q)	0.02089	0.02413	0.09349
	(!SCD * SCE * !Q)	0.00765	0.01060	0.07863
	(!SCD * SCE * !Q)	0.01186	0.01483	0.08286
	(!D * DE * !SCE * Q)	0.01685	0.02007	0.08927
	(!D * DE * !SCE * Q)	0.02107	0.02431	0.09351
	(!D * !SCE * !Q)	0.00765	0.01059	0.07863
	(!D * !SCE * !Q)	0.01187	0.01483	0.08286
	(!D * !DE * !SCE * Q)	0.00779	0.01081	0.07898
	(!D * !DE * !SCE * Q)	0.01201	0.01504	0.08320

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

INPUT		OUTPUT
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor2_1	11.18880
sky130_fd_sc_hs__xnor2_2	17.58240
sky130_fd_sc_hs__xnor2_4	30.36960

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	Y
sky130_fd_sc_hs__xnor2_1	0.00480	0.00500	0.73206
sky130_fd_sc_hs__xnor2_2	0.00798	0.00789	1.33497
sky130_fd_sc_hs__xnor2_4	0.01423	0.01436	2.16584

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor2_1	0.00000	0.29046	0.94418
sky130_fd_sc_hs__xnor2_2	0.00000	0.16422	0.25258
sky130_fd_sc_hs__xnor2_4	0.00000	0.62549	1.89035

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	0.05238	0.30246	2.42840
	A->Y (FR)	!B	0.06784	0.85231	10.57970
	B->Y (RR)	A	0.04644	0.29266	2.48891
	B->Y (FR)	!A	0.05777	0.84536	10.64740
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.05591	0.26118	2.29788
	A->Y (FR)	!B	0.06646	0.72492	10.29070
	B->Y (RR)	A	0.05355	0.25852	2.26909
	B->Y (FR)	!A	0.05424	0.71681	10.35510
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.06857	0.37951	5.20327
	A->Y (FR)	!B	0.06988	0.65598	10.29170
	B->Y (RR)	A	0.06515	0.37285	5.17433
	B->Y (FR)	!A	0.05538	0.65842	10.53140

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	0.06687	0.41857	4.11212
	A->Y (RF)	!B	0.02690	0.30429	3.58686
	B->Y (FF)	A	0.06277	0.42109	4.37513
	B->Y (RF)	!A	0.02100	0.29215	3.52034
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.07845	0.43858	4.38082
	A->Y (RF)	!B	0.02525	0.24160	3.34818
	B->Y (FF)	A	0.07059	0.39884	4.08664
	B->Y (RF)	!A	0.02223	0.23762	3.39083
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.07473	0.40834	4.51479
	A->Y (RF)	!B	0.02732	0.19392	3.07150
	B->Y (FF)	A	0.06884	0.37361	4.23179
	B->Y (RF)	!A	0.02292	0.18829	3.13079

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	0.00971	0.01277	0.08613
	A	B	0.00162	0.00466	0.07823
	A	!B	-0.00108	-0.00102	0.00647
	A	!B	0.00689	0.00697	0.01458
	B	A	0.00890	0.01237	0.08871
	B	A	0.00243	0.00589	0.08241
	B	!A	-0.00006	0.00100	0.01697
	B	!A	0.00640	0.00747	0.02355
sky130_fd_sc_hs__xnor2_2	A	B	0.01531	0.01732	0.08052
	A	B	0.00366	0.00560	0.06942
	A	!B	-0.00047	-0.00037	0.01381
	A	!B	0.01351	0.01369	0.02793
	B	A	0.01461	0.01663	0.06917
	B	A	0.00511	0.00715	0.06023
	B	!A	0.00023	0.00208	0.02949
	B	!A	0.01195	0.01382	0.04135
sky130_fd_sc_hs__xnor2_4	A	B	0.02487	0.02951	0.16556
	A	B	0.00388	0.00845	0.14449
	A	!B	-0.00165	-0.00142	0.02610
	A	!B	0.02501	0.02534	0.05307
	B	A	0.02396	0.02831	0.14754
	B	A	0.00723	0.01160	0.13087
	B	!A	-0.00056	0.00286	0.05086
	B	!A	0.02183	0.02499	0.07362

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	0.00223	0.00640	0.07983
	A	B	0.01032	0.01445	0.08779
	A	!B	0.00918	0.00929	0.01461
	A	!B	0.00103	0.00109	0.00609
	B	A	0.00362	0.00711	0.08267
	B	A	0.00999	0.01343	0.08888
	B	!A	0.00620	0.00638	0.01124
	B	!A	-0.00019	-0.00002	0.00483
sky130_fd_sc_hs__xnor2_2	A	B	0.00481	0.00823	0.07218
	A	B	0.01656	0.01995	0.08385
	A	!B	0.01738	0.01745	0.02765
	A	!B	0.00317	0.00321	0.01328
	B	A	0.00750	0.00973	0.07497
	B	A	0.01666	0.01886	0.08412
	B	!A	0.01232	0.01270	0.02296
	B	!A	0.00064	0.00104	0.01075
sky130_fd_sc_hs__xnor2_4	A	B	0.00790	0.01514	0.15248
	A	B	0.02902	0.03616	0.17276
	A	!B	0.03216	0.03250	0.05509
	A	!B	0.00503	0.00527	0.02712
	B	A	0.01110	0.01616	0.15124
	B	A	0.02725	0.03229	0.16737
	B	!A	0.02296	0.02410	0.04540
	B	!A	0.00073	0.00179	0.02247

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xnor3_1	27.17280
sky130_fd_sc_hs__xnor3_2	28.77120
sky130_fd_sc_hs__xnor3_4	33.56640

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xnor3_1	0.00252	0.00659	0.00412	1.39086
sky130_fd_sc_hs__xnor3_2	0.00257	0.00664	0.00417	2.73805
sky130_fd_sc_hs__xnor3_4	0.00256	0.00662	0.00408	5.33206

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xnor3_1	0.00000	1.54102	1.73994
sky130_fd_sc_hs__xnor3_2	0.00000	1.57299	1.80288
sky130_fd_sc_hs__xnor3_4	0.00000	1.63695	1.92878

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)	0.18299	0.80639	8.61226
	B->X (-R)	0.13132	0.72815	8.59737
	C->X (-R)	0.09699	0.68794	8.41889
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.19435	0.73126	8.59066
	B->X (-R)	0.13866	0.64608	8.54366
	C->X (-R)	0.10208	0.60640	8.35902
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.22173	0.69952	8.58249
	B->X (-R)	0.17076	0.62192	8.59163
	C->X (-R)	0.12902	0.57773	8.38950

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.12987	0.63872	5.25969
	B->X (-F)	0.12782	0.61888	5.61973
	C->X (-F)	0.07860	0.52141	5.32078
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.14345	0.62714	5.16821
	B->X (-F)	0.13698	0.59496	5.49186
	C->X (-F)	0.08730	0.50783	5.20675
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.17358	0.64208	5.27716
	B->X (-F)	0.16802	0.61432	5.62750
	C->X (-F)	0.11926	0.53194	5.35955

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.02300	0.02525	0.10135
	A	0.01786	0.02011	0.09631
	B	0.02087	0.02608	0.17488
	B	0.02123	0.02859	0.17567
	C	0.01073	0.01384	0.08990
	C	0.00436	0.00748	0.08374
sky130_fd_sc_hs__xnor3_2	A	0.02552	0.02765	0.10046
	A	0.02030	0.02245	0.09560
	B	0.02337	0.02845	0.17436
	B	0.02370	0.03083	0.17554
	C	0.01342	0.01668	0.09214
	C	0.00698	0.01028	0.08616
sky130_fd_sc_hs__xnor3_4	A	0.03236	0.03425	0.10983
	A	0.02721	0.02910	0.10506
	B	0.02998	0.03452	0.18003
	B	0.01905	0.02365	0.16981
	C	0.01995	0.02288	0.10435
	C	0.01363	0.01669	0.09919

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01903	0.02208	0.09733
	A	0.02417	0.02726	0.10151
	B	0.01943	0.02434	0.17195
	B	0.02255	0.02918	0.17459
	C	0.00345	0.00796	0.08875
	C	0.00983	0.01431	0.09509
sky130_fd_sc_hs__xnor3_2	A	0.02314	0.02437	0.09671
	A	0.02837	0.02969	0.10036
	B	0.01526	0.02043	0.16337
	B	0.02633	0.03151	0.17441
	C	0.00709	0.01068	0.09287
	C	0.01354	0.01700	0.09853
sky130_fd_sc_hs__xnor3_4	A	0.03442	0.03131	0.10451
	A	0.03957	0.03658	0.10853
	B	0.02583	0.02682	0.17321
	B	0.03677	0.03775	0.18019
	C	0.01786	0.01708	0.10304
	C	0.02418	0.02338	0.10637

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor2_1	12.78720
sky130_fd_sc_hs__xor2_2	15.98400
sky130_fd_sc_hs__xor2_4	28.77120

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	A	B	X
sky130_fd_sc_hs__xor2_1	0.00489	0.00508	0.65250
sky130_fd_sc_hs__xor2_2	0.00747	0.00741	1.22124
sky130_fd_sc_hs__xor2_4	0.01513	0.01479	2.05129

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor2_1	0.00000	0.06698	0.11429
sky130_fd_sc_hs__xor2_2	0.00000	0.09470	0.12992
sky130_fd_sc_hs__xor2_4	0.00000	0.18838	0.25577

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	0.06344	0.57176	5.10075
	A->X (FR)	B	0.08254	0.88861	10.56840
	B->X (RR)	!A	0.07857	0.60387	5.62375
	B->X (FR)	A	0.06139	0.83696	10.19280
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.05512	0.47597	5.44262
	A->X (FR)	B	0.07199	0.76259	10.62280
	B->X (RR)	!A	0.06588	0.46361	5.43302
	B->X (FR)	A	0.05663	0.74791	10.61500
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.05314	0.38309	5.30917
	A->X (FR)	B	0.07251	0.64899	10.02440
	B->X (RR)	!A	0.05787	0.35402	4.98619
	B->X (FR)	A	0.05854	0.64528	10.23580

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	0.08305	0.39813	3.47953
	A->X (RF)	B	0.02504	0.27755	3.08709
	B->X (FF)	!A	0.07461	0.39383	3.51444
	B->X (RF)	A	0.01856	0.28818	3.30921
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.10896	0.49099	4.84253
	A->X (RF)	B	0.02277	0.23350	3.16595
	B->X (FF)	!A	0.09533	0.48730	4.90178
	B->X (RF)	A	0.02033	0.30070	4.18815
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.11143	0.45731	4.73238
	A->X (RF)	B	0.02434	0.18695	2.90832
	B->X (FF)	!A	0.09365	0.45114	4.68039
	B->X (RF)	A	0.02182	0.22849	3.64090

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	0.00006	0.00008	0.00821
	A	B	0.00837	0.00845	0.01666
	A	!B	0.01127	0.01283	0.05157
	A	!B	0.00293	0.00449	0.04329
	B	A	-0.00000	0.00004	0.00819
	B	A	0.00642	0.00645	0.01466
	B	!A	0.01015	0.01136	0.06524
	B	!A	0.00370	0.00492	0.05893
sky130_fd_sc_hs__xor2_2	A	B	0.00089	0.00103	0.01519
	A	B	0.01451	0.01465	0.02899
	A	!B	0.01506	0.01694	0.06150
	A	!B	0.00356	0.00547	0.05020
	B	A	-0.00021	-0.00006	0.01350
	B	A	0.01065	0.01083	0.02455
	B	!A	0.01493	0.01563	0.07537
	B	!A	0.00625	0.00693	0.06684
sky130_fd_sc_hs__xor2_4	A	B	0.00093	0.00114	0.02842
	A	B	0.02975	0.02998	0.05731
	A	!B	0.03019	0.03279	0.11328
	A	!B	0.00781	0.01036	0.09088
	B	A	-0.00032	0.00019	0.02680
	B	A	0.02248	0.02306	0.04981
	B	!A	0.02647	0.02835	0.13658
	B	!A	0.01001	0.01188	0.12032

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	0.00832	0.00820	0.01356
	A	B	0.00004	-0.00011	0.00521
	A	!B	0.00186	0.00312	0.04049
	A	!B	0.01011	0.01139	0.04879
	B	A	0.00707	0.00737	0.01437
	B	A	0.00061	0.00085	0.00766
	B	!A	0.00300	0.00576	0.05869
	B	!A	0.00970	0.01240	0.06537
sky130_fd_sc_hs__xor2_2	A	B	0.01428	0.01421	0.02492
	A	B	0.00068	0.00052	0.01091
	A	!B	0.00180	0.00297	0.04489
	A	!B	0.01306	0.01426	0.05627
	B	A	0.01204	0.01234	0.02363
	B	A	0.00116	0.00141	0.01251
	B	!A	0.00346	0.00598	0.06463
	B	!A	0.01277	0.01529	0.07333
sky130_fd_sc_hs__xor2_4	A	B	0.02938	0.02917	0.05120
	A	B	0.00073	0.00036	0.02214
	A	!B	0.00384	0.00596	0.08395
	A	!B	0.02585	0.02806	0.10481
	B	A	0.02456	0.02528	0.04981
	B	A	0.00164	0.00231	0.02582
	B	!A	0.00767	0.01299	0.11260
	B	!A	0.02524	0.03052	0.12978

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ff_1.76v_-40C.ccs
Cell Library: Process , Voltage
1.76, Temp -40.00

Truth Table

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

Footprint

Cell Name	Area
sky130_fd_sc_hs__xor3_1	30.36960
sky130_fd_sc_hs__xor3_2	31.96800
sky130_fd_sc_hs__xor3_4	35.16480

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	A	B	C	X
sky130_fd_sc_hs__xor3_1	0.00252	0.00676	0.00412	1.41525
sky130_fd_sc_hs__xor3_2	0.00254	0.00689	0.00411	2.72065
sky130_fd_sc_hs__xor3_4	0.00252	0.00699	0.00407	5.29209

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	1.54102	1.73998
sky130_fd_sc_hs__xor3_2	0.00000	1.57299	1.80292
sky130_fd_sc_hs__xor3_4	0.00000	1.63694	1.92881

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)	0.17913	0.79839	8.55538
	B->X (-R)	0.12526	0.71293	8.49816
	C->X (-R)	0.09733	0.68829	8.36643
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.18654	0.71948	8.47978
	B->X (-R)	0.13457	0.63748	8.42329
	C->X (-R)	0.10429	0.61427	8.28997
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.21141	0.68976	8.57246
	B->X (-R)	0.16254	0.60968	8.53289
	C->X (-R)	0.12545	0.58366	8.40932

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.12718	0.62693	5.13651
	B->X (-F)	0.12473	0.60363	5.48161
	C->X (-F)	0.07658	0.50944	5.23198
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.13862	0.61790	5.13049
	B->X (-F)	0.13643	0.59249	5.47179
	C->X (-F)	0.08875	0.51590	5.23848
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.17186	0.64404	5.28882
	B->X (-F)	0.17026	0.61581	5.62695
	C->X (-F)	0.11722	0.54356	5.39176

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.02406	0.02625	0.10179
	A	0.01882	0.02103	0.09673
	B	0.02295	0.02815	0.17825
	B	0.02018	0.02822	0.17669
	C	0.01085	0.01405	0.09400
	C	0.00448	0.00769	0.08793
sky130_fd_sc_hs__xor3_2	A	0.02708	0.02938	0.10424
	A	0.02201	0.02434	0.09957
	B	0.02567	0.03089	0.17991
	B	0.01428	0.01954	0.16914
	C	0.01365	0.01682	0.09884
	C	0.00729	0.01048	0.09293
sky130_fd_sc_hs__xor3_4	A	0.03351	0.03563	0.11040
	A	0.02835	0.03050	0.10567
	B	0.03203	0.03683	0.18550
	B	0.02063	0.02547	0.17478
	C	0.02015	0.02253	0.10471
	C	0.01385	0.01632	0.09935

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01898	0.02197	0.09529
	A	0.02420	0.02719	0.10047
	B	0.02163	0.02646	0.17561
	B	0.02161	0.02852	0.17591
	C	0.00330	0.00793	0.09185
	C	0.00968	0.01426	0.09695
sky130_fd_sc_hs__xor3_2	A	0.02338	0.02471	0.10205
	A	0.02845	0.02979	0.10234
	B	0.01381	0.01947	0.16604
	B	0.02516	0.03086	0.17735
	C	0.00673	0.01067	0.09780
	C	0.01309	0.01692	0.09955
sky130_fd_sc_hs__xor3_4	A	0.03533	0.03187	0.10393
	A	0.04048	0.03713	0.10889
	B	0.02480	0.02626	0.17283
	B	0.03617	0.03773	0.18363
	C	0.01736	0.01708	0.09981
	C	0.02367	0.02336	0.10598