sky130_fd_sc_hs_ff_1.56v_-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_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00260	0.00249	0.00260	0.00273	0.00272	0.27728
sky130_fd_sc_hs__a2111oi_2	0.00491	0.00473	0.00394	0.00396	0.00396	0.49142
sky130_fd_sc_hs__a2111oi_4	0.00975	0.00948	0.00769	0.00756	0.00774	0.89781

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111oi_1	0.00000	0.00643	0.03242
sky130_fd_sc_hs__a2111oi_2	0.00000	0.01268	0.06484
sky130_fd_sc_hs__a2111oi_4	0.00000	0.02537	0.12968

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)	0.20111	1.25674	10.61390
	A2->Y (FR)	0.24063	1.32222	10.84520
	B1->Y (FR)	0.22411	1.30908	11.24150
	C1->Y (FR)	0.19558	1.29552	11.55550
	D1->Y (FR)	0.15157	1.21589	11.06430
sky130_fd_sc_hs__a2111oi_2	A1->Y (FR)	0.18705	1.09319	10.55950
	A2->Y (FR)	0.23631	1.15231	10.70170
	B1->Y (FR)	0.21076	1.13182	11.06070
	C1->Y (FR)	0.17957	1.12126	11.49240
	D1->Y (FR)	0.11443	1.02266	10.96810
sky130_fd_sc_hs__a2111oi_4	A1->Y (FR)	0.17862	0.93808	10.32430
	A2->Y (FR)	0.23211	1.00589	10.56560
	B1->Y (FR)	0.20720	0.99076	10.99570
	C1->Y (FR)	0.17148	0.97579	11.43370
	D1->Y (FR)	0.10720	0.88491	10.96880

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111oi_1	A1->Y (RF)	0.02345	0.27190	2.15893
	A2->Y (RF)	0.02638	0.26279	2.07268
	B1->Y (RF)	0.01976	0.22691	1.75692
	C1->Y (RF)	0.01981	0.22026	1.74417
	D1->Y (RF)	0.01761	0.21224	1.72824
sky130_fd_sc_hs__a2111oi_2	A1->Y (RF)	0.02075	0.24523	2.23187
	A2->Y (RF)	0.02531	0.23356	2.07827
	B1->Y (RF)	0.02764	0.30422	2.93112
	C1->Y (RF)	0.02659	0.29228	2.90470
	D1->Y (RF)	0.02103	0.27723	2.88146
sky130_fd_sc_hs__a2111oi_4	A1->Y (RF)	0.02180	0.22215	2.32011
	A2->Y (RF)	0.02564	0.19526	1.95101
	B1->Y (RF)	0.02452	0.24843	2.67642
	C1->Y (RF)	0.02359	0.23414	2.64813
	D1->Y (RF)	0.01849	0.22264	2.69589

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111oi_1	A1	0.00033	0.00015	0.00075
	A1	0.00636	0.00621	0.00682
	A2	0.00062	0.00051	0.00110
	A2	0.00750	0.00739	0.00800
	B1	0.00025	0.00012	0.00108
	B1	0.00672	0.00656	0.00743
	C1	0.00023	0.00009	0.00146
	C1	0.00607	0.00590	0.00718
	D1	0.00015	0.00037	0.00477
	D1	0.00415	0.00438	0.00879
sky130_fd_sc_hs__a2111oi_2	A1	0.00005	-0.00024	0.00089
	A1	0.01135	0.01109	0.01227
	A2	0.00118	0.00089	0.00200
	A2	0.01409	0.01382	0.01496
	B1	0.00067	0.00053	0.00154
	B1	0.01225	0.01208	0.01298
	C1	0.00075	0.00062	0.00212
	C1	0.01087	0.01069	0.01209
	D1	0.00060	0.00107	0.00682
	D1	0.00935	0.00970	0.01497

sky130_fd_sc_hs__a2111oi_4	**A1**	-0.00053	-0.00111	0.00125
	A1	0.02217	0.02163	0.02403
	A2	0.00151	0.00097	0.00327
	A2	0.02745	0.02687	0.02928
	B1	0.00082	0.00058	0.00267
	B1	0.02376	0.02343	0.02533
	C1	0.00089	0.00069	0.00389
	C1	0.02089	0.02060	0.02348
	D1	0.00059	0.00150	0.01281
	D1	0.01782	0.01849	0.02891

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**A1**	0.00832	0.00819	0.00947
	A1	0.00248	0.00233	0.00364
	A2	0.00918	0.00903	0.00985
	A2	0.00246	0.00230	0.00316
	B1	0.00734	0.00730	0.00871
	B1	0.00137	0.00128	0.00281
	C1	0.00608	0.00612	0.00754
	C1	0.00073	0.00069	0.00221
	D1	0.00402	0.00409	0.00563
	D1	0.00002	0.00008	0.00162

sky130_fd_sc_hs__a2111oi_2	**A1**	0.01548	0.01514	0.01764
	A1	0.00460	0.00423	0.00680
	A2	0.01713	0.01680	0.01838
	A2	0.00454	0.00417	0.00586
	B1	0.01270	0.01255	0.01429
	B1	0.00243	0.00222	0.00410
	C1	0.00999	0.00995	0.01174
	C1	0.00111	0.00098	0.00285
	D1	0.00502	0.00516	0.00710
	D1	-0.00087	-0.00073	0.00121
sky130_fd_sc_hs__a2111oi_4	**A1**	0.03027	0.02956	0.03457
	A1	0.00843	0.00768	0.01278
	A2	0.03363	0.03295	0.03635
	A2	0.00833	0.00761	0.01117
	B1	0.02490	0.02452	0.02827
	B1	0.00437	0.00389	0.00788
	C1	0.01944	0.01932	0.02313
	C1	0.00169	0.00144	0.00545
	D1	0.00992	0.01022	0.01429
	D1	-0.00179	-0.00154	0.00255

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)**	0.00118	0.00119	0.00118
	(A2 * B1 * D1 * !Y)	-0.00128	-0.00134	-0.00134
	(A2 * B1 * C1 * !D1 * !Y)	0.00118	0.00119	0.00118
	(A2 * B1 * C1 * !D1 * !Y)	-0.00128	-0.00134	-0.00134
	(A2 * B1 * !C1 * !D1 * !Y)	0.00118	0.00119	0.00118
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00128	-0.00134	-0.00134
	(A2 * !B1 * C1 * D1 * !Y)	0.00118	0.00118	0.00118
	(A2 * !B1 * C1 * D1 * !Y)	-0.00122	-0.00130	-0.00130
	(A2 * !B1 * C1 * !D1 * !Y)	0.00118	0.00118	0.00118
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00122	-0.00130	-0.00130
	(A2 * !B1 * !C1 * D1 * !Y)	0.00118	0.00119	0.00118
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00119	-0.00130	-0.00128
	(!A2 * B1 * D1 * !Y)	0.00113	0.00114	0.00113
	(!A2 * B1 * D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * B1 * C1 * !D1 * !Y)	0.00112	0.00113	0.00112
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00112	0.00113	0.00112
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * C1 * D1 * !Y)	0.00111	0.00113	0.00112
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00111	0.00113	0.00112
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00112	0.00114	0.00112
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00160	-0.00160	-0.00163

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	0.00234	0.00238	0.00235
	(A2 * B1 * D1 * !Y)	-0.00257	-0.00269	-0.00268
	(A2 * B1 * C1 * !D1 * !Y)	0.00235	0.00238	0.00235
	(A2 * B1 * C1 * !D1 * !Y)	-0.00257	-0.00269	-0.00268
	(A2 * B1 * !C1 * !D1 * !Y)	0.00235	0.00238	0.00235
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00255	-0.00269	-0.00267
	(A2 * !B1 * C1 * D1 * !Y)	0.00235	0.00237	0.00235
	(A2 * !B1 * C1 * D1 * !Y)	-0.00240	-0.00260	-0.00258
	(A2 * !B1 * C1 * !D1 * !Y)	0.00235	0.00237	0.00235
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00241	-0.00260	-0.00258
	(A2 * !B1 * !C1 * D1 * !Y)	0.00236	0.00238	0.00235
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00238	-0.00258	-0.00254
	(!A2 * B1 * D1 * !Y)	0.00226	0.00229	0.00227
	(!A2 * B1 * D1 * !Y)	-0.00273	-0.00276	-0.00274
	(!A2 * B1 * C1 * !D1 * !Y)	0.00226	0.00228	0.00227
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00273	-0.00274	-0.00274
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00224	0.00225	0.00225
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00274	-0.00274	-0.00274
	(!A2 * !B1 * C1 * D1 * !Y)	0.00226	0.00230	0.00228
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00273	-0.00276	-0.00274
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00223	0.00225	0.00224
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00273	-0.00275	-0.00274
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00223	0.00225	0.00224
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00273	-0.00275	-0.00274
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00079	0.00079	0.00076
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00318	-0.00320	-0.00326

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	0.00471	0.00477	0.00472
	(A2 * B1 * D1 * !Y)	-0.00513	-0.00539	-0.00536
	(A2 * B1 * C1 * !D1 * !Y)	0.00471	0.00477	0.00472
	(A2 * B1 * C1 * !D1 * !Y)	-0.00513	-0.00539	-0.00535
	(A2 * B1 * !C1 * !D1 * !Y)	0.00473	0.00477	0.00472
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00513	-0.00535	-0.00536
	(A2 * !B1 * C1 * D1 * !Y)	0.00473	0.00476	0.00472
	(A2 * !B1 * C1 * D1 * !Y)	-0.00487	-0.00523	-0.00520
	(A2 * !B1 * C1 * !D1 * !Y)	0.00473	0.00476	0.00472
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00486	-0.00521	-0.00520
	(A2 * !B1 * !C1 * D1 * !Y)	0.00475	0.00477	0.00473
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00478	-0.00518	-0.00511
	(!A2 * B1 * D1 * !Y)	0.00452	0.00458	0.00454
	(!A2 * B1 * D1 * !Y)	-0.00548	-0.00553	-0.00550
	(!A2 * B1 * C1 * !D1 * !Y)	0.00453	0.00459	0.00454
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00549	-0.00553	-0.00550
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00453	0.00461	0.00455
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00548	-0.00554	-0.00550
	(!A2 * !B1 * C1 * D1 * !Y)	0.00454	0.00460	0.00456
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00547	-0.00553	-0.00550
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00454	0.00460	0.00456
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00549	-0.00553	-0.00550
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00454	0.00455	0.00456
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00549	-0.00549	-0.00550
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00152	0.00152	0.00146
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00647	-0.00647	-0.00658

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)**	-0.00118	-0.00118	-0.00118
	(A2 * B1 * D1 * !Y)	0.00134	0.00134	0.00134
	(A2 * B1 * C1 * !D1 * !Y)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * C1 * !D1 * !Y)	0.00134	0.00134	0.00134
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * !C1 * !D1 * !Y)	0.00134	0.00134	0.00134
	(A2 * !B1 * C1 * D1 * !Y)	-0.00117	-0.00118	-0.00118
	(A2 * !B1 * C1 * D1 * !Y)	0.00130	0.00130	0.00130
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00117	-0.00118	-0.00118
	(A2 * !B1 * C1 * !D1 * !Y)	0.00130	0.00130	0.00130
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * !C1 * D1 * !Y)	0.00128	0.00130	0.00128
	(!A2 * B1 * D1 * !Y)	-0.00108	-0.00112	-0.00113
	(!A2 * B1 * D1 * !Y)	0.00137	0.00138	0.00138
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00108	-0.00112	-0.00112
	(!A2 * B1 * C1 * !D1 * !Y)	0.00137	0.00138	0.00138
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00108	-0.00112	-0.00112
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00137	0.00138	0.00138
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00108	-0.00112	-0.00112
	(!A2 * !B1 * C1 * D1 * !Y)	0.00137	0.00138	0.00138
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00108	-0.00112	-0.00112
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00137	0.00139	0.00138
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00108	-0.00112	-0.00112
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00137	0.00139	0.00138
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00163	0.00165	0.00163

sky130_fd_sc_hs__a2111oi_2	**(A2 * B1 * D1 * !Y)**	-0.00234	-0.00235	-0.00235
	(A2 * B1 * D1 * !Y)	0.00268	0.00269	0.00268
	(A2 * B1 * C1 * !D1 * !Y)	-0.00235	-0.00235	-0.00235
	(A2 * B1 * C1 * !D1 * !Y)	0.00268	0.00269	0.00268
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00235	-0.00235	-0.00235
	(A2 * B1 * !C1 * !D1 * !Y)	0.00267	0.00269	0.00267
	(A2 * !B1 * C1 * D1 * !Y)	-0.00234	-0.00236	-0.00235
	(A2 * !B1 * C1 * D1 * !Y)	0.00258	0.00260	0.00258
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00234	-0.00236	-0.00235
	(A2 * !B1 * C1 * !D1 * !Y)	0.00258	0.00260	0.00258
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00235	-0.00236	-0.00235
	(A2 * !B1 * !C1 * D1 * !Y)	0.00254	0.00258	0.00254
	(!A2 * B1 * D1 * !Y)	-0.00214	-0.00226	-0.00227
	(!A2 * B1 * D1 * !Y)	0.00273	0.00276	0.00275
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00213	-0.00226	-0.00227
	(!A2 * B1 * C1 * !D1 * !Y)	0.00273	0.00276	0.00275
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00213	-0.00225	-0.00225
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00275	0.00274	0.00275
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00213	-0.00226	-0.00227
	(!A2 * !B1 * C1 * D1 * !Y)	0.00273	0.00276	0.00275
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00213	-0.00225	-0.00224
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00275	0.00277	0.00275
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00213	-0.00225	-0.00224
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00275	0.00277	0.00275
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00075	-0.00075	-0.00074
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00327	0.00331	0.00326

sky130_fd_sc_hs__a2111oi_4	**(A2 * B1 * D1 * !Y)**	-0.00471	-0.00473	-0.00471
	(A2 * B1 * D1 * !Y)	0.00536	0.00539	0.00536
	(A2 * B1 * C1 * !D1 * !Y)	-0.00471	-0.00473	-0.00471
	(A2 * B1 * C1 * !D1 * !Y)	0.00536	0.00539	0.00535
	(A2 * B1 * !C1 * !D1 * !Y)	-0.00472	-0.00471	-0.00471
	(A2 * B1 * !C1 * !D1 * !Y)	0.00536	0.00535	0.00536
	(A2 * !B1 * C1 * D1 * !Y)	-0.00471	-0.00473	-0.00471
	(A2 * !B1 * C1 * D1 * !Y)	0.00518	0.00523	0.00520
	(A2 * !B1 * C1 * !D1 * !Y)	-0.00472	-0.00472	-0.00471
	(A2 * !B1 * C1 * !D1 * !Y)	0.00521	0.00521	0.00520
	(A2 * !B1 * !C1 * D1 * !Y)	-0.00473	-0.00475	-0.00472
	(A2 * !B1 * !C1 * D1 * !Y)	0.00513	0.00518	0.00511
	(!A2 * B1 * D1 * !Y)	-0.00428	-0.00455	-0.00454
	(!A2 * B1 * D1 * !Y)	0.00549	0.00553	0.00551
	(!A2 * B1 * C1 * !D1 * !Y)	-0.00428	-0.00455	-0.00454
	(!A2 * B1 * C1 * !D1 * !Y)	0.00549	0.00553	0.00551
	(!A2 * B1 * !C1 * !D1 * !Y)	-0.00428	-0.00458	-0.00455
	(!A2 * B1 * !C1 * !D1 * !Y)	0.00552	0.00556	0.00551
	(!A2 * !B1 * C1 * D1 * !Y)	-0.00426	-0.00458	-0.00455
	(!A2 * !B1 * C1 * D1 * !Y)	0.00547	0.00556	0.00551
	(!A2 * !B1 * C1 * !D1 * !Y)	-0.00428	-0.00460	-0.00455
	(!A2 * !B1 * C1 * !D1 * !Y)	0.00552	0.00555	0.00551
	(!A2 * !B1 * !C1 * D1 * !Y)	-0.00426	-0.00455	-0.00455
	(!A2 * !B1 * !C1 * D1 * !Y)	0.00550	0.00555	0.00551
	(!A2 * !B1 * !C1 * !D1 * Y)	-0.00143	-0.00145	-0.00143
	(!A2 * !B1 * !C1 * !D1 * Y)	0.00658	0.00669	0.00659

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)**	0.00125	0.00126	0.00125
	(A1 * B1 * D1 * !Y)	-0.00129	-0.00135	-0.00135
	(A1 * B1 * C1 * !D1 * !Y)	0.00125	0.00126	0.00125
	(A1 * B1 * C1 * !D1 * !Y)	-0.00129	-0.00135	-0.00135
	(A1 * B1 * !C1 * !D1 * !Y)	0.00125	0.00126	0.00125
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00129	-0.00135	-0.00135
	(A1 * !B1 * C1 * D1 * !Y)	0.00125	0.00125	0.00125
	(A1 * !B1 * C1 * D1 * !Y)	-0.00123	-0.00131	-0.00131
	(A1 * !B1 * C1 * !D1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00123	-0.00131	-0.00131
	(A1 * !B1 * !C1 * D1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00120	-0.00130	-0.00129
	(!A1 * B1 * !Y)	0.00119	0.00121	0.00120
	(!A1 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * C1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00237	0.00239	0.00237
	(A1 * B1 * D1 * !Y)	-0.00257	-0.00268	-0.00267
	(A1 * B1 * C1 * !D1 * !Y)	0.00237	0.00239	0.00237
	(A1 * B1 * C1 * !D1 * !Y)	-0.00257	-0.00268	-0.00267
	(A1 * B1 * !C1 * !D1 * !Y)	0.00237	0.00239	0.00237
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00256	-0.00268	-0.00267
	(A1 * !B1 * C1 * D1 * !Y)	0.00237	0.00239	0.00237
	(A1 * !B1 * C1 * D1 * !Y)	-0.00242	-0.00259	-0.00258
	(A1 * !B1 * C1 * !D1 * !Y)	0.00237	0.00239	0.00237
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00242	-0.00259	-0.00258
	(A1 * !B1 * !C1 * D1 * !Y)	0.00238	0.00239	0.00237
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00238	-0.00258	-0.00255
	(!A1 * B1 * !Y)	0.00227	0.00230	0.00228
	(!A1 * B1 * !Y)	-0.00272	-0.00273	-0.00273
	(!A1 * !B1 * C1 * !Y)	0.00227	0.00229	0.00228
	(!A1 * !B1 * C1 * !Y)	-0.00272	-0.00273	-0.00273
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00227	0.00229	0.00228
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00272	-0.00273	-0.00273
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00227	0.00230	0.00228
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00272	-0.00274	-0.00273

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00476	0.00480	0.00475
	(A1 * B1 * D1 * !Y)	-0.00514	-0.00537	-0.00535
	(A1 * B1 * C1 * !D1 * !Y)	0.00477	0.00480	0.00475
	(A1 * B1 * C1 * !D1 * !Y)	-0.00514	-0.00537	-0.00535
	(A1 * B1 * !C1 * !D1 * !Y)	0.00477	0.00480	0.00475
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00512	-0.00537	-0.00535
	(A1 * !B1 * C1 * D1 * !Y)	0.00474	0.00480	0.00475
	(A1 * !B1 * C1 * D1 * !Y)	-0.00484	-0.00521	-0.00518
	(A1 * !B1 * C1 * !D1 * !Y)	0.00474	0.00480	0.00475
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00484	-0.00520	-0.00519
	(A1 * !B1 * !C1 * D1 * !Y)	0.00476	0.00480	0.00476
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00476	-0.00516	-0.00510
	(!A1 * B1 * !Y)	0.00455	0.00458	0.00457
	(!A1 * B1 * !Y)	-0.00547	-0.00550	-0.00549
	(!A1 * !B1 * C1 * !Y)	0.00451	0.00458	0.00453
	(!A1 * !B1 * C1 * !Y)	-0.00548	-0.00552	-0.00549
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00454	0.00456	0.00455
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00548	-0.00549	-0.00549
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00451	0.00456	0.00452
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00548	-0.00552	-0.00549

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)**	-0.00125	-0.00125	-0.00125
	(A1 * B1 * D1 * !Y)	0.00135	0.00135	0.00135
	(A1 * B1 * C1 * !D1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * C1 * !D1 * !Y)	0.00135	0.00135	0.00135
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * !C1 * !D1 * !Y)	0.00135	0.00135	0.00135
	(A1 * !B1 * C1 * D1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !B1 * C1 * D1 * !Y)	0.00132	0.00131	0.00131
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !B1 * C1 * !D1 * !Y)	0.00132	0.00131	0.00131
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00125	-0.00125	-0.00124
	(A1 * !B1 * !C1 * D1 * !Y)	0.00130	0.00130	0.00129
	(!A1 * B1 * !Y)	-0.00116	-0.00121	-0.00120
	(!A1 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * !B1 * C1 * !Y)	-0.00116	-0.00120	-0.00119
	(!A1 * !B1 * C1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00116	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00114	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00142	0.00140	0.00139

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00235	-0.00237	-0.00236
	(A1 * B1 * D1 * !Y)	0.00265	0.00268	0.00267
	(A1 * B1 * C1 * !D1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * B1 * C1 * !D1 * !Y)	0.00267	0.00268	0.00267
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * B1 * !C1 * !D1 * !Y)	0.00267	0.00268	0.00267
	(A1 * !B1 * C1 * D1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * !B1 * C1 * D1 * !Y)	0.00257	0.00259	0.00258
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * !B1 * C1 * !D1 * !Y)	0.00257	0.00259	0.00258
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00236	-0.00238	-0.00236
	(A1 * !B1 * !C1 * D1 * !Y)	0.00254	0.00258	0.00255
	(!A1 * B1 * !Y)	-0.00217	-0.00226	-0.00228
	(!A1 * B1 * !Y)	0.00272	0.00273	0.00274
	(!A1 * !B1 * C1 * !Y)	-0.00217	-0.00226	-0.00228
	(!A1 * !B1 * C1 * !Y)	0.00272	0.00273	0.00274
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00217	-0.00226	-0.00228
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00272	0.00273	0.00274
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00213	-0.00227	-0.00228
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00278	0.00277	0.00274

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00475	-0.00475	-0.00474
	(A1 * B1 * D1 * !Y)	0.00535	0.00537	0.00535
	(A1 * B1 * C1 * !D1 * !Y)	-0.00475	-0.00475	-0.00474
	(A1 * B1 * C1 * !D1 * !Y)	0.00535	0.00537	0.00535
	(A1 * B1 * !C1 * !D1 * !Y)	-0.00473	-0.00475	-0.00474
	(A1 * B1 * !C1 * !D1 * !Y)	0.00532	0.00537	0.00535
	(A1 * !B1 * C1 * D1 * !Y)	-0.00474	-0.00475	-0.00474
	(A1 * !B1 * C1 * D1 * !Y)	0.00517	0.00521	0.00518
	(A1 * !B1 * C1 * !D1 * !Y)	-0.00474	-0.00475	-0.00474
	(A1 * !B1 * C1 * !D1 * !Y)	0.00517	0.00520	0.00519
	(A1 * !B1 * !C1 * D1 * !Y)	-0.00474	-0.00478	-0.00475
	(A1 * !B1 * !C1 * D1 * !Y)	0.00509	0.00516	0.00510
	(!A1 * B1 * !Y)	-0.00435	-0.00452	-0.00457
	(!A1 * B1 * !Y)	0.00548	0.00552	0.00550
	(!A1 * !B1 * C1 * !Y)	-0.00435	-0.00452	-0.00453
	(!A1 * !B1 * C1 * !Y)	0.00548	0.00552	0.00550
	(!A1 * !B1 * !C1 * D1 * !Y)	-0.00435	-0.00452	-0.00455
	(!A1 * !B1 * !C1 * D1 * !Y)	0.00548	0.00552	0.00550
	(!A1 * !B1 * !C1 * !D1 * Y)	-0.00425	-0.00454	-0.00452
	(!A1 * !B1 * !C1 * !D1 * Y)	0.00562	0.00557	0.00551

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)**	0.00124	0.00125	0.00123
	(A1 * A2 * C1 * D1 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * C1 * !D1 * !Y)	0.00123	0.00124	0.00123
	(A1 * A2 * C1 * !D1 * !Y)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * !C1 * D1 * !Y)	0.00123	0.00125	0.00123
	(A1 * A2 * !C1 * D1 * !Y)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !C1 * !D1 * !Y)	0.00122	0.00123	0.00122
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00078	-0.00079	-0.00078
	(A1 * !A2 * C1 * D1 * !Y)	0.00122	0.00123	0.00122
	(A1 * !A2 * C1 * D1 * !Y)	-0.00128	-0.00132	-0.00132
	(A1 * !A2 * C1 * !D1 * !Y)	0.00123	0.00123	0.00122
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00125	-0.00133	-0.00132
	(A1 * !A2 * !C1 * D1 * !Y)	0.00123	0.00122	0.00122
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00116	-0.00128	-0.00127
	(!A1 * C1 * D1 * !Y)	0.00122	0.00122	0.00122
	(!A1 * C1 * D1 * !Y)	-0.00128	-0.00132	-0.00132
	(!A1 * C1 * !D1 * !Y)	0.00123	0.00122	0.00122
	(!A1 * C1 * !D1 * !Y)	-0.00126	-0.00133	-0.00132
	(!A1 * !C1 * D1 * !Y)	0.00123	0.00122	0.00122
	(!A1 * !C1 * D1 * !Y)	-0.00117	-0.00129	-0.00127

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	0.00139	0.00142	0.00139
	(A1 * A2 * C1 * D1 * !Y)	-0.00194	-0.00197	-0.00195
	(A1 * A2 * C1 * !D1 * !Y)	0.00139	0.00142	0.00139
	(A1 * A2 * C1 * !D1 * !Y)	-0.00187	-0.00190	-0.00188
	(A1 * A2 * !C1 * D1 * !Y)	0.00140	0.00141	0.00141
	(A1 * A2 * !C1 * D1 * !Y)	-0.00184	-0.00184	-0.00183
	(A1 * A2 * !C1 * !D1 * !Y)	0.00138	0.00140	0.00139
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00155	-0.00157	-0.00155
	(A1 * !A2 * C1 * D1 * !Y)	0.00139	0.00139	0.00139
	(A1 * !A2 * C1 * D1 * !Y)	-0.00255	-0.00265	-0.00264
	(A1 * !A2 * C1 * !D1 * !Y)	0.00141	0.00139	0.00139
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00252	-0.00264	-0.00264
	(A1 * !A2 * !C1 * D1 * !Y)	0.00142	0.00140	0.00139
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00236	-0.00255	-0.00254
	(!A1 * C1 * D1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * C1 * D1 * !Y)	-0.00255	-0.00266	-0.00265
	(!A1 * C1 * !D1 * !Y)	0.00141	0.00139	0.00139
	(!A1 * C1 * !D1 * !Y)	-0.00252	-0.00266	-0.00265
	(!A1 * !C1 * D1 * !Y)	0.00142	0.00140	0.00139
	(!A1 * !C1 * D1 * !Y)	-0.00237	-0.00255	-0.00254

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	0.00267	0.00270	0.00267
	(A1 * A2 * C1 * D1 * !Y)	-0.00402	-0.00403	-0.00400
	(A1 * A2 * C1 * !D1 * !Y)	0.00267	0.00270	0.00267
	(A1 * A2 * C1 * !D1 * !Y)	-0.00385	-0.00390	-0.00386
	(A1 * A2 * !C1 * D1 * !Y)	0.00270	0.00271	0.00270
	(A1 * A2 * !C1 * D1 * !Y)	-0.00372	-0.00375	-0.00372
	(A1 * A2 * !C1 * !D1 * !Y)	0.00268	0.00269	0.00267
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00326	-0.00326	-0.00323
	(A1 * !A2 * C1 * D1 * !Y)	0.00268	0.00268	0.00266
	(A1 * !A2 * C1 * D1 * !Y)	-0.00525	-0.00544	-0.00545
	(A1 * !A2 * C1 * !D1 * !Y)	0.00272	0.00268	0.00266
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00515	-0.00548	-0.00545
	(A1 * !A2 * !C1 * D1 * !Y)	0.00273	0.00269	0.00267
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00482	-0.00522	-0.00520
	(!A1 * C1 * D1 * !Y)	0.00267	0.00267	0.00266
	(!A1 * C1 * D1 * !Y)	-0.00524	-0.00542	-0.00545
	(!A1 * C1 * !D1 * !Y)	0.00272	0.00268	0.00266
	(!A1 * C1 * !D1 * !Y)	-0.00517	-0.00548	-0.00545
	(!A1 * !C1 * D1 * !Y)	0.00273	0.00269	0.00267
	(!A1 * !C1 * D1 * !Y)	-0.00484	-0.00522	-0.00521

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)**	-0.00123	-0.00123	-0.00123
	(A1 * A2 * C1 * D1 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * C1 * !D1 * !Y)	-0.00123	-0.00123	-0.00122
	(A1 * A2 * C1 * !D1 * !Y)	0.00096	0.00096	0.00095
	(A1 * A2 * !C1 * D1 * !Y)	-0.00122	-0.00123	-0.00122
	(A1 * A2 * !C1 * D1 * !Y)	0.00091	0.00092	0.00091
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00115	-0.00116	-0.00116
	(A1 * A2 * !C1 * !D1 * !Y)	0.00083	0.00084	0.00083
	(A1 * !A2 * C1 * D1 * !Y)	-0.00122	-0.00121	-0.00121
	(A1 * !A2 * C1 * D1 * !Y)	0.00132	0.00132	0.00132
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00122	-0.00122	-0.00121
	(A1 * !A2 * C1 * !D1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !C1 * D1 * !Y)	0.00126	0.00128	0.00127
	(!A1 * C1 * D1 * !Y)	-0.00122	-0.00121	-0.00121
	(!A1 * C1 * D1 * !Y)	0.00132	0.00132	0.00132
	(!A1 * C1 * !D1 * !Y)	-0.00121	-0.00122	-0.00121
	(!A1 * C1 * !D1 * !Y)	0.00131	0.00133	0.00132
	(!A1 * !C1 * D1 * !Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !C1 * D1 * !Y)	0.00126	0.00129	0.00127

sky130_fd_sc_hs__a2111oi_2	**(A1 * A2 * C1 * D1 * !Y)**	-0.00138	-0.00139	-0.00139
	(A1 * A2 * C1 * D1 * !Y)	0.00194	0.00197	0.00195
	(A1 * A2 * C1 * !D1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * C1 * !D1 * !Y)	0.00187	0.00190	0.00188
	(A1 * A2 * !C1 * D1 * !Y)	-0.00140	-0.00140	-0.00140
	(A1 * A2 * !C1 * D1 * !Y)	0.00184	0.00184	0.00183
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00126	-0.00127	-0.00125
	(A1 * A2 * !C1 * !D1 * !Y)	0.00169	0.00171	0.00169
	(A1 * !A2 * C1 * D1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * C1 * D1 * !Y)	0.00264	0.00265	0.00264
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00138	-0.00138	-0.00138
	(A1 * !A2 * C1 * !D1 * !Y)	0.00264	0.00264	0.00264
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * !A2 * !C1 * D1 * !Y)	0.00254	0.00255	0.00254
	(!A1 * C1 * D1 * !Y)	-0.00139	-0.00139	-0.00138
	(!A1 * C1 * D1 * !Y)	0.00264	0.00266	0.00265
	(!A1 * C1 * !D1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * C1 * !D1 * !Y)	0.00264	0.00266	0.00265
	(!A1 * !C1 * D1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * !C1 * D1 * !Y)	0.00254	0.00255	0.00254

sky130_fd_sc_hs__a2111oi_4	**(A1 * A2 * C1 * D1 * !Y)**	-0.00267	-0.00267	-0.00266
	(A1 * A2 * C1 * D1 * !Y)	0.00402	0.00403	0.00400
	(A1 * A2 * C1 * !D1 * !Y)	-0.00266	-0.00268	-0.00266
	(A1 * A2 * C1 * !D1 * !Y)	0.00385	0.00390	0.00386
	(A1 * A2 * !C1 * D1 * !Y)	-0.00268	-0.00270	-0.00269
	(A1 * A2 * !C1 * D1 * !Y)	0.00372	0.00375	0.00372
	(A1 * A2 * !C1 * !D1 * !Y)	-0.00243	-0.00244	-0.00240
	(A1 * A2 * !C1 * !D1 * !Y)	0.00344	0.00346	0.00346
	(A1 * !A2 * C1 * D1 * !Y)	-0.00265	-0.00265	-0.00266
	(A1 * !A2 * C1 * D1 * !Y)	0.00543	0.00544	0.00545
	(A1 * !A2 * C1 * !D1 * !Y)	-0.00265	-0.00267	-0.00266
	(A1 * !A2 * C1 * !D1 * !Y)	0.00543	0.00549	0.00545
	(A1 * !A2 * !C1 * D1 * !Y)	-0.00267	-0.00268	-0.00267
	(A1 * !A2 * !C1 * D1 * !Y)	0.00518	0.00522	0.00520
	(!A1 * C1 * D1 * !Y)	-0.00265	-0.00265	-0.00266
	(!A1 * C1 * D1 * !Y)	0.00543	0.00542	0.00545
	(!A1 * C1 * !D1 * !Y)	-0.00265	-0.00267	-0.00266
	(!A1 * C1 * !D1 * !Y)	0.00543	0.00549	0.00545
	(!A1 * !C1 * D1 * !Y)	-0.00266	-0.00268	-0.00267
	(!A1 * !C1 * D1 * !Y)	0.00519	0.00522	0.00521

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)**	0.00131	0.00132	0.00129
	(A1 * B1 * D1 * !Y)	-0.00085	-0.00085	-0.00085
	(A1 * B1 * !D1 * !Y)	0.00128	0.00130	0.00128
	(A1 * B1 * !D1 * !Y)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * !B1 * D1 * !Y)	0.00136	0.00130	0.00129
	(A1 * A2 * !B1 * D1 * !Y)	-0.00091	-0.00091	-0.00091
	(A1 * A2 * !B1 * !D1 * !Y)	0.00129	0.00130	0.00128
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * !B1 * D1 * !Y)	0.00147	0.00130	0.00128
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00107	-0.00128	-0.00128
	(!A1 * B1 * D1 * !Y)	0.00132	0.00133	0.00129
	(!A1 * B1 * D1 * !Y)	-0.00085	-0.00085	-0.00085
	(!A1 * B1 * !D1 * !Y)	0.00129	0.00130	0.00128
	(!A1 * B1 * !D1 * !Y)	-0.00074	-0.00074	-0.00074
	(!A1 * !B1 * D1 * !Y)	0.00147	0.00130	0.00128
	(!A1 * !B1 * D1 * !Y)	-0.00107	-0.00128	-0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	0.00135	0.00138	0.00135
	(A1 * B1 * D1 * !Y)	-0.00180	-0.00182	-0.00180
	(A1 * B1 * !D1 * !Y)	0.00133	0.00134	0.00132
	(A1 * B1 * !D1 * !Y)	-0.00161	-0.00162	-0.00160
	(A1 * A2 * !B1 * D1 * !Y)	0.00139	0.00135	0.00133
	(A1 * A2 * !B1 * D1 * !Y)	-0.00193	-0.00192	-0.00192
	(A1 * A2 * !B1 * !D1 * !Y)	0.00133	0.00135	0.00133
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00160	-0.00161	-0.00159
	(A1 * !A2 * !B1 * D1 * !Y)	0.00167	0.00134	0.00132
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00232	-0.00273	-0.00273
	(!A1 * B1 * D1 * !Y)	0.00135	0.00139	0.00135
	(!A1 * B1 * D1 * !Y)	-0.00181	-0.00183	-0.00182
	(!A1 * B1 * !D1 * !Y)	0.00133	0.00134	0.00133
	(!A1 * B1 * !D1 * !Y)	-0.00161	-0.00162	-0.00161
	(!A1 * !B1 * D1 * !Y)	0.00167	0.00134	0.00132
	(!A1 * !B1 * D1 * !Y)	-0.00232	-0.00274	-0.00273

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	0.00263	0.00269	0.00262
	(A1 * B1 * D1 * !Y)	-0.00355	-0.00359	-0.00356
	(A1 * B1 * !D1 * !Y)	0.00259	0.00261	0.00257
	(A1 * B1 * !D1 * !Y)	-0.00314	-0.00317	-0.00315
	(A1 * A2 * !B1 * D1 * !Y)	0.00281	0.00262	0.00258
	(A1 * A2 * !B1 * D1 * !Y)	-0.00376	-0.00378	-0.00375
	(A1 * A2 * !B1 * !D1 * !Y)	0.00263	0.00264	0.00258
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00313	-0.00313	-0.00313
	(A1 * !A2 * !B1 * D1 * !Y)	0.00344	0.00259	0.00255
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00438	-0.00533	-0.00534
	(!A1 * B1 * D1 * !Y)	0.00266	0.00270	0.00263
	(!A1 * B1 * D1 * !Y)	-0.00356	-0.00361	-0.00358
	(!A1 * B1 * !D1 * !Y)	0.00261	0.00262	0.00257
	(!A1 * B1 * !D1 * !Y)	-0.00316	-0.00316	-0.00315
	(!A1 * !B1 * D1 * !Y)	0.00343	0.00258	0.00255
	(!A1 * !B1 * D1 * !Y)	-0.00438	-0.00533	-0.00534

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)**	-0.00128	-0.00128	-0.00128
	(A1 * B1 * D1 * !Y)	0.00085	0.00085	0.00085
	(A1 * B1 * !D1 * !Y)	-0.00128	-0.00128	-0.00127
	(A1 * B1 * !D1 * !Y)	0.00076	0.00076	0.00076
	(A1 * A2 * !B1 * D1 * !Y)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !B1 * D1 * !Y)	0.00091	0.00091	0.00091
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00120	-0.00121	-0.00127
	(A1 * A2 * !B1 * !D1 * !Y)	0.00079	0.00080	0.00075
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * D1 * !Y)	0.00127	0.00128	0.00128
	(!A1 * B1 * D1 * !Y)	-0.00128	-0.00128	-0.00128
	(!A1 * B1 * D1 * !Y)	0.00085	0.00085	0.00085
	(!A1 * B1 * !D1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !D1 * !Y)	0.00075	0.00076	0.00076
	(!A1 * !B1 * D1 * !Y)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * D1 * !Y)	0.00127	0.00128	0.00128

sky130_fd_sc_hs__a2111oi_2	**(A1 * B1 * D1 * !Y)**	-0.00133	-0.00134	-0.00133
	(A1 * B1 * D1 * !Y)	0.00180	0.00182	0.00180
	(A1 * B1 * !D1 * !Y)	-0.00131	-0.00132	-0.00131
	(A1 * B1 * !D1 * !Y)	0.00163	0.00163	0.00163
	(A1 * A2 * !B1 * D1 * !Y)	-0.00133	-0.00133	-0.00133
	(A1 * A2 * !B1 * D1 * !Y)	0.00193	0.00192	0.00192
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00119	-0.00120	-0.00127
	(A1 * A2 * !B1 * !D1 * !Y)	0.00169	0.00170	0.00165
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * !B1 * D1 * !Y)	0.00271	0.00273	0.00273
	(!A1 * B1 * D1 * !Y)	-0.00133	-0.00134	-0.00133
	(!A1 * B1 * D1 * !Y)	0.00181	0.00183	0.00182
	(!A1 * B1 * !D1 * !Y)	-0.00130	-0.00131	-0.00130
	(!A1 * B1 * !D1 * !Y)	0.00162	0.00164	0.00165
	(!A1 * !B1 * D1 * !Y)	-0.00132	-0.00132	-0.00132
	(!A1 * !B1 * D1 * !Y)	0.00271	0.00274	0.00273

sky130_fd_sc_hs__a2111oi_4	**(A1 * B1 * D1 * !Y)**	-0.00258	-0.00260	-0.00258
	(A1 * B1 * D1 * !Y)	0.00355	0.00359	0.00356
	(A1 * B1 * !D1 * !Y)	-0.00253	-0.00254	-0.00251
	(A1 * B1 * !D1 * !Y)	0.00322	0.00323	0.00323
	(A1 * A2 * !B1 * D1 * !Y)	-0.00258	-0.00260	-0.00258
	(A1 * A2 * !B1 * D1 * !Y)	0.00376	0.00378	0.00375
	(A1 * A2 * !B1 * !D1 * !Y)	-0.00236	-0.00239	-0.00248
	(A1 * A2 * !B1 * !D1 * !Y)	0.00323	0.00327	0.00321
	(A1 * !A2 * !B1 * D1 * !Y)	-0.00254	-0.00256	-0.00254
	(A1 * !A2 * !B1 * D1 * !Y)	0.00529	0.00536	0.00534
	(!A1 * B1 * D1 * !Y)	-0.00258	-0.00260	-0.00259
	(!A1 * B1 * D1 * !Y)	0.00356	0.00361	0.00358
	(!A1 * B1 * !D1 * !Y)	-0.00253	-0.00254	-0.00250
	(!A1 * B1 * !D1 * !Y)	0.00323	0.00324	0.00324
	(!A1 * !B1 * D1 * !Y)	-0.00254	-0.00256	-0.00254
	(!A1 * !B1 * D1 * !Y)	0.00530	0.00536	0.00534

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	0.00143	0.00144	0.00143
	(A1 * C1 * !Y)	-0.00068	-0.00068	-0.00067
	(A1 * B1 * !C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * !B1 * !C1 * !Y)	0.00143	0.00144	0.00143
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00067
	(!A1 * C1 * !Y)	0.00143	0.00144	0.00143
	(!A1 * C1 * !Y)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * !C1 * !Y)	0.00143	0.00144	0.00143
	(!A1 * B1 * !C1 * !Y)	-0.00068	-0.00068	-0.00067

sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	0.00163	0.00164	0.00163
	(A1 * C1 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * B1 * !C1 * !Y)	0.00163	0.00164	0.00163
	(A1 * B1 * !C1 * !Y)	-0.00137	-0.00138	-0.00137
	(A1 * A2 * !B1 * !C1 * !Y)	0.00163	0.00164	0.00163
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00138	-0.00138	-0.00137
	(!A1 * C1 * !Y)	0.00163	0.00164	0.00163
	(!A1 * C1 * !Y)	-0.00138	-0.00139	-0.00137
	(!A1 * B1 * !C1 * !Y)	0.00163	0.00164	0.00163
	(!A1 * B1 * !C1 * !Y)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	0.00324	0.00325	0.00322
	(A1 * C1 * !Y)	-0.00272	-0.00272	-0.00269
	(A1 * B1 * !C1 * !Y)	0.00324	0.00325	0.00322
	(A1 * B1 * !C1 * !Y)	-0.00271	-0.00271	-0.00269
	(A1 * A2 * !B1 * !C1 * !Y)	0.00321	0.00325	0.00322
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00268	-0.00271	-0.00269
	(!A1 * C1 * !Y)	0.00324	0.00325	0.00322
	(!A1 * C1 * !Y)	-0.00272	-0.00272	-0.00269
	(!A1 * B1 * !C1 * !Y)	0.00324	0.00325	0.00322
	(!A1 * B1 * !C1 * !Y)	-0.00272	-0.00271	-0.00269

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

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

sky130_fd_sc_hs__a2111oi_1	**(A1 * C1 * !Y)**	-0.00139	-0.00140	-0.00142
	(A1 * C1 * !Y)	0.00071	0.00071	0.00069
	(A1 * B1 * !C1 * !Y)	-0.00133	-0.00134	-0.00141
	(A1 * B1 * !C1 * !Y)	0.00075	0.00075	0.00069
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00119	-0.00121	-0.00137
	(A1 * A2 * !B1 * !C1 * !Y)	0.00084	0.00084	0.00072
	(!A1 * C1 * !Y)	-0.00139	-0.00140	-0.00142
	(!A1 * C1 * !Y)	0.00071	0.00071	0.00069
	(!A1 * B1 * !C1 * !Y)	-0.00133	-0.00134	-0.00141
	(!A1 * B1 * !C1 * !Y)	0.00074	0.00075	0.00069
sky130_fd_sc_hs__a2111oi_2	**(A1 * C1 * !Y)**	-0.00150	-0.00151	-0.00161
	(A1 * C1 * !Y)	0.00150	0.00150	0.00140
	(A1 * B1 * !C1 * !Y)	-0.00137	-0.00139	-0.00158
	(A1 * B1 * !C1 * !Y)	0.00156	0.00156	0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00110	-0.00113	-0.00149
	(A1 * A2 * !B1 * !C1 * !Y)	0.00172	0.00173	0.00147
	(!A1 * C1 * !Y)	-0.00149	-0.00151	-0.00161
	(!A1 * C1 * !Y)	0.00148	0.00150	0.00140
	(!A1 * B1 * !C1 * !Y)	-0.00137	-0.00139	-0.00158
	(!A1 * B1 * !C1 * !Y)	0.00155	0.00156	0.00141
sky130_fd_sc_hs__a2111oi_4	**(A1 * C1 * !Y)**	-0.00300	-0.00302	-0.00320
	(A1 * C1 * !Y)	0.00290	0.00290	0.00275
	(A1 * B1 * !C1 * !Y)	-0.00274	-0.00277	-0.00313
	(A1 * B1 * !C1 * !Y)	0.00305	0.00305	0.00277
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00224	-0.00228	-0.00297
	(A1 * A2 * !B1 * !C1 * !Y)	0.00335	0.00336	0.00288
	(!A1 * C1 * !Y)	-0.00300	-0.00302	-0.00320
	(!A1 * C1 * !Y)	0.00291	0.00291	0.00275
	(!A1 * B1 * !C1 * !Y)	-0.00273	-0.00277	-0.00313
	(!A1 * B1 * !C1 * !Y)	0.00303	0.00306	0.00278

SKY130_FD_SC_HS__A2111Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00240	0.00252	0.00241	0.00246	0.00243	1.15329
sky130_fd_sc_hs__a2111o_2	0.00265	0.00276	0.00260	0.00268	0.00281	2.20647
sky130_fd_sc_hs__a2111o_4	0.00451	0.00442	0.00462	0.00464	0.00458	4.21869

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2111o_1	0.00000	0.01466	0.05847
sky130_fd_sc_hs__a2111o_2	0.00000	0.01371	0.06748
sky130_fd_sc_hs__a2111o_4	0.00000	0.03659	0.14001

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)	0.06845	0.55338	5.61815
	A2->X (RR)	0.07192	0.56342	5.69437
	B1->X (RR)	0.05797	0.52531	5.53956
	C1->X (RR)	0.05655	0.51513	5.50497
	D1->X (RR)	0.05202	0.50152	5.56995
sky130_fd_sc_hs__a2111o_2	A1->X (RR)	0.06969	0.48498	5.70491
	A2->X (RR)	0.07309	0.48888	5.77239
	B1->X (RR)	0.05722	0.45338	5.61679
	C1->X (RR)	0.05508	0.44185	5.57628
	D1->X (RR)	0.05205	0.43099	5.60156
sky130_fd_sc_hs__a2111o_4	A1->X (RR)	0.07672	0.42315	5.75580
	A2->X (RR)	0.08131	0.42898	5.82336
	B1->X (RR)	0.05639	0.37274	5.60939
	C1->X (RR)	0.05478	0.36371	5.57015
	D1->X (RR)	0.05035	0.34935	5.61054

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a2111o_1	A1->X (FF)	0.25771	0.73164	4.96909
	A2->X (FF)	0.28026	0.76570	5.01820
	B1->X (FF)	0.25856	0.74464	5.11829
	C1->X (FF)	0.23263	0.73140	5.15867
	D1->X (FF)	0.19254	0.67821	5.00463
sky130_fd_sc_hs__a2111o_2	A1->X (FF)	0.30930	0.78917	5.19079
	A2->X (FF)	0.32825	0.82066	5.25218
	B1->X (FF)	0.30689	0.79842	5.36944
	C1->X (FF)	0.27824	0.78438	5.42200
	D1->X (FF)	0.23932	0.72841	5.19572
sky130_fd_sc_hs__a2111o_4	A1->X (FF)	0.32825	0.76799	5.21980
	A2->X (FF)	0.37191	0.82589	5.30234
	B1->X (FF)	0.35202	0.81019	5.45465
	C1->X (FF)	0.32183	0.79764	5.55465
	D1->X (FF)	0.25643	0.72148	5.32318

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2111o_1	A1	0.01009	0.01023	0.01871
	A1	0.00459	0.00474	0.01336
	A2	0.01071	0.01077	0.01702
	A2	0.00458	0.00464	0.01099
	B1	0.00899	0.00926	0.01780
	B1	0.00357	0.00390	0.01309
	C1	0.00785	0.00817	0.01687
	C1	0.00301	0.00331	0.01267
	D1	0.00597	0.00640	0.02184
	D1	0.00236	0.00279	0.01841
sky130_fd_sc_hs__a2111o_2	A1	0.01268	0.01296	0.01955
	A1	0.00662	0.00691	0.01370
	A2	0.01352	0.01378	0.01851
	A2	0.00664	0.00692	0.01178
	B1	0.01148	0.01186	0.01864
	B1	0.00547	0.00587	0.01334
	C1	0.01011	0.01055	0.01751
	C1	0.00469	0.00514	0.01278
	D1	0.00897	0.00936	0.02082
	D1	0.00406	0.00448	0.01701

sky130_fd_sc_hs__a2111o_4	**A1**	0.02387	0.02444	0.04100
	A1	0.01320	0.01380	0.03059
	A2	0.02543	0.02602	0.03775
	A2	0.01317	0.01377	0.02571
	B1	0.02216	0.02294	0.03968
	B1	0.01111	0.01198	0.03030
	C1	0.01966	0.02051	0.03710
	C1	0.00989	0.01076	0.02919
	D1	0.01498	0.01611	0.04428
	D1	0.00801	0.00920	0.03796

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**A1**	0.00299	0.00295	0.00947
	A1	0.00860	0.00860	0.01438
	A2	0.00344	0.00341	0.00889
	A2	0.00965	0.00967	0.01459
	B1	0.00300	0.00305	0.01051
	B1	0.00878	0.00879	0.01468
	C1	0.00299	0.00309	0.01087
	C1	0.00821	0.00824	0.01470
	D1	0.00302	0.00385	0.01834
	D1	0.00663	0.00748	0.02166

sky130_fd_sc_hs__a2111o_2	**A1**	0.00556	0.00530	0.00998
	A1	0.01178	0.01157	0.01533
	A2	0.00596	0.00573	0.00947
	A2	0.01295	0.01271	0.01614
	B1	0.00599	0.00559	0.01149
	B1	0.01201	0.01178	0.01603
	C1	0.00603	0.00583	0.01174
	C1	0.01141	0.01122	0.01607
	D1	0.00533	0.00583	0.01790
	D1	0.01076	0.01104	0.02147
sky130_fd_sc_hs__a2111o_4	**A1**	0.01097	0.01032	0.02231
	A1	0.02194	0.02131	0.03120
	A2	0.01222	0.01037	0.02150
	A2	0.02467	0.02382	0.03246
	B1	0.01221	0.01093	0.02135
	B1	0.02325	0.02229	0.03230
	C1	0.01223	0.01103	0.02510
	C1	0.02197	0.02100	0.03211
	D1	0.01041	0.01143	0.03700
	D1	0.02053	0.02080	0.04328

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)**	0.00123	0.00124	0.00123
	(A2 * B1 * D1 * X)	-0.00117	-0.00121	-0.00122
	(A2 * B1 * C1 * !D1 * X)	0.00123	0.00124	0.00123
	(A2 * B1 * C1 * !D1 * X)	-0.00117	-0.00121	-0.00122
	(A2 * B1 * !C1 * !D1 * X)	0.00123	0.00124	0.00123
	(A2 * B1 * !C1 * !D1 * X)	-0.00117	-0.00121	-0.00122
	(A2 * !B1 * C1 * D1 * X)	0.00123	0.00124	0.00123
	(A2 * !B1 * C1 * D1 * X)	-0.00111	-0.00119	-0.00118
	(A2 * !B1 * C1 * !D1 * X)	0.00123	0.00124	0.00123
	(A2 * !B1 * C1 * !D1 * X)	-0.00111	-0.00119	-0.00118
	(A2 * !B1 * !C1 * D1 * X)	0.00123	0.00124	0.00123
	(A2 * !B1 * !C1 * D1 * X)	-0.00109	-0.00118	-0.00117
	(!A2 * B1 * D1 * X)	0.00117	0.00119	0.00118
	(!A2 * B1 * D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * B1 * C1 * !D1 * X)	0.00117	0.00118	0.00118
	(!A2 * B1 * C1 * !D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * B1 * !C1 * !D1 * X)	0.00117	0.00118	0.00118
	(!A2 * B1 * !C1 * !D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * D1 * X)	0.00117	0.00118	0.00117
	(!A2 * !B1 * C1 * D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * !D1 * X)	0.00117	0.00118	0.00117
	(!A2 * !B1 * C1 * !D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * D1 * X)	0.00117	0.00119	0.00117
	(!A2 * !B1 * !C1 * D1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00050	0.00050	0.00049
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00147	-0.00148	-0.00149

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	0.00124	0.00125	0.00124
	(A2 * B1 * D1 * X)	-0.00131	-0.00137	-0.00136
	(A2 * B1 * C1 * !D1 * X)	0.00124	0.00125	0.00124
	(A2 * B1 * C1 * !D1 * X)	-0.00130	-0.00137	-0.00136
	(A2 * B1 * !C1 * !D1 * X)	0.00124	0.00125	0.00124
	(A2 * B1 * !C1 * !D1 * X)	-0.00130	-0.00137	-0.00136
	(A2 * !B1 * C1 * D1 * X)	0.00124	0.00125	0.00124
	(A2 * !B1 * C1 * D1 * X)	-0.00124	-0.00133	-0.00133
	(A2 * !B1 * C1 * !D1 * X)	0.00124	0.00125	0.00124
	(A2 * !B1 * C1 * !D1 * X)	-0.00124	-0.00133	-0.00133
	(A2 * !B1 * !C1 * D1 * X)	0.00124	0.00125	0.00124
	(A2 * !B1 * !C1 * D1 * X)	-0.00122	-0.00132	-0.00131
	(!A2 * B1 * D1 * X)	0.00118	0.00119	0.00118
	(!A2 * B1 * D1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * B1 * C1 * !D1 * X)	0.00118	0.00119	0.00118
	(!A2 * B1 * C1 * !D1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * B1 * !C1 * !D1 * X)	0.00118	0.00119	0.00118
	(!A2 * B1 * !C1 * !D1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * C1 * D1 * X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * C1 * D1 * X)	-0.00139	-0.00140	-0.00140
	(!A2 * !B1 * C1 * !D1 * X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * C1 * !D1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * !C1 * D1 * X)	0.00119	0.00120	0.00119
	(!A2 * !B1 * !C1 * D1 * X)	-0.00139	-0.00141	-0.00140
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00041	0.00042	0.00041
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00165	-0.00166	-0.00167

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	0.00208	0.00211	0.00209
	(A2 * B1 * D1 * X)	-0.00237	-0.00249	-0.00248
	(A2 * B1 * C1 * !D1 * X)	0.00208	0.00211	0.00209
	(A2 * B1 * C1 * !D1 * X)	-0.00237	-0.00249	-0.00248
	(A2 * B1 * !C1 * !D1 * X)	0.00208	0.00211	0.00209
	(A2 * B1 * !C1 * !D1 * X)	-0.00236	-0.00249	-0.00248
	(A2 * !B1 * C1 * D1 * X)	0.00208	0.00210	0.00209
	(A2 * !B1 * C1 * D1 * X)	-0.00223	-0.00241	-0.00240
	(A2 * !B1 * C1 * !D1 * X)	0.00209	0.00210	0.00209
	(A2 * !B1 * C1 * !D1 * X)	-0.00223	-0.00241	-0.00240
	(A2 * !B1 * !C1 * D1 * X)	0.00210	0.00211	0.00209
	(A2 * !B1 * !C1 * D1 * X)	-0.00220	-0.00240	-0.00237
	(!A2 * B1 * D1 * X)	0.00201	0.00204	0.00202
	(!A2 * B1 * D1 * X)	-0.00253	-0.00255	-0.00254
	(!A2 * B1 * C1 * !D1 * X)	0.00201	0.00203	0.00202
	(!A2 * B1 * C1 * !D1 * X)	-0.00253	-0.00255	-0.00254
	(!A2 * B1 * !C1 * !D1 * X)	0.00200	0.00203	0.00202
	(!A2 * B1 * !C1 * !D1 * X)	-0.00253	-0.00253	-0.00254
	(!A2 * !B1 * C1 * D1 * X)	0.00201	0.00202	0.00202
	(!A2 * !B1 * C1 * D1 * X)	-0.00253	-0.00254	-0.00254
	(!A2 * !B1 * C1 * !D1 * X)	0.00201	0.00203	0.00202
	(!A2 * !B1 * C1 * !D1 * X)	-0.00253	-0.00255	-0.00254
	(!A2 * !B1 * !C1 * D1 * X)	0.00201	0.00203	0.00202
	(!A2 * !B1 * !C1 * D1 * X)	-0.00253	-0.00256	-0.00254
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00072	0.00073	0.00069
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00294	-0.00298	-0.00301

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)**	-0.00123	-0.00123	-0.00123
	(A2 * B1 * D1 * X)	0.00122	0.00121	0.00122
	(A2 * B1 * C1 * !D1 * X)	-0.00123	-0.00122	-0.00123
	(A2 * B1 * C1 * !D1 * X)	0.00122	0.00121	0.00122
	(A2 * B1 * !C1 * !D1 * X)	-0.00123	-0.00122	-0.00123
	(A2 * B1 * !C1 * !D1 * X)	0.00122	0.00121	0.00122
	(A2 * !B1 * C1 * D1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * !B1 * C1 * D1 * X)	0.00118	0.00119	0.00118
	(A2 * !B1 * C1 * !D1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * !B1 * C1 * !D1 * X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !C1 * D1 * X)	-0.00123	-0.00123	-0.00122
	(A2 * !B1 * !C1 * D1 * X)	0.00117	0.00118	0.00117
	(!A2 * B1 * D1 * X)	-0.00115	-0.00118	-0.00118
	(!A2 * B1 * D1 * X)	0.00124	0.00126	0.00125
	(!A2 * B1 * C1 * !D1 * X)	-0.00115	-0.00118	-0.00118
	(!A2 * B1 * C1 * !D1 * X)	0.00124	0.00126	0.00125
	(!A2 * B1 * !C1 * !D1 * X)	-0.00114	-0.00118	-0.00118
	(!A2 * B1 * !C1 * !D1 * X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * C1 * D1 * X)	-0.00115	-0.00118	-0.00117
	(!A2 * !B1 * C1 * D1 * X)	0.00124	0.00125	0.00125
	(!A2 * !B1 * C1 * !D1 * X)	-0.00114	-0.00118	-0.00117
	(!A2 * !B1 * C1 * !D1 * X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !C1 * D1 * X)	-0.00114	-0.00118	-0.00117
	(!A2 * !B1 * !C1 * D1 * X)	0.00124	0.00125	0.00125
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00049	-0.00050	-0.00049
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00149	0.00152	0.00150

sky130_fd_sc_hs__a2111o_2	**(A2 * B1 * D1 * X)**	-0.00124	-0.00124	-0.00124
	(A2 * B1 * D1 * X)	0.00136	0.00137	0.00136
	(A2 * B1 * C1 * !D1 * X)	-0.00124	-0.00124	-0.00124
	(A2 * B1 * C1 * !D1 * X)	0.00136	0.00137	0.00136
	(A2 * B1 * !C1 * !D1 * X)	-0.00124	-0.00124	-0.00124
	(A2 * B1 * !C1 * !D1 * X)	0.00136	0.00137	0.00136
	(A2 * !B1 * C1 * D1 * X)	-0.00124	-0.00124	-0.00124
	(A2 * !B1 * C1 * D1 * X)	0.00132	0.00133	0.00133
	(A2 * !B1 * C1 * !D1 * X)	-0.00124	-0.00124	-0.00124
	(A2 * !B1 * C1 * !D1 * X)	0.00132	0.00133	0.00133
	(A2 * !B1 * !C1 * D1 * X)	-0.00124	-0.00125	-0.00124
	(A2 * !B1 * !C1 * D1 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * D1 * X)	-0.00115	-0.00119	-0.00118
	(!A2 * B1 * D1 * X)	0.00139	0.00141	0.00140
	(!A2 * B1 * C1 * !D1 * X)	-0.00115	-0.00119	-0.00118
	(!A2 * B1 * C1 * !D1 * X)	0.00139	0.00141	0.00140
	(!A2 * B1 * !C1 * !D1 * X)	-0.00114	-0.00119	-0.00118
	(!A2 * B1 * !C1 * !D1 * X)	0.00139	0.00141	0.00140
	(!A2 * !B1 * C1 * D1 * X)	-0.00115	-0.00119	-0.00118
	(!A2 * !B1 * C1 * D1 * X)	0.00140	0.00140	0.00140
	(!A2 * !B1 * C1 * !D1 * X)	-0.00114	-0.00119	-0.00118
	(!A2 * !B1 * C1 * !D1 * X)	0.00139	0.00141	0.00140
	(!A2 * !B1 * !C1 * D1 * X)	-0.00114	-0.00119	-0.00119
	(!A2 * !B1 * !C1 * D1 * X)	0.00139	0.00141	0.00140
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00168	0.00169	0.00168

sky130_fd_sc_hs__a2111o_4	**(A2 * B1 * D1 * X)**	-0.00208	-0.00209	-0.00209
	(A2 * B1 * D1 * X)	0.00247	0.00249	0.00248
	(A2 * B1 * C1 * !D1 * X)	-0.00208	-0.00209	-0.00209
	(A2 * B1 * C1 * !D1 * X)	0.00247	0.00249	0.00248
	(A2 * B1 * !C1 * !D1 * X)	-0.00208	-0.00209	-0.00209
	(A2 * B1 * !C1 * !D1 * X)	0.00247	0.00249	0.00248
	(A2 * !B1 * C1 * D1 * X)	-0.00208	-0.00209	-0.00209
	(A2 * !B1 * C1 * D1 * X)	0.00239	0.00241	0.00240
	(A2 * !B1 * C1 * !D1 * X)	-0.00208	-0.00209	-0.00209
	(A2 * !B1 * C1 * !D1 * X)	0.00239	0.00241	0.00240
	(A2 * !B1 * !C1 * D1 * X)	-0.00208	-0.00210	-0.00209
	(A2 * !B1 * !C1 * D1 * X)	0.00236	0.00240	0.00237
	(!A2 * B1 * D1 * X)	-0.00191	-0.00202	-0.00202
	(!A2 * B1 * D1 * X)	0.00254	0.00259	0.00255
	(!A2 * B1 * C1 * !D1 * X)	-0.00191	-0.00202	-0.00202
	(!A2 * B1 * C1 * !D1 * X)	0.00254	0.00259	0.00255
	(!A2 * B1 * !C1 * !D1 * X)	-0.00190	-0.00199	-0.00202
	(!A2 * B1 * !C1 * !D1 * X)	0.00253	0.00253	0.00255
	(!A2 * !B1 * C1 * D1 * X)	-0.00191	-0.00202	-0.00202
	(!A2 * !B1 * C1 * D1 * X)	0.00253	0.00259	0.00255
	(!A2 * !B1 * C1 * !D1 * X)	-0.00190	-0.00202	-0.00202
	(!A2 * !B1 * C1 * !D1 * X)	0.00253	0.00259	0.00255
	(!A2 * !B1 * !C1 * D1 * X)	-0.00190	-0.00202	-0.00202
	(!A2 * !B1 * !C1 * D1 * X)	0.00254	0.00259	0.00255
	(!A2 * !B1 * !C1 * !D1 * !X)	-0.00068	-0.00068	-0.00067
	(!A2 * !B1 * !C1 * !D1 * !X)	0.00303	0.00304	0.00302

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)**	0.00112	0.00113	0.00112
	(A1 * B1 * D1 * X)	-0.00122	-0.00127	-0.00127
	(A1 * B1 * C1 * !D1 * X)	0.00112	0.00113	0.00112
	(A1 * B1 * C1 * !D1 * X)	-0.00122	-0.00127	-0.00127
	(A1 * B1 * !C1 * !D1 * X)	0.00112	0.00113	0.00112
	(A1 * B1 * !C1 * !D1 * X)	-0.00122	-0.00127	-0.00127
	(A1 * !B1 * C1 * D1 * X)	0.00112	0.00112	0.00112
	(A1 * !B1 * C1 * D1 * X)	-0.00115	-0.00123	-0.00123
	(A1 * !B1 * C1 * !D1 * X)	0.00112	0.00112	0.00112
	(A1 * !B1 * C1 * !D1 * X)	-0.00115	-0.00123	-0.00123
	(A1 * !B1 * !C1 * D1 * X)	0.00112	0.00113	0.00112
	(A1 * !B1 * !C1 * D1 * X)	-0.00113	-0.00123	-0.00121
	(!A1 * B1 * X)	0.00106	0.00108	0.00107
	(!A1 * B1 * X)	-0.00129	-0.00131	-0.00130
	(!A1 * !B1 * C1 * X)	0.00106	0.00108	0.00107
	(!A1 * !B1 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * !C1 * D1 * X)	0.00107	0.00107	0.00107
	(!A1 * !B1 * !C1 * D1 * X)	-0.00130	-0.00130	-0.00130
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00093	0.00094	0.00094
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00143	-0.00144	-0.00144

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00125	0.00126	0.00125
	(A1 * B1 * D1 * X)	-0.00131	-0.00137	-0.00137
	(A1 * B1 * C1 * !D1 * X)	0.00125	0.00126	0.00125
	(A1 * B1 * C1 * !D1 * X)	-0.00131	-0.00137	-0.00137
	(A1 * B1 * !C1 * !D1 * X)	0.00125	0.00126	0.00125
	(A1 * B1 * !C1 * !D1 * X)	-0.00131	-0.00137	-0.00137
	(A1 * !B1 * C1 * D1 * X)	0.00125	0.00126	0.00125
	(A1 * !B1 * C1 * D1 * X)	-0.00124	-0.00133	-0.00133
	(A1 * !B1 * C1 * !D1 * X)	0.00125	0.00126	0.00125
	(A1 * !B1 * C1 * !D1 * X)	-0.00124	-0.00133	-0.00133
	(A1 * !B1 * !C1 * D1 * X)	0.00125	0.00126	0.00125
	(A1 * !B1 * !C1 * D1 * X)	-0.00121	-0.00132	-0.00131
	(!A1 * B1 * X)	0.00119	0.00121	0.00119
	(!A1 * B1 * X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * C1 * X)	0.00119	0.00121	0.00120
	(!A1 * !B1 * C1 * X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * D1 * X)	0.00119	0.00121	0.00119
	(!A1 * !B1 * !C1 * D1 * X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00149	-0.00150	-0.00149

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00215	0.00217	0.00215
	(A1 * B1 * D1 * X)	-0.00240	-0.00250	-0.00249
	(A1 * B1 * C1 * !D1 * X)	0.00215	0.00217	0.00215
	(A1 * B1 * C1 * !D1 * X)	-0.00240	-0.00250	-0.00249
	(A1 * B1 * !C1 * !D1 * X)	0.00215	0.00217	0.00215
	(A1 * B1 * !C1 * !D1 * X)	-0.00238	-0.00250	-0.00249
	(A1 * !B1 * C1 * D1 * X)	0.00215	0.00216	0.00215
	(A1 * !B1 * C1 * D1 * X)	-0.00226	-0.00242	-0.00241
	(A1 * !B1 * C1 * !D1 * X)	0.00215	0.00216	0.00215
	(A1 * !B1 * C1 * !D1 * X)	-0.00226	-0.00242	-0.00241
	(A1 * !B1 * !C1 * D1 * X)	0.00216	0.00217	0.00215
	(A1 * !B1 * !C1 * D1 * X)	-0.00223	-0.00241	-0.00238
	(!A1 * B1 * X)	0.00205	0.00207	0.00206
	(!A1 * B1 * X)	-0.00255	-0.00257	-0.00256
	(!A1 * !B1 * C1 * X)	0.00205	0.00208	0.00206
	(!A1 * !B1 * C1 * X)	-0.00255	-0.00256	-0.00256
	(!A1 * !B1 * !C1 * D1 * X)	0.00205	0.00208	0.00206
	(!A1 * !B1 * !C1 * D1 * X)	-0.00255	-0.00256	-0.00256
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00205	0.00208	0.00206
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00255	-0.00257	-0.00256

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)**	-0.00112	-0.00112	-0.00112
	(A1 * B1 * D1 * X)	0.00128	0.00127	0.00127
	(A1 * B1 * C1 * !D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * C1 * !D1 * X)	0.00128	0.00127	0.00127
	(A1 * B1 * !C1 * !D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * B1 * !C1 * !D1 * X)	0.00128	0.00127	0.00127
	(A1 * !B1 * C1 * D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * C1 * D1 * X)	0.00124	0.00123	0.00123
	(A1 * !B1 * C1 * !D1 * X)	-0.00112	-0.00112	-0.00112
	(A1 * !B1 * C1 * !D1 * X)	0.00124	0.00123	0.00123
	(A1 * !B1 * !C1 * D1 * X)	-0.00112	-0.00112	-0.00111
	(A1 * !B1 * !C1 * D1 * X)	0.00122	0.00123	0.00121
	(!A1 * B1 * X)	-0.00104	-0.00107	-0.00107
	(!A1 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * !B1 * C1 * X)	-0.00104	-0.00107	-0.00107
	(!A1 * !B1 * C1 * X)	0.00131	0.00131	0.00130
	(!A1 * !B1 * !C1 * D1 * X)	-0.00104	-0.00107	-0.00107
	(!A1 * !B1 * !C1 * D1 * X)	0.00131	0.00131	0.00131
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00088	-0.00094	-0.00094
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00149	0.00146	0.00144

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00125	-0.00125	-0.00125
	(A1 * B1 * D1 * X)	0.00137	0.00137	0.00137
	(A1 * B1 * C1 * !D1 * X)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * C1 * !D1 * X)	0.00137	0.00137	0.00137
	(A1 * B1 * !C1 * !D1 * X)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * !C1 * !D1 * X)	0.00137	0.00137	0.00137
	(A1 * !B1 * C1 * D1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * C1 * D1 * X)	0.00132	0.00133	0.00133
	(A1 * !B1 * C1 * !D1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * C1 * !D1 * X)	0.00132	0.00133	0.00133
	(A1 * !B1 * !C1 * D1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !B1 * !C1 * D1 * X)	0.00130	0.00132	0.00131
	(!A1 * B1 * X)	-0.00116	-0.00120	-0.00119
	(!A1 * B1 * X)	0.00141	0.00142	0.00141
	(!A1 * !B1 * C1 * X)	-0.00116	-0.00120	-0.00120
	(!A1 * !B1 * C1 * X)	0.00140	0.00142	0.00141
	(!A1 * !B1 * !C1 * D1 * X)	-0.00115	-0.00120	-0.00119
	(!A1 * !B1 * !C1 * D1 * X)	0.00140	0.00142	0.00141
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00104	-0.00110	-0.00110
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00153	0.00151	0.00150

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00214	-0.00215	-0.00214
	(A1 * B1 * D1 * X)	0.00248	0.00250	0.00249
	(A1 * B1 * C1 * !D1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * B1 * C1 * !D1 * X)	0.00248	0.00250	0.00249
	(A1 * B1 * !C1 * !D1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * B1 * !C1 * !D1 * X)	0.00248	0.00250	0.00249
	(A1 * !B1 * C1 * D1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * !B1 * C1 * D1 * X)	0.00240	0.00242	0.00241
	(A1 * !B1 * C1 * !D1 * X)	-0.00214	-0.00215	-0.00214
	(A1 * !B1 * C1 * !D1 * X)	0.00240	0.00242	0.00241
	(A1 * !B1 * !C1 * D1 * X)	-0.00214	-0.00216	-0.00214
	(A1 * !B1 * !C1 * D1 * X)	0.00237	0.00241	0.00238
	(!A1 * B1 * X)	-0.00197	-0.00205	-0.00206
	(!A1 * B1 * X)	0.00255	0.00257	0.00256
	(!A1 * !B1 * C1 * X)	-0.00197	-0.00204	-0.00206
	(!A1 * !B1 * C1 * X)	0.00255	0.00256	0.00256
	(!A1 * !B1 * !C1 * D1 * X)	-0.00197	-0.00204	-0.00206
	(!A1 * !B1 * !C1 * D1 * X)	0.00255	0.00256	0.00256
	(!A1 * !B1 * !C1 * !D1 * !X)	-0.00191	-0.00205	-0.00206
	(!A1 * !B1 * !C1 * !D1 * !X)	0.00263	0.00260	0.00257

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)**	0.00115	0.00114	0.00115
	(A1 * A2 * C1 * D1 * X)	-0.00088	-0.00089	-0.00089
	(A1 * A2 * C1 * !D1 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * C1 * !D1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !C1 * D1 * X)	0.00114	0.00115	0.00114
	(A1 * A2 * !C1 * D1 * X)	-0.00083	-0.00083	-0.00082
	(A1 * A2 * !C1 * !D1 * X)	0.00114	0.00116	0.00114
	(A1 * A2 * !C1 * !D1 * X)	-0.00070	-0.00072	-0.00070
	(A1 * !A2 * C1 * D1 * X)	0.00115	0.00115	0.00114
	(A1 * !A2 * C1 * D1 * X)	-0.00116	-0.00120	-0.00119
	(A1 * !A2 * C1 * !D1 * X)	0.00118	0.00115	0.00114
	(A1 * !A2 * C1 * !D1 * X)	-0.00112	-0.00120	-0.00119
	(A1 * !A2 * !C1 * D1 * X)	0.00116	0.00114	0.00114
	(A1 * !A2 * !C1 * D1 * X)	-0.00105	-0.00116	-0.00115
	(!A1 * C1 * D1 * X)	0.00114	0.00115	0.00114
	(!A1 * C1 * D1 * X)	-0.00116	-0.00120	-0.00119
	(!A1 * C1 * !D1 * X)	0.00118	0.00115	0.00114
	(!A1 * C1 * !D1 * X)	-0.00111	-0.00120	-0.00119
	(!A1 * !C1 * D1 * X)	0.00117	0.00114	0.00114
	(!A1 * !C1 * D1 * X)	-0.00104	-0.00116	-0.00115

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	0.00121	0.00122	0.00120
	(A1 * A2 * C1 * D1 * X)	-0.00099	-0.00099	-0.00098
	(A1 * A2 * C1 * !D1 * X)	0.00120	0.00122	0.00120
	(A1 * A2 * C1 * !D1 * X)	-0.00096	-0.00096	-0.00095
	(A1 * A2 * !C1 * D1 * X)	0.00120	0.00122	0.00120
	(A1 * A2 * !C1 * D1 * X)	-0.00091	-0.00092	-0.00091
	(A1 * A2 * !C1 * !D1 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * !C1 * !D1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * C1 * D1 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * C1 * D1 * X)	-0.00128	-0.00132	-0.00132
	(A1 * !A2 * C1 * !D1 * X)	0.00121	0.00121	0.00120
	(A1 * !A2 * C1 * !D1 * X)	-0.00126	-0.00133	-0.00132
	(A1 * !A2 * !C1 * D1 * X)	0.00121	0.00121	0.00120
	(A1 * !A2 * !C1 * D1 * X)	-0.00117	-0.00127	-0.00127
	(!A1 * C1 * D1 * X)	0.00120	0.00121	0.00120
	(!A1 * C1 * D1 * X)	-0.00128	-0.00132	-0.00132
	(!A1 * C1 * !D1 * X)	0.00121	0.00121	0.00120
	(!A1 * C1 * !D1 * X)	-0.00125	-0.00133	-0.00132
	(!A1 * !C1 * D1 * X)	0.00121	0.00121	0.00120
	(!A1 * !C1 * D1 * X)	-0.00116	-0.00128	-0.00127

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	0.00226	0.00227	0.00224
	(A1 * A2 * C1 * D1 * X)	-0.00183	-0.00184	-0.00183
	(A1 * A2 * C1 * !D1 * X)	0.00224	0.00227	0.00224
	(A1 * A2 * C1 * !D1 * X)	-0.00176	-0.00178	-0.00177
	(A1 * A2 * !C1 * D1 * X)	0.00225	0.00227	0.00225
	(A1 * A2 * !C1 * D1 * X)	-0.00172	-0.00174	-0.00172
	(A1 * A2 * !C1 * !D1 * X)	0.00225	0.00226	0.00224
	(A1 * A2 * !C1 * !D1 * X)	-0.00149	-0.00149	-0.00147
	(A1 * !A2 * C1 * D1 * X)	0.00224	0.00224	0.00224
	(A1 * !A2 * C1 * D1 * X)	-0.00236	-0.00248	-0.00246
	(A1 * !A2 * C1 * !D1 * X)	0.00226	0.00225	0.00224
	(A1 * !A2 * C1 * !D1 * X)	-0.00232	-0.00247	-0.00246
	(A1 * !A2 * !C1 * D1 * X)	0.00228	0.00225	0.00224
	(A1 * !A2 * !C1 * D1 * X)	-0.00219	-0.00238	-0.00237
	(!A1 * C1 * D1 * X)	0.00224	0.00224	0.00224
	(!A1 * C1 * D1 * X)	-0.00236	-0.00247	-0.00246
	(!A1 * C1 * !D1 * X)	0.00226	0.00224	0.00224
	(!A1 * C1 * !D1 * X)	-0.00232	-0.00247	-0.00246
	(!A1 * !C1 * D1 * X)	0.00228	0.00225	0.00224
	(!A1 * !C1 * D1 * X)	-0.00219	-0.00238	-0.00237

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)**	-0.00114	-0.00114	-0.00114
	(A1 * A2 * C1 * D1 * X)	0.00088	0.00089	0.00089
	(A1 * A2 * C1 * !D1 * X)	-0.00114	-0.00115	-0.00114
	(A1 * A2 * C1 * !D1 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * !C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !C1 * D1 * X)	0.00083	0.00083	0.00082
	(A1 * A2 * !C1 * !D1 * X)	-0.00109	-0.00109	-0.00109
	(A1 * A2 * !C1 * !D1 * X)	0.00076	0.00077	0.00075
	(A1 * !A2 * C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * C1 * D1 * X)	0.00119	0.00120	0.00119
	(A1 * !A2 * C1 * !D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * C1 * !D1 * X)	0.00119	0.00120	0.00119
	(A1 * !A2 * !C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * !C1 * D1 * X)	0.00115	0.00116	0.00115
	(!A1 * C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * C1 * D1 * X)	0.00119	0.00120	0.00119
	(!A1 * C1 * !D1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * C1 * !D1 * X)	0.00119	0.00120	0.00119
	(!A1 * !C1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * !C1 * D1 * X)	0.00114	0.00116	0.00115

sky130_fd_sc_hs__a2111o_2	**(A1 * A2 * C1 * D1 * X)**	-0.00120	-0.00121	-0.00120
	(A1 * A2 * C1 * D1 * X)	0.00099	0.00099	0.00098
	(A1 * A2 * C1 * !D1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * C1 * !D1 * X)	0.00096	0.00096	0.00095
	(A1 * A2 * !C1 * D1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * A2 * !C1 * D1 * X)	0.00091	0.00092	0.00091
	(A1 * A2 * !C1 * !D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * A2 * !C1 * !D1 * X)	0.00084	0.00084	0.00083
	(A1 * !A2 * C1 * D1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * C1 * D1 * X)	0.00132	0.00132	0.00132
	(A1 * !A2 * C1 * !D1 * X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * C1 * !D1 * X)	0.00132	0.00133	0.00132
	(A1 * !A2 * !C1 * D1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * !C1 * D1 * X)	0.00127	0.00127	0.00127
	(!A1 * C1 * D1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * C1 * D1 * X)	0.00132	0.00132	0.00132
	(!A1 * C1 * !D1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * C1 * !D1 * X)	0.00132	0.00133	0.00132
	(!A1 * !C1 * D1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * !C1 * D1 * X)	0.00126	0.00128	0.00127

sky130_fd_sc_hs__a2111o_4	**(A1 * A2 * C1 * D1 * X)**	-0.00224	-0.00224	-0.00224
	(A1 * A2 * C1 * D1 * X)	0.00183	0.00184	0.00183
	(A1 * A2 * C1 * !D1 * X)	-0.00223	-0.00224	-0.00223
	(A1 * A2 * C1 * !D1 * X)	0.00176	0.00178	0.00177
	(A1 * A2 * !C1 * D1 * X)	-0.00224	-0.00226	-0.00224
	(A1 * A2 * !C1 * D1 * X)	0.00172	0.00174	0.00172
	(A1 * A2 * !C1 * !D1 * X)	-0.00210	-0.00213	-0.00210
	(A1 * A2 * !C1 * !D1 * X)	0.00159	0.00161	0.00160
	(A1 * !A2 * C1 * D1 * X)	-0.00223	-0.00224	-0.00223
	(A1 * !A2 * C1 * D1 * X)	0.00245	0.00248	0.00246
	(A1 * !A2 * C1 * !D1 * X)	-0.00223	-0.00224	-0.00223
	(A1 * !A2 * C1 * !D1 * X)	0.00245	0.00248	0.00246
	(A1 * !A2 * !C1 * D1 * X)	-0.00223	-0.00224	-0.00223
	(A1 * !A2 * !C1 * D1 * X)	0.00236	0.00238	0.00237
	(!A1 * C1 * D1 * X)	-0.00223	-0.00224	-0.00223
	(!A1 * C1 * D1 * X)	0.00245	0.00248	0.00246
	(!A1 * C1 * !D1 * X)	-0.00223	-0.00224	-0.00223
	(!A1 * C1 * !D1 * X)	0.00245	0.00248	0.00246
	(!A1 * !C1 * D1 * X)	-0.00223	-0.00224	-0.00223
	(!A1 * !C1 * D1 * X)	0.00236	0.00238	0.00237

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)**	0.00118	0.00119	0.00116
	(A1 * B1 * D1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * B1 * !D1 * X)	0.00115	0.00117	0.00115
	(A1 * B1 * !D1 * X)	-0.00068	-0.00070	-0.00069
	(A1 * A2 * !B1 * D1 * X)	0.00123	0.00117	0.00115
	(A1 * A2 * !B1 * D1 * X)	-0.00083	-0.00084	-0.00084
	(A1 * A2 * !B1 * !D1 * X)	0.00116	0.00118	0.00115
	(A1 * A2 * !B1 * !D1 * X)	-0.00068	-0.00069	-0.00069
	(A1 * !A2 * !B1 * D1 * X)	0.00135	0.00116	0.00115
	(A1 * !A2 * !B1 * D1 * X)	-0.00097	-0.00117	-0.00118
	(!A1 * B1 * D1 * X)	0.00120	0.00120	0.00117
	(!A1 * B1 * D1 * X)	-0.00078	-0.00079	-0.00078
	(!A1 * B1 * !D1 * X)	0.00115	0.00118	0.00115
	(!A1 * B1 * !D1 * X)	-0.00068	-0.00070	-0.00069
	(!A1 * !B1 * D1 * X)	0.00135	0.00116	0.00115
	(!A1 * !B1 * D1 * X)	-0.00097	-0.00117	-0.00118

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	0.00122	0.00123	0.00120
	(A1 * B1 * D1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * B1 * !D1 * X)	0.00120	0.00121	0.00119
	(A1 * B1 * !D1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * D1 * X)	0.00126	0.00120	0.00119
	(A1 * A2 * !B1 * D1 * X)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !B1 * !D1 * X)	0.00120	0.00122	0.00120
	(A1 * A2 * !B1 * !D1 * X)	-0.00080	-0.00081	-0.00081
	(A1 * !A2 * !B1 * D1 * X)	0.00139	0.00121	0.00119
	(A1 * !A2 * !B1 * D1 * X)	-0.00116	-0.00137	-0.00137
	(!A1 * B1 * D1 * X)	0.00123	0.00124	0.00120
	(!A1 * B1 * D1 * X)	-0.00093	-0.00094	-0.00094
	(!A1 * B1 * !D1 * X)	0.00120	0.00121	0.00119
	(!A1 * B1 * !D1 * X)	-0.00082	-0.00083	-0.00083
	(!A1 * !B1 * D1 * X)	0.00139	0.00121	0.00119
	(!A1 * !B1 * D1 * X)	-0.00116	-0.00137	-0.00137

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	0.00220	0.00226	0.00221
	(A1 * B1 * D1 * X)	-0.00169	-0.00172	-0.00170
	(A1 * B1 * !D1 * X)	0.00219	0.00221	0.00219
	(A1 * B1 * !D1 * X)	-0.00152	-0.00153	-0.00152
	(A1 * A2 * !B1 * D1 * X)	0.00226	0.00221	0.00219
	(A1 * A2 * !B1 * D1 * X)	-0.00181	-0.00181	-0.00181
	(A1 * A2 * !B1 * !D1 * X)	0.00221	0.00222	0.00219
	(A1 * A2 * !B1 * !D1 * X)	-0.00152	-0.00152	-0.00151
	(A1 * !A2 * !B1 * D1 * X)	0.00257	0.00221	0.00218
	(A1 * !A2 * !B1 * D1 * X)	-0.00211	-0.00255	-0.00254
	(!A1 * B1 * D1 * X)	0.00222	0.00226	0.00221
	(!A1 * B1 * D1 * X)	-0.00170	-0.00173	-0.00171
	(!A1 * B1 * !D1 * X)	0.00220	0.00222	0.00219
	(!A1 * B1 * !D1 * X)	-0.00152	-0.00153	-0.00153
	(!A1 * !B1 * D1 * X)	0.00256	0.00221	0.00218
	(!A1 * !B1 * D1 * X)	-0.00211	-0.00255	-0.00254

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)**	-0.00114	-0.00115	-0.00114
	(A1 * B1 * D1 * X)	0.00078	0.00078	0.00078
	(A1 * B1 * !D1 * X)	-0.00114	-0.00115	-0.00113
	(A1 * B1 * !D1 * X)	0.00070	0.00071	0.00071
	(A1 * A2 * !B1 * D1 * X)	-0.00114	-0.00115	-0.00115
	(A1 * A2 * !B1 * D1 * X)	0.00084	0.00084	0.00084
	(A1 * A2 * !B1 * !D1 * X)	-0.00108	-0.00109	-0.00113
	(A1 * A2 * !B1 * !D1 * X)	0.00074	0.00074	0.00070
	(A1 * !A2 * !B1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * !B1 * D1 * X)	0.00118	0.00118	0.00118
	(!A1 * B1 * D1 * X)	-0.00114	-0.00115	-0.00114
	(!A1 * B1 * D1 * X)	0.00078	0.00079	0.00078
	(!A1 * B1 * !D1 * X)	-0.00114	-0.00115	-0.00113
	(!A1 * B1 * !D1 * X)	0.00070	0.00071	0.00071
	(!A1 * !B1 * D1 * X)	-0.00114	-0.00114	-0.00114
	(!A1 * !B1 * D1 * X)	0.00118	0.00118	0.00118

sky130_fd_sc_hs__a2111o_2	**(A1 * B1 * D1 * X)**	-0.00119	-0.00120	-0.00119
	(A1 * B1 * D1 * X)	0.00092	0.00093	0.00092
	(A1 * B1 * !D1 * X)	-0.00119	-0.00119	-0.00118
	(A1 * B1 * !D1 * X)	0.00083	0.00084	0.00084
	(A1 * A2 * !B1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * A2 * !B1 * D1 * X)	0.00098	0.00097	0.00097
	(A1 * A2 * !B1 * !D1 * X)	-0.00111	-0.00112	-0.00118
	(A1 * A2 * !B1 * !D1 * X)	0.00087	0.00087	0.00082
	(A1 * !A2 * !B1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(A1 * !A2 * !B1 * D1 * X)	0.00136	0.00137	0.00137
	(!A1 * B1 * D1 * X)	-0.00119	-0.00119	-0.00119
	(!A1 * B1 * D1 * X)	0.00093	0.00094	0.00094
	(!A1 * B1 * !D1 * X)	-0.00118	-0.00119	-0.00118
	(!A1 * B1 * !D1 * X)	0.00085	0.00085	0.00085
	(!A1 * !B1 * D1 * X)	-0.00118	-0.00119	-0.00119
	(!A1 * !B1 * D1 * X)	0.00136	0.00137	0.00137

sky130_fd_sc_hs__a2111o_4	**(A1 * B1 * D1 * X)**	-0.00219	-0.00220	-0.00219
	(A1 * B1 * D1 * X)	0.00169	0.00172	0.00170
	(A1 * B1 * !D1 * X)	-0.00218	-0.00218	-0.00217
	(A1 * B1 * !D1 * X)	0.00154	0.00155	0.00155
	(A1 * A2 * !B1 * D1 * X)	-0.00219	-0.00219	-0.00219
	(A1 * A2 * !B1 * D1 * X)	0.00181	0.00181	0.00181
	(A1 * A2 * !B1 * !D1 * X)	-0.00208	-0.00209	-0.00213
	(A1 * A2 * !B1 * !D1 * X)	0.00159	0.00159	0.00156
	(A1 * !A2 * !B1 * D1 * X)	-0.00217	-0.00218	-0.00217
	(A1 * !A2 * !B1 * D1 * X)	0.00253	0.00255	0.00254
	(!A1 * B1 * D1 * X)	-0.00218	-0.00220	-0.00219
	(!A1 * B1 * D1 * X)	0.00170	0.00173	0.00171
	(!A1 * B1 * !D1 * X)	-0.00217	-0.00218	-0.00216
	(!A1 * B1 * !D1 * X)	0.00155	0.00155	0.00156
	(!A1 * !B1 * D1 * X)	-0.00217	-0.00218	-0.00217
	(!A1 * !B1 * D1 * X)	0.00253	0.00255	0.00254

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	0.00123	0.00124	0.00123
	(A1 * C1 * X)	-0.00065	-0.00065	-0.00065
	(A1 * B1 * !C1 * X)	0.00123	0.00124	0.00123
	(A1 * B1 * !C1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * !C1 * X)	0.00123	0.00124	0.00123
	(A1 * A2 * !B1 * !C1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * C1 * X)	0.00123	0.00124	0.00123
	(!A1 * C1 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * !C1 * X)	0.00123	0.00124	0.00123
	(!A1 * B1 * !C1 * X)	-0.00064	-0.00065	-0.00064

sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	0.00147	0.00148	0.00147
	(A1 * C1 * X)	-0.00070	-0.00070	-0.00069
	(A1 * B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A1 * B1 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A1 * A2 * !B1 * !C1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * C1 * X)	0.00147	0.00148	0.00147
	(!A1 * C1 * X)	-0.00070	-0.00070	-0.00069
	(!A1 * B1 * !C1 * X)	0.00147	0.00148	0.00147
	(!A1 * B1 * !C1 * X)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	0.00240	0.00242	0.00240
	(A1 * C1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * B1 * !C1 * X)	0.00241	0.00242	0.00240
	(A1 * B1 * !C1 * X)	-0.00133	-0.00132	-0.00131
	(A1 * A2 * !B1 * !C1 * X)	0.00241	0.00242	0.00240
	(A1 * A2 * !B1 * !C1 * X)	-0.00132	-0.00133	-0.00131
	(!A1 * C1 * X)	0.00241	0.00242	0.00240
	(!A1 * C1 * X)	-0.00133	-0.00133	-0.00132
	(!A1 * B1 * !C1 * X)	0.00241	0.00242	0.00240
	(!A1 * B1 * !C1 * X)	-0.00133	-0.00133	-0.00131

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

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

sky130_fd_sc_hs__a2111o_1	**(A1 * C1 * X)**	-0.00120	-0.00120	-0.00123
	(A1 * C1 * X)	0.00068	0.00068	0.00066
	(A1 * B1 * !C1 * X)	-0.00115	-0.00116	-0.00122
	(A1 * B1 * !C1 * X)	0.00070	0.00071	0.00066
	(A1 * A2 * !B1 * !C1 * X)	-0.00103	-0.00104	-0.00118
	(A1 * A2 * !B1 * !C1 * X)	0.00079	0.00079	0.00069
	(!A1 * C1 * X)	-0.00120	-0.00120	-0.00123
	(!A1 * C1 * X)	0.00068	0.00068	0.00066
	(!A1 * B1 * !C1 * X)	-0.00115	-0.00116	-0.00122
	(!A1 * B1 * !C1 * X)	0.00071	0.00071	0.00066
sky130_fd_sc_hs__a2111o_2	**(A1 * C1 * X)**	-0.00143	-0.00144	-0.00146
	(A1 * C1 * X)	0.00073	0.00073	0.00071
	(A1 * B1 * !C1 * X)	-0.00137	-0.00138	-0.00145
	(A1 * B1 * !C1 * X)	0.00077	0.00077	0.00071
	(A1 * A2 * !B1 * !C1 * X)	-0.00123	-0.00124	-0.00141
	(A1 * A2 * !B1 * !C1 * X)	0.00086	0.00086	0.00074
	(!A1 * C1 * X)	-0.00143	-0.00144	-0.00146
	(!A1 * C1 * X)	0.00073	0.00074	0.00071
	(!A1 * B1 * !C1 * X)	-0.00137	-0.00138	-0.00145
	(!A1 * B1 * !C1 * X)	0.00077	0.00077	0.00071
sky130_fd_sc_hs__a2111o_4	**(A1 * C1 * X)**	-0.00227	-0.00229	-0.00238
	(A1 * C1 * X)	0.00143	0.00144	0.00134
	(A1 * B1 * !C1 * X)	-0.00216	-0.00218	-0.00235
	(A1 * B1 * !C1 * X)	0.00148	0.00148	0.00135
	(A1 * A2 * !B1 * !C1 * X)	-0.00191	-0.00195	-0.00227
	(A1 * A2 * !B1 * !C1 * X)	0.00163	0.00165	0.00141
	(!A1 * C1 * X)	-0.00227	-0.00229	-0.00238
	(!A1 * C1 * X)	0.00143	0.00144	0.00135
	(!A1 * B1 * !C1 * X)	-0.00216	-0.00218	-0.00235
	(!A1 * B1 * !C1 * X)	0.00149	0.00149	0.00135

SKY130_FD_SC_HS__A211OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00264	0.00249	0.00263	0.00269	0.37472
sky130_fd_sc_hs__a211oi_2	0.00481	0.00503	0.00401	0.00380	0.67875
sky130_fd_sc_hs__a211oi_4	0.00968	0.00965	0.00761	0.00774	1.21786

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211oi_1	0.00000	0.01031	0.03242
sky130_fd_sc_hs__a211oi_2	0.00000	0.02038	0.06484
sky130_fd_sc_hs__a211oi_4	0.00000	0.04076	0.12968

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)	0.13095	1.11282	10.89650
	A2->Y (FR)	0.15833	1.16600	11.14430
	B1->Y (FR)	0.14103	1.16811	11.63730
	C1->Y (FR)	0.11135	1.10696	11.23230
sky130_fd_sc_hs__a211oi_2	A1->Y (FR)	0.11670	0.95733	10.83940
	A2->Y (FR)	0.15168	0.99091	10.85870
	B1->Y (FR)	0.13103	0.99935	11.42360
	C1->Y (FR)	0.08764	0.92518	11.00660
sky130_fd_sc_hs__a211oi_4	A1->Y (FR)	0.11250	0.82299	10.56560
	A2->Y (FR)	0.15179	0.87558	10.80810
	B1->Y (FR)	0.12759	0.88007	11.41560
	C1->Y (FR)	0.08592	0.81144	11.06320

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211oi_1	A1->Y (RF)	0.02247	0.29468	2.75963
	A2->Y (RF)	0.02530	0.28548	2.64751
	B1->Y (RF)	0.01850	0.24419	2.28107
	C1->Y (RF)	0.01649	0.23772	2.28175
sky130_fd_sc_hs__a211oi_2	A1->Y (RF)	0.02021	0.26569	2.90479
	A2->Y (RF)	0.02525	0.25650	2.72681
	B1->Y (RF)	0.02585	0.32448	3.68384
	C1->Y (RF)	0.01919	0.30170	3.56348
sky130_fd_sc_hs__a211oi_4	A1->Y (RF)	0.02066	0.23667	2.96707
	A2->Y (RF)	0.02476	0.20994	2.52336
	B1->Y (RF)	0.02505	0.28239	3.65427
	C1->Y (RF)	0.01890	0.26478	3.62685

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00026	0.00011	0.00081
	A1	0.00534	0.00520	0.00593
	A2	0.00055	0.00044	0.00115
	A2	0.00642	0.00632	0.00703
	B1	0.00018	0.00007	0.00134
	B1	0.00566	0.00551	0.00666
	C1	0.00001	0.00029	0.00461
	C1	0.00375	0.00405	0.00835
sky130_fd_sc_hs__a211oi_2	A1	-0.00027	-0.00051	0.00091
	A1	0.00941	0.00921	0.01068
	A2	0.00098	0.00067	0.00205
	A2	0.01243	0.01214	0.01356
	B1	0.00045	0.00033	0.00169
	B1	0.01044	0.01025	0.01150
	C1	0.00030	0.00080	0.00623
	C1	0.00882	0.00919	0.01420
sky130_fd_sc_hs__a211oi_4	A1	-0.00080	-0.00128	0.00161
	A1	0.01841	0.01796	0.02099
	A2	0.00119	0.00067	0.00345
	A2	0.02387	0.02337	0.02624
	B1	0.00064	0.00040	0.00326
	B1	0.02001	0.01964	0.02218
	C1	0.00036	0.00142	0.01200
	C1	0.01702	0.01738	0.02738

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	A1	0.00667	0.00656	0.00772
	A1	0.00171	0.00159	0.00277
	A2	0.00747	0.00735	0.00811
	A2	0.00169	0.00155	0.00233
	B1	0.00565	0.00566	0.00691
	B1	0.00056	0.00052	0.00187
	C1	0.00360	0.00366	0.00500
	C1	-0.00014	-0.00010	0.00124
sky130_fd_sc_hs__a211oi_2	A1	0.01233	0.01219	0.01450
	A1	0.00291	0.00273	0.00504
	A2	0.01420	0.01391	0.01538
	A2	0.00292	0.00259	0.00413
	B1	0.00995	0.00980	0.01149
	B1	0.00122	0.00102	0.00268
	C1	0.00483	0.00494	0.00675
	C1	-0.00082	-0.00074	0.00101
sky130_fd_sc_hs__a211oi_4	A1	0.02438	0.02396	0.02863
	A1	0.00573	0.00518	0.00982
	A2	0.02800	0.02743	0.03050
	A2	0.00566	0.00500	0.00827
	B1	0.01882	0.01858	0.02214
	B1	0.00167	0.00128	0.00471
	C1	0.00903	0.00917	0.01288
	C1	-0.00199	-0.00185	0.00170

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)**	0.00118	0.00119	0.00118
	(A2 * B1 * C1 * !Y)	-0.00128	-0.00135	-0.00134
	(A2 * B1 * !C1 * !Y)	0.00118	0.00119	0.00118
	(A2 * B1 * !C1 * !Y)	-0.00128	-0.00134	-0.00134
	(A2 * !B1 * C1 * !Y)	0.00119	0.00119	0.00118
	(A2 * !B1 * C1 * !Y)	-0.00121	-0.00130	-0.00130
	(!A2 * B1 * C1 * !Y)	0.00112	0.00114	0.00113
	(!A2 * B1 * C1 * !Y)	-0.00137	-0.00137	-0.00137
	(!A2 * B1 * !C1 * !Y)	0.00112	0.00114	0.00113
	(!A2 * B1 * !C1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * C1 * !Y)	0.00112	0.00114	0.00113
	(!A2 * !B1 * C1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00036	0.00036
	(!A2 * !B1 * !C1 * Y)	-0.00161	-0.00162	-0.00164
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	0.00242	0.00244	0.00242
	(A2 * B1 * C1 * !Y)	-0.00253	-0.00264	-0.00263
	(A2 * B1 * !C1 * !Y)	0.00243	0.00244	0.00242
	(A2 * B1 * !C1 * !Y)	-0.00252	-0.00264	-0.00263
	(A2 * !B1 * C1 * !Y)	0.00244	0.00244	0.00242
	(A2 * !B1 * C1 * !Y)	-0.00241	-0.00257	-0.00256
	(!A2 * B1 * C1 * !Y)	0.00233	0.00235	0.00234
	(!A2 * B1 * C1 * !Y)	-0.00268	-0.00270	-0.00269
	(!A2 * B1 * !C1 * !Y)	0.00230	0.00231	0.00231
	(!A2 * B1 * !C1 * !Y)	-0.00268	-0.00270	-0.00269
	(!A2 * !B1 * C1 * !Y)	0.00230	0.00232	0.00231
	(!A2 * !B1 * C1 * !Y)	-0.00268	-0.00269	-0.00269
	(!A2 * !B1 * !C1 * Y)	0.00087	0.00087	0.00084
	(!A2 * !B1 * !C1 * Y)	-0.00313	-0.00314	-0.00319

sky130_fd_sc_hs__a211oi_4	**(A2 * B1 * C1 * !Y)**	0.00469	0.00474	0.00470
	(A2 * B1 * C1 * !Y)	-0.00511	-0.00538	-0.00534
	(A2 * B1 * !C1 * !Y)	0.00470	0.00474	0.00470
	(A2 * B1 * !C1 * !Y)	-0.00509	-0.00534	-0.00534
	(A2 * !B1 * C1 * !Y)	0.00474	0.00475	0.00470
	(A2 * !B1 * C1 * !Y)	-0.00485	-0.00519	-0.00519
	(!A2 * B1 * C1 * !Y)	0.00450	0.00457	0.00452
	(!A2 * B1 * C1 * !Y)	-0.00547	-0.00551	-0.00549
	(!A2 * B1 * !C1 * !Y)	0.00453	0.00455	0.00453
	(!A2 * B1 * !C1 * !Y)	-0.00550	-0.00550	-0.00549
	(!A2 * !B1 * C1 * !Y)	0.00452	0.00457	0.00454
	(!A2 * !B1 * C1 * !Y)	-0.00547	-0.00552	-0.00549
	(!A2 * !B1 * !C1 * Y)	0.00151	0.00151	0.00145
	(!A2 * !B1 * !C1 * Y)	-0.00644	-0.00647	-0.00656

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)**	-0.00118	-0.00119	-0.00118
	(A2 * B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(A2 * B1 * !C1 * !Y)	-0.00118	-0.00119	-0.00118
	(A2 * B1 * !C1 * !Y)	0.00134	0.00134	0.00134
	(A2 * !B1 * C1 * !Y)	-0.00118	-0.00118	-0.00118
	(A2 * !B1 * C1 * !Y)	0.00129	0.00130	0.00130
	(!A2 * B1 * C1 * !Y)	-0.00109	-0.00112	-0.00113
	(!A2 * B1 * C1 * !Y)	0.00137	0.00137	0.00137
	(!A2 * B1 * !C1 * !Y)	-0.00109	-0.00113	-0.00113
	(!A2 * B1 * !C1 * !Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * C1 * !Y)	-0.00109	-0.00113	-0.00113
	(!A2 * !B1 * C1 * !Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !C1 * Y)	0.00164	0.00167	0.00164
sky130_fd_sc_hs__a211oi_2	**(A2 * B1 * C1 * !Y)**	-0.00242	-0.00242	-0.00242
	(A2 * B1 * C1 * !Y)	0.00263	0.00264	0.00263
	(A2 * B1 * !C1 * !Y)	-0.00242	-0.00242	-0.00242
	(A2 * B1 * !C1 * !Y)	0.00263	0.00264	0.00263
	(A2 * !B1 * C1 * !Y)	-0.00242	-0.00243	-0.00242
	(A2 * !B1 * C1 * !Y)	0.00256	0.00257	0.00256
	(!A2 * B1 * C1 * !Y)	-0.00220	-0.00233	-0.00233
	(!A2 * B1 * C1 * !Y)	0.00269	0.00271	0.00270
	(!A2 * B1 * !C1 * !Y)	-0.00220	-0.00231	-0.00231
	(!A2 * B1 * !C1 * !Y)	0.00270	0.00272	0.00270
	(!A2 * !B1 * C1 * !Y)	-0.00220	-0.00232	-0.00231
	(!A2 * !B1 * C1 * !Y)	0.00270	0.00269	0.00270
	(!A2 * !B1 * !C1 * Y)	-0.00082	-0.00083	-0.00082
	(!A2 * !B1 * !C1 * Y)	0.00319	0.00325	0.00320

sky130_fd_sc_hs__a211oi_4	(A2 * B1 * C1 * !Y)	-0.00469	-0.00470	-0.00469
	(A2 * B1 * C1 * !Y)	0.00535	0.00538	0.00534
	(A2 * B1 * !C1 * !Y)	-0.00469	-0.00469	-0.00469
	(A2 * B1 * !C1 * !Y)	0.00535	0.00534	0.00534
	(A2 * !B1 * C1 * !Y)	-0.00470	-0.00469	-0.00469
	(A2 * !B1 * C1 * !Y)	0.00520	0.00519	0.00519
	(!A2 * B1 * C1 * !Y)	-0.00424	-0.00452	-0.00452
	(!A2 * B1 * C1 * !Y)	0.00547	0.00551	0.00550
	(!A2 * B1 * !C1 * !Y)	-0.00425	-0.00455	-0.00453
	(!A2 * B1 * !C1 * !Y)	0.00551	0.00554	0.00550
	(!A2 * !B1 * C1 * !Y)	-0.00424	-0.00457	-0.00453
	(!A2 * !B1 * C1 * !Y)	0.00551	0.00554	0.00550
	(!A2 * !B1 * !C1 * Y)	-0.00143	-0.00144	-0.00142
	(!A2 * !B1 * !C1 * Y)	0.00659	0.00668	0.00657

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)	0.00120	0.00121	0.00120
	(A1 * B1 * C1 * !Y)	-0.00130	-0.00136	-0.00135
	(A1 * B1 * !C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * !Y)	-0.00129	-0.00136	-0.00135
	(A1 * !B1 * C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * !B1 * C1 * !Y)	-0.00122	-0.00131	-0.00131
	(!A1 * B1 * !Y)	0.00114	0.00116	0.00114
	(!A1 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * C1 * !Y)	0.00114	0.00116	0.00114
	(!A1 * !B1 * C1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * !C1 * Y)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	0.00249	0.00250	0.00248
	(A1 * B1 * C1 * !Y)	-0.00262	-0.00274	-0.00272
	(A1 * B1 * !C1 * !Y)	0.00249	0.00251	0.00248
	(A1 * B1 * !C1 * !Y)	-0.00261	-0.00274	-0.00272
	(A1 * !B1 * C1 * !Y)	0.00251	0.00250	0.00248
	(A1 * !B1 * C1 * !Y)	-0.00249	-0.00265	-0.00264
	(!A1 * B1 * !Y)	0.00238	0.00241	0.00239
	(!A1 * B1 * !Y)	-0.00279	-0.00281	-0.00280
	(!A1 * !B1 * C1 * !Y)	0.00238	0.00242	0.00239
	(!A1 * !B1 * C1 * !Y)	-0.00279	-0.00281	-0.00280
	(!A1 * !B1 * !C1 * Y)	0.00219	0.00221	0.00220
	(!A1 * !B1 * !C1 * Y)	-0.00299	-0.00300	-0.00299
sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	0.00484	0.00488	0.00483
	(A1 * B1 * C1 * !Y)	-0.00519	-0.00543	-0.00540
	(A1 * B1 * !C1 * !Y)	0.00481	0.00488	0.00483
	(A1 * B1 * !C1 * !Y)	-0.00512	-0.00542	-0.00540
	(A1 * !B1 * C1 * !Y)	0.00485	0.00489	0.00483
	(A1 * !B1 * C1 * !Y)	-0.00488	-0.00525	-0.00524
	(!A1 * B1 * !Y)	0.00460	0.00464	0.00463
	(!A1 * B1 * !Y)	-0.00553	-0.00556	-0.00555
	(!A1 * !B1 * C1 * !Y)	0.00460	0.00461	0.00459
	(!A1 * !B1 * C1 * !Y)	-0.00556	-0.00557	-0.00555
	(!A1 * !B1 * !C1 * Y)	0.00457	0.00463	0.00459
	(!A1 * !B1 * !C1 * Y)	-0.00554	-0.00558	-0.00555

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)**	-0.00120	-0.00120	-0.00120
	(A1 * B1 * C1 * !Y)	0.00135	0.00136	0.00135
	(A1 * B1 * !C1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * !C1 * !Y)	0.00135	0.00136	0.00135
	(A1 * !B1 * C1 * !Y)	-0.00119	-0.00120	-0.00120
	(A1 * !B1 * C1 * !Y)	0.00130	0.00131	0.00131
	(!A1 * B1 * !Y)	-0.00111	-0.00115	-0.00114
	(!A1 * B1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * !B1 * C1 * !Y)	-0.00111	-0.00115	-0.00114
	(!A1 * !B1 * C1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * !B1 * !C1 * Y)	-0.00109	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * Y)	0.00143	0.00140	0.00139
sky130_fd_sc_hs__a211oi_2	**(A1 * B1 * C1 * !Y)**	-0.00248	-0.00248	-0.00248
	(A1 * B1 * C1 * !Y)	0.00273	0.00274	0.00272
	(A1 * B1 * !C1 * !Y)	-0.00248	-0.00248	-0.00248
	(A1 * B1 * !C1 * !Y)	0.00273	0.00274	0.00272
	(A1 * !B1 * C1 * !Y)	-0.00247	-0.00248	-0.00248
	(A1 * !B1 * C1 * !Y)	0.00264	0.00265	0.00264
	(!A1 * B1 * !Y)	-0.00230	-0.00238	-0.00239
	(!A1 * B1 * !Y)	0.00279	0.00282	0.00280
	(!A1 * !B1 * C1 * !Y)	-0.00230	-0.00238	-0.00239
	(!A1 * !B1 * C1 * !Y)	0.00279	0.00281	0.00281
	(!A1 * !B1 * !C1 * Y)	-0.00208	-0.00220	-0.00220
	(!A1 * !B1 * !C1 * Y)	0.00302	0.00303	0.00300

sky130_fd_sc_hs__a211oi_4	**(A1 * B1 * C1 * !Y)**	-0.00481	-0.00483	-0.00482
	(A1 * B1 * C1 * !Y)	0.00538	0.00543	0.00540
	(A1 * B1 * !C1 * !Y)	-0.00481	-0.00483	-0.00482
	(A1 * B1 * !C1 * !Y)	0.00538	0.00542	0.00540
	(A1 * !B1 * C1 * !Y)	-0.00482	-0.00483	-0.00482
	(A1 * !B1 * C1 * !Y)	0.00523	0.00525	0.00524
	(!A1 * B1 * !Y)	-0.00442	-0.00459	-0.00463
	(!A1 * B1 * !Y)	0.00556	0.00558	0.00557
	(!A1 * !B1 * C1 * !Y)	-0.00442	-0.00459	-0.00459
	(!A1 * !B1 * C1 * !Y)	0.00557	0.00558	0.00557
	(!A1 * !B1 * !C1 * Y)	-0.00431	-0.00461	-0.00459
	(!A1 * !B1 * !C1 * Y)	0.00572	0.00563	0.00557

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)	0.00130	0.00129	0.00126
	(A1 * A2 * C1 * !Y)	-0.00094	-0.00093	-0.00094
	(A1 * A2 * !C1 * !Y)	0.00126	0.00127	0.00126
	(A1 * A2 * !C1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * C1 * !Y)	0.00143	0.00127	0.00125
	(A1 * !A2 * C1 * !Y)	-0.00112	-0.00131	-0.00132
	(!A1 * C1 * !Y)	0.00142	0.00126	0.00125
	(!A1 * C1 * !Y)	-0.00113	-0.00132	-0.00132
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	0.00153	0.00154	0.00151
	(A1 * A2 * C1 * !Y)	-0.00179	-0.00182	-0.00180
	(A1 * A2 * !C1 * !Y)	0.00148	0.00149	0.00148
	(A1 * A2 * !C1 * !Y)	-0.00151	-0.00152	-0.00151
	(A1 * !A2 * C1 * !Y)	0.00178	0.00148	0.00146
	(A1 * !A2 * C1 * !Y)	-0.00222	-0.00260	-0.00260
	(!A1 * C1 * !Y)	0.00178	0.00148	0.00146
	(!A1 * C1 * !Y)	-0.00222	-0.00260	-0.00260
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	0.00279	0.00276	0.00268
	(A1 * A2 * C1 * !Y)	-0.00373	-0.00377	-0.00374
	(A1 * A2 * !C1 * !Y)	0.00266	0.00269	0.00264
	(A1 * A2 * !C1 * !Y)	-0.00315	-0.00317	-0.00316
	(A1 * !A2 * C1 * !Y)	0.00339	0.00266	0.00263
	(A1 * !A2 * C1 * !Y)	-0.00456	-0.00541	-0.00539
	(!A1 * C1 * !Y)	0.00337	0.00266	0.00263
	(!A1 * C1 * !Y)	-0.00458	-0.00540	-0.00540

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)	-0.00125	-0.00125	-0.00125
	(A1 * A2 * C1 * !Y)	0.00094	0.00093	0.00094
	(A1 * A2 * !C1 * !Y)	-0.00122	-0.00124	-0.00124
	(A1 * A2 * !C1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A2 * C1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * C1 * !Y)	0.00132	0.00133	0.00132
	(!A1 * C1 * !Y)	-0.00124	-0.00125	-0.00125
	(!A1 * C1 * !Y)	0.00131	0.00133	0.00132
sky130_fd_sc_hs__a211oi_2	(A1 * A2 * C1 * !Y)	-0.00148	-0.00150	-0.00149
	(A1 * A2 * C1 * !Y)	0.00179	0.00182	0.00180
	(A1 * A2 * !C1 * !Y)	-0.00143	-0.00143	-0.00142
	(A1 * A2 * !C1 * !Y)	0.00156	0.00157	0.00157
	(A1 * !A2 * C1 * !Y)	-0.00146	-0.00147	-0.00146
	(A1 * !A2 * C1 * !Y)	0.00258	0.00261	0.00260
	(!A1 * C1 * !Y)	-0.00146	-0.00147	-0.00146
	(!A1 * C1 * !Y)	0.00258	0.00261	0.00260
sky130_fd_sc_hs__a211oi_4	(A1 * A2 * C1 * !Y)	-0.00265	-0.00267	-0.00265
	(A1 * A2 * C1 * !Y)	0.00373	0.00377	0.00374
	(A1 * A2 * !C1 * !Y)	-0.00254	-0.00257	-0.00255
	(A1 * A2 * !C1 * !Y)	0.00324	0.00328	0.00327
	(A1 * !A2 * C1 * !Y)	-0.00262	-0.00264	-0.00262
	(A1 * !A2 * C1 * !Y)	0.00537	0.00542	0.00539
	(!A1 * C1 * !Y)	-0.00262	-0.00264	-0.00262
	(!A1 * C1 * !Y)	0.00536	0.00543	0.00540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	0.00148	0.00150	0.00148
	(A1 * B1 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !B1 * !Y)	0.00149	0.00150	0.00148
	(A1 * A2 * !B1 * !Y)	-0.00068	-0.00068	-0.00067
	(!A1 * B1 * !Y)	0.00148	0.00150	0.00148
	(!A1 * B1 * !Y)	-0.00068	-0.00068	-0.00067
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	0.00157	0.00158	0.00157
	(A1 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * !B1 * !Y)	0.00157	0.00158	0.00157
	(A1 * A2 * !B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * B1 * !Y)	0.00157	0.00158	0.00157
	(!A1 * B1 * !Y)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	0.00318	0.00320	0.00317
	(A1 * B1 * !Y)	-0.00280	-0.00280	-0.00277
	(A1 * A2 * !B1 * !Y)	0.00318	0.00320	0.00317
	(A1 * A2 * !B1 * !Y)	-0.00279	-0.00279	-0.00277
	(!A1 * B1 * !Y)	0.00318	0.00320	0.00317
	(!A1 * B1 * !Y)	-0.00281	-0.00281	-0.00278

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211oi_1	(A1 * B1 * !Y)	-0.00144	-0.00145	-0.00148
	(A1 * B1 * !Y)	0.00072	0.00072	0.00069
	(A1 * A2 * !B1 * !Y)	-0.00133	-0.00135	-0.00145
	(A1 * A2 * !B1 * !Y)	0.00078	0.00078	0.00070
	(!A1 * B1 * !Y)	-0.00143	-0.00145	-0.00148
	(!A1 * B1 * !Y)	0.00071	0.00072	0.00069
sky130_fd_sc_hs__a211oi_2	(A1 * B1 * !Y)	-0.00144	-0.00145	-0.00156
	(A1 * B1 * !Y)	0.00150	0.00151	0.00141
	(A1 * A2 * !B1 * !Y)	-0.00126	-0.00127	-0.00151
	(A1 * A2 * !B1 * !Y)	0.00161	0.00161	0.00143
	(!A1 * B1 * !Y)	-0.00144	-0.00145	-0.00156
	(!A1 * B1 * !Y)	0.00151	0.00151	0.00141
sky130_fd_sc_hs__a211oi_4	(A1 * B1 * !Y)	-0.00292	-0.00296	-0.00315
	(A1 * B1 * !Y)	0.00297	0.00300	0.00283
	(A1 * A2 * !B1 * !Y)	-0.00254	-0.00257	-0.00304
	(A1 * A2 * !B1 * !Y)	0.00322	0.00323	0.00288
	(!A1 * B1 * !Y)	-0.00292	-0.00296	-0.00315
	(!A1 * B1 * !Y)	0.00299	0.00301	0.00284

SKY130_FD_SC_HS__A211Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00246	0.00231	0.00250	0.00248	1.15680
sky130_fd_sc_hs__a211o_2	0.00270	0.00267	0.00265	0.00256	2.20589
sky130_fd_sc_hs__a211o_4	0.00456	0.00467	0.00496	0.00447	4.24261

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a211o_1	0.00000	0.02455	0.05847
sky130_fd_sc_hs__a211o_2	0.00000	0.03086	0.06682
sky130_fd_sc_hs__a211o_4	0.00000	0.06232	0.13743

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)	0.06336	0.52867	5.56357
	A2->X (RR)	0.06644	0.53897	5.62871
	B1->X (RR)	0.05493	0.50784	5.51210
	C1->X (RR)	0.05179	0.49570	5.59848
sky130_fd_sc_hs__a211o_2	A1->X (RR)	0.06354	0.45881	5.64997
	A2->X (RR)	0.06682	0.46394	5.70521
	B1->X (RR)	0.05393	0.43728	5.59138
	C1->X (RR)	0.05123	0.42753	5.63777
sky130_fd_sc_hs__a211o_4	A1->X (RR)	0.06671	0.38556	5.64400
	A2->X (RR)	0.07110	0.39633	5.71223
	B1->X (RR)	0.05175	0.35095	5.55302
	C1->X (RR)	0.05148	0.34836	5.65617

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a211o_1	A1->X (FF)	0.17382	0.62772	4.79117
	A2->X (FF)	0.20075	0.66515	4.87857
	B1->X (FF)	0.18081	0.65642	5.00651
	C1->X (FF)	0.15266	0.61450	4.86488
sky130_fd_sc_hs__a211o_2	A1->X (FF)	0.22404	0.68044	4.98874
	A2->X (FF)	0.25784	0.72491	5.07993
	B1->X (FF)	0.23785	0.72312	5.20476
	C1->X (FF)	0.20659	0.67786	5.01967
sky130_fd_sc_hs__a211o_4	A1->X (FF)	0.20932	0.62450	4.95131
	A2->X (FF)	0.22504	0.65202	5.01012
	B1->X (FF)	0.20812	0.64925	5.09792
	C1->X (FF)	0.17577	0.60370	4.95178

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00871	0.00871	0.01791
	A1	0.00412	0.00412	0.01350
	A2	0.00939	0.00927	0.01598
	A2	0.00411	0.00399	0.01083
	B1	0.00715	0.00745	0.01791
	B1	0.00312	0.00344	0.01408
	C1	0.00601	0.00652	0.02421
	C1	0.00253	0.00304	0.02089
sky130_fd_sc_hs__a211o_2	A1	0.01078	0.01087	0.01851
	A1	0.00576	0.00586	0.01377
	A2	0.01165	0.01167	0.01731
	A2	0.00574	0.00577	0.01160
	B1	0.01002	0.01047	0.01880
	B1	0.00484	0.00535	0.01468
	C1	0.00804	0.00856	0.02430
	C1	0.00421	0.00475	0.02077
sky130_fd_sc_hs__a211o_4	A1	0.01999	0.02069	0.03971
	A1	0.01095	0.01167	0.03121
	A2	0.02175	0.02238	0.03629
	A2	0.01098	0.01163	0.02590
	B1	0.01826	0.01893	0.03787
	B1	0.00894	0.00974	0.03050
	C1	0.01391	0.01532	0.04895
	C1	0.00751	0.00898	0.04309

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	A1	0.00288	0.00289	0.00880
	A1	0.00755	0.00757	0.01341
	A2	0.00319	0.00324	0.00910
	A2	0.00851	0.00857	0.01394
	B1	0.00259	0.00271	0.01208
	B1	0.00663	0.00674	0.01547
	C1	0.00253	0.00344	0.02059
	C1	0.00600	0.00691	0.02358
sky130_fd_sc_hs__a211o_2	A1	0.00489	0.00489	0.01016
	A1	0.00997	0.00996	0.01509
	A2	0.00523	0.00519	0.01095
	A2	0.01117	0.01112	0.01607
	B1	0.00538	0.00525	0.01371
	B1	0.01053	0.01038	0.01663
	C1	0.00468	0.00570	0.02155
	C1	0.00982	0.01050	0.02367
sky130_fd_sc_hs__a211o_4	A1	0.00940	0.00948	0.02266
	A1	0.01859	0.01867	0.03185
	A2	0.00973	0.00976	0.02295
	A2	0.02057	0.02060	0.03216
	B1	0.00898	0.00927	0.02417
	B1	0.01933	0.01922	0.03256
	C1	0.00901	0.01061	0.04225
	C1	0.01540	0.01700	0.04855

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)**	0.00106	0.00107	0.00106
	(A2 * B1 * C1 * X)	-0.00120	-0.00126	-0.00126
	(A2 * B1 * !C1 * X)	0.00106	0.00107	0.00106
	(A2 * B1 * !C1 * X)	-0.00119	-0.00126	-0.00126
	(A2 * !B1 * C1 * X)	0.00107	0.00106	0.00106
	(A2 * !B1 * C1 * X)	-0.00113	-0.00122	-0.00122
	(!A2 * B1 * C1 * X)	0.00100	0.00102	0.00101
	(!A2 * B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * B1 * !C1 * X)	0.00101	0.00102	0.00101
	(!A2 * B1 * !C1 * X)	-0.00130	-0.00130	-0.00129
	(!A2 * !B1 * C1 * X)	0.00101	0.00102	0.00101
	(!A2 * !B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * !B1 * !C1 * !X)	0.00030	0.00030	0.00030
	(!A2 * !B1 * !C1 * !X)	-0.00156	-0.00157	-0.00158
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	0.00129	0.00129	0.00128
	(A2 * B1 * C1 * X)	-0.00115	-0.00121	-0.00120
	(A2 * B1 * !C1 * X)	0.00129	0.00129	0.00128
	(A2 * B1 * !C1 * X)	-0.00114	-0.00120	-0.00120
	(A2 * !B1 * C1 * X)	0.00129	0.00129	0.00128
	(A2 * !B1 * C1 * X)	-0.00108	-0.00117	-0.00117
	(!A2 * B1 * C1 * X)	0.00122	0.00123	0.00122
	(!A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * !C1 * X)	0.00122	0.00123	0.00122
	(!A2 * B1 * !C1 * X)	-0.00123	-0.00123	-0.00123
	(!A2 * !B1 * C1 * X)	0.00122	0.00123	0.00122
	(!A2 * !B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00037	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00155	-0.00156	-0.00158

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	0.00207	0.00209	0.00207
	(A2 * B1 * C1 * X)	-0.00240	-0.00251	-0.00250
	(A2 * B1 * !C1 * X)	0.00207	0.00209	0.00207
	(A2 * B1 * !C1 * X)	-0.00239	-0.00251	-0.00250
	(A2 * !B1 * C1 * X)	0.00208	0.00208	0.00206
	(A2 * !B1 * C1 * X)	-0.00227	-0.00244	-0.00243
	(!A2 * B1 * C1 * X)	0.00197	0.00200	0.00198
	(!A2 * B1 * C1 * X)	-0.00258	-0.00258	-0.00257
	(!A2 * B1 * !C1 * X)	0.00197	0.00200	0.00198
	(!A2 * B1 * !C1 * X)	-0.00256	-0.00259	-0.00257
	(!A2 * !B1 * C1 * X)	0.00197	0.00200	0.00198
	(!A2 * !B1 * C1 * X)	-0.00256	-0.00259	-0.00257
	(!A2 * !B1 * !C1 * !X)	0.00061	0.00062	0.00059
	(!A2 * !B1 * !C1 * !X)	-0.00305	-0.00307	-0.00309

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

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

sky130_fd_sc_hs__a211o_1	**(A2 * B1 * C1 * X)**	-0.00106	-0.00106	-0.00106
	(A2 * B1 * C1 * X)	0.00126	0.00126	0.00126
	(A2 * B1 * !C1 * X)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !C1 * X)	0.00126	0.00126	0.00126
	(A2 * !B1 * C1 * X)	-0.00106	-0.00105	-0.00105
	(A2 * !B1 * C1 * X)	0.00123	0.00122	0.00122
	(!A2 * B1 * C1 * X)	-0.00098	-0.00102	-0.00101
	(!A2 * B1 * C1 * X)	0.00130	0.00131	0.00130
	(!A2 * B1 * !C1 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * B1 * !C1 * X)	0.00130	0.00130	0.00130
	(!A2 * !B1 * C1 * X)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1 * C1 * X)	0.00130	0.00131	0.00130
	(!A2 * !B1 * !C1 * !X)	-0.00029	-0.00029	-0.00029
	(!A2 * !B1 * !C1 * !X)	0.00158	0.00161	0.00159
sky130_fd_sc_hs__a211o_2	**(A2 * B1 * C1 * X)**	-0.00128	-0.00129	-0.00128
	(A2 * B1 * C1 * X)	0.00120	0.00121	0.00120
	(A2 * B1 * !C1 * X)	-0.00128	-0.00129	-0.00128
	(A2 * B1 * !C1 * X)	0.00120	0.00120	0.00120
	(A2 * !B1 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A2 * !B1 * C1 * X)	0.00117	0.00117	0.00117
	(!A2 * B1 * C1 * X)	-0.00119	-0.00123	-0.00122
	(!A2 * B1 * C1 * X)	0.00123	0.00124	0.00123
	(!A2 * B1 * !C1 * X)	-0.00119	-0.00122	-0.00122
	(!A2 * B1 * !C1 * X)	0.00123	0.00123	0.00123
	(!A2 * !B1 * C1 * X)	-0.00118	-0.00122	-0.00122
	(!A2 * !B1 * C1 * X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00159	0.00160	0.00158

sky130_fd_sc_hs__a211o_4	**(A2 * B1 * C1 * X)**	-0.00207	-0.00207	-0.00207
	(A2 * B1 * C1 * X)	0.00250	0.00251	0.00250
	(A2 * B1 * !C1 * X)	-0.00207	-0.00207	-0.00207
	(A2 * B1 * !C1 * X)	0.00250	0.00251	0.00250
	(A2 * !B1 * C1 * X)	-0.00205	-0.00206	-0.00206
	(A2 * !B1 * C1 * X)	0.00242	0.00244	0.00243
	(!A2 * B1 * C1 * X)	-0.00189	-0.00196	-0.00198
	(!A2 * B1 * C1 * X)	0.00258	0.00258	0.00258
	(!A2 * B1 * !C1 * X)	-0.00189	-0.00197	-0.00198
	(!A2 * B1 * !C1 * X)	0.00257	0.00259	0.00258
	(!A2 * !B1 * C1 * X)	-0.00188	-0.00197	-0.00198
	(!A2 * !B1 * C1 * X)	0.00257	0.00260	0.00258
	(!A2 * !B1 * !C1 * !X)	-0.00058	-0.00058	-0.00057
	(!A2 * !B1 * !C1 * !X)	0.00310	0.00312	0.00310

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)**	0.00108	0.00109	0.00108
	(A1 * B1 * C1 * X)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * !C1 * X)	0.00108	0.00109	0.00108
	(A1 * B1 * !C1 * X)	-0.00118	-0.00124	-0.00124
	(A1 * !B1 * C1 * X)	0.00109	0.00109	0.00108
	(A1 * !B1 * C1 * X)	-0.00112	-0.00121	-0.00121
	(!A1 * B1 * X)	0.00103	0.00105	0.00104
	(!A1 * B1 * X)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * C1 * X)	0.00103	0.00105	0.00104
	(!A1 * !B1 * C1 * X)	-0.00127	-0.00128	-0.00128
	(!A1 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00139	-0.00138

sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	0.00139	0.00139	0.00138
	(A1 * B1 * C1 * X)	-0.00116	-0.00122	-0.00121
	(A1 * B1 * !C1 * X)	0.00139	0.00139	0.00138
	(A1 * B1 * !C1 * X)	-0.00115	-0.00122	-0.00121
	(A1 * !B1 * C1 * X)	0.00139	0.00138	0.00137
	(A1 * !B1 * C1 * X)	-0.00110	-0.00118	-0.00118
	(!A1 * B1 * X)	0.00132	0.00133	0.00132
	(!A1 * B1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * !B1 * C1 * X)	0.00131	0.00132	0.00132
	(!A1 * !B1 * C1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00112	0.00112
	(!A1 * !B1 * !C1 * !X)	-0.00143	-0.00144	-0.00144
sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	0.00249	0.00252	0.00248
	(A1 * B1 * C1 * X)	-0.00231	-0.00242	-0.00242
	(A1 * B1 * !C1 * X)	0.00249	0.00252	0.00248
	(A1 * B1 * !C1 * X)	-0.00231	-0.00241	-0.00242
	(A1 * !B1 * C1 * X)	0.00250	0.00252	0.00248
	(A1 * !B1 * C1 * X)	-0.00220	-0.00239	-0.00236
	(!A1 * B1 * X)	0.00238	0.00240	0.00238
	(!A1 * B1 * X)	-0.00247	-0.00248	-0.00247
	(!A1 * !B1 * C1 * X)	0.00238	0.00242	0.00239
	(!A1 * !B1 * C1 * X)	-0.00247	-0.00249	-0.00247
	(!A1 * !B1 * !C1 * !X)	0.00233	0.00236	0.00234
	(!A1 * !B1 * !C1 * !X)	-0.00252	-0.00253	-0.00252

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)**	-0.00108	-0.00108	-0.00108
	(A1 * B1 * C1 * X)	0.00125	0.00125	0.00124
	(A1 * B1 * !C1 * X)	-0.00108	-0.00108	-0.00108
	(A1 * B1 * !C1 * X)	0.00125	0.00124	0.00124
	(A1 * !B1 * C1 * X)	-0.00108	-0.00108	-0.00108
	(A1 * !B1 * C1 * X)	0.00122	0.00121	0.00121
	(!A1 * B1 * X)	-0.00101	-0.00105	-0.00104
	(!A1 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * C1 * X)	-0.00101	-0.00105	-0.00104
	(!A1 * !B1 * C1 * X)	0.00128	0.00129	0.00128
	(!A1 * !B1 * !C1 * !X)	-0.00088	-0.00094	-0.00093
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00139	0.00138
sky130_fd_sc_hs__a211o_2	**(A1 * B1 * C1 * X)**	-0.00138	-0.00138	-0.00138
	(A1 * B1 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * !C1 * X)	-0.00138	-0.00138	-0.00138
	(A1 * B1 * !C1 * X)	0.00121	0.00122	0.00121
	(A1 * !B1 * C1 * X)	-0.00137	-0.00137	-0.00137
	(A1 * !B1 * C1 * X)	0.00117	0.00118	0.00118
	(!A1 * B1 * X)	-0.00128	-0.00132	-0.00132
	(!A1 * B1 * X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * C1 * X)	-0.00128	-0.00132	-0.00132
	(!A1 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00106	-0.00112	-0.00112
	(!A1 * !B1 * !C1 * !X)	0.00148	0.00146	0.00144

sky130_fd_sc_hs__a211o_4	**(A1 * B1 * C1 * X)**	-0.00248	-0.00248	-0.00248
	(A1 * B1 * C1 * X)	0.00241	0.00242	0.00242
	(A1 * B1 * !C1 * X)	-0.00248	-0.00248	-0.00248
	(A1 * B1 * !C1 * X)	0.00241	0.00241	0.00242
	(A1 * !B1 * C1 * X)	-0.00246	-0.00249	-0.00248
	(A1 * !B1 * C1 * X)	0.00234	0.00239	0.00236
	(!A1 * B1 * X)	-0.00232	-0.00240	-0.00238
	(!A1 * B1 * X)	0.00247	0.00251	0.00248
	(!A1 * !B1 * C1 * X)	-0.00232	-0.00238	-0.00239
	(!A1 * !B1 * C1 * X)	0.00247	0.00249	0.00248
	(!A1 * !B1 * !C1 * !X)	-0.00222	-0.00236	-0.00234
	(!A1 * !B1 * !C1 * !X)	0.00259	0.00255	0.00253

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)	0.00135	0.00130	0.00128
	(A1 * A2 * C1 * X)	-0.00085	-0.00086	-0.00085
	(A1 * A2 * !C1 * X)	0.00127	0.00130	0.00127
	(A1 * A2 * !C1 * X)	-0.00069	-0.00071	-0.00070
	(A1 * !A2 * C1 * X)	0.00145	0.00127	0.00126
	(A1 * !A2 * C1 * X)	-0.00100	-0.00119	-0.00120
	(!A1 * C1 * X)	0.00144	0.00127	0.00126
	(!A1 * C1 * X)	-0.00101	-0.00119	-0.00120
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	0.00138	0.00136	0.00132
	(A1 * A2 * C1 * X)	-0.00085	-0.00085	-0.00085
	(A1 * A2 * !C1 * X)	0.00131	0.00132	0.00130
	(A1 * A2 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * C1 * X)	0.00148	0.00130	0.00129
	(A1 * !A2 * C1 * X)	-0.00099	-0.00119	-0.00120
	(!A1 * C1 * X)	0.00147	0.00130	0.00129
	(!A1 * C1 * X)	-0.00100	-0.00119	-0.00120
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	0.00243	0.00240	0.00234
	(A1 * A2 * C1 * X)	-0.00179	-0.00178	-0.00178
	(A1 * A2 * !C1 * X)	0.00234	0.00235	0.00232
	(A1 * A2 * !C1 * X)	-0.00150	-0.00150	-0.00149
	(A1 * !A2 * C1 * X)	0.00266	0.00233	0.00230
	(A1 * !A2 * C1 * X)	-0.00209	-0.00249	-0.00250
	(!A1 * C1 * X)	0.00267	0.00233	0.00230
	(!A1 * C1 * X)	-0.00208	-0.00248	-0.00250

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)	-0.00126	-0.00127	-0.00126
	(A1 * A2 * C1 * X)	0.00085	0.00086	0.00085
	(A1 * A2 * !C1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * A2 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * !A2 * C1 * X)	-0.00126	-0.00126	-0.00125
	(A1 * !A2 * C1 * X)	0.00119	0.00120	0.00120
	(!A1 * C1 * X)	-0.00126	-0.00126	-0.00125
	(!A1 * C1 * X)	0.00119	0.00120	0.00120
sky130_fd_sc_hs__a211o_2	(A1 * A2 * C1 * X)	-0.00131	-0.00131	-0.00131
	(A1 * A2 * C1 * X)	0.00085	0.00085	0.00085
	(A1 * A2 * !C1 * X)	-0.00128	-0.00129	-0.00129
	(A1 * A2 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * !A2 * C1 * X)	-0.00129	-0.00129	-0.00128
	(A1 * !A2 * C1 * X)	0.00119	0.00120	0.00120
	(!A1 * C1 * X)	-0.00129	-0.00129	-0.00128
	(!A1 * C1 * X)	0.00119	0.00120	0.00120
sky130_fd_sc_hs__a211o_4	(A1 * A2 * C1 * X)	-0.00232	-0.00232	-0.00232
	(A1 * A2 * C1 * X)	0.00179	0.00178	0.00178
	(A1 * A2 * !C1 * X)	-0.00228	-0.00229	-0.00228
	(A1 * A2 * !C1 * X)	0.00155	0.00155	0.00154
	(A1 * !A2 * C1 * X)	-0.00230	-0.00230	-0.00229
	(A1 * !A2 * C1 * X)	0.00249	0.00251	0.00250
	(!A1 * C1 * X)	-0.00229	-0.00229	-0.00229
	(!A1 * C1 * X)	0.00248	0.00248	0.00250

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	0.00137	0.00140	0.00138
	(A1 * B1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * X)	0.00137	0.00140	0.00138
	(A1 * A2 * !B1 * X)	-0.00063	-0.00065	-0.00064
	(!A1 * B1 * X)	0.00137	0.00140	0.00138
	(!A1 * B1 * X)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	0.00138	0.00139	0.00138
	(A1 * B1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * !B1 * X)	0.00138	0.00139	0.00138
	(A1 * A2 * !B1 * X)	-0.00067	-0.00067	-0.00066
	(!A1 * B1 * X)	0.00138	0.00139	0.00138
	(!A1 * B1 * X)	-0.00067	-0.00067	-0.00067
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	0.00224	0.00227	0.00225
	(A1 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !B1 * X)	0.00224	0.00227	0.00225
	(A1 * A2 * !B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * B1 * X)	0.00224	0.00227	0.00225
	(!A1 * B1 * X)	-0.00130	-0.00131	-0.00129

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a211o_1	(A1 * B1 * X)	-0.00134	-0.00135	-0.00137
	(A1 * B1 * X)	0.00067	0.00068	0.00065
	(A1 * A2 * !B1 * X)	-0.00124	-0.00126	-0.00135
	(A1 * A2 * !B1 * X)	0.00074	0.00074	0.00066
	(!A1 * B1 * X)	-0.00134	-0.00135	-0.00137
	(!A1 * B1 * X)	0.00067	0.00068	0.00065
sky130_fd_sc_hs__a211o_2	(A1 * B1 * X)	-0.00134	-0.00135	-0.00137
	(A1 * B1 * X)	0.00070	0.00070	0.00067
	(A1 * A2 * !B1 * X)	-0.00125	-0.00126	-0.00135
	(A1 * A2 * !B1 * X)	0.00076	0.00076	0.00069
	(!A1 * B1 * X)	-0.00134	-0.00135	-0.00137
	(!A1 * B1 * X)	0.00070	0.00070	0.00068
sky130_fd_sc_hs__a211o_4	(A1 * B1 * X)	-0.00215	-0.00217	-0.00224
	(A1 * B1 * X)	0.00137	0.00137	0.00131
	(A1 * A2 * !B1 * X)	-0.00197	-0.00199	-0.00219
	(A1 * A2 * !B1 * X)	0.00148	0.00149	0.00133
	(!A1 * B1 * X)	-0.00215	-0.00217	-0.00223
	(!A1 * B1 * X)	0.00138	0.00138	0.00132

SKY130_FD_SC_HS__A21BOIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00259	0.00250	0.00245	0.55487
sky130_fd_sc_hs__a21boi_2	0.00489	0.00471	0.00237	1.05714
sky130_fd_sc_hs__a21boi_4	0.00970	0.00961	0.00345	1.88278

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21boi_1	0.00000	0.13021	0.25211
sky130_fd_sc_hs__a21boi_2	0.00000	0.06076	0.10479
sky130_fd_sc_hs__a21boi_4	0.00000	0.29136	0.55120

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)	0.07171	0.96604	11.14310
	A2->Y (FR)	0.09095	1.01424	11.46910
	B1_N->Y (RR)	0.08821	0.70281	6.31254
sky130_fd_sc_hs__a21boi_2	A1->Y (FR)	0.06557	0.84706	11.33580
	A2->Y (FR)	0.08519	0.86410	11.31010
	B1_N->Y (RR)	0.08199	0.55905	6.08147
sky130_fd_sc_hs__a21boi_4	A1->Y (FR)	0.06595	0.73881	11.14470
	A2->Y (FR)	0.08459	0.74708	10.93210
	B1_N->Y (RR)	0.07285	0.49995	6.46126

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21boi_1	A1->Y (RF)	0.02079	0.33458	3.75065
	A2->Y (RF)	0.02358	0.32161	3.55414
	B1_N->Y (FF)	0.06045	0.38954	3.02662
sky130_fd_sc_hs__a21boi_2	A1->Y (RF)	0.01956	0.30591	4.05045
	A2->Y (RF)	0.02369	0.28977	3.75839
	B1_N->Y (FF)	0.06492	0.40264	3.18767
sky130_fd_sc_hs__a21boi_4	A1->Y (RF)	0.02070	0.26924	4.11464
	A2->Y (RF)	0.02455	0.23660	3.52517
	B1_N->Y (FF)	0.06856	0.37793	2.89629

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00061	0.00051	0.00137
	A1	0.00376	0.00367	0.00452
	A2	0.00102	0.00093	0.00179
	A2	0.00492	0.00484	0.00569
	B1_N	0.00594	0.00652	0.02932
	B1_N	0.00394	0.00452	0.02738
sky130_fd_sc_hs__a21boi_2	A1	0.00131	0.00117	0.00284
	A1	0.00741	0.00727	0.00894
	A2	0.00257	0.00236	0.00402
	A2	0.01019	0.00998	0.01148
	B1_N	0.00876	0.00920	0.03194
	B1_N	0.00799	0.00842	0.03131
sky130_fd_sc_hs__a21boi_4	A1	0.00275	0.00239	0.00579
	A1	0.01511	0.01481	0.01824
	A2	0.00470	0.00424	0.00760
	A2	0.02023	0.01978	0.02322
	B1_N	0.01523	0.01589	0.05322
	B1_N	0.01535	0.01603	0.05361

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21boi_1	A1	0.00419	0.00412	0.00514
	A1	0.00109	0.00101	0.00200
	A2	0.00497	0.00490	0.00559
	A2	0.00108	0.00097	0.00161
	B1_N	0.00337	0.00470	0.02536
	B1_N	0.00528	0.00659	0.02725
sky130_fd_sc_hs__a21boi_2	A1	0.00755	0.00737	0.00969
	A1	0.00155	0.00134	0.00326
	A2	0.00916	0.00893	0.01018
	A2	0.00151	0.00128	0.00254
	B1_N	0.00649	0.00795	0.02698
	B1_N	0.00706	0.00849	0.02752
sky130_fd_sc_hs__a21boi_4	A1	0.01481	0.01440	0.01837
	A1	0.00262	0.00217	0.00608
	A2	0.01824	0.01773	0.02049
	A2	0.00272	0.00213	0.00491
	B1_N	0.01326	0.01568	0.05092
	B1_N	0.01280	0.01518	0.05039

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)	0.00128	0.00123	0.00122
	(A2 * !B1_N * !Y)	-0.00131	-0.00141	-0.00140
	(!A2 * B1_N * Y)	0.00046	0.00047	0.00046
	(!A2 * B1_N * Y)	-0.00160	-0.00161	-0.00163
	(!A2 * !B1_N * !Y)	0.00116	0.00117	0.00116
	(!A2 * !B1_N * !Y)	-0.00142	-0.00143	-0.00142
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	0.00252	0.00242	0.00240
	(A2 * !B1_N * !Y)	-0.00251	-0.00271	-0.00270
	(!A2 * B1_N * Y)	0.00083	0.00083	0.00080
	(!A2 * B1_N * Y)	-0.00321	-0.00322	-0.00327
	(!A2 * !B1_N * !Y)	0.00231	0.00234	0.00232
	(!A2 * !B1_N * !Y)	-0.00273	-0.00276	-0.00274
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	0.00503	0.00478	0.00472
	(A2 * !B1_N * !Y)	-0.00502	-0.00547	-0.00544
	(!A2 * B1_N * Y)	0.00155	0.00155	0.00149
	(!A2 * B1_N * Y)	-0.00649	-0.00650	-0.00659
	(!A2 * !B1_N * !Y)	0.00454	0.00459	0.00456
	(!A2 * !B1_N * !Y)	-0.00551	-0.00555	-0.00553

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)	-0.00121	-0.00122	-0.00121
	(A2 * !B1_N * !Y)	0.00140	0.00141	0.00140
	(!A2 * B1_N * Y)	-0.00045	-0.00045	-0.00044
	(!A2 * B1_N * Y)	0.00164	0.00167	0.00164
	(!A2 * !B1_N * !Y)	-0.00112	-0.00116	-0.00116
	(!A2 * !B1_N * !Y)	0.00142	0.00143	0.00143
sky130_fd_sc_hs__a21boi_2	(A2 * !B1_N * !Y)	-0.00240	-0.00240	-0.00239
	(A2 * !B1_N * !Y)	0.00270	0.00271	0.00270
	(!A2 * B1_N * Y)	-0.00079	-0.00080	-0.00078
	(!A2 * B1_N * Y)	0.00328	0.00333	0.00328
	(!A2 * !B1_N * !Y)	-0.00218	-0.00231	-0.00231
	(!A2 * !B1_N * !Y)	0.00274	0.00276	0.00275
sky130_fd_sc_hs__a21boi_4	(A2 * !B1_N * !Y)	-0.00472	-0.00472	-0.00470
	(A2 * !B1_N * !Y)	0.00545	0.00547	0.00544
	(!A2 * B1_N * Y)	-0.00146	-0.00148	-0.00145
	(!A2 * B1_N * Y)	0.00662	0.00672	0.00661
	(!A2 * !B1_N * !Y)	-0.00429	-0.00455	-0.00455
	(!A2 * !B1_N * !Y)	0.00552	0.00555	0.00554

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)	0.00134	0.00128	0.00127
	(A1 * !B1_N * !Y)	-0.00125	-0.00135	-0.00135
	(!A1 * B1_N * Y)	0.00120	0.00122	0.00121
	(!A1 * B1_N * Y)	-0.00137	-0.00138	-0.00138
	(!A1 * !B1_N * !Y)	0.00121	0.00123	0.00122
	(!A1 * !B1_N * !Y)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	0.00249	0.00238	0.00236
	(A1 * !B1_N * !Y)	-0.00252	-0.00270	-0.00269
	(!A1 * B1_N * Y)	0.00225	0.00228	0.00226
	(!A1 * B1_N * Y)	-0.00273	-0.00275	-0.00273
	(!A1 * !B1_N * !Y)	0.00225	0.00228	0.00226
	(!A1 * !B1_N * !Y)	-0.00273	-0.00274	-0.00273
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	0.00511	0.00483	0.00478
	(A1 * !B1_N * !Y)	-0.00499	-0.00544	-0.00542
	(!A1 * B1_N * Y)	0.00436	0.00443	0.00437
	(!A1 * B1_N * Y)	-0.00570	-0.00576	-0.00572
	(!A1 * !B1_N * !Y)	0.00458	0.00460	0.00459
	(!A1 * !B1_N * !Y)	-0.00548	-0.00550	-0.00549

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)	-0.00127	-0.00127	-0.00127
	(A1 * !B1_N * !Y)	0.00135	0.00135	0.00135
	(!A1 * B1_N * Y)	-0.00115	-0.00122	-0.00121
	(!A1 * B1_N * Y)	0.00141	0.00140	0.00138
	(!A1 * !B1_N * !Y)	-0.00118	-0.00123	-0.00122
	(!A1 * !B1_N * !Y)	0.00138	0.00139	0.00137
sky130_fd_sc_hs__a21boi_2	(A1 * !B1_N * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * !B1_N * !Y)	0.00268	0.00270	0.00269
	(!A1 * B1_N * Y)	-0.00213	-0.00226	-0.00226
	(!A1 * B1_N * Y)	0.00278	0.00277	0.00274
	(!A1 * !B1_N * !Y)	-0.00216	-0.00225	-0.00226
	(!A1 * !B1_N * !Y)	0.00273	0.00275	0.00274
sky130_fd_sc_hs__a21boi_4	(A1 * !B1_N * !Y)	-0.00475	-0.00477	-0.00476
	(A1 * !B1_N * !Y)	0.00539	0.00544	0.00542
	(!A1 * B1_N * Y)	-0.00411	-0.00436	-0.00437
	(!A1 * B1_N * Y)	0.00582	0.00580	0.00574
	(!A1 * !B1_N * !Y)	-0.00441	-0.00458	-0.00459
	(!A1 * !B1_N * !Y)	0.00549	0.00554	0.00551

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)	0.00372	0.00430	0.02688
	(A1 * A2 * !Y)	0.00064	0.00121	0.02381
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00431	0.00475	0.02707
	(A1 * A2 * !Y)	0.00133	0.00175	0.02409
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00659	0.00694	0.04424
	(A1 * A2 * !Y)	0.00223	0.00255	0.03988

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)	0.00067	0.00188	0.02476
	(A1 * A2 * !Y)	0.00374	0.00496	0.02784
sky130_fd_sc_hs__a21boi_2	(A1 * A2 * !Y)	0.00217	0.00311	0.02539
	(A1 * A2 * !Y)	0.00513	0.00606	0.02834
sky130_fd_sc_hs__a21boi_4	(A1 * A2 * !Y)	0.00474	0.00659	0.04516
	(A1 * A2 * !Y)	0.00904	0.01092	0.04948

SKY130_FD_SC_HS__A21BOx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00243	0.00233	0.00206	1.04311
sky130_fd_sc_hs__a21bo_2	0.00259	0.00243	0.00215	1.95748
sky130_fd_sc_hs__a21bo_4	0.00446	0.00474	0.00248	3.64451

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21bo_1	0.00000	0.15472	0.26889
sky130_fd_sc_hs__a21bo_2	0.00000	0.16692	0.29478
sky130_fd_sc_hs__a21bo_4	0.00000	0.13492	0.19266

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)	0.06409	0.54052	5.63803
	A2->X (RR)	0.06701	0.55305	5.69289
	B1_N->X (FR)	0.10178	0.75948	8.40064
sky130_fd_sc_hs__a21bo_2	A1->X (RR)	0.06041	0.45568	5.61377
	A2->X (RR)	0.06343	0.46298	5.66071
	B1_N->X (FR)	0.10574	0.67023	8.29832
sky130_fd_sc_hs__a21bo_4	A1->X (RR)	0.06225	0.37796	5.55187
	A2->X (RR)	0.06738	0.39151	5.61407
	B1_N->X (FR)	0.11827	0.63281	8.45308

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21bo_1	A1->X (FF)	0.11216	0.54466	4.59537
	A2->X (FF)	0.12974	0.57512	4.63786
	B1_N->X (RF)	0.12715	0.30367	1.48656
sky130_fd_sc_hs__a21bo_2	A1->X (FF)	0.14043	0.56989	4.55989
	A2->X (FF)	0.16125	0.60388	4.63207
	B1_N->X (RF)	0.16419	0.33002	1.36521
sky130_fd_sc_hs__a21bo_4	A1->X (FF)	0.13418	0.52780	4.53700
	A2->X (FF)	0.14753	0.55495	4.58531
	B1_N->X (RF)	0.14794	0.28651	1.23088

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00653	0.00682	0.01791
	A1	0.00350	0.00380	0.01500
	A2	0.00727	0.00749	0.01584
	A2	0.00351	0.00373	0.01217
	B1_N	0.00600	0.00735	0.03049
	B1_N	0.00746	0.00882	0.03399
sky130_fd_sc_hs__a21bo_2	A1	0.00844	0.00892	0.01835
	A1	0.00528	0.00579	0.01549
	A2	0.00914	0.00952	0.01678
	A2	0.00527	0.00567	0.01312
	B1_N	0.00823	0.00950	0.03209
	B1_N	0.00974	0.01103	0.03412
sky130_fd_sc_hs__a21bo_4	A1	0.01547	0.01642	0.03836
	A1	0.01001	0.01099	0.03357
	A2	0.01741	0.01820	0.03460
	A2	0.01003	0.01088	0.02781
	B1_N	0.01471	0.01612	0.04047
	B1_N	0.01566	0.01711	0.04249

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21bo_1	A1	0.00348	0.00352	0.01312
	A1	0.00653	0.00656	0.01582
	A2	0.00358	0.00370	0.01188
	A2	0.00733	0.00744	0.01529
	B1_N	0.00798	0.00859	0.02818
	B1_N	0.00646	0.00705	0.02663
sky130_fd_sc_hs__a21bo_2	A1	0.00518	0.00534	0.01316
	A1	0.00835	0.00851	0.01619
	A2	0.00561	0.00586	0.01327
	A2	0.00946	0.00970	0.01667
	B1_N	0.01056	0.01113	0.03000
	B1_N	0.00899	0.00953	0.02836
sky130_fd_sc_hs__a21bo_4	A1	0.01028	0.01104	0.02861
	A1	0.01578	0.01625	0.03339
	A2	0.01049	0.01113	0.02782
	A2	0.01784	0.01840	0.03335
	B1_N	0.01767	0.01857	0.03970
	B1_N	0.01658	0.01746	0.03845

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)	0.00116	0.00107	0.00106
	(A2 * !B1_N * X)	-0.00121	-0.00135	-0.00135
	(!A2 * B1_N * !X)	0.00039	0.00039	0.00038
	(!A2 * B1_N * !X)	-0.00154	-0.00155	-0.00157
	(!A2 * !B1_N * X)	0.00100	0.00102	0.00101
	(!A2 * !B1_N * X)	-0.00137	-0.00138	-0.00137
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	0.00133	0.00126	0.00124
	(A2 * !B1_N * X)	-0.00120	-0.00132	-0.00132
	(!A2 * B1_N * !X)	0.00048	0.00048	0.00047
	(!A2 * B1_N * !X)	-0.00153	-0.00154	-0.00156
	(!A2 * !B1_N * X)	0.00118	0.00119	0.00119
	(!A2 * !B1_N * X)	-0.00133	-0.00134	-0.00134
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	0.00218	0.00204	0.00202
	(A2 * !B1_N * X)	-0.00229	-0.00251	-0.00250
	(!A2 * B1_N * !X)	0.00062	0.00062	0.00059
	(!A2 * B1_N * !X)	-0.00297	-0.00298	-0.00302
	(!A2 * !B1_N * X)	0.00192	0.00194	0.00193
	(!A2 * !B1_N * X)	-0.00253	-0.00256	-0.00254

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)	-0.00106	-0.00106	-0.00106
	(A2 * !B1_N * X)	0.00135	0.00135	0.00135
	(!A2 * B1_N * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * B1_N * !X)	0.00157	0.00160	0.00157
	(!A2 * !B1_N * X)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1_N * X)	0.00138	0.00138	0.00138
sky130_fd_sc_hs__a21bo_2	(A2 * !B1_N * X)	-0.00124	-0.00124	-0.00124
	(A2 * !B1_N * X)	0.00132	0.00132	0.00132
	(!A2 * B1_N * !X)	-0.00046	-0.00047	-0.00046
	(!A2 * B1_N * !X)	0.00157	0.00159	0.00156
	(!A2 * !B1_N * X)	-0.00115	-0.00119	-0.00119
	(!A2 * !B1_N * X)	0.00134	0.00136	0.00134
sky130_fd_sc_hs__a21bo_4	(A2 * !B1_N * X)	-0.00201	-0.00202	-0.00201
	(A2 * !B1_N * X)	0.00249	0.00252	0.00250
	(!A2 * B1_N * !X)	-0.00058	-0.00059	-0.00057
	(!A2 * B1_N * !X)	0.00304	0.00308	0.00303
	(!A2 * !B1_N * X)	-0.00183	-0.00192	-0.00193
	(!A2 * !B1_N * X)	0.00254	0.00256	0.00255

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)	0.00132	0.00125	0.00124
	(A1 * !B1_N * X)	-0.00114	-0.00123	-0.00123
	(!A1 * B1_N * !X)	0.00119	0.00120	0.00119
	(!A1 * B1_N * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1_N * X)	0.00118	0.00119	0.00118
	(!A1 * !B1_N * X)	-0.00124	-0.00125	-0.00125
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	0.00131	0.00123	0.00121
	(A1 * !B1_N * X)	-0.00115	-0.00128	-0.00128
	(!A1 * B1_N * !X)	0.00115	0.00117	0.00116
	(!A1 * B1_N * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1_N * X)	0.00115	0.00116	0.00116
	(!A1 * !B1_N * X)	-0.00130	-0.00131	-0.00130
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	0.00262	0.00253	0.00249
	(A1 * !B1_N * X)	-0.00231	-0.00250	-0.00249
	(!A1 * B1_N * !X)	0.00238	0.00239	0.00239
	(!A1 * B1_N * !X)	-0.00251	-0.00252	-0.00252
	(!A1 * !B1_N * X)	0.00238	0.00240	0.00239
	(!A1 * !B1_N * X)	-0.00251	-0.00253	-0.00252

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)	-0.00124	-0.00124	-0.00123
	(A1 * !B1_N * X)	0.00123	0.00124	0.00123
	(!A1 * B1_N * !X)	-0.00112	-0.00119	-0.00119
	(!A1 * B1_N * !X)	0.00129	0.00126	0.00125
	(!A1 * !B1_N * X)	-0.00115	-0.00119	-0.00118
	(!A1 * !B1_N * X)	0.00124	0.00125	0.00125
sky130_fd_sc_hs__a21bo_2	(A1 * !B1_N * X)	-0.00121	-0.00121	-0.00121
	(A1 * !B1_N * X)	0.00128	0.00129	0.00128
	(!A1 * B1_N * !X)	-0.00111	-0.00117	-0.00116
	(!A1 * B1_N * !X)	0.00134	0.00132	0.00131
	(!A1 * !B1_N * X)	-0.00113	-0.00116	-0.00116
	(!A1 * !B1_N * X)	0.00131	0.00132	0.00131
sky130_fd_sc_hs__a21bo_4	(A1 * !B1_N * X)	-0.00249	-0.00250	-0.00249
	(A1 * !B1_N * X)	0.00248	0.00250	0.00249
	(!A1 * B1_N * !X)	-0.00226	-0.00239	-0.00239
	(!A1 * B1_N * !X)	0.00259	0.00255	0.00253
	(!A1 * !B1_N * X)	-0.00231	-0.00238	-0.00239
	(!A1 * !B1_N * X)	0.00251	0.00253	0.00253

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)	0.00308	0.00374	0.02592
	(A1 * A2 * X)	0.00049	0.00113	0.02333
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00350	0.00407	0.02611
	(A1 * A2 * X)	0.00078	0.00133	0.02340
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00465	0.00508	0.02695
	(A1 * A2 * X)	0.00154	0.00195	0.02383

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)	0.00087	0.00211	0.02455
	(A1 * A2 * X)	0.00346	0.00470	0.02713
sky130_fd_sc_hs__a21bo_2	(A1 * A2 * X)	0.00106	0.00225	0.02463
	(A1 * A2 * X)	0.00376	0.00496	0.02735
sky130_fd_sc_hs__a21bo_4	(A1 * A2 * X)	0.00176	0.00276	0.02444
	(A1 * A2 * X)	0.00485	0.00587	0.02754

SKY130_FD_SC_HS__A21OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00269	0.00250	0.00262	0.54607
sky130_fd_sc_hs__a21oi_2	0.00485	0.00504	0.00384	0.94009
sky130_fd_sc_hs__a21oi_4	0.00988	0.00958	0.00757	1.80751

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21oi_1	0.00000	0.01560	0.03242
sky130_fd_sc_hs__a21oi_2	0.00000	0.03096	0.06484
sky130_fd_sc_hs__a21oi_4	0.00000	0.06192	0.12968

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)	0.07181	0.96188	11.04820
	A2->Y (FR)	0.08964	1.00781	11.36280
	B1->Y (FR)	0.07021	0.97376	11.24000
sky130_fd_sc_hs__a21oi_2	A1->Y (FR)	0.06969	0.87160	11.31960
	A2->Y (FR)	0.09219	0.87895	11.12290
	B1->Y (FR)	0.03927	0.82482	11.12570
sky130_fd_sc_hs__a21oi_4	A1->Y (FR)	0.06444	0.74807	11.19020
	A2->Y (FR)	0.08413	0.75446	10.96970
	B1->Y (FR)	0.03542	0.70871	11.05530

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21oi_1	A1->Y (RF)	0.02086	0.33182	3.69459
	A2->Y (RF)	0.02325	0.31971	3.51654
	B1->Y (RF)	0.01463	0.26796	3.01548
sky130_fd_sc_hs__a21oi_2	A1->Y (RF)	0.02001	0.29535	3.76930
	A2->Y (RF)	0.02522	0.28008	3.47759
	B1->Y (RF)	0.01774	0.33969	4.47868
sky130_fd_sc_hs__a21oi_4	A1->Y (RF)	0.01962	0.26279	3.98840
	A2->Y (RF)	0.02315	0.23088	3.40708
	B1->Y (RF)	0.01805	0.30820	4.79649

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	-0.00026	-0.00036	0.00050
	A1	0.00390	0.00381	0.00468
	A2	0.00003	-0.00006	0.00082
	A2	0.00495	0.00488	0.00574
	B1	-0.00048	-0.00012	0.00389
	B1	0.00292	0.00330	0.00735
sky130_fd_sc_hs__a21oi_2	A1	-0.00056	-0.00072	0.00105
	A1	0.00718	0.00703	0.00879
	A2	0.00050	0.00025	0.00200
	A2	0.01010	0.00988	0.01161
	B1	-0.00008	0.00036	0.00546
	B1	0.00514	0.00559	0.01080
sky130_fd_sc_hs__a21oi_4	A1	-0.00171	-0.00203	0.00162
	A1	0.01417	0.01390	0.01756
	A2	0.00048	0.00005	0.00371
	A2	0.01966	0.01928	0.02298
	B1	-0.00041	0.00030	0.00997
	B1	0.01005	0.01060	0.02051

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	A1	0.00511	0.00505	0.00611
	A1	0.00101	0.00092	0.00191
	A2	0.00589	0.00582	0.00651
	A2	0.00100	0.00090	0.00155
	B1	0.00324	0.00328	0.00442
	B1	-0.00017	-0.00015	0.00101
sky130_fd_sc_hs__a21oi_2	A1	0.00915	0.00897	0.01120
	A1	0.00153	0.00131	0.00334
	A2	0.01119	0.01095	0.01243
	A2	0.00157	0.00129	0.00264
	B1	0.00409	0.00421	0.00603
	B1	-0.00113	-0.00107	0.00046
sky130_fd_sc_hs__a21oi_4	A1	0.01836	0.01806	0.02234
	A1	0.00271	0.00234	0.00617
	A2	0.02172	0.02119	0.02425
	A2	0.00259	0.00205	0.00482
	B1	0.00848	0.00857	0.01214
	B1	-0.00195	-0.00191	0.00109

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	0.00130	0.00125	0.00124
	(A2 * B1 * !Y)	-0.00122	-0.00134	-0.00133
	(!A2 * B1 * !Y)	0.00117	0.00119	0.00118
	(!A2 * B1 * !Y)	-0.00136	-0.00138	-0.00137
	(!A2 * !B1 * Y)	0.00037	0.00037	0.00036
	(!A2 * !B1 * Y)	-0.00166	-0.00166	-0.00168
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	0.00261	0.00249	0.00246
	(A2 * B1 * !Y)	-0.00237	-0.00263	-0.00261
	(!A2 * B1 * !Y)	0.00229	0.00231	0.00230
	(!A2 * B1 * !Y)	-0.00267	-0.00269	-0.00268
	(!A2 * !B1 * Y)	0.00080	0.00080	0.00077
	(!A2 * !B1 * Y)	-0.00314	-0.00316	-0.00321
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	0.00527	0.00502	0.00495
	(A2 * B1 * !Y)	-0.00470	-0.00523	-0.00520
	(!A2 * B1 * !Y)	0.00471	0.00473	0.00472
	(!A2 * B1 * !Y)	-0.00533	-0.00534	-0.00532
	(!A2 * !B1 * Y)	0.00151	0.00151	0.00145
	(!A2 * !B1 * Y)	-0.00652	-0.00655	-0.00664

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A2 * B1 * !Y)	-0.00123	-0.00124	-0.00124
	(A2 * B1 * !Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * !Y)	-0.00114	-0.00118	-0.00118
	(!A2 * B1 * !Y)	0.00136	0.00138	0.00137
	(!A2 * !B1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * Y)	0.00167	0.00171	0.00168
sky130_fd_sc_hs__a21oi_2	(A2 * B1 * !Y)	-0.00246	-0.00247	-0.00245
	(A2 * B1 * !Y)	0.00260	0.00264	0.00261
	(!A2 * B1 * !Y)	-0.00215	-0.00231	-0.00230
	(!A2 * B1 * !Y)	0.00271	0.00271	0.00268
	(!A2 * !B1 * Y)	-0.00075	-0.00076	-0.00075
	(!A2 * !B1 * Y)	0.00322	0.00327	0.00322
sky130_fd_sc_hs__a21oi_4	(A2 * B1 * !Y)	-0.00495	-0.00496	-0.00494
	(A2 * B1 * !Y)	0.00521	0.00523	0.00520
	(!A2 * B1 * !Y)	-0.00449	-0.00473	-0.00472
	(!A2 * B1 * !Y)	0.00535	0.00538	0.00534
	(!A2 * !B1 * Y)	-0.00143	-0.00142	-0.00142
	(!A2 * !B1 * Y)	0.00666	0.00665	0.00665

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	0.00131	0.00125	0.00124
	(A1 * B1 * !Y)	-0.00122	-0.00133	-0.00133
	(!A1 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * B1 * !Y)	-0.00137	-0.00138	-0.00137
	(!A1 * !B1 * Y)	0.00118	0.00120	0.00118
	(!A1 * !B1 * Y)	-0.00136	-0.00138	-0.00137
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	0.00270	0.00258	0.00255
	(A1 * B1 * !Y)	-0.00237	-0.00263	-0.00261
	(!A1 * B1 * !Y)	0.00241	0.00244	0.00242
	(!A1 * B1 * !Y)	-0.00268	-0.00270	-0.00268
	(!A1 * !B1 * Y)	0.00231	0.00234	0.00232
	(!A1 * !B1 * Y)	-0.00278	-0.00280	-0.00279
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	0.00518	0.00489	0.00482
	(A1 * B1 * !Y)	-0.00489	-0.00538	-0.00536
	(!A1 * B1 * !Y)	0.00458	0.00466	0.00460
	(!A1 * B1 * !Y)	-0.00549	-0.00553	-0.00550
	(!A1 * !B1 * Y)	0.00452	0.00457	0.00453
	(!A1 * !B1 * Y)	-0.00553	-0.00557	-0.00554

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(A1 * B1 * !Y)	0.00133	0.00133	0.00133
	(!A1 * B1 * !Y)	-0.00115	-0.00119	-0.00118
	(!A1 * B1 * !Y)	0.00137	0.00138	0.00137
	(!A1 * !B1 * Y)	-0.00113	-0.00120	-0.00118
	(!A1 * !B1 * Y)	0.00141	0.00138	0.00137
sky130_fd_sc_hs__a21oi_2	(A1 * B1 * !Y)	-0.00255	-0.00256	-0.00254
	(A1 * B1 * !Y)	0.00261	0.00265	0.00261
	(!A1 * B1 * !Y)	-0.00228	-0.00240	-0.00242
	(!A1 * B1 * !Y)	0.00270	0.00270	0.00269
	(!A1 * !B1 * Y)	-0.00215	-0.00230	-0.00232
	(!A1 * !B1 * Y)	0.00284	0.00282	0.00279
sky130_fd_sc_hs__a21oi_4	(A1 * B1 * !Y)	-0.00481	-0.00482	-0.00481
	(A1 * B1 * !Y)	0.00534	0.00538	0.00536
	(!A1 * B1 * !Y)	-0.00440	-0.00457	-0.00460
	(!A1 * B1 * !Y)	0.00552	0.00553	0.00552
	(!A1 * !B1 * Y)	-0.00426	-0.00455	-0.00453
	(!A1 * !B1 * Y)	0.00567	0.00562	0.00556

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	0.00146	0.00147	0.00145
	(A1 * A2 * !Y)	-0.00069	-0.00069	-0.00068
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	0.00161	0.00164	0.00161
	(A1 * A2 * !Y)	-0.00141	-0.00144	-0.00142
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	0.00312	0.00314	0.00311
	(A1 * A2 * !Y)	-0.00275	-0.00275	-0.00272

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21oi_1	(A1 * A2 * !Y)	-0.00137	-0.00138	-0.00144
	(A1 * A2 * !Y)	0.00076	0.00076	0.00070
sky130_fd_sc_hs__a21oi_2	(A1 * A2 * !Y)	-0.00144	-0.00146	-0.00159
	(A1 * A2 * !Y)	0.00156	0.00158	0.00145
sky130_fd_sc_hs__a21oi_4	(A1 * A2 * !Y)	-0.00278	-0.00282	-0.00308
	(A1 * A2 * !Y)	0.00300	0.00301	0.00279

SKY130_FD_SC_HS__A21Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00226	0.00231	0.00232	1.15764
sky130_fd_sc_hs__a21o_2	0.00253	0.00242	0.00258	2.24047
sky130_fd_sc_hs__a21o_4	0.00457	0.00434	0.00467	4.25468

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a21o_1	0.00000	0.04011	0.05847
sky130_fd_sc_hs__a21o_2	0.00000	0.05231	0.06616
sky130_fd_sc_hs__a21o_4	0.00000	0.10537	0.13485

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)	0.05982	0.51201	5.56444
	A2->X (RR)	0.06347	0.52590	5.62063
	B1->X (RR)	0.04724	0.48340	5.64046
sky130_fd_sc_hs__a21o_2	A1->X (RR)	0.05802	0.43542	5.61606
	A2->X (RR)	0.06105	0.44277	5.66168
	B1->X (RR)	0.04561	0.40722	5.64095
sky130_fd_sc_hs__a21o_4	A1->X (RR)	0.06725	0.38104	5.70533
	A2->X (RR)	0.07153	0.39089	5.75472
	B1->X (RR)	0.04752	0.33922	5.71387

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a21o_1	A1->X (FF)	0.10687	0.54646	4.82280
	A2->X (FF)	0.12648	0.58036	4.86991
	B1->X (FF)	0.10577	0.54392	4.67510
sky130_fd_sc_hs__a21o_2	A1->X (FF)	0.13046	0.56192	4.75407
	A2->X (FF)	0.15069	0.59445	4.83231
	B1->X (FF)	0.13178	0.56770	4.66465
sky130_fd_sc_hs__a21o_4	A1->X (FF)	0.13556	0.54365	4.91384
	A2->X (FF)	0.15598	0.57709	4.98267
	B1->X (FF)	0.13344	0.54537	4.85472

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00707	0.00733	0.01839
	A1	0.00350	0.00390	0.01500
	A2	0.00798	0.00813	0.01645
	A2	0.00350	0.00366	0.01211
	B1	0.00526	0.00577	0.02578
	B1	0.00233	0.00285	0.02296
sky130_fd_sc_hs__a21o_2	A1	0.00922	0.00969	0.01925
	A1	0.00531	0.00580	0.01566
	A2	0.01006	0.01042	0.01779
	A2	0.00530	0.00566	0.01326
	B1	0.00745	0.00795	0.02673
	B1	0.00421	0.00476	0.02377
sky130_fd_sc_hs__a21o_4	A1	0.01755	0.01840	0.03965
	A1	0.01009	0.01096	0.03257
	A2	0.01896	0.01968	0.03545
	A2	0.01007	0.01080	0.02682
	B1	0.01384	0.01512	0.05430
	B1	0.00768	0.00904	0.04847

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	A1	0.00259	0.00264	0.01250
	A1	0.00618	0.00623	0.01557
	A2	0.00265	0.00293	0.01087
	A2	0.00713	0.00725	0.01510
	B1	0.00245	0.00352	0.02015
	B1	0.00539	0.00634	0.02273
sky130_fd_sc_hs__a21o_2	A1	0.00432	0.00455	0.01326
	A1	0.00826	0.00850	0.01634
	A2	0.00462	0.00489	0.01299
	A2	0.00937	0.00964	0.01675
	B1	0.00415	0.00542	0.02256
	B1	0.00739	0.00851	0.02548
sky130_fd_sc_hs__a21o_4	A1	0.00878	0.00935	0.02606
	A1	0.01632	0.01675	0.03351
	A2	0.00980	0.01046	0.02782
	A2	0.01868	0.01917	0.03373
	B1	0.00840	0.01069	0.04707
	B1	0.01456	0.01681	0.05230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	0.00108	0.00101	0.00100
	(A2 * B1 * X)	-0.00111	-0.00123	-0.00124
	(!A2 * B1 * X)	0.00094	0.00096	0.00095
	(!A2 * B1 * X)	-0.00126	-0.00127	-0.00127
	(!A2 * !B1 * !X)	0.00033	0.00033	0.00032
	(!A2 * !B1 * !X)	-0.00145	-0.00145	-0.00147
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	0.00127	0.00119	0.00118
	(A2 * B1 * X)	-0.00112	-0.00126	-0.00125
	(!A2 * B1 * X)	0.00112	0.00113	0.00112
	(!A2 * B1 * X)	-0.00128	-0.00129	-0.00129
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !X)	-0.00150	-0.00150	-0.00153
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	0.00233	0.00218	0.00215
	(A2 * B1 * X)	-0.00221	-0.00248	-0.00247
	(!A2 * B1 * X)	0.00207	0.00210	0.00208
	(!A2 * B1 * X)	-0.00252	-0.00255	-0.00253
	(!A2 * !B1 * !X)	0.00072	0.00073	0.00070
	(!A2 * !B1 * !X)	-0.00300	-0.00301	-0.00306

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A2 * B1 * X)	-0.00100	-0.00100	-0.00100
	(A2 * B1 * X)	0.00124	0.00123	0.00124
	(!A2 * B1 * X)	-0.00092	-0.00095	-0.00095
	(!A2 * B1 * X)	0.00127	0.00127	0.00127
	(!A2 * !B1 * !X)	-0.00031	-0.00032	-0.00031
	(!A2 * !B1 * !X)	0.00147	0.00150	0.00147
sky130_fd_sc_hs__a21o_2	(A2 * B1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * X)	0.00125	0.00126	0.00125
	(!A2 * B1 * X)	-0.00109	-0.00113	-0.00112
	(!A2 * B1 * X)	0.00129	0.00130	0.00129
	(!A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00153	0.00155	0.00153
sky130_fd_sc_hs__a21o_4	(A2 * B1 * X)	-0.00215	-0.00215	-0.00215
	(A2 * B1 * X)	0.00247	0.00248	0.00247
	(!A2 * B1 * X)	-0.00197	-0.00208	-0.00208
	(!A2 * B1 * X)	0.00253	0.00258	0.00254
	(!A2 * !B1 * !X)	-0.00068	-0.00069	-0.00068
	(!A2 * !B1 * !X)	0.00308	0.00312	0.00307

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	0.00134	0.00127	0.00126
	(A1 * B1 * X)	-0.00111	-0.00123	-0.00122
	(!A1 * B1 * X)	0.00121	0.00122	0.00121
	(!A1 * B1 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * !B1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !X)	-0.00124	-0.00125	-0.00124
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	0.00133	0.00126	0.00125
	(A1 * B1 * X)	-0.00113	-0.00126	-0.00125
	(!A1 * B1 * X)	0.00119	0.00121	0.00119
	(!A1 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * !B1 * !X)	0.00119	0.00120	0.00119
	(!A1 * !B1 * !X)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	0.00229	0.00214	0.00211
	(A1 * B1 * X)	-0.00224	-0.00247	-0.00247
	(!A1 * B1 * X)	0.00202	0.00205	0.00203
	(!A1 * B1 * X)	-0.00252	-0.00254	-0.00252
	(!A1 * !B1 * !X)	0.00202	0.00205	0.00203
	(!A1 * !B1 * !X)	-0.00252	-0.00254	-0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * B1 * X)	-0.00126	-0.00127	-0.00125
	(A1 * B1 * X)	0.00122	0.00124	0.00122
	(!A1 * B1 * X)	-0.00118	-0.00121	-0.00121
	(!A1 * B1 * X)	0.00124	0.00126	0.00125
	(!A1 * !B1 * !X)	-0.00115	-0.00121	-0.00121
	(!A1 * !B1 * !X)	0.00128	0.00126	0.00125
sky130_fd_sc_hs__a21o_2	(A1 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * B1 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * X)	-0.00116	-0.00121	-0.00119
	(!A1 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * !B1 * !X)	-0.00114	-0.00120	-0.00119
	(!A1 * !B1 * !X)	0.00132	0.00130	0.00129
sky130_fd_sc_hs__a21o_4	(A1 * B1 * X)	-0.00210	-0.00211	-0.00211
	(A1 * B1 * X)	0.00245	0.00247	0.00247
	(!A1 * B1 * X)	-0.00194	-0.00202	-0.00203
	(!A1 * B1 * X)	0.00252	0.00254	0.00253
	(!A1 * !B1 * !X)	-0.00189	-0.00201	-0.00203
	(!A1 * !B1 * !X)	0.00259	0.00256	0.00254

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * X)	-0.00066	-0.00066	-0.00066
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	0.00141	0.00143	0.00142
	(A1 * A2 * X)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	0.00250	0.00251	0.00249
	(A1 * A2 * X)	-0.00136	-0.00136	-0.00135

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a21o_1	(A1 * A2 * X)	-0.00112	-0.00113	-0.00119
	(A1 * A2 * X)	0.00073	0.00073	0.00067
sky130_fd_sc_hs__a21o_2	(A1 * A2 * X)	-0.00133	-0.00134	-0.00141
	(A1 * A2 * X)	0.00072	0.00072	0.00066
sky130_fd_sc_hs__a21o_4	(A1 * A2 * X)	-0.00231	-0.00234	-0.00247
	(A1 * A2 * X)	0.00149	0.00150	0.00138

SKY130_FD_SC_HS__A221OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00258	0.00252	0.00263	0.00271	0.00272	0.35221
sky130_fd_sc_hs__a221oi_2	0.00548	0.00489	0.00538	0.00485	0.00497	0.58848
sky130_fd_sc_hs__a221oi_4	0.01003	0.00993	0.00994	0.00959	0.00984	1.02780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a221oi_1	0.00000	0.01390	0.03242
sky130_fd_sc_hs__a221oi_2	0.00000	0.02781	0.06484
sky130_fd_sc_hs__a221oi_4	0.00000	0.05561	0.12968

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)	0.19347	1.20195	10.96420
	A2->Y (FR)	0.21814	1.23254	11.02070
	B1->Y (FR)	0.16764	1.18589	11.38850
	B2->Y (FR)	0.19563	1.22516	11.51300
	C1->Y (FR)	0.14882	1.14880	11.17560
sky130_fd_sc_hs__a221oi_2	A1->Y (FR)	0.17938	1.00681	10.30730
	A2->Y (FR)	0.23033	1.10067	10.87650
	B1->Y (FR)	0.16452	1.02668	11.09040
	B2->Y (FR)	0.20228	1.08979	11.37570
	C1->Y (FR)	0.14738	1.01763	11.12150
sky130_fd_sc_hs__a221oi_4	A1->Y (FR)	0.20185	0.93293	10.46200
	A2->Y (FR)	0.24354	0.98753	10.64710
	B1->Y (FR)	0.16879	0.90906	10.89600
	B2->Y (FR)	0.21363	0.97691	11.23390
	C1->Y (FR)	0.15789	0.91373	11.12020

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221oi_1	A1->Y (RF)	0.02390	0.29847	2.64400
	A2->Y (RF)	0.02665	0.28827	2.53473
	B1->Y (RF)	0.02561	0.29609	2.70105
	B2->Y (RF)	0.02916	0.28777	2.59952
	C1->Y (RF)	0.01756	0.23638	2.16939
sky130_fd_sc_hs__a221oi_2	A1->Y (RF)	0.02145	0.25183	2.47693
	A2->Y (RF)	0.02614	0.24966	2.41017
	B1->Y (RF)	0.02252	0.24037	2.44673
	B2->Y (RF)	0.02650	0.23833	2.38589
	C1->Y (RF)	0.01581	0.18998	1.98655
sky130_fd_sc_hs__a221oi_4	A1->Y (RF)	0.02356	0.23484	2.58126
	A2->Y (RF)	0.02731	0.20700	2.18685
	B1->Y (RF)	0.02715	0.22649	2.59300
	B2->Y (RF)	0.03085	0.20023	2.18573
	C1->Y (RF)	0.01414	0.14216	1.74667

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221oi_1	A1	0.00079	0.00063	0.00124
	A1	0.00731	0.00712	0.00769
	A2	0.00142	0.00129	0.00186
	A2	0.00837	0.00826	0.00883
	B1	0.00080	0.00063	0.00172
	B1	0.00641	0.00620	0.00720
	B2	0.00111	0.00097	0.00202
	B2	0.00754	0.00739	0.00838
	C1	0.00058	0.00089	0.00550
	C1	0.00437	0.00469	0.00929
sky130_fd_sc_hs__a221oi_2	A1	0.00035	0.00004	0.00150
	A1	0.01388	0.01348	0.01485
	A2	0.00245	0.00209	0.00338
	A2	0.01614	0.01579	0.01712
	B1	0.00041	0.00012	0.00247
	B1	0.01216	0.01169	0.01386
	B2	0.00129	0.00099	0.00334
	B2	0.01423	0.01389	0.01603
	C1	0.00006	0.00084	0.01021
	C1	0.00744	0.00821	0.01765

sky130_fd_sc_hs__a221oi_4	**A1**	0.00016	-0.00050	0.00240
	A1	0.02742	0.02654	0.02918
	A2	0.00418	0.00351	0.00617
	A2	0.03219	0.03155	0.03427
	B1	0.00009	-0.00055	0.00404
	B1	0.02365	0.02281	0.02685
	B2	0.00202	0.00148	0.00589
	B2	0.02860	0.02802	0.03196
	C1	-0.00060	0.00098	0.01897
	C1	0.01392	0.01554	0.03357

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221oi_1	**A1**	0.00846	0.00833	0.00950
	A1	0.00281	0.00268	0.00387
	A2	0.00934	0.00920	0.00992
	A2	0.00279	0.00263	0.00340
	B1	0.00628	0.00627	0.00742
	B1	0.00111	0.00104	0.00228
	B2	0.00714	0.00707	0.00785
	B2	0.00110	0.00098	0.00180
	C1	0.00358	0.00360	0.00504
	C1	-0.00021	-0.00020	0.00125

sky130_fd_sc_hs__a221oi_2	**A1**	0.01590	0.01569	0.01818
	A1	0.00427	0.00400	0.00656
	A2	0.01740	0.01707	0.01861
	A2	0.00446	0.00411	0.00573
	B1	0.01201	0.01195	0.01442
	B1	0.00151	0.00137	0.00400
	B2	0.01348	0.01336	0.01500
	B2	0.00162	0.00138	0.00316
	C1	0.00645	0.00658	0.00967
	C1	-0.00092	-0.00081	0.00227
sky130_fd_sc_hs__a221oi_4	**A1**	0.03199	0.03125	0.03619
	A1	0.00910	0.00836	0.01338
	A2	0.03550	0.03473	0.03805
	A2	0.00903	0.00822	0.01169
	B1	0.02410	0.02394	0.02890
	B1	0.00299	0.00270	0.00786
	B2	0.02757	0.02724	0.03083
	B2	0.00301	0.00248	0.00629
	C1	0.01334	0.01362	0.02005
	C1	-0.00119	-0.00098	0.00548

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)**	0.00117	0.00118	0.00117
	(A2 * B1 * B2 * C1 * !Y)	-0.00127	-0.00133	-0.00132
	(A2 * B1 * B2 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A2 * B1 * B2 * !C1 * !Y)	-0.00127	-0.00133	-0.00132
	(A2 * B1 * !B2 * C1 * !Y)	0.00117	0.00118	0.00117
	(A2 * B1 * !B2 * C1 * !Y)	-0.00121	-0.00130	-0.00129
	(A2 * !B1 * C1 * !Y)	0.00117	0.00118	0.00117
	(A2 * !B1 * C1 * !Y)	-0.00120	-0.00130	-0.00129
	(!A2 * B1 * B2 * C1 * !Y)	0.00111	0.00113	0.00111
	(!A2 * B1 * B2 * C1 * !Y)	-0.00135	-0.00136	-0.00136
	(!A2 * B1 * B2 * !C1 * !Y)	0.00112	0.00113	0.00112
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00135	-0.00136	-0.00136
	(!A2 * B1 * !B2 * C1 * !Y)	0.00111	0.00113	0.00111
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00135	-0.00137	-0.00136
	(!A2 * B1 * !B2 * !C1 * Y)	0.00037	0.00037	0.00037
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00157	-0.00158	-0.00160
	(!A2 * !B1 * C1 * !Y)	0.00111	0.00113	0.00111
	(!A2 * !B1 * C1 * !Y)	-0.00135	-0.00137	-0.00136
	(!A2 * !B1 * !C1 * Y)	0.00038	0.00037	0.00037
	(!A2 * !B1 * !C1 * Y)	-0.00158	-0.00158	-0.00160

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	0.00249	0.00251	0.00249
	(A2 * B1 * B2 * C1 * !Y)	-0.00268	-0.00282	-0.00281
	(A2 * B1 * B2 * !C1 * !Y)	0.00249	0.00251	0.00249
	(A2 * B1 * B2 * !C1 * !Y)	-0.00267	-0.00282	-0.00281
	(A2 * B1 * !B2 * C1 * !Y)	0.00250	0.00252	0.00249
	(A2 * B1 * !B2 * C1 * !Y)	-0.00258	-0.00273	-0.00273
	(A2 * !B1 * C1 * !Y)	0.00251	0.00252	0.00249
	(A2 * !B1 * C1 * !Y)	-0.00259	-0.00274	-0.00274
	(!A2 * B1 * B2 * C1 * !Y)	0.00241	0.00242	0.00242
	(!A2 * B1 * B2 * C1 * !Y)	-0.00289	-0.00289	-0.00290
	(!A2 * B1 * B2 * !C1 * !Y)	0.00241	0.00245	0.00242
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00289	-0.00291	-0.00290
	(!A2 * B1 * !B2 * C1 * !Y)	0.00241	0.00245	0.00242
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00289	-0.00292	-0.00289
	(!A2 * B1 * !B2 * !C1 * Y)	0.00085	0.00085	0.00082
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00345	-0.00347	-0.00352
	(!A2 * !B1 * C1 * !Y)	0.00241	0.00245	0.00242
	(!A2 * !B1 * C1 * !Y)	-0.00289	-0.00292	-0.00289
	(!A2 * !B1 * !C1 * Y)	0.00085	0.00085	0.00082
	(!A2 * !B1 * !C1 * Y)	-0.00345	-0.00347	-0.00352

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	0.00479	0.00485	0.00480
	(A2 * B1 * B2 * C1 * !Y)	-0.00516	-0.00543	-0.00538
	(A2 * B1 * B2 * !C1 * !Y)	0.00480	0.00486	0.00480
	(A2 * B1 * B2 * !C1 * !Y)	-0.00510	-0.00539	-0.00536
	(A2 * B1 * !B2 * C1 * !Y)	0.00481	0.00486	0.00480
	(A2 * B1 * !B2 * C1 * !Y)	-0.00485	-0.00529	-0.00522
	(A2 * !B1 * C1 * !Y)	0.00480	0.00486	0.00480
	(A2 * !B1 * C1 * !Y)	-0.00483	-0.00529	-0.00522
	(!A2 * B1 * B2 * C1 * !Y)	0.00459	0.00464	0.00461
	(!A2 * B1 * B2 * C1 * !Y)	-0.00549	-0.00553	-0.00550
	(!A2 * B1 * B2 * !C1 * !Y)	0.00462	0.00467	0.00464
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00547	-0.00551	-0.00548
	(!A2 * B1 * !B2 * C1 * !Y)	0.00461	0.00466	0.00463
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00554	-0.00559	-0.00556
	(!A2 * B1 * !B2 * !C1 * Y)	0.00152	0.00153	0.00146
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00664	-0.00667	-0.00675
	(!A2 * !B1 * C1 * !Y)	0.00462	0.00466	0.00463
	(!A2 * !B1 * C1 * !Y)	-0.00557	-0.00559	-0.00556
	(!A2 * !B1 * !C1 * Y)	0.00153	0.00153	0.00147
	(!A2 * !B1 * !C1 * Y)	-0.00664	-0.00667	-0.00675

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)**	-0.00117	-0.00117	-0.00117
	(A2 * B1 * B2 * C1 * !Y)	0.00132	0.00133	0.00132
	(A2 * B1 * B2 * !C1 * !Y)	-0.00116	-0.00117	-0.00117
	(A2 * B1 * B2 * !C1 * !Y)	0.00131	0.00133	0.00132
	(A2 * B1 * !B2 * C1 * !Y)	-0.00117	-0.00118	-0.00117
	(A2 * B1 * !B2 * C1 * !Y)	0.00130	0.00130	0.00129
	(A2 * !B1 * C1 * !Y)	-0.00117	-0.00118	-0.00117
	(A2 * !B1 * C1 * !Y)	0.00128	0.00130	0.00129
	(!A2 * B1 * B2 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A2 * B1 * B2 * C1 * !Y)	0.00135	0.00136	0.00136
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00108	-0.00111	-0.00112
	(!A2 * B1 * B2 * !C1 * !Y)	0.00136	0.00136	0.00136
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00108	-0.00111	-0.00111
	(!A2 * B1 * !B2 * C1 * !Y)	0.00136	0.00137	0.00136
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * Y)	0.00160	0.00163	0.00160
	(!A2 * !B1 * C1 * !Y)	-0.00107	-0.00111	-0.00111
	(!A2 * !B1 * C1 * !Y)	0.00135	0.00137	0.00136
	(!A2 * !B1 * !C1 * Y)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * Y)	0.00160	0.00163	0.00160

sky130_fd_sc_hs__a221oi_2	**(A2 * B1 * B2 * C1 * !Y)**	-0.00249	-0.00249	-0.00249
	(A2 * B1 * B2 * C1 * !Y)	0.00281	0.00282	0.00281
	(A2 * B1 * B2 * !C1 * !Y)	-0.00248	-0.00250	-0.00249
	(A2 * B1 * B2 * !C1 * !Y)	0.00280	0.00282	0.00281
	(A2 * B1 * !B2 * C1 * !Y)	-0.00249	-0.00249	-0.00249
	(A2 * B1 * !B2 * C1 * !Y)	0.00273	0.00273	0.00273
	(A2 * !B1 * C1 * !Y)	-0.00249	-0.00249	-0.00249
	(A2 * !B1 * C1 * !Y)	0.00274	0.00274	0.00274
	(!A2 * B1 * B2 * C1 * !Y)	-0.00231	-0.00240	-0.00242
	(!A2 * B1 * B2 * C1 * !Y)	0.00289	0.00290	0.00290
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00230	-0.00241	-0.00242
	(!A2 * B1 * B2 * !C1 * !Y)	0.00291	0.00291	0.00290
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00231	-0.00243	-0.00242
	(!A2 * B1 * !B2 * C1 * !Y)	0.00291	0.00296	0.00290
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00081	-0.00082	-0.00080
	(!A2 * B1 * !B2 * !C1 * Y)	0.00354	0.00358	0.00353
	(!A2 * !B1 * C1 * !Y)	-0.00229	-0.00243	-0.00242
	(!A2 * !B1 * C1 * !Y)	0.00289	0.00296	0.00290
	(!A2 * !B1 * !C1 * Y)	-0.00081	-0.00082	-0.00080
	(!A2 * !B1 * !C1 * Y)	0.00354	0.00358	0.00353

sky130_fd_sc_hs__a221oi_4	**(A2 * B1 * B2 * C1 * !Y)**	-0.00478	-0.00482	-0.00479
	(A2 * B1 * B2 * C1 * !Y)	0.00536	0.00543	0.00538
	(A2 * B1 * B2 * !C1 * !Y)	-0.00478	-0.00481	-0.00479
	(A2 * B1 * B2 * !C1 * !Y)	0.00534	0.00539	0.00536
	(A2 * B1 * !B2 * C1 * !Y)	-0.00478	-0.00482	-0.00479
	(A2 * B1 * !B2 * C1 * !Y)	0.00519	0.00529	0.00522
	(A2 * !B1 * C1 * !Y)	-0.00480	-0.00482	-0.00479
	(A2 * !B1 * C1 * !Y)	0.00523	0.00529	0.00522
	(!A2 * B1 * B2 * C1 * !Y)	-0.00439	-0.00463	-0.00461
	(!A2 * B1 * B2 * C1 * !Y)	0.00549	0.00554	0.00552
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00439	-0.00467	-0.00464
	(!A2 * B1 * B2 * !C1 * !Y)	0.00551	0.00554	0.00550
	(!A2 * B1 * !B2 * C1 * !Y)	-0.00437	-0.00466	-0.00463
	(!A2 * B1 * !B2 * C1 * !Y)	0.00554	0.00562	0.00558
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00144	-0.00145	-0.00143
	(!A2 * B1 * !B2 * !C1 * Y)	0.00677	0.00686	0.00676
	(!A2 * !B1 * C1 * !Y)	-0.00438	-0.00465	-0.00463
	(!A2 * !B1 * C1 * !Y)	0.00559	0.00563	0.00558
	(!A2 * !B1 * !C1 * Y)	-0.00145	-0.00146	-0.00143
	(!A2 * !B1 * !C1 * Y)	0.00677	0.00686	0.00676

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)**	0.00124	0.00126	0.00125
	(A1 * B1 * B2 * C1 * !Y)	-0.00129	-0.00136	-0.00135
	(A1 * B1 * B2 * !C1 * !Y)	0.00125	0.00126	0.00125
	(A1 * B1 * B2 * !C1 * !Y)	-0.00129	-0.00136	-0.00135
	(A1 * B1 * !B2 * C1 * !Y)	0.00125	0.00126	0.00125
	(A1 * B1 * !B2 * C1 * !Y)	-0.00123	-0.00133	-0.00131
	(A1 * !B1 * C1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !B1 * C1 * !Y)	-0.00123	-0.00133	-0.00131
	(!A1 * B1 * B2 * !Y)	0.00119	0.00120	0.00119
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00139	-0.00139
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00118	0.00120	0.00119
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00138	-0.00140	-0.00139
	(!A1 * B1 * !B2 * !C1 * Y)	0.00119	0.00121	0.00119
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00138	-0.00139	-0.00138
	(!A1 * !B1 * !C1 * Y)	0.00119	0.00121	0.00119
	(!A1 * !B1 * !C1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00237	0.00240	0.00237
	(A1 * B1 * B2 * C1 * !Y)	-0.00246	-0.00261	-0.00259
	(A1 * B1 * B2 * !C1 * !Y)	0.00236	0.00240	0.00237
	(A1 * B1 * B2 * !C1 * !Y)	-0.00244	-0.00261	-0.00259
	(A1 * B1 * !B2 * C1 * !Y)	0.00239	0.00240	0.00237
	(A1 * B1 * !B2 * C1 * !Y)	-0.00236	-0.00255	-0.00252
	(A1 * !B1 * C1 * !Y)	0.00239	0.00240	0.00237
	(A1 * !B1 * C1 * !Y)	-0.00236	-0.00256	-0.00252
	(!A1 * B1 * B2 * !Y)	0.00229	0.00232	0.00230
	(!A1 * B1 * B2 * !Y)	-0.00265	-0.00268	-0.00266
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00230	0.00232	0.00230
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00266	-0.00268	-0.00266
	(!A1 * B1 * !B2 * !C1 * Y)	0.00218	0.00219	0.00219
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00277	-0.00278	-0.00277
	(!A1 * !B1 * !C1 * Y)	0.00218	0.00220	0.00219
	(!A1 * !B1 * !C1 * Y)	-0.00277	-0.00278	-0.00277

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	0.00485	0.00491	0.00486
	(A1 * B1 * B2 * C1 * !Y)	-0.00519	-0.00545	-0.00541
	(A1 * B1 * B2 * !C1 * !Y)	0.00485	0.00492	0.00486
	(A1 * B1 * B2 * !C1 * !Y)	-0.00512	-0.00543	-0.00539
	(A1 * B1 * !B2 * C1 * !Y)	0.00486	0.00492	0.00485
	(A1 * B1 * !B2 * C1 * !Y)	-0.00488	-0.00525	-0.00525
	(A1 * !B1 * C1 * !Y)	0.00486	0.00492	0.00485
	(A1 * !B1 * C1 * !Y)	-0.00488	-0.00524	-0.00525
	(!A1 * B1 * B2 * !Y)	0.00467	0.00470	0.00466
	(!A1 * B1 * B2 * !Y)	-0.00552	-0.00555	-0.00553
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00466	0.00470	0.00466
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00560	-0.00562	-0.00560
	(!A1 * B1 * !B2 * !C1 * Y)	0.00436	0.00440	0.00436
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00592	-0.00594	-0.00591
	(!A1 * !B1 * !C1 * Y)	0.00436	0.00440	0.00436
	(!A1 * !B1 * !C1 * Y)	-0.00592	-0.00594	-0.00591

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)**	-0.00124	-0.00125	-0.00125
	(A1 * B1 * B2 * C1 * !Y)	0.00136	0.00136	0.00135
	(A1 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * B2 * !C1 * !Y)	0.00135	0.00136	0.00135
	(A1 * B1 * !B2 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * B1 * !B2 * C1 * !Y)	0.00132	0.00133	0.00131
	(A1 * !B1 * C1 * !Y)	-0.00125	-0.00126	-0.00125
	(A1 * !B1 * C1 * !Y)	0.00132	0.00133	0.00131
	(!A1 * B1 * B2 * !Y)	-0.00116	-0.00120	-0.00119
	(!A1 * B1 * B2 * !Y)	0.00139	0.00140	0.00139
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00116	-0.00120	-0.00119
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00139	0.00140	0.00139
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00114	-0.00121	-0.00119
	(!A1 * B1 * !B2 * !C1 * Y)	0.00143	0.00140	0.00139
	(!A1 * !B1 * !C1 * Y)	-0.00114	-0.00121	-0.00119
	(!A1 * !B1 * !C1 * Y)	0.00143	0.00140	0.00139

sky130_fd_sc_hs__a221oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00236	-0.00238	-0.00236
	(A1 * B1 * B2 * C1 * !Y)	0.00259	0.00261	0.00259
	(A1 * B1 * B2 * !C1 * !Y)	-0.00236	-0.00238	-0.00236
	(A1 * B1 * B2 * !C1 * !Y)	0.00259	0.00261	0.00259
	(A1 * B1 * !B2 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !B2 * C1 * !Y)	0.00252	0.00255	0.00252
	(A1 * !B1 * C1 * !Y)	-0.00237	-0.00238	-0.00237
	(A1 * !B1 * C1 * !Y)	0.00252	0.00256	0.00252
	(!A1 * B1 * B2 * !Y)	-0.00220	-0.00228	-0.00230
	(!A1 * B1 * B2 * !Y)	0.00266	0.00268	0.00267
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00220	-0.00228	-0.00230
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00266	0.00268	0.00267
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00205	-0.00218	-0.00218
	(!A1 * B1 * !B2 * !C1 * Y)	0.00281	0.00281	0.00278
	(!A1 * !B1 * !C1 * Y)	-0.00205	-0.00218	-0.00218
	(!A1 * !B1 * !C1 * Y)	0.00281	0.00281	0.00278

sky130_fd_sc_hs__a221oi_4	**(A1 * B1 * B2 * C1 * !Y)**	-0.00484	-0.00487	-0.00485
	(A1 * B1 * B2 * C1 * !Y)	0.00539	0.00545	0.00541
	(A1 * B1 * B2 * !C1 * !Y)	-0.00484	-0.00487	-0.00485
	(A1 * B1 * B2 * !C1 * !Y)	0.00537	0.00543	0.00539
	(A1 * B1 * !B2 * C1 * !Y)	-0.00484	-0.00484	-0.00484
	(A1 * B1 * !B2 * C1 * !Y)	0.00523	0.00525	0.00525
	(A1 * !B1 * C1 * !Y)	-0.00484	-0.00484	-0.00484
	(A1 * !B1 * C1 * !Y)	0.00523	0.00524	0.00525
	(!A1 * B1 * B2 * !Y)	-0.00449	-0.00466	-0.00466
	(!A1 * B1 * B2 * !Y)	0.00552	0.00557	0.00554
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00449	-0.00465	-0.00466
	(!A1 * B1 * !B2 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00560	0.00562	0.00562
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00411	-0.00437	-0.00436
	(!A1 * B1 * !B2 * !C1 * Y)	0.00600	0.00598	0.00592
	(!A1 * !B1 * !C1 * Y)	-0.00411	-0.00436	-0.00436
	(!A1 * !B1 * !C1 * Y)	0.00600	0.00598	0.00592

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)**	0.00121	0.00123	0.00121
	(A1 * A2 * B2 * C1 * !Y)	-0.00099	-0.00100	-0.00099
	(A1 * A2 * B2 * !C1 * !Y)	0.00120	0.00121	0.00120
	(A1 * A2 * B2 * !C1 * !Y)	-0.00080	-0.00080	-0.00079
	(A1 * A2 * !B2 * C1 * !Y)	0.00115	0.00116	0.00115
	(A1 * A2 * !B2 * C1 * !Y)	-0.00093	-0.00094	-0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	0.00114	0.00115	0.00114
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * !A2 * B2 * C1 * !Y)	0.00127	0.00121	0.00120
	(A1 * !A2 * B2 * C1 * !Y)	-0.00124	-0.00134	-0.00134
	(A1 * !A2 * !B2 * C1 * !Y)	0.00113	0.00115	0.00114
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00162	-0.00163	-0.00164
	(!A1 * B2 * C1 * !Y)	0.00127	0.00121	0.00120
	(!A1 * B2 * C1 * !Y)	-0.00124	-0.00134	-0.00134
	(!A1 * !B2 * C1 * !Y)	0.00113	0.00115	0.00114
	(!A1 * !B2 * C1 * !Y)	-0.00136	-0.00137	-0.00137
	(!A1 * !B2 * !C1 * Y)	0.00037	0.00037	0.00036
	(!A1 * !B2 * !C1 * Y)	-0.00162	-0.00163	-0.00164

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	0.00245	0.00248	0.00245
	(A1 * A2 * B2 * C1 * !Y)	-0.00201	-0.00203	-0.00201
	(A1 * A2 * B2 * !C1 * !Y)	0.00243	0.00246	0.00243
	(A1 * A2 * B2 * !C1 * !Y)	-0.00166	-0.00167	-0.00166
	(A1 * A2 * !B2 * C1 * !Y)	0.00234	0.00239	0.00235
	(A1 * A2 * !B2 * C1 * !Y)	-0.00189	-0.00190	-0.00189
	(A1 * A2 * !B2 * !C1 * !Y)	0.00235	0.00236	0.00235
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00165	-0.00166	-0.00165
	(A1 * !A2 * B2 * C1 * !Y)	0.00262	0.00244	0.00242
	(A1 * !A2 * B2 * C1 * !Y)	-0.00250	-0.00279	-0.00278
	(A1 * !A2 * !B2 * C1 * !Y)	0.00233	0.00234	0.00233
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00283	-0.00285	-0.00284
	(A1 * !A2 * !B2 * !C1 * Y)	0.00075	0.00076	0.00073
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00339	-0.00342	-0.00345
	(!A1 * B2 * C1 * !Y)	0.00262	0.00244	0.00242
	(!A1 * B2 * C1 * !Y)	-0.00251	-0.00280	-0.00278
	(!A1 * !B2 * C1 * !Y)	0.00232	0.00235	0.00233
	(!A1 * !B2 * C1 * !Y)	-0.00284	-0.00286	-0.00284
	(!A1 * !B2 * !C1 * Y)	0.00075	0.00076	0.00073
	(!A1 * !B2 * !C1 * Y)	-0.00339	-0.00342	-0.00345

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	0.00486	0.00492	0.00481
	(A1 * A2 * B2 * C1 * !Y)	-0.00383	-0.00381	-0.00381
	(A1 * A2 * B2 * !C1 * !Y)	0.00479	0.00485	0.00479
	(A1 * A2 * B2 * !C1 * !Y)	-0.00310	-0.00313	-0.00312
	(A1 * A2 * !B2 * C1 * !Y)	0.00459	0.00460	0.00460
	(A1 * A2 * !B2 * C1 * !Y)	-0.00360	-0.00363	-0.00361
	(A1 * A2 * !B2 * !C1 * !Y)	0.00462	0.00465	0.00462
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00309	-0.00311	-0.00311
	(A1 * !A2 * B2 * C1 * !Y)	0.00527	0.00480	0.00477
	(A1 * !A2 * B2 * C1 * !Y)	-0.00458	-0.00531	-0.00530
	(A1 * !A2 * !B2 * C1 * !Y)	0.00458	0.00463	0.00459
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00548	-0.00554	-0.00551
	(A1 * !A2 * !B2 * !C1 * Y)	0.00149	0.00151	0.00145
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00651	-0.00657	-0.00665
	(!A1 * B2 * C1 * !Y)	0.00525	0.00481	0.00477
	(!A1 * B2 * C1 * !Y)	-0.00461	-0.00532	-0.00530
	(!A1 * !B2 * C1 * !Y)	0.00457	0.00463	0.00459
	(!A1 * !B2 * C1 * !Y)	-0.00550	-0.00554	-0.00551
	(!A1 * !B2 * !C1 * Y)	0.00150	0.00152	0.00145
	(!A1 * !B2 * !C1 * Y)	-0.00651	-0.00657	-0.00665

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)**	-0.00120	-0.00121	-0.00120
	(A1 * A2 * B2 * C1 * !Y)	0.00099	0.00100	0.00099
	(A1 * A2 * B2 * !C1 * !Y)	-0.00114	-0.00115	-0.00116
	(A1 * A2 * B2 * !C1 * !Y)	0.00084	0.00085	0.00084
	(A1 * A2 * !B2 * C1 * !Y)	-0.00111	-0.00115	-0.00115
	(A1 * A2 * !B2 * C1 * !Y)	0.00093	0.00094	0.00093
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00111	-0.00115	-0.00114
	(A1 * A2 * !B2 * !C1 * !Y)	0.00079	0.00080	0.00079
	(A1 * !A2 * B2 * C1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * B2 * C1 * !Y)	0.00133	0.00134	0.00134
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00110	-0.00114	-0.00114
	(A1 * !A2 * !B2 * C1 * !Y)	0.00137	0.00137	0.00137
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00035	-0.00036	-0.00035
	(A1 * !A2 * !B2 * !C1 * Y)	0.00164	0.00167	0.00164
	(!A1 * B2 * C1 * !Y)	-0.00119	-0.00120	-0.00120
	(!A1 * B2 * C1 * !Y)	0.00133	0.00134	0.00134
	(!A1 * !B2 * C1 * !Y)	-0.00110	-0.00114	-0.00114
	(!A1 * !B2 * C1 * !Y)	0.00136	0.00137	0.00137
	(!A1 * !B2 * !C1 * Y)	-0.00035	-0.00036	-0.00035
	(!A1 * !B2 * !C1 * Y)	0.00164	0.00167	0.00164

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B2 * C1 * !Y)**	-0.00243	-0.00245	-0.00243
	(A1 * A2 * B2 * C1 * !Y)	0.00201	0.00203	0.00201
	(A1 * A2 * B2 * !C1 * !Y)	-0.00236	-0.00238	-0.00236
	(A1 * A2 * B2 * !C1 * !Y)	0.00171	0.00172	0.00173
	(A1 * A2 * !B2 * C1 * !Y)	-0.00224	-0.00233	-0.00235
	(A1 * A2 * !B2 * C1 * !Y)	0.00189	0.00190	0.00189
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00223	-0.00234	-0.00235
	(A1 * A2 * !B2 * !C1 * !Y)	0.00166	0.00166	0.00165
	(A1 * !A2 * B2 * C1 * !Y)	-0.00242	-0.00243	-0.00242
	(A1 * !A2 * B2 * C1 * !Y)	0.00277	0.00279	0.00278
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00221	-0.00233	-0.00233
	(A1 * !A2 * !B2 * C1 * !Y)	0.00283	0.00286	0.00285
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * !B2 * !C1 * Y)	0.00346	0.00345	0.00345
	(!A1 * B2 * C1 * !Y)	-0.00242	-0.00243	-0.00242
	(!A1 * B2 * C1 * !Y)	0.00278	0.00280	0.00278
	(!A1 * !B2 * C1 * !Y)	-0.00222	-0.00233	-0.00233
	(!A1 * !B2 * C1 * !Y)	0.00284	0.00286	0.00285
	(!A1 * !B2 * !C1 * Y)	-0.00072	-0.00072	-0.00072
	(!A1 * !B2 * !C1 * Y)	0.00346	0.00345	0.00345

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B2 * C1 * !Y)**	-0.00479	-0.00478	-0.00479
	(A1 * A2 * B2 * C1 * !Y)	0.00383	0.00381	0.00381
	(A1 * A2 * B2 * !C1 * !Y)	-0.00469	-0.00472	-0.00466
	(A1 * A2 * B2 * !C1 * !Y)	0.00328	0.00331	0.00325
	(A1 * A2 * !B2 * C1 * !Y)	-0.00434	-0.00460	-0.00460
	(A1 * A2 * !B2 * C1 * !Y)	0.00360	0.00363	0.00361
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00434	-0.00465	-0.00461
	(A1 * A2 * !B2 * !C1 * !Y)	0.00312	0.00313	0.00311
	(A1 * !A2 * B2 * C1 * !Y)	-0.00475	-0.00477	-0.00475
	(A1 * !A2 * B2 * C1 * !Y)	0.00527	0.00531	0.00530
	(A1 * !A2 * !B2 * C1 * !Y)	-0.00429	-0.00463	-0.00459
	(A1 * !A2 * !B2 * C1 * !Y)	0.00548	0.00555	0.00552
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00140	-0.00141	-0.00141
	(A1 * !A2 * !B2 * !C1 * Y)	0.00662	0.00665	0.00666
	(!A1 * B2 * C1 * !Y)	-0.00476	-0.00478	-0.00475
	(!A1 * B2 * C1 * !Y)	0.00530	0.00532	0.00530
	(!A1 * !B2 * C1 * !Y)	-0.00432	-0.00463	-0.00459
	(!A1 * !B2 * C1 * !Y)	0.00552	0.00555	0.00552
	(!A1 * !B2 * !C1 * Y)	-0.00141	-0.00142	-0.00142
	(!A1 * !B2 * !C1 * Y)	0.00662	0.00665	0.00666

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)**	0.00125	0.00127	0.00125
	(A1 * A2 * B1 * C1 * !Y)	-0.00102	-0.00104	-0.00103
	(A1 * A2 * B1 * !C1 * !Y)	0.00125	0.00125	0.00124
	(A1 * A2 * B1 * !C1 * !Y)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B1 * C1 * !Y)	0.00118	0.00120	0.00119
	(A1 * A2 * !B1 * C1 * !Y)	-0.00097	-0.00097	-0.00097
	(A1 * A2 * !B1 * !C1 * !Y)	0.00118	0.00119	0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00082	-0.00083	-0.00083
	(A1 * !A2 * B1 * C1 * !Y)	0.00132	0.00125	0.00124
	(A1 * !A2 * B1 * C1 * !Y)	-0.00127	-0.00139	-0.00138
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00118	0.00119	0.00118
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !B1 * !C1 * Y)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00150	-0.00151	-0.00150
	(!A1 * B1 * C1 * !Y)	0.00132	0.00125	0.00124
	(!A1 * B1 * C1 * !Y)	-0.00127	-0.00139	-0.00138
	(!A1 * !B1 * !C1 * Y)	0.00109	0.00109	0.00109
	(!A1 * !B1 * !C1 * Y)	-0.00150	-0.00150	-0.00150

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00238	0.00242	0.00238
	(A1 * A2 * B1 * C1 * !Y)	-0.00188	-0.00187	-0.00187
	(A1 * A2 * B1 * !C1 * !Y)	0.00235	0.00238	0.00236
	(A1 * A2 * B1 * !C1 * !Y)	-0.00149	-0.00152	-0.00151
	(A1 * A2 * !B1 * C1 * !Y)	0.00226	0.00229	0.00227
	(A1 * A2 * !B1 * C1 * !Y)	-0.00176	-0.00178	-0.00177
	(A1 * A2 * !B1 * !C1 * !Y)	0.00226	0.00228	0.00228
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00150	-0.00151	-0.00150
	(A1 * !A2 * B1 * C1 * !Y)	0.00251	0.00237	0.00235
	(A1 * !A2 * B1 * C1 * !Y)	-0.00235	-0.00259	-0.00259
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00226	0.00228	0.00226
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00264	-0.00265	-0.00264
	(A1 * !A2 * !B1 * !C1 * Y)	0.00217	0.00221	0.00218
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00272	-0.00274	-0.00273
	(!A1 * B1 * C1 * !Y)	0.00250	0.00237	0.00235
	(!A1 * B1 * C1 * !Y)	-0.00236	-0.00260	-0.00259
	(!A1 * !B1 * !C1 * Y)	0.00217	0.00219	0.00218
	(!A1 * !B1 * !C1 * Y)	-0.00272	-0.00273	-0.00273

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00488	0.00493	0.00482
	(A1 * A2 * B1 * C1 * !Y)	-0.00383	-0.00385	-0.00382
	(A1 * A2 * B1 * !C1 * !Y)	0.00481	0.00487	0.00480
	(A1 * A2 * B1 * !C1 * !Y)	-0.00311	-0.00314	-0.00312
	(A1 * A2 * !B1 * C1 * !Y)	0.00457	0.00461	0.00459
	(A1 * A2 * !B1 * C1 * !Y)	-0.00361	-0.00363	-0.00362
	(A1 * A2 * !B1 * !C1 * !Y)	0.00457	0.00460	0.00455
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00311	-0.00312	-0.00311
	(A1 * !A2 * B1 * C1 * !Y)	0.00531	0.00482	0.00478
	(A1 * !A2 * B1 * C1 * !Y)	-0.00460	-0.00531	-0.00530
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00455	0.00462	0.00456
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00549	-0.00554	-0.00550
	(A1 * !A2 * !B1 * !C1 * Y)	0.00458	0.00462	0.00458
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00551	-0.00553	-0.00551
	(!A1 * B1 * C1 * !Y)	0.00531	0.00482	0.00478
	(!A1 * B1 * C1 * !Y)	-0.00461	-0.00532	-0.00530
	(!A1 * !B1 * !C1 * Y)	0.00453	0.00456	0.00454
	(!A1 * !B1 * !C1 * Y)	-0.00550	-0.00552	-0.00551

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)**	-0.00124	-0.00125	-0.00124
	(A1 * A2 * B1 * C1 * !Y)	0.00102	0.00104	0.00103
	(A1 * A2 * B1 * !C1 * !Y)	-0.00120	-0.00120	-0.00120
	(A1 * A2 * B1 * !C1 * !Y)	0.00088	0.00088	0.00087
	(A1 * A2 * !B1 * C1 * !Y)	-0.00116	-0.00119	-0.00119
	(A1 * A2 * !B1 * C1 * !Y)	0.00097	0.00097	0.00097
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00114	-0.00118	-0.00118
	(A1 * A2 * !B1 * !C1 * !Y)	0.00082	0.00083	0.00083
	(A1 * !A2 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00123
	(A1 * !A2 * B1 * C1 * !Y)	0.00138	0.00139	0.00138
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00115	-0.00118	-0.00118
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00142	0.00142	0.00142
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00103	-0.00110	-0.00109
	(A1 * !A2 * !B1 * !C1 * Y)	0.00153	0.00152	0.00150
	(!A1 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * C1 * !Y)	0.00138	0.00139	0.00138
	(!A1 * !B1 * !C1 * Y)	-0.00103	-0.00109	-0.00109
	(!A1 * !B1 * !C1 * Y)	0.00153	0.00152	0.00150

sky130_fd_sc_hs__a221oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00237	-0.00237	-0.00236
	(A1 * A2 * B1 * C1 * !Y)	0.00188	0.00187	0.00187
	(A1 * A2 * B1 * !C1 * !Y)	-0.00227	-0.00229	-0.00228
	(A1 * A2 * B1 * !C1 * !Y)	0.00157	0.00159	0.00159
	(A1 * A2 * !B1 * C1 * !Y)	-0.00218	-0.00228	-0.00227
	(A1 * A2 * !B1 * C1 * !Y)	0.00176	0.00178	0.00177
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00217	-0.00226	-0.00227
	(A1 * A2 * !B1 * !C1 * !Y)	0.00150	0.00151	0.00150
	(A1 * !A2 * B1 * C1 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * !A2 * B1 * C1 * !Y)	0.00258	0.00259	0.00259
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00216	-0.00224	-0.00226
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00264	0.00265	0.00265
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00203	-0.00219	-0.00218
	(A1 * !A2 * !B1 * !C1 * Y)	0.00279	0.00275	0.00273
	(!A1 * B1 * C1 * !Y)	-0.00235	-0.00236	-0.00235
	(!A1 * B1 * C1 * !Y)	0.00258	0.00260	0.00259
	(!A1 * !B1 * !C1 * Y)	-0.00203	-0.00219	-0.00218
	(!A1 * !B1 * !C1 * Y)	0.00279	0.00275	0.00273

sky130_fd_sc_hs__a221oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00480	-0.00482	-0.00480
	(A1 * A2 * B1 * C1 * !Y)	0.00383	0.00385	0.00382
	(A1 * A2 * B1 * !C1 * !Y)	-0.00469	-0.00472	-0.00467
	(A1 * A2 * B1 * !C1 * !Y)	0.00329	0.00331	0.00326
	(A1 * A2 * !B1 * C1 * !Y)	-0.00439	-0.00457	-0.00459
	(A1 * A2 * !B1 * C1 * !Y)	0.00361	0.00363	0.00362
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00439	-0.00456	-0.00455
	(A1 * A2 * !B1 * !C1 * !Y)	0.00312	0.00312	0.00311
	(A1 * !A2 * B1 * C1 * !Y)	-0.00476	-0.00478	-0.00476
	(A1 * !A2 * B1 * C1 * !Y)	0.00527	0.00531	0.00530
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	-0.00437	-0.00456	-0.00456
	(A1 * !A2 * !B1 * C1 * !Y) + (!A1 * !B1 * C1 * !Y)	0.00551	0.00554	0.00552
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00426	-0.00458	-0.00458
	(A1 * !A2 * !B1 * !C1 * Y)	0.00564	0.00556	0.00552
	(!A1 * B1 * C1 * !Y)	-0.00476	-0.00479	-0.00477
	(!A1 * B1 * C1 * !Y)	0.00527	0.00532	0.00530
	(!A1 * !B1 * !C1 * Y)	-0.00426	-0.00456	-0.00454
	(!A1 * !B1 * !C1 * Y)	0.00564	0.00556	0.00552

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)	0.00144	0.00145	0.00144
	(A1 * B1 * B2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * B1 * !B2 * !Y)	0.00144	0.00145	0.00144
	(A1 * A2 * B1 * !B2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B1 * !Y)	0.00145	0.00145	0.00144
	(A1 * A2 * !B1 * !Y)	-0.00076	-0.00076	-0.00075
	(!A1 * B1 * B2 * !Y)	0.00144	0.00145	0.00144
	(!A1 * B1 * B2 * !Y)	-0.00076	-0.00076	-0.00075
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	0.00270	0.00272	0.00270
	(A1 * B1 * B2 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * B1 * !B2 * !Y)	0.00270	0.00272	0.00270
	(A1 * A2 * B1 * !B2 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * !B1 * !Y)	0.00270	0.00272	0.00270
	(A1 * A2 * !B1 * !Y)	-0.00138	-0.00138	-0.00137
	(!A1 * B1 * B2 * !Y)	0.00270	0.00272	0.00270
	(!A1 * B1 * B2 * !Y)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	0.00531	0.00538	0.00533
	(A1 * B1 * B2 * !Y)	-0.00274	-0.00277	-0.00274
	(A1 * A2 * B1 * !B2 * !Y)	0.00531	0.00542	0.00533
	(A1 * A2 * B1 * !B2 * !Y)	-0.00274	-0.00279	-0.00274
	(A1 * A2 * !B1 * !Y)	0.00533	0.00542	0.00533
	(A1 * A2 * !B1 * !Y)	-0.00276	-0.00279	-0.00274
	(!A1 * B1 * B2 * !Y)	0.00533	0.00542	0.00533
	(!A1 * B1 * B2 * !Y)	-0.00277	-0.00281	-0.00276

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)	-0.00135	-0.00136	-0.00143
	(A1 * B1 * B2 * !Y)	0.00084	0.00084	0.00077
	(A1 * A2 * B1 * !B2 * !Y)	-0.00120	-0.00122	-0.00139
	(A1 * A2 * B1 * !B2 * !Y)	0.00092	0.00093	0.00080
	(A1 * A2 * !B1 * !Y)	-0.00121	-0.00122	-0.00139
	(A1 * A2 * !B1 * !Y)	0.00092	0.00093	0.00080
	(!A1 * B1 * B2 * !Y)	-0.00134	-0.00136	-0.00143
	(!A1 * B1 * B2 * !Y)	0.00083	0.00084	0.00077
sky130_fd_sc_hs__a221oi_2	(A1 * B1 * B2 * !Y)	-0.00251	-0.00254	-0.00267
	(A1 * B1 * B2 * !Y)	0.00152	0.00153	0.00141
	(A1 * A2 * B1 * !B2 * !Y)	-0.00228	-0.00231	-0.00261
	(A1 * A2 * B1 * !B2 * !Y)	0.00166	0.00167	0.00144
	(A1 * A2 * !B1 * !Y)	-0.00228	-0.00231	-0.00261
	(A1 * A2 * !B1 * !Y)	0.00166	0.00167	0.00144
	(!A1 * B1 * B2 * !Y)	-0.00251	-0.00254	-0.00267
	(!A1 * B1 * B2 * !Y)	0.00153	0.00154	0.00141
sky130_fd_sc_hs__a221oi_4	(A1 * B1 * B2 * !Y)	-0.00499	-0.00504	-0.00529
	(A1 * B1 * B2 * !Y)	0.00299	0.00300	0.00281
	(A1 * A2 * B1 * !B2 * !Y)	-0.00454	-0.00459	-0.00516
	(A1 * A2 * B1 * !B2 * !Y)	0.00332	0.00333	0.00292
	(A1 * A2 * !B1 * !Y)	-0.00455	-0.00459	-0.00516
	(A1 * A2 * !B1 * !Y)	0.00333	0.00333	0.00292
	(!A1 * B1 * B2 * !Y)	-0.00500	-0.00504	-0.00529
	(!A1 * B1 * B2 * !Y)	0.00301	0.00301	0.00282

SKY130_FD_SC_HS__A221Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00245	0.00254	0.00242	0.00243	0.00241	1.18878
sky130_fd_sc_hs__a221o_2	0.00256	0.00262	0.00263	0.00264	0.00256	2.20467
sky130_fd_sc_hs__a221o_4	0.00450	0.00448	0.00465	0.00474	0.00460	3.43696

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a221o_1	0.00000	0.03388	0.05847
sky130_fd_sc_hs__a221o_2	0.00000	0.04310	0.06682
sky130_fd_sc_hs__a221o_4	0.00000	0.08695	0.13743

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)	0.06969	0.55555	5.75782
	A2->X (RR)	0.07320	0.56267	5.80305
	B1->X (RR)	0.06751	0.54023	5.67969
	B2->X (RR)	0.07098	0.54880	5.73873
	C1->X (RR)	0.05417	0.51064	5.71169
sky130_fd_sc_hs__a221o_2	A1->X (RR)	0.07221	0.48820	5.76454
	A2->X (RR)	0.07577	0.48981	5.80445
	B1->X (RR)	0.07047	0.47531	5.70008
	B2->X (RR)	0.07366	0.47867	5.75007
	C1->X (RR)	0.05542	0.44409	5.68816
sky130_fd_sc_hs__a221o_4	A1->X (RR)	0.09054	0.46244	5.65959
	A2->X (RR)	0.09482	0.44671	5.62056
	B1->X (RR)	0.07941	0.42058	5.48384
	B2->X (RR)	0.08485	0.41552	5.49753
	C1->X (RR)	0.05240	0.36012	5.41637

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a221o_1	A1->X (FF)	0.22153	0.69379	4.95964
	A2->X (FF)	0.24221	0.72194	5.01976
	B1->X (FF)	0.20328	0.68451	5.06427
	B2->X (FF)	0.21995	0.71520	5.12040
	C1->X (FF)	0.17319	0.65465	4.97012
sky130_fd_sc_hs__a221o_2	A1->X (FF)	0.27553	0.74886	5.17153
	A2->X (FF)	0.29681	0.77962	5.24521
	B1->X (FF)	0.26425	0.75194	5.29553
	B2->X (FF)	0.27622	0.77810	5.36787
	C1->X (FF)	0.22986	0.71608	5.15854
sky130_fd_sc_hs__a221o_4	A1->X (FF)	0.28629	0.70571	4.68323
	A2->X (FF)	0.31287	0.74605	4.79254
	B1->X (FF)	0.26988	0.71118	4.87917
	B2->X (FF)	0.29189	0.74903	4.97186
	C1->X (FF)	0.23313	0.67754	4.76650

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a221o_1	A1	0.01024	0.01022	0.01942
	A1	0.00482	0.00479	0.01405
	A2	0.01108	0.01092	0.01630
	A2	0.00484	0.00467	0.01011
	B1	0.00841	0.00861	0.01659
	B1	0.00352	0.00372	0.01294
	B2	0.00918	0.00924	0.01517
	B2	0.00359	0.00365	0.01059
	C1	0.00606	0.00656	0.02346
	C1	0.00241	0.00291	0.01990
sky130_fd_sc_hs__a221o_2	A1	0.01248	0.01243	0.01968
	A1	0.00668	0.00665	0.01419
	A2	0.01339	0.01325	0.01767
	A2	0.00669	0.00659	0.01106
	B1	0.01083	0.01125	0.01819
	B1	0.00540	0.00585	0.01394
	B2	0.01167	0.01196	0.01717
	B2	0.00551	0.00583	0.01199
	C1	0.00826	0.00888	0.02383
	C1	0.00433	0.00499	0.02020

sky130_fd_sc_hs__a221o_4	**A1**	0.02456	0.02508	0.04167
	A1	0.01414	0.01468	0.03183
	A2	0.02605	0.02634	0.03714
	A2	0.01417	0.01450	0.02590
	B1	0.02086	0.02154	0.03657
	B1	0.01127	0.01214	0.02970
	B2	0.02261	0.02322	0.03430
	B2	0.01133	0.01203	0.02545
	C1	0.01504	0.01635	0.04688
	C1	0.00848	0.00979	0.04081

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a221o_1	**A1**	0.00304	0.00305	0.00954
	A1	0.00859	0.00860	0.01440
	A2	0.00354	0.00333	0.00816
	A2	0.01007	0.00989	0.01461
	B1	0.00304	0.00301	0.01145
	B1	0.00827	0.00814	0.01492
	B2	0.00329	0.00329	0.01060
	B2	0.00917	0.00909	0.01511
	C1	0.00275	0.00373	0.02140
	C1	0.00640	0.00733	0.02470

sky130_fd_sc_hs__a221o_2	**A1**	0.00606	0.00575	0.01196
	A1	0.01220	0.01208	0.01659
	A2	0.00631	0.00597	0.01130
	A2	0.01330	0.01298	0.01723
	B1	0.00547	0.00542	0.01349
	B1	0.01142	0.01112	0.01688
	B2	0.00633	0.00612	0.01254
	B2	0.01242	0.01221	0.01758
	C1	0.00523	0.00609	0.02329
	C1	0.01040	0.01116	0.02537
sky130_fd_sc_hs__a221o_4	**A1**	0.01140	0.01099	0.02156
	A1	0.02247	0.02206	0.03157
	A2	0.01240	0.01124	0.02089
	A2	0.02484	0.02413	0.03294
	B1	0.01160	0.01079	0.02351
	B1	0.02106	0.02024	0.03173
	B2	0.01214	0.01147	0.02357
	B2	0.02317	0.02249	0.03322
	C1	0.00962	0.01168	0.04292
	C1	0.01621	0.01790	0.04804

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)**	0.00107	0.00107	0.00107
	(A2 * B1 * B2 * C1 * X)	-0.00121	-0.00128	-0.00127
	(A2 * B1 * B2 * !C1 * X)	0.00107	0.00107	0.00107
	(A2 * B1 * B2 * !C1 * X)	-0.00121	-0.00128	-0.00127
	(A2 * B1 * !B2 * C1 * X)	0.00108	0.00108	0.00107
	(A2 * B1 * !B2 * C1 * X)	-0.00116	-0.00125	-0.00124
	(A2 * !B1 * C1 * X)	0.00108	0.00108	0.00107
	(A2 * !B1 * C1 * X)	-0.00116	-0.00125	-0.00124
	(!A2 * B1 * B2 * C1 * X)	0.00102	0.00103	0.00103
	(!A2 * B1 * B2 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * B2 * !C1 * X)	0.00101	0.00103	0.00102
	(!A2 * B1 * B2 * !C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * X)	0.00102	0.00104	0.00103
	(!A2 * B1 * !B2 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * !B2 * !C1 * !X)	0.00034	0.00035	0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00153	-0.00155	-0.00155
	(!A2 * !B1 * C1 * X)	0.00102	0.00104	0.00103
	(!A2 * !B1 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * !B1 * !C1 * !X)	0.00034	0.00035	0.00033
	(!A2 * !B1 * !C1 * !X)	-0.00153	-0.00155	-0.00155

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	0.00121	0.00121	0.00120
	(A2 * B1 * B2 * C1 * X)	-0.00120	-0.00126	-0.00125
	(A2 * B1 * B2 * !C1 * X)	0.00122	0.00121	0.00120
	(A2 * B1 * B2 * !C1 * X)	-0.00120	-0.00126	-0.00125
	(A2 * B1 * !B2 * C1 * X)	0.00121	0.00121	0.00121
	(A2 * B1 * !B2 * C1 * X)	-0.00115	-0.00124	-0.00122
	(A2 * !B1 * C1 * X)	0.00121	0.00121	0.00121
	(A2 * !B1 * C1 * X)	-0.00115	-0.00124	-0.00122
	(!A2 * B1 * B2 * C1 * X)	0.00115	0.00116	0.00115
	(!A2 * B1 * B2 * C1 * X)	-0.00129	-0.00129	-0.00129
	(!A2 * B1 * B2 * !C1 * X)	0.00114	0.00115	0.00114
	(!A2 * B1 * B2 * !C1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * B1 * !B2 * C1 * X)	0.00115	0.00117	0.00116
	(!A2 * B1 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * B1 * !B2 * !C1 * !X)	0.00037	0.00038	0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00154	-0.00156	-0.00157
	(!A2 * !B1 * C1 * X)	0.00114	0.00116	0.00115
	(!A2 * !B1 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * !B1 * !C1 * !X)	0.00037	0.00038	0.00037
	(!A2 * !B1 * !C1 * !X)	-0.00154	-0.00156	-0.00157

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	0.00242	0.00242	0.00239
	(A2 * B1 * B2 * C1 * X)	-0.00236	-0.00248	-0.00245
	(A2 * B1 * B2 * !C1 * X)	0.00242	0.00242	0.00239
	(A2 * B1 * B2 * !C1 * X)	-0.00235	-0.00248	-0.00245
	(A2 * B1 * !B2 * C1 * X)	0.00241	0.00242	0.00239
	(A2 * B1 * !B2 * C1 * X)	-0.00229	-0.00242	-0.00240
	(A2 * !B1 * C1 * X)	0.00241	0.00242	0.00239
	(A2 * !B1 * C1 * X)	-0.00229	-0.00242	-0.00240
	(!A2 * B1 * B2 * C1 * X)	0.00227	0.00230	0.00228
	(!A2 * B1 * B2 * C1 * X)	-0.00253	-0.00254	-0.00253
	(!A2 * B1 * B2 * !C1 * X)	0.00226	0.00229	0.00227
	(!A2 * B1 * B2 * !C1 * X)	-0.00252	-0.00255	-0.00253
	(!A2 * B1 * !B2 * C1 * X)	0.00227	0.00227	0.00228
	(!A2 * B1 * !B2 * C1 * X)	-0.00252	-0.00252	-0.00253
	(!A2 * B1 * !B2 * !C1 * !X)	0.00107	0.00108	0.00105
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00284	-0.00286	-0.00291
	(!A2 * !B1 * C1 * X)	0.00227	0.00230	0.00228
	(!A2 * !B1 * C1 * X)	-0.00252	-0.00254	-0.00253
	(!A2 * !B1 * !C1 * !X)	0.00107	0.00108	0.00105
	(!A2 * !B1 * !C1 * !X)	-0.00284	-0.00286	-0.00291

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)**	-0.00107	-0.00107	-0.00107
	(A2 * B1 * B2 * C1 * X)	0.00127	0.00128	0.00127
	(A2 * B1 * B2 * !C1 * X)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * B2 * !C1 * X)	0.00127	0.00128	0.00127
	(A2 * B1 * !B2 * C1 * X)	-0.00106	-0.00107	-0.00107
	(A2 * B1 * !B2 * C1 * X)	0.00123	0.00125	0.00124
	(A2 * !B1 * C1 * X)	-0.00106	-0.00107	-0.00107
	(A2 * !B1 * C1 * X)	0.00123	0.00125	0.00124
	(!A2 * B1 * B2 * C1 * X)	-0.00099	-0.00102	-0.00103
	(!A2 * B1 * B2 * C1 * X)	0.00130	0.00132	0.00131
	(!A2 * B1 * B2 * !C1 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * B2 * !C1 * X)	0.00131	0.00131	0.00131
	(!A2 * B1 * !B2 * C1 * X)	-0.00099	-0.00102	-0.00103
	(!A2 * B1 * !B2 * C1 * X)	0.00131	0.00131	0.00131
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * B1 * !B2 * !C1 * !X)	0.00156	0.00157	0.00156
	(!A2 * !B1 * C1 * X)	-0.00098	-0.00102	-0.00103
	(!A2 * !B1 * C1 * X)	0.00130	0.00131	0.00131
	(!A2 * !B1 * !C1 * !X)	-0.00033	-0.00033	-0.00033
	(!A2 * !B1 * !C1 * !X)	0.00156	0.00157	0.00156

sky130_fd_sc_hs__a221o_2	**(A2 * B1 * B2 * C1 * X)**	-0.00120	-0.00121	-0.00120
	(A2 * B1 * B2 * C1 * X)	0.00126	0.00126	0.00125
	(A2 * B1 * B2 * !C1 * X)	-0.00120	-0.00121	-0.00120
	(A2 * B1 * B2 * !C1 * X)	0.00125	0.00126	0.00125
	(A2 * B1 * !B2 * C1 * X)	-0.00120	-0.00121	-0.00120
	(A2 * B1 * !B2 * C1 * X)	0.00122	0.00124	0.00122
	(A2 * !B1 * C1 * X)	-0.00120	-0.00121	-0.00120
	(A2 * !B1 * C1 * X)	0.00122	0.00124	0.00122
	(!A2 * B1 * B2 * C1 * X)	-0.00111	-0.00115	-0.00115
	(!A2 * B1 * B2 * C1 * X)	0.00130	0.00130	0.00130
	(!A2 * B1 * B2 * !C1 * X)	-0.00111	-0.00115	-0.00114
	(!A2 * B1 * B2 * !C1 * X)	0.00130	0.00130	0.00130
	(!A2 * B1 * !B2 * C1 * X)	-0.00111	-0.00115	-0.00116
	(!A2 * B1 * !B2 * C1 * X)	0.00130	0.00130	0.00130
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * B1 * !B2 * !C1 * !X)	0.00157	0.00158	0.00157
	(!A2 * !B1 * C1 * X)	-0.00111	-0.00115	-0.00115
	(!A2 * !B1 * C1 * X)	0.00130	0.00130	0.00130
	(!A2 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(!A2 * !B1 * !C1 * !X)	0.00157	0.00158	0.00157

sky130_fd_sc_hs__a221o_4	**(A2 * B1 * B2 * C1 * X)**	-0.00239	-0.00241	-0.00239
	(A2 * B1 * B2 * C1 * X)	0.00244	0.00248	0.00245
	(A2 * B1 * B2 * !C1 * X)	-0.00239	-0.00241	-0.00239
	(A2 * B1 * B2 * !C1 * X)	0.00244	0.00248	0.00245
	(A2 * B1 * !B2 * C1 * X)	-0.00238	-0.00240	-0.00239
	(A2 * B1 * !B2 * C1 * X)	0.00239	0.00242	0.00240
	(A2 * !B1 * C1 * X)	-0.00238	-0.00240	-0.00239
	(A2 * !B1 * C1 * X)	0.00239	0.00242	0.00240
	(!A2 * B1 * B2 * C1 * X)	-0.00218	-0.00230	-0.00228
	(!A2 * B1 * B2 * C1 * X)	0.00254	0.00254	0.00253
	(!A2 * B1 * B2 * !C1 * X)	-0.00217	-0.00229	-0.00227
	(!A2 * B1 * B2 * !C1 * X)	0.00253	0.00255	0.00253
	(!A2 * B1 * !B2 * C1 * X)	-0.00218	-0.00227	-0.00228
	(!A2 * B1 * !B2 * C1 * X)	0.00254	0.00254	0.00253
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(!A2 * B1 * !B2 * !C1 * !X)	0.00291	0.00293	0.00292
	(!A2 * !B1 * C1 * X)	-0.00218	-0.00229	-0.00228
	(!A2 * !B1 * C1 * X)	0.00254	0.00254	0.00253
	(!A2 * !B1 * !C1 * !X)	-0.00103	-0.00103	-0.00103
	(!A2 * !B1 * !C1 * !X)	0.00291	0.00293	0.00292

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)**	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * C1 * X)	-0.00116	-0.00123	-0.00122
	(A1 * B1 * B2 * !C1 * X)	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * !C1 * X)	-0.00116	-0.00123	-0.00122
	(A1 * B1 * !B2 * C1 * X)	0.00125	0.00125	0.00124
	(A1 * B1 * !B2 * C1 * X)	-0.00112	-0.00121	-0.00120
	(A1 * !B1 * C1 * X)	0.00125	0.00125	0.00124
	(A1 * !B1 * C1 * X)	-0.00112	-0.00121	-0.00120
	(!A1 * B1 * B2 * X)	0.00120	0.00121	0.00120
	(!A1 * B1 * B2 * X)	-0.00125	-0.00126	-0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00118	0.00121	0.00119
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00100	0.00102	0.00101
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00144	-0.00145	-0.00144
	(!A1 * !B1 * !C1 * !X)	0.00100	0.00102	0.00101
	(!A1 * !B1 * !C1 * !X)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	0.00135	0.00135	0.00135
	(A1 * B1 * B2 * C1 * X)	-0.00116	-0.00122	-0.00121
	(A1 * B1 * B2 * !C1 * X)	0.00135	0.00135	0.00135
	(A1 * B1 * B2 * !C1 * X)	-0.00115	-0.00122	-0.00121
	(A1 * B1 * !B2 * C1 * X)	0.00135	0.00135	0.00135
	(A1 * B1 * !B2 * C1 * X)	-0.00111	-0.00120	-0.00118
	(A1 * !B1 * C1 * X)	0.00135	0.00135	0.00135
	(A1 * !B1 * C1 * X)	-0.00111	-0.00120	-0.00118
	(!A1 * B1 * B2 * X)	0.00129	0.00131	0.00129
	(!A1 * B1 * B2 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00129	0.00131	0.00129
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00142	-0.00144	-0.00143
	(!A1 * !B1 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * !B1 * !C1 * !X)	-0.00142	-0.00144	-0.00143

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	0.00237	0.00239	0.00236
	(A1 * B1 * B2 * C1 * X)	-0.00232	-0.00245	-0.00243
	(A1 * B1 * B2 * !C1 * X)	0.00238	0.00239	0.00236
	(A1 * B1 * B2 * !C1 * X)	-0.00231	-0.00244	-0.00243
	(A1 * B1 * !B2 * C1 * X)	0.00237	0.00239	0.00236
	(A1 * B1 * !B2 * C1 * X)	-0.00225	-0.00240	-0.00238
	(A1 * !B1 * C1 * X)	0.00237	0.00239	0.00236
	(A1 * !B1 * C1 * X)	-0.00225	-0.00240	-0.00238
	(!A1 * B1 * B2 * X)	0.00225	0.00226	0.00225
	(!A1 * B1 * B2 * X)	-0.00251	-0.00251	-0.00251
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00225	0.00226	0.00225
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00250	-0.00251	-0.00251
	(!A1 * B1 * !B2 * !C1 * !X)	0.00220	0.00221	0.00220
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00257	-0.00258	-0.00257
	(!A1 * !B1 * !C1 * !X)	0.00220	0.00221	0.00220
	(!A1 * !B1 * !C1 * !X)	-0.00257	-0.00258	-0.00257

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)**	-0.00124	-0.00124	-0.00124
	(A1 * B1 * B2 * C1 * X)	0.00122	0.00123	0.00122
	(A1 * B1 * B2 * !C1 * X)	-0.00124	-0.00124	-0.00124
	(A1 * B1 * B2 * !C1 * X)	0.00122	0.00123	0.00122
	(A1 * B1 * !B2 * C1 * X)	-0.00124	-0.00125	-0.00124
	(A1 * B1 * !B2 * C1 * X)	0.00119	0.00121	0.00120
	(A1 * !B1 * C1 * X)	-0.00124	-0.00125	-0.00124
	(A1 * !B1 * C1 * X)	0.00119	0.00121	0.00120
	(!A1 * B1 * B2 * X)	-0.00117	-0.00120	-0.00120
	(!A1 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00117	-0.00120	-0.00119
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00095	-0.00101	-0.00101
	(!A1 * B1 * !B2 * !C1 * !X)	0.00149	0.00147	0.00145
	(!A1 * !B1 * !C1 * !X)	-0.00095	-0.00101	-0.00101
	(!A1 * !B1 * !C1 * !X)	0.00149	0.00147	0.00145

sky130_fd_sc_hs__a221o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00135	-0.00135	-0.00135
	(A1 * B1 * B2 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * B2 * !C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * B2 * !C1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * !B2 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * B1 * !B2 * C1 * X)	0.00119	0.00120	0.00118
	(A1 * !B1 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A1 * !B1 * C1 * X)	0.00119	0.00120	0.00118
	(!A1 * B1 * B2 * X)	-0.00126	-0.00129	-0.00129
	(!A1 * B1 * B2 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00126	-0.00129	-0.00129
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00105	-0.00112	-0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	0.00147	0.00144	0.00143
	(!A1 * !B1 * !C1 * !X)	-0.00105	-0.00112	-0.00111
	(!A1 * !B1 * !C1 * !X)	0.00147	0.00144	0.00143

sky130_fd_sc_hs__a221o_4	**(A1 * B1 * B2 * C1 * X)**	-0.00237	-0.00237	-0.00236
	(A1 * B1 * B2 * C1 * X)	0.00243	0.00245	0.00243
	(A1 * B1 * B2 * !C1 * X)	-0.00236	-0.00237	-0.00236
	(A1 * B1 * B2 * !C1 * X)	0.00243	0.00244	0.00243
	(A1 * B1 * !B2 * C1 * X)	-0.00235	-0.00236	-0.00235
	(A1 * B1 * !B2 * C1 * X)	0.00236	0.00240	0.00238
	(A1 * !B1 * C1 * X)	-0.00235	-0.00236	-0.00235
	(A1 * !B1 * C1 * X)	0.00236	0.00240	0.00238
	(!A1 * B1 * B2 * X)	-0.00218	-0.00226	-0.00225
	(!A1 * B1 * B2 * X)	0.00251	0.00251	0.00251
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00218	-0.00226	-0.00225
	(!A1 * B1 * !B2 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00251	0.00251	0.00251
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00209	-0.00220	-0.00220
	(!A1 * B1 * !B2 * !C1 * !X)	0.00262	0.00258	0.00258
	(!A1 * !B1 * !C1 * !X)	-0.00209	-0.00220	-0.00220
	(!A1 * !B1 * !C1 * !X)	0.00262	0.00258	0.00258

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)**	0.00110	0.00110	0.00109
	(A1 * A2 * B2 * C1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * A2 * B2 * !C1 * X)	0.00108	0.00109	0.00108
	(A1 * A2 * B2 * !C1 * X)	-0.00076	-0.00077	-0.00076
	(A1 * A2 * !B2 * C1 * X)	0.00103	0.00104	0.00103
	(A1 * A2 * !B2 * C1 * X)	-0.00088	-0.00088	-0.00087
	(A1 * A2 * !B2 * !C1 * X)	0.00103	0.00104	0.00104
	(A1 * A2 * !B2 * !C1 * X)	-0.00075	-0.00076	-0.00076
	(A1 * !A2 * B2 * C1 * X)	0.00117	0.00108	0.00107
	(A1 * !A2 * B2 * C1 * X)	-0.00115	-0.00127	-0.00127
	(A1 * !A2 * !B2 * C1 * X)	0.00102	0.00102	0.00102
	(A1 * !A2 * !B2 * C1 * X)	-0.00129	-0.00129	-0.00129
	(A1 * !A2 * !B2 * !C1 * !X)	0.00032	0.00033	0.00032
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00154	-0.00155	-0.00156
	(!A1 * B2 * C1 * X)	0.00117	0.00108	0.00107
	(!A1 * B2 * C1 * X)	-0.00115	-0.00127	-0.00127
	(!A1 * !B2 * C1 * X)	0.00102	0.00103	0.00102
	(!A1 * !B2 * C1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * !B2 * !C1 * !X)	0.00032	0.00033	0.00032
	(!A1 * !B2 * !C1 * !X)	-0.00154	-0.00155	-0.00156

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	0.00130	0.00132	0.00130
	(A1 * A2 * B2 * C1 * X)	-0.00093	-0.00095	-0.00094
	(A1 * A2 * B2 * !C1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * B2 * !C1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A2 * !B2 * C1 * X)	0.00123	0.00125	0.00123
	(A1 * A2 * !B2 * C1 * X)	-0.00088	-0.00088	-0.00089
	(A1 * A2 * !B2 * !C1 * X)	0.00122	0.00124	0.00123
	(A1 * A2 * !B2 * !C1 * X)	-0.00077	-0.00078	-0.00078
	(A1 * !A2 * B2 * C1 * X)	0.00138	0.00129	0.00128
	(A1 * !A2 * B2 * C1 * X)	-0.00116	-0.00128	-0.00128
	(A1 * !A2 * !B2 * C1 * X)	0.00121	0.00123	0.00122
	(A1 * !A2 * !B2 * C1 * X)	-0.00130	-0.00131	-0.00131
	(A1 * !A2 * !B2 * !C1 * !X)	0.00038	0.00039	0.00038
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00163	-0.00163	-0.00165
	(!A1 * B2 * C1 * X)	0.00138	0.00129	0.00128
	(!A1 * B2 * C1 * X)	-0.00116	-0.00128	-0.00128
	(!A1 * !B2 * C1 * X)	0.00121	0.00123	0.00122
	(!A1 * !B2 * C1 * X)	-0.00130	-0.00131	-0.00131
	(!A1 * !B2 * !C1 * !X)	0.00038	0.00039	0.00038
	(!A1 * !B2 * !C1 * !X)	-0.00163	-0.00163	-0.00165

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	0.00234	0.00238	0.00233
	(A1 * A2 * B2 * C1 * X)	-0.00192	-0.00194	-0.00191
	(A1 * A2 * B2 * !C1 * X)	0.00231	0.00233	0.00231
	(A1 * A2 * B2 * !C1 * X)	-0.00155	-0.00157	-0.00156
	(A1 * A2 * !B2 * C1 * X)	0.00224	0.00226	0.00225
	(A1 * A2 * !B2 * C1 * X)	-0.00180	-0.00184	-0.00181
	(A1 * A2 * !B2 * !C1 * X)	0.00224	0.00225	0.00223
	(A1 * A2 * !B2 * !C1 * X)	-0.00156	-0.00157	-0.00156
	(A1 * !A2 * B2 * C1 * X)	0.00249	0.00230	0.00229
	(A1 * !A2 * B2 * C1 * X)	-0.00227	-0.00255	-0.00255
	(A1 * !A2 * !B2 * C1 * X)	0.00222	0.00224	0.00222
	(A1 * !A2 * !B2 * C1 * X)	-0.00259	-0.00261	-0.00259
	(A1 * !A2 * !B2 * !C1 * !X)	0.00084	0.00085	0.00081
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00308	-0.00311	-0.00315
	(!A1 * B2 * C1 * X)	0.00249	0.00230	0.00229
	(!A1 * B2 * C1 * X)	-0.00227	-0.00255	-0.00255
	(!A1 * !B2 * C1 * X)	0.00222	0.00225	0.00222
	(!A1 * !B2 * C1 * X)	-0.00258	-0.00261	-0.00259
	(!A1 * !B2 * !C1 * !X)	0.00084	0.00085	0.00081
	(!A1 * !B2 * !C1 * !X)	-0.00308	-0.00311	-0.00315

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)**	-0.00108	-0.00109	-0.00108
	(A1 * A2 * B2 * C1 * X)	0.00092	0.00093	0.00092
	(A1 * A2 * B2 * !C1 * X)	-0.00104	-0.00105	-0.00104
	(A1 * A2 * B2 * !C1 * X)	0.00079	0.00080	0.00080
	(A1 * A2 * !B2 * C1 * X)	-0.00101	-0.00104	-0.00103
	(A1 * A2 * !B2 * C1 * X)	0.00088	0.00088	0.00087
	(A1 * A2 * !B2 * !C1 * X)	-0.00100	-0.00103	-0.00104
	(A1 * A2 * !B2 * !C1 * X)	0.00076	0.00076	0.00076
	(A1 * !A2 * B2 * C1 * X)	-0.00107	-0.00108	-0.00107
	(A1 * !A2 * B2 * C1 * X)	0.00126	0.00127	0.00127
	(A1 * !A2 * !B2 * C1 * X)	-0.00099	-0.00102	-0.00102
	(A1 * !A2 * !B2 * C1 * X)	0.00130	0.00130	0.00129
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00031	-0.00032	-0.00031
	(A1 * !A2 * !B2 * !C1 * !X)	0.00156	0.00158	0.00156
	(!A1 * B2 * C1 * X)	-0.00107	-0.00108	-0.00107
	(!A1 * B2 * C1 * X)	0.00126	0.00127	0.00127
	(!A1 * !B2 * C1 * X)	-0.00099	-0.00102	-0.00102
	(!A1 * !B2 * C1 * X)	0.00130	0.00130	0.00129
	(!A1 * !B2 * !C1 * !X)	-0.00031	-0.00032	-0.00031
	(!A1 * !B2 * !C1 * !X)	0.00156	0.00158	0.00156

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B2 * C1 * X)**	-0.00129	-0.00130	-0.00129
	(A1 * A2 * B2 * C1 * X)	0.00093	0.00095	0.00094
	(A1 * A2 * B2 * !C1 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * B2 * !C1 * X)	0.00081	0.00081	0.00081
	(A1 * A2 * !B2 * C1 * X)	-0.00119	-0.00123	-0.00123
	(A1 * A2 * !B2 * C1 * X)	0.00088	0.00088	0.00089
	(A1 * A2 * !B2 * !C1 * X)	-0.00119	-0.00123	-0.00123
	(A1 * A2 * !B2 * !C1 * X)	0.00078	0.00078	0.00078
	(A1 * !A2 * B2 * C1 * X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * B2 * C1 * X)	0.00127	0.00128	0.00128
	(A1 * !A2 * !B2 * C1 * X)	-0.00119	-0.00122	-0.00122
	(A1 * !A2 * !B2 * C1 * X)	0.00131	0.00131	0.00131
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * !A2 * !B2 * !C1 * !X)	0.00165	0.00167	0.00165
	(!A1 * B2 * C1 * X)	-0.00128	-0.00128	-0.00128
	(!A1 * B2 * C1 * X)	0.00127	0.00128	0.00128
	(!A1 * !B2 * C1 * X)	-0.00119	-0.00122	-0.00122
	(!A1 * !B2 * C1 * X)	0.00131	0.00131	0.00131
	(!A1 * !B2 * !C1 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !B2 * !C1 * !X)	0.00165	0.00167	0.00165

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B2 * C1 * X)**	-0.00232	-0.00234	-0.00232
	(A1 * A2 * B2 * C1 * X)	0.00192	0.00194	0.00191
	(A1 * A2 * B2 * !C1 * X)	-0.00225	-0.00227	-0.00224
	(A1 * A2 * B2 * !C1 * X)	0.00161	0.00163	0.00164
	(A1 * A2 * !B2 * C1 * X)	-0.00214	-0.00226	-0.00225
	(A1 * A2 * !B2 * C1 * X)	0.00180	0.00184	0.00181
	(A1 * A2 * !B2 * !C1 * X)	-0.00212	-0.00225	-0.00223
	(A1 * A2 * !B2 * !C1 * X)	0.00157	0.00157	0.00156
	(A1 * !A2 * B2 * C1 * X)	-0.00229	-0.00229	-0.00228
	(A1 * !A2 * B2 * C1 * X)	0.00255	0.00256	0.00255
	(A1 * !A2 * !B2 * C1 * X)	-0.00211	-0.00222	-0.00222
	(A1 * !A2 * !B2 * C1 * X)	0.00259	0.00262	0.00260
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00079	-0.00081	-0.00079
	(A1 * !A2 * !B2 * !C1 * !X)	0.00315	0.00320	0.00316
	(!A1 * B2 * C1 * X)	-0.00228	-0.00229	-0.00228
	(!A1 * B2 * C1 * X)	0.00254	0.00256	0.00255
	(!A1 * !B2 * C1 * X)	-0.00211	-0.00222	-0.00222
	(!A1 * !B2 * C1 * X)	0.00258	0.00262	0.00260
	(!A1 * !B2 * !C1 * !X)	-0.00079	-0.00081	-0.00079
	(!A1 * !B2 * !C1 * !X)	0.00315	0.00320	0.00316

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)**	0.00114	0.00114	0.00112
	(A1 * A2 * B1 * C1 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B1 * !C1 * X)	0.00112	0.00113	0.00112
	(A1 * A2 * B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * A2 * !B1 * C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !B1 * C1 * X)	-0.00086	-0.00086	-0.00085
	(A1 * A2 * !B1 * !C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * !B1 * !C1 * X)	-0.00074	-0.00074	-0.00074
	(A1 * !A2 * B1 * C1 * X)	0.00123	0.00112	0.00111
	(A1 * !A2 * B1 * C1 * X)	-0.00110	-0.00124	-0.00124
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00106	0.00106	0.00106
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !C1 * !X)	0.00095	0.00095	0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00137	-0.00136	-0.00137
	(!A1 * B1 * C1 * X)	0.00123	0.00112	0.00111
	(!A1 * B1 * C1 * X)	-0.00110	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00095	0.00095	0.00096
	(!A1 * !B1 * !C1 * !X)	-0.00137	-0.00137	-0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	0.00134	0.00136	0.00133
	(A1 * A2 * B1 * C1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * B1 * !C1 * X)	0.00132	0.00134	0.00132
	(A1 * A2 * B1 * !C1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(A1 * A2 * !B1 * C1 * X)	-0.00082	-0.00082	-0.00082
	(A1 * A2 * !B1 * !C1 * X)	0.00127	0.00127	0.00127
	(A1 * A2 * !B1 * !C1 * X)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B1 * C1 * X)	0.00142	0.00133	0.00132
	(A1 * !A2 * B1 * C1 * X)	-0.00107	-0.00119	-0.00119
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(!A1 * B1 * C1 * X)	0.00142	0.00133	0.00132
	(!A1 * B1 * C1 * X)	-0.00107	-0.00119	-0.00119
	(!A1 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	0.00258	0.00261	0.00259
	(A1 * A2 * B1 * C1 * X)	-0.00182	-0.00184	-0.00183
	(A1 * A2 * B1 * !C1 * X)	0.00256	0.00257	0.00256
	(A1 * A2 * B1 * !C1 * X)	-0.00147	-0.00148	-0.00148
	(A1 * A2 * !B1 * C1 * X)	0.00250	0.00254	0.00250
	(A1 * A2 * !B1 * C1 * X)	-0.00172	-0.00173	-0.00172
	(A1 * A2 * !B1 * !C1 * X)	0.00249	0.00251	0.00249
	(A1 * A2 * !B1 * !C1 * X)	-0.00146	-0.00148	-0.00147
	(A1 * !A2 * B1 * C1 * X)	0.00270	0.00256	0.00254
	(A1 * !A2 * B1 * C1 * X)	-0.00221	-0.00246	-0.00246
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00247	0.00250	0.00247
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00250	-0.00251	-0.00250
	(A1 * !A2 * !B1 * !C1 * !X)	0.00241	0.00244	0.00241
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00256	-0.00258	-0.00257
	(!A1 * B1 * C1 * X)	0.00270	0.00256	0.00254
	(!A1 * B1 * C1 * X)	-0.00221	-0.00246	-0.00246
	(!A1 * !B1 * !C1 * !X)	0.00241	0.00244	0.00241
	(!A1 * !B1 * !C1 * !X)	-0.00256	-0.00258	-0.00257

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)**	-0.00112	-0.00113	-0.00112
	(A1 * A2 * B1 * C1 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * B1 * !C1 * X)	-0.00109	-0.00109	-0.00108
	(A1 * A2 * B1 * !C1 * X)	0.00077	0.00077	0.00077
	(A1 * A2 * !B1 * C1 * X)	-0.00104	-0.00107	-0.00107
	(A1 * A2 * !B1 * C1 * X)	0.00086	0.00086	0.00085
	(A1 * A2 * !B1 * !C1 * X)	-0.00104	-0.00107	-0.00107
	(A1 * A2 * !B1 * !C1 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(A1 * !A2 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00103	-0.00106	-0.00106
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00127	0.00127	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00095	-0.00096
	(A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00139	0.00137
	(!A1 * B1 * C1 * X)	-0.00111	-0.00111	-0.00111
	(!A1 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00090	-0.00095	-0.00096
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00139	0.00137

sky130_fd_sc_hs__a221o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00132	-0.00134	-0.00133
	(A1 * A2 * B1 * C1 * X)	0.00086	0.00087	0.00086
	(A1 * A2 * B1 * !C1 * X)	-0.00129	-0.00129	-0.00129
	(A1 * A2 * B1 * !C1 * X)	0.00073	0.00073	0.00074
	(A1 * A2 * !B1 * C1 * X)	-0.00124	-0.00128	-0.00127
	(A1 * A2 * !B1 * C1 * X)	0.00082	0.00082	0.00082
	(A1 * A2 * !B1 * !C1 * X)	-0.00124	-0.00127	-0.00127
	(A1 * A2 * !B1 * !C1 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * B1 * C1 * X)	-0.00132	-0.00132	-0.00131
	(A1 * !A2 * B1 * C1 * X)	0.00119	0.00119	0.00119
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00123	-0.00126	-0.00126
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00122	0.00122	0.00122
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00104	-0.00109	-0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	0.00142	0.00139	0.00138
	(!A1 * B1 * C1 * X)	-0.00132	-0.00132	-0.00131
	(!A1 * B1 * C1 * X)	0.00119	0.00119	0.00119
	(!A1 * !B1 * !C1 * !X)	-0.00104	-0.00109	-0.00109
	(!A1 * !B1 * !C1 * !X)	0.00142	0.00139	0.00138

sky130_fd_sc_hs__a221o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00257	-0.00259	-0.00257
	(A1 * A2 * B1 * C1 * X)	0.00182	0.00184	0.00183
	(A1 * A2 * B1 * !C1 * X)	-0.00248	-0.00250	-0.00249
	(A1 * A2 * B1 * !C1 * X)	0.00153	0.00155	0.00155
	(A1 * A2 * !B1 * C1 * X)	-0.00243	-0.00252	-0.00250
	(A1 * A2 * !B1 * C1 * X)	0.00172	0.00173	0.00172
	(A1 * A2 * !B1 * !C1 * X)	-0.00241	-0.00251	-0.00249
	(A1 * A2 * !B1 * !C1 * X)	0.00147	0.00148	0.00147
	(A1 * !A2 * B1 * C1 * X)	-0.00253	-0.00253	-0.00253
	(A1 * !A2 * B1 * C1 * X)	0.00244	0.00246	0.00246
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	-0.00240	-0.00249	-0.00247
	(A1 * !A2 * !B1 * C1 * X) + (!A1 * !B1 * C1 * X)	0.00250	0.00252	0.00251
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00230	-0.00243	-0.00240
	(A1 * !A2 * !B1 * !C1 * !X)	0.00261	0.00259	0.00258
	(!A1 * B1 * C1 * X)	-0.00253	-0.00253	-0.00253
	(!A1 * B1 * C1 * X)	0.00244	0.00246	0.00246
	(!A1 * !B1 * !C1 * !X)	-0.00230	-0.00243	-0.00240
	(!A1 * !B1 * !C1 * !X)	0.00261	0.00259	0.00258

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)	0.00136	0.00138	0.00135
	(A1 * B1 * B2 * X)	-0.00065	-0.00065	-0.00064
	(A1 * A2 * B1 * !B2 * X)	0.00135	0.00138	0.00135
	(A1 * A2 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * X)	0.00135	0.00138	0.00135
	(A1 * A2 * !B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * B1 * B2 * X)	0.00135	0.00138	0.00135
	(!A1 * B1 * B2 * X)	-0.00064	-0.00066	-0.00065
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	0.00140	0.00142	0.00141
	(A1 * B1 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * B1 * !B2 * X)	0.00141	0.00142	0.00141
	(A1 * A2 * B1 * !B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B1 * X)	0.00141	0.00142	0.00141
	(A1 * A2 * !B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * B1 * B2 * X)	0.00140	0.00142	0.00141
	(!A1 * B1 * B2 * X)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	0.00241	0.00242	0.00240
	(A1 * B1 * B2 * X)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * B1 * !B2 * X)	0.00241	0.00242	0.00240
	(A1 * A2 * B1 * !B2 * X)	-0.00138	-0.00138	-0.00137
	(A1 * A2 * !B1 * X)	0.00241	0.00242	0.00240
	(A1 * A2 * !B1 * X)	-0.00138	-0.00138	-0.00137
	(!A1 * B1 * B2 * X)	0.00240	0.00242	0.00239
	(!A1 * B1 * B2 * X)	-0.00141	-0.00141	-0.00139

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)	-0.00127	-0.00128	-0.00135
	(A1 * B1 * B2 * X)	0.00071	0.00072	0.00066
	(A1 * A2 * B1 * !B2 * X)	-0.00116	-0.00118	-0.00132
	(A1 * A2 * B1 * !B2 * X)	0.00078	0.00079	0.00068
	(A1 * A2 * !B1 * X)	-0.00117	-0.00118	-0.00132
	(A1 * A2 * !B1 * X)	0.00078	0.00079	0.00068
	(!A1 * B1 * B2 * X)	-0.00127	-0.00128	-0.00135
	(!A1 * B1 * B2 * X)	0.00072	0.00072	0.00066
sky130_fd_sc_hs__a221o_2	(A1 * B1 * B2 * X)	-0.00133	-0.00134	-0.00140
	(A1 * B1 * B2 * X)	0.00072	0.00072	0.00066
	(A1 * A2 * B1 * !B2 * X)	-0.00122	-0.00123	-0.00137
	(A1 * A2 * B1 * !B2 * X)	0.00078	0.00078	0.00068
	(A1 * A2 * !B1 * X)	-0.00122	-0.00123	-0.00137
	(A1 * A2 * !B1 * X)	0.00078	0.00078	0.00068
	(!A1 * B1 * B2 * X)	-0.00133	-0.00134	-0.00140
	(!A1 * B1 * B2 * X)	0.00072	0.00072	0.00066
sky130_fd_sc_hs__a221o_4	(A1 * B1 * B2 * X)	-0.00222	-0.00224	-0.00238
	(A1 * B1 * B2 * X)	0.00154	0.00154	0.00141
	(A1 * A2 * B1 * !B2 * X)	-0.00198	-0.00201	-0.00231
	(A1 * A2 * B1 * !B2 * X)	0.00169	0.00170	0.00145
	(A1 * A2 * !B1 * X)	-0.00198	-0.00201	-0.00231
	(A1 * A2 * !B1 * X)	0.00168	0.00170	0.00145
	(!A1 * B1 * B2 * X)	-0.00220	-0.00223	-0.00237
	(!A1 * B1 * B2 * X)	0.00155	0.00157	0.00143

SKY130_FD_SC_HS__A222OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00248	0.00233	0.00242	0.00244	0.00245	0.00254	0.31524
sky130_fd_sc_hs__a222oi_2	0.00498	0.00437	0.00492	0.00449	0.00444	0.00506	0.54844

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222oi_1	0.00000	0.02825	0.11563
sky130_fd_sc_hs__a222oi_2	0.00000	0.05649	0.23125

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)	0.23654	1.24137	10.64000
	A2->Y (FR)	0.25944	1.27071	10.69740
	B1->Y (FR)	0.20953	1.22492	11.07350
	B2->Y (FR)	0.23632	1.26169	11.17800
	C1->Y (FR)	0.16043	1.15483	10.79430
	C2->Y (FR)	0.18475	1.17696	10.82030
sky130_fd_sc_hs__a222oi_2	A1->Y (FR)	0.23133	1.07116	10.32630
	A2->Y (FR)	0.26444	1.11995	10.51390
	B1->Y (FR)	0.20078	1.04215	10.64930
	B2->Y (FR)	0.24131	1.12123	11.14300
	C1->Y (FR)	0.14955	1.00625	10.76100
	C2->Y (FR)	0.18371	1.03800	10.78160

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222oi_1	A1->Y (RF)	0.03356	0.30839	2.49912
	A2->Y (RF)	0.03673	0.30628	2.49115
	B1->Y (RF)	0.03170	0.29249	2.43848
	B2->Y (RF)	0.03512	0.29117	2.42984
	C1->Y (RF)	0.02442	0.27942	2.42076
	C2->Y (RF)	0.02762	0.27710	2.41035
sky130_fd_sc_hs__a222oi_2	A1->Y (RF)	0.03242	0.26635	2.41096
	A2->Y (RF)	0.03601	0.26819	2.41733
	B1->Y (RF)	0.03142	0.25402	2.39222
	B2->Y (RF)	0.03537	0.25821	2.41346
	C1->Y (RF)	0.02046	0.21810	2.19478
	C2->Y (RF)	0.02460	0.22219	2.20446

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00062	0.00046	0.00128
	A1	0.00739	0.00721	0.00792
	A2	0.00119	0.00108	0.00190
	A2	0.00883	0.00871	0.00949
	B1	0.00063	0.00048	0.00193
	B1	0.00545	0.00530	0.00677
	B2	0.00087	0.00075	0.00218
	B2	0.00802	0.00788	0.00911
	C1	0.00053	0.00080	0.00618
	C1	0.00420	0.00437	0.00988
	C2	0.00080	0.00109	0.00654
	C2	0.00519	0.00531	0.01096
sky130_fd_sc_hs__a222oi_2	A1	0.00047	0.00017	0.00201
	A1	0.01412	0.01379	0.01568
	A2	0.00209	0.00181	0.00365
	A2	0.01704	0.01675	0.01845
	B1	0.00050	0.00018	0.00327
	B1	0.01024	0.00982	0.01304
	B2	0.00117	0.00090	0.00382
	B2	0.01539	0.01507	0.01762
	C1	0.00036	0.00124	0.01163
	C1	0.00732	0.00822	0.01868
	C2	0.00097	0.00162	0.01228
	C2	0.00974	0.01040	0.02112

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222oi_1	A1	0.00975	0.00965	0.01138
	A1	0.00372	0.00363	0.00539
	A2	0.01045	0.01033	0.01137
	A2	0.00370	0.00358	0.00465
	B1	0.00686	0.00687	0.00867
	B1	0.00212	0.00211	0.00393
	B2	0.00837	0.00833	0.00940
	B2	0.00214	0.00205	0.00317
	C1	0.00427	0.00432	0.00616
	C1	0.00060	0.00064	0.00248
	C2	0.00502	0.00500	0.00619
	C2	0.00059	0.00055	0.00175
sky130_fd_sc_hs__a222oi_2	A1	0.01834	0.01816	0.02183
	A1	0.00630	0.00609	0.00985
	A2	0.01943	0.01922	0.02145
	A2	0.00632	0.00608	0.00841
	B1	0.01304	0.01302	0.01681
	B1	0.00343	0.00337	0.00720
	B2	0.01580	0.01572	0.01794
	B2	0.00366	0.00347	0.00585
	C1	0.00751	0.00769	0.01156
	C1	0.00054	0.00068	0.00458
	C2	0.00934	0.00931	0.01188
	C2	0.00050	0.00041	0.00300

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)**	0.00107	0.00107	0.00106
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00121	-0.00127	-0.00126
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00107	0.00107	0.00106
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00120	-0.00126	-0.00126
	(A2 * B1 * B2 * !C1 * !Y)	0.00107	0.00107	0.00106
	(A2 * B1 * B2 * !C1 * !Y)	-0.00120	-0.00126	-0.00126
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00108	0.00107	0.00106
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00116	-0.00124	-0.00123
	(A2 * !B1 * C1 * C2 * !Y)	0.00108	0.00107	0.00106
	(A2 * !B1 * C1 * C2 * !Y)	-0.00116	-0.00124	-0.00123
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00101	0.00102	0.00101
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00100	0.00101	0.00100
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00130	-0.00131	-0.00130
	(!A2 * B1 * B2 * !C1 * !Y)	0.00100	0.00101	0.00101
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00129	-0.00131	-0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00101	0.00101	0.00101
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00130	-0.00130	-0.00130
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00036	0.00036	0.00035
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00151	-0.00151	-0.00152
	(!A2 * B1 * !B2 * !C1 * Y)	0.00036	0.00036	0.00035
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00151	-0.00151	-0.00152
	(!A2 * !B1 * C1 * C2 * !Y)	0.00100	0.00101	0.00101
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00130	-0.00130	-0.00130
	(!A2 * !B1 * C1 * !C2 * Y)	0.00036	0.00036	0.00035
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00151	-0.00151	-0.00152
	(!A2 * !B1 * !C1 * Y)	0.00036	0.00036	0.00035
	(!A2 * !B1 * !C1 * Y)	-0.00151	-0.00151	-0.00152

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	0.00220	0.00221	0.00219
	(A2 * B1 * B2 * C1 * C2 * !Y)	-0.00243	-0.00255	-0.00255
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00220	0.00221	0.00219
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00242	-0.00255	-0.00255
	(A2 * B1 * B2 * !C1 * !Y)	0.00220	0.00221	0.00219
	(A2 * B1 * B2 * !C1 * !Y)	-0.00242	-0.00255	-0.00255
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00222	0.00222	0.00220
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00232	-0.00248	-0.00249
	(A2 * !B1 * C1 * C2 * !Y)	0.00222	0.00222	0.00220
	(A2 * !B1 * C1 * C2 * !Y)	-0.00232	-0.00248	-0.00249
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00211	0.00213	0.00212
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00263	-0.00265	-0.00264
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00211	0.00213	0.00212
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00263	-0.00264	-0.00263
	(!A2 * B1 * B2 * !C1 * !Y)	0.00211	0.00213	0.00212
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00263	-0.00264	-0.00263
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00211	0.00214	0.00212
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00263	-0.00265	-0.00263
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00071	0.00071	0.00069
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00315	-0.00317	-0.00321
	(!A2 * B1 * !B2 * !C1 * Y)	0.00071	0.00071	0.00069
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00315	-0.00317	-0.00321
	(!A2 * !B1 * C1 * C2 * !Y)	0.00211	0.00214	0.00212
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00263	-0.00265	-0.00263
	(!A2 * !B1 * C1 * !C2 * Y)	0.00071	0.00072	0.00069
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00316	-0.00317	-0.00321
	(!A2 * !B1 * !C1 * Y)	0.00071	0.00072	0.00069
	(!A2 * !B1 * !C1 * Y)	-0.00316	-0.00317	-0.00321

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)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00126	0.00127	0.00126
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00126	0.00126	0.00126
	(A2 * B1 * B2 * !C1 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * B2 * !C1 * !Y)	0.00126	0.00126	0.00126
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00123	0.00124	0.00123
	(A2 * !B1 * C1 * C2 * !Y)	-0.00106	-0.00106	-0.00106
	(A2 * !B1 * C1 * C2 * !Y)	0.00123	0.00124	0.00123
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00098	-0.00101	-0.00101
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00098	-0.00101	-0.00100
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00098	-0.00101	-0.00101
	(!A2 * B1 * B2 * !C1 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00097	-0.00101	-0.00101
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00130	0.00131	0.00130
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00152	0.00155	0.00152
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * B1 * !B2 * !C1 * Y)	0.00152	0.00155	0.00152
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00098	-0.00101	-0.00101
	(!A2 * !B1 * C1 * C2 * !Y)	0.00130	0.00132	0.00130
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * C1 * !C2 * Y)	0.00152	0.00155	0.00152
	(!A2 * !B1 * !C1 * Y)	-0.00035	-0.00035	-0.00035
	(!A2 * !B1 * !C1 * Y)	0.00152	0.00155	0.00152

sky130_fd_sc_hs__a222oi_2	**(A2 * B1 * B2 * C1 * C2 * !Y)**	-0.00219	-0.00219	-0.00219
	(A2 * B1 * B2 * C1 * C2 * !Y)	0.00254	0.00255	0.00255
	(A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00219	-0.00219	-0.00219
	(A2 * B1 * B2 * C1 * !C2 * !Y)	0.00254	0.00255	0.00255
	(A2 * B1 * B2 * !C1 * !Y)	-0.00219	-0.00219	-0.00219
	(A2 * B1 * B2 * !C1 * !Y)	0.00254	0.00255	0.00255
	(A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00219	-0.00219	-0.00219
	(A2 * B1 * !B2 * C1 * C2 * !Y)	0.00248	0.00248	0.00249
	(A2 * !B1 * C1 * C2 * !Y)	-0.00219	-0.00219	-0.00219
	(A2 * !B1 * C1 * C2 * !Y)	0.00248	0.00248	0.00249
	(!A2 * B1 * B2 * C1 * C2 * !Y)	-0.00202	-0.00210	-0.00212
	(!A2 * B1 * B2 * C1 * C2 * !Y)	0.00263	0.00265	0.00264
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	-0.00202	-0.00211	-0.00212
	(!A2 * B1 * B2 * C1 * !C2 * !Y)	0.00263	0.00265	0.00264
	(!A2 * B1 * B2 * !C1 * !Y)	-0.00203	-0.00211	-0.00212
	(!A2 * B1 * B2 * !C1 * !Y)	0.00265	0.00265	0.00264
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	-0.00202	-0.00212	-0.00212
	(!A2 * B1 * !B2 * C1 * C2 * !Y)	0.00265	0.00265	0.00264
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	-0.00069	-0.00069	-0.00068
	(!A2 * B1 * !B2 * C1 * !C2 * Y)	0.00322	0.00326	0.00321
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00069	-0.00069	-0.00068
	(!A2 * B1 * !B2 * !C1 * Y)	0.00322	0.00326	0.00321
	(!A2 * !B1 * C1 * C2 * !Y)	-0.00202	-0.00211	-0.00212
	(!A2 * !B1 * C1 * C2 * !Y)	0.00265	0.00266	0.00264
	(!A2 * !B1 * C1 * !C2 * Y)	-0.00069	-0.00069	-0.00068
	(!A2 * !B1 * C1 * !C2 * Y)	0.00322	0.00326	0.00321
	(!A2 * !B1 * !C1 * Y)	-0.00069	-0.00069	-0.00068
	(!A2 * !B1 * !C1 * Y)	0.00322	0.00326	0.00321

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)	0.00111	0.00111	0.00110
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00120	-0.00126	-0.00126
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00111	0.00111	0.00110
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00119	-0.00126	-0.00126
	(A1 * B1 * B2 * !C1 * !Y)	0.00111	0.00111	0.00110
	(A1 * B1 * B2 * !C1 * !Y)	-0.00119	-0.00126	-0.00126
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00111	0.00111	0.00110
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00115	-0.00124	-0.00123
	(A1 * !B1 * C1 * C2 * !Y)	0.00111	0.00111	0.00110
	(A1 * !B1 * C1 * C2 * !Y)	-0.00115	-0.00124	-0.00123
	(!A1 * B1 * B2 * !Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * B2 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * B1 * !B2 * !C1 * Y)	0.00105	0.00106	0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * C1 * !C2 * Y)	0.00104	0.00106	0.00105
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00129	-0.00130	-0.00129
	(!A1 * !B1 * !C1 * Y)	0.00104	0.00106	0.00105
	(!A1 * !B1 * !C1 * Y)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	0.00206	0.00207	0.00206
	(A1 * B1 * B2 * C1 * C2 * !Y)	-0.00225	-0.00238	-0.00236
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00207	0.00207	0.00206
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00224	-0.00238	-0.00236
	(A1 * B1 * B2 * !C1 * !Y)	0.00207	0.00207	0.00206
	(A1 * B1 * B2 * !C1 * !Y)	-0.00224	-0.00238	-0.00236
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00208	0.00208	0.00206
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00218	-0.00234	-0.00231
	(A1 * !B1 * C1 * C2 * !Y)	0.00208	0.00208	0.00206
	(A1 * !B1 * C1 * C2 * !Y)	-0.00217	-0.00234	-0.00231
	(!A1 * B1 * B2 * !Y)	0.00198	0.00199	0.00199
	(!A1 * B1 * B2 * !Y)	-0.00242	-0.00243	-0.00242
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00198	0.00201	0.00199
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00241	-0.00243	-0.00242
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00191	0.00194	0.00191
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * B1 * !B2 * !C1 * Y)	0.00191	0.00194	0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * !B1 * C1 * !C2 * Y)	0.00191	0.00194	0.00191
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00249	-0.00251	-0.00249
	(!A1 * !B1 * !C1 * Y)	0.00191	0.00194	0.00191
	(!A1 * !B1 * !C1 * Y)	-0.00249	-0.00251	-0.00249

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)**	-0.00110	-0.00110	-0.00110
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00126	0.00126	0.00126
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00126	0.00126	0.00126
	(A1 * B1 * B2 * !C1 * !Y)	-0.00110	-0.00110	-0.00110
	(A1 * B1 * B2 * !C1 * !Y)	0.00126	0.00126	0.00126
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00123	0.00124	0.00123
	(A1 * !B1 * C1 * C2 * !Y)	-0.00110	-0.00111	-0.00110
	(A1 * !B1 * C1 * C2 * !Y)	0.00123	0.00124	0.00123
	(!A1 * B1 * B2 * !Y)	-0.00102	-0.00106	-0.00105
	(!A1 * B1 * B2 * !Y)	0.00130	0.00131	0.00130
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00102	-0.00106	-0.00105
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00130	0.00131	0.00130
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00134	0.00131	0.00130
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * B1 * !B2 * !C1 * Y)	0.00134	0.00131	0.00130
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * C1 * !C2 * Y)	0.00134	0.00131	0.00130
	(!A1 * !B1 * !C1 * Y)	-0.00100	-0.00106	-0.00105
	(!A1 * !B1 * !C1 * Y)	0.00134	0.00131	0.00130

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * C2 * !Y)**	-0.00205	-0.00207	-0.00206
	(A1 * B1 * B2 * C1 * C2 * !Y)	0.00235	0.00238	0.00236
	(A1 * B1 * B2 * C1 * !C2 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * B1 * B2 * C1 * !C2 * !Y)	0.00235	0.00238	0.00236
	(A1 * B1 * B2 * !C1 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * B1 * B2 * !C1 * !Y)	0.00235	0.00238	0.00236
	(A1 * B1 * !B2 * C1 * C2 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * B1 * !B2 * C1 * C2 * !Y)	0.00230	0.00234	0.00231
	(A1 * !B1 * C1 * C2 * !Y)	-0.00205	-0.00207	-0.00206
	(A1 * !B1 * C1 * C2 * !Y)	0.00230	0.00234	0.00231
	(!A1 * B1 * B2 * !Y)	-0.00190	-0.00197	-0.00199
	(!A1 * B1 * B2 * !Y)	0.00242	0.00243	0.00243
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00190	-0.00197	-0.00198
	(!A1 * B1 * !B2 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00242	0.00243	0.00243
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	-0.00178	-0.00190	-0.00191
	(!A1 * B1 * !B2 * C1 * !C2 * Y)	0.00257	0.00253	0.00250
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00178	-0.00190	-0.00191
	(!A1 * B1 * !B2 * !C1 * Y)	0.00257	0.00253	0.00250
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00178	-0.00190	-0.00191
	(!A1 * !B1 * C1 * !C2 * Y)	0.00257	0.00253	0.00250
	(!A1 * !B1 * !C1 * Y)	-0.00178	-0.00190	-0.00191
	(!A1 * !B1 * !C1 * Y)	0.00257	0.00253	0.00250

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)**	0.00108	0.00109	0.00107
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00074	-0.00075	-0.00075
	(A1 * A2 * B2 * !C1 * !Y)	0.00106	0.00107	0.00106
	(A1 * A2 * B2 * !C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00102	0.00103	0.00102
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00101	0.00101	0.00101
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00074	-0.00075	-0.00075
	(A1 * A2 * !B2 * !C1 * !Y)	0.00101	0.00102	0.00102
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00074	-0.00075	-0.00075
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00114	0.00106	0.00105
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00111	-0.00124	-0.00124
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00126	-0.00127	-0.00127
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00033	0.00034	0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00149	-0.00150	-0.00151
	(A1 * !A2 * !B2 * !C1 * Y)	0.00033	0.00034	0.00033
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00151
	(!A1 * B2 * C1 * C2 * !Y)	0.00114	0.00106	0.00105
	(!A1 * B2 * C1 * C2 * !Y)	-0.00112	-0.00124	-0.00124
	(!A1 * !B2 * C1 * C2 * !Y)	0.00100	0.00101	0.00100
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00127	-0.00127	-0.00127
	(!A1 * !B2 * C1 * !C2 * Y)	0.00033	0.00034	0.00033
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00149	-0.00150	-0.00151
	(!A1 * !B2 * !C1 * Y)	0.00033	0.00034	0.00033
	(!A1 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00151

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	0.00222	0.00224	0.00222
	(A1 * A2 * B2 * C1 * C2 * !Y)	-0.00183	-0.00186	-0.00183
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00220	0.00222	0.00220
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * B2 * !C1 * !Y)	0.00220	0.00222	0.00220
	(A1 * A2 * B2 * !C1 * !Y)	-0.00156	-0.00157	-0.00156
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00213	0.00217	0.00214
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00175	-0.00175	-0.00175
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00212	0.00214	0.00213
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00154	-0.00156	-0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	0.00213	0.00214	0.00213
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00155	-0.00156	-0.00155
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00241	0.00221	0.00219
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00229	-0.00257	-0.00257
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00210	0.00213	0.00211
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00262	-0.00264	-0.00262
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00069	0.00069	0.00067
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00317	-0.00319	-0.00321
	(A1 * !A2 * !B2 * !C1 * Y)	0.00069	0.00069	0.00067
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00317	-0.00319	-0.00321
	(!A1 * B2 * C1 * C2 * !Y)	0.00240	0.00221	0.00219
	(!A1 * B2 * C1 * C2 * !Y)	-0.00230	-0.00257	-0.00257
	(!A1 * !B2 * C1 * C2 * !Y)	0.00210	0.00212	0.00211
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00261	-0.00263	-0.00262
	(!A1 * !B2 * C1 * !C2 * Y)	0.00069	0.00069	0.00067
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00317	-0.00319	-0.00321
	(!A1 * !B2 * !C1 * Y)	0.00069	0.00069	0.00067
	(!A1 * !B2 * !C1 * Y)	-0.00317	-0.00319	-0.00321

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)	-0.00107	-0.00107	-0.00107
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00090	0.00091	0.00090
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00100	-0.00100	-0.00102
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00080	0.00081	0.00079
	(A1 * A2 * B2 * !C1 * !Y)	-0.00100	-0.00100	-0.00102
	(A1 * A2 * B2 * !C1 * !Y)	0.00080	0.00081	0.00079
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00086	0.00087	0.00086
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00098	-0.00101	-0.00101
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00075	0.00075	0.00075
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00098	-0.00102	-0.00102
	(A1 * A2 * !B2 * !C1 * !Y)	0.00075	0.00075	0.00075
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00124	0.00125	0.00124
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00097	-0.00101	-0.00100
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00127	0.00128	0.00127
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00033	-0.00032
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00151	0.00153	0.00151
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00032	-0.00033	-0.00032
	(A1 * !A2 * !B2 * !C1 * Y)	0.00151	0.00153	0.00151
	(!A1 * B2 * C1 * C2 * !Y)	-0.00105	-0.00105	-0.00105
	(!A1 * B2 * C1 * C2 * !Y)	0.00124	0.00125	0.00124
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00097	-0.00101	-0.00100
	(!A1 * !B2 * C1 * C2 * !Y)	0.00127	0.00128	0.00127
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00032	-0.00033	-0.00032
	(!A1 * !B2 * C1 * !C2 * Y)	0.00151	0.00153	0.00151
	(!A1 * !B2 * !C1 * Y)	-0.00032	-0.00033	-0.00032
	(!A1 * !B2 * !C1 * Y)	0.00151	0.00153	0.00151

sky130_fd_sc_hs__a222oi_2	**(A1 * A2 * B2 * C1 * C2 * !Y)**	-0.00220	-0.00222	-0.00221
	(A1 * A2 * B2 * C1 * C2 * !Y)	0.00183	0.00186	0.00183
	(A1 * A2 * B2 * C1 * !C2 * !Y)	-0.00210	-0.00212	-0.00212
	(A1 * A2 * B2 * C1 * !C2 * !Y)	0.00163	0.00165	0.00164
	(A1 * A2 * B2 * !C1 * !Y)	-0.00210	-0.00212	-0.00212
	(A1 * A2 * B2 * !C1 * !Y)	0.00163	0.00165	0.00164
	(A1 * A2 * !B2 * C1 * C2 * !Y)	-0.00204	-0.00212	-0.00214
	(A1 * A2 * !B2 * C1 * C2 * !Y)	0.00175	0.00175	0.00175
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	-0.00204	-0.00212	-0.00213
	(A1 * A2 * !B2 * C1 * !C2 * !Y)	0.00156	0.00156	0.00155
	(A1 * A2 * !B2 * !C1 * !Y)	-0.00204	-0.00212	-0.00213
	(A1 * A2 * !B2 * !C1 * !Y)	0.00156	0.00156	0.00155
	(A1 * !A2 * B2 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00217
	(A1 * !A2 * B2 * C1 * C2 * !Y)	0.00255	0.00259	0.00257
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	-0.00202	-0.00211	-0.00211
	(A1 * !A2 * !B2 * C1 * C2 * !Y)	0.00264	0.00264	0.00263
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	-0.00065	-0.00067	-0.00066
	(A1 * !A2 * !B2 * C1 * !C2 * Y)	0.00320	0.00326	0.00321
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00065	-0.00067	-0.00066
	(A1 * !A2 * !B2 * !C1 * Y)	0.00319	0.00326	0.00321
	(!A1 * B2 * C1 * C2 * !Y)	-0.00218	-0.00219	-0.00217
	(!A1 * B2 * C1 * C2 * !Y)	0.00256	0.00259	0.00257
	(!A1 * !B2 * C1 * C2 * !Y)	-0.00201	-0.00211	-0.00211
	(!A1 * !B2 * C1 * C2 * !Y)	0.00264	0.00264	0.00263
	(!A1 * !B2 * C1 * !C2 * Y)	-0.00065	-0.00067	-0.00066
	(!A1 * !B2 * C1 * !C2 * Y)	0.00319	0.00326	0.00321
	(!A1 * !B2 * !C1 * Y)	-0.00065	-0.00067	-0.00066
	(!A1 * !B2 * !C1 * Y)	0.00319	0.00326	0.00321

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)	0.00118	0.00119	0.00117
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00116	0.00117	0.00116
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * B1 * !C1 * !Y)	0.00116	0.00117	0.00116
	(A1 * A2 * B1 * !C1 * !Y)	-0.00075	-0.00076	-0.00075
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00111	0.00112	0.00112
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00086	-0.00087	-0.00086
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * A2 * !B1 * !C1 * !Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00075	-0.00075	-0.00075
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00126	0.00116	0.00115
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00112	-0.00124	-0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * C1 * C2 * !Y)	0.00126	0.00116	0.00115
	(!A1 * B1 * C1 * C2 * !Y)	-0.00112	-0.00124	-0.00125
	(!A1 * !B1 * C1 * !C2 * Y)	0.00096	0.00098	0.00097
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * Y)	0.00096	0.00098	0.00097
	(!A1 * !B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140

	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00216	0.00216	0.00216
	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00168	-0.00171	-0.00169
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00215	0.00216	0.00214
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * A2 * B1 * !C1 * !Y)	0.00215	0.00216	0.00214
	(A1 * A2 * B1 * !C1 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00207	0.00209	0.00207
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00160	-0.00161	-0.00161
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00206	0.00207	0.00206
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00139	-0.00140	-0.00140
	(A1 * A2 * !B1 * !C1 * !Y)	0.00206	0.00207	0.00206
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00139	-0.00140	-0.00140
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00237	0.00215	0.00213
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	-0.00206	-0.00237	-0.00237
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00204	0.00206	0.00205
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00242	-0.00243	-0.00242
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00194	0.00197	0.00195
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00251	-0.00253	-0.00252
	(A1 * !A2 * !B1 * !C1 * Y)	0.00194	0.00197	0.00195
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00251	-0.00253	-0.00252
	(!A1 * B1 * C1 * C2 * !Y)	0.00237	0.00215	0.00213
	(!A1 * B1 * C1 * C2 * !Y)	-0.00206	-0.00237	-0.00237
	(!A1 * !B1 * C1 * !C2 * Y)	0.00194	0.00197	0.00195
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00251	-0.00253	-0.00252
	(!A1 * !B1 * !C1 * Y)	0.00194	0.00197	0.00195
	(!A1 * !B1 * !C1 * Y)	-0.00251	-0.00254	-0.00252

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)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00090	0.00091	0.00090
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00109	-0.00110	-0.00111
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00080	0.00081	0.00079
	(A1 * A2 * B1 * !C1 * !Y)	-0.00109	-0.00110	-0.00111
	(A1 * A2 * B1 * !C1 * !Y)	0.00080	0.00081	0.00079
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00109	-0.00112	-0.00112
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00086	0.00087	0.00086
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00108	-0.00111	-0.00111
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00075	0.00076	0.00075
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00108	-0.00111	-0.00111
	(A1 * A2 * !B1 * !C1 * !Y)	0.00075	0.00075	0.00075
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00115	-0.00115	-0.00114
	(A1 * !A2 * B1 * C1 * C2 * !Y)	0.00125	0.00125	0.00125
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00107	-0.00110	-0.00110
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00128	0.00129	0.00128
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00092	-0.00097	-0.00097
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00145	0.00142	0.00140
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00092	-0.00097	-0.00097
	(A1 * !A2 * !B1 * !C1 * Y)	0.00145	0.00142	0.00140
	(!A1 * B1 * C1 * C2 * !Y)	-0.00115	-0.00115	-0.00114
	(!A1 * B1 * C1 * C2 * !Y)	0.00125	0.00125	0.00125
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * C1 * !C2 * Y)	0.00145	0.00142	0.00140
	(!A1 * !B1 * !C1 * Y)	-0.00092	-0.00097	-0.00097
	(!A1 * !B1 * !C1 * Y)	0.00145	0.00142	0.00140

	(A1 * A2 * B1 * C1 * C2 * !Y)	-0.00215	-0.00216	-0.00215
	(A1 * A2 * B1 * C1 * C2 * !Y)	0.00168	0.00171	0.00169
	(A1 * A2 * B1 * C1 * !C2 * !Y)	-0.00203	-0.00206	-0.00206
	(A1 * A2 * B1 * C1 * !C2 * !Y)	0.00147	0.00149	0.00148
	(A1 * A2 * B1 * !C1 * !Y)	-0.00204	-0.00206	-0.00206
	(A1 * A2 * B1 * !C1 * !Y)	0.00147	0.00149	0.00148
	(A1 * A2 * !B1 * C1 * C2 * !Y)	-0.00199	-0.00206	-0.00207
	(A1 * A2 * !B1 * C1 * C2 * !Y)	0.00160	0.00161	0.00161
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	-0.00198	-0.00205	-0.00206
	(A1 * A2 * !B1 * C1 * !C2 * !Y)	0.00139	0.00140	0.00140
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00198	-0.00205	-0.00206
	(A1 * A2 * !B1 * !C1 * !Y)	0.00139	0.00140	0.00140
	(A1 * !A2 * B1 * C1 * C2 * !Y)	-0.00212	-0.00214	-0.00212
sky130_fd_sc_hs__a222oi_2	**(A1 * !A2 * B1 * C1 * C2 * !Y)**	0.00235	0.00239	0.00237
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	-0.00196	-0.00204	-0.00205
	(A1 * !A2 * !B1 * C1 * C2 * !Y) + (!A1 * !B1 * C1 * C2 * !Y)	0.00242	0.00244	0.00243
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	-0.00181	-0.00195	-0.00195
	(A1 * !A2 * !B1 * C1 * !C2 * Y)	0.00260	0.00255	0.00252
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00181	-0.00195	-0.00195
	(A1 * !A2 * !B1 * !C1 * Y)	0.00260	0.00255	0.00252
	(!A1 * B1 * C1 * C2 * !Y)	-0.00212	-0.00214	-0.00212
	(!A1 * B1 * C1 * C2 * !Y)	0.00235	0.00239	0.00237
	(!A1 * !B1 * C1 * !C2 * Y)	-0.00181	-0.00195	-0.00195
	(!A1 * !B1 * C1 * !C2 * Y)	0.00260	0.00255	0.00252
	(!A1 * !B1 * !C1 * Y)	-0.00181	-0.00195	-0.00195
	(!A1 * !B1 * !C1 * Y)	0.00260	0.00255	0.00252

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)	0.00127	0.00128	0.00127
	(A1 * B1 * B2 * C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * B1 * B2 * !C2 * !Y)	0.00122	0.00123	0.00122
	(A1 * B1 * B2 * !C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00127	0.00128	0.00127
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00122	0.00123	0.00122
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * C2 * !Y)	0.00127	0.00128	0.00127
	(A1 * A2 * !B1 * C2 * !Y)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * !C2 * !Y)	0.00122	0.00123	0.00122
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00066	-0.00066	-0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00038	0.00038	0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00153	-0.00154	-0.00155
	(A1 * !A2 * !B1 * !C2 * Y)	0.00038	0.00038	0.00037
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00153	-0.00154	-0.00155
	(!A1 * B1 * B2 * C2 * !Y)	0.00127	0.00128	0.00127
	(!A1 * B1 * B2 * C2 * !Y)	-0.00066	-0.00066	-0.00066
	(!A1 * B1 * B2 * !C2 * !Y)	0.00122	0.00123	0.00122
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00066	-0.00066	-0.00065
	(!A1 * B1 * !B2 * !C2 * Y)	0.00038	0.00038	0.00037
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00153	-0.00154	-0.00155
	(!A1 * !B1 * !C2 * Y)	0.00038	0.00038	0.00037
	(!A1 * !B1 * !C2 * Y)	-0.00153	-0.00154	-0.00155

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	0.00223	0.00226	0.00224
	(A1 * B1 * B2 * C2 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * B1 * B2 * !C2 * !Y)	0.00215	0.00217	0.00216
	(A1 * B1 * B2 * !C2 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00223	0.00226	0.00224
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00127	-0.00128	-0.00127
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00213	0.00215	0.00214
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00126	-0.00127	-0.00127
	(A1 * A2 * !B1 * C2 * !Y)	0.00222	0.00226	0.00224
	(A1 * A2 * !B1 * C2 * !Y)	-0.00126	-0.00128	-0.00127
	(A1 * A2 * !B1 * !C2 * !Y)	0.00214	0.00215	0.00214
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00066	0.00067	0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00282	-0.00285	-0.00288
	(A1 * !A2 * !B1 * !C2 * Y)	0.00066	0.00067	0.00065
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00282	-0.00285	-0.00288
	(!A1 * B1 * B2 * C2 * !Y)	0.00222	0.00226	0.00224
	(!A1 * B1 * B2 * C2 * !Y)	-0.00127	-0.00129	-0.00128
	(!A1 * B1 * B2 * !C2 * !Y)	0.00214	0.00215	0.00214
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00126	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !C2 * Y)	0.00066	0.00067	0.00065
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00282	-0.00285	-0.00288
	(!A1 * !B1 * !C2 * Y)	0.00066	0.00067	0.00065
	(!A1 * !B1 * !C2 * Y)	-0.00282	-0.00285	-0.00288

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)**	-0.00118	-0.00119	-0.00126
	(A1 * B1 * B2 * C2 * !Y)	0.00074	0.00074	0.00067
	(A1 * B1 * B2 * !C2 * !Y)	-0.00119	-0.00123	-0.00122
	(A1 * B1 * B2 * !C2 * !Y)	0.00066	0.00066	0.00065
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00104	-0.00105	-0.00122
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00084	0.00084	0.00070
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00119	-0.00123	-0.00122
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00066	0.00066	0.00065
	(A1 * A2 * !B1 * C2 * !Y)	-0.00104	-0.00105	-0.00122
	(A1 * A2 * !B1 * C2 * !Y)	0.00084	0.00084	0.00070
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00119	-0.00123	-0.00122
	(A1 * A2 * !B1 * !C2 * !Y)	0.00066	0.00066	0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00037	-0.00037	-0.00036
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00155	0.00157	0.00155
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00037	-0.00037	-0.00036
	(A1 * !A2 * !B1 * !C2 * Y)	0.00155	0.00157	0.00155
	(!A1 * B1 * B2 * C2 * !Y)	-0.00118	-0.00119	-0.00126
	(!A1 * B1 * B2 * C2 * !Y)	0.00074	0.00074	0.00067
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00119	-0.00123	-0.00122
	(!A1 * B1 * B2 * !C2 * !Y)	0.00066	0.00066	0.00065
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00037	-0.00037	-0.00036
	(!A1 * B1 * !B2 * !C2 * Y)	0.00155	0.00157	0.00155
	(!A1 * !B1 * !C2 * Y)	-0.00037	-0.00037	-0.00036
	(!A1 * !B1 * !C2 * Y)	0.00155	0.00157	0.00155

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C2 * !Y)**	-0.00205	-0.00208	-0.00222
	(A1 * B1 * B2 * C2 * !Y)	0.00142	0.00143	0.00131
	(A1 * B1 * B2 * !C2 * !Y)	-0.00206	-0.00216	-0.00216
	(A1 * B1 * B2 * !C2 * !Y)	0.00126	0.00128	0.00127
	(A1 * A2 * B1 * !B2 * C2 * !Y)	-0.00182	-0.00185	-0.00215
	(A1 * A2 * B1 * !B2 * C2 * !Y)	0.00158	0.00158	0.00135
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	-0.00206	-0.00215	-0.00214
	(A1 * A2 * B1 * !B2 * !C2 * !Y)	0.00126	0.00128	0.00127
	(A1 * A2 * !B1 * C2 * !Y)	-0.00182	-0.00185	-0.00215
	(A1 * A2 * !B1 * C2 * !Y)	0.00158	0.00158	0.00135
	(A1 * A2 * !B1 * !C2 * !Y)	-0.00207	-0.00215	-0.00214
	(A1 * A2 * !B1 * !C2 * !Y)	0.00127	0.00128	0.00127
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	-0.00063	-0.00065	-0.00063
	(A1 * !A2 * B1 * !B2 * !C2 * Y)	0.00287	0.00291	0.00288
	(A1 * !A2 * !B1 * !C2 * Y)	-0.00063	-0.00065	-0.00063
	(A1 * !A2 * !B1 * !C2 * Y)	0.00287	0.00292	0.00288
	(!A1 * B1 * B2 * C2 * !Y)	-0.00205	-0.00207	-0.00222
	(!A1 * B1 * B2 * C2 * !Y)	0.00143	0.00144	0.00131
	(!A1 * B1 * B2 * !C2 * !Y)	-0.00205	-0.00215	-0.00214
	(!A1 * B1 * B2 * !C2 * !Y)	0.00126	0.00128	0.00127
	(!A1 * B1 * !B2 * !C2 * Y)	-0.00063	-0.00065	-0.00063
	(!A1 * B1 * !B2 * !C2 * Y)	0.00287	0.00292	0.00288
	(!A1 * !B1 * !C2 * Y)	-0.00063	-0.00065	-0.00063
	(!A1 * !B1 * !C2 * Y)	0.00287	0.00292	0.00288

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)**	0.00133	0.00133	0.00132
	(A1 * B1 * B2 * C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * B1 * B2 * !C1 * !Y)	0.00127	0.00128	0.00128
	(A1 * B1 * B2 * !C1 * !Y)	-0.00066	-0.00067	-0.00067
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00133	0.00133	0.00132
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00127	0.00128	0.00128
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00066	-0.00067	-0.00067
	(A1 * A2 * !B1 * C1 * !Y)	0.00133	0.00133	0.00132
	(A1 * A2 * !B1 * C1 * !Y)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !B1 * !C1 * !Y)	0.00127	0.00128	0.00128
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00066	-0.00067	-0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00098	0.00100	0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A1 * !A2 * !B1 * !C1 * Y)	0.00099	0.00099	0.00099
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * B1 * B2 * C1 * !Y)	0.00133	0.00133	0.00132
	(!A1 * B1 * B2 * C1 * !Y)	-0.00067	-0.00067	-0.00067
	(!A1 * B1 * B2 * !C1 * !Y)	0.00128	0.00128	0.00128
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00067	-0.00067	-0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	0.00098	0.00100	0.00099
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(!A1 * !B1 * !C1 * Y)	0.00098	0.00100	0.00099
	(!A1 * !B1 * !C1 * Y)	-0.00143	-0.00144	-0.00143

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	0.00266	0.00267	0.00265
	(A1 * B1 * B2 * C1 * !Y)	-0.00134	-0.00134	-0.00133
	(A1 * B1 * B2 * !C1 * !Y)	0.00255	0.00257	0.00256
	(A1 * B1 * B2 * !C1 * !Y)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00266	0.00269	0.00265
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00134	-0.00135	-0.00132
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00255	0.00257	0.00256
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * !B1 * C1 * !Y)	0.00266	0.00269	0.00265
	(A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00132
	(A1 * A2 * !B1 * !C1 * !Y)	0.00255	0.00257	0.00256
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00197	0.00200	0.00198
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00286	-0.00289	-0.00287
	(A1 * !A2 * !B1 * !C1 * Y)	0.00197	0.00199	0.00198
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00286	-0.00288	-0.00287
	(!A1 * B1 * B2 * C1 * !Y)	0.00266	0.00269	0.00265
	(!A1 * B1 * B2 * C1 * !Y)	-0.00134	-0.00135	-0.00133
	(!A1 * B1 * B2 * !C1 * !Y)	0.00255	0.00257	0.00256
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00132	-0.00133	-0.00133
	(!A1 * B1 * !B2 * !C1 * Y)	0.00197	0.00200	0.00198
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00286	-0.00289	-0.00287
	(!A1 * !B1 * !C1 * Y)	0.00197	0.00199	0.00198
	(!A1 * !B1 * !C1 * Y)	-0.00287	-0.00289	-0.00287

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)**	-0.00123	-0.00124	-0.00131
	(A1 * B1 * B2 * C1 * !Y)	0.00075	0.00075	0.00069
	(A1 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00128	-0.00128
	(A1 * B1 * B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00109	-0.00111	-0.00127
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00084	0.00085	0.00071
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00125	-0.00128	-0.00128
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * A2 * !B1 * C1 * !Y)	-0.00109	-0.00111	-0.00127
	(A1 * A2 * !B1 * C1 * !Y)	0.00084	0.00085	0.00071
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00125	-0.00128	-0.00128
	(A1 * A2 * !B1 * !C1 * !Y)	0.00067	0.00067	0.00067
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00094	-0.00100	-0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00148	0.00145	0.00144
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00094	-0.00099	-0.00099
	(A1 * !A2 * !B1 * !C1 * Y)	0.00148	0.00145	0.00144
	(!A1 * B1 * B2 * C1 * !Y)	-0.00123	-0.00124	-0.00131
	(!A1 * B1 * B2 * C1 * !Y)	0.00075	0.00075	0.00069
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00125	-0.00128	-0.00128
	(!A1 * B1 * B2 * !C1 * !Y)	0.00067	0.00067	0.00067
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00094	-0.00100	-0.00099
	(!A1 * B1 * !B2 * !C1 * Y)	0.00148	0.00145	0.00144
	(!A1 * !B1 * !C1 * Y)	-0.00094	-0.00100	-0.00099
	(!A1 * !B1 * !C1 * Y)	0.00148	0.00145	0.00144

sky130_fd_sc_hs__a222oi_2	**(A1 * B1 * B2 * C1 * !Y)**	-0.00247	-0.00249	-0.00263
	(A1 * B1 * B2 * C1 * !Y)	0.00148	0.00148	0.00136
	(A1 * B1 * B2 * !C1 * !Y)	-0.00251	-0.00257	-0.00256
	(A1 * B1 * B2 * !C1 * !Y)	0.00133	0.00133	0.00132
	(A1 * A2 * B1 * !B2 * C1 * !Y)	-0.00224	-0.00226	-0.00256
	(A1 * A2 * B1 * !B2 * C1 * !Y)	0.00164	0.00164	0.00141
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	-0.00251	-0.00257	-0.00256
	(A1 * A2 * B1 * !B2 * !C1 * !Y)	0.00133	0.00133	0.00132
	(A1 * A2 * !B1 * C1 * !Y)	-0.00224	-0.00226	-0.00256
	(A1 * A2 * !B1 * C1 * !Y)	0.00164	0.00164	0.00141
	(A1 * A2 * !B1 * !C1 * !Y)	-0.00251	-0.00257	-0.00256
	(A1 * A2 * !B1 * !C1 * !Y)	0.00133	0.00133	0.00132
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	-0.00189	-0.00200	-0.00198
	(A1 * !A2 * B1 * !B2 * !C1 * Y)	0.00294	0.00289	0.00288
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00189	-0.00199	-0.00198
	(A1 * !A2 * !B1 * !C1 * Y)	0.00294	0.00290	0.00288
	(!A1 * B1 * B2 * C1 * !Y)	-0.00247	-0.00249	-0.00263
	(!A1 * B1 * B2 * C1 * !Y)	0.00149	0.00149	0.00137
	(!A1 * B1 * B2 * !C1 * !Y)	-0.00251	-0.00257	-0.00256
	(!A1 * B1 * B2 * !C1 * !Y)	0.00133	0.00133	0.00133
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00189	-0.00200	-0.00198
	(!A1 * B1 * !B2 * !C1 * Y)	0.00294	0.00289	0.00288
	(!A1 * !B1 * !C1 * Y)	-0.00189	-0.00199	-0.00198
	(!A1 * !B1 * !C1 * Y)	0.00294	0.00290	0.00288

SKY130_FD_SC_HS__A222Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00239	0.00243	0.00248	0.00237	0.00246	0.00252	1.17154
sky130_fd_sc_hs__a222o_2	0.00242	0.00228	0.00241	0.00237	0.00243	0.00257	1.97033

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a222o_1	0.00000	0.04231	0.11629
sky130_fd_sc_hs__a222o_2	0.00000	0.05636	0.11694

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)	0.07960	0.58831	5.85573
	A2->X (RR)	0.08329	0.59252	5.89727
	B1->X (RR)	0.07536	0.57040	5.77057
	B2->X (RR)	0.07842	0.57507	5.82232
	C1->X (RR)	0.06852	0.54761	5.80088
	C2->X (RR)	0.07173	0.55187	5.82515
sky130_fd_sc_hs__a222o_2	A1->X (RR)	0.09482	0.55288	5.86038
	A2->X (RR)	0.09928	0.54387	5.89670
	B1->X (RR)	0.08501	0.52064	5.78665
	B2->X (RR)	0.08822	0.52296	5.83574
	C1->X (RR)	0.07663	0.49911	5.82258
	C2->X (RR)	0.08035	0.50129	5.83784

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a222o_1	A1->X (FF)	0.27443	0.77763	5.22346
	A2->X (FF)	0.29337	0.80312	5.28324
	B1->X (FF)	0.25487	0.76974	5.34885
	B2->X (FF)	0.26767	0.79508	5.41195
	C1->X (FF)	0.19047	0.69466	5.15061
	C2->X (FF)	0.20562	0.71800	5.17976
sky130_fd_sc_hs__a222o_2	A1->X (FF)	0.32520	0.80638	5.09801
	A2->X (FF)	0.32779	0.82353	5.15540
	B1->X (FF)	0.30406	0.80534	5.25071
	B2->X (FF)	0.30440	0.80957	5.25411
	C1->X (FF)	0.23663	0.72317	4.94652
	C2->X (FF)	0.25933	0.75431	5.03038

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.01197	0.01172	0.02024
	A1	0.00577	0.00552	0.01408
	A2	0.01268	0.01230	0.01724
	A2	0.00578	0.00539	0.01058
	B1	0.01015	0.01043	0.01833
	B1	0.00439	0.00469	0.01380
	B2	0.01080	0.01091	0.01674
	B2	0.00447	0.00458	0.01144
	C1	0.00630	0.00670	0.02266
	C1	0.00245	0.00320	0.01885
	C2	0.00700	0.00721	0.02101
	C2	0.00248	0.00270	0.01655
sky130_fd_sc_hs__a222o_2	A1	0.01391	0.01417	0.02135
	A1	0.00798	0.00830	0.01560
	A2	0.01463	0.01491	0.02122
	A2	0.00792	0.00827	0.01466
	B1	0.01191	0.01231	0.02130
	B1	0.00634	0.00681	0.01553
	B2	0.01260	0.01293	0.01984
	B2	0.00634	0.00674	0.01311
	C1	0.00842	0.00874	0.02183
	C1	0.00479	0.00513	0.01841
	C2	0.00917	0.00929	0.02001
	C2	0.00475	0.00489	0.01580

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a222o_1	A1	0.00337	0.00334	0.00915
	A1	0.01083	0.01076	0.01504
	A2	0.00432	0.00404	0.00880
	A2	0.01176	0.01148	0.01547
	B1	0.00333	0.00327	0.01203
	B1	0.01001	0.00980	0.01582
	B2	0.00360	0.00361	0.01101
	B2	0.01082	0.01069	0.01618
	C1	0.00325	0.00392	0.02048
	C1	0.00711	0.00777	0.02434
	C2	0.00352	0.00421	0.01986
	C2	0.00799	0.00868	0.02431
sky130_fd_sc_hs__a222o_2	A1	0.00623	0.00521	0.01051
	A1	0.01273	0.01199	0.01651
	A2	0.00632	0.00636	0.01166
	A2	0.01337	0.01341	0.01833
	B1	0.00671	0.00630	0.01243
	B1	0.01250	0.01223	0.01795
	B2	0.00693	0.00671	0.01352
	B2	0.01337	0.01317	0.01878
	C1	0.00502	0.00601	0.02002
	C1	0.00865	0.00960	0.02297
	C2	0.00532	0.00595	0.02017
	C2	0.01145	0.01185	0.02481

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)**	0.00107	0.00107	0.00107
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00119	-0.00125	-0.00124
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00107	0.00107	0.00107
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00118	-0.00125	-0.00124
	(A2 * B1 * B2 * !C1 * X)	0.00107	0.00107	0.00107
	(A2 * B1 * B2 * !C1 * X)	-0.00118	-0.00125	-0.00124
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00108	0.00108	0.00107
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00114	-0.00123	-0.00122
	(A2 * !B1 * C1 * C2 * X)	0.00108	0.00108	0.00107
	(A2 * !B1 * C1 * C2 * X)	-0.00114	-0.00123	-0.00122
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00101	0.00103	0.00102
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00101	0.00103	0.00102
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * B2 * !C1 * X)	0.00101	0.00103	0.00102
	(!A2 * B1 * B2 * !C1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00127	-0.00129	-0.00128
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00150	-0.00152	-0.00152
	(!A2 * B1 * !B2 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00150	-0.00152	-0.00152
	(!A2 * !B1 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(!A2 * !B1 * C1 * C2 * X)	-0.00127	-0.00129	-0.00128
	(!A2 * !B1 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00150	-0.00152	-0.00152
	(!A2 * !B1 * !C1 * !X)	0.00035	0.00035	0.00034
	(!A2 * !B1 * !C1 * !X)	-0.00150	-0.00152	-0.00152

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	0.00115	0.00115	0.00115
	(A2 * B1 * B2 * C1 * C2 * X)	-0.00120	-0.00124	-0.00123
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00116	0.00115	0.00115
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00119	-0.00124	-0.00123
	(A2 * B1 * B2 * !C1 * X)	0.00116	0.00115	0.00115
	(A2 * B1 * B2 * !C1 * X)	-0.00119	-0.00124	-0.00123
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00116	0.00116	0.00115
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00113	-0.00122	-0.00120
	(A2 * !B1 * C1 * C2 * X)	0.00117	0.00116	0.00115
	(A2 * !B1 * C1 * C2 * X)	-0.00114	-0.00122	-0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00110	0.00112	0.00111
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00125	-0.00126	-0.00126
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00110	0.00112	0.00111
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * B2 * !C1 * X)	0.00110	0.00112	0.00111
	(!A2 * B1 * B2 * !C1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00110	0.00111	0.00110
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00126	-0.00126	-0.00127
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00041	0.00041	0.00039
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00154	-0.00156	-0.00158
	(!A2 * B1 * !B2 * !C1 * !X)	0.00041	0.00041	0.00039
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00154	-0.00156	-0.00158
	(!A2 * !B1 * C1 * C2 * X)	0.00111	0.00112	0.00111
	(!A2 * !B1 * C1 * C2 * X)	-0.00126	-0.00128	-0.00127
	(!A2 * !B1 * C1 * !C2 * !X)	0.00040	0.00041	0.00039
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00153	-0.00156	-0.00158
	(!A2 * !B1 * !C1 * !X)	0.00040	0.00041	0.00039
	(!A2 * !B1 * !C1 * !X)	-0.00153	-0.00156	-0.00158

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)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * B2 * C1 * C2 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00107	-0.00107	-0.00106
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * B2 * !C1 * X)	-0.00107	-0.00107	-0.00106
	(A2 * B1 * B2 * !C1 * X)	0.00125	0.00125	0.00124
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00107	-0.00107	-0.00107
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00122	0.00123	0.00122
	(A2 * !B1 * C1 * C2 * X)	-0.00107	-0.00107	-0.00107
	(A2 * !B1 * C1 * C2 * X)	0.00122	0.00123	0.00122
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00099	-0.00103	-0.00102
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00128	0.00130	0.00128
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00128	0.00129	0.00128
	(!A2 * B1 * B2 * !C1 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * B2 * !C1 * X)	0.00128	0.00129	0.00128
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00128	0.00129	0.00128
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00153	0.00154	0.00153
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * B1 * !B2 * !C1 * !X)	0.00153	0.00154	0.00153
	(!A2 * !B1 * C1 * C2 * X)	-0.00099	-0.00102	-0.00102
	(!A2 * !B1 * C1 * C2 * X)	0.00128	0.00129	0.00128
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * C1 * !C2 * !X)	0.00153	0.00154	0.00153
	(!A2 * !B1 * !C1 * !X)	-0.00034	-0.00034	-0.00034
	(!A2 * !B1 * !C1 * !X)	0.00153	0.00154	0.00153

sky130_fd_sc_hs__a222o_2	**(A2 * B1 * B2 * C1 * C2 * X)**	-0.00114	-0.00115	-0.00115
	(A2 * B1 * B2 * C1 * C2 * X)	0.00123	0.00124	0.00123
	(A2 * B1 * B2 * C1 * !C2 * X)	-0.00114	-0.00115	-0.00115
	(A2 * B1 * B2 * C1 * !C2 * X)	0.00123	0.00124	0.00123
	(A2 * B1 * B2 * !C1 * X)	-0.00114	-0.00115	-0.00115
	(A2 * B1 * B2 * !C1 * X)	0.00123	0.00124	0.00123
	(A2 * B1 * !B2 * C1 * C2 * X)	-0.00115	-0.00115	-0.00115
	(A2 * B1 * !B2 * C1 * C2 * X)	0.00121	0.00122	0.00120
	(A2 * !B1 * C1 * C2 * X)	-0.00115	-0.00115	-0.00115
	(A2 * !B1 * C1 * C2 * X)	0.00121	0.00122	0.00120
	(!A2 * B1 * B2 * C1 * C2 * X)	-0.00107	-0.00112	-0.00111
	(!A2 * B1 * B2 * C1 * C2 * X)	0.00126	0.00127	0.00126
	(!A2 * B1 * B2 * C1 * !C2 * X)	-0.00107	-0.00111	-0.00111
	(!A2 * B1 * B2 * C1 * !C2 * X)	0.00126	0.00126	0.00126
	(!A2 * B1 * B2 * !C1 * X)	-0.00107	-0.00111	-0.00111
	(!A2 * B1 * B2 * !C1 * X)	0.00126	0.00126	0.00126
	(!A2 * B1 * !B2 * C1 * C2 * X)	-0.00106	-0.00110	-0.00110
	(!A2 * B1 * !B2 * C1 * C2 * X)	0.00127	0.00126	0.00127
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	-0.00038	-0.00038	-0.00037
	(!A2 * B1 * !B2 * C1 * !C2 * !X)	0.00159	0.00160	0.00159
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00038	-0.00038	-0.00037
	(!A2 * B1 * !B2 * !C1 * !X)	0.00159	0.00160	0.00159
	(!A2 * !B1 * C1 * C2 * X)	-0.00106	-0.00111	-0.00111
	(!A2 * !B1 * C1 * C2 * X)	0.00128	0.00129	0.00127
	(!A2 * !B1 * C1 * !C2 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * C1 * !C2 * !X)	0.00158	0.00160	0.00159
	(!A2 * !B1 * !C1 * !X)	-0.00037	-0.00038	-0.00038
	(!A2 * !B1 * !C1 * !X)	0.00158	0.00160	0.00159

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)	0.00119	0.00120	0.00120
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00115	-0.00121	-0.00120
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00120	0.00120	0.00120
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00114	-0.00121	-0.00120
	(A1 * B1 * B2 * !C1 * X)	0.00120	0.00120	0.00120
	(A1 * B1 * B2 * !C1 * X)	-0.00114	-0.00121	-0.00120
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00120	0.00120	0.00120
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00111	-0.00119	-0.00117
	(A1 * !B1 * C1 * C2 * X)	0.00120	0.00120	0.00120
	(A1 * !B1 * C1 * C2 * X)	-0.00111	-0.00119	-0.00117
	(!A1 * B1 * B2 * X)	0.00114	0.00116	0.00115
	(!A1 * B1 * B2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00115	0.00116	0.00115
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00123	-0.00124	-0.00123
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00097	0.00099	0.00098
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * B1 * !B2 * !C1 * !X)	0.00097	0.00099	0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * C1 * !C2 * !X)	0.00097	0.00099	0.00098
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00140	-0.00141	-0.00140
	(!A1 * !B1 * !C1 * !X)	0.00097	0.00099	0.00098
	(!A1 * !B1 * !C1 * !X)	-0.00140	-0.00141	-0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	0.00112	0.00112	0.00112
	(A1 * B1 * B2 * C1 * C2 * X)	-0.00120	-0.00125	-0.00124
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00111	0.00112	0.00112
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * B2 * !C1 * X)	0.00111	0.00112	0.00112
	(A1 * B1 * B2 * !C1 * X)	-0.00119	-0.00125	-0.00124
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00113	0.00113	0.00112
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00113	-0.00122	-0.00121
	(A1 * !B1 * C1 * C2 * X)	0.00113	0.00113	0.00112
	(A1 * !B1 * C1 * C2 * X)	-0.00114	-0.00122	-0.00121
	(!A1 * B1 * B2 * X)	0.00107	0.00108	0.00107
	(!A1 * B1 * B2 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00107	0.00109	0.00107
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00125	-0.00127	-0.00126
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00107	0.00108	0.00107
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !B1 * C1 * !C2 * !X)	0.00107	0.00108	0.00107
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00127	-0.00127	-0.00126
	(!A1 * !B1 * !C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00126

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)**	-0.00119	-0.00120	-0.00119
	(A1 * B1 * B2 * C1 * C2 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * B2 * !C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * B2 * !C1 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00118	0.00119	0.00117
	(A1 * !B1 * C1 * C2 * X)	-0.00120	-0.00120	-0.00119
	(A1 * !B1 * C1 * C2 * X)	0.00118	0.00119	0.00117
	(!A1 * B1 * B2 * X)	-0.00112	-0.00116	-0.00115
	(!A1 * B1 * B2 * X)	0.00124	0.00124	0.00123
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00112	-0.00116	-0.00115
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00124	0.00124	0.00123
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00145	0.00142	0.00141
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	0.00145	0.00142	0.00141
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * !B1 * C1 * !C2 * !X)	0.00145	0.00142	0.00141
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * !B1 * !C1 * !X)	0.00145	0.00142	0.00141

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * C2 * X)**	-0.00111	-0.00112	-0.00112
	(A1 * B1 * B2 * C1 * C2 * X)	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * C1 * !C2 * X)	-0.00111	-0.00112	-0.00112
	(A1 * B1 * B2 * C1 * !C2 * X)	0.00123	0.00125	0.00124
	(A1 * B1 * B2 * !C1 * X)	-0.00111	-0.00112	-0.00112
	(A1 * B1 * B2 * !C1 * X)	0.00123	0.00125	0.00124
	(A1 * B1 * !B2 * C1 * C2 * X)	-0.00111	-0.00113	-0.00112
	(A1 * B1 * !B2 * C1 * C2 * X)	0.00120	0.00122	0.00121
	(A1 * !B1 * C1 * C2 * X)	-0.00112	-0.00113	-0.00112
	(A1 * !B1 * C1 * C2 * X)	0.00120	0.00122	0.00121
	(!A1 * B1 * B2 * X)	-0.00103	-0.00108	-0.00107
	(!A1 * B1 * B2 * X)	0.00125	0.00127	0.00126
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00104	-0.00108	-0.00107
	(!A1 * B1 * !B2 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00127	0.00127	0.00126
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	-0.00102	-0.00108	-0.00107
	(!A1 * B1 * !B2 * C1 * !C2 * !X)	0.00129	0.00128	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00102	-0.00108	-0.00107
	(!A1 * B1 * !B2 * !C1 * !X)	0.00129	0.00128	0.00127
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00101	-0.00108	-0.00107
	(!A1 * !B1 * C1 * !C2 * !X)	0.00128	0.00128	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00101	-0.00108	-0.00107
	(!A1 * !B1 * !C1 * !X)	0.00128	0.00128	0.00127

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)**	0.00112	0.00114	0.00112
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00094	-0.00094	-0.00093
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * B2 * !C1 * X)	0.00111	0.00112	0.00111
	(A1 * A2 * B2 * !C1 * X)	-0.00079	-0.00080	-0.00079
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00106	0.00107	0.00107
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00090	-0.00091	-0.00090
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00106	0.00107	0.00106
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A2 * !B2 * !C1 * X)	0.00106	0.00107	0.00106
	(A1 * A2 * !B2 * !C1 * X)	-0.00079	-0.00079	-0.00079
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00118	0.00112	0.00111
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00120	-0.00129	-0.00129
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00105	0.00107	0.00106
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00132	-0.00133	-0.00132
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00157	-0.00158	-0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00157	-0.00158	-0.00159
	(!A1 * B2 * C1 * C2 * X)	0.00118	0.00112	0.00111
	(!A1 * B2 * C1 * C2 * X)	-0.00120	-0.00129	-0.00129
	(!A1 * !B2 * C1 * C2 * X)	0.00105	0.00107	0.00106
	(!A1 * !B2 * C1 * C2 * X)	-0.00132	-0.00133	-0.00132
	(!A1 * !B2 * C1 * !C2 * !X)	0.00037	0.00037	0.00036
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00157	-0.00158	-0.00159
	(!A1 * !B2 * !C1 * !X)	0.00037	0.00037	0.00036
	(!A1 * !B2 * !C1 * !X)	-0.00157	-0.00158	-0.00159

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	0.00109	0.00110	0.00109
	(A1 * A2 * B2 * C1 * C2 * X)	-0.00088	-0.00088	-0.00087
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * B2 * !C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * B2 * !C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00103	0.00104	0.00103
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00084	-0.00084	-0.00083
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00102	0.00103	0.00103
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !B2 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B2 * !C1 * X)	-0.00072	-0.00073	-0.00072
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00119	0.00108	0.00107
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00105	-0.00120	-0.00120
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00035	0.00035	0.00034
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00145	-0.00146	-0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	0.00035	0.00035	0.00034
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00145	-0.00146	-0.00148
	(!A1 * B2 * C1 * C2 * X)	0.00118	0.00108	0.00107
	(!A1 * B2 * C1 * C2 * X)	-0.00106	-0.00120	-0.00120
	(!A1 * !B2 * C1 * C2 * X)	0.00101	0.00102	0.00102
	(!A1 * !B2 * C1 * C2 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B2 * C1 * !C2 * !X)	0.00035	0.00036	0.00035
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00145	-0.00146	-0.00147
	(!A1 * !B2 * !C1 * !X)	0.00035	0.00036	0.00035
	(!A1 * !B2 * !C1 * !X)	-0.00145	-0.00146	-0.00148

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)	-0.00112	-0.00112	-0.00111
	(A1 * A2 * B2 * C1 * C2 * X)	0.00094	0.00094	0.00093
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00083	0.00084	0.00084
	(A1 * A2 * B2 * !C1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * A2 * B2 * !C1 * X)	0.00083	0.00084	0.00084
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00104	-0.00107	-0.00107
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00090	0.00091	0.00090
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00103	-0.00106	-0.00106
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00079	0.00079	0.00079
	(A1 * A2 * !B2 * !C1 * X)	-0.00103	-0.00107	-0.00106
	(A1 * A2 * !B2 * !C1 * X)	0.00079	0.00080	0.00079
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00110
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00129	0.00129	0.00129
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00103	-0.00106	-0.00106
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00133	0.00134	0.00133
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00035	-0.00036	-0.00035
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00160	0.00161	0.00159
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(A1 * !A2 * !B2 * !C1 * !X)	0.00160	0.00161	0.00159
	(!A1 * B2 * C1 * C2 * X)	-0.00111	-0.00111	-0.00110
	(!A1 * B2 * C1 * C2 * X)	0.00129	0.00130	0.00129
	(!A1 * !B2 * C1 * C2 * X)	-0.00103	-0.00106	-0.00106
	(!A1 * !B2 * C1 * C2 * X)	0.00133	0.00133	0.00133
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00035	-0.00036	-0.00035
	(!A1 * !B2 * C1 * !C2 * !X)	0.00160	0.00161	0.00159
	(!A1 * !B2 * !C1 * !X)	-0.00035	-0.00036	-0.00035
	(!A1 * !B2 * !C1 * !X)	0.00160	0.00161	0.00159

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B2 * C1 * C2 * X)**	-0.00108	-0.00109	-0.00108
	(A1 * A2 * B2 * C1 * C2 * X)	0.00088	0.00088	0.00087
	(A1 * A2 * B2 * C1 * !C2 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B2 * C1 * !C2 * X)	0.00078	0.00078	0.00077
	(A1 * A2 * B2 * !C1 * X)	-0.00103	-0.00103	-0.00103
	(A1 * A2 * B2 * !C1 * X)	0.00078	0.00078	0.00077
	(A1 * A2 * !B2 * C1 * C2 * X)	-0.00100	-0.00103	-0.00103
	(A1 * A2 * !B2 * C1 * C2 * X)	0.00084	0.00084	0.00083
	(A1 * A2 * !B2 * C1 * !C2 * X)	-0.00100	-0.00103	-0.00103
	(A1 * A2 * !B2 * C1 * !C2 * X)	0.00073	0.00073	0.00072
	(A1 * A2 * !B2 * !C1 * X)	-0.00100	-0.00103	-0.00102
	(A1 * A2 * !B2 * !C1 * X)	0.00073	0.00073	0.00072
	(A1 * !A2 * B2 * C1 * C2 * X)	-0.00106	-0.00107	-0.00107
	(A1 * !A2 * B2 * C1 * C2 * X)	0.00119	0.00121	0.00120
	(A1 * !A2 * !B2 * C1 * C2 * X)	-0.00098	-0.00102	-0.00101
	(A1 * !A2 * !B2 * C1 * C2 * X)	0.00125	0.00125	0.00125
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	-0.00033	-0.00034	-0.00033
	(A1 * !A2 * !B2 * C1 * !C2 * !X)	0.00148	0.00149	0.00148
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00033	-0.00034	-0.00033
	(A1 * !A2 * !B2 * !C1 * !X)	0.00148	0.00149	0.00148
	(!A1 * B2 * C1 * C2 * X)	-0.00106	-0.00107	-0.00107
	(!A1 * B2 * C1 * C2 * X)	0.00119	0.00121	0.00120
	(!A1 * !B2 * C1 * C2 * X)	-0.00098	-0.00102	-0.00102
	(!A1 * !B2 * C1 * C2 * X)	0.00125	0.00125	0.00125
	(!A1 * !B2 * C1 * !C2 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !B2 * C1 * !C2 * !X)	0.00147	0.00149	0.00148
	(!A1 * !B2 * !C1 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !B2 * !C1 * !X)	0.00147	0.00149	0.00148

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)	0.00107	0.00109	0.00108
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00088	-0.00089	-0.00088
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00075	-0.00075	-0.00074
	(A1 * A2 * B1 * !C1 * X)	0.00107	0.00108	0.00107
	(A1 * A2 * B1 * !C1 * X)	-0.00075	-0.00075	-0.00074
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00073	-0.00074	-0.00074
	(A1 * A2 * !B1 * !C1 * X)	0.00102	0.00103	0.00102
	(A1 * A2 * !B1 * !C1 * X)	-0.00073	-0.00074	-0.00074
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00113	0.00107	0.00107
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00111	-0.00122	-0.00122
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00101	0.00102	0.00101
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00125	-0.00126	-0.00125
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00096	0.00097	0.00097
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * !A2 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * B1 * C1 * C2 * X)	0.00113	0.00107	0.00107
	(!A1 * B1 * C1 * C2 * X)	-0.00111	-0.00122	-0.00122
	(!A1 * !B1 * C1 * !C2 * !X)	0.00096	0.00097	0.00097
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00131	-0.00130

	(A1 * A2 * B1 * C1 * C2 * X)	0.00110	0.00112	0.00110
	(A1 * A2 * B1 * C1 * C2 * X)	-0.00086	-0.00088	-0.00087
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * B1 * !C1 * X)	0.00109	0.00110	0.00109
	(A1 * A2 * B1 * !C1 * X)	-0.00073	-0.00073	-0.00072
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00104	0.00105	0.00104
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00082	-0.00084	-0.00083
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00104	0.00104	0.00104
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * !B1 * !C1 * X)	0.00104	0.00104	0.00104
	(A1 * A2 * !B1 * !C1 * X)	-0.00072	-0.00072	-0.00072
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00119	0.00109	0.00108
sky130_fd_sc_hs__a222o_2	**(A1 * !A2 * B1 * C1 * C2 * X)**	-0.00107	-0.00120	-0.00120
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00103	0.00104	0.00103
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00124	-0.00124	-0.00124
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00124	-0.00124	-0.00124
	(A1 * !A2 * !B1 * !C1 * !X)	0.00100	0.00101	0.00100
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * B1 * C1 * C2 * X)	0.00120	0.00109	0.00108
	(!A1 * B1 * C1 * C2 * X)	-0.00106	-0.00120	-0.00120
	(!A1 * !B1 * C1 * !C2 * !X)	0.00103	0.00103	0.00103
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * !C1 * !X)	-0.00124	-0.00124	-0.00124

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)	-0.00107	-0.00108	-0.00107
	(A1 * A2 * B1 * C1 * C2 * X)	0.00088	0.00089	0.00088
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00102	-0.00102	-0.00102
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00078	0.00079	0.00079
	(A1 * A2 * B1 * !C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00079	0.00079
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00100	-0.00103	-0.00102
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00074	0.00074	0.00074
	(A1 * A2 * !B1 * !C1 * X)	-0.00099	-0.00103	-0.00102
	(A1 * A2 * !B1 * !C1 * X)	0.00074	0.00074	0.00074
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00107	-0.00107	-0.00106
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00123	0.00123	0.00122
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00099	-0.00102	-0.00101
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00126	0.00127	0.00126
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00091	-0.00097	-0.00097
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00135	0.00131	0.00131
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00091	-0.00098	-0.00097
	(A1 * !A2 * !B1 * !C1 * !X)	0.00135	0.00131	0.00131
	(!A1 * B1 * C1 * C2 * X)	-0.00107	-0.00107	-0.00106
	(!A1 * B1 * C1 * C2 * X)	0.00123	0.00123	0.00122
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00091	-0.00097	-0.00097
	(!A1 * !B1 * C1 * !C2 * !X)	0.00135	0.00131	0.00131
	(!A1 * !B1 * !C1 * !X)	-0.00091	-0.00098	-0.00097
	(!A1 * !B1 * !C1 * !X)	0.00135	0.00131	0.00131

sky130_fd_sc_hs__a222o_2	**(A1 * A2 * B1 * C1 * C2 * X)**	-0.00109	-0.00110	-0.00109
	(A1 * A2 * B1 * C1 * C2 * X)	0.00086	0.00088	0.00087
	(A1 * A2 * B1 * C1 * !C2 * X)	-0.00103	-0.00104	-0.00104
	(A1 * A2 * B1 * C1 * !C2 * X)	0.00078	0.00078	0.00077
	(A1 * A2 * B1 * !C1 * X)	-0.00103	-0.00104	-0.00104
	(A1 * A2 * B1 * !C1 * X)	0.00078	0.00078	0.00077
	(A1 * A2 * !B1 * C1 * C2 * X)	-0.00101	-0.00105	-0.00104
	(A1 * A2 * !B1 * C1 * C2 * X)	0.00082	0.00084	0.00083
	(A1 * A2 * !B1 * C1 * !C2 * X)	-0.00101	-0.00104	-0.00104
	(A1 * A2 * !B1 * C1 * !C2 * X)	0.00073	0.00073	0.00072
	(A1 * A2 * !B1 * !C1 * X)	-0.00101	-0.00104	-0.00104
	(A1 * A2 * !B1 * !C1 * X)	0.00073	0.00073	0.00072
	(A1 * !A2 * B1 * C1 * C2 * X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * B1 * C1 * C2 * X)	0.00119	0.00121	0.00120
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	-0.00100	-0.00103	-0.00103
	(A1 * !A2 * !B1 * C1 * C2 * X) + (!A1 * !B1 * C1 * C2 * X)	0.00125	0.00125	0.00124
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	-0.00095	-0.00101	-0.00100
	(A1 * !A2 * !B1 * C1 * !C2 * !X)	0.00129	0.00126	0.00125
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00095	-0.00101	-0.00100
	(A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00126	0.00125
	(!A1 * B1 * C1 * C2 * X)	-0.00108	-0.00109	-0.00108
	(!A1 * B1 * C1 * C2 * X)	0.00119	0.00121	0.00120
	(!A1 * !B1 * C1 * !C2 * !X)	-0.00098	-0.00103	-0.00103
	(!A1 * !B1 * C1 * !C2 * !X)	0.00129	0.00125	0.00124
	(!A1 * !B1 * !C1 * !X)	-0.00098	-0.00104	-0.00103
	(!A1 * !B1 * !C1 * !X)	0.00129	0.00125	0.00124

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)	0.00128	0.00130	0.00129
	(A1 * B1 * B2 * C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * B1 * B2 * !C2 * X)	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * !C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * C2 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * !B1 * C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * A2 * !B1 * !C2 * X)	0.00123	0.00124	0.00124
	(A1 * A2 * !B1 * !C2 * X)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00039	0.00039	0.00038
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00159	-0.00160	-0.00161
	(A1 * !A2 * !B1 * !C2 * !X)	0.00039	0.00039	0.00038
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00159	-0.00160	-0.00161
	(!A1 * B1 * B2 * C2 * X)	0.00129	0.00130	0.00129
	(!A1 * B1 * B2 * C2 * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B1 * B2 * !C2 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * B2 * !C2 * X)	-0.00069	-0.00070	-0.00070
	(!A1 * B1 * !B2 * !C2 * !X)	0.00039	0.00039	0.00038
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00159	-0.00160	-0.00161
	(!A1 * !B1 * !C2 * !X)	0.00039	0.00039	0.00038
	(!A1 * !B1 * !C2 * !X)	-0.00159	-0.00160	-0.00161

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	0.00125	0.00126	0.00125
	(A1 * B1 * B2 * C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * B1 * B2 * !C2 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00064	-0.00065	-0.00065
	(A1 * A2 * !B1 * C2 * X)	0.00125	0.00126	0.00125
	(A1 * A2 * !B1 * C2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * A2 * !B1 * !C2 * X)	0.00120	0.00121	0.00120
	(A1 * A2 * !B1 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00151	-0.00151	-0.00153
	(A1 * !A2 * !B1 * !C2 * !X)	0.00038	0.00038	0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00151	-0.00151	-0.00153
	(!A1 * B1 * B2 * C2 * X)	0.00125	0.00126	0.00125
	(!A1 * B1 * B2 * C2 * X)	-0.00065	-0.00066	-0.00065
	(!A1 * B1 * B2 * !C2 * X)	0.00120	0.00121	0.00120
	(!A1 * B1 * B2 * !C2 * X)	-0.00065	-0.00065	-0.00065
	(!A1 * B1 * !B2 * !C2 * !X)	0.00038	0.00038	0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00151	-0.00151	-0.00153
	(!A1 * !B1 * !C2 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B1 * !C2 * !X)	-0.00151	-0.00151	-0.00153

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

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

sky130_fd_sc_hs__a222o_1	**(A1 * B1 * B2 * C2 * X)**	-0.00117	-0.00118	-0.00127
	(A1 * B1 * B2 * C2 * X)	0.00080	0.00080	0.00072
	(A1 * B1 * B2 * !C2 * X)	-0.00121	-0.00125	-0.00124
	(A1 * B1 * B2 * !C2 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00105	-0.00107	-0.00124
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00088	0.00088	0.00074
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00121	-0.00124	-0.00125
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00070	0.00070	0.00069
	(A1 * A2 * !B1 * C2 * X)	-0.00105	-0.00107	-0.00124
	(A1 * A2 * !B1 * C2 * X)	0.00088	0.00088	0.00074
	(A1 * A2 * !B1 * !C2 * X)	-0.00121	-0.00124	-0.00124
	(A1 * A2 * !B1 * !C2 * X)	0.00070	0.00070	0.00069
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00161	0.00163	0.00161
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00037	-0.00038	-0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	0.00161	0.00163	0.00161
	(!A1 * B1 * B2 * C2 * X)	-0.00117	-0.00118	-0.00127
	(!A1 * B1 * B2 * C2 * X)	0.00081	0.00081	0.00072
	(!A1 * B1 * B2 * !C2 * X)	-0.00121	-0.00124	-0.00125
	(!A1 * B1 * B2 * !C2 * X)	0.00070	0.00070	0.00070
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	0.00161	0.00163	0.00161
	(!A1 * !B1 * !C2 * !X)	-0.00037	-0.00038	-0.00037
	(!A1 * !B1 * !C2 * !X)	0.00161	0.00163	0.00161

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C2 * X)**	-0.00116	-0.00117	-0.00124
	(A1 * B1 * B2 * C2 * X)	0.00073	0.00073	0.00067
	(A1 * B1 * B2 * !C2 * X)	-0.00118	-0.00121	-0.00120
	(A1 * B1 * B2 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * B1 * !B2 * C2 * X)	-0.00104	-0.00105	-0.00121
	(A1 * A2 * B1 * !B2 * C2 * X)	0.00082	0.00082	0.00070
	(A1 * A2 * B1 * !B2 * !C2 * X)	-0.00118	-0.00121	-0.00120
	(A1 * A2 * B1 * !B2 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * A2 * !B1 * C2 * X)	-0.00104	-0.00105	-0.00121
	(A1 * A2 * !B1 * C2 * X)	0.00082	0.00082	0.00070
	(A1 * A2 * !B1 * !C2 * X)	-0.00117	-0.00121	-0.00120
	(A1 * A2 * !B1 * !C2 * X)	0.00065	0.00065	0.00065
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(A1 * !A2 * B1 * !B2 * !C2 * !X)	0.00153	0.00154	0.00153
	(A1 * !A2 * !B1 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(A1 * !A2 * !B1 * !C2 * !X)	0.00153	0.00154	0.00153
	(!A1 * B1 * B2 * C2 * X)	-0.00116	-0.00117	-0.00124
	(!A1 * B1 * B2 * C2 * X)	0.00073	0.00073	0.00067
	(!A1 * B1 * B2 * !C2 * X)	-0.00118	-0.00121	-0.00120
	(!A1 * B1 * B2 * !C2 * X)	0.00065	0.00065	0.00065
	(!A1 * B1 * !B2 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * B1 * !B2 * !C2 * !X)	0.00153	0.00154	0.00153
	(!A1 * !B1 * !C2 * !X)	-0.00037	-0.00037	-0.00037
	(!A1 * !B1 * !C2 * !X)	0.00153	0.00154	0.00153

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)**	0.00129	0.00130	0.00129
	(A1 * B1 * B2 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * B1 * B2 * !C1 * X)	0.00124	0.00125	0.00124
	(A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00124	0.00125	0.00124
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * !B1 * C1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * !B1 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C1 * X)	0.00124	0.00125	0.00124
	(A1 * A2 * !B1 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	0.00099	0.00100	0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A1 * B1 * B2 * C1 * X)	0.00129	0.00130	0.00129
	(!A1 * B1 * B2 * C1 * X)	-0.00067	-0.00067	-0.00066
	(!A1 * B1 * B2 * !C1 * X)	0.00124	0.00125	0.00124
	(!A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00067	-0.00066
	(!A1 * B1 * !B2 * !C1 * !X)	0.00099	0.00099	0.00099
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A1 * !B1 * !C1 * !X)	0.00099	0.00099	0.00099
	(!A1 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	0.00133	0.00134	0.00133
	(A1 * B1 * B2 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * B1 * B2 * !C1 * X)	0.00128	0.00129	0.00128
	(A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00066	-0.00067	-0.00066
	(A1 * A2 * !B1 * C1 * X)	0.00133	0.00134	0.00133
	(A1 * A2 * !B1 * C1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * !B1 * !C1 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * !B1 * !C1 * X)	-0.00066	-0.00067	-0.00066
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00097	0.00097	0.00097
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00146	-0.00146	-0.00146
	(A1 * !A2 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * B1 * B2 * C1 * X)	0.00133	0.00134	0.00133
	(!A1 * B1 * B2 * C1 * X)	-0.00067	-0.00067	-0.00067
	(!A1 * B1 * B2 * !C1 * X)	0.00128	0.00129	0.00128
	(!A1 * B1 * B2 * !C1 * X)	-0.00066	-0.00066	-0.00066
	(!A1 * B1 * !B2 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00146	-0.00147	-0.00146
	(!A1 * !B1 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * !B1 * !C1 * !X)	-0.00146	-0.00147	-0.00146

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)**	-0.00116	-0.00118	-0.00127
	(A1 * B1 * B2 * C1 * X)	0.00077	0.00077	0.00069
	(A1 * B1 * B2 * !C1 * X)	-0.00121	-0.00124	-0.00124
	(A1 * B1 * B2 * !C1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00106	-0.00124
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00085	0.00085	0.00071
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00121	-0.00124	-0.00124
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !B1 * C1 * X)	-0.00105	-0.00106	-0.00124
	(A1 * A2 * !B1 * C1 * X)	0.00085	0.00085	0.00071
	(A1 * A2 * !B1 * !C1 * X)	-0.00121	-0.00124	-0.00124
	(A1 * A2 * !B1 * !C1 * X)	0.00066	0.00066	0.00066
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00099	-0.00099
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00144	0.00142	0.00140
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00094	-0.00099	-0.00099
	(A1 * !A2 * !B1 * !C1 * !X)	0.00144	0.00141	0.00140
	(!A1 * B1 * B2 * C1 * X)	-0.00116	-0.00118	-0.00127
	(!A1 * B1 * B2 * C1 * X)	0.00077	0.00077	0.00069
	(!A1 * B1 * B2 * !C1 * X)	-0.00121	-0.00124	-0.00124
	(!A1 * B1 * B2 * !C1 * X)	0.00067	0.00067	0.00066
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00094	-0.00099	-0.00099
	(!A1 * B1 * !B2 * !C1 * !X)	0.00144	0.00141	0.00140
	(!A1 * !B1 * !C1 * !X)	-0.00094	-0.00099	-0.00099
	(!A1 * !B1 * !C1 * !X)	0.00144	0.00141	0.00140

sky130_fd_sc_hs__a222o_2	**(A1 * B1 * B2 * C1 * X)**	-0.00123	-0.00125	-0.00132
	(A1 * B1 * B2 * C1 * X)	0.00075	0.00075	0.00068
	(A1 * B1 * B2 * !C1 * X)	-0.00126	-0.00128	-0.00128
	(A1 * B1 * B2 * !C1 * X)	0.00067	0.00066	0.00066
	(A1 * A2 * B1 * !B2 * C1 * X)	-0.00111	-0.00113	-0.00128
	(A1 * A2 * B1 * !B2 * C1 * X)	0.00084	0.00084	0.00071
	(A1 * A2 * B1 * !B2 * !C1 * X)	-0.00126	-0.00129	-0.00128
	(A1 * A2 * B1 * !B2 * !C1 * X)	0.00067	0.00067	0.00066
	(A1 * A2 * !B1 * C1 * X)	-0.00111	-0.00113	-0.00128
	(A1 * A2 * !B1 * C1 * X)	0.00084	0.00084	0.00071
	(A1 * A2 * !B1 * !C1 * X)	-0.00126	-0.00129	-0.00128
	(A1 * A2 * !B1 * !C1 * X)	0.00067	0.00067	0.00066
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00097	-0.00097
	(A1 * !A2 * B1 * !B2 * !C1 * !X)	0.00151	0.00148	0.00146
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00092	-0.00098	-0.00097
	(A1 * !A2 * !B1 * !C1 * !X)	0.00151	0.00148	0.00146
	(!A1 * B1 * B2 * C1 * X)	-0.00123	-0.00124	-0.00132
	(!A1 * B1 * B2 * C1 * X)	0.00075	0.00075	0.00068
	(!A1 * B1 * B2 * !C1 * X)	-0.00126	-0.00128	-0.00128
	(!A1 * B1 * B2 * !C1 * X)	0.00067	0.00066	0.00067
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00092	-0.00098	-0.00097
	(!A1 * B1 * !B2 * !C1 * !X)	0.00151	0.00148	0.00146
	(!A1 * !B1 * !C1 * !X)	-0.00092	-0.00098	-0.00097
	(!A1 * !B1 * !C1 * !X)	0.00151	0.00148	0.00146

SKY130_FD_SC_HS__A22OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00256	0.00253	0.00266	0.00267	0.53891
sky130_fd_sc_hs__a22oi_2	0.00564	0.00488	0.00537	0.00486	0.93168
sky130_fd_sc_hs__a22oi_4	0.00979	0.00961	0.00990	0.00972	1.71246

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a22oi_1	0.00000	0.01730	0.06484
sky130_fd_sc_hs__a22oi_2	0.00000	0.03460	0.12968
sky130_fd_sc_hs__a22oi_4	0.00000	0.06920	0.25936

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)	0.10013	1.01614	11.29920
	A2->Y (FR)	0.11797	1.03936	11.36660
	B1->Y (FR)	0.07334	0.96644	11.10320
	B2->Y (FR)	0.09168	0.99667	11.25180
sky130_fd_sc_hs__a22oi_2	A1->Y (FR)	0.10567	0.87370	10.85260
	A2->Y (FR)	0.12747	0.91242	11.10170
	B1->Y (FR)	0.07540	0.83517	10.81820
	B2->Y (FR)	0.09954	0.87954	11.12050
sky130_fd_sc_hs__a22oi_4	A1->Y (FR)	0.09806	0.75629	10.64340
	A2->Y (FR)	0.12379	0.79524	10.89380
	B1->Y (FR)	0.07043	0.72686	10.66140
	B2->Y (FR)	0.09700	0.77005	11.00330

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22oi_1	A1->Y (RF)	0.02539	0.33921	3.69443
	A2->Y (RF)	0.02878	0.32723	3.49591
	B1->Y (RF)	0.01912	0.33312	3.74546
	B2->Y (RF)	0.02253	0.32254	3.57801
sky130_fd_sc_hs__a22oi_2	A1->Y (RF)	0.02656	0.29017	3.53923
	A2->Y (RF)	0.02992	0.28542	3.41693
	B1->Y (RF)	0.01879	0.27368	3.52537
	B2->Y (RF)	0.02323	0.27003	3.39565
sky130_fd_sc_hs__a22oi_4	A1->Y (RF)	0.02722	0.26939	3.82811
	A2->Y (RF)	0.03091	0.23985	3.30078
	B1->Y (RF)	0.01847	0.25068	3.83773
	B2->Y (RF)	0.02242	0.22039	3.26966

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	-0.00021	-0.00032	0.00052
	A1	0.00466	0.00456	0.00544
	A2	0.00016	0.00007	0.00090
	A2	0.00655	0.00643	0.00722
	B1	-0.00029	0.00002	0.00371
	B1	0.00317	0.00349	0.00720
	B2	-0.00002	0.00023	0.00386
	B2	0.00432	0.00442	0.00819
sky130_fd_sc_hs__a22oi_2	A1	-0.00007	-0.00032	0.00155
	A1	0.01192	0.01156	0.01339
	A2	0.00090	0.00063	0.00255
	A2	0.01389	0.01361	0.01543
	B1	-0.00033	0.00040	0.00827
	B1	0.00690	0.00750	0.01561
	B2	0.00094	0.00153	0.00914
	B2	0.00945	0.01005	0.01766
sky130_fd_sc_hs__a22oi_4	A1	-0.00145	-0.00192	0.00190
	A1	0.02151	0.02078	0.02460
	A2	0.00057	0.00009	0.00389
	A2	0.02658	0.02606	0.02974
	B1	-0.00181	-0.00047	0.01406
	B1	0.01174	0.01307	0.02796
	B2	0.00037	0.00170	0.01565
	B2	0.01716	0.01849	0.03243

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22oi_1	A1	0.00664	0.00657	0.00767
	A1	0.00186	0.00178	0.00279
	A2	0.00752	0.00743	0.00814
	A2	0.00182	0.00171	0.00236
	B1	0.00336	0.00338	0.00445
	B1	-0.00009	-0.00009	0.00097
	B2	0.00431	0.00431	0.00504
	B2	-0.00007	-0.00011	0.00058
sky130_fd_sc_hs__a22oi_2	A1	0.01342	0.01320	0.01556
	A1	0.00330	0.00307	0.00522
	A2	0.01464	0.01442	0.01594
	A2	0.00337	0.00312	0.00450
	B1	0.00719	0.00723	0.00975
	B1	-0.00004	-0.00004	0.00233
	B2	0.00866	0.00858	0.01032
	B2	0.00004	-0.00007	0.00151
sky130_fd_sc_hs__a22oi_4	A1	0.02530	0.02492	0.02942
	A1	0.00632	0.00590	0.01011
	A2	0.02873	0.02827	0.03138
	A2	0.00627	0.00570	0.00862
	B1	0.01304	0.01314	0.01752
	B1	-0.00048	-0.00043	0.00399
	B2	0.01669	0.01649	0.01978
	B2	-0.00029	-0.00057	0.00260

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)	0.00122	0.00118	0.00117
	(A2 * B1 * B2 * !Y)	-0.00124	-0.00133	-0.00132
	(!A2 * B1 * B2 * !Y)	0.00113	0.00114	0.00113
	(!A2 * B1 * B2 * !Y)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * !B2 * Y)	0.00040	0.00040	0.00039
	(!A2 * B1 * !B2 * Y)	-0.00157	-0.00157	-0.00160
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(!A2 * !B1 * Y)	-0.00157	-0.00157	-0.00160
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	0.00274	0.00260	0.00257
	(A2 * B1 * B2 * !Y)	-0.00256	-0.00283	-0.00283
	(!A2 * B1 * B2 * !Y)	0.00247	0.00250	0.00248
	(!A2 * B1 * B2 * !Y)	-0.00291	-0.00294	-0.00292
	(!A2 * B1 * !B2 * Y)	0.00080	0.00080	0.00078
	(!A2 * B1 * !B2 * Y)	-0.00356	-0.00359	-0.00362
	(!A2 * !B1 * Y)	0.00080	0.00080	0.00078
	(!A2 * !B1 * Y)	-0.00356	-0.00359	-0.00362
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	0.00502	0.00482	0.00476
	(A2 * B1 * B2 * !Y)	-0.00487	-0.00538	-0.00534
	(!A2 * B1 * B2 * !Y)	0.00450	0.00453	0.00451
	(!A2 * B1 * B2 * !Y)	-0.00550	-0.00551	-0.00550
	(!A2 * B1 * !B2 * Y)	0.00152	0.00152	0.00146
	(!A2 * B1 * !B2 * Y)	-0.00649	-0.00652	-0.00660
	(!A2 * !B1 * Y)	0.00153	0.00153	0.00147
	(!A2 * !B1 * Y)	-0.00649	-0.00651	-0.00660

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)	-0.00117	-0.00117	-0.00117
	(A2 * B1 * B2 * !Y)	0.00131	0.00133	0.00132
	(!A2 * B1 * B2 * !Y)	-0.00108	-0.00112	-0.00113
	(!A2 * B1 * B2 * !Y)	0.00136	0.00136	0.00136
	(!A2 * B1 * !B2 * Y)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * Y)	0.00159	0.00163	0.00160
	(!A2 * !B1 * Y)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * Y)	0.00159	0.00162	0.00160
sky130_fd_sc_hs__a22oi_2	(A2 * B1 * B2 * !Y)	-0.00256	-0.00257	-0.00256
	(A2 * B1 * B2 * !Y)	0.00282	0.00283	0.00283
	(!A2 * B1 * B2 * !Y)	-0.00236	-0.00247	-0.00247
	(!A2 * B1 * B2 * !Y)	0.00294	0.00295	0.00293
	(!A2 * B1 * !B2 * Y)	-0.00077	-0.00076	-0.00076
	(!A2 * B1 * !B2 * Y)	0.00363	0.00362	0.00362
	(!A2 * !B1 * Y)	-0.00077	-0.00076	-0.00076
	(!A2 * !B1 * Y)	0.00363	0.00362	0.00362
sky130_fd_sc_hs__a22oi_4	(A2 * B1 * B2 * !Y)	-0.00475	-0.00477	-0.00474
	(A2 * B1 * B2 * !Y)	0.00534	0.00539	0.00534
	(!A2 * B1 * B2 * !Y)	-0.00429	-0.00453	-0.00451
	(!A2 * B1 * B2 * !Y)	0.00552	0.00556	0.00552
	(!A2 * B1 * !B2 * Y)	-0.00144	-0.00143	-0.00143
	(!A2 * B1 * !B2 * Y)	0.00663	0.00660	0.00661
	(!A2 * !B1 * Y)	-0.00144	-0.00146	-0.00143
	(!A2 * !B1 * Y)	0.00663	0.00673	0.00661

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)	0.00129	0.00125	0.00124
	(A1 * B1 * B2 * !Y)	-0.00128	-0.00138	-0.00138
	(!A1 * B1 * B2 * !Y)	0.00119	0.00120	0.00119
	(!A1 * B1 * B2 * !Y)	-0.00141	-0.00142	-0.00141
	(!A1 * B1 * !B2 * Y)	0.00118	0.00120	0.00119
	(!A1 * B1 * !B2 * Y)	-0.00141	-0.00142	-0.00142
	(!A1 * !B1 * Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * Y)	-0.00141	-0.00142	-0.00142
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	0.00245	0.00237	0.00235
	(A1 * B1 * B2 * !Y)	-0.00241	-0.00262	-0.00260
	(!A1 * B1 * B2 * !Y)	0.00222	0.00224	0.00223
	(!A1 * B1 * B2 * !Y)	-0.00267	-0.00268	-0.00267
	(!A1 * B1 * !B2 * Y)	0.00217	0.00218	0.00218
	(!A1 * B1 * !B2 * Y)	-0.00275	-0.00276	-0.00275
	(!A1 * !B1 * Y)	0.00217	0.00218	0.00218
	(!A1 * !B1 * Y)	-0.00275	-0.00276	-0.00275
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	0.00508	0.00484	0.00479
	(A1 * B1 * B2 * !Y)	-0.00493	-0.00540	-0.00537
	(!A1 * B1 * B2 * !Y)	0.00458	0.00459	0.00457
	(!A1 * B1 * B2 * !Y)	-0.00553	-0.00553	-0.00552
	(!A1 * B1 * !B2 * Y)	0.00453	0.00460	0.00455
	(!A1 * B1 * !B2 * Y)	-0.00551	-0.00556	-0.00552
	(!A1 * !B1 * Y)	0.00453	0.00459	0.00455
	(!A1 * !B1 * Y)	-0.00551	-0.00555	-0.00552

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)	-0.00124	-0.00124	-0.00124
	(A1 * B1 * B2 * !Y)	0.00137	0.00138	0.00138
	(!A1 * B1 * B2 * !Y)	-0.00116	-0.00119	-0.00119
	(!A1 * B1 * B2 * !Y)	0.00142	0.00143	0.00142
	(!A1 * B1 * !B2 * Y)	-0.00114	-0.00120	-0.00119
	(!A1 * B1 * !B2 * Y)	0.00144	0.00143	0.00142
	(!A1 * !B1 * Y)	-0.00114	-0.00120	-0.00119
	(!A1 * !B1 * Y)	0.00144	0.00143	0.00142
sky130_fd_sc_hs__a22oi_2	(A1 * B1 * B2 * !Y)	-0.00235	-0.00236	-0.00235
	(A1 * B1 * B2 * !Y)	0.00260	0.00262	0.00260
	(!A1 * B1 * B2 * !Y)	-0.00216	-0.00223	-0.00223
	(!A1 * B1 * B2 * !Y)	0.00267	0.00268	0.00268
	(!A1 * B1 * !B2 * Y)	-0.00203	-0.00217	-0.00218
	(!A1 * B1 * !B2 * Y)	0.00282	0.00279	0.00276
	(!A1 * !B1 * Y)	-0.00203	-0.00217	-0.00218
	(!A1 * !B1 * Y)	0.00282	0.00279	0.00276
sky130_fd_sc_hs__a22oi_4	(A1 * B1 * B2 * !Y)	-0.00477	-0.00480	-0.00478
	(A1 * B1 * B2 * !Y)	0.00534	0.00540	0.00537
	(!A1 * B1 * B2 * !Y)	-0.00436	-0.00453	-0.00457
	(!A1 * B1 * B2 * !Y)	0.00554	0.00556	0.00554
	(!A1 * B1 * !B2 * Y)	-0.00426	-0.00455	-0.00455
	(!A1 * B1 * !B2 * Y)	0.00569	0.00560	0.00554
	(!A1 * !B1 * Y)	-0.00426	-0.00455	-0.00455
	(!A1 * !B1 * Y)	0.00569	0.00560	0.00554

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)	0.00135	0.00136	0.00135
	(A1 * A2 * B2 * !Y)	-0.00070	-0.00071	-0.00070
	(A1 * A2 * !B2 * !Y)	0.00129	0.00130	0.00130
	(A1 * A2 * !B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !B2 * Y)	0.00036	0.00037	0.00036
	(A1 * !A2 * !B2 * Y)	-0.00165	-0.00166	-0.00167
	(!A1 * !B2 * Y)	0.00036	0.00037	0.00036
	(!A1 * !B2 * Y)	-0.00165	-0.00166	-0.00167
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	0.00289	0.00292	0.00289
	(A1 * A2 * B2 * !Y)	-0.00136	-0.00137	-0.00135
	(A1 * A2 * !B2 * !Y)	0.00277	0.00280	0.00278
	(A1 * A2 * !B2 * !Y)	-0.00135	-0.00135	-0.00135
	(A1 * !A2 * !B2 * Y)	0.00086	0.00087	0.00083
	(A1 * !A2 * !B2 * Y)	-0.00329	-0.00331	-0.00334
	(!A1 * !B2 * Y)	0.00086	0.00087	0.00083
	(!A1 * !B2 * Y)	-0.00329	-0.00331	-0.00334
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	0.00533	0.00544	0.00535
	(A1 * A2 * B2 * !Y)	-0.00273	-0.00279	-0.00274
	(A1 * A2 * !B2 * !Y)	0.00511	0.00516	0.00513
	(A1 * A2 * !B2 * !Y)	-0.00273	-0.00275	-0.00273
	(A1 * !A2 * !B2 * Y)	0.00150	0.00152	0.00145
	(A1 * !A2 * !B2 * Y)	-0.00649	-0.00656	-0.00663
	(!A1 * !B2 * Y)	0.00150	0.00152	0.00145
	(!A1 * !B2 * Y)	-0.00649	-0.00656	-0.00663

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)	-0.00122	-0.00124	-0.00133
	(A1 * A2 * B2 * !Y)	0.00081	0.00081	0.00072
	(A1 * A2 * !B2 * !Y)	-0.00125	-0.00130	-0.00130
	(A1 * A2 * !B2 * !Y)	0.00070	0.00070	0.00070
	(A1 * !A2 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(A1 * !A2 * !B2 * Y)	0.00167	0.00167	0.00167
	(!A1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1 * !B2 * Y)	0.00167	0.00167	0.00167
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B2 * !Y)	-0.00266	-0.00269	-0.00286
	(A1 * A2 * B2 * !Y)	0.00154	0.00154	0.00140
	(A1 * A2 * !B2 * !Y)	-0.00267	-0.00278	-0.00278
	(A1 * A2 * !B2 * !Y)	0.00136	0.00135	0.00135
	(A1 * !A2 * !B2 * Y)	-0.00083	-0.00082	-0.00082
	(A1 * !A2 * !B2 * Y)	0.00335	0.00335	0.00335
	(!A1 * !B2 * Y)	-0.00083	-0.00082	-0.00082
	(!A1 * !B2 * Y)	0.00335	0.00335	0.00335
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B2 * !Y)	-0.00491	-0.00497	-0.00530
	(A1 * A2 * B2 * !Y)	0.00309	0.00311	0.00282
	(A1 * A2 * !B2 * !Y)	-0.00490	-0.00516	-0.00513
	(A1 * A2 * !B2 * !Y)	0.00274	0.00275	0.00273
	(A1 * !A2 * !B2 * Y)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !B2 * Y)	0.00661	0.00665	0.00664
	(!A1 * !B2 * Y)	-0.00141	-0.00142	-0.00141
	(!A1 * !B2 * Y)	0.00661	0.00665	0.00664

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)	0.00148	0.00149	0.00147
	(A1 * A2 * B1 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * A2 * !B1 * !Y)	0.00141	0.00144	0.00142
	(A1 * A2 * !B1 * !Y)	-0.00070	-0.00071	-0.00071
	(A1 * !A2 * !B1 * Y)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * Y)	-0.00146	-0.00147	-0.00147
	(!A1 * !B1 * Y)	0.00119	0.00120	0.00119
	(!A1 * !B1 * Y)	-0.00146	-0.00147	-0.00147
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	0.00255	0.00257	0.00255
	(A1 * A2 * B1 * !Y)	-0.00137	-0.00137	-0.00136
	(A1 * A2 * !B1 * !Y)	0.00245	0.00246	0.00246
	(A1 * A2 * !B1 * !Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A2 * !B1 * Y)	0.00216	0.00218	0.00217
	(A1 * !A2 * !B1 * Y)	-0.00272	-0.00273	-0.00272
	(!A1 * !B1 * Y)	0.00216	0.00218	0.00217
	(!A1 * !B1 * Y)	-0.00272	-0.00273	-0.00272
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	0.00533	0.00544	0.00535
	(A1 * A2 * B1 * !Y)	-0.00274	-0.00279	-0.00274
	(A1 * A2 * !B1 * !Y)	0.00510	0.00514	0.00512
	(A1 * A2 * !B1 * !Y)	-0.00273	-0.00274	-0.00273
	(A1 * !A2 * !B1 * Y)	0.00450	0.00451	0.00452
	(A1 * !A2 * !B1 * Y)	-0.00548	-0.00548	-0.00549
	(!A1 * !B1 * Y)	0.00451	0.00452	0.00452
	(!A1 * !B1 * Y)	-0.00548	-0.00548	-0.00549

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)	-0.00134	-0.00136	-0.00146
	(A1 * A2 * B1 * !Y)	0.00081	0.00082	0.00073
	(A1 * A2 * !B1 * !Y)	-0.00139	-0.00142	-0.00142
	(A1 * A2 * !B1 * !Y)	0.00071	0.00071	0.00071
	(A1 * !A2 * !B1 * Y)	-0.00114	-0.00121	-0.00120
	(A1 * !A2 * !B1 * Y)	0.00151	0.00148	0.00147
	(!A1 * !B1 * Y)	-0.00114	-0.00120	-0.00119
	(!A1 * !B1 * Y)	0.00151	0.00148	0.00147
sky130_fd_sc_hs__a22oi_2	(A1 * A2 * B1 * !Y)	-0.00232	-0.00234	-0.00252
	(A1 * A2 * B1 * !Y)	0.00154	0.00155	0.00140
	(A1 * A2 * !B1 * !Y)	-0.00235	-0.00244	-0.00246
	(A1 * A2 * !B1 * !Y)	0.00135	0.00136	0.00136
	(A1 * !A2 * !B1 * Y)	-0.00203	-0.00218	-0.00217
	(A1 * !A2 * !B1 * Y)	0.00277	0.00275	0.00273
	(!A1 * !B1 * Y)	-0.00203	-0.00218	-0.00217
	(!A1 * !B1 * Y)	0.00277	0.00275	0.00273
sky130_fd_sc_hs__a22oi_4	(A1 * A2 * B1 * !Y)	-0.00491	-0.00496	-0.00530
	(A1 * A2 * B1 * !Y)	0.00310	0.00311	0.00282
	(A1 * A2 * !B1 * !Y)	-0.00494	-0.00512	-0.00512
	(A1 * A2 * !B1 * !Y)	0.00273	0.00274	0.00273
	(A1 * !A2 * !B1 * Y)	-0.00425	-0.00451	-0.00452
	(A1 * !A2 * !B1 * Y)	0.00561	0.00554	0.00550
	(!A1 * !B1 * Y)	-0.00425	-0.00452	-0.00452
	(!A1 * !B1 * Y)	0.00561	0.00554	0.00550

SKY130_FD_SC_HS__A22Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00253	0.00231	0.00247	0.00253	1.14919
sky130_fd_sc_hs__a22o_2	0.00263	0.00241	0.00259	0.00252	2.20478
sky130_fd_sc_hs__a22o_4	0.00445	0.00469	0.00446	0.00493	4.45127

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__a22o_1	0.00000	0.04889	0.11629
sky130_fd_sc_hs__a22o_2	0.00000	0.06702	0.11694
sky130_fd_sc_hs__a22o_4	0.00000	0.13484	0.23389

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)	0.07273	0.55973	5.77807
	A2->X (RR)	0.07689	0.56169	5.83164
	B1->X (RR)	0.06212	0.52984	5.88623
	B2->X (RR)	0.06577	0.53811	5.90501
sky130_fd_sc_hs__a22o_2	A1->X (RR)	0.07326	0.48580	5.82778
	A2->X (RR)	0.07751	0.48171	5.85736
	B1->X (RR)	0.06241	0.45587	5.87299
	B2->X (RR)	0.06559	0.45941	5.89210
sky130_fd_sc_hs__a22o_4	A1->X (RR)	0.07004	0.39004	5.75540
	A2->X (RR)	0.07463	0.39846	5.80233
	B1->X (RR)	0.06174	0.36608	5.80490
	B2->X (RR)	0.06554	0.37383	5.84119

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a22o_1	A1->X (FF)	0.13460	0.58579	4.85412
	A2->X (FF)	0.14638	0.61581	4.90836
	B1->X (FF)	0.11598	0.55951	4.78009
	B2->X (FF)	0.12498	0.57580	4.75732
sky130_fd_sc_hs__a22o_2	A1->X (FF)	0.16306	0.60679	4.85262
	A2->X (FF)	0.17667	0.63907	4.95281
	B1->X (FF)	0.14652	0.58889	4.75174
	B2->X (FF)	0.15401	0.60296	4.76598
sky130_fd_sc_hs__a22o_4	A1->X (FF)	0.15816	0.58356	5.10443
	A2->X (FF)	0.16873	0.60491	5.15014
	B1->X (FF)	0.14109	0.56504	4.96713
	B2->X (FF)	0.14428	0.56972	4.96587

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00850	0.00871	0.01764
	A1	0.00400	0.00421	0.01320
	A2	0.00937	0.00954	0.01783
	A2	0.00401	0.00417	0.01248
	B1	0.00571	0.00626	0.02357
	B1	0.00253	0.00308	0.02043
	B2	0.00643	0.00672	0.02193
	B2	0.00248	0.00278	0.01801
sky130_fd_sc_hs__a22o_2	A1	0.01047	0.01080	0.01851
	A1	0.00582	0.00617	0.01398
	A2	0.01136	0.01170	0.01875
	A2	0.00574	0.00611	0.01331
	B1	0.00761	0.00822	0.02375
	B1	0.00426	0.00488	0.02049
	B2	0.00838	0.00881	0.02238
	B2	0.00424	0.00467	0.01833
sky130_fd_sc_hs__a22o_4	A1	0.02049	0.02135	0.04344
	A1	0.01181	0.01269	0.03510
	A2	0.02220	0.02287	0.03900
	A2	0.01186	0.01255	0.02913
	B1	0.01487	0.01597	0.05116
	B1	0.00887	0.01001	0.04533
	B2	0.01644	0.01704	0.04930
	B2	0.00864	0.00932	0.04166

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a22o_1	A1	0.00243	0.00226	0.01180
	A1	0.00698	0.00680	0.01587
	A2	0.00289	0.00300	0.01166
	A2	0.00823	0.00834	0.01641
	B1	0.00243	0.00363	0.02274
	B1	0.00560	0.00667	0.02558
	B2	0.00264	0.00375	0.02153
	B2	0.00655	0.00766	0.02512
sky130_fd_sc_hs__a22o_2	A1	0.00438	0.00434	0.01253
	A1	0.00985	0.00971	0.01659
	A2	0.00560	0.00579	0.01355
	A2	0.01142	0.01162	0.01830
	B1	0.00433	0.00583	0.02338
	B1	0.00768	0.00896	0.02611
	B2	0.00464	0.00607	0.02304
	B2	0.01065	0.01142	0.02677
sky130_fd_sc_hs__a22o_4	A1	0.00854	0.00928	0.02826
	A1	0.01732	0.01784	0.03528
	A2	0.00968	0.01022	0.02636
	A2	0.02056	0.02108	0.03520
	B1	0.00850	0.01069	0.04343
	B1	0.01451	0.01650	0.04777
	B2	0.00910	0.01163	0.04546
	B2	0.01678	0.01914	0.05143

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)	0.00132	0.00126	0.00125
	(A2 * B1 * B2 * X)	-0.00109	-0.00119	-0.00119
	(!A2 * B1 * B2 * X)	0.00120	0.00121	0.00120
	(!A2 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * !B2 * !X)	0.00040	0.00040	0.00038
	(!A2 * B1 * !B2 * !X)	-0.00159	-0.00159	-0.00163
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00159	-0.00160	-0.00163
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	0.00143	0.00137	0.00137
	(A2 * B1 * B2 * X)	-0.00108	-0.00118	-0.00118
	(!A2 * B1 * B2 * X)	0.00132	0.00133	0.00133
	(!A2 * B1 * B2 * X)	-0.00120	-0.00121	-0.00120
	(!A2 * B1 * !B2 * !X)	0.00043	0.00043	0.00041
	(!A2 * B1 * !B2 * !X)	-0.00159	-0.00159	-0.00164
	(!A2 * !B1 * !X)	0.00044	0.00044	0.00041
	(!A2 * !B1 * !X)	-0.00159	-0.00160	-0.00164
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	0.00218	0.00204	0.00202
	(A2 * B1 * B2 * X)	-0.00223	-0.00247	-0.00247
	(!A2 * B1 * B2 * X)	0.00192	0.00195	0.00193
	(!A2 * B1 * B2 * X)	-0.00254	-0.00257	-0.00255
	(!A2 * B1 * !B2 * !X)	0.00061	0.00061	0.00059
	(!A2 * B1 * !B2 * !X)	-0.00298	-0.00298	-0.00302
	(!A2 * !B1 * !X)	0.00061	0.00061	0.00059
	(!A2 * !B1 * !X)	-0.00298	-0.00298	-0.00302

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)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * B2 * X)	0.00120	0.00119	0.00119
	(!A2 * B1 * B2 * X)	-0.00114	-0.00120	-0.00120
	(!A2 * B1 * B2 * X)	0.00122	0.00122	0.00122
	(!A2 * B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * B1 * !B2 * !X)	0.00162	0.00166	0.00163
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00162	0.00166	0.00163
sky130_fd_sc_hs__a22o_2	(A2 * B1 * B2 * X)	-0.00136	-0.00137	-0.00136
	(A2 * B1 * B2 * X)	0.00118	0.00119	0.00118
	(!A2 * B1 * B2 * X)	-0.00126	-0.00133	-0.00133
	(!A2 * B1 * B2 * X)	0.00121	0.00123	0.00121
	(!A2 * B1 * !B2 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * B1 * !B2 * !X)	0.00164	0.00167	0.00164
	(!A2 * !B1 * !X)	-0.00040	-0.00040	-0.00040
	(!A2 * !B1 * !X)	0.00164	0.00167	0.00164
sky130_fd_sc_hs__a22o_4	(A2 * B1 * B2 * X)	-0.00201	-0.00201	-0.00201
	(A2 * B1 * B2 * X)	0.00246	0.00247	0.00247
	(!A2 * B1 * B2 * X)	-0.00183	-0.00193	-0.00193
	(!A2 * B1 * B2 * X)	0.00254	0.00258	0.00256
	(!A2 * B1 * !B2 * !X)	-0.00058	-0.00059	-0.00057
	(!A2 * B1 * !B2 * !X)	0.00303	0.00307	0.00303
	(!A2 * !B1 * !X)	-0.00058	-0.00059	-0.00057
	(!A2 * !B1 * !X)	0.00303	0.00307	0.00303

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)	0.00130	0.00124	0.00123
	(A1 * B1 * B2 * X)	-0.00108	-0.00120	-0.00120
	(!A1 * B1 * B2 * X)	0.00119	0.00120	0.00119
	(!A1 * B1 * B2 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * B1 * !B2 * !X)	0.00116	0.00118	0.00117
	(!A1 * B1 * !B2 * !X)	-0.00122	-0.00123	-0.00122
	(!A1 * !B1 * !X)	0.00116	0.00117	0.00117
	(!A1 * !B1 * !X)	-0.00122	-0.00123	-0.00122
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	0.00131	0.00126	0.00125
	(A1 * B1 * B2 * X)	-0.00114	-0.00124	-0.00124
	(!A1 * B1 * B2 * X)	0.00120	0.00121	0.00120
	(!A1 * B1 * B2 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * B1 * !B2 * !X)	0.00120	0.00121	0.00120
	(!A1 * B1 * !B2 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	0.00260	0.00251	0.00247
	(A1 * B1 * B2 * X)	-0.00220	-0.00244	-0.00243
	(!A1 * B1 * B2 * X)	0.00237	0.00241	0.00238
	(!A1 * B1 * B2 * X)	-0.00248	-0.00251	-0.00249
	(!A1 * B1 * !B2 * !X)	0.00231	0.00234	0.00232
	(!A1 * B1 * !B2 * !X)	-0.00253	-0.00255	-0.00254
	(!A1 * !B1 * !X)	0.00231	0.00234	0.00232
	(!A1 * !B1 * !X)	-0.00254	-0.00256	-0.00254

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)	-0.00123	-0.00123	-0.00123
	(A1 * B1 * B2 * X)	0.00119	0.00120	0.00120
	(!A1 * B1 * B2 * X)	-0.00114	-0.00119	-0.00119
	(!A1 * B1 * B2 * X)	0.00122	0.00124	0.00122
	(!A1 * B1 * !B2 * !X)	-0.00112	-0.00118	-0.00117
	(!A1 * B1 * !B2 * !X)	0.00124	0.00124	0.00123
	(!A1 * !B1 * !X)	-0.00112	-0.00117	-0.00117
	(!A1 * !B1 * !X)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__a22o_2	(A1 * B1 * B2 * X)	-0.00125	-0.00125	-0.00125
	(A1 * B1 * B2 * X)	0.00124	0.00125	0.00124
	(!A1 * B1 * B2 * X)	-0.00115	-0.00120	-0.00120
	(!A1 * B1 * B2 * X)	0.00126	0.00128	0.00127
	(!A1 * B1 * !B2 * !X)	-0.00115	-0.00121	-0.00120
	(!A1 * B1 * !B2 * !X)	0.00129	0.00128	0.00127
	(!A1 * !B1 * !X)	-0.00114	-0.00121	-0.00120
	(!A1 * !B1 * !X)	0.00127	0.00128	0.00127
sky130_fd_sc_hs__a22o_4	(A1 * B1 * B2 * X)	-0.00247	-0.00247	-0.00246
	(A1 * B1 * B2 * X)	0.00242	0.00244	0.00243
	(!A1 * B1 * B2 * X)	-0.00230	-0.00240	-0.00238
	(!A1 * B1 * B2 * X)	0.00249	0.00252	0.00250
	(!A1 * B1 * !B2 * !X)	-0.00221	-0.00234	-0.00232
	(!A1 * B1 * !B2 * !X)	0.00260	0.00257	0.00255
	(!A1 * !B1 * !X)	-0.00221	-0.00234	-0.00232
	(!A1 * !B1 * !X)	0.00260	0.00257	0.00255

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)	0.00119	0.00121	0.00120
	(A1 * A2 * B2 * X)	-0.00064	-0.00065	-0.00064
	(A1 * A2 * !B2 * X)	0.00115	0.00115	0.00115
	(A1 * A2 * !B2 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00147	-0.00147	-0.00148
	(!A1 * !B2 * !X)	0.00036	0.00036	0.00035
	(!A1 * !B2 * !X)	-0.00147	-0.00147	-0.00148
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	0.00132	0.00134	0.00133
	(A1 * A2 * B2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * !B2 * X)	0.00128	0.00129	0.00128
	(A1 * A2 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B2 * !X)	0.00037	0.00037	0.00036
	(A1 * !A2 * !B2 * !X)	-0.00150	-0.00150	-0.00152
	(!A1 * !B2 * !X)	0.00038	0.00038	0.00037
	(!A1 * !B2 * !X)	-0.00149	-0.00150	-0.00152
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	0.00222	0.00224	0.00222
	(A1 * A2 * B2 * X)	-0.00125	-0.00126	-0.00125
	(A1 * A2 * !B2 * X)	0.00214	0.00215	0.00214
	(A1 * A2 * !B2 * X)	-0.00124	-0.00126	-0.00125
	(A1 * !A2 * !B2 * !X)	0.00063	0.00064	0.00062
	(A1 * !A2 * !B2 * !X)	-0.00282	-0.00285	-0.00288
	(!A1 * !B2 * !X)	0.00063	0.00064	0.00062
	(!A1 * !B2 * !X)	-0.00282	-0.00285	-0.00288

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)	-0.00111	-0.00112	-0.00119
	(A1 * A2 * B2 * X)	0.00072	0.00072	0.00066
	(A1 * A2 * !B2 * X)	-0.00112	-0.00115	-0.00115
	(A1 * A2 * !B2 * X)	0.00064	0.00064	0.00064
	(A1 * !A2 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(A1 * !A2 * !B2 * !X)	0.00148	0.00151	0.00148
	(!A1 * !B2 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !B2 * !X)	0.00148	0.00150	0.00148
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B2 * X)	-0.00124	-0.00125	-0.00132
	(A1 * A2 * B2 * X)	0.00071	0.00071	0.00065
	(A1 * A2 * !B2 * X)	-0.00123	-0.00128	-0.00128
	(A1 * A2 * !B2 * X)	0.00063	0.00063	0.00063
	(A1 * !A2 * !B2 * !X)	-0.00035	-0.00036	-0.00035
	(A1 * !A2 * !B2 * !X)	0.00151	0.00154	0.00152
	(!A1 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(!A1 * !B2 * !X)	0.00151	0.00154	0.00152
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B2 * X)	-0.00202	-0.00205	-0.00220
	(A1 * A2 * B2 * X)	0.00140	0.00142	0.00129
	(A1 * A2 * !B2 * X)	-0.00205	-0.00215	-0.00214
	(A1 * A2 * !B2 * X)	0.00124	0.00126	0.00125
	(A1 * !A2 * !B2 * !X)	-0.00061	-0.00062	-0.00060
	(A1 * !A2 * !B2 * !X)	0.00289	0.00292	0.00288
	(!A1 * !B2 * !X)	-0.00061	-0.00062	-0.00060
	(!A1 * !B2 * !X)	0.00289	0.00292	0.00288

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)	0.00126	0.00126	0.00125
	(A1 * A2 * B1 * X)	-0.00071	-0.00071	-0.00070
	(A1 * A2 * !B1 * X)	0.00120	0.00121	0.00121
	(A1 * A2 * !B1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * !A2 * !B1 * !X)	0.00102	0.00104	0.00103
	(A1 * !A2 * !B1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !B1 * !X)	0.00109	0.00111	0.00109
	(!A1 * !B1 * !X)	-0.00129	-0.00130	-0.00129
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	0.00131	0.00131	0.00130
	(A1 * A2 * B1 * X)	-0.00067	-0.00067	-0.00066
	(A1 * A2 * !B1 * X)	0.00125	0.00125	0.00125
	(A1 * A2 * !B1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * !A2 * !B1 * !X)	0.00112	0.00114	0.00113
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !X)	0.00115	0.00117	0.00116
	(!A1 * !B1 * !X)	-0.00123	-0.00125	-0.00124
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	0.00243	0.00245	0.00243
	(A1 * A2 * B1 * X)	-0.00140	-0.00140	-0.00138
	(A1 * A2 * !B1 * X)	0.00233	0.00236	0.00234
	(A1 * A2 * !B1 * X)	-0.00137	-0.00139	-0.00138
	(A1 * !A2 * !B1 * !X)	0.00187	0.00190	0.00187
	(A1 * !A2 * !B1 * !X)	-0.00284	-0.00286	-0.00284
	(!A1 * !B1 * !X)	0.00187	0.00190	0.00187
	(!A1 * !B1 * !X)	-0.00284	-0.00286	-0.00284

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)	-0.00116	-0.00117	-0.00124
	(A1 * A2 * B1 * X)	0.00078	0.00078	0.00072
	(A1 * A2 * !B1 * X)	-0.00118	-0.00121	-0.00121
	(A1 * A2 * !B1 * X)	0.00070	0.00070	0.00070
	(A1 * !A2 * !B1 * !X)	-0.00097	-0.00103	-0.00103
	(A1 * !A2 * !B1 * !X)	0.00136	0.00133	0.00130
	(!A1 * !B1 * !X)	-0.00104	-0.00110	-0.00109
	(!A1 * !B1 * !X)	0.00134	0.00132	0.00130
sky130_fd_sc_hs__a22o_2	(A1 * A2 * B1 * X)	-0.00121	-0.00122	-0.00129
	(A1 * A2 * B1 * X)	0.00074	0.00074	0.00068
	(A1 * A2 * !B1 * X)	-0.00121	-0.00125	-0.00125
	(A1 * A2 * !B1 * X)	0.00066	0.00066	0.00066
	(A1 * !A2 * !B1 * !X)	-0.00106	-0.00113	-0.00113
	(A1 * !A2 * !B1 * !X)	0.00127	0.00125	0.00124
	(!A1 * !B1 * !X)	-0.00111	-0.00116	-0.00116
	(!A1 * !B1 * !X)	0.00128	0.00125	0.00124
sky130_fd_sc_hs__a22o_4	(A1 * A2 * B1 * X)	-0.00223	-0.00225	-0.00240
	(A1 * A2 * B1 * X)	0.00155	0.00155	0.00142
	(A1 * A2 * !B1 * X)	-0.00228	-0.00235	-0.00234
	(A1 * A2 * !B1 * X)	0.00139	0.00139	0.00138
	(A1 * !A2 * !B1 * !X)	-0.00178	-0.00189	-0.00187
	(A1 * !A2 * !B1 * !X)	0.00292	0.00287	0.00285
	(!A1 * !B1 * !X)	-0.00178	-0.00188	-0.00187
	(!A1 * !B1 * !X)	0.00292	0.00287	0.00285

SKY130_FD_SC_HS__A2BB2OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00218	0.00237	0.00249	0.00269	0.51508
sky130_fd_sc_hs__a2bb2oi_2	0.00239	0.00249	0.00484	0.00490	1.03695
sky130_fd_sc_hs__a2bb2oi_4	0.00370	0.00391	0.00962	0.00985	1.86876

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2oi_1	0.00000	0.03147	0.08130
sky130_fd_sc_hs__a2bb2oi_2	0.00000	0.04296	0.10479
sky130_fd_sc_hs__a2bb2oi_4	0.00000	0.08496	0.20959

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)	0.09986	0.75058	6.13500
	A2_N->Y (RR)	0.09549	0.73154	6.20662
	B1->Y (FR)	0.09666	1.03354	11.43290
	B2->Y (FR)	0.07482	0.97032	10.97100
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (RR)	0.08947	0.58852	6.00763
	A2_N->Y (RR)	0.08595	0.57670	6.08953
	B1->Y (FR)	0.08814	0.87690	11.40580
	B2->Y (FR)	0.06499	0.84169	11.21010
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (RR)	0.10665	0.55514	6.31684
	A2_N->Y (RR)	0.09880	0.52999	6.36275
	B1->Y (FR)	0.08774	0.76286	11.17080
	B2->Y (FR)	0.06307	0.72315	10.85650

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)	0.09921	0.46511	3.30507
	A2_N->Y (FF)	0.08875	0.43755	3.12391
	B1->Y (RF)	0.02342	0.31284	3.36908
	B2->Y (RF)	0.02070	0.32516	3.55096
sky130_fd_sc_hs__a2bb2oi_2	A1_N->Y (FF)	0.12568	0.50531	3.59648
	A2_N->Y (FF)	0.11436	0.48166	3.36947
	B1->Y (RF)	0.02440	0.29078	3.74161
	B2->Y (RF)	0.01967	0.30639	4.03216
sky130_fd_sc_hs__a2bb2oi_4	A1_N->Y (FF)	0.12704	0.48224	3.29082
	A2_N->Y (FF)	0.10810	0.44621	3.17489
	B1->Y (RF)	0.02380	0.23644	3.51545
	B2->Y (RF)	0.01989	0.26634	4.07139

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	0.00705	0.00727	0.01645
	A1_N	0.00459	0.00482	0.01407
	A2_N	0.00592	0.00614	0.02282
	A2_N	0.00399	0.00422	0.02095
	B1	0.00111	0.00102	0.00191
	B1	0.00499	0.00486	0.00578
	B2	0.00064	0.00055	0.00144
	B2	0.00386	0.00377	0.00467
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.01040	0.01077	0.02196
	A1_N	0.00878	0.00914	0.02049
	A2_N	0.00904	0.00937	0.02778
	A2_N	0.00808	0.00841	0.02695
	B1	0.00257	0.00234	0.00400
	B1	0.01031	0.01010	0.01174
	B2	0.00132	0.00117	0.00287
	B2	0.00741	0.00727	0.00890
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01863	0.01873	0.03266
	A1_N	0.01688	0.01700	0.03116
	A2_N	0.01612	0.01646	0.04361
	A2_N	0.01538	0.01572	0.04308
	B1	0.00468	0.00422	0.00771
	B1	0.02032	0.01991	0.02337
	B2	0.00256	0.00222	0.00579
	B2	0.01491	0.01460	0.01831

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2oi_1	A1_N	0.00380	0.00396	0.01210
	A1_N	0.00617	0.00633	0.01447
	A2_N	0.00376	0.00466	0.01954
	A2_N	0.00559	0.00645	0.02136
	B1	0.00483	0.00476	0.00542
	B1	0.00096	0.00085	0.00153
	B2	0.00413	0.00407	0.00521
	B2	0.00096	0.00088	0.00191
sky130_fd_sc_hs__a2bb2oi_2	A1_N	0.00644	0.00690	0.01586
	A1_N	0.00786	0.00820	0.01727
	A2_N	0.00660	0.00763	0.02285
	A2_N	0.00736	0.00835	0.02359
	B1	0.00926	0.00904	0.01040
	B1	0.00150	0.00124	0.00250
	B2	0.00751	0.00734	0.00926
	B2	0.00153	0.00130	0.00325
sky130_fd_sc_hs__a2bb2oi_4	A1_N	0.01356	0.01436	0.02455
	A1_N	0.01497	0.01564	0.02589
	A2_N	0.01319	0.01490	0.04164
	A2_N	0.01354	0.01518	0.04192
	B1	0.01830	0.01784	0.02064
	B1	0.00265	0.00210	0.00485
	B2	0.01485	0.01444	0.01919
	B2	0.00268	0.00221	0.00617

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)	0.00111	0.00099	0.00097
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00111	-0.00126	-0.00126
	(!A2_N * B1 * B2 * !Y)	0.00463	0.00466	0.01353
	(!A2_N * B1 * B2 * !Y)	0.00109	0.00112	0.01001
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00142	0.00129	0.00127
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00107	-0.00121	-0.00122
	(!A2_N * B1 * B2 * !Y)	0.00585	0.00605	0.01682
	(!A2_N * B1 * B2 * !Y)	0.00200	0.00219	0.01300
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00161	0.00136	0.00133
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00214	-0.00249	-0.00249
	(!A2_N * B1 * B2 * !Y)	0.01007	0.01001	0.02378
	(!A2_N * B1 * B2 * !Y)	0.00385	0.00376	0.01761

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)	-0.00096	-0.00097	-0.00096
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00126	0.00126	0.00126
	(!A2_N * B1 * B2 * !Y)	0.00123	0.00123	0.00959
	(!A2_N * B1 * B2 * !Y)	0.00473	0.00474	0.01310
sky130_fd_sc_hs__a2bb2oi_2	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00127	-0.00127	-0.00126
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00121	0.00122	0.00122
	(!A2_N * B1 * B2 * !Y)	0.00215	0.00210	0.01158
	(!A2_N * B1 * B2 * !Y)	0.00596	0.00593	0.01539
sky130_fd_sc_hs__a2bb2oi_4	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	-0.00133	-0.00133	-0.00132
	(A2_N * B1 * B2 * !Y) + (A2_N * B1 * !B2 * Y) + (A2_N * !B1 * Y)	0.00248	0.00250	0.00249
	(!A2_N * B1 * B2 * !Y)	0.00503	0.00487	0.01779
	(!A2_N * B1 * B2 * !Y)	0.01118	0.01102	0.02394

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)	0.00114	0.00116	0.00115
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00066	-0.00066	-0.00066
	(!A1_N * B1 * B2 * !Y)	0.00356	0.00378	0.02024
	(!A1_N * B1 * B2 * !Y)	0.00056	0.00076	0.01724
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00128	0.00129	0.00128
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00066	-0.00066	-0.00066
	(!A1_N * B1 * B2 * !Y)	0.00465	0.00493	0.02341
	(!A1_N * B1 * B2 * !Y)	0.00144	0.00172	0.02022
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00182	0.00184	0.00183
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00134	-0.00135	-0.00134
	(!A1_N * B1 * B2 * !Y)	0.00741	0.00745	0.03374
	(!A1_N * B1 * B2 * !Y)	0.00217	0.00218	0.02850

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)	-0.00111	-0.00112	-0.00114
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00069	0.00069	0.00067
	(!A1_N * B1 * B2 * !Y)	0.00119	0.00194	0.01844
	(!A1_N * B1 * B2 * !Y)	0.00418	0.00494	0.02143
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00124	-0.00125	-0.00127
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00069	0.00069	0.00067
	(!A1_N * B1 * B2 * !Y)	0.00231	0.00298	0.02106
	(!A1_N * B1 * B2 * !Y)	0.00549	0.00616	0.02424
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	-0.00171	-0.00172	-0.00181
	(A1_N * B1 * B2 * !Y) + (A1_N * B1 * !B2 * Y) + (A1_N * !B1 * Y)	0.00145	0.00145	0.00137
	(!A1_N * B1 * B2 * !Y)	0.00462	0.00565	0.03269
	(!A1_N * B1 * B2 * !Y)	0.00983	0.01085	0.03790

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)	0.00119	0.00120	0.00119
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00136	-0.00137	-0.00136
	(!A1_N * !A2_N * B2 * !Y)	0.00132	0.00126	0.00125
	(!A1_N * !A2_N * B2 * !Y)	-0.00123	-0.00134	-0.00134
	(!A1_N * !A2_N * !B2 * !Y)	0.00120	0.00121	0.00120
	(!A1_N * !A2_N * !B2 * !Y)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00229	0.00231	0.00230
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00275	-0.00277	-0.00276
	(!A1_N * !A2_N * B2 * !Y)	0.00255	0.00244	0.00241
	(!A1_N * !A2_N * B2 * !Y)	-0.00253	-0.00272	-0.00271
	(!A1_N * !A2_N * !B2 * !Y)	0.00230	0.00233	0.00231
	(!A1_N * !A2_N * !B2 * !Y)	-0.00275	-0.00277	-0.00276
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00455	0.00459	0.00456
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00552	-0.00555	-0.00553
	(!A1_N * !A2_N * B2 * !Y)	0.00516	0.00488	0.00481
	(!A1_N * !A2_N * B2 * !Y)	-0.00501	-0.00546	-0.00543
	(!A1_N * !A2_N * !B2 * !Y)	0.00455	0.00457	0.00457
	(!A1_N * !A2_N * !B2 * !Y)	-0.00552	-0.00553	-0.00553

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)	-0.00114	-0.00120	-0.00119
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00139	0.00138	0.00136
	(!A1_N * !A2_N * B2 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1_N * !A2_N * B2 * !Y)	0.00134	0.00134	0.00134
	(!A1_N * !A2_N * !B2 * !Y)	-0.00116	-0.00121	-0.00120
	(!A1_N * !A2_N * !B2 * !Y)	0.00137	0.00138	0.00136
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00216	-0.00230	-0.00230
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00283	0.00280	0.00277
	(!A1_N * !A2_N * B2 * !Y)	-0.00241	-0.00241	-0.00240
	(!A1_N * !A2_N * B2 * !Y)	0.00271	0.00272	0.00271
	(!A1_N * !A2_N * !B2 * !Y)	-0.00220	-0.00228	-0.00231
	(!A1_N * !A2_N * !B2 * !Y)	0.00276	0.00277	0.00277
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	-0.00428	-0.00459	-0.00456
	(A1_N * !B2 * Y) + (!A1_N * A2_N * !B2 * Y)	0.00570	0.00561	0.00555
	(!A1_N * !A2_N * B2 * !Y)	-0.00480	-0.00482	-0.00480
	(!A1_N * !A2_N * B2 * !Y)	0.00541	0.00546	0.00543
	(!A1_N * !A2_N * !B2 * !Y)	-0.00439	-0.00456	-0.00457
	(!A1_N * !A2_N * !B2 * !Y)	0.00554	0.00556	0.00555

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)	0.00050	0.00050	0.00049
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00163	-0.00164	-0.00166
	(!A1_N * !A2_N * B1 * !Y)	0.00132	0.00126	0.00124
	(!A1_N * !A2_N * B1 * !Y)	-0.00134	-0.00144	-0.00144
	(!A1_N * !A2_N * !B1 * !Y)	0.00118	0.00120	0.00119
	(!A1_N * !A2_N * !B1 * !Y)	-0.00146	-0.00147	-0.00146
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00083	0.00083	0.00079
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00320	-0.00321	-0.00326
	(!A1_N * !A2_N * B1 * !Y)	0.00252	0.00242	0.00240
	(!A1_N * !A2_N * B1 * !Y)	-0.00250	-0.00269	-0.00269
	(!A1_N * !A2_N * !B1 * !Y)	0.00230	0.00234	0.00231
	(!A1_N * !A2_N * !B1 * !Y)	-0.00272	-0.00275	-0.00273
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00155	0.00156	0.00149
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00655	-0.00656	-0.00666
	(!A1_N * !A2_N * B1 * !Y)	0.00510	0.00484	0.00478
	(!A1_N * !A2_N * B1 * !Y)	-0.00501	-0.00548	-0.00545
	(!A1_N * !A2_N * !B1 * !Y)	0.00457	0.00463	0.00459
	(!A1_N * !A2_N * !B1 * !Y)	-0.00554	-0.00559	-0.00555

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)	-0.00049	-0.00049	-0.00048
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00167	0.00169	0.00166
	(!A1_N * !A2_N * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A1_N * !A2_N * B1 * !Y)	0.00143	0.00144	0.00144
	(!A1_N * !A2_N * !B1 * !Y)	-0.00114	-0.00119	-0.00119
	(!A1_N * !A2_N * !B1 * !Y)	0.00146	0.00147	0.00147
sky130_fd_sc_hs__a2bb2oi_2	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00078	-0.00079	-0.00078
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00327	0.00332	0.00327
	(!A1_N * !A2_N * B1 * !Y)	-0.00240	-0.00240	-0.00240
	(!A1_N * !A2_N * B1 * !Y)	0.00269	0.00269	0.00269
	(!A1_N * !A2_N * !B1 * !Y)	-0.00217	-0.00231	-0.00231
	(!A1_N * !A2_N * !B1 * !Y)	0.00273	0.00275	0.00274
sky130_fd_sc_hs__a2bb2oi_4	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	-0.00147	-0.00149	-0.00146
	(A1_N * !B1 * Y) + (!A1_N * A2_N * !B1 * Y)	0.00668	0.00679	0.00667
	(!A1_N * !A2_N * B1 * !Y)	-0.00478	-0.00479	-0.00477
	(!A1_N * !A2_N * B1 * !Y)	0.00546	0.00548	0.00545
	(!A1_N * !A2_N * !B1 * !Y)	-0.00432	-0.00459	-0.00459
	(!A1_N * !A2_N * !B1 * !Y)	0.00555	0.00559	0.00557

SKY130_FD_SC_HS__A2BB2Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00215	0.00223	0.00235	0.00228	1.13148
sky130_fd_sc_hs__a2bb2o_2	0.00227	0.00233	0.00246	0.00266	1.95729
sky130_fd_sc_hs__a2bb2o_4	0.00245	0.00261	0.00444	0.00448	4.21646

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a2bb2o_1	0.00000	0.05835	0.09809
sky130_fd_sc_hs__a2bb2o_2	0.00000	0.07632	0.12397
sky130_fd_sc_hs__a2bb2o_4	0.00000	0.12411	0.16534

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)	0.14274	0.81635	8.66653
	A2_N->X (FR)	0.13083	0.78552	8.47292
	B1->X (RR)	0.06645	0.53672	5.64488
	B2->X (RR)	0.06271	0.52354	5.59272
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (FR)	0.14841	0.73727	8.58268
	A2_N->X (FR)	0.13633	0.70777	8.42456
	B1->X (RR)	0.06500	0.46469	5.63445
	B2->X (RR)	0.06243	0.45814	5.58832
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (FR)	0.18338	0.71767	8.94766
	A2_N->X (FR)	0.17279	0.69134	8.75177
	B1->X (RR)	0.07412	0.39526	5.75159
	B2->X (RR)	0.06954	0.38605	5.70676

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)	0.13571	0.32993	1.36607
	A2_N->X (RF)	0.12963	0.31367	1.38035
	B1->X (FF)	0.13184	0.57968	4.69904
	B2->X (FF)	0.11153	0.54574	4.64771
sky130_fd_sc_hs__a2bb2o_2	A1_N->X (RF)	0.16203	0.33712	1.18505
	A2_N->X (RF)	0.15603	0.31645	1.18715
	B1->X (FF)	0.15801	0.59907	4.60886
	B2->X (FF)	0.13904	0.56875	4.53168
sky130_fd_sc_hs__a2bb2o_4	A1_N->X (RF)	0.15858	0.31302	1.40228
	A2_N->X (RF)	0.15122	0.29551	1.41273
	B1->X (FF)	0.16094	0.58195	4.93458
	B2->X (FF)	0.13856	0.54636	4.87897

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	0.00649	0.00665	0.01504
	A1_N	0.00867	0.00882	0.01754
	A2_N	0.00643	0.00731	0.02468
	A2_N	0.00803	0.00891	0.02670
	B1	0.00742	0.00758	0.01584
	B1	0.00353	0.00369	0.01206
	B2	0.00658	0.00683	0.01782
	B2	0.00353	0.00380	0.01494
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.00844	0.00896	0.01690
	A1_N	0.01081	0.01135	0.01949
	A2_N	0.00847	0.00966	0.02701
	A2_N	0.01016	0.01135	0.03222
	B1	0.00952	0.00991	0.01726
	B1	0.00560	0.00602	0.01364
	B2	0.00879	0.00928	0.01878
	B2	0.00561	0.00611	0.01595
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01393	0.01484	0.02289
	A1_N	0.01561	0.01661	0.02518
	A2_N	0.01384	0.01546	0.03177
	A2_N	0.01482	0.01650	0.03338
	B1	0.01741	0.01817	0.03399
	B1	0.01010	0.01087	0.02693
	B2	0.01586	0.01678	0.03774
	B2	0.01010	0.01105	0.03236

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a2bb2o_1	A1_N	0.00943	0.00960	0.01842
	A1_N	0.00720	0.00736	0.01619
	A2_N	0.00815	0.00854	0.02508
	A2_N	0.00649	0.00685	0.02339
	B1	0.00359	0.00370	0.01181
	B1	0.00746	0.00757	0.01534
	B2	0.00341	0.00352	0.01301
	B2	0.00647	0.00651	0.01571
sky130_fd_sc_hs__a2bb2o_2	A1_N	0.01145	0.01186	0.02043
	A1_N	0.00902	0.00943	0.01800
	A2_N	0.01019	0.01076	0.02712
	A2_N	0.00842	0.00897	0.02534
	B1	0.00553	0.00580	0.01289
	B1	0.00942	0.00969	0.01671
	B2	0.00522	0.00542	0.01349
	B2	0.00843	0.00863	0.01634
sky130_fd_sc_hs__a2bb2o_4	A1_N	0.01945	0.02023	0.03075
	A1_N	0.01767	0.01841	0.02894
	A2_N	0.01790	0.01905	0.03697
	A2_N	0.01673	0.01786	0.03552
	B1	0.01182	0.01232	0.02829
	B1	0.01909	0.01954	0.03403
	B2	0.01092	0.01158	0.02984
	B2	0.01672	0.01719	0.03384

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)	0.00119	0.00106	0.00104
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00103	-0.00118	-0.00118
	(!A2_N * B1 * B2 * X)	0.00446	0.00450	0.01337
	(!A2_N * B1 * B2 * X)	0.00108	0.00111	0.01000
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00123	0.00109	0.00108
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00109	-0.00125	-0.00126
	(!A2_N * B1 * B2 * X)	0.00457	0.00469	0.01337
	(!A2_N * B1 * B2 * X)	0.00100	0.00111	0.00981
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00134	0.00122	0.00120
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00118	-0.00134	-0.00134
	(!A2_N * B1 * B2 * X)	0.00591	0.00596	0.01574
	(!A2_N * B1 * B2 * X)	0.00193	0.00199	0.01179

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)	-0.00103	-0.00104	-0.00103
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00118	0.00119	0.00118
	(!A2_N * B1 * B2 * X)	0.00122	0.00123	0.00959
	(!A2_N * B1 * B2 * X)	0.00458	0.00461	0.01296
sky130_fd_sc_hs__a2bb2o_2	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00107	-0.00107	-0.00107
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00125	0.00126	0.00126
	(!A2_N * B1 * B2 * X)	0.00113	0.00113	0.00940
	(!A2_N * B1 * B2 * X)	0.00467	0.00468	0.01295
sky130_fd_sc_hs__a2bb2o_4	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	-0.00119	-0.00120	-0.00119
	(A2_N * B1 * B2 * X) + (A2_N * B1 * !B2 * !X) + (A2_N * !B1 * !X)	0.00132	0.00134	0.00134
	(!A2_N * B1 * B2 * X)	0.00102	0.00094	0.00952
	(!A2_N * B1 * B2 * X)	0.00496	0.00488	0.01346

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)	0.00114	0.00115	0.00114
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1_N * B1 * B2 * X)	0.00332	0.00358	0.01993
	(!A1_N * B1 * B2 * X)	0.00050	0.00074	0.01710
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00115	0.00116	0.00115
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1_N * B1 * B2 * X)	0.00340	0.00364	0.01997
	(!A1_N * B1 * B2 * X)	0.00048	0.00071	0.01705
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00135	0.00136	0.00135
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00069	-0.00070	-0.00069
	(!A1_N * B1 * B2 * X)	0.00471	0.00492	0.02133
	(!A1_N * B1 * B2 * X)	0.00134	0.00153	0.01796

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)	-0.00110	-0.00111	-0.00114
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00066	0.00066	0.00063
	(!A1_N * B1 * B2 * X)	0.00119	0.00195	0.01830
	(!A1_N * B1 * B2 * X)	0.00401	0.00478	0.02112
sky130_fd_sc_hs__a2bb2o_2	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00112	-0.00112	-0.00115
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00066	0.00066	0.00063
	(!A1_N * B1 * B2 * X)	0.00115	0.00187	0.01823
	(!A1_N * B1 * B2 * X)	0.00405	0.00478	0.02114
sky130_fd_sc_hs__a2bb2o_4	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	-0.00131	-0.00132	-0.00134
	(A1_N * B1 * B2 * X) + (A1_N * B1 * !B2 * !X) + (A1_N * !B1 * !X)	0.00073	0.00073	0.00070
	(!A1_N * B1 * B2 * X)	0.00100	0.00155	0.01761
	(!A1_N * B1 * B2 * X)	0.00434	0.00490	0.02096

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)	0.00126	0.00127	0.00126
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00124	-0.00125	-0.00125
	(!A1_N * !A2_N * B2 * X)	0.00138	0.00132	0.00130
	(!A1_N * !A2_N * B2 * X)	-0.00115	-0.00124	-0.00124
	(!A1_N * !A2_N * !B2 * X)	0.00126	0.00127	0.00126
	(!A1_N * !A2_N * !B2 * X)	-0.00125	-0.00125	-0.00125
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00119	0.00121	0.00120
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00127	-0.00128	-0.00128
	(!A1_N * !A2_N * B2 * X)	0.00134	0.00127	0.00126
	(!A1_N * !A2_N * B2 * X)	-0.00115	-0.00125	-0.00125
	(!A1_N * !A2_N * !B2 * X)	0.00120	0.00121	0.00120
	(!A1_N * !A2_N * !B2 * X)	-0.00127	-0.00128	-0.00128
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00202	0.00204	0.00203
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00255	-0.00256	-0.00256
	(!A1_N * !A2_N * B2 * X)	0.00234	0.00218	0.00215
	(!A1_N * !A2_N * B2 * X)	-0.00229	-0.00252	-0.00252
	(!A1_N * !A2_N * !B2 * X)	0.00204	0.00207	0.00205
	(!A1_N * !A2_N * !B2 * X)	-0.00255	-0.00257	-0.00255

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)	-0.00121	-0.00127	-0.00126
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00128	0.00127	0.00125
	(!A1_N * !A2_N * B2 * X)	-0.00131	-0.00132	-0.00130
	(!A1_N * !A2_N * B2 * X)	0.00123	0.00126	0.00124
	(!A1_N * !A2_N * !B2 * X)	-0.00123	-0.00127	-0.00126
	(!A1_N * !A2_N * !B2 * X)	0.00125	0.00127	0.00125
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00114	-0.00121	-0.00120
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00132	0.00129	0.00128
	(!A1_N * !A2_N * B2 * X)	-0.00126	-0.00125	-0.00126
	(!A1_N * !A2_N * B2 * X)	0.00125	0.00125	0.00125
	(!A1_N * !A2_N * !B2 * X)	-0.00117	-0.00120	-0.00120
	(!A1_N * !A2_N * !B2 * X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	-0.00190	-0.00204	-0.00203
	(A1_N * !B2 * !X) + (!A1_N * A2_N * !B2 * !X)	0.00263	0.00260	0.00257
	(!A1_N * !A2_N * B2 * X)	-0.00213	-0.00214	-0.00214
	(!A1_N * !A2_N * B2 * X)	0.00250	0.00252	0.00252
	(!A1_N * !A2_N * !B2 * X)	-0.00196	-0.00204	-0.00205
	(!A1_N * !A2_N * !B2 * X)	0.00255	0.00257	0.00256

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)	0.00046	0.00046	0.00045
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00144	-0.00144	-0.00146
	(!A1_N * !A2_N * B1 * X)	0.00109	0.00102	0.00101
	(!A1_N * !A2_N * B1 * X)	-0.00124	-0.00136	-0.00136
	(!A1_N * !A2_N * !B1 * X)	0.00096	0.00097	0.00096
	(!A1_N * !A2_N * !B1 * X)	-0.00137	-0.00137	-0.00137
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00045	0.00045	0.00044
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00157	-0.00158	-0.00160
	(!A1_N * !A2_N * B1 * X)	0.00134	0.00125	0.00124
	(!A1_N * !A2_N * B1 * X)	-0.00121	-0.00133	-0.00134
	(!A1_N * !A2_N * !B1 * X)	0.00117	0.00118	0.00117
	(!A1_N * !A2_N * !B1 * X)	-0.00136	-0.00137	-0.00137
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00076	0.00076	0.00074
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00292	-0.00293	-0.00298
	(!A1_N * !A2_N * B1 * X)	0.00232	0.00217	0.00215
	(!A1_N * !A2_N * B1 * X)	-0.00228	-0.00252	-0.00251
	(!A1_N * !A2_N * !B1 * X)	0.00205	0.00206	0.00205
	(!A1_N * !A2_N * !B1 * X)	-0.00255	-0.00257	-0.00255

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)	-0.00044	-0.00045	-0.00044
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00146	0.00149	0.00147
	(!A1_N * !A2_N * B1 * X)	-0.00101	-0.00101	-0.00101
	(!A1_N * !A2_N * B1 * X)	0.00136	0.00136	0.00136
	(!A1_N * !A2_N * !B1 * X)	-0.00093	-0.00096	-0.00096
	(!A1_N * !A2_N * !B1 * X)	0.00138	0.00137	0.00138
sky130_fd_sc_hs__a2bb2o_2	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00044	-0.00044	-0.00043
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00161	0.00163	0.00160
	(!A1_N * !A2_N * B1 * X)	-0.00124	-0.00123	-0.00123
	(!A1_N * !A2_N * B1 * X)	0.00134	0.00133	0.00134
	(!A1_N * !A2_N * !B1 * X)	-0.00113	-0.00117	-0.00117
	(!A1_N * !A2_N * !B1 * X)	0.00136	0.00137	0.00137
sky130_fd_sc_hs__a2bb2o_4	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	-0.00073	-0.00073	-0.00072
	(A1_N * !B1 * !X) + (!A1_N * A2_N * !B1 * !X)	0.00300	0.00303	0.00299
	(!A1_N * !A2_N * B1 * X)	-0.00214	-0.00214	-0.00214
	(!A1_N * !A2_N * B1 * X)	0.00250	0.00252	0.00251
	(!A1_N * !A2_N * !B1 * X)	-0.00194	-0.00204	-0.00205
	(!A1_N * !A2_N * !B1 * X)	0.00255	0.00257	0.00256

SKY130_FD_SC_HS__A311OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00269	0.00273	0.00264	0.00282	0.00267	0.35346
sky130_fd_sc_hs__a311oi_2	0.00508	0.00486	0.00467	0.00401	0.00390	0.65616
sky130_fd_sc_hs__a311oi_4	0.00980	0.00946	0.00947	0.00748	0.00761	1.18185

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311oi_1	0.00000	0.01135	0.03242
sky130_fd_sc_hs__a311oi_2	0.00000	0.02241	0.06484
sky130_fd_sc_hs__a311oi_4	0.00000	0.04483	0.12968

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)	0.14670	1.12547	10.73850
	A2->Y (FR)	0.18343	1.19591	11.07100
	A3->Y (FR)	0.19941	1.19366	10.87650
	B1->Y (FR)	0.15998	1.19421	11.57160
	C1->Y (FR)	0.12587	1.12622	11.15320
sky130_fd_sc_hs__a311oi_2	A1->Y (FR)	0.12444	0.95729	10.62790
	A2->Y (FR)	0.15525	0.99409	10.72490
	A3->Y (FR)	0.18518	1.02760	10.77110
	B1->Y (FR)	0.15950	1.02977	11.35160
	C1->Y (FR)	0.11717	0.95539	10.94250
sky130_fd_sc_hs__a311oi_4	A1->Y (FR)	0.11699	0.81725	10.30820
	A2->Y (FR)	0.15282	0.86371	10.51600
	A3->Y (FR)	0.18863	0.91345	10.70780
	B1->Y (FR)	0.16059	0.91612	11.38400
	C1->Y (FR)	0.11845	0.84909	11.02230

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311oi_1	A1->Y (RF)	0.03088	0.34798	3.20678
	A2->Y (RF)	0.03642	0.34284	3.12195
	A3->Y (RF)	0.03886	0.31127	2.74112
	B1->Y (RF)	0.01960	0.24188	2.18296
	C1->Y (RF)	0.01762	0.23550	2.18646
sky130_fd_sc_hs__a311oi_2	A1->Y (RF)	0.02843	0.34418	3.73832
	A2->Y (RF)	0.03378	0.30749	3.24473
	A3->Y (RF)	0.03786	0.27792	2.80015
	B1->Y (RF)	0.02479	0.31238	3.49036
	C1->Y (RF)	0.01940	0.29698	3.46649
sky130_fd_sc_hs__a311oi_4	A1->Y (RF)	0.02858	0.30784	3.79950
	A2->Y (RF)	0.03473	0.27289	3.26118
	A3->Y (RF)	0.03844	0.23283	2.63961
	B1->Y (RF)	0.02246	0.25620	3.27145
	C1->Y (RF)	0.01868	0.26134	3.55244

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311oi_1	A1	0.00039	0.00019	0.00088
	A1	0.00588	0.00569	0.00641
	A2	0.00085	0.00064	0.00133
	A2	0.00715	0.00695	0.00765
	A3	0.00105	0.00088	0.00158
	A3	0.00816	0.00801	0.00871
	B1	0.00023	0.00010	0.00142
	B1	0.00737	0.00718	0.00837
	C1	0.00015	0.00047	0.00493
	C1	0.00551	0.00577	0.01010
sky130_fd_sc_hs__a311oi_2	A1	-0.00005	-0.00037	0.00089
	A1	0.01002	0.00971	0.01103
	A2	0.00088	0.00055	0.00180
	A2	0.01242	0.01210	0.01340
	A3	0.00193	0.00163	0.00288
	A3	0.01491	0.01462	0.01591
	B1	0.00055	0.00045	0.00188
	B1	0.01287	0.01268	0.01396
	C1	0.00041	0.00103	0.00654
	C1	0.01128	0.01168	0.01666

sky130_fd_sc_hs__a311oi_4	**A1**	-0.00058	-0.00119	0.00148
	A1	0.01903	0.01842	0.02113
	A2	0.00132	0.00058	0.00324
	A2	0.02399	0.02328	0.02603
	A3	0.00313	0.00253	0.00514
	A3	0.02899	0.02845	0.03109
	B1	0.00062	0.00045	0.00353
	B1	0.02469	0.02437	0.02698
	C1	0.00038	0.00098	0.01220
	C1	0.02176	0.02236	0.03208

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311oi_1	**A1**	0.00717	0.00704	0.00814
	A1	0.00180	0.00166	0.00278
	A2	0.00800	0.00784	0.00856
	A2	0.00179	0.00162	0.00233
	A3	0.00883	0.00869	0.00938
	A3	0.00174	0.00159	0.00229
	B1	0.00694	0.00697	0.00826
	B1	0.00068	0.00062	0.00202
	C1	0.00402	0.00406	0.00545
	C1	-0.00005	-0.00002	0.00137

sky130_fd_sc_hs__a311oi_2	**A1**	0.01327	0.01301	0.01500
	A1	0.00351	0.00322	0.00526
	A2	0.01485	0.01455	0.01601
	A2	0.00354	0.00322	0.00462
	A3	0.01640	0.01612	0.01748
	A3	0.00352	0.00320	0.00458
	B1	0.01137	0.01127	0.01293
	B1	0.00105	0.00083	0.00260
	C1	0.00630	0.00641	0.00822
	C1	-0.00091	-0.00085	0.00095
sky130_fd_sc_hs__a311oi_4	**A1**	0.02555	0.02490	0.02947
	A1	0.00651	0.00586	0.00999
	A2	0.02874	0.02809	0.03086
	A2	0.00652	0.00585	0.00873
	A3	0.03214	0.03151	0.03439
	A3	0.00645	0.00579	0.00869
	B1	0.02196	0.02173	0.02519
	B1	0.00167	0.00127	0.00497
	C1	0.01224	0.01245	0.01616
	C1	-0.00190	-0.00181	0.00186

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)**	0.00126	0.00126	0.00125
	(A2 * A3 * B1 * C1 * !Y)	-0.00124	-0.00131	-0.00130
	(A2 * A3 * B1 * !C1 * !Y)	0.00126	0.00126	0.00125
	(A2 * A3 * B1 * !C1 * !Y)	-0.00124	-0.00131	-0.00130
	(A2 * A3 * !B1 * C1 * !Y)	0.00125	0.00125	0.00124
	(A2 * A3 * !B1 * C1 * !Y)	-0.00118	-0.00127	-0.00127
	(A2 * !A3 * B1 * C1 * !Y)	0.00116	0.00116	0.00116
	(A2 * !A3 * B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * B1 * !C1 * !Y)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * !B1 * C1 * !Y)	0.00116	0.00117	0.00116
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * !B1 * !C1 * Y)	0.00037	0.00037	0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00161	-0.00162	-0.00167
	(!A2 * B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(!A2 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A2 * B1 * !C1 * !Y)	0.00119	0.00120	0.00119
	(!A2 * B1 * !C1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A2 * !B1 * C1 * !Y)	0.00119	0.00120	0.00119
	(!A2 * !B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A2 * !B1 * !C1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !C1 * Y)	-0.00164	-0.00165	-0.00167

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	0.00242	0.00245	0.00243
	(A2 * A3 * B1 * C1 * !Y)	-0.00260	-0.00274	-0.00272
	(A2 * A3 * B1 * !C1 * !Y)	0.00243	0.00245	0.00243
	(A2 * A3 * B1 * !C1 * !Y)	-0.00260	-0.00275	-0.00272
	(A2 * A3 * !B1 * C1 * !Y)	0.00244	0.00245	0.00244
	(A2 * A3 * !B1 * C1 * !Y)	-0.00248	-0.00265	-0.00265
	(A2 * !A3 * B1 * C1 * !Y)	0.00229	0.00230	0.00229
	(A2 * !A3 * B1 * C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A2 * !A3 * B1 * !C1 * !Y)	0.00229	0.00230	0.00229
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A2 * !A3 * !B1 * C1 * !Y)	0.00229	0.00230	0.00229
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00281	-0.00281	-0.00280
	(A2 * !A3 * !B1 * !C1 * Y)	0.00081	0.00082	0.00076
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00323	-0.00324	-0.00336
	(!A2 * B1 * C1 * !Y)	0.00233	0.00234	0.00233
	(!A2 * B1 * C1 * !Y)	-0.00280	-0.00281	-0.00280
	(!A2 * B1 * !C1 * !Y)	0.00232	0.00234	0.00233
	(!A2 * B1 * !C1 * !Y)	-0.00279	-0.00281	-0.00280
	(!A2 * !B1 * C1 * !Y)	0.00233	0.00237	0.00235
	(!A2 * !B1 * C1 * !Y)	-0.00280	-0.00283	-0.00280
	(!A2 * !B1 * !C1 * Y)	0.00081	0.00082	0.00079
	(!A2 * !B1 * !C1 * Y)	-0.00331	-0.00332	-0.00337

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	0.00474	0.00480	0.00476
	(A2 * A3 * B1 * C1 * !Y)	-0.00514	-0.00542	-0.00539
	(A2 * A3 * B1 * !C1 * !Y)	0.00475	0.00480	0.00476
	(A2 * A3 * B1 * !C1 * !Y)	-0.00513	-0.00544	-0.00539
	(A2 * A3 * !B1 * C1 * !Y)	0.00480	0.00481	0.00476
	(A2 * A3 * !B1 * C1 * !Y)	-0.00492	-0.00526	-0.00523
	(A2 * !A3 * B1 * C1 * !Y)	0.00449	0.00453	0.00451
	(A2 * !A3 * B1 * C1 * !Y)	-0.00554	-0.00556	-0.00555
	(A2 * !A3 * B1 * !C1 * !Y)	0.00448	0.00451	0.00449
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00553	-0.00556	-0.00554
	(A2 * !A3 * !B1 * C1 * !Y)	0.00446	0.00448	0.00448
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00553	-0.00555	-0.00554
	(A2 * !A3 * !B1 * !C1 * Y)	0.00153	0.00154	0.00143
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00638	-0.00642	-0.00661
	(!A2 * B1 * C1 * !Y)	0.00452	0.00457	0.00455
	(!A2 * B1 * C1 * !Y)	-0.00553	-0.00557	-0.00554
	(!A2 * B1 * !C1 * !Y)	0.00451	0.00456	0.00454
	(!A2 * B1 * !C1 * !Y)	-0.00552	-0.00557	-0.00554
	(!A2 * !B1 * C1 * !Y)	0.00451	0.00457	0.00453
	(!A2 * !B1 * C1 * !Y)	-0.00552	-0.00558	-0.00554
	(!A2 * !B1 * !C1 * Y)	0.00155	0.00156	0.00150
	(!A2 * !B1 * !C1 * Y)	-0.00654	-0.00658	-0.00664

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)**	-0.00124	-0.00125	-0.00125
	(A2 * A3 * B1 * C1 * !Y)	0.00130	0.00131	0.00130
	(A2 * A3 * B1 * !C1 * !Y)	-0.00124	-0.00125	-0.00125
	(A2 * A3 * B1 * !C1 * !Y)	0.00130	0.00131	0.00130
	(A2 * A3 * !B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * A3 * !B1 * C1 * !Y)	0.00127	0.00127	0.00127
	(A2 * !A3 * B1 * C1 * !Y)	-0.00108	-0.00116	-0.00116
	(A2 * !A3 * B1 * C1 * !Y)	0.00134	0.00136	0.00134
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00107	-0.00118	-0.00117
	(A2 * !A3 * B1 * !C1 * !Y)	0.00134	0.00136	0.00134
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00106	-0.00117	-0.00116
	(A2 * !A3 * !B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00035	-0.00036	-0.00035
	(A2 * !A3 * !B1 * !C1 * Y)	0.00167	0.00169	0.00167
	(!A2 * B1 * C1 * !Y)	-0.00115	-0.00119	-0.00119
	(!A2 * B1 * C1 * !Y)	0.00133	0.00134	0.00134
	(!A2 * B1 * !C1 * !Y)	-0.00115	-0.00119	-0.00119
	(!A2 * B1 * !C1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * !B1 * C1 * !Y)	-0.00115	-0.00119	-0.00119
	(!A2 * !B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * !B1 * !C1 * Y)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !C1 * Y)	0.00167	0.00170	0.00167

sky130_fd_sc_hs__a311oi_2	**(A2 * A3 * B1 * C1 * !Y)**	-0.00242	-0.00244	-0.00243
	(A2 * A3 * B1 * C1 * !Y)	0.00271	0.00274	0.00272
	(A2 * A3 * B1 * !C1 * !Y)	-0.00242	-0.00244	-0.00243
	(A2 * A3 * B1 * !C1 * !Y)	0.00271	0.00275	0.00272
	(A2 * A3 * !B1 * C1 * !Y)	-0.00243	-0.00243	-0.00243
	(A2 * A3 * !B1 * C1 * !Y)	0.00264	0.00265	0.00265
	(A2 * !A3 * B1 * C1 * !Y)	-0.00210	-0.00229	-0.00229
	(A2 * !A3 * B1 * C1 * !Y)	0.00282	0.00283	0.00281
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00207	-0.00230	-0.00229
	(A2 * !A3 * B1 * !C1 * !Y)	0.00282	0.00284	0.00281
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00204	-0.00228	-0.00229
	(A2 * !A3 * !B1 * C1 * !Y)	0.00281	0.00283	0.00281
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00076	-0.00076	-0.00075
	(A2 * !A3 * !B1 * !C1 * Y)	0.00338	0.00341	0.00337
	(!A2 * B1 * C1 * !Y)	-0.00224	-0.00234	-0.00233
	(!A2 * B1 * C1 * !Y)	0.00280	0.00286	0.00281
	(!A2 * B1 * !C1 * !Y)	-0.00224	-0.00234	-0.00233
	(!A2 * B1 * !C1 * !Y)	0.00282	0.00282	0.00281
	(!A2 * !B1 * C1 * !Y)	-0.00223	-0.00235	-0.00235
	(!A2 * !B1 * C1 * !Y)	0.00282	0.00283	0.00281
	(!A2 * !B1 * !C1 * Y)	-0.00078	-0.00079	-0.00077
	(!A2 * !B1 * !C1 * Y)	0.00338	0.00343	0.00338

sky130_fd_sc_hs__a311oi_4	**(A2 * A3 * B1 * C1 * !Y)**	-0.00474	-0.00476	-0.00475
	(A2 * A3 * B1 * C1 * !Y)	0.00539	0.00542	0.00539
	(A2 * A3 * B1 * !C1 * !Y)	-0.00475	-0.00477	-0.00475
	(A2 * A3 * B1 * !C1 * !Y)	0.00539	0.00544	0.00539
	(A2 * A3 * !B1 * C1 * !Y)	-0.00476	-0.00477	-0.00475
	(A2 * A3 * !B1 * C1 * !Y)	0.00524	0.00526	0.00523
	(A2 * !A3 * B1 * C1 * !Y)	-0.00403	-0.00452	-0.00451
	(A2 * !A3 * B1 * C1 * !Y)	0.00557	0.00562	0.00556
	(A2 * !A3 * B1 * !C1 * !Y)	-0.00397	-0.00449	-0.00449
	(A2 * !A3 * B1 * !C1 * !Y)	0.00557	0.00560	0.00556
	(A2 * !A3 * !B1 * C1 * !Y)	-0.00388	-0.00448	-0.00448
	(A2 * !A3 * !B1 * C1 * !Y)	0.00557	0.00560	0.00556
	(A2 * !A3 * !B1 * !C1 * Y)	-0.00142	-0.00144	-0.00142
	(A2 * !A3 * !B1 * !C1 * Y)	0.00662	0.00673	0.00665
	(!A2 * B1 * C1 * !Y)	-0.00436	-0.00457	-0.00455
	(!A2 * B1 * C1 * !Y)	0.00555	0.00559	0.00556
	(!A2 * B1 * !C1 * !Y)	-0.00434	-0.00456	-0.00454
	(!A2 * B1 * !C1 * !Y)	0.00554	0.00559	0.00556
	(!A2 * !B1 * C1 * !Y)	-0.00432	-0.00457	-0.00453
	(!A2 * !B1 * C1 * !Y)	0.00552	0.00560	0.00556
	(!A2 * !B1 * !C1 * Y)	-0.00146	-0.00146	-0.00146
	(!A2 * !B1 * !C1 * Y)	0.00662	0.00662	0.00665

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)**	0.00131	0.00131	0.00130
	(A1 * A3 * B1 * C1 * !Y)	-0.00124	-0.00131	-0.00130
	(A1 * A3 * B1 * !C1 * !Y)	0.00131	0.00131	0.00130
	(A1 * A3 * B1 * !C1 * !Y)	-0.00124	-0.00131	-0.00130
	(A1 * A3 * !B1 * C1 * !Y)	0.00131	0.00131	0.00130
	(A1 * A3 * !B1 * C1 * !Y)	-0.00118	-0.00127	-0.00127
	(A1 * !A3 * B1 * C1 * !Y)	0.00123	0.00125	0.00124
	(A1 * !A3 * B1 * C1 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A3 * B1 * !C1 * !Y)	0.00124	0.00126	0.00124
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A3 * !B1 * C1 * !Y)	0.00123	0.00125	0.00124
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A3 * !B1 * !C1 * Y)	0.00045	0.00045	0.00045
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * A3 * B1 * !Y)	0.00125	0.00125	0.00125
	(!A1 * A3 * B1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * A3 * !B1 * C1 * !Y)	0.00124	0.00126	0.00125
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * A3 * !B1 * !C1 * Y)	0.00108	0.00110	0.00108
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00150	-0.00151	-0.00150
	(!A1 * !A3 * B1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * !A3 * B1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00073	0.00074	0.00073
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00051	0.00052	0.00051
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00150	-0.00151	-0.00151

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00239	0.00241	0.00239
	(A1 * A3 * B1 * C1 * !Y)	-0.00256	-0.00269	-0.00269
	(A1 * A3 * B1 * !C1 * !Y)	0.00239	0.00241	0.00239
	(A1 * A3 * B1 * !C1 * !Y)	-0.00256	-0.00268	-0.00269
	(A1 * A3 * !B1 * C1 * !Y)	0.00241	0.00241	0.00240
	(A1 * A3 * !B1 * C1 * !Y)	-0.00246	-0.00262	-0.00262
	(A1 * !A3 * B1 * C1 * !Y)	0.00228	0.00229	0.00228
	(A1 * !A3 * B1 * C1 * !Y)	-0.00278	-0.00278	-0.00277
	(A1 * !A3 * B1 * !C1 * !Y)	0.00228	0.00229	0.00228
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00278	-0.00278	-0.00277
	(A1 * !A3 * !B1 * C1 * !Y)	0.00227	0.00228	0.00227
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00278	-0.00278	-0.00277
	(A1 * !A3 * !B1 * !C1 * Y)	0.00101	0.00103	0.00102
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00278	-0.00281	-0.00278
	(!A1 * A3 * B1 * !Y)	0.00228	0.00230	0.00229
	(!A1 * A3 * B1 * !Y)	-0.00277	-0.00278	-0.00277
	(!A1 * A3 * !B1 * C1 * !Y)	0.00228	0.00230	0.00229
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00277	-0.00278	-0.00277
	(!A1 * A3 * !B1 * !C1 * Y)	0.00227	0.00230	0.00229
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00277	-0.00279	-0.00278
	(!A1 * !A3 * B1 * !Y)	0.00129	0.00129	0.00129
	(!A1 * !A3 * B1 * !Y)	-0.00277	-0.00277	-0.00278
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00129	0.00128	0.00129
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00277	-0.00276	-0.00277
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00280	-0.00283	-0.00280

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00476	0.00480	0.00477
	(A1 * A3 * B1 * C1 * !Y)	-0.00510	-0.00538	-0.00534
	(A1 * A3 * B1 * !C1 * !Y)	0.00476	0.00480	0.00477
	(A1 * A3 * B1 * !C1 * !Y)	-0.00509	-0.00535	-0.00534
	(A1 * A3 * !B1 * C1 * !Y)	0.00481	0.00482	0.00478
	(A1 * A3 * !B1 * C1 * !Y)	-0.00488	-0.00521	-0.00520
	(A1 * !A3 * B1 * C1 * !Y)	0.00454	0.00461	0.00456
	(A1 * !A3 * B1 * C1 * !Y)	-0.00548	-0.00554	-0.00550
	(A1 * !A3 * B1 * !C1 * !Y)	0.00453	0.00460	0.00455
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00548	-0.00554	-0.00550
	(A1 * !A3 * !B1 * C1 * !Y)	0.00449	0.00451	0.00451
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00549	-0.00551	-0.00550
	(A1 * !A3 * !B1 * !C1 * Y)	0.00194	0.00196	0.00195
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00552	-0.00556	-0.00550
	(!A1 * A3 * B1 * !Y)	0.00455	0.00458	0.00457
	(!A1 * A3 * B1 * !Y)	-0.00549	-0.00551	-0.00550
	(!A1 * A3 * !B1 * C1 * !Y)	0.00454	0.00458	0.00456
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00549	-0.00552	-0.00550
	(!A1 * A3 * !B1 * !C1 * Y)	0.00457	0.00463	0.00459
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00549	-0.00554	-0.00550
	(!A1 * !A3 * B1 * !Y)	0.00246	0.00245	0.00245
	(!A1 * !A3 * B1 * !Y)	-0.00551	-0.00550	-0.00550
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00246	0.00245	0.00245
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00551	-0.00549	-0.00550
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00222	0.00224	0.00222
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00556	-0.00560	-0.00554

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)**	-0.00130	-0.00131	-0.00130
	(A1 * A3 * B1 * C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A3 * B1 * !C1 * !Y)	-0.00130	-0.00131	-0.00130
	(A1 * A3 * B1 * !C1 * !Y)	0.00130	0.00131	0.00130
	(A1 * A3 * !B1 * C1 * !Y)	-0.00130	-0.00130	-0.00130
	(A1 * A3 * !B1 * C1 * !Y)	0.00126	0.00127	0.00127
	(A1 * !A3 * B1 * C1 * !Y)	-0.00120	-0.00124	-0.00124
	(A1 * !A3 * B1 * C1 * !Y)	0.00133	0.00135	0.00134
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00120	-0.00124	-0.00124
	(A1 * !A3 * B1 * !C1 * !Y)	0.00134	0.00135	0.00134
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00120	-0.00125	-0.00124
	(A1 * !A3 * !B1 * C1 * !Y)	0.00133	0.00135	0.00134
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00043	-0.00044	-0.00044
	(A1 * !A3 * !B1 * !C1 * Y)	0.00153	0.00154	0.00151
	(!A1 * A3 * B1 * !Y)	-0.00120	-0.00125	-0.00125
	(!A1 * A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00120	-0.00125	-0.00125
	(!A1 * A3 * !B1 * C1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00101	-0.00110	-0.00108
	(!A1 * A3 * !B1 * !C1 * Y)	0.00154	0.00152	0.00151
	(!A1 * !A3 * B1 * !Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A3 * B1 * !Y)	0.00135	0.00135	0.00134
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00135	0.00135	0.00134
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00051	-0.00052	-0.00051
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00156	0.00157	0.00152

sky130_fd_sc_hs__a311oi_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00239	-0.00239	-0.00239
	(A1 * A3 * B1 * C1 * !Y)	0.00269	0.00269	0.00269
	(A1 * A3 * B1 * !C1 * !Y)	-0.00239	-0.00239	-0.00239
	(A1 * A3 * B1 * !C1 * !Y)	0.00269	0.00268	0.00269
	(A1 * A3 * !B1 * C1 * !Y)	-0.00239	-0.00240	-0.00239
	(A1 * A3 * !B1 * C1 * !Y)	0.00260	0.00262	0.00262
	(A1 * !A3 * B1 * C1 * !Y)	-0.00217	-0.00229	-0.00228
	(A1 * !A3 * B1 * C1 * !Y)	0.00278	0.00282	0.00278
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00216	-0.00229	-0.00228
	(A1 * !A3 * B1 * !C1 * !Y)	0.00278	0.00280	0.00278
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00216	-0.00228	-0.00227
	(A1 * !A3 * !B1 * C1 * !Y)	0.00278	0.00280	0.00278
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00097	-0.00098	-0.00099
	(A1 * !A3 * !B1 * !C1 * Y)	0.00286	0.00288	0.00281
	(!A1 * A3 * B1 * !Y)	-0.00219	-0.00230	-0.00229
	(!A1 * A3 * B1 * !Y)	0.00277	0.00279	0.00278
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00219	-0.00230	-0.00229
	(!A1 * A3 * !B1 * C1 * !Y)	0.00277	0.00279	0.00278
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00212	-0.00229	-0.00229
	(!A1 * A3 * !B1 * !C1 * Y)	0.00286	0.00280	0.00279
	(!A1 * !A3 * B1 * !Y)	-0.00129	-0.00129	-0.00129
	(!A1 * !A3 * B1 * !Y)	0.00279	0.00281	0.00278
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00129	-0.00128	-0.00129
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00279	0.00281	0.00278
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00290	0.00292	0.00282

sky130_fd_sc_hs__a311oi_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00475	-0.00478	-0.00476
	(A1 * A3 * B1 * C1 * !Y)	0.00532	0.00538	0.00534
	(A1 * A3 * B1 * !C1 * !Y)	-0.00475	-0.00477	-0.00476
	(A1 * A3 * B1 * !C1 * !Y)	0.00532	0.00535	0.00534
	(A1 * A3 * !B1 * C1 * !Y)	-0.00476	-0.00477	-0.00477
	(A1 * A3 * !B1 * C1 * !Y)	0.00518	0.00521	0.00520
	(A1 * !A3 * B1 * C1 * !Y)	-0.00429	-0.00461	-0.00456
	(A1 * !A3 * B1 * C1 * !Y)	0.00552	0.00555	0.00551
	(A1 * !A3 * B1 * !C1 * !Y)	-0.00429	-0.00460	-0.00455
	(A1 * !A3 * B1 * !C1 * !Y)	0.00552	0.00556	0.00551
	(A1 * !A3 * !B1 * C1 * !Y)	-0.00427	-0.00451	-0.00451
	(A1 * !A3 * !B1 * C1 * !Y)	0.00550	0.00555	0.00552
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00186	-0.00187	-0.00189
	(A1 * !A3 * !B1 * !C1 * Y)	0.00567	0.00570	0.00555
	(!A1 * A3 * B1 * !Y)	-0.00436	-0.00458	-0.00457
	(!A1 * A3 * B1 * !Y)	0.00549	0.00554	0.00551
	(!A1 * A3 * !B1 * C1 * !Y)	-0.00436	-0.00458	-0.00456
	(!A1 * A3 * !B1 * C1 * !Y)	0.00549	0.00554	0.00551
	(!A1 * A3 * !B1 * !C1 * Y)	-0.00417	-0.00459	-0.00459
	(!A1 * A3 * !B1 * !C1 * Y)	0.00573	0.00554	0.00552
	(!A1 * !A3 * B1 * !Y)	-0.00246	-0.00245	-0.00245
	(!A1 * !A3 * B1 * !Y)	0.00554	0.00557	0.00552
	(!A1 * !A3 * !B1 * C1 * !Y)	-0.00246	-0.00245	-0.00245
	(!A1 * !A3 * !B1 * C1 * !Y)	0.00554	0.00557	0.00552
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00222	-0.00224	-0.00222
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00577	0.00580	0.00559

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)**	0.00140	0.00139	0.00138
	(A1 * A2 * B1 * C1 * !Y)	-0.00126	-0.00132	-0.00131
	(A1 * A2 * B1 * !C1 * !Y)	0.00140	0.00139	0.00138
	(A1 * A2 * B1 * !C1 * !Y)	-0.00126	-0.00132	-0.00131
	(A1 * A2 * !B1 * C1 * !Y)	0.00140	0.00139	0.00138
	(A1 * A2 * !B1 * C1 * !Y)	-0.00120	-0.00127	-0.00128
	(A1 * !A2 * !B1 * !C1 * Y)	0.00119	0.00120	0.00119
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00147	-0.00148	-0.00147
	(!A2 * B1 * !Y)	0.00132	0.00134	0.00132
	(!A2 * B1 * !Y)	-0.00135	-0.00135	-0.00134
	(!A2 * !B1 * C1 * !Y)	0.00131	0.00133	0.00132
	(!A2 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A2 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A1 * A2 * B1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A2 * !B1 * C1 * !Y)	0.00129	0.00130	0.00129
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A2 * !B1 * !C1 * Y)	0.00116	0.00118	0.00116
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00119	0.00121	0.00119
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00147	-0.00148	-0.00147

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	0.00235	0.00236	0.00234
	(A1 * A2 * B1 * C1 * !Y)	-0.00252	-0.00264	-0.00263
	(A1 * A2 * B1 * !C1 * !Y)	0.00235	0.00236	0.00234
	(A1 * A2 * B1 * !C1 * !Y)	-0.00251	-0.00264	-0.00263
	(A1 * A2 * !B1 * C1 * !Y)	0.00237	0.00237	0.00235
	(A1 * A2 * !B1 * C1 * !Y)	-0.00241	-0.00256	-0.00256
	(A1 * !A2 * !B1 * !C1 * Y)	0.00224	0.00227	0.00224
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00270	-0.00272	-0.00270
	(!A2 * B1 * !Y)	0.00224	0.00226	0.00225
	(!A2 * B1 * !Y)	-0.00269	-0.00271	-0.00270
	(!A2 * !B1 * C1 * !Y)	0.00224	0.00227	0.00225
	(!A2 * !B1 * C1 * !Y)	-0.00270	-0.00272	-0.00270
	(!A1 * A2 * B1 * !Y)	0.00220	0.00220	0.00219
	(!A1 * A2 * B1 * !Y)	-0.00271	-0.00271	-0.00270
	(!A1 * A2 * !B1 * C1 * !Y)	0.00218	0.00220	0.00219
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00269	-0.00271	-0.00270
	(!A1 * A2 * !B1 * !C1 * Y)	0.00218	0.00220	0.00219
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00269	-0.00271	-0.00270
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00224	0.00227	0.00225
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00270	-0.00272	-0.00270

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	0.00477	0.00479	0.00476
	(A1 * A2 * B1 * C1 * !Y)	-0.00511	-0.00528	-0.00532
	(A1 * A2 * B1 * !C1 * !Y)	0.00477	0.00479	0.00476
	(A1 * A2 * B1 * !C1 * !Y)	-0.00510	-0.00536	-0.00532
	(A1 * A2 * !B1 * C1 * !Y)	0.00477	0.00481	0.00476
	(A1 * A2 * !B1 * C1 * !Y)	-0.00485	-0.00517	-0.00518
	(A1 * !A2 * !B1 * !C1 * Y)	0.00449	0.00454	0.00451
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00546	-0.00550	-0.00547
	(!A2 * B1 * !Y)	0.00453	0.00458	0.00456
	(!A2 * B1 * !Y)	-0.00545	-0.00549	-0.00547
	(!A2 * !B1 * C1 * !Y)	0.00452	0.00460	0.00454
	(!A2 * !B1 * C1 * !Y)	-0.00546	-0.00550	-0.00547
	(!A1 * A2 * B1 * !Y)	0.00439	0.00443	0.00442
	(!A1 * A2 * B1 * !Y)	-0.00545	-0.00548	-0.00547
	(!A1 * A2 * !B1 * C1 * !Y)	0.00438	0.00444	0.00439
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00546	-0.00550	-0.00547
	(!A1 * A2 * !B1 * !C1 * Y)	0.00437	0.00442	0.00439
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00546	-0.00549	-0.00547
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00449	0.00454	0.00451
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00546	-0.00550	-0.00547

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)**	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B1 * C1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * B1 * !C1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * B1 * !C1 * !Y)	0.00131	0.00132	0.00131
	(A1 * A2 * !B1 * C1 * !Y)	-0.00137	-0.00137	-0.00138
	(A1 * A2 * !B1 * C1 * !Y)	0.00127	0.00127	0.00128
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00120	-0.00119
	(A1 * !A2 * !B1 * !C1 * Y)	0.00148	0.00150	0.00148
	(!A2 * B1 * !Y)	-0.00129	-0.00133	-0.00132
	(!A2 * B1 * !Y)	0.00135	0.00136	0.00135
	(!A2 * !B1 * C1 * !Y)	-0.00129	-0.00132	-0.00132
	(!A2 * !B1 * C1 * !Y)	0.00135	0.00136	0.00135
	(!A1 * A2 * B1 * !Y)	-0.00124	-0.00130	-0.00129
	(!A1 * A2 * B1 * !Y)	0.00135	0.00136	0.00135
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00124	-0.00130	-0.00129
	(!A1 * A2 * !B1 * C1 * !Y)	0.00135	0.00136	0.00135
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00111	-0.00118	-0.00116
	(!A1 * A2 * !B1 * !C1 * Y)	0.00148	0.00149	0.00148
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00116	-0.00120	-0.00119
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00148	0.00150	0.00148

sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * B1 * C1 * !Y)**	-0.00233	-0.00234	-0.00234
	(A1 * A2 * B1 * C1 * !Y)	0.00261	0.00264	0.00263
	(A1 * A2 * B1 * !C1 * !Y)	-0.00233	-0.00234	-0.00234
	(A1 * A2 * B1 * !C1 * !Y)	0.00261	0.00264	0.00263
	(A1 * A2 * !B1 * C1 * !Y)	-0.00234	-0.00234	-0.00234
	(A1 * A2 * !B1 * C1 * !Y)	0.00255	0.00256	0.00256
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00213	-0.00224	-0.00224
	(A1 * !A2 * !B1 * !C1 * Y)	0.00270	0.00274	0.00271
	(!A2 * B1 * !Y)	-0.00215	-0.00223	-0.00225
	(!A2 * B1 * !Y)	0.00270	0.00271	0.00271
	(!A2 * !B1 * C1 * !Y)	-0.00215	-0.00224	-0.00225
	(!A2 * !B1 * C1 * !Y)	0.00270	0.00272	0.00271
	(!A1 * A2 * B1 * !Y)	-0.00204	-0.00220	-0.00219
	(!A1 * A2 * B1 * !Y)	0.00271	0.00273	0.00271
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00204	-0.00220	-0.00219
	(!A1 * A2 * !B1 * C1 * !Y)	0.00271	0.00273	0.00271
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00203	-0.00220	-0.00219
	(!A1 * A2 * !B1 * !C1 * Y)	0.00272	0.00274	0.00271
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00214	-0.00224	-0.00225
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00270	0.00274	0.00271

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * B1 * C1 * !Y)**	-0.00474	-0.00473	-0.00475
	(A1 * A2 * B1 * C1 * !Y)	0.00530	0.00528	0.00532
	(A1 * A2 * B1 * !C1 * !Y)	-0.00474	-0.00476	-0.00474
	(A1 * A2 * B1 * !C1 * !Y)	0.00530	0.00536	0.00532
	(A1 * A2 * !B1 * C1 * !Y)	-0.00475	-0.00475	-0.00475
	(A1 * A2 * !B1 * C1 * !Y)	0.00516	0.00517	0.00518
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00429	-0.00453	-0.00451
	(A1 * !A2 * !B1 * !C1 * Y)	0.00547	0.00554	0.00549
	(!A2 * B1 * !Y)	-0.00432	-0.00451	-0.00455
	(!A2 * B1 * !Y)	0.00546	0.00550	0.00548
	(!A2 * !B1 * C1 * !Y)	-0.00432	-0.00450	-0.00454
	(!A2 * !B1 * C1 * !Y)	0.00547	0.00550	0.00549
	(!A1 * A2 * B1 * !Y)	-0.00410	-0.00443	-0.00442
	(!A1 * A2 * B1 * !Y)	0.00550	0.00553	0.00549
	(!A1 * A2 * !B1 * C1 * !Y)	-0.00411	-0.00444	-0.00439
	(!A1 * A2 * !B1 * C1 * !Y)	0.00550	0.00553	0.00549
	(!A1 * A2 * !B1 * !C1 * Y)	-0.00409	-0.00442	-0.00439
	(!A1 * A2 * !B1 * !C1 * Y)	0.00551	0.00555	0.00549
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00430	-0.00453	-0.00451
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00547	0.00554	0.00549

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)**	0.00141	0.00139	0.00136
	(A1 * A2 * A3 * C1 * !Y)	-0.00093	-0.00093	-0.00093
	(A1 * A2 * A3 * !C1 * !Y)	0.00134	0.00135	0.00133
	(A1 * A2 * A3 * !C1 * !Y)	-0.00075	-0.00076	-0.00076
	(A1 * A2 * !A3 * C1 * !Y)	0.00150	0.00134	0.00132
	(A1 * A2 * !A3 * C1 * !Y)	-0.00111	-0.00130	-0.00131
	(A1 * !A2 * C1 * !Y)	0.00150	0.00134	0.00132
	(A1 * !A2 * C1 * !Y)	-0.00111	-0.00130	-0.00131
	(!A1 * C1 * !Y)	0.00149	0.00134	0.00132
	(!A1 * C1 * !Y)	-0.00112	-0.00130	-0.00131
sky130_fd_sc_hs__a311oi_2	**(A1 * A2 * A3 * C1 * !Y)**	0.00143	0.00140	0.00137
	(A1 * A2 * A3 * C1 * !Y)	-0.00193	-0.00196	-0.00194
	(A1 * A2 * A3 * !C1 * !Y)	0.00136	0.00137	0.00135
	(A1 * A2 * A3 * !C1 * !Y)	-0.00159	-0.00160	-0.00160
	(A1 * A2 * !A3 * C1 * !Y)	0.00167	0.00135	0.00134
	(A1 * A2 * !A3 * C1 * !Y)	-0.00231	-0.00271	-0.00271
	(A1 * !A2 * C1 * !Y)	0.00167	0.00136	0.00134
	(A1 * !A2 * C1 * !Y)	-0.00231	-0.00271	-0.00271
	(!A1 * C1 * !Y)	0.00167	0.00136	0.00134
	(!A1 * C1 * !Y)	-0.00232	-0.00271	-0.00271
sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	0.00280	0.00270	0.00262
	(A1 * A2 * A3 * C1 * !Y)	-0.00378	-0.00381	-0.00377
	(A1 * A2 * A3 * !C1 * !Y)	0.00261	0.00263	0.00259
	(A1 * A2 * A3 * !C1 * !Y)	-0.00310	-0.00312	-0.00311
	(A1 * A2 * !A3 * C1 * !Y)	0.00333	0.00260	0.00257
	(A1 * A2 * !A3 * C1 * !Y)	-0.00450	-0.00535	-0.00533
	(A1 * !A2 * C1 * !Y)	0.00332	0.00260	0.00257
	(A1 * !A2 * C1 * !Y)	-0.00451	-0.00535	-0.00534
	(!A1 * C1 * !Y)	0.00330	0.00260	0.00256
	(!A1 * C1 * !Y)	-0.00453	-0.00535	-0.00534

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)	-0.00134	-0.00134	-0.00134
	(A1 * A2 * A3 * C1 * !Y)	0.00093	0.00093	0.00093
	(A1 * A2 * A3 * !C1 * !Y)	-0.00130	-0.00131	-0.00132
	(A1 * A2 * A3 * !C1 * !Y)	0.00079	0.00079	0.00078
	(A1 * A2 * !A3 * C1 * !Y)	-0.00132	-0.00132	-0.00132
	(A1 * A2 * !A3 * C1 * !Y)	0.00130	0.00131	0.00131
	(A1 * !A2 * C1 * !Y)	-0.00132	-0.00132	-0.00132
	(A1 * !A2 * C1 * !Y)	0.00130	0.00131	0.00131
	(!A1 * C1 * !Y)	-0.00131	-0.00133	-0.00132
	(!A1 * C1 * !Y)	0.00129	0.00131	0.00131
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * A3 * C1 * !Y)	-0.00135	-0.00137	-0.00136
	(A1 * A2 * A3 * C1 * !Y)	0.00193	0.00196	0.00194
	(A1 * A2 * A3 * !C1 * !Y)	-0.00128	-0.00129	-0.00130
	(A1 * A2 * A3 * !C1 * !Y)	0.00166	0.00167	0.00166
	(A1 * A2 * !A3 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * A2 * !A3 * C1 * !Y)	0.00269	0.00272	0.00271
	(A1 * !A2 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * C1 * !Y)	0.00269	0.00272	0.00271
	(!A1 * C1 * !Y)	-0.00134	-0.00134	-0.00134
	(!A1 * C1 * !Y)	0.00269	0.00272	0.00271

sky130_fd_sc_hs__a311oi_4	**(A1 * A2 * A3 * C1 * !Y)**	-0.00260	-0.00261	-0.00260
	(A1 * A2 * A3 * C1 * !Y)	0.00378	0.00381	0.00377
	(A1 * A2 * A3 * !C1 * !Y)	-0.00243	-0.00246	-0.00249
	(A1 * A2 * A3 * !C1 * !Y)	0.00322	0.00326	0.00323
	(A1 * A2 * !A3 * C1 * !Y)	-0.00256	-0.00258	-0.00256
	(A1 * A2 * !A3 * C1 * !Y)	0.00530	0.00536	0.00533
	(A1 * !A2 * C1 * !Y)	-0.00256	-0.00258	-0.00256
	(A1 * !A2 * C1 * !Y)	0.00530	0.00537	0.00534
	(!A1 * C1 * !Y)	-0.00256	-0.00258	-0.00256
	(!A1 * C1 * !Y)	0.00531	0.00537	0.00534

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)	0.00140	0.00142	0.00140
	(A1 * A2 * B1 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * A3 * !B1 * !Y)	0.00141	0.00142	0.00141
	(A1 * A2 * A3 * !B1 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * !A2 * B1 * !Y)	0.00140	0.00142	0.00140
	(A1 * !A2 * B1 * !Y)	-0.00071	-0.00072	-0.00071
	(!A1 * B1 * !Y)	0.00141	0.00142	0.00140
	(!A1 * B1 * !Y)	-0.00072	-0.00072	-0.00071
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	0.00158	0.00159	0.00158
	(A1 * A2 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * A2 * A3 * !B1 * !Y)	0.00159	0.00160	0.00158
	(A1 * A2 * A3 * !B1 * !Y)	-0.00139	-0.00139	-0.00138
	(A1 * !A2 * B1 * !Y)	0.00158	0.00159	0.00158
	(A1 * !A2 * B1 * !Y)	-0.00139	-0.00140	-0.00138
	(!A1 * B1 * !Y)	0.00157	0.00160	0.00158
	(!A1 * B1 * !Y)	-0.00137	-0.00140	-0.00138
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	0.00315	0.00317	0.00314
	(A1 * A2 * B1 * !Y)	-0.00275	-0.00276	-0.00274
	(A1 * A2 * A3 * !B1 * !Y)	0.00316	0.00317	0.00314
	(A1 * A2 * A3 * !B1 * !Y)	-0.00276	-0.00276	-0.00273
	(A1 * !A2 * B1 * !Y)	0.00315	0.00317	0.00314
	(A1 * !A2 * B1 * !Y)	-0.00275	-0.00277	-0.00274
	(!A1 * B1 * !Y)	0.00316	0.00317	0.00314
	(!A1 * B1 * !Y)	-0.00277	-0.00277	-0.00274

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)	-0.00135	-0.00137	-0.00140
	(A1 * A2 * B1 * !Y)	0.00074	0.00075	0.00072
	(A1 * A2 * A3 * !B1 * !Y)	-0.00125	-0.00126	-0.00137
	(A1 * A2 * A3 * !B1 * !Y)	0.00082	0.00083	0.00074
	(A1 * !A2 * B1 * !Y)	-0.00135	-0.00137	-0.00140
	(A1 * !A2 * B1 * !Y)	0.00075	0.00075	0.00072
	(!A1 * B1 * !Y)	-0.00136	-0.00137	-0.00140
	(!A1 * B1 * !Y)	0.00075	0.00075	0.00072
sky130_fd_sc_hs__a311oi_2	(A1 * A2 * B1 * !Y)	-0.00145	-0.00146	-0.00157
	(A1 * A2 * B1 * !Y)	0.00151	0.00151	0.00141
	(A1 * A2 * A3 * !B1 * !Y)	-0.00119	-0.00121	-0.00150
	(A1 * A2 * A3 * !B1 * !Y)	0.00165	0.00166	0.00145
	(A1 * !A2 * B1 * !Y)	-0.00144	-0.00146	-0.00157
	(A1 * !A2 * B1 * !Y)	0.00149	0.00151	0.00141
	(!A1 * B1 * !Y)	-0.00144	-0.00146	-0.00157
	(!A1 * B1 * !Y)	0.00150	0.00151	0.00141
sky130_fd_sc_hs__a311oi_4	(A1 * A2 * B1 * !Y)	-0.00291	-0.00294	-0.00312
	(A1 * A2 * B1 * !Y)	0.00296	0.00296	0.00280
	(A1 * A2 * A3 * !B1 * !Y)	-0.00242	-0.00245	-0.00299
	(A1 * A2 * A3 * !B1 * !Y)	0.00325	0.00326	0.00287
	(A1 * !A2 * B1 * !Y)	-0.00289	-0.00294	-0.00312
	(A1 * !A2 * B1 * !Y)	0.00294	0.00297	0.00280
	(!A1 * B1 * !Y)	-0.00290	-0.00294	-0.00312
	(!A1 * B1 * !Y)	0.00295	0.00297	0.00280

SKY130_FD_SC_HS__A311Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00247	0.00233	0.00233	0.00242	0.00251	1.15491
sky130_fd_sc_hs__a311o_2	0.00254	0.00253	0.00268	0.00273	0.00260	1.97807
sky130_fd_sc_hs__a311o_4	0.00465	0.00429	0.00456	0.00446	0.00446	3.37930

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a311o_1	0.00000	0.02741	0.05847
sky130_fd_sc_hs__a311o_2	0.00000	0.03469	0.06682
sky130_fd_sc_hs__a311o_4	0.00000	0.07003	0.13743

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)	0.07582	0.55437	5.65001
	A2->X (RR)	0.08071	0.57016	5.72920
	A3->X (RR)	0.08407	0.56335	5.69798
	B1->X (RR)	0.05618	0.52040	5.55543
	C1->X (RR)	0.05339	0.50961	5.62390
sky130_fd_sc_hs__a311o_2	A1->X (RR)	0.08259	0.51296	5.79511
	A2->X (RR)	0.08767	0.52177	5.86133
	A3->X (RR)	0.09133	0.51154	5.81233
	B1->X (RR)	0.05952	0.46987	5.66976
	C1->X (RR)	0.05677	0.46120	5.68903
sky130_fd_sc_hs__a311o_4	A1->X (RR)	0.10441	0.47808	5.62178
	A2->X (RR)	0.11288	0.49508	5.70647
	A3->X (RR)	0.11599	0.45603	5.55370
	B1->X (RR)	0.05698	0.37377	5.30859
	C1->X (RR)	0.05367	0.36259	5.35534

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a311o_1	A1->X (FF)	0.17444	0.63535	4.86839
	A2->X (FF)	0.20174	0.67258	4.95660
	A3->X (FF)	0.22193	0.69999	5.02933
	B1->X (FF)	0.20061	0.69163	5.18202
	C1->X (FF)	0.17334	0.65195	5.02416
sky130_fd_sc_hs__a311o_2	A1->X (FF)	0.23258	0.68370	4.75426
	A2->X (FF)	0.26812	0.73000	4.86127
	A3->X (FF)	0.29269	0.76148	4.94074
	B1->X (FF)	0.27131	0.75913	5.08159
	C1->X (FF)	0.23887	0.71433	4.87585
sky130_fd_sc_hs__a311o_4	A1->X (FF)	0.24879	0.65237	4.51651
	A2->X (FF)	0.28248	0.69599	4.60472
	A3->X (FF)	0.31095	0.73822	4.72340
	B1->X (FF)	0.28801	0.74016	4.92149
	C1->X (FF)	0.24147	0.68333	4.74389

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a311o_1	A1	0.00875	0.00872	0.01696
	A1	0.00399	0.00396	0.01231
	A2	0.00931	0.00904	0.01514
	A2	0.00398	0.00371	0.00989
	A3	0.01005	0.00968	0.01445
	A3	0.00397	0.00360	0.00847
	B1	0.00834	0.00862	0.01702
	B1	0.00297	0.00330	0.01364
	C1	0.00596	0.00645	0.02351
	C1	0.00238	0.00288	0.02010
sky130_fd_sc_hs__a311o_2	A1	0.01123	0.01124	0.01839
	A1	0.00611	0.00614	0.01345
	A2	0.01202	0.01196	0.01715
	A2	0.00611	0.00606	0.01126
	A3	0.01297	0.01280	0.01613
	A3	0.00612	0.00596	0.00940
	B1	0.01124	0.01171	0.01799
	B1	0.00511	0.00562	0.01406
	C1	0.00845	0.00904	0.02275
	C1	0.00449	0.00508	0.01911

sky130_fd_sc_hs__a311o_4	**A1**	0.02201	0.02236	0.03875
	A1	0.01304	0.01340	0.03038
	A2	0.02332	0.02362	0.03541
	A2	0.01296	0.01329	0.02547
	A3	0.02506	0.02532	0.03531
	A3	0.01308	0.01335	0.02402
	B1	0.02109	0.02161	0.03665
	B1	0.01065	0.01119	0.02908
	C1	0.01656	0.01783	0.04586
	C1	0.00862	0.01003	0.04042

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a311o_1	**A1**	0.00253	0.00252	0.00779
	A1	0.00738	0.00737	0.01250
	A2	0.00304	0.00305	0.00817
	A2	0.00843	0.00844	0.01334
	A3	0.00330	0.00318	0.00804
	A3	0.00938	0.00924	0.01392
	B1	0.00246	0.00255	0.01146
	B1	0.00850	0.00849	0.01536
	C1	0.00227	0.00323	0.02026
	C1	0.00584	0.00672	0.02372

sky130_fd_sc_hs__a311o_2	**A1**	0.00510	0.00502	0.01045
	A1	0.01029	0.01021	0.01506
	A2	0.00560	0.00547	0.01110
	A2	0.01153	0.01140	0.01614
	A3	0.00582	0.00519	0.01035
	A3	0.01263	0.01206	0.01627
	B1	0.00532	0.00505	0.01260
	B1	0.01187	0.01139	0.01685
	C1	0.00468	0.00577	0.02096
	C1	0.01121	0.01138	0.02324
sky130_fd_sc_hs__a311o_4	**A1**	0.01053	0.01024	0.02065
	A1	0.01968	0.01942	0.02979
	A2	0.01226	0.01162	0.02156
	A2	0.02268	0.02224	0.03173
	A3	0.01264	0.01163	0.02191
	A3	0.02458	0.02375	0.03280
	B1	0.01155	0.01135	0.02458
	B1	0.02306	0.02232	0.03301
	C1	0.00980	0.01115	0.04093
	C1	0.02175	0.02222	0.04593

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)**	0.00119	0.00119	0.00118
	(A2 * A3 * B1 * C1 * X)	-0.00115	-0.00121	-0.00120
	(A2 * A3 * B1 * !C1 * X)	0.00119	0.00119	0.00118
	(A2 * A3 * B1 * !C1 * X)	-0.00115	-0.00121	-0.00120
	(A2 * A3 * !B1 * C1 * X)	0.00119	0.00119	0.00118
	(A2 * A3 * !B1 * C1 * X)	-0.00109	-0.00118	-0.00117
	(A2 * !A3 * B1 * C1 * X)	0.00111	0.00112	0.00111
	(A2 * !A3 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * B1 * !C1 * X)	0.00111	0.00112	0.00111
	(A2 * !A3 * B1 * !C1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * !B1 * C1 * X)	0.00111	0.00112	0.00111
	(A2 * !A3 * !B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(A2 * !A3 * !B1 * !C1 * !X)	0.00046	0.00046	0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00144	-0.00145	-0.00148
	(!A2 * B1 * C1 * X)	0.00112	0.00113	0.00113
	(!A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * B1 * !C1 * X)	0.00113	0.00113	0.00113
	(!A2 * B1 * !C1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * C1 * X)	0.00112	0.00114	0.00113
	(!A2 * !B1 * C1 * X)	-0.00123	-0.00124	-0.00123
	(!A2 * !B1 * !C1 * !X)	0.00046	0.00046	0.00045
	(!A2 * !B1 * !C1 * !X)	-0.00146	-0.00147	-0.00148

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	0.00125	0.00124	0.00124
	(A2 * A3 * B1 * C1 * X)	-0.00113	-0.00119	-0.00119
	(A2 * A3 * B1 * !C1 * X)	0.00124	0.00124	0.00124
	(A2 * A3 * B1 * !C1 * X)	-0.00113	-0.00120	-0.00119
	(A2 * A3 * !B1 * C1 * X)	0.00124	0.00124	0.00123
	(A2 * A3 * !B1 * C1 * X)	-0.00107	-0.00116	-0.00116
	(A2 * !A3 * B1 * C1 * X)	0.00114	0.00115	0.00115
	(A2 * !A3 * B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(A2 * !A3 * B1 * !C1 * X)	0.00115	0.00115	0.00115
	(A2 * !A3 * B1 * !C1 * X)	-0.00122	-0.00122	-0.00122
	(A2 * !A3 * !B1 * C1 * X)	0.00114	0.00115	0.00115
	(A2 * !A3 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A2 * !A3 * !B1 * !C1 * !X)	0.00037	0.00038	0.00036
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00147	-0.00148	-0.00153
	(!A2 * B1 * C1 * X)	0.00119	0.00119	0.00119
	(!A2 * B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * !C1 * X)	0.00119	0.00120	0.00119
	(!A2 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * C1 * X)	0.00118	0.00119	0.00118
	(!A2 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * !C1 * !X)	0.00038	0.00039	0.00038
	(!A2 * !B1 * !C1 * !X)	-0.00151	-0.00153	-0.00154

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	0.00216	0.00216	0.00215
	(A2 * A3 * B1 * C1 * X)	-0.00239	-0.00250	-0.00249
	(A2 * A3 * B1 * !C1 * X)	0.00215	0.00216	0.00215
	(A2 * A3 * B1 * !C1 * X)	-0.00238	-0.00249	-0.00249
	(A2 * A3 * !B1 * C1 * X)	0.00216	0.00216	0.00214
	(A2 * A3 * !B1 * C1 * X)	-0.00229	-0.00245	-0.00244
	(A2 * !A3 * B1 * C1 * X)	0.00202	0.00203	0.00202
	(A2 * !A3 * B1 * C1 * X)	-0.00258	-0.00258	-0.00257
	(A2 * !A3 * B1 * !C1 * X)	0.00202	0.00202	0.00202
	(A2 * !A3 * B1 * !C1 * X)	-0.00257	-0.00258	-0.00257
	(A2 * !A3 * !B1 * C1 * X)	0.00202	0.00202	0.00202
	(A2 * !A3 * !B1 * C1 * X)	-0.00257	-0.00258	-0.00257
	(A2 * !A3 * !B1 * !C1 * !X)	0.00072	0.00073	0.00067
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00293	-0.00294	-0.00305
	(!A2 * B1 * C1 * X)	0.00207	0.00209	0.00207
	(!A2 * B1 * C1 * X)	-0.00256	-0.00259	-0.00257
	(!A2 * B1 * !C1 * X)	0.00207	0.00207	0.00207
	(!A2 * B1 * !C1 * X)	-0.00256	-0.00257	-0.00257
	(!A2 * !B1 * C1 * X)	0.00207	0.00207	0.00207
	(!A2 * !B1 * C1 * X)	-0.00257	-0.00258	-0.00257
	(!A2 * !B1 * !C1 * !X)	0.00079	0.00080	0.00075
	(!A2 * !B1 * !C1 * !X)	-0.00298	-0.00301	-0.00305

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)**	-0.00118	-0.00119	-0.00118
	(A2 * A3 * B1 * C1 * X)	0.00120	0.00121	0.00120
	(A2 * A3 * B1 * !C1 * X)	-0.00118	-0.00119	-0.00118
	(A2 * A3 * B1 * !C1 * X)	0.00120	0.00121	0.00120
	(A2 * A3 * !B1 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(A2 * !A3 * B1 * C1 * X)	-0.00105	-0.00112	-0.00111
	(A2 * !A3 * B1 * C1 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * !C1 * X)	-0.00104	-0.00112	-0.00111
	(A2 * !A3 * B1 * !C1 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * !B1 * C1 * X)	-0.00103	-0.00112	-0.00111
	(A2 * !A3 * !B1 * C1 * X)	0.00124	0.00125	0.00124
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(A2 * !A3 * !B1 * !C1 * !X)	0.00148	0.00150	0.00149
	(!A2 * B1 * C1 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A2 * B1 * !C1 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * B1 * !C1 * X)	0.00123	0.00124	0.00124
	(!A2 * !B1 * C1 * X)	-0.00110	-0.00113	-0.00113
	(!A2 * !B1 * C1 * X)	0.00123	0.00124	0.00124
	(!A2 * !B1 * !C1 * !X)	-0.00045	-0.00045	-0.00044
	(!A2 * !B1 * !C1 * !X)	0.00148	0.00151	0.00149

sky130_fd_sc_hs__a311o_2	**(A2 * A3 * B1 * C1 * X)**	-0.00123	-0.00124	-0.00124
	(A2 * A3 * B1 * C1 * X)	0.00118	0.00119	0.00119
	(A2 * A3 * B1 * !C1 * X)	-0.00123	-0.00124	-0.00124
	(A2 * A3 * B1 * !C1 * X)	0.00119	0.00120	0.00119
	(A2 * A3 * !B1 * C1 * X)	-0.00123	-0.00123	-0.00123
	(A2 * A3 * !B1 * C1 * X)	0.00116	0.00116	0.00116
	(A2 * !A3 * B1 * C1 * X)	-0.00108	-0.00115	-0.00115
	(A2 * !A3 * B1 * C1 * X)	0.00122	0.00124	0.00123
	(A2 * !A3 * B1 * !C1 * X)	-0.00107	-0.00115	-0.00115
	(A2 * !A3 * B1 * !C1 * X)	0.00122	0.00124	0.00123
	(A2 * !A3 * !B1 * C1 * X)	-0.00106	-0.00115	-0.00115
	(A2 * !A3 * !B1 * C1 * X)	0.00122	0.00124	0.00123
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00036	-0.00036
	(A2 * !A3 * !B1 * !C1 * !X)	0.00154	0.00155	0.00154
	(!A2 * B1 * C1 * X)	-0.00114	-0.00119	-0.00119
	(!A2 * B1 * C1 * X)	0.00122	0.00123	0.00123
	(!A2 * B1 * !C1 * X)	-0.00114	-0.00119	-0.00119
	(!A2 * B1 * !C1 * X)	0.00123	0.00123	0.00123
	(!A2 * !B1 * C1 * X)	-0.00113	-0.00118	-0.00118
	(!A2 * !B1 * C1 * X)	0.00122	0.00123	0.00123
	(!A2 * !B1 * !C1 * !X)	-0.00037	-0.00037	-0.00037
	(!A2 * !B1 * !C1 * !X)	0.00154	0.00155	0.00154

sky130_fd_sc_hs__a311o_4	**(A2 * A3 * B1 * C1 * X)**	-0.00214	-0.00215	-0.00215
	(A2 * A3 * B1 * C1 * X)	0.00248	0.00250	0.00249
	(A2 * A3 * B1 * !C1 * X)	-0.00214	-0.00215	-0.00215
	(A2 * A3 * B1 * !C1 * X)	0.00248	0.00249	0.00249
	(A2 * A3 * !B1 * C1 * X)	-0.00213	-0.00214	-0.00214
	(A2 * A3 * !B1 * C1 * X)	0.00242	0.00245	0.00244
	(A2 * !A3 * B1 * C1 * X)	-0.00181	-0.00202	-0.00202
	(A2 * !A3 * B1 * C1 * X)	0.00258	0.00260	0.00258
	(A2 * !A3 * B1 * !C1 * X)	-0.00179	-0.00200	-0.00202
	(A2 * !A3 * B1 * !C1 * X)	0.00257	0.00260	0.00258
	(A2 * !A3 * !B1 * C1 * X)	-0.00179	-0.00200	-0.00202
	(A2 * !A3 * !B1 * C1 * X)	0.00257	0.00260	0.00258
	(A2 * !A3 * !B1 * !C1 * !X)	-0.00067	-0.00068	-0.00067
	(A2 * !A3 * !B1 * !C1 * !X)	0.00307	0.00309	0.00306
	(!A2 * B1 * C1 * X)	-0.00196	-0.00208	-0.00207
	(!A2 * B1 * C1 * X)	0.00256	0.00262	0.00258
	(!A2 * B1 * !C1 * X)	-0.00195	-0.00207	-0.00207
	(!A2 * B1 * !C1 * X)	0.00256	0.00262	0.00258
	(!A2 * !B1 * C1 * X)	-0.00196	-0.00207	-0.00207
	(!A2 * !B1 * C1 * X)	0.00258	0.00261	0.00258
	(!A2 * !B1 * !C1 * !X)	-0.00073	-0.00073	-0.00072
	(!A2 * !B1 * !C1 * !X)	0.00307	0.00308	0.00306

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)**	0.00103	0.00103	0.00102
	(A1 * A3 * B1 * C1 * X)	-0.00118	-0.00124	-0.00123
	(A1 * A3 * B1 * !C1 * X)	0.00103	0.00103	0.00102
	(A1 * A3 * B1 * !C1 * X)	-0.00118	-0.00124	-0.00123
	(A1 * A3 * !B1 * C1 * X)	0.00103	0.00103	0.00102
	(A1 * A3 * !B1 * C1 * X)	-0.00111	-0.00120	-0.00120
	(A1 * !A3 * B1 * C1 * X)	0.00097	0.00098	0.00097
	(A1 * !A3 * B1 * C1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * B1 * !C1 * X)	0.00097	0.00098	0.00098
	(A1 * !A3 * B1 * !C1 * X)	-0.00126	-0.00128	-0.00127
	(A1 * !A3 * !B1 * C1 * X)	0.00097	0.00098	0.00098
	(A1 * !A3 * !B1 * C1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !C1 * !X)	0.00038	0.00038	0.00038
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133
	(!A1 * A3 * B1 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !B1 * C1 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * !B1 * C1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * !B1 * !C1 * !X)	0.00091	0.00091	0.00091
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !A3 * B1 * X)	0.00054	0.00055	0.00054
	(!A1 * !A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * C1 * X)	0.00054	0.00055	0.00054
	(!A1 * !A3 * !B1 * C1 * X)	-0.00126	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00044	0.00044	0.00044
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00134	-0.00135	-0.00134

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	0.00123	0.00123	0.00123
	(A1 * A3 * B1 * C1 * X)	-0.00113	-0.00119	-0.00119
	(A1 * A3 * B1 * !C1 * X)	0.00123	0.00123	0.00123
	(A1 * A3 * B1 * !C1 * X)	-0.00113	-0.00119	-0.00119
	(A1 * A3 * !B1 * C1 * X)	0.00123	0.00123	0.00122
	(A1 * A3 * !B1 * C1 * X)	-0.00108	-0.00116	-0.00116
	(A1 * !A3 * B1 * C1 * X)	0.00116	0.00117	0.00116
	(A1 * !A3 * B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * B1 * !C1 * X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * !B1 * C1 * X)	0.00117	0.00118	0.00118
	(A1 * !A3 * !B1 * C1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * !B1 * !C1 * !X)	0.00045	0.00046	0.00046
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00130	-0.00132	-0.00131
	(!A1 * A3 * B1 * X)	0.00117	0.00118	0.00118
	(!A1 * A3 * B1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * !B1 * C1 * X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A3 * !B1 * !C1 * !X)	0.00108	0.00109	0.00109
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00131
	(!A1 * !A3 * B1 * X)	0.00066	0.00067	0.00066
	(!A1 * !A3 * B1 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * !A3 * !B1 * C1 * X)	0.00066	0.00067	0.00066
	(!A1 * !A3 * !B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00051	0.00052	0.00052
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00131	-0.00133	-0.00132

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	0.00206	0.00206	0.00205
	(A1 * A3 * B1 * C1 * X)	-0.00236	-0.00248	-0.00246
	(A1 * A3 * B1 * !C1 * X)	0.00206	0.00206	0.00205
	(A1 * A3 * B1 * !C1 * X)	-0.00236	-0.00248	-0.00246
	(A1 * A3 * !B1 * C1 * X)	0.00206	0.00207	0.00205
	(A1 * A3 * !B1 * C1 * X)	-0.00228	-0.00242	-0.00241
	(A1 * !A3 * B1 * C1 * X)	0.00195	0.00198	0.00196
	(A1 * !A3 * B1 * C1 * X)	-0.00251	-0.00254	-0.00252
	(A1 * !A3 * B1 * !C1 * X)	0.00197	0.00199	0.00198
	(A1 * !A3 * B1 * !C1 * X)	-0.00251	-0.00254	-0.00252
	(A1 * !A3 * !B1 * C1 * X)	0.00197	0.00199	0.00198
	(A1 * !A3 * !B1 * C1 * X)	-0.00252	-0.00254	-0.00252
	(A1 * !A3 * !B1 * !C1 * !X)	0.00089	0.00090	0.00090
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00253	-0.00255	-0.00252
	(!A1 * A3 * B1 * X)	0.00196	0.00199	0.00197
	(!A1 * A3 * B1 * X)	-0.00251	-0.00253	-0.00252
	(!A1 * A3 * !B1 * C1 * X)	0.00196	0.00197	0.00197
	(!A1 * A3 * !B1 * C1 * X)	-0.00251	-0.00253	-0.00252
	(!A1 * A3 * !B1 * !C1 * !X)	0.00196	0.00199	0.00197
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00251	-0.00253	-0.00252
	(!A1 * !A3 * B1 * X)	0.00116	0.00117	0.00116
	(!A1 * !A3 * B1 * X)	-0.00252	-0.00254	-0.00252
	(!A1 * !A3 * !B1 * C1 * X)	0.00117	0.00117	0.00116
	(!A1 * !A3 * !B1 * C1 * X)	-0.00252	-0.00254	-0.00252
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00104	0.00105	0.00104
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00254	-0.00256	-0.00254

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)**	-0.00102	-0.00103	-0.00102
	(A1 * A3 * B1 * C1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * B1 * !C1 * X)	-0.00102	-0.00103	-0.00102
	(A1 * A3 * B1 * !C1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * !B1 * C1 * X)	-0.00102	-0.00102	-0.00102
	(A1 * A3 * !B1 * C1 * X)	0.00121	0.00120	0.00120
	(A1 * !A3 * B1 * C1 * X)	-0.00094	-0.00098	-0.00097
	(A1 * !A3 * B1 * C1 * X)	0.00127	0.00128	0.00127
	(A1 * !A3 * B1 * !C1 * X)	-0.00094	-0.00098	-0.00098
	(A1 * !A3 * B1 * !C1 * X)	0.00126	0.00128	0.00127
	(A1 * !A3 * !B1 * C1 * X)	-0.00094	-0.00098	-0.00098
	(A1 * !A3 * !B1 * C1 * X)	0.00128	0.00130	0.00127
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00036	-0.00037	-0.00037
	(A1 * !A3 * !B1 * !C1 * !X)	0.00136	0.00137	0.00134
	(!A1 * A3 * B1 * X)	-0.00094	-0.00098	-0.00097
	(!A1 * A3 * B1 * X)	0.00127	0.00129	0.00127
	(!A1 * A3 * !B1 * C1 * X)	-0.00094	-0.00098	-0.00097
	(!A1 * A3 * !B1 * C1 * X)	0.00127	0.00128	0.00127
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00084	-0.00091	-0.00091
	(!A1 * A3 * !B1 * !C1 * !X)	0.00138	0.00135	0.00134
	(!A1 * !A3 * B1 * X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * B1 * X)	0.00127	0.00129	0.00127
	(!A1 * !A3 * !B1 * C1 * X)	-0.00054	-0.00055	-0.00054
	(!A1 * !A3 * !B1 * C1 * X)	0.00127	0.00129	0.00128
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00139	0.00140	0.00135

sky130_fd_sc_hs__a311o_2	**(A1 * A3 * B1 * C1 * X)**	-0.00122	-0.00123	-0.00123
	(A1 * A3 * B1 * C1 * X)	0.00119	0.00119	0.00119
	(A1 * A3 * B1 * !C1 * X)	-0.00122	-0.00123	-0.00123
	(A1 * A3 * B1 * !C1 * X)	0.00119	0.00119	0.00119
	(A1 * A3 * !B1 * C1 * X)	-0.00122	-0.00122	-0.00122
	(A1 * A3 * !B1 * C1 * X)	0.00116	0.00116	0.00116
	(A1 * !A3 * B1 * C1 * X)	-0.00112	-0.00117	-0.00116
	(A1 * !A3 * B1 * C1 * X)	0.00122	0.00123	0.00123
	(A1 * !A3 * B1 * !C1 * X)	-0.00112	-0.00117	-0.00117
	(A1 * !A3 * B1 * !C1 * X)	0.00122	0.00123	0.00123
	(A1 * !A3 * !B1 * C1 * X)	-0.00112	-0.00117	-0.00118
	(A1 * !A3 * !B1 * C1 * X)	0.00122	0.00123	0.00123
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00043	-0.00044	-0.00044
	(A1 * !A3 * !B1 * !C1 * !X)	0.00134	0.00135	0.00132
	(!A1 * A3 * B1 * X)	-0.00113	-0.00117	-0.00118
	(!A1 * A3 * B1 * X)	0.00122	0.00123	0.00123
	(!A1 * A3 * !B1 * C1 * X)	-0.00113	-0.00117	-0.00117
	(!A1 * A3 * !B1 * C1 * X)	0.00123	0.00123	0.00123
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00102	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !C1 * !X)	0.00135	0.00132	0.00131
	(!A1 * !A3 * B1 * X)	-0.00066	-0.00067	-0.00066
	(!A1 * !A3 * B1 * X)	0.00123	0.00124	0.00123
	(!A1 * !A3 * !B1 * C1 * X)	-0.00066	-0.00067	-0.00066
	(!A1 * !A3 * !B1 * C1 * X)	0.00123	0.00124	0.00123
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00051	-0.00052	-0.00052
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00137	0.00138	0.00133

sky130_fd_sc_hs__a311o_4	**(A1 * A3 * B1 * C1 * X)**	-0.00205	-0.00206	-0.00205
	(A1 * A3 * B1 * C1 * X)	0.00247	0.00248	0.00246
	(A1 * A3 * B1 * !C1 * X)	-0.00205	-0.00206	-0.00205
	(A1 * A3 * B1 * !C1 * X)	0.00247	0.00248	0.00246
	(A1 * A3 * !B1 * C1 * X)	-0.00204	-0.00205	-0.00205
	(A1 * A3 * !B1 * C1 * X)	0.00241	0.00242	0.00241
	(A1 * !A3 * B1 * C1 * X)	-0.00188	-0.00197	-0.00196
	(A1 * !A3 * B1 * C1 * X)	0.00253	0.00254	0.00253
	(A1 * !A3 * B1 * !C1 * X)	-0.00188	-0.00197	-0.00198
	(A1 * !A3 * B1 * !C1 * X)	0.00253	0.00255	0.00253
	(A1 * !A3 * !B1 * C1 * X)	-0.00187	-0.00198	-0.00198
	(A1 * !A3 * !B1 * C1 * X)	0.00253	0.00255	0.00253
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00084	-0.00085	-0.00087
	(A1 * !A3 * !B1 * !C1 * !X)	0.00262	0.00263	0.00256
	(!A1 * A3 * B1 * X)	-0.00186	-0.00197	-0.00197
	(!A1 * A3 * B1 * X)	0.00251	0.00253	0.00253
	(!A1 * A3 * !B1 * C1 * X)	-0.00186	-0.00197	-0.00197
	(!A1 * A3 * !B1 * C1 * X)	0.00252	0.00253	0.00253
	(!A1 * A3 * !B1 * !C1 * !X)	-0.00178	-0.00197	-0.00197
	(!A1 * A3 * !B1 * !C1 * !X)	0.00263	0.00253	0.00253
	(!A1 * !A3 * B1 * X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A3 * B1 * X)	0.00252	0.00255	0.00253
	(!A1 * !A3 * !B1 * C1 * X)	-0.00117	-0.00117	-0.00116
	(!A1 * !A3 * !B1 * C1 * X)	0.00252	0.00256	0.00253
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00104	-0.00105	-0.00104
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00258	0.00262	0.00255

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)**	0.00113	0.00113	0.00113
	(A1 * A2 * B1 * C1 * X)	-0.00115	-0.00122	-0.00121
	(A1 * A2 * B1 * !C1 * X)	0.00113	0.00113	0.00113
	(A1 * A2 * B1 * !C1 * X)	-0.00115	-0.00122	-0.00121
	(A1 * A2 * !B1 * C1 * X)	0.00113	0.00113	0.00113
	(A1 * A2 * !B1 * C1 * X)	-0.00110	-0.00118	-0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * X)	0.00107	0.00109	0.00108
	(!A2 * B1 * X)	-0.00124	-0.00125	-0.00124
	(!A2 * !B1 * C1 * X)	0.00108	0.00109	0.00108
	(!A2 * !B1 * C1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * A2 * B1 * X)	0.00106	0.00106	0.00106
	(!A1 * A2 * B1 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * !B1 * C1 * X)	0.00106	0.00106	0.00106
	(!A1 * A2 * !B1 * C1 * X)	-0.00124	-0.00124	-0.00124
	(!A1 * A2 * !B1 * !C1 * !X)	0.00091	0.00092	0.00091
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00093	0.00094	0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	0.00141	0.00141	0.00140
	(A1 * A2 * B1 * C1 * X)	-0.00113	-0.00119	-0.00118
	(A1 * A2 * B1 * !C1 * X)	0.00141	0.00141	0.00140
	(A1 * A2 * B1 * !C1 * X)	-0.00112	-0.00119	-0.00118
	(A1 * A2 * !B1 * C1 * X)	0.00141	0.00141	0.00140
	(A1 * A2 * !B1 * C1 * X)	-0.00107	-0.00115	-0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00146	-0.00146
	(!A2 * B1 * X)	0.00134	0.00136	0.00134
	(!A2 * B1 * X)	-0.00121	-0.00122	-0.00121
	(!A2 * !B1 * C1 * X)	0.00134	0.00136	0.00134
	(!A2 * !B1 * C1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * A2 * B1 * X)	0.00132	0.00132	0.00132
	(!A1 * A2 * B1 * X)	-0.00122	-0.00121	-0.00121
	(!A1 * A2 * !B1 * C1 * X)	0.00132	0.00133	0.00132
	(!A1 * A2 * !B1 * C1 * X)	-0.00122	-0.00121	-0.00121
	(!A1 * A2 * !B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00146	-0.00146	-0.00146
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00111	0.00109
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00146	-0.00147	-0.00146

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	0.00237	0.00237	0.00235
	(A1 * A2 * B1 * C1 * X)	-0.00229	-0.00240	-0.00238
	(A1 * A2 * B1 * !C1 * X)	0.00237	0.00237	0.00235
	(A1 * A2 * B1 * !C1 * X)	-0.00228	-0.00240	-0.00238
	(A1 * A2 * !B1 * C1 * X)	0.00237	0.00237	0.00235
	(A1 * A2 * !B1 * C1 * X)	-0.00220	-0.00234	-0.00233
	(A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00203	0.00201
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00269	-0.00271	-0.00270
	(!A2 * B1 * X)	0.00227	0.00230	0.00227
	(!A2 * B1 * X)	-0.00244	-0.00246	-0.00244
	(!A2 * !B1 * C1 * X)	0.00227	0.00230	0.00228
	(!A2 * !B1 * C1 * X)	-0.00244	-0.00246	-0.00244
	(!A1 * A2 * B1 * X)	0.00225	0.00226	0.00225
	(!A1 * A2 * B1 * X)	-0.00245	-0.00245	-0.00244
	(!A1 * A2 * !B1 * C1 * X)	0.00226	0.00227	0.00225
	(!A1 * A2 * !B1 * C1 * X)	-0.00245	-0.00245	-0.00244
	(!A1 * A2 * !B1 * !C1 * !X)	0.00200	0.00201	0.00200
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00270	-0.00271	-0.00269
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00201	0.00204	0.00201
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00269	-0.00271	-0.00270

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)**	-0.00113	-0.00113	-0.00113
	(A1 * A2 * B1 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * B1 * !C1 * X)	-0.00113	-0.00113	-0.00113
	(A1 * A2 * B1 * !C1 * X)	0.00121	0.00122	0.00121
	(A1 * A2 * !B1 * C1 * X)	-0.00113	-0.00112	-0.00112
	(A1 * A2 * !B1 * C1 * X)	0.00119	0.00118	0.00118
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00094	-0.00093
	(A1 * !A2 * !B1 * !C1 * !X)	0.00140	0.00141	0.00139
	(!A2 * B1 * X)	-0.00105	-0.00108	-0.00108
	(!A2 * B1 * X)	0.00125	0.00125	0.00125
	(!A2 * !B1 * C1 * X)	-0.00105	-0.00108	-0.00108
	(!A2 * !B1 * C1 * X)	0.00125	0.00124	0.00125
	(!A1 * A2 * B1 * X)	-0.00100	-0.00106	-0.00106
	(!A1 * A2 * B1 * X)	0.00124	0.00126	0.00125
	(!A1 * A2 * !B1 * C1 * X)	-0.00100	-0.00106	-0.00106
	(!A1 * A2 * !B1 * C1 * X)	0.00124	0.00126	0.00125
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00086	-0.00092	-0.00091
	(!A1 * A2 * !B1 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00090	-0.00094	-0.00093
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00140	0.00140	0.00139

sky130_fd_sc_hs__a311o_2	**(A1 * A2 * B1 * C1 * X)**	-0.00141	-0.00141	-0.00140
	(A1 * A2 * B1 * C1 * X)	0.00118	0.00119	0.00118
	(A1 * A2 * B1 * !C1 * X)	-0.00141	-0.00141	-0.00140
	(A1 * A2 * B1 * !C1 * X)	0.00118	0.00119	0.00118
	(A1 * A2 * !B1 * C1 * X)	-0.00139	-0.00140	-0.00140
	(A1 * A2 * !B1 * C1 * X)	0.00115	0.00115	0.00115
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00110	-0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	0.00147	0.00147	0.00146
	(!A2 * B1 * X)	-0.00131	-0.00135	-0.00134
	(!A2 * B1 * X)	0.00122	0.00122	0.00122
	(!A2 * !B1 * C1 * X)	-0.00131	-0.00135	-0.00134
	(!A2 * !B1 * C1 * X)	0.00122	0.00122	0.00122
	(!A1 * A2 * B1 * X)	-0.00126	-0.00132	-0.00132
	(!A1 * A2 * B1 * X)	0.00122	0.00123	0.00122
	(!A1 * A2 * !B1 * C1 * X)	-0.00126	-0.00133	-0.00132
	(!A1 * A2 * !B1 * C1 * X)	0.00122	0.00123	0.00122
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00101	-0.00107	-0.00107
	(!A1 * A2 * !B1 * !C1 * !X)	0.00147	0.00148	0.00146
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00106	-0.00110	-0.00109
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00147	0.00148	0.00146

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * B1 * C1 * X)**	-0.00235	-0.00236	-0.00235
	(A1 * A2 * B1 * C1 * X)	0.00237	0.00240	0.00238
	(A1 * A2 * B1 * !C1 * X)	-0.00235	-0.00236	-0.00235
	(A1 * A2 * B1 * !C1 * X)	0.00237	0.00240	0.00238
	(A1 * A2 * !B1 * C1 * X)	-0.00234	-0.00235	-0.00235
	(A1 * A2 * !B1 * C1 * X)	0.00232	0.00234	0.00233
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00192	-0.00200	-0.00201
	(A1 * !A2 * !B1 * !C1 * !X)	0.00270	0.00273	0.00271
	(!A2 * B1 * X)	-0.00219	-0.00226	-0.00227
	(!A2 * B1 * X)	0.00244	0.00246	0.00245
	(!A2 * !B1 * C1 * X)	-0.00219	-0.00226	-0.00228
	(!A2 * !B1 * C1 * X)	0.00244	0.00246	0.00245
	(!A1 * A2 * B1 * X)	-0.00213	-0.00226	-0.00225
	(!A1 * A2 * B1 * X)	0.00245	0.00248	0.00245
	(!A1 * A2 * !B1 * C1 * X)	-0.00212	-0.00225	-0.00225
	(!A1 * A2 * !B1 * C1 * X)	0.00245	0.00248	0.00245
	(!A1 * A2 * !B1 * !C1 * !X)	-0.00187	-0.00200	-0.00200
	(!A1 * A2 * !B1 * !C1 * !X)	0.00271	0.00273	0.00270
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00192	-0.00200	-0.00201
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00270	0.00273	0.00271

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)**	0.00125	0.00120	0.00117
	(A1 * A2 * A3 * C1 * X)	-0.00085	-0.00087	-0.00086
	(A1 * A2 * A3 * !C1 * X)	0.00117	0.00119	0.00116
	(A1 * A2 * A3 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !A3 * C1 * X)	0.00134	0.00116	0.00115
	(A1 * A2 * !A3 * C1 * X)	-0.00100	-0.00119	-0.00120
	(A1 * !A2 * C1 * X)	0.00134	0.00116	0.00115
	(A1 * !A2 * C1 * X)	-0.00100	-0.00119	-0.00120
	(!A1 * C1 * X)	0.00133	0.00116	0.00115
	(!A1 * C1 * X)	-0.00101	-0.00119	-0.00120
sky130_fd_sc_hs__a311o_2	**(A1 * A2 * A3 * C1 * X)**	0.00143	0.00140	0.00137
	(A1 * A2 * A3 * C1 * X)	-0.00086	-0.00086	-0.00086
	(A1 * A2 * A3 * !C1 * X)	0.00135	0.00136	0.00134
	(A1 * A2 * A3 * !C1 * X)	-0.00069	-0.00070	-0.00070
	(A1 * A2 * !A3 * C1 * X)	0.00152	0.00135	0.00133
	(A1 * A2 * !A3 * C1 * X)	-0.00099	-0.00119	-0.00120
	(A1 * !A2 * C1 * X)	0.00152	0.00135	0.00133
	(A1 * !A2 * C1 * X)	-0.00099	-0.00119	-0.00120
	(!A1 * C1 * X)	0.00151	0.00134	0.00133
	(!A1 * C1 * X)	-0.00100	-0.00119	-0.00120
sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	0.00224	0.00223	0.00217
	(A1 * A2 * A3 * C1 * X)	-0.00187	-0.00187	-0.00186
	(A1 * A2 * A3 * !C1 * X)	0.00215	0.00218	0.00215
	(A1 * A2 * A3 * !C1 * X)	-0.00150	-0.00153	-0.00153
	(A1 * A2 * !A3 * C1 * X)	0.00250	0.00215	0.00213
	(A1 * A2 * !A3 * C1 * X)	-0.00210	-0.00250	-0.00251
	(A1 * !A2 * C1 * X)	0.00250	0.00215	0.00213
	(A1 * !A2 * C1 * X)	-0.00210	-0.00250	-0.00251
	(!A1 * C1 * X)	0.00250	0.00215	0.00213
	(!A1 * C1 * X)	-0.00210	-0.00250	-0.00251

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)	-0.00116	-0.00117	-0.00116
	(A1 * A2 * A3 * C1 * X)	0.00085	0.00087	0.00086
	(A1 * A2 * A3 * !C1 * X)	-0.00112	-0.00114	-0.00114
	(A1 * A2 * A3 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * A2 * !A3 * C1 * X)	-0.00115	-0.00115	-0.00114
	(A1 * A2 * !A3 * C1 * X)	0.00120	0.00120	0.00120
	(A1 * !A2 * C1 * X)	-0.00115	-0.00115	-0.00114
	(A1 * !A2 * C1 * X)	0.00120	0.00120	0.00120
	(!A1 * C1 * X)	-0.00115	-0.00115	-0.00114
	(!A1 * C1 * X)	0.00120	0.00121	0.00120
sky130_fd_sc_hs__a311o_2	(A1 * A2 * A3 * C1 * X)	-0.00135	-0.00136	-0.00135
	(A1 * A2 * A3 * C1 * X)	0.00086	0.00086	0.00086
	(A1 * A2 * A3 * !C1 * X)	-0.00132	-0.00132	-0.00133
	(A1 * A2 * A3 * !C1 * X)	0.00073	0.00074	0.00072
	(A1 * A2 * !A3 * C1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * A2 * !A3 * C1 * X)	0.00119	0.00120	0.00120
	(A1 * !A2 * C1 * X)	-0.00133	-0.00133	-0.00132
	(A1 * !A2 * C1 * X)	0.00119	0.00120	0.00120
	(!A1 * C1 * X)	-0.00133	-0.00133	-0.00132
	(!A1 * C1 * X)	0.00119	0.00120	0.00120

sky130_fd_sc_hs__a311o_4	**(A1 * A2 * A3 * C1 * X)**	-0.00215	-0.00215	-0.00215
	(A1 * A2 * A3 * C1 * X)	0.00187	0.00187	0.00186
	(A1 * A2 * A3 * !C1 * X)	-0.00208	-0.00210	-0.00210
	(A1 * A2 * A3 * !C1 * X)	0.00158	0.00160	0.00158
	(A1 * A2 * !A3 * C1 * X)	-0.00212	-0.00212	-0.00212
	(A1 * A2 * !A3 * C1 * X)	0.00250	0.00250	0.00251
	(A1 * !A2 * C1 * X)	-0.00212	-0.00212	-0.00212
	(A1 * !A2 * C1 * X)	0.00250	0.00250	0.00251
	(!A1 * C1 * X)	-0.00212	-0.00212	-0.00212
	(!A1 * C1 * X)	0.00250	0.00250	0.00251

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)	0.00140	0.00143	0.00141
	(A1 * A2 * B1 * X)	-0.00063	-0.00065	-0.00064
	(A1 * A2 * A3 * !B1 * X)	0.00140	0.00143	0.00141
	(A1 * A2 * A3 * !B1 * X)	-0.00063	-0.00065	-0.00063
	(A1 * !A2 * B1 * X)	0.00140	0.00143	0.00141
	(A1 * !A2 * B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * B1 * X)	0.00140	0.00143	0.00141
	(!A1 * B1 * X)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	0.00137	0.00139	0.00137
	(A1 * A2 * B1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * A3 * !B1 * X)	0.00137	0.00139	0.00137
	(A1 * A2 * A3 * !B1 * X)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * B1 * X)	0.00137	0.00139	0.00137
	(A1 * !A2 * B1 * X)	-0.00068	-0.00069	-0.00068
	(!A1 * B1 * X)	0.00137	0.00139	0.00137
	(!A1 * B1 * X)	-0.00068	-0.00069	-0.00068
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	0.00228	0.00230	0.00228
	(A1 * A2 * B1 * X)	-0.00147	-0.00147	-0.00145
	(A1 * A2 * A3 * !B1 * X)	0.00228	0.00230	0.00228
	(A1 * A2 * A3 * !B1 * X)	-0.00146	-0.00146	-0.00145
	(A1 * !A2 * B1 * X)	0.00228	0.00230	0.00228
	(A1 * !A2 * B1 * X)	-0.00147	-0.00147	-0.00145
	(!A1 * B1 * X)	0.00228	0.00230	0.00228
	(!A1 * B1 * X)	-0.00147	-0.00147	-0.00145

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)	-0.00137	-0.00136	-0.00140
	(A1 * A2 * B1 * X)	0.00067	0.00066	0.00065
	(A1 * A2 * A3 * !B1 * X)	-0.00126	-0.00126	-0.00138
	(A1 * A2 * A3 * !B1 * X)	0.00074	0.00073	0.00066
	(A1 * !A2 * B1 * X)	-0.00137	-0.00136	-0.00140
	(A1 * !A2 * B1 * X)	0.00067	0.00067	0.00065
	(!A1 * B1 * X)	-0.00137	-0.00138	-0.00140
	(!A1 * B1 * X)	0.00067	0.00068	0.00065
sky130_fd_sc_hs__a311o_2	(A1 * A2 * B1 * X)	-0.00134	-0.00135	-0.00137
	(A1 * A2 * B1 * X)	0.00072	0.00072	0.00069
	(A1 * A2 * A3 * !B1 * X)	-0.00124	-0.00125	-0.00135
	(A1 * A2 * A3 * !B1 * X)	0.00078	0.00078	0.00070
	(A1 * !A2 * B1 * X)	-0.00134	-0.00135	-0.00137
	(A1 * !A2 * B1 * X)	0.00072	0.00072	0.00069
	(!A1 * B1 * X)	-0.00134	-0.00135	-0.00137
	(!A1 * B1 * X)	0.00072	0.00072	0.00069
sky130_fd_sc_hs__a311o_4	(A1 * A2 * B1 * X)	-0.00215	-0.00217	-0.00226
	(A1 * A2 * B1 * X)	0.00156	0.00157	0.00148
	(A1 * A2 * A3 * !B1 * X)	-0.00193	-0.00196	-0.00221
	(A1 * A2 * A3 * !B1 * X)	0.00171	0.00172	0.00152
	(A1 * !A2 * B1 * X)	-0.00215	-0.00217	-0.00226
	(A1 * !A2 * B1 * X)	0.00156	0.00157	0.00148
	(!A1 * B1 * X)	-0.00215	-0.00217	-0.00226
	(!A1 * B1 * X)	0.00156	0.00157	0.00148

SKY130_FD_SC_HS__A31OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00264	0.00271	0.00261	0.00268	0.55125
sky130_fd_sc_hs__a31oi_2	0.00502	0.00486	0.00520	0.00394	1.06044
sky130_fd_sc_hs__a31oi_4	0.01017	0.00957	0.00955	0.00797	1.72689

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31oi_1	0.00000	0.01676	0.03360
sky130_fd_sc_hs__a31oi_2	0.00000	0.03324	0.06721
sky130_fd_sc_hs__a31oi_4	0.00000	0.06648	0.13442

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)	0.07940	0.97355	11.12280
	A2->Y (FR)	0.10151	1.01931	11.40140
	A3->Y (FR)	0.11289	1.02356	11.30470
	B1->Y (FR)	0.07631	0.97858	11.25670
sky130_fd_sc_hs__a31oi_2	A1->Y (FR)	0.07181	0.85531	11.36600
	A2->Y (FR)	0.08739	0.86717	11.32260
	A3->Y (FR)	0.10099	0.86583	11.08750
	B1->Y (FR)	0.05870	0.82395	11.22520
sky130_fd_sc_hs__a31oi_4	A1->Y (FR)	0.07287	0.74404	10.83840
	A2->Y (FR)	0.09254	0.75413	10.70250
	A3->Y (FR)	0.11480	0.78861	10.89880
	B1->Y (FR)	0.08484	0.75880	10.96950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31oi_1	A1->Y (RF)	0.02768	0.39547	4.41301
	A2->Y (RF)	0.03327	0.38638	4.24171
	A3->Y (RF)	0.03552	0.35138	3.75873
	B1->Y (RF)	0.01560	0.27249	3.04627
sky130_fd_sc_hs__a31oi_2	A1->Y (RF)	0.02735	0.38636	5.09174
	A2->Y (RF)	0.03105	0.33168	4.28775
	A3->Y (RF)	0.03477	0.30677	3.85610
	B1->Y (RF)	0.01885	0.36844	5.02025
sky130_fd_sc_hs__a31oi_4	A1->Y (RF)	0.02940	0.34853	5.11110
	A2->Y (RF)	0.03540	0.30431	4.34689
	A3->Y (RF)	0.03889	0.26059	3.61060
	B1->Y (RF)	0.01741	0.28027	4.27859

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	-0.00003	-0.00016	0.00062
	A1	0.00435	0.00423	0.00500
	A2	0.00045	0.00028	0.00107
	A2	0.00568	0.00551	0.00630
	A3	0.00067	0.00054	0.00134
	A3	0.00671	0.00659	0.00737
	B1	-0.00036	-0.00001	0.00399
	B1	0.00465	0.00491	0.00878
sky130_fd_sc_hs__a31oi_2	A1	-0.00005	-0.00029	0.00122
	A1	0.00815	0.00793	0.00944
	A2	0.00079	0.00056	0.00208
	A2	0.01049	0.01027	0.01161
	A3	0.00156	0.00131	0.00280
	A3	0.01297	0.01274	0.01423
	B1	0.00040	0.00097	0.00566
	B1	0.01079	0.01081	0.01534
sky130_fd_sc_hs__a31oi_4	A1	-0.00126	-0.00173	0.00157
	A1	0.01562	0.01518	0.01857
	A2	0.00118	0.00049	0.00376
	A2	0.02103	0.02041	0.02381
	A3	0.00294	0.00241	0.00562
	A3	0.02602	0.02552	0.02879
	B1	-0.00029	0.00052	0.01106
	B1	0.01640	0.01688	0.02689

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31oi_1	A1	0.00561	0.00555	0.00642
	A1	0.00129	0.00119	0.00211
	A2	0.00648	0.00639	0.00704
	A2	0.00128	0.00115	0.00173
	A3	0.00729	0.00717	0.00791
	A3	0.00122	0.00109	0.00167
	B1	0.00368	0.00371	0.00488
	B1	0.00000	-0.00000	0.00117
sky130_fd_sc_hs__a31oi_2	A1	0.01018	0.00999	0.01290
	A1	0.00214	0.00189	0.00355
	A2	0.01173	0.01148	0.01320
	A2	0.00210	0.00185	0.00300
	A3	0.01360	0.01335	0.01443
	A3	0.00213	0.00185	0.00300
	B1	0.00417	0.00422	0.00632
	B1	-0.00101	-0.00103	0.00041
sky130_fd_sc_hs__a31oi_4	A1	0.02064	0.02014	0.02474
	A1	0.00408	0.00352	0.00687
	A2	0.02371	0.02314	0.02593
	A2	0.00397	0.00331	0.00575
	A3	0.02711	0.02654	0.02966
	A3	0.00391	0.00326	0.00572
	B1	0.00889	0.00896	0.01258
	B1	-0.00207	-0.00209	0.00118

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)**	0.00127	0.00124	0.00123
	(A2 * A3 * B1 * !Y)	-0.00122	-0.00131	-0.00130
	(A2 * !A3 * B1 * !Y)	0.00114	0.00114	0.00114
	(A2 * !A3 * B1 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * !B1 * Y)	0.00038	0.00038	0.00036
	(A2 * !A3 * !B1 * Y)	-0.00157	-0.00159	-0.00164
	(!A2 * B1 * !Y)	0.00116	0.00118	0.00117
	(!A2 * B1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A2 * !B1 * Y)	0.00039	0.00039	0.00038
	(!A2 * !B1 * Y)	-0.00160	-0.00162	-0.00164
sky130_fd_sc_hs__a31oi_2	**(A2 * A3 * B1 * !Y)**	0.00253	0.00249	0.00247
	(A2 * A3 * B1 * !Y)	-0.00250	-0.00269	-0.00267
	(A2 * !A3 * B1 * !Y)	0.00234	0.00236	0.00234
	(A2 * !A3 * B1 * !Y)	-0.00274	-0.00274	-0.00273
	(A2 * !A3 * !B1 * Y)	0.00075	0.00075	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00325	-0.00327	-0.00337
	(!A2 * B1 * !Y)	0.00234	0.00236	0.00235
	(!A2 * B1 * !Y)	-0.00273	-0.00274	-0.00273
	(!A2 * !B1 * Y)	0.00073	0.00074	0.00071
	(!A2 * !B1 * Y)	-0.00333	-0.00336	-0.00340
sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	0.00527	0.00518	0.00511
	(A2 * A3 * B1 * !Y)	-0.00488	-0.00530	-0.00525
	(A2 * !A3 * B1 * !Y)	0.00482	0.00485	0.00484
	(A2 * !A3 * B1 * !Y)	-0.00538	-0.00540	-0.00539
	(A2 * !A3 * !B1 * Y)	0.00159	0.00160	0.00148
	(A2 * !A3 * !B1 * Y)	-0.00651	-0.00656	-0.00676
	(!A2 * B1 * !Y)	0.00487	0.00495	0.00490
	(!A2 * B1 * !Y)	-0.00536	-0.00542	-0.00538
	(!A2 * !B1 * Y)	0.00164	0.00164	0.00157
	(!A2 * !B1 * Y)	-0.00667	-0.00672	-0.00679

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)	-0.00122	-0.00123	-0.00123
	(A2 * A3 * B1 * !Y)	0.00130	0.00131	0.00130
	(A2 * !A3 * B1 * !Y)	-0.00105	-0.00114	-0.00114
	(A2 * !A3 * B1 * !Y)	0.00134	0.00136	0.00134
	(A2 * !A3 * !B1 * Y)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * Y)	0.00163	0.00166	0.00164
	(!A2 * B1 * !Y)	-0.00113	-0.00117	-0.00117
	(!A2 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A2 * !B1 * Y)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * Y)	0.00164	0.00167	0.00164
sky130_fd_sc_hs__a31oi_2	(A2 * A3 * B1 * !Y)	-0.00247	-0.00249	-0.00246
	(A2 * A3 * B1 * !Y)	0.00267	0.00271	0.00267
	(A2 * !A3 * B1 * !Y)	-0.00209	-0.00233	-0.00234
	(A2 * !A3 * B1 * !Y)	0.00275	0.00276	0.00274
	(A2 * !A3 * !B1 * Y)	-0.00069	-0.00069	-0.00068
	(A2 * !A3 * !B1 * Y)	0.00340	0.00345	0.00340
	(!A2 * B1 * !Y)	-0.00224	-0.00236	-0.00235
	(!A2 * B1 * !Y)	0.00273	0.00275	0.00274
	(!A2 * !B1 * Y)	-0.00070	-0.00071	-0.00069
	(!A2 * !B1 * Y)	0.00341	0.00346	0.00340

sky130_fd_sc_hs__a31oi_4	**(A2 * A3 * B1 * !Y)**	-0.00511	-0.00515	-0.00511
	(A2 * A3 * B1 * !Y)	0.00526	0.00533	0.00525
	(A2 * !A3 * B1 * !Y)	-0.00430	-0.00485	-0.00484
	(A2 * !A3 * B1 * !Y)	0.00541	0.00544	0.00540
	(A2 * !A3 * !B1 * Y)	-0.00148	-0.00149	-0.00148
	(A2 * !A3 * !B1 * Y)	0.00676	0.00683	0.00680
	(!A2 * B1 * !Y)	-0.00468	-0.00495	-0.00490
	(!A2 * B1 * !Y)	0.00538	0.00545	0.00540
	(!A2 * !B1 * Y)	-0.00153	-0.00154	-0.00153
	(!A2 * !B1 * Y)	0.00677	0.00684	0.00680

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)**	0.00135	0.00132	0.00131
	(A1 * A3 * B1 * !Y)	-0.00121	-0.00131	-0.00130
	(A1 * !A3 * B1 * !Y)	0.00125	0.00126	0.00125
	(A1 * !A3 * B1 * !Y)	-0.00133	-0.00135	-0.00134
	(A1 * !A3 * !B1 * Y)	0.00046	0.00046	0.00046
	(A1 * !A3 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * A3 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A1 * A3 * B1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A1 * A3 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * A3 * !B1 * Y)	-0.00150	-0.00150	-0.00150
	(!A1 * !A3 * B1 * !Y)	0.00075	0.00075	0.00075
	(!A1 * !A3 * B1 * !Y)	-0.00133	-0.00134	-0.00134
	(!A1 * !A3 * !B1 * Y)	0.00053	0.00053	0.00053
	(!A1 * !A3 * !B1 * Y)	-0.00150	-0.00151	-0.00151

sky130_fd_sc_hs__a31oi_2	**(A1 * A3 * B1 * !Y)**	0.00234	0.00230	0.00228
	(A1 * A3 * B1 * !Y)	-0.00253	-0.00270	-0.00268
	(A1 * !A3 * B1 * !Y)	0.00219	0.00221	0.00219
	(A1 * !A3 * B1 * !Y)	-0.00276	-0.00277	-0.00275
	(A1 * !A3 * !B1 * Y)	0.00091	0.00091	0.00091
	(A1 * !A3 * !B1 * Y)	-0.00276	-0.00277	-0.00277
	(!A1 * A3 * B1 * !Y)	0.00216	0.00218	0.00217
	(!A1 * A3 * B1 * !Y)	-0.00274	-0.00276	-0.00275
	(!A1 * A3 * !B1 * Y)	0.00218	0.00220	0.00219
	(!A1 * A3 * !B1 * Y)	-0.00276	-0.00277	-0.00276
	(!A1 * !A3 * B1 * !Y)	0.00117	0.00119	0.00118
	(!A1 * !A3 * B1 * !Y)	-0.00275	-0.00278	-0.00275
	(!A1 * !A3 * !B1 * Y)	0.00104	0.00105	0.00104
	(!A1 * !A3 * !B1 * Y)	-0.00279	-0.00282	-0.00279
sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	0.00503	0.00489	0.00485
	(A1 * A3 * B1 * !Y)	-0.00503	-0.00542	-0.00538
	(A1 * !A3 * B1 * !Y)	0.00460	0.00463	0.00462
	(A1 * !A3 * B1 * !Y)	-0.00551	-0.00554	-0.00553
	(A1 * !A3 * !B1 * Y)	0.00199	0.00199	0.00200
	(A1 * !A3 * !B1 * Y)	-0.00560	-0.00559	-0.00558
	(!A1 * A3 * B1 * !Y)	0.00467	0.00468	0.00469
	(!A1 * A3 * B1 * !Y)	-0.00552	-0.00552	-0.00553
	(!A1 * A3 * !B1 * Y)	0.00463	0.00470	0.00465
	(!A1 * A3 * !B1 * Y)	-0.00556	-0.00560	-0.00557
	(!A1 * !A3 * B1 * !Y)	0.00261	0.00262	0.00260
	(!A1 * !A3 * B1 * !Y)	-0.00554	-0.00556	-0.00553
	(!A1 * !A3 * !B1 * Y)	0.00230	0.00230	0.00229
	(!A1 * !A3 * !B1 * Y)	-0.00564	-0.00564	-0.00563

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)	-0.00131	-0.00131	-0.00131
	(A1 * A3 * B1 * !Y)	0.00130	0.00131	0.00130
	(A1 * !A3 * B1 * !Y)	-0.00120	-0.00125	-0.00125
	(A1 * !A3 * B1 * !Y)	0.00133	0.00135	0.00134
	(A1 * !A3 * !B1 * Y)	-0.00044	-0.00045	-0.00045
	(A1 * !A3 * !B1 * Y)	0.00153	0.00155	0.00151
	(!A1 * A3 * B1 * !Y)	-0.00121	-0.00126	-0.00125
	(!A1 * A3 * B1 * !Y)	0.00133	0.00134	0.00134
	(!A1 * A3 * !B1 * Y)	-0.00102	-0.00110	-0.00109
	(!A1 * A3 * !B1 * Y)	0.00153	0.00152	0.00150
	(!A1 * !A3 * B1 * !Y)	-0.00075	-0.00075	-0.00075
	(!A1 * !A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(!A1 * !A3 * !B1 * Y)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * !B1 * Y)	0.00155	0.00157	0.00152
sky130_fd_sc_hs__a31oi_2	(A1 * A3 * B1 * !Y)	-0.00227	-0.00228	-0.00228
	(A1 * A3 * B1 * !Y)	0.00268	0.00270	0.00268
	(A1 * !A3 * B1 * !Y)	-0.00207	-0.00221	-0.00219
	(A1 * !A3 * B1 * !Y)	0.00277	0.00278	0.00276
	(A1 * !A3 * !B1 * Y)	-0.00087	-0.00087	-0.00088
	(A1 * !A3 * !B1 * Y)	0.00285	0.00286	0.00279
	(!A1 * A3 * B1 * !Y)	-0.00207	-0.00218	-0.00217
	(!A1 * A3 * B1 * !Y)	0.00275	0.00281	0.00276
	(!A1 * A3 * !B1 * Y)	-0.00202	-0.00220	-0.00218
	(!A1 * A3 * !B1 * Y)	0.00283	0.00280	0.00277
	(!A1 * !A3 * B1 * !Y)	-0.00117	-0.00119	-0.00118
	(!A1 * !A3 * B1 * !Y)	0.00278	0.00279	0.00276
	(!A1 * !A3 * !B1 * Y)	-0.00104	-0.00105	-0.00104
	(!A1 * !A3 * !B1 * Y)	0.00288	0.00290	0.00281

sky130_fd_sc_hs__a31oi_4	**(A1 * A3 * B1 * !Y)**	-0.00485	-0.00487	-0.00484
	(A1 * A3 * B1 * !Y)	0.00538	0.00543	0.00538
	(A1 * !A3 * B1 * !Y)	-0.00433	-0.00463	-0.00462
	(A1 * !A3 * B1 * !Y)	0.00554	0.00559	0.00555
	(A1 * !A3 * !B1 * Y)	-0.00190	-0.00191	-0.00194
	(A1 * !A3 * !B1 * Y)	0.00576	0.00578	0.00564
	(!A1 * A3 * B1 * !Y)	-0.00442	-0.00468	-0.00468
	(!A1 * A3 * B1 * !Y)	0.00552	0.00556	0.00555
	(!A1 * A3 * !B1 * Y)	-0.00423	-0.00463	-0.00464
	(!A1 * A3 * !B1 * Y)	0.00577	0.00560	0.00559
	(!A1 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00260
	(!A1 * !A3 * B1 * !Y)	0.00557	0.00560	0.00555
	(!A1 * !A3 * !B1 * Y)	-0.00230	-0.00230	-0.00229
	(!A1 * !A3 * !B1 * Y)	0.00579	0.00583	0.00566

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)**	0.00140	0.00137	0.00136
	(A1 * A2 * B1 * !Y)	-0.00127	-0.00136	-0.00135
	(A1 * !A2 * !B1 * Y)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * Y)	-0.00148	-0.00149	-0.00148
	(!A2 * B1 * !Y)	0.00129	0.00131	0.00130
	(!A2 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * A2 * B1 * !Y)	0.00128	0.00128	0.00128
	(!A1 * A2 * B1 * !Y)	-0.00138	-0.00138	-0.00138
	(!A1 * A2 * !B1 * Y)	0.00118	0.00118	0.00117
	(!A1 * A2 * !B1 * Y)	-0.00148	-0.00148	-0.00148
	(!A1 * !A2 * !B1 * Y)	0.00120	0.00121	0.00120
	(!A1 * !A2 * !B1 * Y)	-0.00148	-0.00149	-0.00148

sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	0.00260	0.00254	0.00253
	(A1 * A2 * B1 * !Y)	-0.00251	-0.00267	-0.00266
	(A1 * !A2 * !B1 * Y)	0.00236	0.00238	0.00237
	(A1 * !A2 * !B1 * Y)	-0.00272	-0.00274	-0.00273
	(!A2 * B1 * !Y)	0.00241	0.00243	0.00242
	(!A2 * B1 * !Y)	-0.00271	-0.00273	-0.00272
	(!A1 * A2 * B1 * !Y)	0.00232	0.00234	0.00233
	(!A1 * A2 * B1 * !Y)	-0.00271	-0.00273	-0.00272
	(!A1 * A2 * !B1 * Y)	0.00231	0.00235	0.00232
	(!A1 * A2 * !B1 * Y)	-0.00272	-0.00275	-0.00273
	(!A1 * !A2 * !B1 * Y)	0.00236	0.00238	0.00236
	(!A1 * !A2 * !B1 * Y)	-0.00272	-0.00274	-0.00273
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	0.00498	0.00486	0.00481
	(A1 * A2 * B1 * !Y)	-0.00504	-0.00540	-0.00536
	(A1 * !A2 * !B1 * Y)	0.00454	0.00461	0.00455
	(A1 * !A2 * !B1 * Y)	-0.00550	-0.00555	-0.00551
	(!A2 * B1 * !Y)	0.00454	0.00461	0.00455
	(!A2 * B1 * !Y)	-0.00549	-0.00553	-0.00550
	(!A1 * A2 * B1 * !Y)	0.00441	0.00443	0.00443
	(!A1 * A2 * B1 * !Y)	-0.00548	-0.00550	-0.00550
	(!A1 * A2 * !B1 * Y)	0.00449	0.00455	0.00451
	(!A1 * A2 * !B1 * Y)	-0.00549	-0.00553	-0.00551
	(!A1 * !A2 * !B1 * Y)	0.00454	0.00460	0.00456
	(!A1 * !A2 * !B1 * Y)	-0.00550	-0.00554	-0.00551

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)**	-0.00135	-0.00136	-0.00136
	(A1 * A2 * B1 * !Y)	0.00135	0.00136	0.00135
	(A1 * !A2 * !B1 * Y)	-0.00116	-0.00121	-0.00120
	(A1 * !A2 * !B1 * Y)	0.00149	0.00150	0.00148
	(!A2 * B1 * !Y)	-0.00127	-0.00130	-0.00130
	(!A2 * B1 * !Y)	0.00139	0.00139	0.00139
	(!A1 * A2 * B1 * !Y)	-0.00121	-0.00128	-0.00128
	(!A1 * A2 * B1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * A2 * !B1 * Y)	-0.00112	-0.00118	-0.00117
	(!A1 * A2 * !B1 * Y)	0.00148	0.00150	0.00148
	(!A1 * !A2 * !B1 * Y)	-0.00117	-0.00121	-0.00120
	(!A1 * !A2 * !B1 * Y)	0.00149	0.00150	0.00148
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * B1 * !Y)**	-0.00251	-0.00253	-0.00252
	(A1 * A2 * B1 * !Y)	0.00264	0.00267	0.00266
	(A1 * !A2 * !B1 * Y)	-0.00226	-0.00236	-0.00237
	(A1 * !A2 * !B1 * Y)	0.00272	0.00276	0.00274
	(!A2 * B1 * !Y)	-0.00233	-0.00243	-0.00242
	(!A2 * B1 * !Y)	0.00271	0.00275	0.00273
	(!A1 * A2 * B1 * !Y)	-0.00220	-0.00234	-0.00233
	(!A1 * A2 * B1 * !Y)	0.00274	0.00276	0.00273
	(!A1 * A2 * !B1 * Y)	-0.00219	-0.00235	-0.00232
	(!A1 * A2 * !B1 * Y)	0.00275	0.00276	0.00274
	(!A1 * !A2 * !B1 * Y)	-0.00228	-0.00237	-0.00236
	(!A1 * !A2 * !B1 * Y)	0.00272	0.00276	0.00274

sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * B1 * !Y)**	-0.00480	-0.00482	-0.00480
	(A1 * A2 * B1 * !Y)	0.00534	0.00540	0.00536
	(A1 * !A2 * !B1 * Y)	-0.00433	-0.00456	-0.00455
	(A1 * !A2 * !B1 * Y)	0.00551	0.00558	0.00552
	(!A2 * B1 * !Y)	-0.00435	-0.00454	-0.00455
	(!A2 * B1 * !Y)	0.00550	0.00553	0.00552
	(!A1 * A2 * B1 * !Y)	-0.00416	-0.00443	-0.00443
	(!A1 * A2 * B1 * !Y)	0.00553	0.00558	0.00552
	(!A1 * A2 * !B1 * Y)	-0.00415	-0.00454	-0.00451
	(!A1 * A2 * !B1 * Y)	0.00554	0.00558	0.00552
	(!A1 * !A2 * !B1 * Y)	-0.00434	-0.00456	-0.00456
	(!A1 * !A2 * !B1 * Y)	0.00551	0.00558	0.00552

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)**	0.00150	0.00151	0.00149
	(A1 * A2 * A3 * !Y)	-0.00068	-0.00068	-0.00068
sky130_fd_sc_hs__a31oi_2	**(A1 * A2 * A3 * !Y)**	0.00159	0.00160	0.00159
	(A1 * A2 * A3 * !Y)	-0.00134	-0.00136	-0.00134
sky130_fd_sc_hs__a31oi_4	**(A1 * A2 * A3 * !Y)**	0.00329	0.00336	0.00331
	(A1 * A2 * A3 * !Y)	-0.00274	-0.00280	-0.00276

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)	-0.00139	-0.00141	-0.00148
	(A1 * A2 * A3 * !Y)	0.00077	0.00076	0.00070
sky130_fd_sc_hs__a31oi_2	(A1 * A2 * A3 * !Y)	-0.00136	-0.00138	-0.00156
	(A1 * A2 * A3 * !Y)	0.00154	0.00154	0.00139
sky130_fd_sc_hs__a31oi_4	(A1 * A2 * A3 * !Y)	-0.00286	-0.00291	-0.00326
	(A1 * A2 * A3 * !Y)	0.00312	0.00313	0.00284

SKY130_FD_SC_HS__A31Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00237	0.00234	0.00234	0.00256	1.16581
sky130_fd_sc_hs__a31o_2	0.00264	0.00254	0.00255	0.00249	2.23891
sky130_fd_sc_hs__a31o_4	0.00465	0.00450	0.00448	0.00465	4.38450

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a31o_1	0.00000	0.04426	0.05847
sky130_fd_sc_hs__a31o_2	0.00000	0.05844	0.06616
sky130_fd_sc_hs__a31o_4	0.00000	0.11763	0.13485

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)	0.06943	0.53526	5.69570
	A2->X (RR)	0.07440	0.55147	5.76010
	A3->X (RR)	0.07728	0.54662	5.72330
	B1->X (RR)	0.05138	0.50615	5.73180
sky130_fd_sc_hs__a31o_2	A1->X (RR)	0.07161	0.46569	5.70938
	A2->X (RR)	0.07624	0.47581	5.76405
	A3->X (RR)	0.07915	0.46724	5.72687
	B1->X (RR)	0.04914	0.42548	5.68184
sky130_fd_sc_hs__a31o_4	A1->X (RR)	0.08353	0.41783	5.79712
	A2->X (RR)	0.08889	0.42106	5.81952
	A3->X (RR)	0.09270	0.41075	5.78183
	B1->X (RR)	0.04889	0.35048	5.72704

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a31o_1	A1->X (FF)	0.11032	0.54691	4.65233
	A2->X (FF)	0.12987	0.57857	4.73321
	A3->X (FF)	0.14147	0.60025	4.78510
	B1->X (FF)	0.12059	0.56518	4.75842
sky130_fd_sc_hs__a31o_2	A1->X (FF)	0.14501	0.58467	4.77278
	A2->X (FF)	0.16917	0.62031	4.87375
	A3->X (FF)	0.17638	0.63224	4.91998
	B1->X (FF)	0.15377	0.60742	4.81287
sky130_fd_sc_hs__a31o_4	A1->X (FF)	0.14370	0.55440	4.90250
	A2->X (FF)	0.16233	0.58657	4.97705
	A3->X (FF)	0.18038	0.61487	5.05841
	B1->X (FF)	0.15224	0.57827	4.95959

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00726	0.00734	0.01766
	A1	0.00338	0.00346	0.01386
	A2	0.00794	0.00788	0.01558
	A2	0.00338	0.00333	0.01108
	A3	0.00867	0.00855	0.01458
	A3	0.00336	0.00324	0.00934
	B1	0.00574	0.00634	0.02641
	B1	0.00231	0.00291	0.02305
sky130_fd_sc_hs__a31o_2	A1	0.00956	0.00980	0.01846
	A1	0.00533	0.00559	0.01442
	A2	0.01032	0.01042	0.01702
	A2	0.00533	0.00545	0.01217
	A3	0.01116	0.01120	0.01645
	A3	0.00532	0.00538	0.01079
	B1	0.00777	0.00844	0.02634
	B1	0.00424	0.00497	0.02311
sky130_fd_sc_hs__a31o_4	A1	0.01844	0.01926	0.03897
	A1	0.01067	0.01154	0.03156
	A2	0.01992	0.02046	0.03545
	A2	0.01069	0.01130	0.02648
	A3	0.02145	0.02199	0.03640
	A3	0.01067	0.01132	0.02584
	B1	0.01378	0.01539	0.05654
	B1	0.00761	0.00923	0.05077

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a31o_1	A1	0.00254	0.00254	0.01050
	A1	0.00646	0.00646	0.01386
	A2	0.00292	0.00296	0.00976
	A2	0.00748	0.00752	0.01424
	A3	0.00309	0.00304	0.01004
	A3	0.00836	0.00831	0.01470
	B1	0.00208	0.00324	0.02415
	B1	0.00551	0.00661	0.02705
sky130_fd_sc_hs__a31o_2	A1	0.00445	0.00457	0.01153
	A1	0.00873	0.00884	0.01546
	A2	0.00494	0.00507	0.01170
	A2	0.00992	0.01004	0.01637
	A3	0.00524	0.00520	0.01136
	A3	0.01100	0.01098	0.01709
	B1	0.00416	0.00551	0.02479
	B1	0.00768	0.00878	0.02734
sky130_fd_sc_hs__a31o_4	A1	0.00921	0.00962	0.02687
	A1	0.01714	0.01737	0.03312
	A2	0.01000	0.01036	0.02652
	A2	0.01926	0.01956	0.03350
	A3	0.01093	0.01117	0.02788
	A3	0.02161	0.02194	0.03546
	B1	0.00869	0.01094	0.05048
	B1	0.01486	0.01708	0.05665

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)**	0.00111	0.00104	0.00103
	(A2 * A3 * B1 * X)	-0.00113	-0.00124	-0.00123
	(A2 * !A3 * B1 * X)	0.00096	0.00096	0.00096
	(A2 * !A3 * B1 * X)	-0.00127	-0.00127	-0.00127
	(A2 * !A3 * !B1 * !X)	0.00030	0.00031	0.00029
	(A2 * !A3 * !B1 * !X)	-0.00147	-0.00149	-0.00153
	(!A2 * B1 * X)	0.00098	0.00099	0.00099
	(!A2 * B1 * X)	-0.00127	-0.00127	-0.00127
	(!A2 * !B1 * !X)	0.00031	0.00032	0.00031
	(!A2 * !B1 * !X)	-0.00150	-0.00151	-0.00153
sky130_fd_sc_hs__a31o_2	**(A2 * A3 * B1 * X)**	0.00136	0.00130	0.00129
	(A2 * A3 * B1 * X)	-0.00109	-0.00120	-0.00119
	(A2 * !A3 * B1 * X)	0.00122	0.00122	0.00122
	(A2 * !A3 * B1 * X)	-0.00122	-0.00122	-0.00122
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00152	-0.00153	-0.00158
	(!A2 * B1 * X)	0.00123	0.00124	0.00124
	(!A2 * B1 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !X)	-0.00155	-0.00156	-0.00158
sky130_fd_sc_hs__a31o_4	**(A2 * A3 * B1 * X)**	0.00230	0.00223	0.00221
	(A2 * A3 * B1 * X)	-0.00228	-0.00249	-0.00248
	(A2 * !A3 * B1 * X)	0.00206	0.00206	0.00206
	(A2 * !A3 * B1 * X)	-0.00255	-0.00256	-0.00255
	(A2 * !A3 * !B1 * !X)	0.00073	0.00074	0.00068
	(A2 * !A3 * !B1 * !X)	-0.00299	-0.00300	-0.00311
	(!A2 * B1 * X)	0.00211	0.00212	0.00212
	(!A2 * B1 * X)	-0.00254	-0.00255	-0.00255
	(!A2 * !B1 * !X)	0.00073	0.00074	0.00071
	(!A2 * !B1 * !X)	-0.00306	-0.00308	-0.00312

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)	-0.00103	-0.00104	-0.00103
	(A2 * A3 * B1 * X)	0.00124	0.00124	0.00123
	(A2 * !A3 * B1 * X)	-0.00088	-0.00096	-0.00096
	(A2 * !A3 * B1 * X)	0.00127	0.00129	0.00128
	(A2 * !A3 * !B1 * !X)	-0.00029	-0.00029	-0.00029
	(A2 * !A3 * !B1 * !X)	0.00153	0.00155	0.00153
	(!A2 * B1 * X)	-0.00095	-0.00099	-0.00099
	(!A2 * B1 * X)	0.00128	0.00128	0.00127
	(!A2 * !B1 * !X)	-0.00030	-0.00030	-0.00030
	(!A2 * !B1 * !X)	0.00153	0.00156	0.00153
sky130_fd_sc_hs__a31o_2	(A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(A2 * A3 * B1 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * X)	-0.00113	-0.00122	-0.00122
	(A2 * !A3 * B1 * X)	0.00122	0.00123	0.00122
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00158	0.00160	0.00158
	(!A2 * B1 * X)	-0.00120	-0.00124	-0.00124
	(!A2 * B1 * X)	0.00122	0.00123	0.00122
	(!A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00158	0.00161	0.00159

sky130_fd_sc_hs__a31o_4	(A2 * A3 * B1 * X)	-0.00220	-0.00221	-0.00220
	(A2 * A3 * B1 * X)	0.00246	0.00249	0.00248
	(A2 * !A3 * B1 * X)	-0.00190	-0.00206	-0.00206
	(A2 * !A3 * B1 * X)	0.00255	0.00259	0.00256
	(A2 * !A3 * !B1 * !X)	-0.00067	-0.00068	-0.00067
	(A2 * !A3 * !B1 * !X)	0.00312	0.00315	0.00313
	(!A2 * B1 * X)	-0.00203	-0.00211	-0.00212
	(!A2 * B1 * X)	0.00254	0.00255	0.00256
	(!A2 * !B1 * !X)	-0.00069	-0.00071	-0.00069
	(!A2 * !B1 * !X)	0.00312	0.00317	0.00313

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)	0.00109	0.00103	0.00102
	(A1 * A3 * B1 * X)	-0.00113	-0.00124	-0.00123
	(A1 * !A3 * B1 * X)	0.00096	0.00097	0.00096
	(A1 * !A3 * B1 * X)	-0.00126	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00037	0.00038	0.00038
	(A1 * !A3 * !B1 * !X)	-0.00131	-0.00133	-0.00131
	(!A1 * A3 * B1 * X)	0.00097	0.00098	0.00097
	(!A1 * A3 * B1 * X)	-0.00126	-0.00127	-0.00127
	(!A1 * A3 * !B1 * !X)	0.00092	0.00093	0.00092
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A3 * B1 * X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * B1 * X)	-0.00126	-0.00127	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00043	0.00044	0.00043
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00132

sky130_fd_sc_hs__a31o_2	**(A1 * A3 * B1 * X)**	0.00131	0.00126	0.00124
	(A1 * A3 * B1 * X)	-0.00108	-0.00119	-0.00119
	(A1 * !A3 * B1 * X)	0.00118	0.00119	0.00118
	(A1 * !A3 * B1 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * !B1 * !X)	0.00046	0.00047	0.00047
	(A1 * !A3 * !B1 * !X)	-0.00131	-0.00133	-0.00132
	(!A1 * A3 * B1 * X)	0.00119	0.00120	0.00119
	(!A1 * A3 * B1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A3 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * A3 * !B1 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A3 * B1 * X)	0.00069	0.00070	0.00069
	(!A1 * !A3 * B1 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00133
sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	0.00228	0.00220	0.00218
	(A1 * A3 * B1 * X)	-0.00230	-0.00252	-0.00250
	(A1 * !A3 * B1 * X)	0.00206	0.00208	0.00207
	(A1 * !A3 * B1 * X)	-0.00257	-0.00259	-0.00258
	(A1 * !A3 * !B1 * !X)	0.00095	0.00096	0.00096
	(A1 * !A3 * !B1 * !X)	-0.00260	-0.00262	-0.00260
	(!A1 * A3 * B1 * X)	0.00208	0.00210	0.00209
	(!A1 * A3 * B1 * X)	-0.00257	-0.00259	-0.00258
	(!A1 * A3 * !B1 * !X)	0.00209	0.00212	0.00210
	(!A1 * A3 * !B1 * !X)	-0.00258	-0.00260	-0.00258
	(!A1 * !A3 * B1 * X)	0.00121	0.00122	0.00121
	(!A1 * !A3 * B1 * X)	-0.00258	-0.00261	-0.00258
	(!A1 * !A3 * !B1 * !X)	0.00108	0.00110	0.00109
	(!A1 * !A3 * !B1 * !X)	-0.00261	-0.00264	-0.00262

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)	-0.00102	-0.00102	-0.00101
	(A1 * A3 * B1 * X)	0.00123	0.00124	0.00123
	(A1 * !A3 * B1 * X)	-0.00093	-0.00096	-0.00096
	(A1 * !A3 * B1 * X)	0.00126	0.00128	0.00127
	(A1 * !A3 * !B1 * !X)	-0.00036	-0.00036	-0.00037
	(A1 * !A3 * !B1 * !X)	0.00134	0.00135	0.00132
	(!A1 * A3 * B1 * X)	-0.00093	-0.00097	-0.00097
	(!A1 * A3 * B1 * X)	0.00126	0.00127	0.00127
	(!A1 * A3 * !B1 * !X)	-0.00085	-0.00093	-0.00092
	(!A1 * A3 * !B1 * !X)	0.00136	0.00133	0.00132
	(!A1 * !A3 * B1 * X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * B1 * X)	0.00127	0.00128	0.00127
	(!A1 * !A3 * !B1 * !X)	-0.00043	-0.00044	-0.00043
	(!A1 * !A3 * !B1 * !X)	0.00137	0.00138	0.00134
sky130_fd_sc_hs__a31o_2	(A1 * A3 * B1 * X)	-0.00125	-0.00125	-0.00124
	(A1 * A3 * B1 * X)	0.00119	0.00120	0.00119
	(A1 * !A3 * B1 * X)	-0.00114	-0.00119	-0.00118
	(A1 * !A3 * B1 * X)	0.00122	0.00123	0.00122
	(A1 * !A3 * !B1 * !X)	-0.00044	-0.00045	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00135	0.00136	0.00133
	(!A1 * A3 * B1 * X)	-0.00115	-0.00119	-0.00119
	(!A1 * A3 * B1 * X)	0.00122	0.00122	0.00122
	(!A1 * A3 * !B1 * !X)	-0.00103	-0.00110	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00135	0.00133	0.00132
	(!A1 * !A3 * B1 * X)	-0.00069	-0.00070	-0.00069
	(!A1 * !A3 * B1 * X)	0.00122	0.00123	0.00122
	(!A1 * !A3 * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * !B1 * !X)	0.00137	0.00139	0.00134

sky130_fd_sc_hs__a31o_4	**(A1 * A3 * B1 * X)**	-0.00217	-0.00218	-0.00218
	(A1 * A3 * B1 * X)	0.00249	0.00252	0.00250
	(A1 * !A3 * B1 * X)	-0.00196	-0.00208	-0.00207
	(A1 * !A3 * B1 * X)	0.00258	0.00260	0.00259
	(A1 * !A3 * !B1 * !X)	-0.00091	-0.00091	-0.00093
	(A1 * !A3 * !B1 * !X)	0.00268	0.00269	0.00262
	(!A1 * A3 * B1 * X)	-0.00201	-0.00210	-0.00209
	(!A1 * A3 * B1 * X)	0.00258	0.00263	0.00259
	(!A1 * A3 * !B1 * !X)	-0.00193	-0.00211	-0.00210
	(!A1 * A3 * !B1 * !X)	0.00269	0.00264	0.00259
	(!A1 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * !A3 * B1 * X)	0.00260	0.00262	0.00259
	(!A1 * !A3 * !B1 * !X)	-0.00108	-0.00110	-0.00109
	(!A1 * !A3 * !B1 * !X)	0.00271	0.00273	0.00264

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)**	0.00117	0.00113	0.00112
	(A1 * A2 * B1 * X)	-0.00111	-0.00122	-0.00121
	(A1 * !A2 * !B1 * !X)	0.00093	0.00095	0.00094
	(A1 * !A2 * !B1 * !X)	-0.00137	-0.00139	-0.00138
	(!A2 * B1 * X)	0.00106	0.00108	0.00107
	(!A2 * B1 * X)	-0.00124	-0.00125	-0.00124
	(!A1 * A2 * B1 * X)	0.00106	0.00106	0.00106
	(!A1 * A2 * B1 * X)	-0.00125	-0.00125	-0.00124
	(!A1 * A2 * !B1 * !X)	0.00092	0.00092	0.00092
	(!A1 * A2 * !B1 * !X)	-0.00137	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * !X)	0.00093	0.00094	0.00094
	(!A1 * !A2 * !B1 * !X)	-0.00137	-0.00138	-0.00138

sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	0.00139	0.00135	0.00134
	(A1 * A2 * B1 * X)	-0.00108	-0.00118	-0.00117
	(A1 * !A2 * !B1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * B1 * X)	0.00127	0.00129	0.00127
	(!A2 * B1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * A2 * B1 * X)	0.00128	0.00129	0.00127
	(!A1 * A2 * B1 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * A2 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * A2 * !B1 * !X)	-0.00138	-0.00138	-0.00138
	(!A1 * !A2 * !B1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * !B1 * !X)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	0.00226	0.00218	0.00216
	(A1 * A2 * B1 * X)	-0.00231	-0.00252	-0.00251
	(A1 * !A2 * !B1 * !X)	0.00204	0.00205	0.00204
	(A1 * !A2 * !B1 * !X)	-0.00260	-0.00260	-0.00259
	(!A2 * B1 * X)	0.00206	0.00209	0.00207
	(!A2 * B1 * X)	-0.00258	-0.00258	-0.00259
	(!A1 * A2 * B1 * X)	0.00200	0.00200	0.00200
	(!A1 * A2 * B1 * X)	-0.00259	-0.00259	-0.00259
	(!A1 * A2 * !B1 * !X)	0.00203	0.00205	0.00203
	(!A1 * A2 * !B1 * !X)	-0.00260	-0.00261	-0.00259
	(!A1 * !A2 * !B1 * !X)	0.00204	0.00207	0.00204
	(!A1 * !A2 * !B1 * !X)	-0.00259	-0.00261	-0.00259

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)**	-0.00112	-0.00112	-0.00112
	(A1 * A2 * B1 * X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00094
	(A1 * !A2 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A2 * B1 * X)	-0.00104	-0.00107	-0.00107
	(!A2 * B1 * X)	0.00125	0.00125	0.00125
	(!A1 * A2 * B1 * X)	-0.00100	-0.00106	-0.00106
	(!A1 * A2 * B1 * X)	0.00125	0.00126	0.00125
	(!A1 * A2 * !B1 * !X)	-0.00087	-0.00092	-0.00092
	(!A1 * A2 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A1 * !A2 * !B1 * !X)	-0.00091	-0.00094	-0.00094
	(!A1 * !A2 * !B1 * !X)	0.00138	0.00139	0.00138
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * B1 * X)**	-0.00134	-0.00134	-0.00134
	(A1 * A2 * B1 * X)	0.00118	0.00118	0.00117
	(A1 * !A2 * !B1 * !X)	-0.00106	-0.00110	-0.00109
	(A1 * !A2 * !B1 * !X)	0.00139	0.00140	0.00139
	(!A2 * B1 * X)	-0.00125	-0.00128	-0.00127
	(!A2 * B1 * X)	0.00121	0.00121	0.00120
	(!A1 * A2 * B1 * X)	-0.00120	-0.00129	-0.00127
	(!A1 * A2 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * A2 * !B1 * !X)	-0.00101	-0.00109	-0.00109
	(!A1 * A2 * !B1 * !X)	0.00138	0.00140	0.00139
	(!A1 * !A2 * !B1 * !X)	-0.00106	-0.00110	-0.00109
	(!A1 * !A2 * !B1 * !X)	0.00139	0.00139	0.00139

sky130_fd_sc_hs__a31o_4	**(A1 * A2 * B1 * X)**	-0.00215	-0.00216	-0.00215
	(A1 * A2 * B1 * X)	0.00250	0.00252	0.00251
	(A1 * !A2 * !B1 * !X)	-0.00195	-0.00205	-0.00204
	(A1 * !A2 * !B1 * !X)	0.00260	0.00262	0.00260
	(!A2 * B1 * X)	-0.00197	-0.00204	-0.00207
	(!A2 * B1 * X)	0.00259	0.00258	0.00260
	(!A1 * A2 * B1 * X)	-0.00188	-0.00200	-0.00200
	(!A1 * A2 * B1 * X)	0.00259	0.00262	0.00260
	(!A1 * A2 * !B1 * !X)	-0.00187	-0.00205	-0.00203
	(!A1 * A2 * !B1 * !X)	0.00260	0.00262	0.00260
	(!A1 * !A2 * !B1 * !X)	-0.00196	-0.00205	-0.00204
	(!A1 * !A2 * !B1 * !X)	0.00260	0.00262	0.00260

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)**	0.00149	0.00152	0.00150
	(A1 * A2 * A3 * X)	-0.00063	-0.00065	-0.00064
sky130_fd_sc_hs__a31o_2	**(A1 * A2 * A3 * X)**	0.00140	0.00142	0.00140
	(A1 * A2 * A3 * X)	-0.00062	-0.00063	-0.00062
sky130_fd_sc_hs__a31o_4	**(A1 * A2 * A3 * X)**	0.00245	0.00248	0.00245
	(A1 * A2 * A3 * X)	-0.00136	-0.00137	-0.00136

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)	-0.00141	-0.00142	-0.00149
	(A1 * A2 * A3 * X)	0.00071	0.00071	0.00066
sky130_fd_sc_hs__a31o_2	(A1 * A2 * A3 * X)	-0.00132	-0.00133	-0.00139
	(A1 * A2 * A3 * X)	0.00070	0.00070	0.00064
sky130_fd_sc_hs__a31o_4	(A1 * A2 * A3 * X)	-0.00223	-0.00225	-0.00243
	(A1 * A2 * A3 * X)	0.00155	0.00155	0.00140

SKY130_FD_SC_HS__A32OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00269	0.00268	0.00241	0.00276	0.00253	0.54336
sky130_fd_sc_hs__a32oi_2	0.00505	0.00489	0.00480	0.00510	0.00495	0.99617
sky130_fd_sc_hs__a32oi_4	0.00998	0.00963	0.00958	0.01019	0.00981	1.63191

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32oi_1	0.00000	0.01797	0.06484
sky130_fd_sc_hs__a32oi_2	0.00000	0.03594	0.12968
sky130_fd_sc_hs__a32oi_4	0.00000	0.07188	0.25936

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)	0.11221	1.02820	11.34780
	A2->Y (FR)	0.12823	1.04322	11.35100
	A3->Y (FR)	0.14092	1.05088	11.28650
	B1->Y (FR)	0.08026	0.98134	11.22870
	B2->Y (FR)	0.07693	0.97968	11.22860
sky130_fd_sc_hs__a32oi_2	A1->Y (FR)	0.10120	0.86012	10.86360
	A2->Y (FR)	0.13092	0.91784	11.30420
	A3->Y (FR)	0.14332	0.92502	11.18670
	B1->Y (FR)	0.07018	0.83387	11.06210
	B2->Y (FR)	0.09393	0.86784	11.20130
sky130_fd_sc_hs__a32oi_4	A1->Y (FR)	0.11708	0.79665	10.91040
	A2->Y (FR)	0.13930	0.81460	10.85500
	A3->Y (FR)	0.15782	0.83620	10.86300
	B1->Y (FR)	0.09688	0.76091	10.70720
	B2->Y (FR)	0.12650	0.80791	11.04390

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32oi_1	A1->Y (RF)	0.03475	0.40081	4.35094
	A2->Y (RF)	0.03925	0.39377	4.20970
	A3->Y (RF)	0.04165	0.35607	3.70408
	B1->Y (RF)	0.02038	0.32985	3.68789
	B2->Y (RF)	0.02302	0.31734	3.50649
sky130_fd_sc_hs__a32oi_2	A1->Y (RF)	0.03679	0.38905	4.88424
	A2->Y (RF)	0.04454	0.38001	4.65050
	A3->Y (RF)	0.04682	0.31167	3.67797
	B1->Y (RF)	0.01831	0.29546	3.92121
	B2->Y (RF)	0.02318	0.27984	3.61340
sky130_fd_sc_hs__a32oi_4	A1->Y (RF)	0.03824	0.34108	4.70169
	A2->Y (RF)	0.04524	0.32335	4.32464
	A3->Y (RF)	0.04760	0.25665	3.32087
	B1->Y (RF)	0.01912	0.24888	3.72829
	B2->Y (RF)	0.02314	0.21757	3.15816

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32oi_1	A1	0.00020	0.00004	0.00084
	A1	0.00535	0.00520	0.00606
	A2	0.00054	0.00037	0.00118
	A2	0.00717	0.00692	0.00772
	A3	0.00098	0.00087	0.00167
	A3	0.00825	0.00803	0.00880
	B1	0.00008	0.00033	0.00426
	B1	0.00377	0.00402	0.00800
	B2	0.00042	0.00070	0.00465
	B2	0.00603	0.00617	0.01005
sky130_fd_sc_hs__a32oi_2	A1	-0.00068	-0.00092	0.00062
	A1	0.01142	0.01104	0.01252
	A2	0.00216	0.00172	0.00311
	A2	0.01440	0.01396	0.01515
	A3	0.00265	0.00245	0.00385
	A3	0.01644	0.01625	0.01763
	B1	-0.00093	-0.00017	0.00698
	B1	0.00913	0.00959	0.01641
	B2	0.00039	0.00103	0.00810
	B2	0.01195	0.01246	0.01918

sky130_fd_sc_hs__a32oi_4	**A1**	-0.00119	-0.00179	0.00162
	A1	0.02280	0.02191	0.02516
	A2	0.00348	0.00257	0.00574
	A2	0.02799	0.02703	0.03031
	A3	0.00463	0.00419	0.00733
	A3	0.03230	0.03185	0.03510
	B1	-0.00178	-0.00032	0.01417
	B1	0.01804	0.01905	0.03288
	B2	0.00059	0.00188	0.01616
	B2	0.02326	0.02402	0.03795

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32oi_1	**A1**	0.00729	0.00720	0.00836
	A1	0.00224	0.00213	0.00309
	A2	0.00812	0.00804	0.00886
	A2	0.00223	0.00210	0.00271
	A3	0.00881	0.00872	0.00928
	A3	0.00219	0.00207	0.00267
	B1	0.00373	0.00374	0.00494
	B1	0.00005	0.00003	0.00114
	B2	0.00531	0.00530	0.00611
	B2	0.00004	-0.00001	0.00072

sky130_fd_sc_hs__a32oi_2	**A1**	0.01414	0.01396	0.01567
	A1	0.00429	0.00405	0.00585
	A2	0.01585	0.01560	0.01688
	A2	0.00429	0.00399	0.00510
	A3	0.01751	0.01728	0.01858
	A3	0.00426	0.00398	0.00516
	B1	0.00675	0.00679	0.00893
	B1	-0.00016	-0.00017	0.00200
	B2	0.00858	0.00848	0.00991
	B2	-0.00013	-0.00023	0.00121
sky130_fd_sc_hs__a32oi_4	**A1**	0.02767	0.02708	0.03115
	A1	0.00789	0.00733	0.01099
	A2	0.03091	0.03026	0.03349
	A2	0.00782	0.00717	0.00960
	A3	0.03423	0.03368	0.03646
	A3	0.00766	0.00704	0.00966
	B1	0.01374	0.01378	0.01882
	B1	-0.00038	-0.00041	0.00409
	B2	0.01733	0.01703	0.02051
	B2	-0.00021	-0.00051	0.00271

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)**	0.00131	0.00129	0.00128
	(A2 * A3 * B1 * B2 * !Y)	-0.00123	-0.00131	-0.00130
	(A2 * !A3 * B1 * B2 * !Y)	0.00118	0.00119	0.00119
	(A2 * !A3 * B1 * B2 * !Y)	-0.00133	-0.00134	-0.00134
	(A2 * !A3 * B1 * !B2 * Y)	0.00041	0.00040	0.00038
	(A2 * !A3 * B1 * !B2 * Y)	-0.00161	-0.00161	-0.00166
	(A2 * !A3 * !B1 * Y)	0.00041	0.00041	0.00038
	(A2 * !A3 * !B1 * Y)	-0.00161	-0.00161	-0.00166
	(!A2 * B1 * B2 * !Y)	0.00121	0.00123	0.00122
	(!A2 * B1 * B2 * !Y)	-0.00133	-0.00135	-0.00134
	(!A2 * B1 * !B2 * Y)	0.00040	0.00040	0.00039
	(!A2 * B1 * !B2 * Y)	-0.00164	-0.00164	-0.00166
	(!A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(!A2 * !B1 * Y)	-0.00164	-0.00164	-0.00166
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	0.00257	0.00254	0.00252
	(A2 * A3 * B1 * B2 * !Y)	-0.00245	-0.00262	-0.00260
	(A2 * !A3 * B1 * B2 * !Y)	0.00238	0.00239	0.00239
	(A2 * !A3 * B1 * B2 * !Y)	-0.00266	-0.00267	-0.00267
	(A2 * !A3 * B1 * !B2 * Y)	0.00084	0.00084	0.00078
	(A2 * !A3 * B1 * !B2 * Y)	-0.00315	-0.00317	-0.00329
	(A2 * !A3 * !B1 * Y)	0.00084	0.00085	0.00078
	(A2 * !A3 * !B1 * Y)	-0.00315	-0.00317	-0.00329
	(!A2 * B1 * B2 * !Y)	0.00241	0.00244	0.00242
	(!A2 * B1 * B2 * !Y)	-0.00266	-0.00268	-0.00267
	(!A2 * B1 * !B2 * Y)	0.00087	0.00087	0.00083
	(!A2 * B1 * !B2 * Y)	-0.00322	-0.00324	-0.00330
	(!A2 * !B1 * Y)	0.00087	0.00088	0.00084
	(!A2 * !B1 * Y)	-0.00322	-0.00324	-0.00330

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	0.00513	0.00503	0.00499
	(A2 * A3 * B1 * B2 * !Y)	-0.00483	-0.00524	-0.00520
	(A2 * !A3 * B1 * B2 * !Y)	0.00470	0.00474	0.00470
	(A2 * !A3 * B1 * B2 * !Y)	-0.00534	-0.00538	-0.00535
	(A2 * !A3 * B1 * !B2 * Y)	0.00150	0.00151	0.00140
	(A2 * !A3 * B1 * !B2 * Y)	-0.00643	-0.00646	-0.00666
	(A2 * !A3 * !B1 * Y)	0.00151	0.00151	0.00140
	(A2 * !A3 * !B1 * Y)	-0.00643	-0.00646	-0.00666
	(!A2 * B1 * B2 * !Y)	0.00480	0.00485	0.00482
	(!A2 * B1 * B2 * !Y)	-0.00534	-0.00538	-0.00535
	(!A2 * B1 * !B2 * Y)	0.00155	0.00156	0.00149
	(!A2 * B1 * !B2 * Y)	-0.00658	-0.00662	-0.00669
	(!A2 * !B1 * Y)	0.00156	0.00156	0.00150
	(!A2 * !B1 * Y)	-0.00658	-0.00661	-0.00669

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)**	-0.00128	-0.00128	-0.00128
	(A2 * A3 * B1 * B2 * !Y)	0.00131	0.00131	0.00130
	(A2 * !A3 * B1 * B2 * !Y)	-0.00110	-0.00119	-0.00119
	(A2 * !A3 * B1 * B2 * !Y)	0.00135	0.00136	0.00134
	(A2 * !A3 * B1 * !B2 * Y)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * B1 * !B2 * Y)	0.00166	0.00168	0.00167
	(A2 * !A3 * !B1 * Y)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * !B1 * Y)	0.00166	0.00168	0.00167
	(!A2 * B1 * B2 * !Y)	-0.00118	-0.00122	-0.00122
	(!A2 * B1 * B2 * !Y)	0.00134	0.00135	0.00134
	(!A2 * B1 * !B2 * Y)	-0.00038	-0.00039	-0.00038
	(!A2 * B1 * !B2 * Y)	0.00166	0.00169	0.00167
	(!A2 * !B1 * Y)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * Y)	0.00166	0.00170	0.00167
sky130_fd_sc_hs__a32oi_2	**(A2 * A3 * B1 * B2 * !Y)**	-0.00251	-0.00253	-0.00252
	(A2 * A3 * B1 * B2 * !Y)	0.00259	0.00262	0.00260
	(A2 * !A3 * B1 * B2 * !Y)	-0.00209	-0.00239	-0.00239
	(A2 * !A3 * B1 * B2 * !Y)	0.00267	0.00269	0.00268
	(A2 * !A3 * B1 * !B2 * Y)	-0.00079	-0.00080	-0.00078
	(A2 * !A3 * B1 * !B2 * Y)	0.00331	0.00336	0.00330
	(A2 * !A3 * !B1 * Y)	-0.00079	-0.00080	-0.00078
	(A2 * !A3 * !B1 * Y)	0.00331	0.00336	0.00330
	(!A2 * B1 * B2 * !Y)	-0.00230	-0.00244	-0.00242
	(!A2 * B1 * B2 * !Y)	0.00267	0.00269	0.00268
	(!A2 * B1 * !B2 * Y)	-0.00082	-0.00083	-0.00081
	(!A2 * B1 * !B2 * Y)	0.00331	0.00336	0.00331
	(!A2 * !B1 * Y)	-0.00082	-0.00083	-0.00081
	(!A2 * !B1 * Y)	0.00331	0.00336	0.00331

sky130_fd_sc_hs__a32oi_4	**(A2 * A3 * B1 * B2 * !Y)**	-0.00497	-0.00500	-0.00498
	(A2 * A3 * B1 * B2 * !Y)	0.00518	0.00524	0.00520
	(A2 * !A3 * B1 * B2 * !Y)	-0.00406	-0.00474	-0.00470
	(A2 * !A3 * B1 * B2 * !Y)	0.00534	0.00540	0.00537
	(A2 * !A3 * B1 * !B2 * Y)	-0.00142	-0.00140	-0.00140
	(A2 * !A3 * B1 * !B2 * Y)	0.00671	0.00666	0.00670
	(A2 * !A3 * !B1 * Y)	-0.00143	-0.00144	-0.00140
	(A2 * !A3 * !B1 * Y)	0.00671	0.00678	0.00670
	(!A2 * B1 * B2 * !Y)	-0.00456	-0.00485	-0.00482
	(!A2 * B1 * B2 * !Y)	0.00538	0.00541	0.00537
	(!A2 * B1 * !B2 * Y)	-0.00147	-0.00145	-0.00146
	(!A2 * B1 * !B2 * Y)	0.00672	0.00669	0.00671
	(!A2 * !B1 * Y)	-0.00147	-0.00149	-0.00146
	(!A2 * !B1 * Y)	0.00672	0.00682	0.00670

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)**	0.00135	0.00132	0.00132
	(A1 * A3 * B1 * B2 * !Y)	-0.00124	-0.00131	-0.00131
	(A1 * !A3 * B1 * B2 * !Y)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * B2 * !Y)	-0.00134	-0.00135	-0.00134
	(A1 * !A3 * B1 * !B2 * Y)	0.00055	0.00055	0.00055
	(A1 * !A3 * B1 * !B2 * Y)	-0.00142	-0.00143	-0.00141
	(A1 * !A3 * !B1 * Y)	0.00055	0.00055	0.00055
	(A1 * !A3 * !B1 * Y)	-0.00142	-0.00143	-0.00141
	(!A1 * A3 * B1 * B2 * !Y)	0.00125	0.00127	0.00125
	(!A1 * A3 * B1 * B2 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * A3 * B1 * !B2 * Y)	0.00117	0.00119	0.00117
	(!A1 * A3 * B1 * !B2 * Y)	-0.00142	-0.00143	-0.00142
	(!A1 * A3 * !B1 * Y)	0.00117	0.00119	0.00117
	(!A1 * A3 * !B1 * Y)	-0.00142	-0.00143	-0.00142
	(!A1 * !A3 * B1 * B2 * !Y)	0.00074	0.00074	0.00074
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00133	-0.00134	-0.00134
	(!A1 * !A3 * B1 * !B2 * Y)	0.00061	0.00061	0.00061
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00142	-0.00142	-0.00142
	(!A1 * !A3 * !B1 * Y)	0.00061	0.00061	0.00061
	(!A1 * !A3 * !B1 * Y)	-0.00142	-0.00142	-0.00142

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	0.00249	0.00244	0.00242
	(A1 * A3 * B1 * B2 * !Y)	-0.00252	-0.00272	-0.00270
	(A1 * !A3 * B1 * B2 * !Y)	0.00231	0.00233	0.00231
	(A1 * !A3 * B1 * B2 * !Y)	-0.00278	-0.00280	-0.00278
	(A1 * !A3 * B1 * !B2 * Y)	0.00101	0.00101	0.00102
	(A1 * !A3 * B1 * !B2 * Y)	-0.00282	-0.00282	-0.00282
	(A1 * !A3 * !B1 * Y)	0.00101	0.00101	0.00102
	(A1 * !A3 * !B1 * Y)	-0.00282	-0.00282	-0.00282
	(!A1 * A3 * B1 * B2 * !Y)	0.00231	0.00235	0.00232
	(!A1 * A3 * B1 * B2 * !Y)	-0.00277	-0.00280	-0.00278
	(!A1 * A3 * B1 * !B2 * Y)	0.00228	0.00231	0.00229
	(!A1 * A3 * B1 * !B2 * Y)	-0.00281	-0.00283	-0.00282
	(!A1 * A3 * !B1 * Y)	0.00229	0.00231	0.00229
	(!A1 * A3 * !B1 * Y)	-0.00281	-0.00283	-0.00282
	(!A1 * !A3 * B1 * B2 * !Y)	0.00134	0.00135	0.00134
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00279	-0.00280	-0.00279
	(!A1 * !A3 * B1 * !B2 * Y)	0.00117	0.00119	0.00117
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00284	-0.00287	-0.00285
	(!A1 * !A3 * !B1 * Y)	0.00117	0.00117	0.00118
	(!A1 * !A3 * !B1 * Y)	-0.00284	-0.00283	-0.00285

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	0.00505	0.00490	0.00486
	(A1 * A3 * B1 * B2 * !Y)	-0.00498	-0.00539	-0.00536
	(A1 * !A3 * B1 * B2 * !Y)	0.00454	0.00456	0.00456
	(A1 * !A3 * B1 * B2 * !Y)	-0.00550	-0.00553	-0.00552
	(A1 * !A3 * B1 * !B2 * Y)	0.00193	0.00193	0.00194
	(A1 * !A3 * B1 * !B2 * Y)	-0.00560	-0.00559	-0.00558
	(A1 * !A3 * !B1 * Y)	0.00193	0.00194	0.00195
	(A1 * !A3 * !B1 * Y)	-0.00560	-0.00560	-0.00558
	(!A1 * A3 * B1 * B2 * !Y)	0.00467	0.00472	0.00468
	(!A1 * A3 * B1 * B2 * !Y)	-0.00550	-0.00554	-0.00552
	(!A1 * A3 * B1 * !B2 * Y)	0.00461	0.00466	0.00462
	(!A1 * A3 * B1 * !B2 * Y)	-0.00556	-0.00559	-0.00557
	(!A1 * A3 * !B1 * Y)	0.00461	0.00468	0.00463
	(!A1 * A3 * !B1 * Y)	-0.00556	-0.00559	-0.00557
	(!A1 * !A3 * B1 * B2 * !Y)	0.00253	0.00255	0.00253
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00553	-0.00554	-0.00552
	(!A1 * !A3 * B1 * !B2 * Y)	0.00221	0.00221	0.00220
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00564	-0.00564	-0.00563
	(!A1 * !A3 * !B1 * Y)	0.00222	0.00222	0.00221
	(!A1 * !A3 * !B1 * Y)	-0.00564	-0.00564	-0.00563

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)**	-0.00132	-0.00132	-0.00131
	(A1 * A3 * B1 * B2 * !Y)	0.00131	0.00131	0.00131
	(A1 * !A3 * B1 * B2 * !Y)	-0.00122	-0.00127	-0.00126
	(A1 * !A3 * B1 * B2 * !Y)	0.00135	0.00135	0.00134
	(A1 * !A3 * B1 * !B2 * Y)	-0.00052	-0.00053	-0.00053
	(A1 * !A3 * B1 * !B2 * Y)	0.00144	0.00146	0.00143
	(A1 * !A3 * !B1 * Y)	-0.00052	-0.00053	-0.00053
	(A1 * !A3 * !B1 * Y)	0.00144	0.00146	0.00143
	(!A1 * A3 * B1 * B2 * !Y)	-0.00122	-0.00127	-0.00125
	(!A1 * A3 * B1 * B2 * !Y)	0.00134	0.00136	0.00134
	(!A1 * A3 * B1 * !B2 * Y)	-0.00110	-0.00119	-0.00117
	(!A1 * A3 * B1 * !B2 * Y)	0.00147	0.00144	0.00142
	(!A1 * A3 * !B1 * Y)	-0.00110	-0.00119	-0.00117
	(!A1 * A3 * !B1 * Y)	0.00147	0.00144	0.00142
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00074	-0.00074	-0.00074
	(!A1 * !A3 * B1 * B2 * !Y)	0.00134	0.00136	0.00134
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00061	-0.00061	-0.00061
	(!A1 * !A3 * B1 * !B2 * Y)	0.00148	0.00149	0.00144
	(!A1 * !A3 * !B1 * Y)	-0.00061	-0.00061	-0.00061
	(!A1 * !A3 * !B1 * Y)	0.00148	0.00149	0.00144

sky130_fd_sc_hs__a32oi_2	**(A1 * A3 * B1 * B2 * !Y)**	-0.00241	-0.00243	-0.00241
	(A1 * A3 * B1 * B2 * !Y)	0.00269	0.00272	0.00270
	(A1 * !A3 * B1 * B2 * !Y)	-0.00219	-0.00233	-0.00231
	(A1 * !A3 * B1 * B2 * !Y)	0.00280	0.00281	0.00279
	(A1 * !A3 * B1 * !B2 * Y)	-0.00096	-0.00097	-0.00099
	(A1 * !A3 * B1 * !B2 * Y)	0.00292	0.00293	0.00285
	(A1 * !A3 * !B1 * Y)	-0.00097	-0.00097	-0.00099
	(A1 * !A3 * !B1 * Y)	0.00292	0.00293	0.00285
	(!A1 * A3 * B1 * B2 * !Y)	-0.00220	-0.00233	-0.00232
	(!A1 * A3 * B1 * B2 * !Y)	0.00278	0.00280	0.00279
	(!A1 * A3 * B1 * !B2 * Y)	-0.00209	-0.00229	-0.00229
	(!A1 * A3 * B1 * !B2 * Y)	0.00291	0.00283	0.00282
	(!A1 * A3 * !B1 * Y)	-0.00209	-0.00230	-0.00229
	(!A1 * A3 * !B1 * Y)	0.00291	0.00283	0.00282
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00134	-0.00135	-0.00134
	(!A1 * !A3 * B1 * B2 * !Y)	0.00282	0.00283	0.00280
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00117	-0.00119	-0.00117
	(!A1 * !A3 * B1 * !B2 * Y)	0.00291	0.00293	0.00286
	(!A1 * !A3 * !B1 * Y)	-0.00117	-0.00117	-0.00118
	(!A1 * !A3 * !B1 * Y)	0.00291	0.00293	0.00286

sky130_fd_sc_hs__a32oi_4	**(A1 * A3 * B1 * B2 * !Y)**	-0.00484	-0.00487	-0.00484
	(A1 * A3 * B1 * B2 * !Y)	0.00534	0.00539	0.00536
	(A1 * !A3 * B1 * B2 * !Y)	-0.00437	-0.00456	-0.00456
	(A1 * !A3 * B1 * B2 * !Y)	0.00555	0.00558	0.00554
	(A1 * !A3 * B1 * !B2 * Y)	-0.00185	-0.00186	-0.00189
	(A1 * !A3 * B1 * !B2 * Y)	0.00576	0.00578	0.00564
	(A1 * !A3 * !B1 * Y)	-0.00186	-0.00186	-0.00189
	(A1 * !A3 * !B1 * Y)	0.00576	0.00578	0.00564
	(!A1 * A3 * B1 * B2 * !Y)	-0.00442	-0.00468	-0.00468
	(!A1 * A3 * B1 * B2 * !Y)	0.00552	0.00554	0.00554
	(!A1 * A3 * B1 * !B2 * Y)	-0.00416	-0.00462	-0.00462
	(!A1 * A3 * B1 * !B2 * Y)	0.00585	0.00559	0.00559
	(!A1 * A3 * !B1 * Y)	-0.00416	-0.00462	-0.00463
	(!A1 * A3 * !B1 * Y)	0.00585	0.00559	0.00559
	(!A1 * !A3 * B1 * B2 * !Y)	-0.00253	-0.00255	-0.00253
	(!A1 * !A3 * B1 * B2 * !Y)	0.00556	0.00559	0.00554
	(!A1 * !A3 * B1 * !B2 * Y)	-0.00221	-0.00221	-0.00220
	(!A1 * !A3 * B1 * !B2 * Y)	0.00584	0.00587	0.00568
	(!A1 * !A3 * !B1 * Y)	-0.00222	-0.00222	-0.00221
	(!A1 * !A3 * !B1 * Y)	0.00584	0.00587	0.00568

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)**	0.00126	0.00124	0.00123
	(A1 * A2 * B1 * B2 * !Y)	-0.00125	-0.00133	-0.00132
	(A1 * !A2 * B1 * !B2 * Y)	0.00117	0.00119	0.00118
	(A1 * !A2 * B1 * !B2 * Y)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * !B1 * Y)	0.00117	0.00119	0.00118
	(A1 * !A2 * !B1 * Y)	-0.00135	-0.00136	-0.00135
	(!A2 * B1 * B2 * !Y)	0.00117	0.00118	0.00117
	(!A2 * B1 * B2 * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * A2 * B1 * B2 * !Y)	0.00116	0.00118	0.00116
	(!A1 * A2 * B1 * B2 * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * A2 * B1 * !B2 * Y)	0.00116	0.00117	0.00116
	(!A1 * A2 * B1 * !B2 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * A2 * !B1 * Y)	0.00116	0.00118	0.00116
	(!A1 * A2 * !B1 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * B1 * !B2 * Y)	0.00117	0.00118	0.00118
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00135	-0.00135	-0.00135
	(!A1 * !A2 * !B1 * Y)	0.00117	0.00119	0.00118
	(!A1 * !A2 * !B1 * Y)	-0.00135	-0.00136	-0.00135

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	0.00254	0.00250	0.00248
	(A1 * A2 * B1 * B2 * !Y)	-0.00250	-0.00268	-0.00267
	(A1 * !A2 * B1 * !B2 * Y)	0.00234	0.00237	0.00235
	(A1 * !A2 * B1 * !B2 * Y)	-0.00274	-0.00276	-0.00275
	(A1 * !A2 * !B1 * Y)	0.00234	0.00237	0.00235
	(A1 * !A2 * !B1 * Y)	-0.00274	-0.00276	-0.00275
	(!A2 * B1 * B2 * !Y)	0.00234	0.00236	0.00235
	(!A2 * B1 * B2 * !Y)	-0.00274	-0.00275	-0.00274
	(!A1 * A2 * B1 * B2 * !Y)	0.00235	0.00238	0.00236
	(!A1 * A2 * B1 * B2 * !Y)	-0.00273	-0.00275	-0.00274
	(!A1 * A2 * B1 * !B2 * Y)	0.00234	0.00237	0.00235
	(!A1 * A2 * B1 * !B2 * Y)	-0.00273	-0.00275	-0.00274
	(!A1 * A2 * !B1 * Y)	0.00234	0.00238	0.00236
	(!A1 * A2 * !B1 * Y)	-0.00273	-0.00276	-0.00274
	(!A1 * !A2 * B1 * !B2 * Y)	0.00234	0.00238	0.00235
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00274	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * Y)	0.00234	0.00238	0.00235
	(!A1 * !A2 * !B1 * Y)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	0.00496	0.00485	0.00481
	(A1 * A2 * B1 * B2 * !Y)	-0.00502	-0.00543	-0.00539
	(A1 * !A2 * B1 * !B2 * Y)	0.00454	0.00459	0.00456
	(A1 * !A2 * B1 * !B2 * Y)	-0.00554	-0.00557	-0.00555
	(A1 * !A2 * !B1 * Y)	0.00454	0.00458	0.00456
	(A1 * !A2 * !B1 * Y)	-0.00554	-0.00557	-0.00555
	(!A2 * B1 * B2 * !Y)	0.00455	0.00458	0.00457
	(!A2 * B1 * B2 * !Y)	-0.00553	-0.00556	-0.00555
	(!A1 * A2 * B1 * B2 * !Y)	0.00448	0.00453	0.00450
	(!A1 * A2 * B1 * B2 * !Y)	-0.00553	-0.00557	-0.00555
	(!A1 * A2 * B1 * !B2 * Y)	0.00447	0.00453	0.00449
	(!A1 * A2 * B1 * !B2 * Y)	-0.00554	-0.00558	-0.00556
	(!A1 * A2 * !B1 * Y)	0.00447	0.00453	0.00449
	(!A1 * A2 * !B1 * Y)	-0.00554	-0.00558	-0.00556
	(!A1 * !A2 * B1 * !B2 * Y)	0.00454	0.00459	0.00456
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00554	-0.00558	-0.00555
	(!A1 * !A2 * !B1 * Y)	0.00454	0.00458	0.00456
	(!A1 * !A2 * !B1 * Y)	-0.00554	-0.00557	-0.00555

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)**	-0.00123	-0.00123	-0.00123
	(A1 * A2 * B1 * B2 * !Y)	0.00133	0.00133	0.00132
	(A1 * !A2 * B1 * !B2 * Y)	-0.00114	-0.00119	-0.00118
	(A1 * !A2 * B1 * !B2 * Y)	0.00136	0.00137	0.00136
	(A1 * !A2 * !B1 * Y)	-0.00114	-0.00119	-0.00118
	(A1 * !A2 * !B1 * Y)	0.00136	0.00137	0.00136
	(!A2 * B1 * B2 * !Y)	-0.00115	-0.00118	-0.00117
	(!A2 * B1 * B2 * !Y)	0.00136	0.00136	0.00136
	(!A1 * A2 * B1 * B2 * !Y)	-0.00109	-0.00118	-0.00116
	(!A1 * A2 * B1 * B2 * !Y)	0.00135	0.00137	0.00136
	(!A1 * A2 * B1 * !B2 * Y)	-0.00109	-0.00117	-0.00116
	(!A1 * A2 * B1 * !B2 * Y)	0.00135	0.00137	0.00136
	(!A1 * A2 * !B1 * Y)	-0.00109	-0.00118	-0.00116
	(!A1 * A2 * !B1 * Y)	0.00135	0.00137	0.00136
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00115	-0.00118	-0.00118
	(!A1 * !A2 * B1 * !B2 * Y)	0.00136	0.00137	0.00136
	(!A1 * !A2 * !B1 * Y)	-0.00115	-0.00119	-0.00118
	(!A1 * !A2 * !B1 * Y)	0.00136	0.00137	0.00136

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * B1 * B2 * !Y)**	-0.00247	-0.00248	-0.00247
	(A1 * A2 * B1 * B2 * !Y)	0.00265	0.00268	0.00267
	(A1 * !A2 * B1 * !B2 * Y)	-0.00227	-0.00237	-0.00235
	(A1 * !A2 * B1 * !B2 * Y)	0.00274	0.00278	0.00275
	(A1 * !A2 * !B1 * Y)	-0.00227	-0.00237	-0.00235
	(A1 * !A2 * !B1 * Y)	0.00274	0.00278	0.00275
	(!A2 * B1 * B2 * !Y)	-0.00227	-0.00235	-0.00235
	(!A2 * B1 * B2 * !Y)	0.00274	0.00276	0.00275
	(!A1 * A2 * B1 * B2 * !Y)	-0.00221	-0.00234	-0.00236
	(!A1 * A2 * B1 * B2 * !Y)	0.00275	0.00278	0.00275
	(!A1 * A2 * B1 * !B2 * Y)	-0.00220	-0.00235	-0.00235
	(!A1 * A2 * B1 * !B2 * Y)	0.00276	0.00278	0.00275
	(!A1 * A2 * !B1 * Y)	-0.00221	-0.00235	-0.00236
	(!A1 * A2 * !B1 * Y)	0.00276	0.00278	0.00275
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00227	-0.00237	-0.00235
	(!A1 * !A2 * B1 * !B2 * Y)	0.00274	0.00278	0.00275
	(!A1 * !A2 * !B1 * Y)	-0.00227	-0.00237	-0.00235
	(!A1 * !A2 * !B1 * Y)	0.00274	0.00278	0.00275

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * B1 * B2 * !Y)**	-0.00479	-0.00481	-0.00479
	(A1 * A2 * B1 * B2 * !Y)	0.00537	0.00543	0.00539
	(A1 * !A2 * B1 * !B2 * Y)	-0.00434	-0.00454	-0.00456
	(A1 * !A2 * B1 * !B2 * Y)	0.00557	0.00562	0.00557
	(A1 * !A2 * !B1 * Y)	-0.00434	-0.00454	-0.00456
	(A1 * !A2 * !B1 * Y)	0.00557	0.00562	0.00557
	(!A2 * B1 * B2 * !Y)	-0.00437	-0.00454	-0.00457
	(!A2 * B1 * B2 * !Y)	0.00557	0.00559	0.00557
	(!A1 * A2 * B1 * B2 * !Y)	-0.00420	-0.00453	-0.00450
	(!A1 * A2 * B1 * B2 * !Y)	0.00558	0.00562	0.00557
	(!A1 * A2 * B1 * !B2 * Y)	-0.00419	-0.00453	-0.00449
	(!A1 * A2 * B1 * !B2 * Y)	0.00559	0.00563	0.00557
	(!A1 * A2 * !B1 * Y)	-0.00419	-0.00453	-0.00449
	(!A1 * A2 * !B1 * Y)	0.00559	0.00563	0.00557
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00435	-0.00454	-0.00456
	(!A1 * !A2 * B1 * !B2 * Y)	0.00557	0.00562	0.00557
	(!A1 * !A2 * !B1 * Y)	-0.00435	-0.00454	-0.00456
	(!A1 * !A2 * !B1 * Y)	0.00557	0.00562	0.00557

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)**	0.00144	0.00145	0.00144
	(A1 * A2 * A3 * B2 * !Y)	-0.00068	-0.00068	-0.00068
	(A1 * A2 * A3 * !B2 * !Y)	0.00138	0.00139	0.00138
	(A1 * A2 * A3 * !B2 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * A2 * !A3 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * A2 * !A3 * !B2 * Y)	-0.00168	-0.00170	-0.00171
	(A1 * !A2 * !B2 * Y)	0.00039	0.00039	0.00038
	(A1 * !A2 * !B2 * Y)	-0.00168	-0.00170	-0.00171
	(!A1 * !B2 * Y)	0.00039	0.00039	0.00038
	(!A1 * !B2 * Y)	-0.00169	-0.00170	-0.00171
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B2 * !Y)**	0.00272	0.00278	0.00273
	(A1 * A2 * A3 * B2 * !Y)	-0.00135	-0.00138	-0.00135
	(A1 * A2 * A3 * !B2 * !Y)	0.00264	0.00267	0.00265
	(A1 * A2 * A3 * !B2 * !Y)	-0.00135	-0.00136	-0.00135
	(A1 * A2 * !A3 * !B2 * Y)	0.00081	0.00083	0.00078
	(A1 * A2 * !A3 * !B2 * Y)	-0.00322	-0.00327	-0.00331
	(A1 * !A2 * !B2 * Y)	0.00081	0.00083	0.00078
	(A1 * !A2 * !B2 * Y)	-0.00322	-0.00327	-0.00331
	(!A1 * !B2 * Y)	0.00082	0.00083	0.00079
	(!A1 * !B2 * Y)	-0.00322	-0.00326	-0.00331
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	0.00549	0.00561	0.00551
	(A1 * A2 * A3 * B2 * !Y)	-0.00275	-0.00280	-0.00275
	(A1 * A2 * A3 * !B2 * !Y)	0.00528	0.00530	0.00528
	(A1 * A2 * A3 * !B2 * !Y)	-0.00274	-0.00276	-0.00274
	(A1 * A2 * !A3 * !B2 * Y)	0.00154	0.00157	0.00150
	(A1 * A2 * !A3 * !B2 * Y)	-0.00657	-0.00666	-0.00673
	(A1 * !A2 * !B2 * Y)	0.00155	0.00157	0.00150
	(A1 * !A2 * !B2 * Y)	-0.00658	-0.00666	-0.00673
	(!A1 * !B2 * Y)	0.00155	0.00158	0.00150
	(!A1 * !B2 * Y)	-0.00658	-0.00666	-0.00673

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)	-0.00129	-0.00131	-0.00142
	(A1 * A2 * A3 * B2 * !Y)	0.00080	0.00080	0.00070
	(A1 * A2 * A3 * !B2 * !Y)	-0.00134	-0.00139	-0.00138
	(A1 * A2 * A3 * !B2 * !Y)	0.00067	0.00068	0.00067
	(A1 * A2 * !A3 * !B2 * Y)	-0.00038	-0.00038	-0.00037
	(A1 * A2 * !A3 * !B2 * Y)	0.00171	0.00171	0.00171
	(A1 * !A2 * !B2 * Y)	-0.00038	-0.00038	-0.00037
	(A1 * !A2 * !B2 * Y)	0.00171	0.00171	0.00171
	(!A1 * !B2 * Y)	-0.00038	-0.00038	-0.00037
	(!A1 * !B2 * Y)	0.00171	0.00171	0.00171
sky130_fd_sc_hs__a32oi_2	(A1 * A2 * A3 * B2 * !Y)	-0.00244	-0.00247	-0.00269
	(A1 * A2 * A3 * B2 * !Y)	0.00160	0.00160	0.00141
	(A1 * A2 * A3 * !B2 * !Y)	-0.00250	-0.00267	-0.00265
	(A1 * A2 * A3 * !B2 * !Y)	0.00135	0.00136	0.00135
	(A1 * A2 * !A3 * !B2 * Y)	-0.00077	-0.00077	-0.00076
	(A1 * A2 * !A3 * !B2 * Y)	0.00332	0.00331	0.00331
	(A1 * !A2 * !B2 * Y)	-0.00077	-0.00077	-0.00076
	(A1 * !A2 * !B2 * Y)	0.00332	0.00331	0.00331
	(!A1 * !B2 * Y)	-0.00078	-0.00077	-0.00077
	(!A1 * !B2 * Y)	0.00332	0.00331	0.00331

sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B2 * !Y)**	-0.00498	-0.00503	-0.00545
	(A1 * A2 * A3 * B2 * !Y)	0.00320	0.00320	0.00285
	(A1 * A2 * A3 * !B2 * !Y)	-0.00504	-0.00530	-0.00528
	(A1 * A2 * A3 * !B2 * !Y)	0.00274	0.00276	0.00274
	(A1 * A2 * !A3 * !B2 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * A2 * !A3 * !B2 * Y)	0.00671	0.00675	0.00674
	(A1 * !A2 * !B2 * Y)	-0.00146	-0.00147	-0.00146
	(A1 * !A2 * !B2 * Y)	0.00671	0.00675	0.00674
	(!A1 * !B2 * Y)	-0.00146	-0.00147	-0.00147
	(!A1 * !B2 * Y)	0.00671	0.00675	0.00674

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)**	0.00139	0.00139	0.00138
	(A1 * A2 * A3 * B1 * !Y)	-0.00072	-0.00072	-0.00072
	(A1 * A2 * A3 * !B1 * !Y)	0.00132	0.00133	0.00132
	(A1 * A2 * A3 * !B1 * !Y)	-0.00071	-0.00072	-0.00071
	(A1 * A2 * !A3 * !B1 * Y)	0.00117	0.00118	0.00117
	(A1 * A2 * !A3 * !B1 * Y)	-0.00140	-0.00141	-0.00141
	(A1 * !A2 * !B1 * Y)	0.00117	0.00118	0.00117
	(A1 * !A2 * !B1 * Y)	-0.00140	-0.00141	-0.00141
	(!A1 * !B1 * Y)	0.00117	0.00118	0.00117
	(!A1 * !B1 * Y)	-0.00140	-0.00141	-0.00141

sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00271	0.00277	0.00272
	(A1 * A2 * A3 * B1 * !Y)	-0.00139	-0.00142	-0.00139
	(A1 * A2 * A3 * !B1 * !Y)	0.00262	0.00267	0.00263
	(A1 * A2 * A3 * !B1 * !Y)	-0.00138	-0.00139	-0.00139
	(A1 * A2 * !A3 * !B1 * Y)	0.00232	0.00236	0.00233
	(A1 * A2 * !A3 * !B1 * Y)	-0.00274	-0.00277	-0.00275
	(A1 * !A2 * !B1 * Y)	0.00232	0.00236	0.00233
	(A1 * !A2 * !B1 * Y)	-0.00274	-0.00277	-0.00275
	(!A1 * !B1 * Y)	0.00232	0.00236	0.00233
	(!A1 * !B1 * Y)	-0.00274	-0.00277	-0.00275
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00538	0.00549	0.00539
	(A1 * A2 * A3 * B1 * !Y)	-0.00277	-0.00282	-0.00277
	(A1 * A2 * A3 * !B1 * !Y)	0.00515	0.00518	0.00516
	(A1 * A2 * A3 * !B1 * !Y)	-0.00275	-0.00277	-0.00276
	(A1 * A2 * !A3 * !B1 * Y)	0.00458	0.00464	0.00459
	(A1 * A2 * !A3 * !B1 * Y)	-0.00549	-0.00554	-0.00550
	(A1 * !A2 * !B1 * Y)	0.00456	0.00464	0.00459
	(A1 * !A2 * !B1 * Y)	-0.00549	-0.00554	-0.00550
	(!A1 * !B1 * Y)	0.00457	0.00464	0.00459
	(!A1 * !B1 * Y)	-0.00549	-0.00553	-0.00550

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)**	-0.00123	-0.00125	-0.00136
	(A1 * A2 * A3 * B1 * !Y)	0.00084	0.00084	0.00074
	(A1 * A2 * A3 * !B1 * !Y)	-0.00129	-0.00133	-0.00132
	(A1 * A2 * A3 * !B1 * !Y)	0.00072	0.00072	0.00071
	(A1 * A2 * !A3 * !B1 * Y)	-0.00112	-0.00118	-0.00117
	(A1 * A2 * !A3 * !B1 * Y)	0.00144	0.00143	0.00141
	(A1 * !A2 * !B1 * Y)	-0.00112	-0.00118	-0.00117
	(A1 * !A2 * !B1 * Y)	0.00144	0.00143	0.00141
	(!A1 * !B1 * Y)	-0.00112	-0.00118	-0.00117
	(!A1 * !B1 * Y)	0.00144	0.00143	0.00141
sky130_fd_sc_hs__a32oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00243	-0.00246	-0.00269
	(A1 * A2 * A3 * B1 * !Y)	0.00163	0.00164	0.00145
	(A1 * A2 * A3 * !B1 * !Y)	-0.00252	-0.00262	-0.00263
	(A1 * A2 * A3 * !B1 * !Y)	0.00139	0.00139	0.00139
	(A1 * A2 * !A3 * !B1 * Y)	-0.00220	-0.00236	-0.00233
	(A1 * A2 * !A3 * !B1 * Y)	0.00280	0.00278	0.00276
	(A1 * !A2 * !B1 * Y)	-0.00220	-0.00235	-0.00233
	(A1 * !A2 * !B1 * Y)	0.00280	0.00278	0.00276
	(!A1 * !B1 * Y)	-0.00220	-0.00235	-0.00233
	(!A1 * !B1 * Y)	0.00280	0.00278	0.00276
sky130_fd_sc_hs__a32oi_4	**(A1 * A2 * A3 * B1 * !Y)**	-0.00485	-0.00490	-0.00533
	(A1 * A2 * A3 * B1 * !Y)	0.00321	0.00321	0.00286
	(A1 * A2 * A3 * !B1 * !Y)	-0.00499	-0.00516	-0.00516
	(A1 * A2 * A3 * !B1 * !Y)	0.00276	0.00277	0.00276
	(A1 * A2 * !A3 * !B1 * Y)	-0.00431	-0.00464	-0.00459
	(A1 * A2 * !A3 * !B1 * Y)	0.00564	0.00555	0.00551
	(A1 * !A2 * !B1 * Y)	-0.00431	-0.00464	-0.00459
	(A1 * !A2 * !B1 * Y)	0.00564	0.00555	0.00551
	(!A1 * !B1 * Y)	-0.00431	-0.00464	-0.00459
	(!A1 * !B1 * Y)	0.00564	0.00555	0.00551

SKY130_FD_SC_HS__A32Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00242	0.00239	0.00247	0.00242	0.00223	1.13612
sky130_fd_sc_hs__a32o_2	0.00259	0.00253	0.00261	0.00254	0.00239	1.97835
sky130_fd_sc_hs__a32o_4	0.00441	0.00498	0.00443	0.00460	0.00529	4.24741

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a32o_1	0.00000	0.05320	0.11629
sky130_fd_sc_hs__a32o_2	0.00000	0.07433	0.11694
sky130_fd_sc_hs__a32o_4	0.00000	0.14941	0.23389

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)	0.08303	0.57674	5.79109
	A2->X (RR)	0.08811	0.58864	5.84908
	A3->X (RR)	0.09151	0.58050	5.80293
	B1->X (RR)	0.06435	0.53844	5.78477
	B2->X (RR)	0.06707	0.54279	5.78886
sky130_fd_sc_hs__a32o_2	A1->X (RR)	0.08497	0.51801	5.86153
	A2->X (RR)	0.09008	0.52556	5.91124
	A3->X (RR)	0.09360	0.51497	5.85273
	B1->X (RR)	0.06590	0.47838	5.78848
	B2->X (RR)	0.06907	0.47974	5.79897
sky130_fd_sc_hs__a32o_4	A1->X (RR)	0.09277	0.44383	5.89429
	A2->X (RR)	0.09994	0.45882	5.96349
	A3->X (RR)	0.10382	0.44606	5.91578
	B1->X (RR)	0.06549	0.38982	5.86624
	B2->X (RR)	0.06916	0.39458	5.88139

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a32o_1	A1->X (FF)	0.15245	0.61853	4.82658
	A2->X (FF)	0.16952	0.64720	4.89808
	A3->X (FF)	0.17742	0.65917	4.94705
	B1->X (FF)	0.13143	0.59131	4.82615
	B2->X (FF)	0.14414	0.61709	4.84760
sky130_fd_sc_hs__a32o_2	A1->X (FF)	0.18293	0.63353	4.68158
	A2->X (FF)	0.20167	0.66290	4.77605
	A3->X (FF)	0.21665	0.68467	4.84065
	B1->X (FF)	0.16450	0.61604	4.62953
	B2->X (FF)	0.18215	0.64767	4.69972
sky130_fd_sc_hs__a32o_4	A1->X (FF)	0.17191	0.59637	4.96200
	A2->X (FF)	0.18210	0.61798	5.00711
	A3->X (FF)	0.20541	0.65101	5.10077
	B1->X (FF)	0.16182	0.59280	4.90110
	B2->X (FF)	0.17226	0.61011	4.93586

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a32o_1	A1	0.00913	0.00899	0.01867
	A1	0.00443	0.00431	0.01405
	A2	0.00978	0.00949	0.01658
	A2	0.00444	0.00414	0.01126
	A3	0.01056	0.01016	0.01532
	A3	0.00442	0.00403	0.00927
	B1	0.00598	0.00653	0.02486
	B1	0.00261	0.00316	0.02155
	B2	0.00666	0.00695	0.02249
	B2	0.00259	0.00323	0.01848
sky130_fd_sc_hs__a32o_2	A1	0.01129	0.01137	0.01945
	A1	0.00643	0.00645	0.01486
	A2	0.01206	0.01197	0.01811
	A2	0.00642	0.00633	0.01318
	A3	0.01296	0.01279	0.01672
	A3	0.00642	0.00625	0.01020
	B1	0.00811	0.00872	0.02424
	B1	0.00459	0.00520	0.02090
	B2	0.00896	0.00937	0.02219
	B2	0.00458	0.00500	0.01798

sky130_fd_sc_hs__a32o_4	**A1**	0.02145	0.02210	0.04201
	A1	0.01260	0.01333	0.03361
	A2	0.02321	0.02359	0.03833
	A2	0.01257	0.01304	0.02909
	A3	0.02464	0.02507	0.03912
	A3	0.01256	0.01315	0.02855
	B1	0.01490	0.01610	0.05343
	B1	0.00855	0.00976	0.04731
	B2	0.01850	0.01914	0.05103
	B2	0.00848	0.00922	0.04260

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a32o_1	**A1**	0.00282	0.00287	0.00995
	A1	0.00758	0.00752	0.01417
	A2	0.00319	0.00319	0.01000
	A2	0.00856	0.00857	0.01494
	A3	0.00335	0.00317	0.00973
	A3	0.00947	0.00928	0.01533
	B1	0.00272	0.00362	0.02341
	B1	0.00609	0.00690	0.02637
	B2	0.00293	0.00387	0.02216
	B2	0.00696	0.00780	0.02560

sky130_fd_sc_hs__a32o_2	**A1**	0.00507	0.00510	0.01171
	A1	0.01026	0.01029	0.01620
	A2	0.00556	0.00557	0.01191
	A2	0.01146	0.01152	0.01733
	A3	0.00575	0.00541	0.01170
	A3	0.01250	0.01215	0.01734
	B1	0.00432	0.00538	0.02325
	B1	0.00785	0.00881	0.02650
	B2	0.00467	0.00566	0.02222
	B2	0.01026	0.01106	0.02655
sky130_fd_sc_hs__a32o_4	**A1**	0.00874	0.00913	0.02740
	A1	0.01915	0.01934	0.03412
	A2	0.00948	0.00999	0.02632
	A2	0.02169	0.02176	0.03495
	A3	0.01055	0.01102	0.02657
	A3	0.02399	0.02416	0.03690
	B1	0.00843	0.01068	0.04513
	B1	0.01703	0.01896	0.05151
	B2	0.00843	0.01037	0.04478
	B2	0.01915	0.02107	0.05354

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)**	0.00116	0.00112	0.00111
	(A2 * A3 * B1 * B2 * X)	-0.00111	-0.00120	-0.00119
	(A2 * !A3 * B1 * B2 * X)	0.00103	0.00104	0.00104
	(A2 * !A3 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(A2 * !A3 * B1 * !B2 * !X)	0.00035	0.00035	0.00033
	(A2 * !A3 * B1 * !B2 * !X)	-0.00146	-0.00147	-0.00151
	(A2 * !A3 * !B1 * !X)	0.00035	0.00035	0.00033
	(A2 * !A3 * !B1 * !X)	-0.00147	-0.00147	-0.00151
	(!A2 * B1 * B2 * X)	0.00106	0.00107	0.00106
	(!A2 * B1 * B2 * X)	-0.00122	-0.00123	-0.00122
	(!A2 * B1 * !B2 * !X)	0.00036	0.00036	0.00035
	(!A2 * B1 * !B2 * !X)	-0.00150	-0.00150	-0.00152
	(!A2 * !B1 * !X)	0.00035	0.00036	0.00035
	(!A2 * !B1 * !X)	-0.00149	-0.00150	-0.00152
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	0.00131	0.00126	0.00126
	(A2 * A3 * B1 * B2 * X)	-0.00111	-0.00119	-0.00119
	(A2 * !A3 * B1 * B2 * X)	0.00116	0.00117	0.00117
	(A2 * !A3 * B1 * B2 * X)	-0.00121	-0.00122	-0.00122
	(A2 * !A3 * B1 * !B2 * !X)	0.00039	0.00038	0.00036
	(A2 * !A3 * B1 * !B2 * !X)	-0.00150	-0.00150	-0.00155
	(A2 * !A3 * !B1 * !X)	0.00039	0.00038	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00150	-0.00150	-0.00155
	(!A2 * B1 * B2 * X)	0.00120	0.00121	0.00121
	(!A2 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A2 * B1 * !B2 * !X)	0.00040	0.00040	0.00038
	(!A2 * B1 * !B2 * !X)	-0.00153	-0.00153	-0.00155
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00038
	(!A2 * !B1 * !X)	-0.00153	-0.00153	-0.00155

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	0.00207	0.00203	0.00201
	(A2 * A3 * B1 * B2 * X)	-0.00221	-0.00239	-0.00238
	(A2 * !A3 * B1 * B2 * X)	0.00189	0.00189	0.00189
	(A2 * !A3 * B1 * B2 * X)	-0.00244	-0.00244	-0.00244
	(A2 * !A3 * B1 * !B2 * !X)	0.00065	0.00066	0.00060
	(A2 * !A3 * B1 * !B2 * !X)	-0.00277	-0.00278	-0.00289
	(A2 * !A3 * !B1 * !X)	0.00065	0.00066	0.00060
	(A2 * !A3 * !B1 * !X)	-0.00277	-0.00278	-0.00289
	(!A2 * B1 * B2 * X)	0.00192	0.00195	0.00193
	(!A2 * B1 * B2 * X)	-0.00243	-0.00246	-0.00244
	(!A2 * B1 * !B2 * !X)	0.00063	0.00063	0.00061
	(!A2 * B1 * !B2 * !X)	-0.00285	-0.00286	-0.00290
	(!A2 * !B1 * !X)	0.00063	0.00063	0.00061
	(!A2 * !B1 * !X)	-0.00285	-0.00286	-0.00290

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)**	-0.00111	-0.00111	-0.00111
	(A2 * A3 * B1 * B2 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * B2 * X)	-0.00096	-0.00104	-0.00104
	(A2 * !A3 * B1 * B2 * X)	0.00123	0.00124	0.00123
	(A2 * !A3 * B1 * !B2 * !X)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * B1 * !B2 * !X)	0.00151	0.00154	0.00152
	(A2 * !A3 * !B1 * !X)	-0.00033	-0.00034	-0.00033
	(A2 * !A3 * !B1 * !X)	0.00151	0.00154	0.00152
	(!A2 * B1 * B2 * X)	-0.00103	-0.00106	-0.00106
	(!A2 * B1 * B2 * X)	0.00123	0.00123	0.00123
	(!A2 * B1 * !B2 * !X)	-0.00034	-0.00035	-0.00034
	(!A2 * B1 * !B2 * !X)	0.00151	0.00154	0.00152
	(!A2 * !B1 * !X)	-0.00034	-0.00035	-0.00034
	(!A2 * !B1 * !X)	0.00151	0.00154	0.00152
sky130_fd_sc_hs__a32o_2	**(A2 * A3 * B1 * B2 * X)**	-0.00125	-0.00126	-0.00125
	(A2 * A3 * B1 * B2 * X)	0.00118	0.00119	0.00119
	(A2 * !A3 * B1 * B2 * X)	-0.00108	-0.00117	-0.00117
	(A2 * !A3 * B1 * B2 * X)	0.00122	0.00122	0.00122
	(A2 * !A3 * B1 * !B2 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * B1 * !B2 * !X)	0.00155	0.00157	0.00155
	(A2 * !A3 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(A2 * !A3 * !B1 * !X)	0.00155	0.00157	0.00155
	(!A2 * B1 * B2 * X)	-0.00116	-0.00120	-0.00121
	(!A2 * B1 * B2 * X)	0.00123	0.00122	0.00122
	(!A2 * B1 * !B2 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * B1 * !B2 * !X)	0.00155	0.00158	0.00156
	(!A2 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(!A2 * !B1 * !X)	0.00155	0.00158	0.00156

sky130_fd_sc_hs__a32o_4	**(A2 * A3 * B1 * B2 * X)**	-0.00200	-0.00201	-0.00200
	(A2 * A3 * B1 * B2 * X)	0.00236	0.00239	0.00238
	(A2 * !A3 * B1 * B2 * X)	-0.00168	-0.00188	-0.00189
	(A2 * !A3 * B1 * B2 * X)	0.00244	0.00247	0.00245
	(A2 * !A3 * B1 * !B2 * !X)	-0.00058	-0.00058	-0.00056
	(A2 * !A3 * B1 * !B2 * !X)	0.00291	0.00293	0.00291
	(A2 * !A3 * !B1 * !X)	-0.00058	-0.00058	-0.00056
	(A2 * !A3 * !B1 * !X)	0.00291	0.00293	0.00291
	(!A2 * B1 * B2 * X)	-0.00183	-0.00193	-0.00193
	(!A2 * B1 * B2 * X)	0.00244	0.00246	0.00245
	(!A2 * B1 * !B2 * !X)	-0.00060	-0.00060	-0.00060
	(!A2 * B1 * !B2 * !X)	0.00291	0.00293	0.00291
	(!A2 * !B1 * !X)	-0.00060	-0.00060	-0.00060
	(!A2 * !B1 * !X)	0.00291	0.00293	0.00291

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)**	0.00114	0.00110	0.00109
	(A1 * A3 * B1 * B2 * X)	-0.00111	-0.00120	-0.00119
	(A1 * !A3 * B1 * B2 * X)	0.00103	0.00105	0.00104
	(A1 * !A3 * B1 * B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * B1 * !B2 * !X)	0.00041	0.00041	0.00041
	(A1 * !A3 * B1 * !B2 * !X)	-0.00132	-0.00133	-0.00131
	(A1 * !A3 * !B1 * !X)	0.00041	0.00041	0.00041
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00133	-0.00131
	(!A1 * A3 * B1 * B2 * X)	0.00104	0.00105	0.00104
	(!A1 * A3 * B1 * B2 * X)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * B1 * !B2 * !X)	0.00095	0.00096	0.00095
	(!A1 * A3 * B1 * !B2 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00096	0.00096	0.00096
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * !A3 * B1 * B2 * X)	0.00061	0.00061	0.00061
	(!A1 * !A3 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A3 * B1 * !B2 * !X)	0.00047	0.00047	0.00047
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00133	-0.00132	-0.00132
	(!A1 * !A3 * !B1 * !X)	0.00046	0.00047	0.00047
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00132

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	0.00128	0.00124	0.00123
	(A1 * A3 * B1 * B2 * X)	-0.00111	-0.00119	-0.00119
	(A1 * !A3 * B1 * B2 * X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * B2 * X)	-0.00121	-0.00123	-0.00122
	(A1 * !A3 * B1 * !B2 * !X)	0.00046	0.00047	0.00046
	(A1 * !A3 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00131
	(A1 * !A3 * !B1 * !X)	0.00046	0.00047	0.00046
	(A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * A3 * B1 * B2 * X)	0.00118	0.00118	0.00118
	(!A1 * A3 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * A3 * B1 * !B2 * !X)	0.00109	0.00110	0.00109
	(!A1 * A3 * B1 * !B2 * !X)	-0.00131	-0.00132	-0.00131
	(!A1 * A3 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(!A1 * !A3 * B1 * B2 * X)	0.00068	0.00068	0.00068
	(!A1 * !A3 * B1 * B2 * X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A3 * B1 * !B2 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00132	-0.00132	-0.00132
	(!A1 * !A3 * !B1 * !X)	0.00053	0.00053	0.00053
	(!A1 * !A3 * !B1 * !X)	-0.00132	-0.00132	-0.00132

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	0.00226	0.00216	0.00214
	(A1 * A3 * B1 * B2 * X)	-0.00237	-0.00262	-0.00261
	(A1 * !A3 * B1 * B2 * X)	0.00206	0.00207	0.00206
	(A1 * !A3 * B1 * B2 * X)	-0.00270	-0.00269	-0.00269
	(A1 * !A3 * B1 * !B2 * !X)	0.00086	0.00088	0.00086
	(A1 * !A3 * B1 * !B2 * !X)	-0.00282	-0.00286	-0.00283
	(A1 * !A3 * !B1 * !X)	0.00086	0.00088	0.00086
	(A1 * !A3 * !B1 * !X)	-0.00283	-0.00286	-0.00283
	(!A1 * A3 * B1 * B2 * X)	0.00206	0.00209	0.00207
	(!A1 * A3 * B1 * B2 * X)	-0.00268	-0.00271	-0.00269
	(!A1 * A3 * B1 * !B2 * !X)	0.00191	0.00194	0.00191
	(!A1 * A3 * B1 * !B2 * !X)	-0.00282	-0.00284	-0.00283
	(!A1 * A3 * !B1 * !X)	0.00191	0.00193	0.00191
	(!A1 * A3 * !B1 * !X)	-0.00282	-0.00284	-0.00283
	(!A1 * !A3 * B1 * B2 * X)	0.00126	0.00127	0.00126
	(!A1 * !A3 * B1 * B2 * X)	-0.00270	-0.00271	-0.00269
	(!A1 * !A3 * B1 * !B2 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00286	-0.00287	-0.00285
	(!A1 * !A3 * !B1 * !X)	0.00102	0.00102	0.00101
	(!A1 * !A3 * !B1 * !X)	-0.00286	-0.00287	-0.00285

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)**	-0.00109	-0.00109	-0.00109
	(A1 * A3 * B1 * B2 * X)	0.00120	0.00120	0.00119
	(A1 * !A3 * B1 * B2 * X)	-0.00101	-0.00104	-0.00104
	(A1 * !A3 * B1 * B2 * X)	0.00123	0.00124	0.00123
	(A1 * !A3 * B1 * !B2 * !X)	-0.00039	-0.00040	-0.00040
	(A1 * !A3 * B1 * !B2 * !X)	0.00134	0.00135	0.00133
	(A1 * !A3 * !B1 * !X)	-0.00039	-0.00040	-0.00040
	(A1 * !A3 * !B1 * !X)	0.00134	0.00135	0.00133
	(!A1 * A3 * B1 * B2 * X)	-0.00101	-0.00105	-0.00104
	(!A1 * A3 * B1 * B2 * X)	0.00122	0.00124	0.00123
	(!A1 * A3 * B1 * !B2 * !X)	-0.00088	-0.00096	-0.00095
	(!A1 * A3 * B1 * !B2 * !X)	0.00136	0.00133	0.00132
	(!A1 * A3 * !B1 * !X)	-0.00088	-0.00096	-0.00096
	(!A1 * A3 * !B1 * !X)	0.00136	0.00133	0.00132
	(!A1 * !A3 * B1 * B2 * X)	-0.00061	-0.00061	-0.00061
	(!A1 * !A3 * B1 * B2 * X)	0.00122	0.00124	0.00123
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00047	-0.00047	-0.00047
	(!A1 * !A3 * B1 * !B2 * !X)	0.00137	0.00139	0.00134
	(!A1 * !A3 * !B1 * !X)	-0.00046	-0.00047	-0.00047
	(!A1 * !A3 * !B1 * !X)	0.00137	0.00139	0.00134

sky130_fd_sc_hs__a32o_2	**(A1 * A3 * B1 * B2 * X)**	-0.00123	-0.00123	-0.00123
	(A1 * A3 * B1 * B2 * X)	0.00118	0.00119	0.00119
	(A1 * !A3 * B1 * B2 * X)	-0.00113	-0.00117	-0.00117
	(A1 * !A3 * B1 * B2 * X)	0.00122	0.00123	0.00122
	(A1 * !A3 * B1 * !B2 * !X)	-0.00044	-0.00044	-0.00045
	(A1 * !A3 * B1 * !B2 * !X)	0.00134	0.00135	0.00132
	(A1 * !A3 * !B1 * !X)	-0.00044	-0.00044	-0.00045
	(A1 * !A3 * !B1 * !X)	0.00134	0.00135	0.00132
	(!A1 * A3 * B1 * B2 * X)	-0.00113	-0.00118	-0.00118
	(!A1 * A3 * B1 * B2 * X)	0.00122	0.00123	0.00122
	(!A1 * A3 * B1 * !B2 * !X)	-0.00102	-0.00110	-0.00109
	(!A1 * A3 * B1 * !B2 * !X)	0.00135	0.00133	0.00132
	(!A1 * A3 * !B1 * !X)	-0.00102	-0.00109	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00135	0.00133	0.00132
	(!A1 * !A3 * B1 * B2 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * B1 * B2 * X)	0.00123	0.00124	0.00122
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * B1 * !B2 * !X)	0.00137	0.00138	0.00133
	(!A1 * !A3 * !B1 * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * !A3 * !B1 * !X)	0.00137	0.00138	0.00133

sky130_fd_sc_hs__a32o_4	**(A1 * A3 * B1 * B2 * X)**	-0.00213	-0.00213	-0.00213
	(A1 * A3 * B1 * B2 * X)	0.00259	0.00262	0.00261
	(A1 * !A3 * B1 * B2 * X)	-0.00195	-0.00205	-0.00206
	(A1 * !A3 * B1 * B2 * X)	0.00271	0.00269	0.00270
	(A1 * !A3 * B1 * !B2 * !X)	-0.00082	-0.00082	-0.00083
	(A1 * !A3 * B1 * !B2 * !X)	0.00291	0.00292	0.00286
	(A1 * !A3 * !B1 * !X)	-0.00082	-0.00082	-0.00083
	(A1 * !A3 * !B1 * !X)	0.00291	0.00292	0.00286
	(!A1 * A3 * B1 * B2 * X)	-0.00196	-0.00206	-0.00206
	(!A1 * A3 * B1 * B2 * X)	0.00269	0.00275	0.00270
	(!A1 * A3 * B1 * !B2 * !X)	-0.00175	-0.00192	-0.00191
	(!A1 * A3 * B1 * !B2 * !X)	0.00294	0.00288	0.00284
	(!A1 * A3 * !B1 * !X)	-0.00175	-0.00192	-0.00191
	(!A1 * A3 * !B1 * !X)	0.00294	0.00288	0.00284
	(!A1 * !A3 * B1 * B2 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * !A3 * B1 * B2 * X)	0.00272	0.00273	0.00271
	(!A1 * !A3 * B1 * !B2 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * !A3 * B1 * !B2 * !X)	0.00295	0.00295	0.00287
	(!A1 * !A3 * !B1 * !X)	-0.00102	-0.00102	-0.00101
	(!A1 * !A3 * !B1 * !X)	0.00295	0.00295	0.00287

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)**	0.00126	0.00123	0.00123
	(A1 * A2 * B1 * B2 * X)	-0.00109	-0.00118	-0.00117
	(A1 * !A2 * B1 * !B2 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00143	-0.00142
	(A1 * !A2 * !B1 * !X)	0.00096	0.00097	0.00096
	(A1 * !A2 * !B1 * !X)	-0.00141	-0.00143	-0.00142
	(!A2 * B1 * B2 * X)	0.00117	0.00119	0.00117
	(!A2 * B1 * B2 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * A2 * B1 * B2 * X)	0.00118	0.00119	0.00117
	(!A1 * A2 * B1 * B2 * X)	-0.00120	-0.00121	-0.00120
	(!A1 * A2 * B1 * !B2 * !X)	0.00096	0.00096	0.00095
	(!A1 * A2 * B1 * !B2 * !X)	-0.00142	-0.00142	-0.00141
	(!A1 * A2 * !B1 * !X)	0.00096	0.00096	0.00095
	(!A1 * A2 * !B1 * !X)	-0.00142	-0.00142	-0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	0.00096	0.00097	0.00097
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00142
	(!A1 * !A2 * !B1 * !X)	0.00096	0.00097	0.00096
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00143	-0.00142

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	0.00141	0.00138	0.00137
	(A1 * A2 * B1 * B2 * X)	-0.00109	-0.00118	-0.00118
	(A1 * !A2 * B1 * !B2 * !X)	0.00110	0.00111	0.00111
	(A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !B1 * !X)	0.00110	0.00111	0.00111
	(A1 * !A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(!A2 * B1 * B2 * X)	0.00131	0.00133	0.00131
	(!A2 * B1 * B2 * X)	-0.00120	-0.00121	-0.00121
	(!A1 * A2 * B1 * B2 * X)	0.00128	0.00129	0.00129
	(!A1 * A2 * B1 * B2 * X)	-0.00120	-0.00121	-0.00121
	(!A1 * A2 * B1 * !B2 * !X)	0.00108	0.00109	0.00108
	(!A1 * A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * A2 * !B1 * !X)	0.00108	0.00109	0.00108
	(!A1 * A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * B1 * !B2 * !X)	0.00110	0.00112	0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00141	-0.00142	-0.00141
	(!A1 * !A2 * !B1 * !X)	0.00110	0.00112	0.00111
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	0.00222	0.00214	0.00212
	(A1 * A2 * B1 * B2 * X)	-0.00230	-0.00252	-0.00251
	(A1 * !A2 * B1 * !B2 * !X)	0.00201	0.00202	0.00202
	(A1 * !A2 * B1 * !B2 * !X)	-0.00258	-0.00259	-0.00259
	(A1 * !A2 * !B1 * !X)	0.00202	0.00202	0.00202
	(A1 * !A2 * !B1 * !X)	-0.00259	-0.00259	-0.00259
	(!A2 * B1 * B2 * X)	0.00202	0.00205	0.00203
	(!A2 * B1 * B2 * X)	-0.00258	-0.00260	-0.00259
	(!A1 * A2 * B1 * B2 * X)	0.00195	0.00196	0.00196
	(!A1 * A2 * B1 * B2 * X)	-0.00258	-0.00259	-0.00259
	(!A1 * A2 * B1 * !B2 * !X)	0.00194	0.00196	0.00195
	(!A1 * A2 * B1 * !B2 * !X)	-0.00258	-0.00259	-0.00259
	(!A1 * A2 * !B1 * !X)	0.00196	0.00196	0.00195
	(!A1 * A2 * !B1 * !X)	-0.00260	-0.00259	-0.00259
	(!A1 * !A2 * B1 * !B2 * !X)	0.00201	0.00202	0.00202
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00258	-0.00259	-0.00259
	(!A1 * !A2 * !B1 * !X)	0.00202	0.00203	0.00202
	(!A1 * !A2 * !B1 * !X)	-0.00259	-0.00260	-0.00259

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)**	-0.00123	-0.00123	-0.00122
	(A1 * A2 * B1 * B2 * X)	0.00118	0.00118	0.00117
	(A1 * !A2 * B1 * !B2 * !X)	-0.00093	-0.00097	-0.00096
	(A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !B1 * !X)	-0.00093	-0.00097	-0.00096
	(A1 * !A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A2 * B1 * B2 * X)	-0.00115	-0.00117	-0.00117
	(!A2 * B1 * B2 * X)	0.00121	0.00120	0.00121
	(!A1 * A2 * B1 * B2 * X)	-0.00110	-0.00118	-0.00117
	(!A1 * A2 * B1 * B2 * X)	0.00120	0.00122	0.00121
	(!A1 * A2 * B1 * !B2 * !X)	-0.00089	-0.00096	-0.00095
	(!A1 * A2 * B1 * !B2 * !X)	0.00142	0.00143	0.00142
	(!A1 * A2 * !B1 * !X)	-0.00089	-0.00096	-0.00095
	(!A1 * A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00093	-0.00097	-0.00097
	(!A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00142
	(!A1 * !A2 * !B1 * !X)	-0.00093	-0.00097	-0.00096
	(!A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00142

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * B1 * B2 * X)**	-0.00137	-0.00137	-0.00137
	(A1 * A2 * B1 * B2 * X)	0.00117	0.00118	0.00118
	(A1 * !A2 * B1 * !B2 * !X)	-0.00107	-0.00111	-0.00111
	(A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00143	0.00142
	(A1 * !A2 * !B1 * !X)	-0.00107	-0.00111	-0.00111
	(A1 * !A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A2 * B1 * B2 * X)	-0.00127	-0.00132	-0.00131
	(!A2 * B1 * B2 * X)	0.00120	0.00122	0.00121
	(!A1 * A2 * B1 * B2 * X)	-0.00123	-0.00129	-0.00129
	(!A1 * A2 * B1 * B2 * X)	0.00122	0.00122	0.00121
	(!A1 * A2 * B1 * !B2 * !X)	-0.00102	-0.00109	-0.00108
	(!A1 * A2 * B1 * !B2 * !X)	0.00142	0.00143	0.00142
	(!A1 * A2 * !B1 * !X)	-0.00102	-0.00109	-0.00108
	(!A1 * A2 * !B1 * !X)	0.00142	0.00143	0.00142
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00107	-0.00111	-0.00111
	(!A1 * !A2 * B1 * !B2 * !X)	0.00142	0.00144	0.00142
	(!A1 * !A2 * !B1 * !X)	-0.00107	-0.00111	-0.00111
	(!A1 * !A2 * !B1 * !X)	0.00142	0.00144	0.00142

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * B1 * B2 * X)**	-0.00211	-0.00212	-0.00211
	(A1 * A2 * B1 * B2 * X)	0.00250	0.00252	0.00251
	(A1 * !A2 * B1 * !B2 * !X)	-0.00192	-0.00202	-0.00202
	(A1 * !A2 * B1 * !B2 * !X)	0.00259	0.00262	0.00260
	(A1 * !A2 * !B1 * !X)	-0.00192	-0.00202	-0.00202
	(A1 * !A2 * !B1 * !X)	0.00259	0.00262	0.00260
	(!A2 * B1 * B2 * X)	-0.00194	-0.00202	-0.00203
	(!A2 * B1 * B2 * X)	0.00259	0.00260	0.00260
	(!A1 * A2 * B1 * B2 * X)	-0.00183	-0.00196	-0.00196
	(!A1 * A2 * B1 * B2 * X)	0.00259	0.00262	0.00260
	(!A1 * A2 * B1 * !B2 * !X)	-0.00182	-0.00196	-0.00195
	(!A1 * A2 * B1 * !B2 * !X)	0.00260	0.00262	0.00260
	(!A1 * A2 * !B1 * !X)	-0.00182	-0.00196	-0.00195
	(!A1 * A2 * !B1 * !X)	0.00260	0.00262	0.00260
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00193	-0.00202	-0.00202
	(!A1 * !A2 * B1 * !B2 * !X)	0.00259	0.00262	0.00260
	(!A1 * !A2 * !B1 * !X)	-0.00193	-0.00202	-0.00202
	(!A1 * !A2 * !B1 * !X)	0.00259	0.00262	0.00260

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)**	0.00120	0.00121	0.00120
	(A1 * A2 * A3 * B2 * X)	-0.00062	-0.00063	-0.00062
	(A1 * A2 * A3 * !B2 * X)	0.00115	0.00116	0.00115
	(A1 * A2 * A3 * !B2 * X)	-0.00062	-0.00062	-0.00062
	(A1 * A2 * !A3 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * A2 * !A3 * !B2 * !X)	-0.00148	-0.00148	-0.00150
	(A1 * !A2 * !B2 * !X)	0.00034	0.00034	0.00033
	(A1 * !A2 * !B2 * !X)	-0.00148	-0.00148	-0.00150
	(!A1 * !B2 * !X)	0.00034	0.00034	0.00033
	(!A1 * !B2 * !X)	-0.00148	-0.00148	-0.00150
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B2 * X)**	0.00132	0.00134	0.00133
	(A1 * A2 * A3 * B2 * X)	-0.00063	-0.00064	-0.00063
	(A1 * A2 * A3 * !B2 * X)	0.00127	0.00128	0.00128
	(A1 * A2 * A3 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * A2 * !A3 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * A2 * !A3 * !B2 * !X)	-0.00147	-0.00148	-0.00150
	(A1 * !A2 * !B2 * !X)	0.00042	0.00042	0.00040
	(A1 * !A2 * !B2 * !X)	-0.00147	-0.00148	-0.00150
	(!A1 * !B2 * !X)	0.00042	0.00042	0.00040
	(!A1 * !B2 * !X)	-0.00147	-0.00148	-0.00150
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	0.00241	0.00242	0.00240
	(A1 * A2 * A3 * B2 * X)	-0.00128	-0.00128	-0.00126
	(A1 * A2 * A3 * !B2 * X)	0.00229	0.00233	0.00230
	(A1 * A2 * A3 * !B2 * X)	-0.00125	-0.00127	-0.00126
	(A1 * A2 * !A3 * !B2 * !X)	0.00062	0.00063	0.00060
	(A1 * A2 * !A3 * !B2 * !X)	-0.00298	-0.00300	-0.00303
	(A1 * !A2 * !B2 * !X)	0.00062	0.00063	0.00060
	(A1 * !A2 * !B2 * !X)	-0.00298	-0.00300	-0.00303
	(!A1 * !B2 * !X)	0.00062	0.00063	0.00060
	(!A1 * !B2 * !X)	-0.00298	-0.00300	-0.00303

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)	-0.00108	-0.00109	-0.00119
	(A1 * A2 * A3 * B2 * X)	0.00073	0.00073	0.00065
	(A1 * A2 * A3 * !B2 * X)	-0.00112	-0.00116	-0.00115
	(A1 * A2 * A3 * !B2 * X)	0.00062	0.00062	0.00062
	(A1 * A2 * !A3 * !B2 * !X)	-0.00033	-0.00033	-0.00033
	(A1 * A2 * !A3 * !B2 * !X)	0.00149	0.00152	0.00150
	(A1 * !A2 * !B2 * !X)	-0.00032	-0.00033	-0.00033
	(A1 * !A2 * !B2 * !X)	0.00149	0.00152	0.00150
	(!A1 * !B2 * !X)	-0.00032	-0.00033	-0.00033
	(!A1 * !B2 * !X)	0.00149	0.00152	0.00150
sky130_fd_sc_hs__a32o_2	(A1 * A2 * A3 * B2 * X)	-0.00121	-0.00122	-0.00131
	(A1 * A2 * A3 * B2 * X)	0.00074	0.00074	0.00065
	(A1 * A2 * A3 * !B2 * X)	-0.00123	-0.00128	-0.00128
	(A1 * A2 * A3 * !B2 * X)	0.00063	0.00063	0.00063
	(A1 * A2 * !A3 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(A1 * A2 * !A3 * !B2 * !X)	0.00150	0.00152	0.00150
	(A1 * !A2 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(A1 * !A2 * !B2 * !X)	0.00150	0.00152	0.00150
	(!A1 * !B2 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !B2 * !X)	0.00149	0.00152	0.00150

sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B2 * X)**	-0.00213	-0.00216	-0.00237
	(A1 * A2 * A3 * B2 * X)	0.00147	0.00148	0.00131
	(A1 * A2 * A3 * !B2 * X)	-0.00220	-0.00230	-0.00230
	(A1 * A2 * A3 * !B2 * X)	0.00125	0.00127	0.00126
	(A1 * A2 * !A3 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(A1 * A2 * !A3 * !B2 * !X)	0.00304	0.00307	0.00303
	(A1 * !A2 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(A1 * !A2 * !B2 * !X)	0.00304	0.00307	0.00303
	(!A1 * !B2 * !X)	-0.00060	-0.00061	-0.00059
	(!A1 * !B2 * !X)	0.00304	0.00307	0.00303

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)**	0.00118	0.00119	0.00118
	(A1 * A2 * A3 * B1 * X)	-0.00066	-0.00066	-0.00066
	(A1 * A2 * A3 * !B1 * X)	0.00113	0.00114	0.00113
	(A1 * A2 * A3 * !B1 * X)	-0.00065	-0.00066	-0.00066
	(A1 * A2 * !A3 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * A2 * !A3 * !B1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * !B1 * !X)	0.00103	0.00104	0.00104
	(A1 * !A2 * !B1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * !B1 * !X)	0.00103	0.00104	0.00103
	(!A1 * !B1 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	0.00135	0.00135	0.00134
	(A1 * A2 * A3 * B1 * X)	-0.00068	-0.00068	-0.00067
	(A1 * A2 * A3 * !B1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * A3 * !B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * A2 * !A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(A1 * A2 * !A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A1 * !A2 * !B1 * !X)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A1 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !X)	-0.00125	-0.00126	-0.00125
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	0.00305	0.00307	0.00306
	(A1 * A2 * A3 * B1 * X)	-0.00132	-0.00133	-0.00132
	(A1 * A2 * A3 * !B1 * X)	0.00294	0.00297	0.00295
	(A1 * A2 * A3 * !B1 * X)	-0.00131	-0.00132	-0.00132
	(A1 * A2 * !A3 * !B1 * !X)	0.00257	0.00258	0.00258
	(A1 * A2 * !A3 * !B1 * !X)	-0.00265	-0.00265	-0.00265
	(A1 * !A2 * !B1 * !X)	0.00258	0.00259	0.00258
	(A1 * !A2 * !B1 * !X)	-0.00265	-0.00266	-0.00265
	(!A1 * !B1 * !X)	0.00258	0.00262	0.00258
	(!A1 * !B1 * !X)	-0.00265	-0.00267	-0.00265

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)**	-0.00105	-0.00106	-0.00116
	(A1 * A2 * A3 * B1 * X)	0.00076	0.00076	0.00068
	(A1 * A2 * A3 * !B1 * X)	-0.00110	-0.00114	-0.00113
	(A1 * A2 * A3 * !B1 * X)	0.00066	0.00066	0.00066
	(A1 * A2 * !A3 * !B1 * !X)	-0.00098	-0.00104	-0.00103
	(A1 * A2 * !A3 * !B1 * !X)	0.00129	0.00125	0.00124
	(A1 * !A2 * !B1 * !X)	-0.00098	-0.00103	-0.00104
	(A1 * !A2 * !B1 * !X)	0.00129	0.00125	0.00124
	(!A1 * !B1 * !X)	-0.00098	-0.00104	-0.00103
	(!A1 * !B1 * !X)	0.00129	0.00125	0.00124
sky130_fd_sc_hs__a32o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00122	-0.00123	-0.00133
	(A1 * A2 * A3 * B1 * X)	0.00077	0.00077	0.00069
	(A1 * A2 * A3 * !B1 * X)	-0.00126	-0.00129	-0.00129
	(A1 * A2 * A3 * !B1 * X)	0.00067	0.00067	0.00067
	(A1 * A2 * !A3 * !B1 * !X)	-0.00116	-0.00121	-0.00120
	(A1 * A2 * !A3 * !B1 * !X)	0.00128	0.00126	0.00125
	(A1 * !A2 * !B1 * !X)	-0.00116	-0.00121	-0.00120
	(A1 * !A2 * !B1 * !X)	0.00128	0.00126	0.00125
	(!A1 * !B1 * !X)	-0.00116	-0.00121	-0.00120
	(!A1 * !B1 * !X)	0.00128	0.00126	0.00125
sky130_fd_sc_hs__a32o_4	**(A1 * A2 * A3 * B1 * X)**	-0.00281	-0.00282	-0.00303
	(A1 * A2 * A3 * B1 * X)	0.00154	0.00153	0.00137
	(A1 * A2 * A3 * !B1 * X)	-0.00288	-0.00296	-0.00295
	(A1 * A2 * A3 * !B1 * X)	0.00132	0.00132	0.00132
	(A1 * A2 * !A3 * !B1 * !X)	-0.00245	-0.00258	-0.00258
	(A1 * A2 * !A3 * !B1 * !X)	0.00277	0.00267	0.00266
	(A1 * !A2 * !B1 * !X)	-0.00245	-0.00259	-0.00258
	(A1 * !A2 * !B1 * !X)	0.00277	0.00267	0.00266
	(!A1 * !B1 * !X)	-0.00245	-0.00259	-0.00258
	(!A1 * !B1 * !X)	0.00277	0.00267	0.00266

SKY130_FD_SC_HS__A41OIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00264	0.00268	0.00263	0.00266	0.00270	0.50917
sky130_fd_sc_hs__a41oi_2	0.00511	0.00496	0.00486	0.00485	0.00387	0.96745
sky130_fd_sc_hs__a41oi_4	0.00995	0.00958	0.00969	0.00959	0.00765	1.66522

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41oi_1	0.00000	0.01700	0.04331
sky130_fd_sc_hs__a41oi_2	0.00000	0.03368	0.08662
sky130_fd_sc_hs__a41oi_4	0.00000	0.06737	0.17325

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)	0.09570	1.01669	11.20260
	A2->Y (FR)	0.11848	1.05667	11.40510
	A3->Y (FR)	0.13032	1.04612	11.15600
	A4->Y (FR)	0.13390	1.00714	10.68860
	B1->Y (FR)	0.08311	1.00895	11.31750
sky130_fd_sc_hs__a41oi_2	A1->Y (FR)	0.07988	0.87747	11.32010
	A2->Y (FR)	0.09871	0.87253	11.00830
	A3->Y (FR)	0.11587	0.89789	11.09000
	A4->Y (FR)	0.13433	0.92163	11.14750
	B1->Y (FR)	0.03463	0.80960	11.04460
sky130_fd_sc_hs__a41oi_4	A1->Y (FR)	0.07393	0.74159	10.64560
	A2->Y (FR)	0.09713	0.74921	10.42870
	A3->Y (FR)	0.11918	0.78430	10.64440
	A4->Y (FR)	0.14141	0.82308	10.88590
	B1->Y (FR)	0.10428	0.78859	11.01050

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41oi_1	A1->Y (RF)	0.03380	0.43554	4.71137
	A2->Y (RF)	0.04073	0.43082	4.58754
	A3->Y (RF)	0.04507	0.40046	4.14560
	A4->Y (RF)	0.04821	0.37058	3.69991
	B1->Y (RF)	0.01575	0.26052	2.83280
sky130_fd_sc_hs__a41oi_2	A1->Y (RF)	0.03198	0.43452	5.57281
	A2->Y (RF)	0.04216	0.43091	5.39165
	A3->Y (RF)	0.04723	0.37563	4.55104
	A4->Y (RF)	0.05150	0.35082	4.08900
	B1->Y (RF)	0.01757	0.34492	4.60166
sky130_fd_sc_hs__a41oi_4	A1->Y (RF)	0.03080	0.37914	5.50683
	A2->Y (RF)	0.04305	0.37367	5.23356
	A3->Y (RF)	0.04909	0.32625	4.43824
	A4->Y (RF)	0.05228	0.28826	3.78994
	B1->Y (RF)	0.01671	0.28013	4.25316

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41oi_1	A1	0.00018	0.00003	0.00075
	A1	0.00491	0.00477	0.00548
	A2	0.00074	0.00056	0.00127
	A2	0.00618	0.00599	0.00671
	A3	0.00119	0.00102	0.00173
	A3	0.00733	0.00711	0.00788
	A4	0.00146	0.00132	0.00204
	A4	0.00838	0.00824	0.00898
	B1	-0.00010	0.00029	0.00469
	B1	0.00617	0.00625	0.01064
sky130_fd_sc_hs__a41oi_2	A1	-0.00068	-0.00083	0.00053
	A1	0.00790	0.00776	0.00910
	A2	0.00073	0.00033	0.00168
	A2	0.01089	0.01052	0.01188
	A3	0.00152	0.00120	0.00254
	A3	0.01312	0.01280	0.01414
	A4	0.00256	0.00226	0.00359
	A4	0.01578	0.01548	0.01678
	B1	-0.00021	0.00040	0.00545
	B1	0.01050	0.01089	0.01565

sky130_fd_sc_hs__a41oi_4	**A1**	-0.00184	-0.00215	0.00127
	A1	0.01518	0.01493	0.01850
	A2	0.00138	0.00050	0.00383
	A2	0.02154	0.02071	0.02422
	A3	0.00296	0.00216	0.00535
	A3	0.02637	0.02559	0.02892
	A4	0.00458	0.00402	0.00719
	A4	0.03101	0.03043	0.03367
	B1	-0.00071	0.00022	0.01243
	B1	0.02088	0.02191	0.03251

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41oi_1	**A1**	0.00622	0.00614	0.00721
	A1	0.00160	0.00148	0.00235
	A2	0.00697	0.00683	0.00762
	A2	0.00159	0.00146	0.00200
	A3	0.00770	0.00762	0.00808
	A3	0.00157	0.00143	0.00197
	A4	0.00856	0.00842	0.00903
	A4	0.00158	0.00143	0.00197
	B1	0.00512	0.00515	0.00636
	B1	-0.00019	-0.00020	0.00104

sky130_fd_sc_hs__a41oi_2	**A1**	0.01124	0.01099	0.01280
	A1	0.00287	0.00260	0.00416
	A2	0.01291	0.01258	0.01391
	A2	0.00284	0.00252	0.00350
	A3	0.01442	0.01418	0.01545
	A3	0.00283	0.00249	0.00351
	A4	0.01616	0.01585	0.01693
	A4	0.00279	0.00246	0.00347
	B1	0.00429	0.00433	0.00647
	B1	-0.00104	-0.00106	0.00050
sky130_fd_sc_hs__a41oi_4	**A1**	0.02181	0.02137	0.02550
	A1	0.00515	0.00462	0.00820
	A2	0.02509	0.02448	0.02746
	A2	0.00510	0.00440	0.00678
	A3	0.02848	0.02782	0.03101
	A3	0.00501	0.00431	0.00671
	A4	0.03172	0.03111	0.03381
	A4	0.00498	0.00429	0.00682
	B1	0.00841	0.00851	0.01324
	B1	-0.00211	-0.00207	0.00195

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)**	0.00128	0.00127	0.00126
	(A2 * A3 * A4 * B1 * !Y)	-0.00126	-0.00136	-0.00135
	(A2 * A3 * !A4 * B1 * !Y)	0.00116	0.00117	0.00116
	(A2 * A3 * !A4 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(A2 * A3 * !A4 * !B1 * Y)	0.00044	0.00045	0.00041
	(A2 * A3 * !A4 * !B1 * Y)	-0.00158	-0.00160	-0.00168
	(A2 * !A3 * B1 * !Y)	0.00121	0.00123	0.00121
	(A2 * !A3 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00042
	(A2 * !A3 * !B1 * Y)	-0.00162	-0.00163	-0.00168
	(!A2 * B1 * !Y)	0.00123	0.00123	0.00123
	(!A2 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * !B1 * Y)	0.00044	0.00044	0.00043
	(!A2 * !B1 * Y)	-0.00166	-0.00167	-0.00169
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	0.00256	0.00254	0.00251
	(A2 * A3 * A4 * B1 * !Y)	-0.00248	-0.00265	-0.00263
	(A2 * A3 * !A4 * B1 * !Y)	0.00236	0.00237	0.00237
	(A2 * A3 * !A4 * B1 * !Y)	-0.00271	-0.00272	-0.00271
	(A2 * A3 * !A4 * !B1 * Y)	0.00082	0.00082	0.00073
	(A2 * A3 * !A4 * !B1 * Y)	-0.00316	-0.00318	-0.00335
	(A2 * !A3 * B1 * !Y)	0.00237	0.00240	0.00238
	(A2 * !A3 * B1 * !Y)	-0.00271	-0.00273	-0.00271
	(A2 * !A3 * !B1 * Y)	0.00079	0.00079	0.00073
	(A2 * !A3 * !B1 * Y)	-0.00325	-0.00327	-0.00337
	(!A2 * B1 * !Y)	0.00241	0.00242	0.00241
	(!A2 * B1 * !Y)	-0.00271	-0.00272	-0.00271
	(!A2 * !B1 * Y)	0.00080	0.00080	0.00077
	(!A2 * !B1 * Y)	-0.00333	-0.00335	-0.00339

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	0.00512	0.00508	0.00503
	(A2 * A3 * A4 * B1 * !Y)	-0.00488	-0.00524	-0.00520
	(A2 * A3 * !A4 * B1 * !Y)	0.00468	0.00473	0.00469
	(A2 * A3 * !A4 * B1 * !Y)	-0.00537	-0.00539	-0.00536
	(A2 * A3 * !A4 * !B1 * Y)	0.00166	0.00167	0.00149
	(A2 * A3 * !A4 * !B1 * Y)	-0.00619	-0.00624	-0.00658
	(A2 * !A3 * B1 * !Y)	0.00476	0.00479	0.00476
	(A2 * !A3 * B1 * !Y)	-0.00535	-0.00538	-0.00536
	(A2 * !A3 * !B1 * Y)	0.00161	0.00161	0.00149
	(A2 * !A3 * !B1 * Y)	-0.00636	-0.00638	-0.00661
	(!A2 * B1 * !Y)	0.00483	0.00485	0.00483
	(!A2 * B1 * !Y)	-0.00536	-0.00537	-0.00536
	(!A2 * !B1 * Y)	0.00169	0.00169	0.00161
	(!A2 * !B1 * Y)	-0.00651	-0.00653	-0.00664

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)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * A4 * B1 * !Y)	0.00134	0.00136	0.00135
	(A2 * A3 * !A4 * B1 * !Y)	-0.00105	-0.00117	-0.00116
	(A2 * A3 * !A4 * B1 * !Y)	0.00139	0.00141	0.00140
	(A2 * A3 * !A4 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(A2 * A3 * !A4 * !B1 * Y)	0.00168	0.00171	0.00169
	(A2 * !A3 * B1 * !Y)	-0.00109	-0.00119	-0.00121
	(A2 * !A3 * B1 * !Y)	0.00139	0.00140	0.00140
	(A2 * !A3 * !B1 * Y)	-0.00041	-0.00042	-0.00041
	(A2 * !A3 * !B1 * Y)	0.00168	0.00171	0.00169
	(!A2 * B1 * !Y)	-0.00117	-0.00122	-0.00122
	(!A2 * B1 * !Y)	0.00139	0.00142	0.00140
	(!A2 * !B1 * Y)	-0.00042	-0.00043	-0.00042
	(!A2 * !B1 * Y)	0.00168	0.00172	0.00169
sky130_fd_sc_hs__a41oi_2	**(A2 * A3 * A4 * B1 * !Y)**	-0.00250	-0.00252	-0.00251
	(A2 * A3 * A4 * B1 * !Y)	0.00262	0.00265	0.00263
	(A2 * A3 * !A4 * B1 * !Y)	-0.00201	-0.00237	-0.00237
	(A2 * A3 * !A4 * B1 * !Y)	0.00271	0.00273	0.00272
	(A2 * A3 * !A4 * !B1 * Y)	-0.00073	-0.00072	-0.00072
	(A2 * A3 * !A4 * !B1 * Y)	0.00340	0.00338	0.00340
	(A2 * !A3 * B1 * !Y)	-0.00209	-0.00239	-0.00238
	(A2 * !A3 * B1 * !Y)	0.00271	0.00274	0.00272
	(A2 * !A3 * !B1 * Y)	-0.00073	-0.00072	-0.00073
	(A2 * !A3 * !B1 * Y)	0.00340	0.00338	0.00340
	(!A2 * B1 * !Y)	-0.00229	-0.00242	-0.00241
	(!A2 * B1 * !Y)	0.00272	0.00274	0.00272
	(!A2 * !B1 * Y)	-0.00075	-0.00074	-0.00075
	(!A2 * !B1 * Y)	0.00340	0.00338	0.00340

sky130_fd_sc_hs__a41oi_4	**(A2 * A3 * A4 * B1 * !Y)**	-0.00502	-0.00505	-0.00503
	(A2 * A3 * A4 * B1 * !Y)	0.00518	0.00524	0.00520
	(A2 * A3 * !A4 * B1 * !Y)	-0.00395	-0.00473	-0.00469
	(A2 * A3 * !A4 * B1 * !Y)	0.00538	0.00541	0.00538
	(A2 * A3 * !A4 * !B1 * Y)	-0.00152	-0.00151	-0.00149
	(A2 * A3 * !A4 * !B1 * Y)	0.00665	0.00663	0.00665
	(A2 * !A3 * B1 * !Y)	-0.00408	-0.00479	-0.00476
	(A2 * !A3 * B1 * !Y)	0.00535	0.00541	0.00538
	(A2 * !A3 * !B1 * Y)	-0.00153	-0.00151	-0.00149
	(A2 * !A3 * !B1 * Y)	0.00665	0.00663	0.00665
	(!A2 * B1 * !Y)	-0.00458	-0.00485	-0.00483
	(!A2 * B1 * !Y)	0.00537	0.00542	0.00538
	(!A2 * !B1 * Y)	-0.00159	-0.00157	-0.00157
	(!A2 * !B1 * Y)	0.00666	0.00664	0.00665

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)**	0.00123	0.00122	0.00121
	(A1 * A3 * A4 * B1 * !Y)	-0.00126	-0.00136	-0.00135
	(A1 * A3 * !A4 * B1 * !Y)	0.00113	0.00114	0.00114
	(A1 * A3 * !A4 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * A3 * !A4 * !B1 * Y)	0.00045	0.00045	0.00046
	(A1 * A3 * !A4 * !B1 * Y)	-0.00146	-0.00146	-0.00146
	(A1 * !A3 * B1 * !Y)	0.00116	0.00116	0.00116
	(A1 * !A3 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(A1 * !A3 * !B1 * Y)	0.00048	0.00049	0.00049
	(A1 * !A3 * !B1 * Y)	-0.00146	-0.00148	-0.00146
	(!A1 * A3 * A4 * B1 * !Y)	0.00117	0.00119	0.00118
	(!A1 * A3 * A4 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * A3 * A4 * !B1 * Y)	0.00109	0.00110	0.00109
	(!A1 * A3 * A4 * !B1 * Y)	-0.00146	-0.00147	-0.00146
	(!A1 * A3 * !A4 * B1 * !Y)	0.00067	0.00067	0.00067
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * A3 * !A4 * !B1 * Y)	0.00056	0.00056	0.00056
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !A3 * B1 * !Y)	0.00069	0.00070	0.00070
	(!A1 * !A3 * B1 * !Y)	-0.00138	-0.00141	-0.00139
	(!A1 * !A3 * !B1 * Y)	0.00056	0.00056	0.00056
	(!A1 * !A3 * !B1 * Y)	-0.00147	-0.00148	-0.00147

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00249	0.00247	0.00245
	(A1 * A3 * A4 * B1 * !Y)	-0.00252	-0.00271	-0.00269
	(A1 * A3 * !A4 * B1 * !Y)	0.00231	0.00231	0.00231
	(A1 * A3 * !A4 * B1 * !Y)	-0.00277	-0.00277	-0.00277
	(A1 * A3 * !A4 * !B1 * Y)	0.00101	0.00101	0.00102
	(A1 * A3 * !A4 * !B1 * Y)	-0.00280	-0.00281	-0.00280
	(A1 * !A3 * B1 * !Y)	0.00233	0.00235	0.00234
	(A1 * !A3 * B1 * !Y)	-0.00276	-0.00278	-0.00277
	(A1 * !A3 * !B1 * Y)	0.00106	0.00107	0.00107
	(A1 * !A3 * !B1 * Y)	-0.00280	-0.00281	-0.00281
	(!A1 * A3 * A4 * B1 * !Y)	0.00234	0.00236	0.00235
	(!A1 * A3 * A4 * B1 * !Y)	-0.00276	-0.00278	-0.00277
	(!A1 * A3 * A4 * !B1 * Y)	0.00231	0.00232	0.00231
	(!A1 * A3 * A4 * !B1 * Y)	-0.00281	-0.00281	-0.00281
	(!A1 * A3 * !A4 * B1 * !Y)	0.00135	0.00137	0.00135
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00276	-0.00279	-0.00277
	(!A1 * A3 * !A4 * !B1 * Y)	0.00123	0.00124	0.00123
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00282	-0.00284	-0.00283
	(!A1 * !A3 * B1 * !Y)	0.00139	0.00140	0.00140
	(!A1 * !A3 * B1 * !Y)	-0.00277	-0.00277	-0.00277
	(!A1 * !A3 * !B1 * Y)	0.00122	0.00122	0.00122
	(!A1 * !A3 * !B1 * Y)	-0.00283	-0.00284	-0.00283

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00493	0.00487	0.00484
	(A1 * A3 * A4 * B1 * !Y)	-0.00498	-0.00536	-0.00532
	(A1 * A3 * !A4 * B1 * !Y)	0.00451	0.00452	0.00451
	(A1 * A3 * !A4 * B1 * !Y)	-0.00549	-0.00551	-0.00549
	(A1 * A3 * !A4 * !B1 * Y)	0.00193	0.00193	0.00198
	(A1 * A3 * !A4 * !B1 * Y)	-0.00553	-0.00552	-0.00551
	(A1 * !A3 * B1 * !Y)	0.00460	0.00466	0.00461
	(A1 * !A3 * B1 * !Y)	-0.00548	-0.00554	-0.00549
	(A1 * !A3 * !B1 * Y)	0.00200	0.00200	0.00202
	(A1 * !A3 * !B1 * Y)	-0.00553	-0.00553	-0.00551
	(!A1 * A3 * A4 * B1 * !Y)	0.00467	0.00472	0.00468
	(!A1 * A3 * A4 * B1 * !Y)	-0.00549	-0.00553	-0.00549
	(!A1 * A3 * A4 * !B1 * Y)	0.00464	0.00468	0.00465
	(!A1 * A3 * A4 * !B1 * Y)	-0.00554	-0.00556	-0.00553
	(!A1 * A3 * !A4 * B1 * !Y)	0.00257	0.00259	0.00256
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00549	-0.00553	-0.00549
	(!A1 * A3 * !A4 * !B1 * Y)	0.00238	0.00240	0.00237
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00556	-0.00559	-0.00555
	(!A1 * !A3 * B1 * !Y)	0.00261	0.00262	0.00260
	(!A1 * !A3 * B1 * !Y)	-0.00550	-0.00553	-0.00549
	(!A1 * !A3 * !B1 * Y)	0.00230	0.00232	0.00231
	(!A1 * !A3 * !B1 * Y)	-0.00555	-0.00557	-0.00556

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)**	-0.00121	-0.00121	-0.00121
	(A1 * A3 * A4 * B1 * !Y)	0.00134	0.00136	0.00135
	(A1 * A3 * !A4 * B1 * !Y)	-0.00102	-0.00114	-0.00114
	(A1 * A3 * !A4 * B1 * !Y)	0.00139	0.00140	0.00140
	(A1 * A3 * !A4 * !B1 * Y)	-0.00045	-0.00045	-0.00046
	(A1 * A3 * !A4 * !B1 * Y)	0.00150	0.00151	0.00148
	(A1 * !A3 * B1 * !Y)	-0.00112	-0.00116	-0.00116
	(A1 * !A3 * B1 * !Y)	0.00140	0.00140	0.00140
	(A1 * !A3 * !B1 * Y)	-0.00046	-0.00047	-0.00047
	(A1 * !A3 * !B1 * Y)	0.00149	0.00151	0.00148
	(!A1 * A3 * A4 * B1 * !Y)	-0.00112	-0.00117	-0.00117
	(!A1 * A3 * A4 * B1 * !Y)	0.00139	0.00142	0.00140
	(!A1 * A3 * A4 * !B1 * Y)	-0.00101	-0.00110	-0.00109
	(!A1 * A3 * A4 * !B1 * Y)	0.00151	0.00149	0.00147
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00067	-0.00067	-0.00067
	(!A1 * A3 * !A4 * B1 * !Y)	0.00140	0.00141	0.00140
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(!A1 * A3 * !A4 * !B1 * Y)	0.00149	0.00149	0.00147
	(!A1 * !A3 * B1 * !Y)	-0.00069	-0.00070	-0.00070
	(!A1 * !A3 * B1 * !Y)	0.00140	0.00141	0.00140
	(!A1 * !A3 * !B1 * Y)	-0.00056	-0.00056	-0.00056
	(!A1 * !A3 * !B1 * Y)	0.00152	0.00153	0.00148

sky130_fd_sc_hs__a41oi_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00244	-0.00246	-0.00245
	(A1 * A3 * A4 * B1 * !Y)	0.00266	0.00271	0.00269
	(A1 * A3 * !A4 * B1 * !Y)	-0.00202	-0.00231	-0.00231
	(A1 * A3 * !A4 * B1 * !Y)	0.00277	0.00280	0.00278
	(A1 * A3 * !A4 * !B1 * Y)	-0.00098	-0.00099	-0.00100
	(A1 * A3 * !A4 * !B1 * Y)	0.00289	0.00292	0.00284
	(A1 * !A3 * B1 * !Y)	-0.00224	-0.00235	-0.00234
	(A1 * !A3 * B1 * !Y)	0.00278	0.00280	0.00278
	(A1 * !A3 * !B1 * Y)	-0.00101	-0.00102	-0.00104
	(A1 * !A3 * !B1 * Y)	0.00289	0.00291	0.00284
	(!A1 * A3 * A4 * B1 * !Y)	-0.00223	-0.00236	-0.00235
	(!A1 * A3 * A4 * B1 * !Y)	0.00278	0.00278	0.00278
	(!A1 * A3 * A4 * !B1 * Y)	-0.00207	-0.00232	-0.00231
	(!A1 * A3 * A4 * !B1 * Y)	0.00298	0.00284	0.00281
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00135	-0.00137	-0.00135
	(!A1 * A3 * !A4 * B1 * !Y)	0.00277	0.00280	0.00278
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00123	-0.00124	-0.00123
	(!A1 * A3 * !A4 * !B1 * Y)	0.00285	0.00285	0.00283
	(!A1 * !A3 * B1 * !Y)	-0.00139	-0.00140	-0.00140
	(!A1 * !A3 * B1 * !Y)	0.00279	0.00280	0.00278
	(!A1 * !A3 * !B1 * Y)	-0.00122	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * Y)	0.00291	0.00293	0.00285

sky130_fd_sc_hs__a41oi_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00483	-0.00485	-0.00483
	(A1 * A3 * A4 * B1 * !Y)	0.00530	0.00536	0.00532
	(A1 * A3 * !A4 * B1 * !Y)	-0.00388	-0.00452	-0.00451
	(A1 * A3 * !A4 * B1 * !Y)	0.00549	0.00555	0.00551
	(A1 * A3 * !A4 * !B1 * Y)	-0.00187	-0.00188	-0.00191
	(A1 * A3 * !A4 * !B1 * Y)	0.00570	0.00574	0.00558
	(A1 * !A3 * B1 * !Y)	-0.00435	-0.00466	-0.00461
	(A1 * !A3 * B1 * !Y)	0.00549	0.00555	0.00551
	(A1 * !A3 * !B1 * Y)	-0.00191	-0.00192	-0.00195
	(A1 * !A3 * !B1 * Y)	0.00570	0.00573	0.00558
	(!A1 * A3 * A4 * B1 * !Y)	-0.00439	-0.00472	-0.00468
	(!A1 * A3 * A4 * B1 * !Y)	0.00551	0.00555	0.00551
	(!A1 * A3 * A4 * !B1 * Y)	-0.00410	-0.00468	-0.00464
	(!A1 * A3 * A4 * !B1 * Y)	0.00588	0.00558	0.00554
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00257	-0.00259	-0.00256
	(!A1 * A3 * !A4 * B1 * !Y)	0.00549	0.00556	0.00551
	(!A1 * A3 * !A4 * !B1 * Y)	-0.00238	-0.00240	-0.00237
	(!A1 * A3 * !A4 * !B1 * Y)	0.00558	0.00560	0.00556
	(!A1 * !A3 * B1 * !Y)	-0.00261	-0.00262	-0.00260
	(!A1 * !A3 * B1 * !Y)	0.00553	0.00556	0.00551
	(!A1 * !A3 * !B1 * Y)	-0.00230	-0.00232	-0.00231
	(!A1 * !A3 * !B1 * Y)	0.00570	0.00575	0.00559

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)**	0.00121	0.00120	0.00119
	(A1 * A2 * A4 * B1 * !Y)	-0.00128	-0.00135	-0.00135
	(A1 * A2 * !A4 * B1 * !Y)	0.00112	0.00114	0.00113
	(A1 * A2 * !A4 * B1 * !Y)	-0.00138	-0.00140	-0.00139
	(A1 * A2 * !A4 * !B1 * Y)	0.00046	0.00047	0.00047
	(A1 * A2 * !A4 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(A1 * !A2 * A4 * !B1 * Y)	0.00108	0.00110	0.00109
	(A1 * !A2 * A4 * !B1 * Y)	-0.00143	-0.00145	-0.00144
	(A1 * !A2 * !A4 * !B1 * Y)	0.00054	0.00054	0.00054
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00144	-0.00145	-0.00145
	(!A2 * A4 * B1 * !Y)	0.00114	0.00115	0.00114
	(!A2 * A4 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A2 * !A4 * B1 * !Y)	0.00064	0.00064	0.00064
	(!A2 * !A4 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * A2 * A4 * B1 * !Y)	0.00112	0.00113	0.00111
	(!A1 * A2 * A4 * B1 * !Y)	-0.00139	-0.00140	-0.00139
	(!A1 * A2 * A4 * !B1 * Y)	0.00106	0.00107	0.00106
	(!A1 * A2 * A4 * !B1 * Y)	-0.00144	-0.00144	-0.00144
	(!A1 * A2 * !A4 * B1 * !Y)	0.00065	0.00065	0.00064
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(!A1 * A2 * !A4 * !B1 * Y)	0.00054	0.00055	0.00054
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00144	-0.00145	-0.00145
	(!A1 * !A2 * A4 * !B1 * Y)	0.00108	0.00110	0.00109
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00143	-0.00145	-0.00144
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00144	-0.00145	-0.00145

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	0.00244	0.00242	0.00240
	(A1 * A2 * A4 * B1 * !Y)	-0.00251	-0.00269	-0.00267
	(A1 * A2 * !A4 * B1 * !Y)	0.00226	0.00227	0.00227
	(A1 * A2 * !A4 * B1 * !Y)	-0.00274	-0.00276	-0.00275
	(A1 * A2 * !A4 * !B1 * Y)	0.00104	0.00105	0.00105
	(A1 * A2 * !A4 * !B1 * Y)	-0.00272	-0.00274	-0.00270
	(A1 * !A2 * A4 * !B1 * Y)	0.00229	0.00231	0.00230
	(A1 * !A2 * A4 * !B1 * Y)	-0.00275	-0.00277	-0.00275
	(A1 * !A2 * !A4 * !B1 * Y)	0.00120	0.00120	0.00119
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00275	-0.00276	-0.00275
	(!A2 * A4 * B1 * !Y)	0.00229	0.00232	0.00230
	(!A2 * A4 * B1 * !Y)	-0.00275	-0.00276	-0.00275
	(!A2 * !A4 * B1 * !Y)	0.00129	0.00130	0.00129
	(!A2 * !A4 * B1 * !Y)	-0.00275	-0.00276	-0.00275
	(!A1 * A2 * A4 * B1 * !Y)	0.00228	0.00230	0.00229
	(!A1 * A2 * A4 * B1 * !Y)	-0.00274	-0.00276	-0.00275
	(!A1 * A2 * A4 * !B1 * Y)	0.00227	0.00230	0.00229
	(!A1 * A2 * A4 * !B1 * Y)	-0.00274	-0.00277	-0.00276
	(!A1 * A2 * !A4 * B1 * !Y)	0.00129	0.00130	0.00130
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00274	-0.00275	-0.00275
	(!A1 * A2 * !A4 * !B1 * Y)	0.00119	0.00120	0.00119
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00278	-0.00279	-0.00277
	(!A1 * !A2 * A4 * !B1 * Y)	0.00229	0.00230	0.00230
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00275	-0.00276	-0.00275
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00274	-0.00276	-0.00275

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	0.00490	0.00482	0.00479
	(A1 * A2 * A4 * B1 * !Y)	-0.00508	-0.00543	-0.00539
	(A1 * A2 * !A4 * B1 * !Y)	0.00452	0.00457	0.00453
	(A1 * A2 * !A4 * B1 * !Y)	-0.00555	-0.00560	-0.00556
	(A1 * A2 * !A4 * !B1 * Y)	0.00197	0.00198	0.00196
	(A1 * A2 * !A4 * !B1 * Y)	-0.00552	-0.00555	-0.00548
	(A1 * !A2 * A4 * !B1 * Y)	0.00451	0.00454	0.00453
	(A1 * !A2 * A4 * !B1 * Y)	-0.00555	-0.00557	-0.00556
	(A1 * !A2 * !A4 * !B1 * Y)	0.00222	0.00222	0.00222
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00558	-0.00557	-0.00556
	(!A2 * A4 * B1 * !Y)	0.00452	0.00459	0.00454
	(!A2 * A4 * B1 * !Y)	-0.00555	-0.00561	-0.00556
	(!A2 * !A4 * B1 * !Y)	0.00241	0.00243	0.00241
	(!A2 * !A4 * B1 * !Y)	-0.00556	-0.00558	-0.00556
	(!A1 * A2 * A4 * B1 * !Y)	0.00447	0.00448	0.00447
	(!A1 * A2 * A4 * B1 * !Y)	-0.00558	-0.00558	-0.00556
	(!A1 * A2 * A4 * !B1 * Y)	0.00448	0.00454	0.00451
	(!A1 * A2 * A4 * !B1 * Y)	-0.00554	-0.00559	-0.00557
	(!A1 * A2 * !A4 * B1 * !Y)	0.00250	0.00250	0.00249
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00556	-0.00557	-0.00556
	(!A1 * A2 * !A4 * !B1 * Y)	0.00231	0.00232	0.00230
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00559	-0.00562	-0.00558
	(!A1 * !A2 * A4 * !B1 * Y)	0.00452	0.00458	0.00453
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00556	-0.00560	-0.00556
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00234	0.00234	0.00233
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00558	-0.00559	-0.00557

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)**	-0.00118	-0.00119	-0.00119
	(A1 * A2 * A4 * B1 * !Y)	0.00134	0.00135	0.00135
	(A1 * A2 * !A4 * B1 * !Y)	-0.00109	-0.00114	-0.00113
	(A1 * A2 * !A4 * B1 * !Y)	0.00140	0.00140	0.00139
	(A1 * A2 * !A4 * !B1 * Y)	-0.00045	-0.00046	-0.00046
	(A1 * A2 * !A4 * !B1 * Y)	0.00147	0.00148	0.00146
	(A1 * !A2 * A4 * !B1 * Y)	-0.00104	-0.00110	-0.00109
	(A1 * !A2 * A4 * !B1 * Y)	0.00144	0.00146	0.00144
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00054	-0.00054	-0.00054
	(A1 * !A2 * !A4 * !B1 * Y)	0.00147	0.00148	0.00146
	(!A2 * A4 * B1 * !Y)	-0.00110	-0.00114	-0.00114
	(!A2 * A4 * B1 * !Y)	0.00139	0.00140	0.00139
	(!A2 * !A4 * B1 * !Y)	-0.00064	-0.00064	-0.00064
	(!A2 * !A4 * B1 * !Y)	0.00140	0.00141	0.00139
	(!A1 * A2 * A4 * B1 * !Y)	-0.00104	-0.00113	-0.00111
	(!A1 * A2 * A4 * B1 * !Y)	0.00140	0.00141	0.00139
	(!A1 * A2 * A4 * !B1 * Y)	-0.00098	-0.00107	-0.00106
	(!A1 * A2 * A4 * !B1 * Y)	0.00145	0.00146	0.00144
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00065	-0.00065	-0.00064
	(!A1 * A2 * !A4 * B1 * !Y)	0.00140	0.00141	0.00139
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00054	-0.00055	-0.00054
	(!A1 * A2 * !A4 * !B1 * Y)	0.00144	0.00146	0.00145
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00104	-0.00110	-0.00109
	(!A1 * !A2 * A4 * !B1 * Y)	0.00144	0.00146	0.00144
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00057	-0.00057	-0.00057
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00146	0.00146	0.00145

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A4 * B1 * !Y)**	-0.00240	-0.00241	-0.00240
	(A1 * A2 * A4 * B1 * !Y)	0.00267	0.00269	0.00267
	(A1 * A2 * !A4 * B1 * !Y)	-0.00215	-0.00227	-0.00227
	(A1 * A2 * !A4 * B1 * !Y)	0.00275	0.00278	0.00276
	(A1 * A2 * !A4 * !B1 * Y)	-0.00098	-0.00100	-0.00100
	(A1 * A2 * !A4 * !B1 * Y)	0.00278	0.00282	0.00278
	(A1 * !A2 * A4 * !B1 * Y)	-0.00218	-0.00231	-0.00230
	(A1 * !A2 * A4 * !B1 * Y)	0.00276	0.00277	0.00276
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00120	-0.00120	-0.00119
	(A1 * !A2 * !A4 * !B1 * Y)	0.00275	0.00279	0.00276
	(!A2 * A4 * B1 * !Y)	-0.00220	-0.00231	-0.00230
	(!A2 * A4 * B1 * !Y)	0.00275	0.00278	0.00276
	(!A2 * !A4 * B1 * !Y)	-0.00129	-0.00130	-0.00129
	(!A2 * !A4 * B1 * !Y)	0.00275	0.00279	0.00276
	(!A1 * A2 * A4 * B1 * !Y)	-0.00207	-0.00229	-0.00229
	(!A1 * A2 * A4 * B1 * !Y)	0.00276	0.00279	0.00276
	(!A1 * A2 * A4 * !B1 * Y)	-0.00206	-0.00225	-0.00229
	(!A1 * A2 * A4 * !B1 * Y)	0.00277	0.00278	0.00276
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * !A4 * B1 * !Y)	0.00275	0.00279	0.00276
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00119	-0.00120	-0.00119
	(!A1 * A2 * !A4 * !B1 * Y)	0.00278	0.00281	0.00278
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00219	-0.00230	-0.00230
	(!A1 * !A2 * A4 * !B1 * Y)	0.00276	0.00278	0.00276
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00274	0.00279	0.00276

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A4 * B1 * !Y)**	-0.00477	-0.00480	-0.00478
	(A1 * A2 * A4 * B1 * !Y)	0.00537	0.00543	0.00539
	(A1 * A2 * !A4 * B1 * !Y)	-0.00431	-0.00457	-0.00453
	(A1 * A2 * !A4 * B1 * !Y)	0.00557	0.00562	0.00558
	(A1 * A2 * !A4 * !B1 * Y)	-0.00184	-0.00185	-0.00185
	(A1 * A2 * !A4 * !B1 * Y)	0.00572	0.00575	0.00563
	(A1 * !A2 * A4 * !B1 * Y)	-0.00423	-0.00454	-0.00453
	(A1 * !A2 * A4 * !B1 * Y)	0.00556	0.00562	0.00558
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00222	-0.00222	-0.00222
	(A1 * !A2 * !A4 * !B1 * Y)	0.00565	0.00566	0.00559
	(!A2 * A4 * B1 * !Y)	-0.00430	-0.00456	-0.00454
	(!A2 * A4 * B1 * !Y)	0.00555	0.00562	0.00558
	(!A2 * !A4 * B1 * !Y)	-0.00241	-0.00243	-0.00241
	(!A2 * !A4 * B1 * !Y)	0.00560	0.00563	0.00558
	(!A1 * A2 * A4 * B1 * !Y)	-0.00398	-0.00448	-0.00447
	(!A1 * A2 * A4 * B1 * !Y)	0.00559	0.00564	0.00558
	(!A1 * A2 * A4 * !B1 * Y)	-0.00397	-0.00444	-0.00451
	(!A1 * A2 * A4 * !B1 * Y)	0.00560	0.00562	0.00558
	(!A1 * A2 * !A4 * B1 * !Y)	-0.00250	-0.00250	-0.00249
	(!A1 * A2 * !A4 * B1 * !Y)	0.00556	0.00563	0.00558
	(!A1 * A2 * !A4 * !B1 * Y)	-0.00231	-0.00232	-0.00230
	(!A1 * A2 * !A4 * !B1 * Y)	0.00561	0.00564	0.00559
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00426	-0.00455	-0.00453
	(!A1 * !A2 * A4 * !B1 * Y)	0.00556	0.00562	0.00558
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00234	-0.00234	-0.00233
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00561	0.00563	0.00558

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)**	0.00129	0.00128	0.00127
	(A1 * A2 * A3 * B1 * !Y)	-0.00127	-0.00135	-0.00134
	(A1 * A2 * !A3 * !B1 * Y)	0.00111	0.00111	0.00111
	(A1 * A2 * !A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(A1 * !A2 * A3 * !B1 * Y)	0.00108	0.00109	0.00109
	(A1 * !A2 * A3 * !B1 * Y)	-0.00148	-0.00150	-0.00149
	(A1 * !A2 * !A3 * !B1 * Y)	0.00110	0.00111	0.00110
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A3 * B1 * !Y)	0.00121	0.00123	0.00122
	(!A3 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A2 * A3 * B1 * !Y)	0.00120	0.00121	0.00120
	(!A2 * A3 * B1 * !Y)	-0.00138	-0.00138	-0.00138
	(!A1 * A2 * A3 * B1 * !Y)	0.00118	0.00119	0.00118
	(!A1 * A2 * A3 * B1 * !Y)	-0.00138	-0.00139	-0.00138
	(!A1 * A2 * A3 * !B1 * Y)	0.00107	0.00108	0.00108
	(!A1 * A2 * A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !A3 * !B1 * Y)	0.00110	0.00112	0.00111
	(!A1 * !A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !A2 * A3 * !B1 * Y)	0.00107	0.00108	0.00108
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00149	-0.00150	-0.00149

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	0.00246	0.00244	0.00242
	(A1 * A2 * A3 * B1 * !Y)	-0.00253	-0.00270	-0.00268
	(A1 * A2 * !A3 * !B1 * Y)	0.00230	0.00233	0.00232
	(A1 * A2 * !A3 * !B1 * Y)	-0.00275	-0.00277	-0.00276
	(A1 * !A2 * A3 * !B1 * Y)	0.00229	0.00231	0.00228
	(A1 * !A2 * A3 * !B1 * Y)	-0.00277	-0.00277	-0.00276
	(A1 * !A2 * !A3 * !B1 * Y)	0.00230	0.00231	0.00232
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00275	-0.00276	-0.00276
	(!A3 * B1 * !Y)	0.00231	0.00232	0.00232
	(!A3 * B1 * !Y)	-0.00276	-0.00276	-0.00276
	(!A2 * A3 * B1 * !Y)	0.00229	0.00231	0.00229
	(!A2 * A3 * B1 * !Y)	-0.00277	-0.00277	-0.00276
	(!A1 * A2 * A3 * B1 * !Y)	0.00227	0.00229	0.00227
	(!A1 * A2 * A3 * B1 * !Y)	-0.00277	-0.00278	-0.00276
	(!A1 * A2 * A3 * !B1 * Y)	0.00227	0.00226	0.00227
	(!A1 * A2 * A3 * !B1 * Y)	-0.00277	-0.00276	-0.00276
	(!A1 * !A3 * !B1 * Y)	0.00230	0.00231	0.00232
	(!A1 * !A3 * !B1 * Y)	-0.00275	-0.00276	-0.00276
	(!A1 * !A2 * A3 * !B1 * Y)	0.00229	0.00228	0.00228
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00277	-0.00276	-0.00276

sky130_fd_sc_hs__a41oi_4	**(A1 * A2 * A3 * B1 * !Y)**	0.00488	0.00484	0.00480
	(A1 * A2 * A3 * B1 * !Y)	-0.00503	-0.00538	-0.00535
	(A1 * A2 * !A3 * !B1 * Y)	0.00454	0.00459	0.00455
	(A1 * A2 * !A3 * !B1 * Y)	-0.00551	-0.00555	-0.00552
	(A1 * !A2 * A3 * !B1 * Y)	0.00444	0.00449	0.00445
	(A1 * !A2 * A3 * !B1 * Y)	-0.00552	-0.00555	-0.00552
	(A1 * !A2 * !A3 * !B1 * Y)	0.00454	0.00459	0.00455
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00551	-0.00555	-0.00552
	(!A3 * B1 * !Y)	0.00455	0.00459	0.00456
	(!A3 * B1 * !Y)	-0.00551	-0.00555	-0.00552
	(!A2 * A3 * B1 * !Y)	0.00446	0.00451	0.00448
	(!A2 * A3 * B1 * !Y)	-0.00551	-0.00554	-0.00552
	(!A1 * A2 * A3 * B1 * !Y)	0.00436	0.00443	0.00438
	(!A1 * A2 * A3 * B1 * !Y)	-0.00550	-0.00556	-0.00552
	(!A1 * A2 * A3 * !B1 * Y)	0.00436	0.00439	0.00438
	(!A1 * A2 * A3 * !B1 * Y)	-0.00551	-0.00553	-0.00552
	(!A1 * !A3 * !B1 * Y)	0.00454	0.00459	0.00455
	(!A1 * !A3 * !B1 * Y)	-0.00551	-0.00555	-0.00552
	(!A1 * !A2 * A3 * !B1 * Y)	0.00441	0.00444	0.00442
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00552	-0.00554	-0.00552

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)**	-0.00127	-0.00127	-0.00127
	(A1 * A2 * A3 * B1 * !Y)	0.00134	0.00135	0.00134
	(A1 * A2 * !A3 * !B1 * Y)	-0.00107	-0.00111	-0.00111
	(A1 * A2 * !A3 * !B1 * Y)	0.00150	0.00152	0.00150
	(A1 * !A2 * A3 * !B1 * Y)	-0.00103	-0.00109	-0.00109
	(A1 * !A2 * A3 * !B1 * Y)	0.00150	0.00151	0.00150
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00107	-0.00111	-0.00110
	(A1 * !A2 * !A3 * !B1 * Y)	0.00150	0.00151	0.00150
	(!A3 * B1 * !Y)	-0.00118	-0.00122	-0.00122
	(!A3 * B1 * !Y)	0.00139	0.00139	0.00139
	(!A2 * A3 * B1 * !Y)	-0.00114	-0.00121	-0.00120
	(!A2 * A3 * B1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * A2 * A3 * B1 * !Y)	-0.00111	-0.00119	-0.00118
	(!A1 * A2 * A3 * B1 * !Y)	0.00138	0.00140	0.00139
	(!A1 * A2 * A3 * !B1 * Y)	-0.00100	-0.00108	-0.00108
	(!A1 * A2 * A3 * !B1 * Y)	0.00149	0.00151	0.00150
	(!A1 * !A3 * !B1 * Y)	-0.00107	-0.00112	-0.00111
	(!A1 * !A3 * !B1 * Y)	0.00150	0.00151	0.00150
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00103	-0.00108	-0.00108
	(!A1 * !A2 * A3 * !B1 * Y)	0.00150	0.00151	0.00150

sky130_fd_sc_hs__a41oi_2	**(A1 * A2 * A3 * B1 * !Y)**	-0.00241	-0.00243	-0.00242
	(A1 * A2 * A3 * B1 * !Y)	0.00267	0.00270	0.00268
	(A1 * A2 * !A3 * !B1 * Y)	-0.00219	-0.00231	-0.00232
	(A1 * A2 * !A3 * !B1 * Y)	0.00276	0.00280	0.00277
	(A1 * !A2 * A3 * !B1 * Y)	-0.00209	-0.00227	-0.00228
	(A1 * !A2 * A3 * !B1 * Y)	0.00277	0.00280	0.00277
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00220	-0.00231	-0.00232
	(A1 * !A2 * !A3 * !B1 * Y)	0.00276	0.00280	0.00277
	(!A3 * B1 * !Y)	-0.00220	-0.00230	-0.00232
	(!A3 * B1 * !Y)	0.00276	0.00277	0.00277
	(!A2 * A3 * B1 * !Y)	-0.00209	-0.00227	-0.00229
	(!A2 * A3 * B1 * !Y)	0.00277	0.00280	0.00277
	(!A1 * A2 * A3 * B1 * !Y)	-0.00205	-0.00227	-0.00227
	(!A1 * A2 * A3 * B1 * !Y)	0.00277	0.00280	0.00277
	(!A1 * A2 * A3 * !B1 * Y)	-0.00204	-0.00226	-0.00227
	(!A1 * A2 * A3 * !B1 * Y)	0.00278	0.00280	0.00277
	(!A1 * !A3 * !B1 * Y)	-0.00220	-0.00231	-0.00232
	(!A1 * !A3 * !B1 * Y)	0.00276	0.00280	0.00277
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00209	-0.00227	-0.00228
	(!A1 * !A2 * A3 * !B1 * Y)	0.00277	0.00280	0.00277

sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * B1 * !Y)	-0.00478	-0.00480	-0.00479
	(A1 * A2 * A3 * B1 * !Y)	0.00533	0.00538	0.00535
	(A1 * A2 * !A3 * !B1 * Y)	-0.00434	-0.00458	-0.00455
	(A1 * A2 * !A3 * !B1 * Y)	0.00552	0.00560	0.00554
	(A1 * !A2 * A3 * !B1 * Y)	-0.00412	-0.00449	-0.00445
	(A1 * !A2 * A3 * !B1 * Y)	0.00555	0.00560	0.00554
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00437	-0.00458	-0.00455
	(A1 * !A2 * !A3 * !B1 * Y)	0.00553	0.00560	0.00554
	(!A3 * B1 * !Y)	-0.00439	-0.00455	-0.00456
	(!A3 * B1 * !Y)	0.00554	0.00556	0.00554
	(!A2 * A3 * B1 * !Y)	-0.00412	-0.00448	-0.00448
	(!A2 * A3 * B1 * !Y)	0.00555	0.00558	0.00554
	(!A1 * A2 * A3 * B1 * !Y)	-0.00407	-0.00443	-0.00438
	(!A1 * A2 * A3 * B1 * !Y)	0.00555	0.00559	0.00554
	(!A1 * A2 * A3 * !B1 * Y)	-0.00406	-0.00439	-0.00438
	(!A1 * A2 * A3 * !B1 * Y)	0.00555	0.00559	0.00554
	(!A1 * !A3 * !B1 * Y)	-0.00437	-0.00458	-0.00455
	(!A1 * !A3 * !B1 * Y)	0.00553	0.00560	0.00554
	(!A1 * !A2 * A3 * !B1 * Y)	-0.00412	-0.00444	-0.00442
	(!A1 * !A2 * A3 * !B1 * Y)	0.00555	0.00560	0.00554

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)	0.00150	0.00152	0.00149
	(A1 * A2 * A3 * A4 * !Y)	-0.00069	-0.00070	-0.00069
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	0.00160	0.00161	0.00159
	(A1 * A2 * A3 * A4 * !Y)	-0.00142	-0.00142	-0.00141
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	0.00313	0.00317	0.00314
	(A1 * A2 * A3 * A4 * !Y)	-0.00276	-0.00280	-0.00277

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)	-0.00135	-0.00137	-0.00147
	(A1 * A2 * A3 * A4 * !Y)	0.00080	0.00080	0.00071
sky130_fd_sc_hs__a41oi_2	(A1 * A2 * A3 * A4 * !Y)	-0.00130	-0.00132	-0.00156
	(A1 * A2 * A3 * A4 * !Y)	0.00165	0.00164	0.00146
sky130_fd_sc_hs__a41oi_4	(A1 * A2 * A3 * A4 * !Y)	-0.00259	-0.00264	-0.00308
	(A1 * A2 * A3 * A4 * !Y)	0.00319	0.00321	0.00287

SKY130_FD_SC_HS__A41Ox

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00250	0.00246	0.00248	0.00242	0.00260	1.17076
sky130_fd_sc_hs__a41o_2	0.00245	0.00252	0.00258	0.00242	0.00260	2.24022
sky130_fd_sc_hs__a41o_4	0.00483	0.00466	0.00482	0.00463	0.00478	3.71354

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__a41o_1	0.00000	0.04539	0.07369
sky130_fd_sc_hs__a41o_2	0.00000	0.06093	0.07434
sky130_fd_sc_hs__a41o_4	0.00000	0.12187	0.14869

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)	0.08204	0.56212	5.75884
	A2->X (RR)	0.08830	0.58052	5.83584
	A3->X (RR)	0.09319	0.58004	5.83453
	A4->X (RR)	0.09603	0.57295	5.80818
	B1->X (RR)	0.05356	0.51718	5.78283
sky130_fd_sc_hs__a41o_2	A1->X (RR)	0.08487	0.49768	5.85217
	A2->X (RR)	0.09194	0.51291	5.92050
	A3->X (RR)	0.09662	0.50794	5.90489
	A4->X (RR)	0.09916	0.49716	5.86644
	B1->X (RR)	0.04982	0.43721	5.81034
sky130_fd_sc_hs__a41o_4	A1->X (RR)	0.10082	0.47748	5.97264
	A2->X (RR)	0.11058	0.49700	6.07088
	A3->X (RR)	0.11508	0.46889	5.96378
	A4->X (RR)	0.11865	0.45928	5.92123
	B1->X (RR)	0.04708	0.37826	5.82636

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__a41o_1	A1->X (FF)	0.12203	0.56247	4.68938
	A2->X (FF)	0.14479	0.59759	4.76525
	A3->X (FF)	0.16083	0.62519	4.83370
	A4->X (FF)	0.17704	0.65187	4.92965
	B1->X (FF)	0.14804	0.60984	4.73321
sky130_fd_sc_hs__a41o_2	A1->X (FF)	0.14341	0.57977	4.75369
	A2->X (FF)	0.16728	0.61604	4.84114
	A3->X (FF)	0.18143	0.63882	4.91362
	A4->X (FF)	0.19549	0.66124	4.98576
	B1->X (FF)	0.16777	0.62476	4.78907
sky130_fd_sc_hs__a41o_4	A1->X (FF)	0.15011	0.55451	4.58091
	A2->X (FF)	0.17212	0.58833	4.65560
	A3->X (FF)	0.18932	0.61689	4.74980
	A4->X (FF)	0.20748	0.64416	4.84175
	B1->X (FF)	0.17605	0.61400	4.70607

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__a41o_1	A1	0.00890	0.00912	0.01804
	A1	0.00481	0.00503	0.01401
	A2	0.00972	0.00979	0.01671
	A2	0.00481	0.00489	0.01183
	A3	0.01051	0.01058	0.01719
	A3	0.00481	0.00488	0.01151
	A4	0.01134	0.01143	0.01781
	A4	0.00480	0.00488	0.01133
	B1	0.00635	0.00682	0.02706
	B1	0.00308	0.00356	0.02389
sky130_fd_sc_hs__a41o_2	A1	0.01019	0.01056	0.01931
	A1	0.00608	0.00648	0.01525
	A2	0.01104	0.01134	0.01801
	A2	0.00610	0.00641	0.01369
	A3	0.01186	0.01214	0.01855
	A3	0.00610	0.00640	0.01341
	A4	0.01263	0.01294	0.01914
	A4	0.00608	0.00638	0.01260
	B1	0.00926	0.00968	0.02739
	B1	0.00437	0.00492	0.02453

sky130_fd_sc_hs__a41o_4	**A1**	0.01957	0.02014	0.03501
	A1	0.01138	0.01198	0.02791
	A2	0.02115	0.02162	0.03430
	A2	0.01137	0.01188	0.02556
	A3	0.02294	0.02344	0.03597
	A3	0.01136	0.01186	0.02550
	A4	0.02452	0.02509	0.03720
	A4	0.01134	0.01192	0.02513
	B1	0.01397	0.01506	0.05084
	B1	0.00767	0.00876	0.04492

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__a41o_1	**A1**	0.00264	0.00259	0.01077
	A1	0.00681	0.00674	0.01457
	A2	0.00303	0.00299	0.01035
	A2	0.00796	0.00791	0.01477
	A3	0.00347	0.00349	0.01073
	A3	0.00913	0.00915	0.01579
	A4	0.00378	0.00387	0.01117
	A4	0.01021	0.01029	0.01679
	B1	0.00243	0.00353	0.02141
	B1	0.00810	0.00892	0.02535

sky130_fd_sc_hs__a41o_2	**A1**	0.00452	0.00469	0.01260
	A1	0.00869	0.00883	0.01607
	A2	0.00502	0.00512	0.01194
	A2	0.00999	0.01013	0.01664
	A3	0.00545	0.00558	0.01297
	A3	0.01117	0.01132	0.01772
	A4	0.00576	0.00591	0.01356
	A4	0.01220	0.01238	0.01868
	B1	0.00425	0.00541	0.02349
	B1	0.01010	0.01108	0.02724
sky130_fd_sc_hs__a41o_4	**A1**	0.00879	0.00879	0.02341
	A1	0.01713	0.01713	0.03047
	A2	0.01024	0.01032	0.02336
	A2	0.02007	0.02010	0.03266
	A3	0.01083	0.01089	0.02480
	A3	0.02232	0.02255	0.03507
	A4	0.01196	0.01215	0.02483
	A4	0.02487	0.02504	0.03737
	B1	0.00830	0.01063	0.04672
	B1	0.01996	0.02226	0.05381

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)**	0.00120	0.00118	0.00117
	(A2 * A3 * A4 * B1 * X)	-0.00116	-0.00124	-0.00124
	(A2 * A3 * !A4 * B1 * X)	0.00111	0.00111	0.00111
	(A2 * A3 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00128
	(A2 * A3 * !A4 * !B1 * !X)	0.00040	0.00040	0.00036
	(A2 * A3 * !A4 * !B1 * !X)	-0.00144	-0.00144	-0.00152
	(A2 * !A3 * B1 * X)	0.00109	0.00109	0.00108
	(A2 * !A3 * B1 * X)	-0.00128	-0.00128	-0.00128
	(A2 * !A3 * !B1 * !X)	0.00039	0.00038	0.00036
	(A2 * !A3 * !B1 * !X)	-0.00147	-0.00147	-0.00152
	(!A2 * B1 * X)	0.00111	0.00113	0.00112
	(!A2 * B1 * X)	-0.00127	-0.00129	-0.00128
	(!A2 * !B1 * !X)	0.00038	0.00038	0.00037
	(!A2 * !B1 * !X)	-0.00151	-0.00151	-0.00153
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	0.00119	0.00117	0.00116
	(A2 * A3 * A4 * B1 * X)	-0.00117	-0.00125	-0.00124
	(A2 * A3 * !A4 * B1 * X)	0.00106	0.00108	0.00107
	(A2 * A3 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A2 * A3 * !A4 * !B1 * !X)	0.00041	0.00040	0.00037
	(A2 * A3 * !A4 * !B1 * !X)	-0.00143	-0.00143	-0.00151
	(A2 * !A3 * B1 * X)	0.00109	0.00110	0.00109
	(A2 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A2 * !A3 * !B1 * !X)	0.00040	0.00040	0.00037
	(A2 * !A3 * !B1 * !X)	-0.00146	-0.00146	-0.00151
	(!A2 * B1 * X)	0.00111	0.00112	0.00111
	(!A2 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * !B1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !B1 * !X)	-0.00149	-0.00149	-0.00152

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	0.00250	0.00247	0.00245
	(A2 * A3 * A4 * B1 * X)	-0.00237	-0.00255	-0.00253
	(A2 * A3 * !A4 * B1 * X)	0.00229	0.00231	0.00230
	(A2 * A3 * !A4 * B1 * X)	-0.00261	-0.00263	-0.00261
	(A2 * A3 * !A4 * !B1 * !X)	0.00088	0.00088	0.00080
	(A2 * A3 * !A4 * !B1 * !X)	-0.00289	-0.00291	-0.00310
	(A2 * !A3 * B1 * X)	0.00228	0.00229	0.00229
	(A2 * !A3 * B1 * X)	-0.00262	-0.00262	-0.00261
	(A2 * !A3 * !B1 * !X)	0.00084	0.00084	0.00079
	(A2 * !A3 * !B1 * !X)	-0.00298	-0.00300	-0.00311
	(!A2 * B1 * X)	0.00234	0.00237	0.00235
	(!A2 * B1 * X)	-0.00260	-0.00263	-0.00261
	(!A2 * !B1 * !X)	0.00087	0.00088	0.00085
	(!A2 * !B1 * !X)	-0.00305	-0.00307	-0.00313

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)**	-0.00116	-0.00117	-0.00116
	(A2 * A3 * A4 * B1 * X)	0.00123	0.00124	0.00124
	(A2 * A3 * !A4 * B1 * X)	-0.00097	-0.00111	-0.00111
	(A2 * A3 * !A4 * B1 * X)	0.00128	0.00130	0.00128
	(A2 * A3 * !A4 * !B1 * !X)	-0.00035	-0.00036	-0.00035
	(A2 * A3 * !A4 * !B1 * !X)	0.00152	0.00154	0.00153
	(A2 * !A3 * B1 * X)	-0.00101	-0.00109	-0.00108
	(A2 * !A3 * B1 * X)	0.00128	0.00130	0.00128
	(A2 * !A3 * !B1 * !X)	-0.00035	-0.00036	-0.00035
	(A2 * !A3 * !B1 * !X)	0.00152	0.00154	0.00153
	(!A2 * B1 * X)	-0.00107	-0.00112	-0.00112
	(!A2 * B1 * X)	0.00127	0.00129	0.00128
	(!A2 * !B1 * !X)	-0.00036	-0.00037	-0.00036
	(!A2 * !B1 * !X)	0.00153	0.00155	0.00153
sky130_fd_sc_hs__a41o_2	**(A2 * A3 * A4 * B1 * X)**	-0.00115	-0.00116	-0.00115
	(A2 * A3 * A4 * B1 * X)	0.00123	0.00125	0.00124
	(A2 * A3 * !A4 * B1 * X)	-0.00097	-0.00108	-0.00107
	(A2 * A3 * !A4 * B1 * X)	0.00128	0.00130	0.00129
	(A2 * A3 * !A4 * !B1 * !X)	-0.00037	-0.00037	-0.00037
	(A2 * A3 * !A4 * !B1 * !X)	0.00152	0.00153	0.00152
	(A2 * !A3 * B1 * X)	-0.00100	-0.00110	-0.00109
	(A2 * !A3 * B1 * X)	0.00128	0.00130	0.00129
	(A2 * !A3 * !B1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00152	0.00153	0.00152
	(!A2 * B1 * X)	-0.00107	-0.00111	-0.00111
	(!A2 * B1 * X)	0.00129	0.00129	0.00129
	(!A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !B1 * !X)	0.00152	0.00154	0.00152

sky130_fd_sc_hs__a41o_4	**(A2 * A3 * A4 * B1 * X)**	-0.00245	-0.00246	-0.00245
	(A2 * A3 * A4 * B1 * X)	0.00252	0.00255	0.00253
	(A2 * A3 * !A4 * B1 * X)	-0.00198	-0.00228	-0.00230
	(A2 * A3 * !A4 * B1 * X)	0.00263	0.00264	0.00262
	(A2 * A3 * !A4 * !B1 * !X)	-0.00080	-0.00080	-0.00079
	(A2 * A3 * !A4 * !B1 * !X)	0.00314	0.00316	0.00313
	(A2 * !A3 * B1 * X)	-0.00204	-0.00229	-0.00229
	(A2 * !A3 * B1 * X)	0.00263	0.00264	0.00262
	(A2 * !A3 * !B1 * !X)	-0.00080	-0.00081	-0.00079
	(A2 * !A3 * !B1 * !X)	0.00314	0.00316	0.00313
	(!A2 * B1 * X)	-0.00222	-0.00235	-0.00235
	(!A2 * B1 * X)	0.00261	0.00263	0.00262
	(!A2 * !B1 * !X)	-0.00083	-0.00084	-0.00082
	(!A2 * !B1 * !X)	0.00315	0.00318	0.00314

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)**	0.00122	0.00120	0.00119
	(A1 * A3 * A4 * B1 * X)	-0.00116	-0.00124	-0.00123
	(A1 * A3 * !A4 * B1 * X)	0.00110	0.00110	0.00110
	(A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * A3 * !A4 * !B1 * !X)	0.00049	0.00050	0.00050
	(A1 * A3 * !A4 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * B1 * X)	0.00113	0.00115	0.00114
	(A1 * !A3 * B1 * X)	-0.00126	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00051	0.00052	0.00051
	(A1 * !A3 * !B1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * A4 * B1 * X)	0.00113	0.00115	0.00114
	(!A1 * A3 * A4 * B1 * X)	-0.00126	-0.00128	-0.00127
	(!A1 * A3 * A4 * !B1 * !X)	0.00112	0.00114	0.00113
	(!A1 * A3 * A4 * !B1 * !X)	-0.00127	-0.00128	-0.00128
	(!A1 * A3 * !A4 * B1 * X)	0.00064	0.00064	0.00064
	(!A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00127	-0.00127
	(!A1 * A3 * !A4 * !B1 * !X)	0.00060	0.00061	0.00060
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00127	-0.00128	-0.00128
	(!A1 * !A3 * B1 * X)	0.00064	0.00065	0.00064
	(!A1 * !A3 * B1 * X)	-0.00126	-0.00128	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	0.00123	0.00121	0.00120
	(A1 * A3 * A4 * B1 * X)	-0.00116	-0.00124	-0.00123
	(A1 * A3 * !A4 * B1 * X)	0.00111	0.00112	0.00111
	(A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * A3 * !A4 * !B1 * !X)	0.00050	0.00051	0.00051
	(A1 * A3 * !A4 * !B1 * !X)	-0.00127	-0.00129	-0.00127
	(A1 * !A3 * B1 * X)	0.00114	0.00116	0.00115
	(A1 * !A3 * B1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * !A3 * !B1 * !X)	0.00053	0.00054	0.00054
	(A1 * !A3 * !B1 * !X)	-0.00127	-0.00129	-0.00127
	(!A1 * A3 * A4 * B1 * X)	0.00115	0.00116	0.00115
	(!A1 * A3 * A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A1 * A3 * A4 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A1 * A3 * A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * A3 * !A4 * B1 * X)	0.00066	0.00065	0.00065
	(!A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00128	-0.00127
	(!A1 * A3 * !A4 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !A3 * B1 * X)	0.00068	0.00068	0.00068
	(!A1 * !A3 * B1 * X)	-0.00128	-0.00129	-0.00127
	(!A1 * !A3 * !B1 * !X)	0.00061	0.00062	0.00061
	(!A1 * !A3 * !B1 * !X)	-0.00128	-0.00129	-0.00128

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	0.00244	0.00240	0.00239
	(A1 * A3 * A4 * B1 * X)	-0.00233	-0.00250	-0.00248
	(A1 * A3 * !A4 * B1 * X)	0.00224	0.00225	0.00224
	(A1 * A3 * !A4 * B1 * X)	-0.00257	-0.00257	-0.00256
	(A1 * A3 * !A4 * !B1 * !X)	0.00095	0.00097	0.00097
	(A1 * A3 * !A4 * !B1 * !X)	-0.00256	-0.00259	-0.00256
	(A1 * !A3 * B1 * X)	0.00224	0.00225	0.00225
	(A1 * !A3 * B1 * X)	-0.00256	-0.00258	-0.00257
	(A1 * !A3 * !B1 * !X)	0.00097	0.00099	0.00098
	(A1 * !A3 * !B1 * !X)	-0.00256	-0.00259	-0.00256
	(!A1 * A3 * A4 * B1 * X)	0.00227	0.00228	0.00228
	(!A1 * A3 * A4 * B1 * X)	-0.00256	-0.00257	-0.00256
	(!A1 * A3 * A4 * !B1 * !X)	0.00226	0.00227	0.00227
	(!A1 * A3 * A4 * !B1 * !X)	-0.00256	-0.00257	-0.00257
	(!A1 * A3 * !A4 * B1 * X)	0.00126	0.00127	0.00126
	(!A1 * A3 * !A4 * B1 * X)	-0.00257	-0.00259	-0.00257
	(!A1 * A3 * !A4 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00258	-0.00259	-0.00258
	(!A1 * !A3 * B1 * X)	0.00125	0.00126	0.00125
	(!A1 * !A3 * B1 * X)	-0.00256	-0.00258	-0.00257
	(!A1 * !A3 * !B1 * !X)	0.00112	0.00112	0.00112
	(!A1 * !A3 * !B1 * !X)	-0.00258	-0.00259	-0.00259

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)**	-0.00119	-0.00119	-0.00119
	(A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * !A4 * B1 * X)	-0.00101	-0.00110	-0.00110
	(A1 * A3 * !A4 * B1 * X)	0.00127	0.00128	0.00127
	(A1 * A3 * !A4 * !B1 * !X)	-0.00048	-0.00049	-0.00049
	(A1 * A3 * !A4 * !B1 * !X)	0.00130	0.00131	0.00128
	(A1 * !A3 * B1 * X)	-0.00109	-0.00114	-0.00114
	(A1 * !A3 * B1 * X)	0.00126	0.00128	0.00127
	(A1 * !A3 * !B1 * !X)	-0.00049	-0.00049	-0.00050
	(A1 * !A3 * !B1 * !X)	0.00130	0.00131	0.00128
	(!A1 * A3 * A4 * B1 * X)	-0.00109	-0.00114	-0.00114
	(!A1 * A3 * A4 * B1 * X)	0.00126	0.00128	0.00127
	(!A1 * A3 * A4 * !B1 * !X)	-0.00105	-0.00113	-0.00113
	(!A1 * A3 * A4 * !B1 * !X)	0.00134	0.00129	0.00128
	(!A1 * A3 * !A4 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * A3 * !A4 * B1 * X)	0.00128	0.00128	0.00127
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * A3 * !A4 * !B1 * !X)	0.00130	0.00129	0.00128
	(!A1 * !A3 * B1 * X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A3 * B1 * X)	0.00128	0.00128	0.00127
	(!A1 * !A3 * !B1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A3 * !B1 * !X)	0.00134	0.00134	0.00129

sky130_fd_sc_hs__a41o_2	**(A1 * A3 * A4 * B1 * X)**	-0.00120	-0.00120	-0.00120
	(A1 * A3 * A4 * B1 * X)	0.00124	0.00124	0.00123
	(A1 * A3 * !A4 * B1 * X)	-0.00102	-0.00112	-0.00111
	(A1 * A3 * !A4 * B1 * X)	0.00127	0.00129	0.00128
	(A1 * A3 * !A4 * !B1 * !X)	-0.00050	-0.00050	-0.00051
	(A1 * A3 * !A4 * !B1 * !X)	0.00131	0.00132	0.00129
	(A1 * !A3 * B1 * X)	-0.00110	-0.00115	-0.00115
	(A1 * !A3 * B1 * X)	0.00127	0.00128	0.00128
	(A1 * !A3 * !B1 * !X)	-0.00051	-0.00051	-0.00052
	(A1 * !A3 * !B1 * !X)	0.00131	0.00132	0.00129
	(!A1 * A3 * A4 * B1 * X)	-0.00111	-0.00116	-0.00115
	(!A1 * A3 * A4 * B1 * X)	0.00128	0.00130	0.00128
	(!A1 * A3 * A4 * !B1 * !X)	-0.00106	-0.00115	-0.00114
	(!A1 * A3 * A4 * !B1 * !X)	0.00134	0.00131	0.00129
	(!A1 * A3 * !A4 * B1 * X)	-0.00066	-0.00065	-0.00065
	(!A1 * A3 * !A4 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * A3 * !A4 * !B1 * !X)	0.00131	0.00130	0.00128
	(!A1 * !A3 * B1 * X)	-0.00068	-0.00068	-0.00068
	(!A1 * !A3 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * !A3 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(!A1 * !A3 * !B1 * !X)	0.00133	0.00134	0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A3 * A4 * B1 * X)**	-0.00238	-0.00240	-0.00238
	(A1 * A3 * A4 * B1 * X)	0.00247	0.00250	0.00248
	(A1 * A3 * !A4 * B1 * X)	-0.00197	-0.00225	-0.00224
	(A1 * A3 * !A4 * B1 * X)	0.00258	0.00259	0.00257
	(A1 * A3 * !A4 * !B1 * !X)	-0.00091	-0.00091	-0.00092
	(A1 * A3 * !A4 * !B1 * !X)	0.00266	0.00267	0.00260
	(A1 * !A3 * B1 * X)	-0.00214	-0.00225	-0.00225
	(A1 * !A3 * B1 * X)	0.00256	0.00260	0.00257
	(A1 * !A3 * !B1 * !X)	-0.00093	-0.00093	-0.00095
	(A1 * !A3 * !B1 * !X)	0.00266	0.00267	0.00260
	(!A1 * A3 * A4 * B1 * X)	-0.00215	-0.00228	-0.00228
	(!A1 * A3 * A4 * B1 * X)	0.00256	0.00259	0.00257
	(!A1 * A3 * A4 * !B1 * !X)	-0.00203	-0.00227	-0.00227
	(!A1 * A3 * A4 * !B1 * !X)	0.00271	0.00260	0.00258
	(!A1 * A3 * !A4 * B1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * A3 * !A4 * B1 * X)	0.00257	0.00260	0.00258
	(!A1 * A3 * !A4 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * !A4 * !B1 * !X)	0.00262	0.00263	0.00259
	(!A1 * !A3 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A1 * !A3 * B1 * X)	0.00256	0.00260	0.00258
	(!A1 * !A3 * !B1 * !X)	-0.00112	-0.00112	-0.00112
	(!A1 * !A3 * !B1 * !X)	0.00265	0.00270	0.00261

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)**	0.00119	0.00117	0.00117
	(A1 * A2 * A4 * B1 * X)	-0.00117	-0.00126	-0.00125
	(A1 * A2 * !A4 * B1 * X)	0.00111	0.00112	0.00112
	(A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(A1 * A2 * !A4 * !B1 * !X)	0.00052	0.00052	0.00052
	(A1 * A2 * !A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * A4 * !B1 * !X)	0.00111	0.00113	0.00112
	(A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(A1 * !A2 * !A4 * !B1 * !X)	0.00059	0.00060	0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00131	-0.00130
	(!A2 * A4 * B1 * X)	0.00111	0.00113	0.00112
	(!A2 * A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A2 * !A4 * B1 * X)	0.00064	0.00065	0.00064
	(!A2 * !A4 * B1 * X)	-0.00129	-0.00131	-0.00130
	(!A1 * A2 * A4 * B1 * X)	0.00108	0.00109	0.00109
	(!A1 * A2 * A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * A4 * !B1 * !X)	0.00109	0.00109	0.00109
	(!A1 * A2 * A4 * !B1 * !X)	-0.00130	-0.00130	-0.00130
	(!A1 * A2 * !A4 * B1 * X)	0.00063	0.00063	0.00063
	(!A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00130	-0.00130
	(!A1 * A2 * !A4 * !B1 * !X)	0.00058	0.00059	0.00059
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00129	-0.00130	-0.00130
	(!A1 * !A2 * A4 * !B1 * !X)	0.00111	0.00113	0.00112
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00129	-0.00131	-0.00130
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00062	0.00063	0.00063
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00129	-0.00131	-0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	0.00125	0.00123	0.00122
	(A1 * A2 * A4 * B1 * X)	-0.00116	-0.00125	-0.00124
	(A1 * A2 * !A4 * B1 * X)	0.00116	0.00117	0.00116
	(A1 * A2 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * A2 * !A4 * !B1 * !X)	0.00054	0.00054	0.00054
	(A1 * A2 * !A4 * !B1 * !X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * A4 * !B1 * !X)	0.00116	0.00118	0.00117
	(A1 * !A2 * A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(A1 * !A2 * !A4 * !B1 * !X)	0.00061	0.00062	0.00061
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00128	-0.00130	-0.00128
	(!A2 * A4 * B1 * X)	0.00116	0.00118	0.00117
	(!A2 * A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A2 * !A4 * B1 * X)	0.00065	0.00066	0.00065
	(!A2 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * A4 * B1 * X)	0.00113	0.00115	0.00114
	(!A1 * A2 * A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * A4 * !B1 * !X)	0.00114	0.00115	0.00114
	(!A1 * A2 * A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * !A4 * B1 * X)	0.00067	0.00067	0.00066
	(!A1 * A2 * !A4 * B1 * X)	-0.00129	-0.00129	-0.00128
	(!A1 * A2 * !A4 * !B1 * !X)	0.00062	0.00062	0.00062
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !A2 * A4 * !B1 * !X)	0.00116	0.00118	0.00117
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00128	-0.00129	-0.00128
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00128	-0.00130	-0.00128

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	0.00249	0.00245	0.00244
	(A1 * A2 * A4 * B1 * X)	-0.00236	-0.00253	-0.00252
	(A1 * A2 * !A4 * B1 * X)	0.00233	0.00235	0.00234
	(A1 * A2 * !A4 * B1 * X)	-0.00260	-0.00261	-0.00260
	(A1 * A2 * !A4 * !B1 * !X)	0.00103	0.00104	0.00103
	(A1 * A2 * !A4 * !B1 * !X)	-0.00257	-0.00259	-0.00255
	(A1 * !A2 * A4 * !B1 * !X)	0.00228	0.00228	0.00229
	(A1 * !A2 * A4 * !B1 * !X)	-0.00259	-0.00260	-0.00260
	(A1 * !A2 * !A4 * !B1 * !X)	0.00116	0.00118	0.00117
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00260	-0.00263	-0.00261
	(!A2 * A4 * B1 * X)	0.00229	0.00232	0.00230
	(!A2 * A4 * B1 * X)	-0.00259	-0.00262	-0.00260
	(!A2 * !A4 * B1 * X)	0.00127	0.00128	0.00127
	(!A2 * !A4 * B1 * X)	-0.00260	-0.00262	-0.00261
	(!A1 * A2 * A4 * B1 * X)	0.00227	0.00227	0.00227
	(!A1 * A2 * A4 * B1 * X)	-0.00261	-0.00261	-0.00260
	(!A1 * A2 * A4 * !B1 * !X)	0.00228	0.00230	0.00228
	(!A1 * A2 * A4 * !B1 * !X)	-0.00261	-0.00262	-0.00260
	(!A1 * A2 * !A4 * B1 * X)	0.00128	0.00129	0.00128
	(!A1 * A2 * !A4 * B1 * X)	-0.00260	-0.00263	-0.00261
	(!A1 * A2 * !A4 * !B1 * !X)	0.00118	0.00119	0.00118
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00261	-0.00262	-0.00262
	(!A1 * !A2 * A4 * !B1 * !X)	0.00228	0.00232	0.00230
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00259	-0.00262	-0.00260
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00122	0.00122	0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00260	-0.00261	-0.00261

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)**	-0.00117	-0.00117	-0.00116
	(A1 * A2 * A4 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !A4 * B1 * X)	-0.00107	-0.00112	-0.00112
	(A1 * A2 * !A4 * B1 * X)	0.00130	0.00130	0.00130
	(A1 * A2 * !A4 * !B1 * !X)	-0.00050	-0.00050	-0.00050
	(A1 * A2 * !A4 * !B1 * !X)	0.00133	0.00133	0.00131
	(A1 * !A2 * A4 * !B1 * !X)	-0.00106	-0.00112	-0.00112
	(A1 * !A2 * A4 * !B1 * !X)	0.00129	0.00131	0.00130
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00059	-0.00060	-0.00060
	(A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00132	0.00130
	(!A2 * A4 * B1 * X)	-0.00107	-0.00111	-0.00112
	(!A2 * A4 * B1 * X)	0.00130	0.00130	0.00130
	(!A2 * !A4 * B1 * X)	-0.00064	-0.00065	-0.00064
	(!A2 * !A4 * B1 * X)	0.00131	0.00131	0.00130
	(!A1 * A2 * A4 * B1 * X)	-0.00100	-0.00109	-0.00109
	(!A1 * A2 * A4 * B1 * X)	0.00130	0.00132	0.00130
	(!A1 * A2 * A4 * !B1 * !X)	-0.00100	-0.00109	-0.00109
	(!A1 * A2 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * A2 * !A4 * B1 * X)	-0.00063	-0.00063	-0.00063
	(!A1 * A2 * !A4 * B1 * X)	0.00131	0.00131	0.00130
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1 * A2 * !A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00107	-0.00113	-0.00112
	(!A1 * !A2 * A4 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00062	-0.00063	-0.00063
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00130	0.00131	0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A4 * B1 * X)**	-0.00122	-0.00122	-0.00122
	(A1 * A2 * A4 * B1 * X)	0.00125	0.00125	0.00124
	(A1 * A2 * !A4 * B1 * X)	-0.00112	-0.00117	-0.00116
	(A1 * A2 * !A4 * B1 * X)	0.00129	0.00130	0.00129
	(A1 * A2 * !A4 * !B1 * !X)	-0.00052	-0.00053	-0.00053
	(A1 * A2 * !A4 * !B1 * !X)	0.00131	0.00132	0.00130
	(A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00118	-0.00117
	(A1 * !A2 * A4 * !B1 * !X)	0.00128	0.00130	0.00129
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00061	-0.00062	-0.00061
	(A1 * !A2 * !A4 * !B1 * !X)	0.00132	0.00132	0.00130
	(!A2 * A4 * B1 * X)	-0.00112	-0.00117	-0.00117
	(!A2 * A4 * B1 * X)	0.00128	0.00129	0.00129
	(!A2 * !A4 * B1 * X)	-0.00065	-0.00066	-0.00065
	(!A2 * !A4 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * A2 * A4 * B1 * X)	-0.00105	-0.00115	-0.00114
	(!A1 * A2 * A4 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * A2 * A4 * !B1 * !X)	-0.00105	-0.00115	-0.00114
	(!A1 * A2 * A4 * !B1 * !X)	0.00128	0.00130	0.00129
	(!A1 * A2 * !A4 * B1 * X)	-0.00067	-0.00067	-0.00066
	(!A1 * A2 * !A4 * B1 * X)	0.00129	0.00130	0.00129
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * A2 * !A4 * !B1 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00112	-0.00118	-0.00117
	(!A1 * !A2 * A4 * !B1 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00129	0.00130	0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A4 * B1 * X)**	-0.00243	-0.00244	-0.00243
	(A1 * A2 * A4 * B1 * X)	0.00251	0.00253	0.00252
	(A1 * A2 * !A4 * B1 * X)	-0.00219	-0.00235	-0.00234
	(A1 * A2 * !A4 * B1 * X)	0.00261	0.00263	0.00261
	(A1 * A2 * !A4 * !B1 * !X)	-0.00096	-0.00097	-0.00097
	(A1 * A2 * !A4 * !B1 * !X)	0.00269	0.00271	0.00264
	(A1 * !A2 * A4 * !B1 * !X)	-0.00218	-0.00228	-0.00229
	(A1 * !A2 * A4 * !B1 * !X)	0.00261	0.00263	0.00261
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00116	-0.00118	-0.00117
	(A1 * !A2 * !A4 * !B1 * !X)	0.00265	0.00265	0.00262
	(!A2 * A4 * B1 * X)	-0.00220	-0.00231	-0.00230
	(!A2 * A4 * B1 * X)	0.00261	0.00263	0.00261
	(!A2 * !A4 * B1 * X)	-0.00127	-0.00128	-0.00127
	(!A2 * !A4 * B1 * X)	0.00263	0.00264	0.00262
	(!A1 * A2 * A4 * B1 * X)	-0.00207	-0.00227	-0.00227
	(!A1 * A2 * A4 * B1 * X)	0.00262	0.00264	0.00261
	(!A1 * A2 * A4 * !B1 * !X)	-0.00207	-0.00226	-0.00228
	(!A1 * A2 * A4 * !B1 * !X)	0.00263	0.00263	0.00261
	(!A1 * A2 * !A4 * B1 * X)	-0.00128	-0.00129	-0.00128
	(!A1 * A2 * !A4 * B1 * X)	0.00260	0.00264	0.00262
	(!A1 * A2 * !A4 * !B1 * !X)	-0.00118	-0.00119	-0.00118
	(!A1 * A2 * !A4 * !B1 * !X)	0.00262	0.00265	0.00263
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00219	-0.00231	-0.00230
	(!A1 * !A2 * A4 * !B1 * !X)	0.00261	0.00263	0.00261
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00122	-0.00122	-0.00122
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00263	0.00264	0.00262

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)**	0.00127	0.00125	0.00125
	(A1 * A2 * A3 * B1 * X)	-0.00117	-0.00126	-0.00125
	(A1 * A2 * !A3 * !B1 * !X)	0.00119	0.00121	0.00120
	(A1 * A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00117	0.00117
	(A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	0.00119	0.00122	0.00120
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A3 * B1 * X)	0.00119	0.00120	0.00119
	(!A3 * B1 * X)	-0.00129	-0.00129	-0.00129
	(!A2 * A3 * B1 * X)	0.00117	0.00117	0.00117
	(!A2 * A3 * B1 * X)	-0.00129	-0.00129	-0.00129
	(!A1 * A2 * A3 * B1 * X)	0.00116	0.00116	0.00116
	(!A1 * A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A1 * A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00119	0.00120	0.00120
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(!A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00117	0.00117
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00129	-0.00129

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	0.00126	0.00125	0.00124
	(A1 * A2 * A3 * B1 * X)	-0.00117	-0.00126	-0.00125
	(A1 * A2 * !A3 * !B1 * !X)	0.00118	0.00118	0.00118
	(A1 * A2 * !A3 * !B1 * !X)	-0.00129	-0.00129	-0.00129
	(A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00118	0.00116
	(A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(A1 * !A2 * !A3 * !B1 * !X)	0.00118	0.00119	0.00118
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A3 * B1 * X)	0.00118	0.00120	0.00118
	(!A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A2 * A3 * B1 * X)	0.00116	0.00117	0.00116
	(!A2 * A3 * B1 * X)	-0.00129	-0.00129	-0.00129
	(!A1 * A2 * A3 * B1 * X)	0.00115	0.00116	0.00115
	(!A1 * A2 * A3 * B1 * X)	-0.00129	-0.00130	-0.00129
	(!A1 * A2 * A3 * !B1 * !X)	0.00115	0.00116	0.00115
	(!A1 * A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A3 * !B1 * !X)	0.00118	0.00120	0.00118
	(!A1 * !A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * A3 * !B1 * !X)	0.00116	0.00118	0.00116
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__a41o_4	**(A1 * A2 * A3 * B1 * X)**	0.00246	0.00242	0.00241
	(A1 * A2 * A3 * B1 * X)	-0.00233	-0.00248	-0.00246
	(A1 * A2 * !A3 * !B1 * !X)	0.00229	0.00229	0.00229
	(A1 * A2 * !A3 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(A1 * !A2 * A3 * !B1 * !X)	0.00227	0.00230	0.00227
	(A1 * !A2 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00253
	(A1 * !A2 * !A3 * !B1 * !X)	0.00230	0.00233	0.00231
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00253	-0.00255	-0.00253
	(!A3 * B1 * X)	0.00230	0.00234	0.00231
	(!A3 * B1 * X)	-0.00253	-0.00254	-0.00253
	(!A2 * A3 * B1 * X)	0.00227	0.00230	0.00228
	(!A2 * A3 * B1 * X)	-0.00253	-0.00255	-0.00253
	(!A1 * A2 * A3 * B1 * X)	0.00226	0.00227	0.00226
	(!A1 * A2 * A3 * B1 * X)	-0.00254	-0.00254	-0.00253
	(!A1 * A2 * A3 * !B1 * !X)	0.00226	0.00226	0.00226
	(!A1 * A2 * A3 * !B1 * !X)	-0.00254	-0.00254	-0.00253
	(!A1 * !A3 * !B1 * !X)	0.00230	0.00233	0.00231
	(!A1 * !A3 * !B1 * !X)	-0.00253	-0.00255	-0.00253
	(!A1 * !A2 * A3 * !B1 * !X)	0.00227	0.00230	0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00254	-0.00255	-0.00253

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)**	-0.00125	-0.00125	-0.00124
	(A1 * A2 * A3 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !A3 * !B1 * !X)	-0.00116	-0.00121	-0.00120
	(A1 * A2 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(A1 * !A2 * A3 * !B1 * !X)	-0.00111	-0.00117	-0.00117
	(A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00131	0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00116	-0.00122	-0.00120
	(A1 * !A2 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A3 * B1 * X)	-0.00116	-0.00120	-0.00119
	(!A3 * B1 * X)	0.00130	0.00130	0.00130
	(!A2 * A3 * B1 * X)	-0.00111	-0.00117	-0.00117
	(!A2 * A3 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * A2 * A3 * B1 * X)	-0.00109	-0.00116	-0.00116
	(!A1 * A2 * A3 * B1 * X)	0.00130	0.00131	0.00130
	(!A1 * A2 * A3 * !B1 * !X)	-0.00109	-0.00117	-0.00116
	(!A1 * A2 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00116	-0.00120	-0.00120
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00111	-0.00117	-0.00117
	(!A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00131	0.00130

sky130_fd_sc_hs__a41o_2	**(A1 * A2 * A3 * B1 * X)**	-0.00124	-0.00124	-0.00123
	(A1 * A2 * A3 * B1 * X)	0.00126	0.00126	0.00125
	(A1 * A2 * !A3 * !B1 * !X)	-0.00114	-0.00118	-0.00118
	(A1 * A2 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(A1 * !A2 * A3 * !B1 * !X)	-0.00110	-0.00118	-0.00116
	(A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00131	0.00130
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00115	-0.00119	-0.00118
	(A1 * !A2 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A3 * B1 * X)	-0.00115	-0.00118	-0.00118
	(!A3 * B1 * X)	0.00130	0.00130	0.00130
	(!A2 * A3 * B1 * X)	-0.00110	-0.00117	-0.00116
	(!A2 * A3 * B1 * X)	0.00129	0.00131	0.00130
	(!A1 * A2 * A3 * B1 * X)	-0.00109	-0.00116	-0.00115
	(!A1 * A2 * A3 * B1 * X)	0.00130	0.00131	0.00130
	(!A1 * A2 * A3 * !B1 * !X)	-0.00109	-0.00116	-0.00115
	(!A1 * A2 * A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A3 * !B1 * !X)	-0.00115	-0.00120	-0.00118
	(!A1 * !A3 * !B1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00110	-0.00118	-0.00116
	(!A1 * !A2 * A3 * !B1 * !X)	0.00129	0.00131	0.00130

sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * B1 * X)	-0.00240	-0.00241	-0.00240
	(A1 * A2 * A3 * B1 * X)	0.00245	0.00248	0.00246
	(A1 * A2 * !A3 * !B1 * !X)	-0.00219	-0.00229	-0.00229
	(A1 * A2 * !A3 * !B1 * !X)	0.00253	0.00257	0.00254
	(A1 * !A2 * A3 * !B1 * !X)	-0.00209	-0.00226	-0.00227
	(A1 * !A2 * A3 * !B1 * !X)	0.00255	0.00257	0.00254
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00220	-0.00230	-0.00231
	(A1 * !A2 * !A3 * !B1 * !X)	0.00253	0.00257	0.00254
	(!A3 * B1 * X)	-0.00220	-0.00229	-0.00231
	(!A3 * B1 * X)	0.00253	0.00254	0.00254
	(!A2 * A3 * B1 * X)	-0.00209	-0.00225	-0.00227
	(!A2 * A3 * B1 * X)	0.00255	0.00257	0.00254
	(!A1 * A2 * A3 * B1 * X)	-0.00206	-0.00225	-0.00226
	(!A1 * A2 * A3 * B1 * X)	0.00255	0.00257	0.00254
	(!A1 * A2 * A3 * !B1 * !X)	-0.00205	-0.00225	-0.00226
	(!A1 * A2 * A3 * !B1 * !X)	0.00255	0.00257	0.00254
	(!A1 * !A3 * !B1 * !X)	-0.00219	-0.00230	-0.00231
	(!A1 * !A3 * !B1 * !X)	0.00253	0.00257	0.00254
	(!A1 * !A2 * A3 * !B1 * !X)	-0.00209	-0.00226	-0.00227
	(!A1 * !A2 * A3 * !B1 * !X)	0.00255	0.00257	0.00254

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)	0.00140	0.00143	0.00141
	(A1 * A2 * A3 * A4 * X)	-0.00065	-0.00066	-0.00065
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	0.00142	0.00144	0.00142
	(A1 * A2 * A3 * A4 * X)	-0.00066	-0.00067	-0.00066
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	0.00266	0.00272	0.00267
	(A1 * A2 * A3 * A4 * X)	-0.00135	-0.00138	-0.00136

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)	-0.00127	-0.00129	-0.00139
	(A1 * A2 * A3 * A4 * X)	0.00075	0.00076	0.00067
sky130_fd_sc_hs__a41o_2	(A1 * A2 * A3 * A4 * X)	-0.00129	-0.00130	-0.00141
	(A1 * A2 * A3 * A4 * X)	0.00077	0.00077	0.00069
sky130_fd_sc_hs__a41o_4	(A1 * A2 * A3 * A4 * X)	-0.00238	-0.00241	-0.00263
	(A1 * A2 * A3 * A4 * X)	0.00158	0.00159	0.00141

SKY130_FD_SC_HS__AND2Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00244	0.00229	1.17361
sky130_fd_sc_hs__and2b_2	0.00219	0.00263	1.96413
sky130_fd_sc_hs__and2b_4	0.00242	0.00480	4.23573

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2b_1	0.00000	0.25399	0.45850
sky130_fd_sc_hs__and2b_2	0.00000	0.19279	0.29412
sky130_fd_sc_hs__and2b_4	0.00000	0.35726	0.91840

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)	0.10123	0.73146	8.31968
	B->X (RR)	0.05635	0.49691	5.81529
sky130_fd_sc_hs__and2b_2	A_N->X (FR)	0.11096	0.67389	8.29737
	B->X (RR)	0.05919	0.43937	5.66123
sky130_fd_sc_hs__and2b_4	A_N->X (FR)	0.10961	0.60141	8.43331
	B->X (RR)	0.06001	0.35330	5.82933

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)	0.08268	0.26331	1.54037
	B->X (FF)	0.06766	0.47653	4.43493
sky130_fd_sc_hs__and2b_2	A_N->X (RF)	0.09376	0.23857	1.25743
	B->X (FF)	0.07793	0.47493	4.18569
sky130_fd_sc_hs__and2b_4	A_N->X (RF)	0.09252	0.21895	1.41586
	B->X (FF)	0.07960	0.45738	4.54872

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	0.00463	0.00579	0.03017
	A_N	0.00741	0.00856	0.03295
	B	0.00597	0.00615	0.02369
	B	0.00319	0.00337	0.02095
sky130_fd_sc_hs__and2b_2	A_N	0.00709	0.00841	0.03147
	A_N	0.00959	0.01093	0.03399
	B	0.00821	0.00841	0.01790
	B	0.00497	0.00517	0.01487
sky130_fd_sc_hs__and2b_4	A_N	0.01330	0.01527	0.03982
	A_N	0.01592	0.01791	0.04253
	B	0.01560	0.01645	0.05410
	B	0.00986	0.01073	0.04851

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	A_N	0.00830	0.00872	0.03249
	A_N	0.00551	0.00593	0.02966
	B	0.00265	0.00397	0.02414
	B	0.00540	0.00659	0.02656
sky130_fd_sc_hs__and2b_2	A_N	0.01013	0.01074	0.02988
	A_N	0.00763	0.00824	0.02735
	B	0.00434	0.00551	0.02159
	B	0.00756	0.00872	0.02464
sky130_fd_sc_hs__and2b_4	A_N	0.01569	0.01694	0.04238
	A_N	0.01307	0.01433	0.03977
	B	0.00863	0.01124	0.05408
	B	0.01433	0.01693	0.05960

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	0.00471	0.00518	0.02768
	(!B * !X)	0.00158	0.00204	0.02456
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00454	0.00508	0.02720
	(!B * !X)	0.00164	0.00216	0.02431
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00560	0.00608	0.02862
	(!B * !X)	0.00231	0.00278	0.02533

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(!B * !X)	-0.00008	0.00105	0.02369
	(!B * !X)	0.00304	0.00419	0.02682
sky130_fd_sc_hs__and2b_2	(!B * !X)	0.00013	0.00121	0.02351
	(!B * !X)	0.00303	0.00411	0.02641
sky130_fd_sc_hs__and2b_4	(!B * !X)	0.00035	0.00123	0.02338
	(!B * !X)	0.00365	0.00454	0.02668

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	0.00108	0.00110	0.00109
	(A_N * !X)	-0.00123	-0.00124	-0.00123
sky130_fd_sc_hs__and2b_2	(A_N * !X)	0.00131	0.00133	0.00132
	(A_N * !X)	-0.00138	-0.00139	-0.00139
sky130_fd_sc_hs__and2b_4	(A_N * !X)	0.00232	0.00235	0.00233
	(A_N * !X)	-0.00249	-0.00251	-0.00249

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2b_1	(A_N * !X)	-0.00104	-0.00108	-0.00108
	(A_N * !X)	0.00129	0.00126	0.00124
sky130_fd_sc_hs__and2b_2	(A_N * !X)	-0.00127	-0.00132	-0.00131
	(A_N * !X)	0.00143	0.00141	0.00140
sky130_fd_sc_hs__and2b_4	(A_N * !X)	-0.00226	-0.00233	-0.00233
	(A_N * !X)	0.00256	0.00253	0.00250

SKY130_FD_SC_HS__AND2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00235	0.00229	1.14919
sky130_fd_sc_hs__and2_2	0.00253	0.00279	2.18962
sky130_fd_sc_hs__and2_4	0.00413	0.00460	4.28938

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and2_1	0.00000	0.13938	0.45790
sky130_fd_sc_hs__and2_2	0.00000	0.07819	0.11694
sky130_fd_sc_hs__and2_4	0.00000	0.32771	0.91711

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)	0.05233	0.49403	5.96624
	B->X (RR)	0.05641	0.50618	5.85663
sky130_fd_sc_hs__and2_2	A->X (RR)	0.05377	0.42334	5.84802
	B->X (RR)	0.05801	0.43219	5.78574
sky130_fd_sc_hs__and2_4	A->X (RR)	0.05286	0.34099	5.90889
	B->X (RR)	0.05917	0.35500	5.87667

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and2_1	A->X (FF)	0.06072	0.45445	4.36103
	B->X (FF)	0.06972	0.47947	4.42070
sky130_fd_sc_hs__and2_2	A->X (FF)	0.06577	0.45584	4.37560
	B->X (FF)	0.07584	0.47991	4.43155
sky130_fd_sc_hs__and2_4	A->X (FF)	0.07236	0.43633	4.51902
	B->X (FF)	0.08067	0.45525	4.51844

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00552	0.00616	0.03031
	A	0.00248	0.00313	0.02755
	B	0.00608	0.00616	0.02198
	B	0.00250	0.00259	0.01868
sky130_fd_sc_hs__and2_2	A	0.00748	0.00799	0.02738
	A	0.00420	0.00473	0.02412
	B	0.00846	0.00854	0.02038
	B	0.00426	0.00434	0.01627
sky130_fd_sc_hs__and2_4	A	0.01376	0.01523	0.06326
	A	0.00857	0.01010	0.05922
	B	0.01566	0.01666	0.05477
	B	0.00850	0.00952	0.04762

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	A	0.00205	0.00346	0.02415
	A	0.00507	0.00645	0.02671
	B	0.00259	0.00380	0.02341
	B	0.00612	0.00720	0.02648
sky130_fd_sc_hs__and2_2	A	0.00422	0.00574	0.02259
	A	0.00749	0.00896	0.02581
	B	0.00446	0.00578	0.02168
	B	0.00861	0.00987	0.02578
sky130_fd_sc_hs__and2_4	A	0.00800	0.01147	0.05684
	A	0.01318	0.01660	0.06105
	B	0.00839	0.01159	0.05620
	B	0.01545	0.01848	0.06164

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	0.00060	0.00060	0.00059
	(!B * !X)	-0.00131	-0.00132	-0.00133
sky130_fd_sc_hs__and2_2	(!B * !X)	0.00042	0.00043	0.00041
	(!B * !X)	-0.00154	-0.00155	-0.00156
sky130_fd_sc_hs__and2_4	(!B * !X)	0.00063	0.00063	0.00061
	(!B * !X)	-0.00254	-0.00254	-0.00259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!B * !X)	-0.00059	-0.00059	-0.00058
	(!B * !X)	0.00134	0.00136	0.00134
sky130_fd_sc_hs__and2_2	(!B * !X)	-0.00040	-0.00041	-0.00040
	(!B * !X)	0.00156	0.00157	0.00156
sky130_fd_sc_hs__and2_4	(!B * !X)	-0.00060	-0.00060	-0.00059
	(!B * !X)	0.00260	0.00264	0.00260

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	0.00096	0.00097	0.00096
	(!A * !X)	-0.00124	-0.00125	-0.00125
sky130_fd_sc_hs__and2_2	(!A * !X)	0.00109	0.00111	0.00110
	(!A * !X)	-0.00150	-0.00152	-0.00151
sky130_fd_sc_hs__and2_4	(!A * !X)	0.00224	0.00227	0.00224
	(!A * !X)	-0.00229	-0.00231	-0.00230

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and2_1	(!A * !X)	-0.00091	-0.00096	-0.00096
	(!A * !X)	0.00128	0.00126	0.00125
sky130_fd_sc_hs__and2_2	(!A * !X)	-0.00104	-0.00110	-0.00110
	(!A * !X)	0.00155	0.00153	0.00151
sky130_fd_sc_hs__and2_4	(!A * !X)	-0.00214	-0.00227	-0.00224
	(!A * !X)	0.00236	0.00232	0.00231

SKY130_FD_SC_HS__AND3Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00213	0.00224	0.00223	1.14437
sky130_fd_sc_hs__and3b_2	0.00221	0.00267	0.00255	1.97521
sky130_fd_sc_hs__and3b_4	0.00245	0.00455	0.00468	4.29402

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and3b_1	0.00000	0.22924	0.68711
sky130_fd_sc_hs__and3b_2	0.00000	0.19345	0.29412
sky130_fd_sc_hs__and3b_4	0.00000	0.18760	0.35081

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)	0.11024	0.75149	8.41771
	B->X (RR)	0.07090	0.54079	6.05148
	C->X (RR)	0.07444	0.53777	5.93565
sky130_fd_sc_hs__and3b_2	A_N->X (FR)	0.12228	0.68671	8.32453
	B->X (RR)	0.07554	0.48010	5.92266
	C->X (RR)	0.07930	0.47358	5.79055
sky130_fd_sc_hs__and3b_4	A_N->X (FR)	0.13573	0.64394	8.61706
	B->X (RR)	0.08980	0.42351	6.15871
	C->X (RR)	0.09288	0.39970	6.02527

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)	0.08857	0.25855	1.41857
	B->X (FF)	0.07759	0.49252	4.38183
	C->X (FF)	0.08235	0.50639	4.42244
sky130_fd_sc_hs__and3b_2	A_N->X (RF)	0.09305	0.23293	1.15465
	B->X (FF)	0.07989	0.47934	4.13823
	C->X (FF)	0.09085	0.50386	4.22261
sky130_fd_sc_hs__and3b_4	A_N->X (RF)	0.09047	0.21742	1.41939
	B->X (FF)	0.07638	0.45452	4.48800
	C->X (FF)	0.08160	0.47011	4.57272

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	0.00572	0.00693	0.03125
	A_N	0.00799	0.00920	0.03354
	B	0.00670	0.00692	0.02774
	B	0.00387	0.00408	0.02516
	C	0.00743	0.00747	0.02246
	C	0.00397	0.00401	0.01927
sky130_fd_sc_hs__and3b_2	A_N	0.00807	0.00939	0.03267
	A_N	0.01047	0.01180	0.03506
	B	0.00926	0.00949	0.02551
	B	0.00596	0.00619	0.02280
	C	0.01008	0.01012	0.01865
	C	0.00611	0.00616	0.01477
sky130_fd_sc_hs__and3b_4	A_N	0.01469	0.01646	0.04017
	A_N	0.01699	0.01877	0.04246
	B	0.01699	0.01747	0.05000
	B	0.01115	0.01169	0.04514
	C	0.01857	0.01907	0.04947
	C	0.01118	0.01169	0.04318

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3b_1	A_N	0.00775	0.00836	0.03228
	A_N	0.00548	0.00608	0.03001
	B	0.00273	0.00394	0.02477
	B	0.00555	0.00667	0.02718
	C	0.00297	0.00395	0.02402
	C	0.00636	0.00734	0.02727
sky130_fd_sc_hs__and3b_2	A_N	0.00992	0.01065	0.03382
	A_N	0.00751	0.00825	0.03140
	B	0.00438	0.00552	0.02269
	B	0.00767	0.00872	0.02570
	C	0.00473	0.00584	0.02119
	C	0.00863	0.00961	0.02495
sky130_fd_sc_hs__and3b_4	A_N	0.01649	0.01757	0.04242
	A_N	0.01418	0.01524	0.03976
	B	0.00945	0.01141	0.04656
	B	0.01525	0.01716	0.05142
	C	0.00987	0.01221	0.04733
	C	0.01708	0.01936	0.05444

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)	0.00405	0.00474	0.02744
	(B * !C * !X)	0.00126	0.00194	0.02465
	(!B * !X)	0.00404	0.00473	0.02742
	(!B * !X)	0.00127	0.00194	0.02465
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00439	0.00495	0.02720
	(B * !C * !X)	0.00150	0.00204	0.02430
	(!B * !X)	0.00438	0.00494	0.02719
	(!B * !X)	0.00150	0.00204	0.02430
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00595	0.00641	0.02889
	(B * !C * !X)	0.00278	0.00321	0.02571
	(!B * !X)	0.00592	0.00638	0.02885
	(!B * !X)	0.00278	0.00321	0.02571

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)	-0.00005	0.00113	0.02395
	(B * !C * !X)	0.00279	0.00397	0.02678
	(!B * !X)	-0.00006	0.00113	0.02396
	(!B * !X)	0.00272	0.00391	0.02674
sky130_fd_sc_hs__and3b_2	(B * !C * !X)	0.00005	0.00115	0.02351
	(B * !C * !X)	0.00301	0.00412	0.02646
	(!B * !X)	0.00005	0.00115	0.02352
	(!B * !X)	0.00293	0.00405	0.02641
sky130_fd_sc_hs__and3b_4	(B * !C * !X)	0.00024	0.00103	0.02312
	(B * !C * !X)	0.00354	0.00434	0.02641
	(!B * !X)	0.00027	0.00106	0.02317
	(!B * !X)	0.00343	0.00423	0.02634

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)	0.00108	0.00110	0.00109
	(A_N * C * !X)	-0.00112	-0.00114	-0.00113
	(A_N * !C * !X)	0.00066	0.00066	0.00065
	(A_N * !C * !X)	-0.00114	-0.00115	-0.00114
	(!A_N * !C * !X)	0.00041	0.00041	0.00040
	(!A_N * !C * !X)	-0.00132	-0.00133	-0.00132
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	0.00133	0.00135	0.00134
	(A_N * C * !X)	-0.00134	-0.00135	-0.00134
	(A_N * !C * !X)	0.00082	0.00083	0.00082
	(A_N * !C * !X)	-0.00134	-0.00136	-0.00134
	(!A_N * !C * !X)	0.00055	0.00055	0.00054
	(!A_N * !C * !X)	-0.00155	-0.00156	-0.00156
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	0.00212	0.00214	0.00213
	(A_N * C * !X)	-0.00255	-0.00256	-0.00256
	(A_N * !C * !X)	0.00122	0.00124	0.00123
	(A_N * !C * !X)	-0.00258	-0.00261	-0.00258
	(!A_N * !C * !X)	0.00088	0.00090	0.00089
	(!A_N * !C * !X)	-0.00275	-0.00278	-0.00277

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)	-0.00102	-0.00109	-0.00109
	(A_N * C * !X)	0.00119	0.00115	0.00114
	(A_N * !C * !X)	-0.00066	-0.00066	-0.00065
	(A_N * !C * !X)	0.00120	0.00121	0.00116
	(!A_N * !C * !X)	-0.00038	-0.00039	-0.00039
	(!A_N * !C * !X)	0.00133	0.00135	0.00133
sky130_fd_sc_hs__and3b_2	(A_N * C * !X)	-0.00127	-0.00134	-0.00133
	(A_N * C * !X)	0.00139	0.00137	0.00135
	(A_N * !C * !X)	-0.00082	-0.00083	-0.00082
	(A_N * !C * !X)	0.00141	0.00142	0.00136
	(!A_N * !C * !X)	-0.00052	-0.00053	-0.00053
	(!A_N * !C * !X)	0.00157	0.00159	0.00157
sky130_fd_sc_hs__and3b_4	(A_N * C * !X)	-0.00197	-0.00213	-0.00213
	(A_N * C * !X)	0.00267	0.00257	0.00257
	(A_N * !C * !X)	-0.00122	-0.00124	-0.00123
	(A_N * !C * !X)	0.00266	0.00268	0.00261
	(!A_N * !C * !X)	-0.00085	-0.00085	-0.00086
	(!A_N * !C * !X)	0.00284	0.00285	0.00280

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)	0.00095	0.00096	0.00095
	(A_N * B * !X)	-0.00118	-0.00119	-0.00118
	(A_N * !B * !X)	0.00097	0.00097	0.00097
	(A_N * !B * !X)	-0.00118	-0.00118	-0.00119
	(!A_N * !B * !X)	0.00096	0.00097	0.00097
	(!A_N * !B * !X)	-0.00119	-0.00119	-0.00119
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	0.00117	0.00118	0.00117
	(A_N * B * !X)	-0.00134	-0.00134	-0.00134
	(A_N * !B * !X)	0.00119	0.00121	0.00119
	(A_N * !B * !X)	-0.00134	-0.00135	-0.00134
	(!A_N * !B * !X)	0.00118	0.00120	0.00119
	(!A_N * !B * !X)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	0.00202	0.00206	0.00203
	(A_N * B * !X)	-0.00264	-0.00267	-0.00265
	(A_N * !B * !X)	0.00201	0.00204	0.00202
	(A_N * !B * !X)	-0.00265	-0.00267	-0.00266
	(!A_N * !B * !X)	0.00201	0.00202	0.00201
	(!A_N * !B * !X)	-0.00265	-0.00266	-0.00266

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)	-0.00090	-0.00096	-0.00095
	(A_N * B * !X)	0.00119	0.00120	0.00119
	(A_N * !B * !X)	-0.00093	-0.00097	-0.00097
	(A_N * !B * !X)	0.00120	0.00120	0.00119
	(!A_N * !B * !X)	-0.00093	-0.00097	-0.00097
	(!A_N * !B * !X)	0.00120	0.00120	0.00119
sky130_fd_sc_hs__and3b_2	(A_N * B * !X)	-0.00113	-0.00118	-0.00117
	(A_N * B * !X)	0.00135	0.00136	0.00135
	(A_N * !B * !X)	-0.00116	-0.00121	-0.00119
	(A_N * !B * !X)	0.00135	0.00136	0.00135
	(!A_N * !B * !X)	-0.00116	-0.00120	-0.00119
	(!A_N * !B * !X)	0.00135	0.00136	0.00135
sky130_fd_sc_hs__and3b_4	(A_N * B * !X)	-0.00192	-0.00203	-0.00203
	(A_N * B * !X)	0.00267	0.00269	0.00266
	(A_N * !B * !X)	-0.00194	-0.00203	-0.00202
	(A_N * !B * !X)	0.00266	0.00269	0.00267
	(!A_N * !B * !X)	-0.00194	-0.00202	-0.00201
	(!A_N * !B * !X)	0.00268	0.00269	0.00267

SKY130_FD_SC_HS__AND3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00242	0.00222	0.00218	1.19177
sky130_fd_sc_hs__and3_2	0.00239	0.00219	0.00221	2.26085
sky130_fd_sc_hs__and3_4	0.00434	0.00420	0.00435	4.24205

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and3_1	0.00000	0.11463	0.68651
sky130_fd_sc_hs__and3_2	0.00000	0.14308	0.68717
sky130_fd_sc_hs__and3_4	0.00000	0.28616	1.37435

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)	0.06239	0.51131	5.99478
	B->X (RR)	0.06735	0.52659	5.99130
	C->X (RR)	0.07040	0.52441	5.92460
sky130_fd_sc_hs__and3_2	A->X (RR)	0.06962	0.45231	6.02228
	B->X (RR)	0.07452	0.46486	6.02460
	C->X (RR)	0.07749	0.45809	5.90824
sky130_fd_sc_hs__and3_4	A->X (RR)	0.07852	0.40438	6.12063
	B->X (RR)	0.08605	0.42129	6.12916
	C->X (RR)	0.08929	0.39760	5.97802

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and3_1	A->X (FF)	0.06718	0.46909	4.44479
	B->X (FF)	0.07658	0.49326	4.46869
	C->X (FF)	0.07868	0.50338	4.49635
sky130_fd_sc_hs__and3_2	A->X (FF)	0.08118	0.48051	4.44867
	B->X (FF)	0.08982	0.50102	4.47732
	C->X (FF)	0.09424	0.51308	4.52335
sky130_fd_sc_hs__and3_4	A->X (FF)	0.07550	0.44290	4.43248
	B->X (FF)	0.08478	0.46474	4.45204
	C->X (FF)	0.09164	0.48277	4.54150

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00619	0.00669	0.02976
	A	0.00299	0.00349	0.02686
	B	0.00656	0.00676	0.02763
	B	0.00300	0.00321	0.02437
	C	0.00728	0.00736	0.02534
	C	0.00298	0.00305	0.02134
sky130_fd_sc_hs__and3_2	A	0.00809	0.00868	0.03095
	A	0.00490	0.00550	0.02834
	B	0.00844	0.00879	0.02867
	B	0.00492	0.00528	0.02572
	C	0.00920	0.00941	0.02390
	C	0.00492	0.00512	0.02022
sky130_fd_sc_hs__and3_4	A	0.01513	0.01612	0.05953
	A	0.00928	0.01036	0.05473
	B	0.01658	0.01725	0.05592
	B	0.00932	0.01002	0.04971
	C	0.01819	0.01885	0.05396
	C	0.00931	0.00998	0.04624

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	A	0.00193	0.00317	0.02435
	A	0.00512	0.00629	0.02701
	B	0.00267	0.00383	0.02455
	B	0.00618	0.00728	0.02753
	C	0.00291	0.00398	0.02499
	C	0.00712	0.00818	0.02871
sky130_fd_sc_hs__and3_2	A	0.00382	0.00512	0.02754
	A	0.00700	0.00830	0.02895
	B	0.00458	0.00590	0.02681
	B	0.00806	0.00929	0.02959
	C	0.00474	0.00608	0.02633
	C	0.00893	0.01005	0.02975
sky130_fd_sc_hs__and3_4	A	0.00827	0.01086	0.05455
	A	0.01413	0.01663	0.05847
	B	0.00948	0.01209	0.05444
	B	0.01664	0.01905	0.05964
	C	0.00993	0.01237	0.05503
	C	0.01858	0.02085	0.06244

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	0.00064	0.00065	0.00063
	(B * !C * !X)	-0.00127	-0.00128	-0.00133
	(!B * !X)	0.00065	0.00065	0.00064
	(!B * !X)	-0.00130	-0.00131	-0.00133
sky130_fd_sc_hs__and3_2	(B * !C * !X)	0.00065	0.00066	0.00064
	(B * !C * !X)	-0.00126	-0.00127	-0.00131
	(!B * !X)	0.00066	0.00067	0.00065
	(!B * !X)	-0.00128	-0.00129	-0.00131
sky130_fd_sc_hs__and3_4	(B * !C * !X)	0.00072	0.00073	0.00068
	(B * !C * !X)	-0.00260	-0.00262	-0.00272
	(!B * !X)	0.00076	0.00075	0.00072
	(!B * !X)	-0.00268	-0.00267	-0.00274

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(B * !C * !X)	-0.00063	-0.00063	-0.00062
	(B * !C * !X)	0.00133	0.00134	0.00133
	(!B * !X)	-0.00064	-0.00064	-0.00063
	(!B * !X)	0.00133	0.00135	0.00133
sky130_fd_sc_hs__and3_2	(B * !C * !X)	-0.00065	-0.00065	-0.00064
	(B * !C * !X)	0.00131	0.00132	0.00131
	(!B * !X)	-0.00065	-0.00066	-0.00065
	(!B * !X)	0.00131	0.00133	0.00131
sky130_fd_sc_hs__and3_4	(B * !C * !X)	-0.00069	-0.00069	-0.00068
	(B * !C * !X)	0.00275	0.00279	0.00274
	(!B * !X)	-0.00071	-0.00072	-0.00070
	(!B * !X)	0.00275	0.00279	0.00275

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	0.00040	0.00040	0.00039
	(A * !C * !X)	-0.00113	-0.00114	-0.00112
	(!A * C * !X)	0.00092	0.00093	0.00093
	(!A * C * !X)	-0.00113	-0.00114	-0.00113
	(!A * !C * !X)	0.00046	0.00046	0.00046
	(!A * !C * !X)	-0.00114	-0.00114	-0.00113
sky130_fd_sc_hs__and3_2	(A * !C * !X)	0.00038	0.00038	0.00038
	(A * !C * !X)	-0.00111	-0.00111	-0.00110
	(!A * C * !X)	0.00092	0.00093	0.00092
	(!A * C * !X)	-0.00110	-0.00111	-0.00111
	(!A * !C * !X)	0.00044	0.00044	0.00044
	(!A * !C * !X)	-0.00111	-0.00112	-0.00111
sky130_fd_sc_hs__and3_4	(A * !C * !X)	0.00093	0.00094	0.00093
	(A * !C * !X)	-0.00220	-0.00221	-0.00219
	(!A * C * !X)	0.00202	0.00203	0.00203
	(!A * C * !X)	-0.00218	-0.00219	-0.00219
	(!A * !C * !X)	0.00107	0.00108	0.00107
	(!A * !C * !X)	-0.00222	-0.00223	-0.00221

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !C * !X)	-0.00037	-0.00038	-0.00038
	(A * !C * !X)	0.00115	0.00116	0.00114
	(!A * C * !X)	-0.00086	-0.00093	-0.00093
	(!A * C * !X)	0.00118	0.00115	0.00113
	(!A * !C * !X)	-0.00046	-0.00046	-0.00046
	(!A * !C * !X)	0.00118	0.00119	0.00115
sky130_fd_sc_hs__and3_2	(A * !C * !X)	-0.00037	-0.00037	-0.00037
	(A * !C * !X)	0.00114	0.00114	0.00111
	(!A * C * !X)	-0.00086	-0.00093	-0.00092
	(!A * C * !X)	0.00115	0.00112	0.00111
	(!A * !C * !X)	-0.00044	-0.00044	-0.00044
	(!A * !C * !X)	0.00116	0.00117	0.00112
sky130_fd_sc_hs__and3_4	(A * !C * !X)	-0.00088	-0.00089	-0.00090
	(A * !C * !X)	0.00227	0.00229	0.00222
	(!A * C * !X)	-0.00186	-0.00203	-0.00203
	(!A * C * !X)	0.00230	0.00220	0.00220
	(!A * !C * !X)	-0.00107	-0.00108	-0.00107
	(!A * !C * !X)	0.00228	0.00230	0.00223

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	0.00096	0.00097	0.00096
	(A * !B * !X)	-0.00116	-0.00117	-0.00117
	(!A * B * !X)	0.00094	0.00095	0.00094
	(!A * B * !X)	-0.00116	-0.00117	-0.00117
	(!A * !B * !X)	0.00096	0.00097	0.00096
	(!A * !B * !X)	-0.00116	-0.00117	-0.00117
sky130_fd_sc_hs__and3_2	(A * !B * !X)	0.00094	0.00095	0.00095
	(A * !B * !X)	-0.00117	-0.00118	-0.00117
	(!A * B * !X)	0.00095	0.00095	0.00094
	(!A * B * !X)	-0.00117	-0.00118	-0.00117
	(!A * !B * !X)	0.00094	0.00096	0.00094
	(!A * !B * !X)	-0.00117	-0.00118	-0.00117
sky130_fd_sc_hs__and3_4	(A * !B * !X)	0.00200	0.00202	0.00201
	(A * !B * !X)	-0.00232	-0.00233	-0.00232
	(!A * B * !X)	0.00199	0.00199	0.00198
	(!A * B * !X)	-0.00233	-0.00233	-0.00233
	(!A * !B * !X)	0.00200	0.00202	0.00201
	(!A * !B * !X)	-0.00232	-0.00233	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and3_1	(A * !B * !X)	-0.00093	-0.00097	-0.00096
	(A * !B * !X)	0.00117	0.00118	0.00117
	(!A * B * !X)	-0.00089	-0.00095	-0.00094
	(!A * B * !X)	0.00117	0.00118	0.00117
	(!A * !B * !X)	-0.00093	-0.00097	-0.00096
	(!A * !B * !X)	0.00117	0.00118	0.00117
sky130_fd_sc_hs__and3_2	(A * !B * !X)	-0.00091	-0.00095	-0.00095
	(A * !B * !X)	0.00118	0.00119	0.00118
	(!A * B * !X)	-0.00087	-0.00095	-0.00094
	(!A * B * !X)	0.00117	0.00119	0.00118
	(!A * !B * !X)	-0.00091	-0.00096	-0.00094
	(!A * !B * !X)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__and3_4	(A * !B * !X)	-0.00192	-0.00201	-0.00201
	(A * !B * !X)	0.00232	0.00235	0.00233
	(!A * B * !X)	-0.00186	-0.00199	-0.00198
	(!A * B * !X)	0.00233	0.00236	0.00233
	(!A * !B * !X)	-0.00192	-0.00201	-0.00201
	(!A * !B * !X)	0.00232	0.00235	0.00233

SKY130_FD_SC_HS__AND4BBx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00219	0.00221	0.00232	0.00226	1.02356
sky130_fd_sc_hs__and4bb_2	0.00222	0.00210	0.00252	0.00258	2.15933
sky130_fd_sc_hs__and4bb_4	0.00236	0.00252	0.00468	0.00452	4.14509

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4bb_1	0.00000	0.31713	0.91633
sky130_fd_sc_hs__and4bb_2	0.00000	0.30474	0.52215
sky130_fd_sc_hs__and4bb_4	0.00000	0.21040	0.46773

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)	0.13242	0.79601	8.40685
	B_N->X (FR)	0.13736	0.79899	8.33200
	C->X (RR)	0.09496	0.58882	6.02780
	D->X (RR)	0.09791	0.58396	5.98713
sky130_fd_sc_hs__and4bb_2	A_N->X (FR)	0.12782	0.67978	8.29720
	B_N->X (FR)	0.14093	0.69898	8.33290
	C->X (RR)	0.09535	0.49670	5.98500
	D->X (RR)	0.09941	0.48839	5.87822
sky130_fd_sc_hs__and4bb_4	A_N->X (FR)	0.16158	0.68293	8.55202
	B_N->X (FR)	0.17960	0.70749	8.59811
	C->X (RR)	0.12238	0.45672	6.10991
	D->X (RR)	0.12586	0.43883	5.98205

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)	0.09444	0.26642	1.38185
	B_N->X (RF)	0.09861	0.27230	1.30624
	C->X (FF)	0.08722	0.51137	4.32714
	D->X (FF)	0.09438	0.52862	4.38033
sky130_fd_sc_hs__and4bb_2	A_N->X (RF)	0.09477	0.24749	1.51283
	B_N->X (RF)	0.10527	0.26823	1.60861
	C->X (FF)	0.08982	0.51737	4.54262
	D->X (FF)	0.09691	0.53406	4.60611
sky130_fd_sc_hs__and4bb_4	A_N->X (RF)	0.10353	0.23476	1.39206
	B_N->X (RF)	0.10567	0.24334	1.41432
	C->X (FF)	0.08278	0.47252	4.45332
	D->X (FF)	0.08869	0.48969	4.54228

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	0.00616	0.00742	0.03083
	A_N	0.00850	0.00977	0.03460
	B_N	0.00673	0.00812	0.03144
	B_N	0.00938	0.01079	0.03437
	C	0.00767	0.00796	0.02811
	C	0.00487	0.00515	0.02557
	D	0.00832	0.00862	0.02889
	D	0.00497	0.00526	0.02580
sky130_fd_sc_hs__and4bb_2	A_N	0.00819	0.00948	0.03293
	A_N	0.01041	0.01172	0.03518
	B_N	0.00942	0.01051	0.03202
	B_N	0.01174	0.01282	0.03489
	C	0.01024	0.01021	0.02503
	C	0.00701	0.00699	0.02240
	D	0.01113	0.01102	0.02108
	D	0.00714	0.00704	0.01711
sky130_fd_sc_hs__and4bb_4	A_N	0.01673	0.01839	0.04126
	A_N	0.01868	0.02033	0.04319
	B_N	0.01843	0.02008	0.04224
	B_N	0.02076	0.02242	0.04473
	C	0.02016	0.02048	0.05096
	C	0.01414	0.01450	0.04602
	D	0.02153	0.02183	0.04894
	D	0.01419	0.01452	0.04278

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4bb_1	A_N	0.00837	0.00878	0.02904
	A_N	0.00604	0.00641	0.02669
	B_N	0.00855	0.00928	0.03288
	B_N	0.00589	0.00658	0.03021
	C	0.00351	0.00457	0.02624
	C	0.00630	0.00735	0.02899
	D	0.00380	0.00497	0.02687
	D	0.00709	0.00819	0.03002
sky130_fd_sc_hs__and4bb_2	A_N	0.00986	0.01056	0.03378
	A_N	0.00763	0.00832	0.03156
	B_N	0.01033	0.01103	0.03053
	B_N	0.00801	0.00868	0.02802
	C	0.00504	0.00637	0.02239
	C	0.00826	0.00957	0.02555
	D	0.00531	0.00658	0.02245
	D	0.00922	0.01027	0.02573
sky130_fd_sc_hs__and4bb_4	A_N	0.01655	0.01769	0.04164
	A_N	0.01460	0.01573	0.03957
	B_N	0.01779	0.01885	0.04292
	B_N	0.01547	0.01649	0.04050
	C	0.00969	0.01161	0.04635
	C	0.01567	0.01750	0.05116
	D	0.01051	0.01259	0.04666
	D	0.01766	0.01971	0.05330

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)	0.00405	0.00462	0.02689
	(B_N * !X)	0.00140	0.00197	0.02423
	(!B_N * C * !D * !X)	0.00425	0.00482	0.02709
	(!B_N * C * !D * !X)	0.00158	0.00215	0.02442
	(!B_N * !C * !X)	0.00425	0.00482	0.02709
	(!B_N * !C * !X)	0.00159	0.00216	0.02442
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00411	0.00470	0.02734
	(B_N * !X)	0.00142	0.00199	0.02464
	(!B_N * C * !D * !X)	0.00429	0.00488	0.02752
	(!B_N * C * !D * !X)	0.00158	0.00216	0.02481
	(!B_N * !C * !X)	0.00428	0.00487	0.02752
	(!B_N * !C * !X)	0.00159	0.00216	0.02482
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00562	0.00609	0.02809
	(B_N * !X)	0.00286	0.00332	0.02534
	(!B_N * C * !D * !X)	0.00599	0.00645	0.02845
	(!B_N * C * !D * !X)	0.00321	0.00365	0.02568
	(!B_N * !C * !X)	0.00599	0.00644	0.02844
	(!B_N * !C * !X)	0.00322	0.00366	0.02568

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)	0.00026	0.00139	0.02377
	(B_N * !X)	0.00291	0.00406	0.02643
	(!B_N * C * !D * !X)	0.00009	0.00122	0.02357
	(!B_N * C * !D * !X)	0.00281	0.00396	0.02629
	(!B_N * !C * !X)	0.00008	0.00121	0.02357
	(!B_N * !C * !X)	0.00275	0.00390	0.02625
sky130_fd_sc_hs__and4bb_2	(B_N * !X)	0.00015	0.00131	0.02408
	(B_N * !X)	0.00285	0.00401	0.02677
	(!B_N * C * !D * !X)	-0.00001	0.00115	0.02389
	(!B_N * C * !D * !X)	0.00278	0.00393	0.02666
	(!B_N * !C * !X)	-0.00002	0.00113	0.02389
	(!B_N * !C * !X)	0.00270	0.00386	0.02661
sky130_fd_sc_hs__and4bb_4	(B_N * !X)	0.00094	0.00173	0.02336
	(B_N * !X)	0.00370	0.00449	0.02610
	(!B_N * C * !D * !X)	0.00061	0.00140	0.02300
	(!B_N * C * !D * !X)	0.00352	0.00432	0.02588
	(!B_N * !C * !X)	0.00058	0.00137	0.02299
	(!B_N * !C * !X)	0.00338	0.00418	0.02578

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)	0.00407	0.00459	0.02687
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00109	0.00160	0.02389
	(!C * !X)	0.00415	0.00471	0.02715
	(!C * !X)	0.00109	0.00165	0.02410
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00408	0.00446	0.02672
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00131	0.00167	0.02394
	(!C * !X)	0.00417	0.00474	0.02704
	(!C * !X)	0.00130	0.00186	0.02416
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00560	0.00576	0.02760
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00246	0.00260	0.02446
	(!C * !X)	0.00572	0.00608	0.02812
	(!C * !X)	0.00241	0.00276	0.02482

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)	0.00077	0.00191	0.02449
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00374	0.00489	0.02747
	(!C * !X)	0.00034	0.00148	0.02416
	(!C * !X)	0.00337	0.00452	0.02720
sky130_fd_sc_hs__and4bb_2	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00113	0.00222	0.02475
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00391	0.00501	0.02753
	(!C * !X)	0.00062	0.00172	0.02434
	(!C * !X)	0.00347	0.00458	0.02719
sky130_fd_sc_hs__and4bb_4	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00240	0.00316	0.02476
	(A_N * C * !X) + (!A_N * C * !D * !X)	0.00555	0.00631	0.02790
	(!C * !X)	0.00147	0.00224	0.02402
	(!C * !X)	0.00475	0.00550	0.02730

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)**	0.00122	0.00123	0.00123
	(A_N * B_N * D * !X)	-0.00109	-0.00109	-0.00110
	(A_N * B_N * !D * !X)	0.00084	0.00085	0.00084
	(A_N * B_N * !D * !X)	-0.00110	-0.00111	-0.00110
	(A_N * !B_N * D * !X)	0.00095	0.00096	0.00095
	(A_N * !B_N * D * !X)	-0.00138	-0.00139	-0.00138
	(A_N * !B_N * !D * !X)	0.00052	0.00052	0.00052
	(A_N * !B_N * !D * !X)	-0.00150	-0.00150	-0.00150
	(!A_N * B_N * D * !X)	0.00122	0.00124	0.00123
	(!A_N * B_N * D * !X)	-0.00110	-0.00110	-0.00110
	(!A_N * B_N * !D * !X)	0.00081	0.00082	0.00081
	(!A_N * B_N * !D * !X)	-0.00110	-0.00111	-0.00110
	(!A_N * !B_N * !D * !X)	0.00043	0.00044	0.00044
	(!A_N * !B_N * !D * !X)	-0.00139	-0.00139	-0.00139
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	0.00129	0.00130	0.00129
	(A_N * B_N * D * !X)	-0.00129	-0.00130	-0.00129
	(A_N * B_N * !D * !X)	0.00084	0.00085	0.00084
	(A_N * B_N * !D * !X)	-0.00130	-0.00130	-0.00129
	(A_N * !B_N * D * !X)	0.00107	0.00107	0.00107
	(A_N * !B_N * D * !X)	-0.00153	-0.00152	-0.00151
	(A_N * !B_N * !D * !X)	0.00057	0.00057	0.00057
	(A_N * !B_N * !D * !X)	-0.00165	-0.00166	-0.00165
	(!A_N * B_N * D * !X)	0.00128	0.00130	0.00129
	(!A_N * B_N * D * !X)	-0.00128	-0.00130	-0.00129
	(!A_N * B_N * !D * !X)	0.00080	0.00081	0.00080
	(!A_N * B_N * !D * !X)	-0.00129	-0.00130	-0.00129
	(!A_N * !B_N * !D * !X)	0.00047	0.00048	0.00048
	(!A_N * !B_N * !D * !X)	-0.00153	-0.00154	-0.00153

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * D * !X)**	0.00217	0.00220	0.00218
	(A_N * B_N * D * !X)	-0.00268	-0.00270	-0.00268
	(A_N * B_N * !D * !X)	0.00134	0.00136	0.00134
	(A_N * B_N * !D * !X)	-0.00269	-0.00272	-0.00269
	(A_N * !B_N * D * !X)	0.00207	0.00208	0.00207
	(A_N * !B_N * D * !X)	-0.00281	-0.00282	-0.00281
	(A_N * !B_N * !D * !X)	0.00114	0.00115	0.00115
	(A_N * !B_N * !D * !X)	-0.00308	-0.00310	-0.00309
	(!A_N * B_N * D * !X)	0.00219	0.00221	0.00218
	(!A_N * B_N * D * !X)	-0.00269	-0.00270	-0.00268
	(!A_N * B_N * !D * !X)	0.00128	0.00130	0.00128
	(!A_N * B_N * !D * !X)	-0.00270	-0.00273	-0.00270
	(!A_N * !B_N * !D * !X)	0.00097	0.00098	0.00097
	(!A_N * !B_N * !D * !X)	-0.00285	-0.00286	-0.00286

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)**	-0.00120	-0.00122	-0.00122
	(A_N * B_N * D * !X)	0.00110	0.00112	0.00111
	(A_N * B_N * !D * !X)	-0.00084	-0.00085	-0.00084
	(A_N * B_N * !D * !X)	0.00110	0.00112	0.00111
	(A_N * !B_N * D * !X)	-0.00088	-0.00094	-0.00095
	(A_N * !B_N * D * !X)	0.00143	0.00139	0.00138
	(A_N * !B_N * !D * !X)	-0.00052	-0.00052	-0.00052
	(A_N * !B_N * !D * !X)	0.00153	0.00157	0.00155
	(!A_N * B_N * D * !X)	-0.00119	-0.00123	-0.00122
	(!A_N * B_N * D * !X)	0.00111	0.00112	0.00111
	(!A_N * B_N * !D * !X)	-0.00081	-0.00082	-0.00081
	(!A_N * B_N * !D * !X)	0.00114	0.00115	0.00111
	(!A_N * !B_N * !D * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * !B_N * !D * !X)	0.00141	0.00143	0.00141
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * D * !X)**	-0.00126	-0.00129	-0.00128
	(A_N * B_N * D * !X)	0.00130	0.00131	0.00130
	(A_N * B_N * !D * !X)	-0.00084	-0.00085	-0.00084
	(A_N * B_N * !D * !X)	0.00131	0.00131	0.00130
	(A_N * !B_N * D * !X)	-0.00100	-0.00107	-0.00107
	(A_N * !B_N * D * !X)	0.00158	0.00153	0.00151
	(A_N * !B_N * !D * !X)	-0.00057	-0.00057	-0.00057
	(A_N * !B_N * !D * !X)	0.00169	0.00173	0.00171
	(!A_N * B_N * D * !X)	-0.00125	-0.00129	-0.00129
	(!A_N * B_N * D * !X)	0.00130	0.00131	0.00130
	(!A_N * B_N * !D * !X)	-0.00080	-0.00081	-0.00080
	(!A_N * B_N * !D * !X)	0.00134	0.00134	0.00130
	(!A_N * !B_N * !D * !X)	-0.00045	-0.00045	-0.00045
	(!A_N * !B_N * !D * !X)	0.00156	0.00158	0.00155

sky130_fd_sc_hs__and4bb_4	(A_N * B_N * D * !X)	-0.00214	-0.00219	-0.00218
	(A_N * B_N * D * !X)	0.00269	0.00271	0.00269
	(A_N * B_N * !D * !X)	-0.00134	-0.00136	-0.00134
	(A_N * B_N * !D * !X)	0.00272	0.00273	0.00271
	(A_N * !B_N * D * !X)	-0.00192	-0.00206	-0.00207
	(A_N * !B_N * D * !X)	0.00296	0.00285	0.00281
	(A_N * !B_N * !D * !X)	-0.00114	-0.00115	-0.00115
	(A_N * !B_N * !D * !X)	0.00312	0.00322	0.00318
	(!A_N * B_N * D * !X)	-0.00212	-0.00219	-0.00218
	(!A_N * B_N * D * !X)	0.00272	0.00271	0.00269
	(!A_N * B_N * !D * !X)	-0.00128	-0.00130	-0.00128
	(!A_N * B_N * !D * !X)	0.00278	0.00279	0.00273
	(!A_N * !B_N * !D * !X)	-0.00093	-0.00093	-0.00093
	(!A_N * !B_N * !D * !X)	0.00292	0.00294	0.00290

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)	0.00112	0.00113	0.00112
	(A_N * B_N * C * !X)	-0.00106	-0.00107	-0.00107
	(A_N * !C * !X)	0.00111	0.00112	0.00111
	(A_N * !C * !X)	-0.00106	-0.00107	-0.00107
	(A_N * !B_N * C * !X)	0.00097	0.00098	0.00097
	(A_N * !B_N * C * !X)	-0.00122	-0.00123	-0.00123
	(!A_N * B_N * C * !X)	0.00111	0.00112	0.00112
	(!A_N * B_N * C * !X)	-0.00107	-0.00107	-0.00107
	(!A_N * B_N * !C * !X)	0.00111	0.00113	0.00111
	(!A_N * B_N * !C * !X)	-0.00107	-0.00108	-0.00107
	(!A_N * !B_N * !C * !X)	0.00097	0.00098	0.00097
	(!A_N * !B_N * !C * !X)	-0.00120	-0.00122	-0.00121

sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	0.00115	0.00115	0.00114
	(A_N * B_N * C * !X)	-0.00138	-0.00138	-0.00137
	(A_N * !C * !X)	0.00115	0.00117	0.00116
	(A_N * !C * !X)	-0.00137	-0.00138	-0.00137
	(A_N * !B_N * C * !X)	0.00107	0.00109	0.00108
	(A_N * !B_N * C * !X)	-0.00146	-0.00147	-0.00146
	(!A_N * B_N * C * !X)	0.00114	0.00115	0.00114
	(!A_N * B_N * C * !X)	-0.00138	-0.00138	-0.00138
	(!A_N * B_N * !C * !X)	0.00115	0.00117	0.00116
	(!A_N * B_N * !C * !X)	-0.00137	-0.00138	-0.00138
	(!A_N * !B_N * !C * !X)	0.00110	0.00111	0.00110
	(!A_N * !B_N * !C * !X)	-0.00142	-0.00144	-0.00143
sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	0.00196	0.00199	0.00197
	(A_N * B_N * C * !X)	-0.00265	-0.00267	-0.00265
	(A_N * !C * !X)	0.00198	0.00201	0.00198
	(A_N * !C * !X)	-0.00265	-0.00267	-0.00265
	(A_N * !B_N * C * !X)	0.00195	0.00197	0.00195
	(A_N * !B_N * C * !X)	-0.00271	-0.00273	-0.00271
	(!A_N * B_N * C * !X)	0.00196	0.00199	0.00197
	(!A_N * B_N * C * !X)	-0.00265	-0.00267	-0.00265
	(!A_N * B_N * !C * !X)	0.00197	0.00200	0.00198
	(!A_N * B_N * !C * !X)	-0.00265	-0.00267	-0.00265
	(!A_N * !B_N * !C * !X)	0.00197	0.00198	0.00198
	(!A_N * !B_N * !C * !X)	-0.00265	-0.00266	-0.00266

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)**	-0.00105	-0.00112	-0.00111
	(A_N * B_N * C * !X)	0.00107	0.00109	0.00108
	(A_N * !C * !X)	-0.00108	-0.00112	-0.00111
	(A_N * !C * !X)	0.00108	0.00109	0.00108
	(A_N * !B_N * C * !X)	-0.00089	-0.00097	-0.00096
	(A_N * !B_N * C * !X)	0.00127	0.00124	0.00123
	(!A_N * B_N * C * !X)	-0.00105	-0.00112	-0.00111
	(!A_N * B_N * C * !X)	0.00107	0.00109	0.00108
	(!A_N * B_N * !C * !X)	-0.00108	-0.00112	-0.00111
	(!A_N * B_N * !C * !X)	0.00108	0.00109	0.00108
	(!A_N * !B_N * !C * !X)	-0.00094	-0.00098	-0.00097
	(!A_N * !B_N * !C * !X)	0.00122	0.00122	0.00121
sky130_fd_sc_hs__and4bb_2	**(A_N * B_N * C * !X)**	-0.00108	-0.00115	-0.00114
	(A_N * B_N * C * !X)	0.00138	0.00140	0.00139
	(A_N * !C * !X)	-0.00112	-0.00117	-0.00116
	(A_N * !C * !X)	0.00139	0.00140	0.00139
	(A_N * !B_N * C * !X)	-0.00100	-0.00109	-0.00108
	(A_N * !B_N * C * !X)	0.00149	0.00147	0.00146
	(!A_N * B_N * C * !X)	-0.00109	-0.00115	-0.00114
	(!A_N * B_N * C * !X)	0.00138	0.00140	0.00139
	(!A_N * B_N * !C * !X)	-0.00112	-0.00117	-0.00116
	(!A_N * B_N * !C * !X)	0.00139	0.00140	0.00139
	(!A_N * !B_N * !C * !X)	-0.00107	-0.00111	-0.00110
	(!A_N * !B_N * !C * !X)	0.00144	0.00144	0.00143

sky130_fd_sc_hs__and4bb_4	**(A_N * B_N * C * !X)**	-0.00185	-0.00197	-0.00197
	(A_N * B_N * C * !X)	0.00267	0.00269	0.00267
	(A_N * !C * !X)	-0.00189	-0.00197	-0.00198
	(A_N * !C * !X)	0.00265	0.00269	0.00267
	(A_N * !B_N * C * !X)	-0.00180	-0.00196	-0.00195
	(A_N * !B_N * C * !X)	0.00278	0.00274	0.00271
	(!A_N * B_N * C * !X)	-0.00185	-0.00197	-0.00197
	(!A_N * B_N * C * !X)	0.00267	0.00269	0.00267
	(!A_N * B_N * !C * !X)	-0.00189	-0.00197	-0.00198
	(!A_N * B_N * !C * !X)	0.00265	0.00269	0.00267
	(!A_N * !B_N * !C * !X)	-0.00188	-0.00197	-0.00198
	(!A_N * !B_N * !C * !X)	0.00266	0.00269	0.00267

SKY130_FD_SC_HS__AND4Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00232	0.00243	0.00234	0.00226	1.11403
sky130_fd_sc_hs__and4b_2	0.00215	0.00257	0.00256	0.00264	1.95434
sky130_fd_sc_hs__and4b_4	0.00232	0.00475	0.00513	0.00473	3.65920

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__and4b_1	0.00000	0.20252	0.91573
sky130_fd_sc_hs__and4b_2	0.00000	0.19014	0.29412
sky130_fd_sc_hs__and4b_4	0.00000	0.18085	0.46644

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)	0.12145	0.76126	8.32148
	B->X (RR)	0.08546	0.56853	6.06845
	C->X (RR)	0.08969	0.56879	6.04613
	D->X (RR)	0.09374	0.56346	5.91004
sky130_fd_sc_hs__and4b_2	A_N->X (FR)	0.13604	0.70690	8.31015
	B->X (RR)	0.08782	0.50401	5.92889
	C->X (RR)	0.09287	0.50110	5.90460
	D->X (RR)	0.09632	0.49264	5.77062
sky130_fd_sc_hs__and4b_4	A_N->X (FR)	0.16724	0.70503	8.59152
	B->X (RR)	0.10388	0.46041	6.05445
	C->X (RR)	0.11505	0.45951	5.96111
	D->X (RR)	0.11507	0.44905	5.95813

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)	0.08809	0.26389	1.45417
	B->X (FF)	0.07868	0.49855	4.35287
	C->X (FF)	0.08623	0.51629	4.41372
	D->X (FF)	0.09379	0.53519	4.46892
sky130_fd_sc_hs__and4b_2	A_N->X (RF)	0.10136	0.25044	1.26725
	B->X (FF)	0.08681	0.49441	4.18437
	C->X (FF)	0.09529	0.51268	4.24891
	D->X (FF)	0.10107	0.52707	4.29370
sky130_fd_sc_hs__and4b_4	A_N->X (RF)	0.11385	0.24955	1.15825
	B->X (FF)	0.08517	0.46191	4.18208
	C->X (FF)	0.09392	0.48191	4.24311
	D->X (FF)	0.10911	0.51218	4.34194

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	0.00584	0.00695	0.03089
	A_N	0.00805	0.00918	0.03310
	B	0.00710	0.00709	0.02670
	B	0.00379	0.00378	0.02365
	C	0.00784	0.00779	0.02745
	C	0.00395	0.00390	0.02383
	D	0.00841	0.00818	0.02218
	D	0.00395	0.00371	0.01799
sky130_fd_sc_hs__and4b_2	A_N	0.00820	0.00947	0.03163
	A_N	0.01029	0.01155	0.03373
	B	0.00918	0.00935	0.02439
	B	0.00570	0.00589	0.02151
	C	0.00997	0.01008	0.02502
	C	0.00587	0.00600	0.02092
	D	0.01085	0.01089	0.01895
	D	0.00586	0.00592	0.01409
sky130_fd_sc_hs__and4b_4	A_N	0.01670	0.01843	0.04127
	A_N	0.01903	0.02080	0.04360
	B	0.01831	0.01889	0.05015
	B	0.01192	0.01252	0.04482
	C	0.02040	0.02086	0.04569
	C	0.01233	0.01280	0.03871
	D	0.02139	0.02186	0.05190
	D	0.01236	0.01288	0.04399

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4b_1	A_N	0.00774	0.00820	0.03197
	A_N	0.00552	0.00598	0.02974
	B	0.00275	0.00378	0.02313
	B	0.00606	0.00706	0.02607
	C	0.00291	0.00407	0.02342
	C	0.00674	0.00778	0.02718
	D	0.00340	0.00422	0.02326
	D	0.00774	0.00853	0.02721
sky130_fd_sc_hs__and4b_2	A_N	0.01032	0.01092	0.02968
	A_N	0.00822	0.00883	0.02755
	B	0.00469	0.00575	0.02195
	B	0.00815	0.00921	0.02537
	C	0.00512	0.00626	0.02267
	C	0.00914	0.01010	0.02659
	D	0.00526	0.00636	0.02153
	D	0.01012	0.01103	0.02612
sky130_fd_sc_hs__and4b_4	A_N	0.01773	0.01864	0.03987
	A_N	0.01540	0.01629	0.03746
	B	0.00884	0.01131	0.04535
	B	0.01520	0.01760	0.05168
	C	0.00956	0.01146	0.04524
	C	0.01745	0.01934	0.05259
	D	0.01079	0.01249	0.04693
	D	0.01951	0.02118	0.05502

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)	0.00417	0.00473	0.02745
	(B * C * !D * !X)	0.00115	0.00171	0.02443
	(B * !C * !X)	0.00417	0.00474	0.02745
	(B * !C * !X)	0.00115	0.00170	0.02443
	(!B * !X)	0.00415	0.00472	0.02744
	(!B * !X)	0.00115	0.00171	0.02443
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00461	0.00516	0.02727
	(B * C * !D * !X)	0.00174	0.00227	0.02440
	(B * !C * !X)	0.00461	0.00516	0.02727
	(B * !C * !X)	0.00174	0.00227	0.02440
	(!B * !X)	0.00459	0.00514	0.02726
	(!B * !X)	0.00174	0.00227	0.02440
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00708	0.00746	0.02913
	(B * C * !D * !X)	0.00363	0.00399	0.02569
	(B * !C * !X)	0.00707	0.00745	0.02913
	(B * !C * !X)	0.00363	0.00399	0.02569
	(!B * !X)	0.00702	0.00740	0.02907
	(!B * !X)	0.00363	0.00399	0.02568

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)	0.00002	0.00118	0.02397
	(B * C * !D * !X)	0.00311	0.00428	0.02705
	(B * !C * !X)	-0.00000	0.00116	0.02396
	(B * !C * !X)	0.00307	0.00424	0.02703
	(!B * !X)	0.00001	0.00117	0.02398
	(!B * !X)	0.00301	0.00419	0.02699
sky130_fd_sc_hs__and4b_2	(B * C * !D * !X)	0.00009	0.00118	0.02346
	(B * C * !D * !X)	0.00305	0.00416	0.02640
	(B * !C * !X)	0.00008	0.00118	0.02346
	(B * !C * !X)	0.00301	0.00410	0.02638
	(!B * !X)	0.00010	0.00119	0.02348
	(!B * !X)	0.00295	0.00404	0.02634
sky130_fd_sc_hs__and4b_4	(B * C * !D * !X)	0.00039	0.00114	0.02231
	(B * C * !D * !X)	0.00400	0.00476	0.02589
	(B * !C * !X)	0.00038	0.00113	0.02232
	(B * !C * !X)	0.00392	0.00469	0.02585
	(!B * !X)	0.00039	0.00115	0.02237
	(!B * !X)	0.00378	0.00455	0.02577

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)**	0.00113	0.00114	0.00113
	(A_N * C * D * !X)	-0.00126	-0.00127	-0.00126
	(A_N * C * !D * !X)	0.00071	0.00071	0.00071
	(A_N * C * !D * !X)	-0.00126	-0.00127	-0.00127
	(A_N * !C * !X)	0.00068	0.00069	0.00068
	(A_N * !C * !X)	-0.00127	-0.00128	-0.00127
	(!A_N * C * !D * !X)	0.00043	0.00044	0.00043
	(!A_N * C * !D * !X)	-0.00144	-0.00144	-0.00145
	(!A_N * !C * !X)	0.00043	0.00044	0.00043
	(!A_N * !C * !X)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__and4b_2	**(A_N * C * D * !X)**	0.00128	0.00129	0.00128
	(A_N * C * D * !X)	-0.00130	-0.00131	-0.00130
	(A_N * C * !D * !X)	0.00077	0.00078	0.00078
	(A_N * C * !D * !X)	-0.00130	-0.00131	-0.00131
	(A_N * !C * !X)	0.00078	0.00079	0.00078
	(A_N * !C * !X)	-0.00130	-0.00132	-0.00131
	(!A_N * C * !D * !X)	0.00045	0.00046	0.00046
	(!A_N * C * !D * !X)	-0.00150	-0.00152	-0.00152
	(!A_N * !C * !X)	0.00048	0.00049	0.00048
	(!A_N * !C * !X)	-0.00152	-0.00154	-0.00153
sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	0.00264	0.00266	0.00264
	(A_N * C * D * !X)	-0.00246	-0.00247	-0.00245
	(A_N * C * !D * !X)	0.00177	0.00178	0.00177
	(A_N * C * !D * !X)	-0.00247	-0.00247	-0.00247
	(A_N * !C * !X)	0.00181	0.00183	0.00181
	(A_N * !C * !X)	-0.00247	-0.00249	-0.00247
	(!A_N * C * !D * !X)	0.00106	0.00108	0.00107
	(!A_N * C * !D * !X)	-0.00293	-0.00296	-0.00298
	(!A_N * !C * !X)	0.00111	0.00113	0.00111
	(!A_N * !C * !X)	-0.00297	-0.00300	-0.00300

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)	-0.00106	-0.00113	-0.00113
	(A_N * C * D * !X)	0.00133	0.00129	0.00127
	(A_N * C * !D * !X)	-0.00071	-0.00071	-0.00071
	(A_N * C * !D * !X)	0.00131	0.00129	0.00127
	(A_N * !C * !X)	-0.00068	-0.00069	-0.00068
	(A_N * !C * !X)	0.00132	0.00133	0.00129
	(!A_N * C * !D * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * C * !D * !X)	0.00147	0.00149	0.00146
	(!A_N * !C * !X)	-0.00041	-0.00042	-0.00042
	(!A_N * !C * !X)	0.00147	0.00149	0.00146
sky130_fd_sc_hs__and4b_2	(A_N * C * D * !X)	-0.00121	-0.00128	-0.00128
	(A_N * C * D * !X)	0.00135	0.00133	0.00131
	(A_N * C * !D * !X)	-0.00077	-0.00078	-0.00078
	(A_N * C * !D * !X)	0.00133	0.00133	0.00131
	(A_N * !C * !X)	-0.00078	-0.00079	-0.00078
	(A_N * !C * !X)	0.00137	0.00137	0.00132
	(!A_N * C * !D * !X)	-0.00045	-0.00045	-0.00046
	(!A_N * C * !D * !X)	0.00155	0.00157	0.00154
	(!A_N * !C * !X)	-0.00046	-0.00046	-0.00047
	(!A_N * !C * !X)	0.00155	0.00157	0.00154

sky130_fd_sc_hs__and4b_4	**(A_N * C * D * !X)**	-0.00252	-0.00266	-0.00264
	(A_N * C * D * !X)	0.00256	0.00248	0.00247
	(A_N * C * !D * !X)	-0.00177	-0.00178	-0.00177
	(A_N * C * !D * !X)	0.00250	0.00249	0.00247
	(A_N * !C * !X)	-0.00181	-0.00183	-0.00181
	(A_N * !C * !X)	0.00254	0.00254	0.00248
	(!A_N * C * !D * !X)	-0.00103	-0.00105	-0.00106
	(!A_N * C * !D * !X)	0.00303	0.00306	0.00302
	(!A_N * !C * !X)	-0.00106	-0.00107	-0.00108
	(!A_N * !C * !X)	0.00303	0.00307	0.00302

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)**	0.00115	0.00116	0.00115
	(A_N * B * D * !X)	-0.00112	-0.00113	-0.00112
	(A_N * B * !D * !X)	0.00072	0.00073	0.00073
	(A_N * B * !D * !X)	-0.00112	-0.00114	-0.00113
	(A_N * !B * D * !X)	0.00114	0.00116	0.00115
	(A_N * !B * D * !X)	-0.00112	-0.00113	-0.00112
	(A_N * !B * !D * !X)	0.00072	0.00073	0.00072
	(A_N * !B * !D * !X)	-0.00113	-0.00114	-0.00113
	(!A_N * B * !D * !X)	0.00063	0.00063	0.00063
	(!A_N * B * !D * !X)	-0.00113	-0.00113	-0.00113
	(!A_N * !B * D * !X)	0.00113	0.00114	0.00114
	(!A_N * !B * D * !X)	-0.00113	-0.00114	-0.00113
	(!A_N * !B * !D * !X)	0.00069	0.00069	0.00069
	(!A_N * !B * !D * !X)	-0.00114	-0.00114	-0.00114

sky130_fd_sc_hs__and4b_2	**(A_N * B * D * !X)**	0.00108	0.00110	0.00109
	(A_N * B * D * !X)	-0.00128	-0.00129	-0.00128
	(A_N * B * !D * !X)	0.00059	0.00059	0.00059
	(A_N * B * !D * !X)	-0.00128	-0.00129	-0.00129
	(A_N * !B * D * !X)	0.00110	0.00111	0.00111
	(A_N * !B * D * !X)	-0.00128	-0.00129	-0.00128
	(A_N * !B * !D * !X)	0.00058	0.00059	0.00058
	(A_N * !B * !D * !X)	-0.00129	-0.00130	-0.00129
	(!A_N * B * !D * !X)	0.00046	0.00046	0.00047
	(!A_N * B * !D * !X)	-0.00130	-0.00131	-0.00130
	(!A_N * !B * D * !X)	0.00109	0.00110	0.00109
	(!A_N * !B * D * !X)	-0.00130	-0.00131	-0.00130
	(!A_N * !B * !D * !X)	0.00053	0.00053	0.00053
	(!A_N * !B * !D * !X)	-0.00130	-0.00130	-0.00131
sky130_fd_sc_hs__and4b_4	**(A_N * B * D * !X)**	0.00249	0.00252	0.00250
	(A_N * B * D * !X)	-0.00262	-0.00264	-0.00263
	(A_N * B * !D * !X)	0.00161	0.00162	0.00161
	(A_N * B * !D * !X)	-0.00263	-0.00264	-0.00264
	(A_N * !B * D * !X)	0.00248	0.00251	0.00248
	(A_N * !B * D * !X)	-0.00263	-0.00265	-0.00263
	(A_N * !B * !D * !X)	0.00163	0.00164	0.00163
	(A_N * !B * !D * !X)	-0.00263	-0.00264	-0.00264
	(!A_N * B * !D * !X)	0.00137	0.00139	0.00138
	(!A_N * B * !D * !X)	-0.00267	-0.00270	-0.00267
	(!A_N * !B * D * !X)	0.00244	0.00247	0.00245
	(!A_N * !B * D * !X)	-0.00267	-0.00268	-0.00267
	(!A_N * !B * !D * !X)	0.00152	0.00153	0.00152
	(!A_N * !B * !D * !X)	-0.00268	-0.00270	-0.00269

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)	-0.00108	-0.00114	-0.00115
	(A_N * B * D * !X)	0.00113	0.00114	0.00113
	(A_N * B * !D * !X)	-0.00072	-0.00073	-0.00073
	(A_N * B * !D * !X)	0.00113	0.00115	0.00114
	(A_N * !B * D * !X)	-0.00111	-0.00116	-0.00115
	(A_N * !B * D * !X)	0.00113	0.00114	0.00113
	(A_N * !B * !D * !X)	-0.00072	-0.00073	-0.00072
	(A_N * !B * !D * !X)	0.00113	0.00115	0.00114
	(!A_N * B * !D * !X)	-0.00060	-0.00061	-0.00060
	(!A_N * B * !D * !X)	0.00116	0.00118	0.00115
	(!A_N * !B * D * !X)	-0.00109	-0.00114	-0.00114
	(!A_N * !B * D * !X)	0.00115	0.00115	0.00114
	(!A_N * !B * !D * !X)	-0.00069	-0.00069	-0.00069
	(!A_N * !B * !D * !X)	0.00118	0.00119	0.00115
sky130_fd_sc_hs__and4b_2	(A_N * B * D * !X)	-0.00102	-0.00110	-0.00109
	(A_N * B * D * !X)	0.00129	0.00131	0.00129
	(A_N * B * !D * !X)	-0.00059	-0.00059	-0.00059
	(A_N * B * !D * !X)	0.00129	0.00131	0.00130
	(A_N * !B * D * !X)	-0.00106	-0.00111	-0.00111
	(A_N * !B * D * !X)	0.00129	0.00130	0.00129
	(A_N * !B * !D * !X)	-0.00058	-0.00059	-0.00058
	(A_N * !B * !D * !X)	0.00130	0.00131	0.00130
	(!A_N * B * !D * !X)	-0.00045	-0.00045	-0.00045
	(!A_N * B * !D * !X)	0.00133	0.00134	0.00132
	(!A_N * !B * D * !X)	-0.00104	-0.00110	-0.00109
	(!A_N * !B * D * !X)	0.00131	0.00132	0.00131
	(!A_N * !B * !D * !X)	-0.00053	-0.00053	-0.00053
	(!A_N * !B * !D * !X)	0.00135	0.00136	0.00132

sky130_fd_sc_hs__and4b_4	(A_N * B * D * !X)	-0.00233	-0.00251	-0.00249
	(A_N * B * D * !X)	0.00264	0.00266	0.00264
	(A_N * B * !D * !X)	-0.00161	-0.00162	-0.00161
	(A_N * B * !D * !X)	0.00264	0.00266	0.00264
	(A_N * !B * D * !X)	-0.00240	-0.00251	-0.00248
	(A_N * !B * D * !X)	0.00264	0.00266	0.00264
	(A_N * !B * !D * !X)	-0.00163	-0.00164	-0.00163
	(A_N * !B * !D * !X)	0.00263	0.00267	0.00265
	(!A_N * B * !D * !X)	-0.00133	-0.00135	-0.00135
	(!A_N * B * !D * !X)	0.00272	0.00275	0.00270
	(!A_N * !B * D * !X)	-0.00235	-0.00247	-0.00245
	(!A_N * !B * D * !X)	0.00269	0.00270	0.00267
	(!A_N * !B * !D * !X)	-0.00152	-0.00153	-0.00152
	(!A_N * !B * !D * !X)	0.00270	0.00274	0.00271

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)	0.00093	0.00095	0.00094
	(A_N * B * C * !X)	-0.00123	-0.00124	-0.00123
	(A_N * !C * !X)	0.00096	0.00097	0.00096
	(A_N * !C * !X)	-0.00123	-0.00124	-0.00123
	(A_N * !B * C * !X)	0.00094	0.00094	0.00094
	(A_N * !B * C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * B * !C * !X)	0.00096	0.00098	0.00097
	(!A_N * B * !C * !X)	-0.00123	-0.00124	-0.00123
	(!A_N * !B * C * !X)	0.00094	0.00093	0.00093
	(!A_N * !B * C * !X)	-0.00123	-0.00123	-0.00123
	(!A_N * !B * !C * !X)	0.00096	0.00098	0.00097
	(!A_N * !B * !C * !X)	-0.00123	-0.00124	-0.00123

sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	0.00109	0.00110	0.00109
	(A_N * B * C * !X)	-0.00140	-0.00141	-0.00140
	(A_N * !C * !X)	0.00111	0.00111	0.00111
	(A_N * !C * !X)	-0.00140	-0.00140	-0.00140
	(A_N * !B * C * !X)	0.00108	0.00109	0.00109
	(A_N * !B * C * !X)	-0.00140	-0.00140	-0.00140
	(!A_N * B * !C * !X)	0.00110	0.00111	0.00110
	(!A_N * B * !C * !X)	-0.00141	-0.00143	-0.00142
	(!A_N * !B * C * !X)	0.00107	0.00108	0.00107
	(!A_N * !B * C * !X)	-0.00142	-0.00142	-0.00142
	(!A_N * !B * !C * !X)	0.00110	0.00110	0.00110
	(!A_N * !B * !C * !X)	-0.00141	-0.00142	-0.00142
sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	0.00205	0.00203	0.00204
	(A_N * B * C * !X)	-0.00262	-0.00261	-0.00261
	(A_N * !C * !X)	0.00200	0.00202	0.00201
	(A_N * !C * !X)	-0.00261	-0.00262	-0.00261
	(A_N * !B * C * !X)	0.00202	0.00203	0.00202
	(A_N * !B * C * !X)	-0.00261	-0.00262	-0.00261
	(!A_N * B * !C * !X)	0.00196	0.00198	0.00197
	(!A_N * B * !C * !X)	-0.00264	-0.00266	-0.00265
	(!A_N * !B * C * !X)	0.00197	0.00200	0.00197
	(!A_N * !B * C * !X)	-0.00264	-0.00267	-0.00265
	(!A_N * !B * !C * !X)	0.00197	0.00198	0.00198
	(!A_N * !B * !C * !X)	-0.00264	-0.00266	-0.00265

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)**	-0.00088	-0.00095	-0.00094
	(A_N * B * C * !X)	0.00125	0.00125	0.00124
	(A_N * !C * !X)	-0.00093	-0.00097	-0.00096
	(A_N * !C * !X)	0.00124	0.00125	0.00124
	(A_N * !B * C * !X)	-0.00088	-0.00094	-0.00094
	(A_N * !B * C * !X)	0.00124	0.00125	0.00124
	(!A_N * B * !C * !X)	-0.00093	-0.00097	-0.00097
	(!A_N * B * !C * !X)	0.00124	0.00125	0.00124
	(!A_N * !B * C * !X)	-0.00088	-0.00093	-0.00093
	(!A_N * !B * C * !X)	0.00123	0.00125	0.00124
	(!A_N * !B * !C * !X)	-0.00094	-0.00098	-0.00097
	(!A_N * !B * !C * !X)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__and4b_2	**(A_N * B * C * !X)**	-0.00102	-0.00110	-0.00109
	(A_N * B * C * !X)	0.00140	0.00142	0.00141
	(A_N * !C * !X)	-0.00108	-0.00111	-0.00111
	(A_N * !C * !X)	0.00141	0.00142	0.00141
	(A_N * !B * C * !X)	-0.00103	-0.00109	-0.00109
	(A_N * !B * C * !X)	0.00141	0.00142	0.00141
	(!A_N * B * !C * !X)	-0.00106	-0.00110	-0.00110
	(!A_N * B * !C * !X)	0.00142	0.00144	0.00142
	(!A_N * !B * C * !X)	-0.00102	-0.00108	-0.00107
	(!A_N * !B * C * !X)	0.00142	0.00143	0.00142
	(!A_N * !B * !C * !X)	-0.00106	-0.00110	-0.00110
	(!A_N * !B * !C * !X)	0.00142	0.00143	0.00142

sky130_fd_sc_hs__and4b_4	**(A_N * B * C * !X)**	-0.00185	-0.00203	-0.00204
	(A_N * B * C * !X)	0.00262	0.00264	0.00262
	(A_N * !C * !X)	-0.00194	-0.00202	-0.00201
	(A_N * !C * !X)	0.00261	0.00265	0.00262
	(A_N * !B * C * !X)	-0.00188	-0.00203	-0.00202
	(A_N * !B * C * !X)	0.00263	0.00265	0.00262
	(!A_N * B * !C * !X)	-0.00189	-0.00198	-0.00197
	(!A_N * B * !C * !X)	0.00265	0.00269	0.00266
	(!A_N * !B * C * !X)	-0.00184	-0.00200	-0.00197
	(!A_N * !B * C * !X)	0.00267	0.00268	0.00266
	(!A_N * !B * !C * !X)	-0.00191	-0.00198	-0.00198
	(!A_N * !B * !C * !X)	0.00265	0.00268	0.00266

SKY130_FD_SC_HS__AND4x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00246	0.00242	0.00233	0.00235	1.13778
sky130_fd_sc_hs__and4_2	0.00262	0.00269	0.00254	0.00250	1.94786
sky130_fd_sc_hs__and4_4	0.00451	0.00466	0.00514	0.00455	4.22627

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__and4_1	0.00000	0.08791	0.91513
sky130_fd_sc_hs__and4_2	0.00000	0.07553	0.23257
sky130_fd_sc_hs__and4_4	0.00000	0.15129	0.46514

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)	0.07729	0.55037	6.10617
	B->X (RR)	0.08327	0.56748	6.11143
	C->X (RR)	0.08663	0.56671	6.08286
	D->X (RR)	0.09123	0.56193	5.95579
sky130_fd_sc_hs__and4_2	A->X (RR)	0.08221	0.49728	5.93920
	B->X (RR)	0.08857	0.51148	5.95947
	C->X (RR)	0.09265	0.50759	5.93438
	D->X (RR)	0.09617	0.49883	5.79339
sky130_fd_sc_hs__and4_4	A->X (RR)	0.08823	0.42196	6.08414
	B->X (RR)	0.09772	0.44337	6.13088
	C->X (RR)	0.10700	0.44264	6.05689
	D->X (RR)	0.10683	0.43206	6.05443

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__and4_1	A->X (FF)	0.06992	0.47315	4.31667
	B->X (FF)	0.07852	0.49423	4.33567
	C->X (FF)	0.08560	0.51203	4.38621
	D->X (FF)	0.09332	0.52986	4.45033
sky130_fd_sc_hs__and4_2	A->X (FF)	0.07399	0.46509	4.07428
	B->X (FF)	0.08403	0.48763	4.13395
	C->X (FF)	0.09116	0.50551	4.19772
	D->X (FF)	0.10198	0.52927	4.27823
sky130_fd_sc_hs__and4_4	A->X (FF)	0.07467	0.44840	4.52459
	B->X (FF)	0.07904	0.45705	4.49793
	C->X (FF)	0.08698	0.47703	4.55820
	D->X (FF)	0.08998	0.48955	4.60956

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00662	0.00694	0.02928
	A	0.00329	0.00361	0.02620
	B	0.00721	0.00734	0.02736
	B	0.00330	0.00343	0.02370
	C	0.00788	0.00797	0.02789
	C	0.00331	0.00339	0.02357
	D	0.00867	0.00859	0.02304
	D	0.00332	0.00324	0.01796
sky130_fd_sc_hs__and4_2	A	0.00886	0.00928	0.02670
	A	0.00520	0.00565	0.02364
	B	0.00967	0.00977	0.02490
	B	0.00530	0.00541	0.02111
	C	0.01037	0.01046	0.02552
	C	0.00530	0.00540	0.02104
	D	0.01125	0.01126	0.01916
	D	0.00532	0.00536	0.01336
sky130_fd_sc_hs__and4_4	A	0.01637	0.01748	0.05441
	A	0.01012	0.01127	0.04923
	B	0.01803	0.01863	0.05055
	B	0.01008	0.01069	0.04365
	C	0.01999	0.02053	0.04792
	C	0.01012	0.01067	0.03915
	D	0.02080	0.02137	0.05314
	D	0.01011	0.01074	0.04356

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__and4_1	A	0.00243	0.00354	0.02402
	A	0.00576	0.00681	0.02721
	B	0.00278	0.00399	0.02380
	B	0.00665	0.00775	0.02759
	C	0.00304	0.00406	0.02428
	C	0.00752	0.00854	0.02872
	D	0.00331	0.00418	0.02374
	D	0.00851	0.00933	0.02882
sky130_fd_sc_hs__and4_2	A	0.00416	0.00529	0.02243
	A	0.00782	0.00881	0.02555
	B	0.00456	0.00553	0.02233
	B	0.00889	0.00985	0.02621
	C	0.00499	0.00651	0.02294
	C	0.00995	0.01121	0.02757
	D	0.00529	0.00622	0.02126
	D	0.01102	0.01185	0.02690
sky130_fd_sc_hs__and4_4	A	0.00832	0.01040	0.04754
	A	0.01459	0.01656	0.05376
	B	0.00876	0.01116	0.04630
	B	0.01662	0.01901	0.05408
	C	0.00936	0.01148	0.04626
	C	0.01900	0.02103	0.05567
	D	0.01055	0.01286	0.04844
	D	0.02088	0.02304	0.05870

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)	0.00038	0.00038	0.00035
	(B * C * !D * !X)	-0.00139	-0.00139	-0.00145
	(B * !C * !X)	0.00036	0.00036	0.00034
	(B * !C * !X)	-0.00141	-0.00141	-0.00145
	(!B * !X)	0.00036	0.00036	0.00035
	(!B * !X)	-0.00144	-0.00144	-0.00146
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	0.00046	0.00046	0.00042
	(B * C * !D * !X)	-0.00155	-0.00156	-0.00163
	(B * !C * !X)	0.00045	0.00044	0.00042
	(B * !C * !X)	-0.00159	-0.00158	-0.00164
	(!B * !X)	0.00044	0.00043	0.00042
	(!B * !X)	-0.00163	-0.00162	-0.00164
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	0.00064	0.00064	0.00057
	(B * C * !D * !X)	-0.00283	-0.00285	-0.00299
	(B * !C * !X)	0.00063	0.00063	0.00058
	(B * !C * !X)	-0.00290	-0.00290	-0.00301
	(!B * !X)	0.00061	0.00061	0.00059
	(!B * !X)	-0.00296	-0.00297	-0.00301

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)	-0.00034	-0.00035	-0.00034
	(B * C * !D * !X)	0.00145	0.00147	0.00146
	(B * !C * !X)	-0.00034	-0.00035	-0.00034
	(B * !C * !X)	0.00145	0.00147	0.00146
	(!B * !X)	-0.00035	-0.00035	-0.00035
	(!B * !X)	0.00145	0.00148	0.00146
sky130_fd_sc_hs__and4_2	(B * C * !D * !X)	-0.00042	-0.00042	-0.00041
	(B * C * !D * !X)	0.00165	0.00166	0.00165
	(B * !C * !X)	-0.00042	-0.00042	-0.00041
	(B * !C * !X)	0.00165	0.00166	0.00165
	(!B * !X)	-0.00042	-0.00042	-0.00042
	(!B * !X)	0.00165	0.00167	0.00165
sky130_fd_sc_hs__and4_4	(B * C * !D * !X)	-0.00056	-0.00056	-0.00054
	(B * C * !D * !X)	0.00303	0.00305	0.00302
	(B * !C * !X)	-0.00056	-0.00056	-0.00055
	(B * !C * !X)	0.00303	0.00305	0.00302
	(!B * !X)	-0.00058	-0.00058	-0.00057
	(!B * !X)	0.00303	0.00305	0.00302

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)**	0.00042	0.00042	0.00041
	(A * C * !D * !X)	-0.00116	-0.00116	-0.00115
	(A * !C * !X)	0.00042	0.00042	0.00042
	(A * !C * !X)	-0.00115	-0.00116	-0.00115
	(!A * C * D * !X)	0.00097	0.00097	0.00097
	(!A * C * D * !X)	-0.00115	-0.00115	-0.00115
	(!A * C * !D * !X)	0.00050	0.00050	0.00050
	(!A * C * !D * !X)	-0.00115	-0.00116	-0.00115
	(!A * !C * !X)	0.00047	0.00047	0.00047
	(!A * !C * !X)	-0.00116	-0.00116	-0.00115
sky130_fd_sc_hs__and4_2	**(A * C * !D * !X)**	0.00049	0.00049	0.00048
	(A * C * !D * !X)	-0.00137	-0.00138	-0.00137
	(A * !C * !X)	0.00050	0.00051	0.00050
	(A * !C * !X)	-0.00137	-0.00138	-0.00137
	(!A * C * D * !X)	0.00112	0.00113	0.00112
	(!A * C * D * !X)	-0.00137	-0.00138	-0.00137
	(!A * C * !D * !X)	0.00058	0.00059	0.00058
	(!A * C * !D * !X)	-0.00137	-0.00138	-0.00137
	(!A * !C * !X)	0.00056	0.00057	0.00056
	(!A * !C * !X)	-0.00137	-0.00139	-0.00137
sky130_fd_sc_hs__and4_4	**(A * C * !D * !X)**	0.00104	0.00105	0.00104
	(A * C * !D * !X)	-0.00256	-0.00258	-0.00256
	(A * !C * !X)	0.00109	0.00110	0.00109
	(A * !C * !X)	-0.00257	-0.00259	-0.00257
	(!A * C * D * !X)	0.00218	0.00220	0.00218
	(!A * C * D * !X)	-0.00255	-0.00257	-0.00255
	(!A * C * !D * !X)	0.00121	0.00123	0.00122
	(!A * C * !D * !X)	-0.00257	-0.00259	-0.00258
	(!A * !C * !X)	0.00122	0.00124	0.00123
	(!A * !C * !X)	-0.00258	-0.00261	-0.00259

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)	-0.00040	-0.00040	-0.00040
	(A * C * !D * !X)	0.00117	0.00118	0.00116
	(A * !C * !X)	-0.00040	-0.00041	-0.00041
	(A * !C * !X)	0.00117	0.00118	0.00116
	(!A * C * D * !X)	-0.00088	-0.00097	-0.00097
	(!A * C * D * !X)	0.00122	0.00116	0.00116
	(!A * C * !D * !X)	-0.00050	-0.00050	-0.00050
	(!A * C * !D * !X)	0.00120	0.00118	0.00116
	(!A * !C * !X)	-0.00047	-0.00047	-0.00047
	(!A * !C * !X)	0.00121	0.00122	0.00117
sky130_fd_sc_hs__and4_2	(A * C * !D * !X)	-0.00047	-0.00047	-0.00047
	(A * C * !D * !X)	0.00139	0.00141	0.00138
	(A * !C * !X)	-0.00048	-0.00048	-0.00048
	(A * !C * !X)	0.00139	0.00141	0.00138
	(!A * C * D * !X)	-0.00103	-0.00112	-0.00112
	(!A * C * D * !X)	0.00143	0.00139	0.00138
	(!A * C * !D * !X)	-0.00058	-0.00059	-0.00058
	(!A * C * !D * !X)	0.00141	0.00139	0.00137
	(!A * !C * !X)	-0.00056	-0.00057	-0.00056
	(!A * !C * !X)	0.00143	0.00144	0.00139

sky130_fd_sc_hs__and4_4	(A * C * !D * !X)	-0.00102	-0.00103	-0.00103
	(A * C * !D * !X)	0.00261	0.00264	0.00259
	(A * !C * !X)	-0.00104	-0.00105	-0.00106
	(A * !C * !X)	0.00262	0.00264	0.00259
	(!A * C * D * !X)	-0.00202	-0.00220	-0.00218
	(!A * C * D * !X)	0.00267	0.00258	0.00256
	(!A * C * !D * !X)	-0.00121	-0.00123	-0.00122
	(!A * C * !D * !X)	0.00265	0.00261	0.00259
	(!A * !C * !X)	-0.00122	-0.00124	-0.00123
	(!A * !C * !X)	0.00270	0.00270	0.00262

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)	0.00048	0.00048	0.00049
	(A * B * !D * !X)	-0.00109	-0.00109	-0.00109
	(A * !B * D * !X)	0.00100	0.00103	0.00101
	(A * !B * D * !X)	-0.00110	-0.00112	-0.00111
	(A * !B * !D * !X)	0.00054	0.00055	0.00054
	(A * !B * !D * !X)	-0.00110	-0.00112	-0.00111
	(!A * B * D * !X)	0.00100	0.00101	0.00101
	(!A * B * D * !X)	-0.00110	-0.00111	-0.00111
	(!A * B * !D * !X)	0.00053	0.00054	0.00053
	(!A * B * !D * !X)	-0.00110	-0.00111	-0.00111
	(!A * !B * D * !X)	0.00101	0.00102	0.00101
	(!A * !B * D * !X)	-0.00111	-0.00111	-0.00111
	(!A * !B * !D * !X)	0.00057	0.00057	0.00056
	(!A * !B * !D * !X)	-0.00110	-0.00112	-0.00111

sky130_fd_sc_hs__and4_2	**(A * B * !D * !X)**	0.00052	0.00052	0.00052
	(A * B * !D * !X)	-0.00126	-0.00127	-0.00126
	(A * !B * D * !X)	0.00112	0.00114	0.00113
	(A * !B * D * !X)	-0.00127	-0.00129	-0.00128
	(A * !B * !D * !X)	0.00059	0.00060	0.00060
	(A * !B * !D * !X)	-0.00128	-0.00129	-0.00128
	(!A * B * D * !X)	0.00109	0.00110	0.00109
	(!A * B * D * !X)	-0.00128	-0.00128	-0.00128
	(!A * B * !D * !X)	0.00057	0.00058	0.00058
	(!A * B * !D * !X)	-0.00127	-0.00128	-0.00128
	(!A * !B * D * !X)	0.00112	0.00112	0.00112
	(!A * !B * D * !X)	-0.00127	-0.00128	-0.00128
	(!A * !B * !D * !X)	0.00062	0.00063	0.00063
	(!A * !B * !D * !X)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__and4_4	**(A * B * !D * !X)**	0.00136	0.00138	0.00137
	(A * B * !D * !X)	-0.00266	-0.00269	-0.00266
	(A * !B * D * !X)	0.00244	0.00246	0.00245
	(A * !B * D * !X)	-0.00265	-0.00267	-0.00266
	(A * !B * !D * !X)	0.00151	0.00152	0.00151
	(A * !B * !D * !X)	-0.00268	-0.00270	-0.00268
	(!A * B * D * !X)	0.00245	0.00248	0.00246
	(!A * B * D * !X)	-0.00265	-0.00268	-0.00266
	(!A * B * !D * !X)	0.00148	0.00149	0.00148
	(!A * B * !D * !X)	-0.00267	-0.00268	-0.00268
	(!A * !B * D * !X)	0.00244	0.00246	0.00245
	(!A * !B * D * !X)	-0.00265	-0.00267	-0.00266
	(!A * !B * !D * !X)	0.00156	0.00157	0.00156
	(!A * !B * !D * !X)	-0.00268	-0.00268	-0.00268

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)	-0.00046	-0.00047	-0.00047
	(A * B * !D * !X)	0.00113	0.00114	0.00112
	(A * !B * D * !X)	-0.00097	-0.00102	-0.00101
	(A * !B * D * !X)	0.00111	0.00112	0.00111
	(A * !B * !D * !X)	-0.00054	-0.00055	-0.00054
	(A * !B * !D * !X)	0.00115	0.00116	0.00112
	(!A * B * D * !X)	-0.00091	-0.00101	-0.00101
	(!A * B * D * !X)	0.00111	0.00112	0.00111
	(!A * B * !D * !X)	-0.00053	-0.00054	-0.00053
	(!A * B * !D * !X)	0.00111	0.00112	0.00111
	(!A * !B * D * !X)	-0.00097	-0.00102	-0.00101
	(!A * !B * D * !X)	0.00111	0.00112	0.00111
	(!A * !B * !D * !X)	-0.00057	-0.00057	-0.00056
	(!A * !B * !D * !X)	0.00110	0.00112	0.00111
sky130_fd_sc_hs__and4_2	(A * B * !D * !X)	-0.00049	-0.00050	-0.00050
	(A * B * !D * !X)	0.00130	0.00132	0.00129
	(A * !B * D * !X)	-0.00107	-0.00113	-0.00113
	(A * !B * D * !X)	0.00128	0.00130	0.00128
	(A * !B * !D * !X)	-0.00059	-0.00060	-0.00060
	(A * !B * !D * !X)	0.00129	0.00131	0.00129
	(!A * B * D * !X)	-0.00101	-0.00110	-0.00109
	(!A * B * D * !X)	0.00128	0.00130	0.00128
	(!A * B * !D * !X)	-0.00057	-0.00058	-0.00058
	(!A * B * !D * !X)	0.00128	0.00129	0.00128
	(!A * !B * D * !X)	-0.00108	-0.00112	-0.00112
	(!A * !B * D * !X)	0.00128	0.00130	0.00128
	(!A * !B * !D * !X)	-0.00062	-0.00063	-0.00063
	(!A * !B * !D * !X)	0.00128	0.00129	0.00128

sky130_fd_sc_hs__and4_4	(A * B * !D * !X)	-0.00132	-0.00134	-0.00135
	(A * B * !D * !X)	0.00271	0.00274	0.00270
	(A * !B * D * !X)	-0.00234	-0.00246	-0.00245
	(A * !B * D * !X)	0.00266	0.00269	0.00267
	(A * !B * !D * !X)	-0.00151	-0.00152	-0.00151
	(A * !B * !D * !X)	0.00269	0.00272	0.00269
	(!A * B * D * !X)	-0.00225	-0.00247	-0.00245
	(!A * B * D * !X)	0.00268	0.00269	0.00267
	(!A * B * !D * !X)	-0.00148	-0.00149	-0.00148
	(!A * B * !D * !X)	0.00268	0.00271	0.00269
	(!A * !B * D * !X)	-0.00235	-0.00246	-0.00245
	(!A * !B * D * !X)	0.00266	0.00269	0.00267
	(!A * !B * !D * !X)	-0.00156	-0.00157	-0.00156
	(!A * !B * !D * !X)	0.00268	0.00271	0.00269

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)	0.00098	0.00100	0.00099
	(A * B * !C * !X)	-0.00123	-0.00125	-0.00124
	(A * !B * C * !X)	0.00095	0.00096	0.00096
	(A * !B * C * !X)	-0.00123	-0.00124	-0.00124
	(A * !B * !C * !X)	0.00098	0.00100	0.00099
	(A * !B * !C * !X)	-0.00123	-0.00124	-0.00124
	(!A * B * C * !X)	0.00095	0.00096	0.00095
	(!A * B * C * !X)	-0.00123	-0.00124	-0.00124
	(!A * !C * !X)	0.00098	0.00100	0.00099
	(!A * !C * !X)	-0.00123	-0.00124	-0.00124
	(!A * !B * C * !X)	0.00096	0.00097	0.00096
	(!A * !B * C * !X)	-0.00123	-0.00124	-0.00124

sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	0.00114	0.00115	0.00115
	(A * B * !C * !X)	-0.00132	-0.00133	-0.00133
	(A * !B * C * !X)	0.00112	0.00113	0.00112
	(A * !B * C * !X)	-0.00132	-0.00133	-0.00133
	(A * !B * !C * !X)	0.00114	0.00116	0.00115
	(A * !B * !C * !X)	-0.00132	-0.00133	-0.00133
	(!A * B * C * !X)	0.00112	0.00113	0.00111
	(!A * B * C * !X)	-0.00133	-0.00133	-0.00133
	(!A * !C * !X)	0.00114	0.00116	0.00115
	(!A * !C * !X)	-0.00132	-0.00133	-0.00133
	(!A * !B * C * !X)	0.00113	0.00113	0.00112
	(!A * !B * C * !X)	-0.00133	-0.00133	-0.00133
sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	0.00192	0.00195	0.00193
	(A * B * !C * !X)	-0.00259	-0.00261	-0.00259
	(A * !B * C * !X)	0.00191	0.00192	0.00192
	(A * !B * C * !X)	-0.00259	-0.00260	-0.00259
	(A * !B * !C * !X)	0.00193	0.00194	0.00193
	(A * !B * !C * !X)	-0.00259	-0.00260	-0.00259
	(!A * B * C * !X)	0.00190	0.00192	0.00190
	(!A * B * C * !X)	-0.00260	-0.00261	-0.00259
	(!A * !C * !X)	0.00192	0.00193	0.00193
	(!A * !C * !X)	-0.00259	-0.00260	-0.00259
	(!A * !B * C * !X)	0.00191	0.00192	0.00192
	(!A * !B * C * !X)	-0.00259	-0.00260	-0.00259

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)**	-0.00096	-0.00100	-0.00099
	(A * B * !C * !X)	0.00124	0.00125	0.00124
	(A * !B * C * !X)	-0.00092	-0.00096	-0.00096
	(A * !B * C * !X)	0.00124	0.00125	0.00124
	(A * !B * !C * !X)	-0.00096	-0.00100	-0.00099
	(A * !B * !C * !X)	0.00124	0.00125	0.00124
	(!A * B * C * !X)	-0.00089	-0.00096	-0.00095
	(!A * B * C * !X)	0.00123	0.00125	0.00124
	(!A * !C * !X)	-0.00096	-0.00100	-0.00099
	(!A * !C * !X)	0.00124	0.00125	0.00124
	(!A * !B * C * !X)	-0.00092	-0.00097	-0.00096
	(!A * !B * C * !X)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__and4_2	**(A * B * !C * !X)**	-0.00111	-0.00115	-0.00115
	(A * B * !C * !X)	0.00133	0.00134	0.00133
	(A * !B * C * !X)	-0.00106	-0.00113	-0.00112
	(A * !B * C * !X)	0.00133	0.00134	0.00133
	(A * !B * !C * !X)	-0.00112	-0.00116	-0.00115
	(A * !B * !C * !X)	0.00133	0.00134	0.00133
	(!A * B * C * !X)	-0.00105	-0.00113	-0.00111
	(!A * B * C * !X)	0.00133	0.00134	0.00133
	(!A * !C * !X)	-0.00112	-0.00116	-0.00115
	(!A * !C * !X)	0.00133	0.00134	0.00133
	(!A * !B * C * !X)	-0.00106	-0.00113	-0.00112
	(!A * !B * C * !X)	0.00133	0.00134	0.00133

sky130_fd_sc_hs__and4_4	**(A * B * !C * !X)**	-0.00184	-0.00193	-0.00193
	(A * B * !C * !X)	0.00260	0.00263	0.00260
	(A * !B * C * !X)	-0.00177	-0.00192	-0.00192
	(A * !B * C * !X)	0.00261	0.00263	0.00260
	(A * !B * !C * !X)	-0.00185	-0.00193	-0.00193
	(A * !B * !C * !X)	0.00260	0.00263	0.00260
	(!A * B * C * !X)	-0.00171	-0.00192	-0.00190
	(!A * B * C * !X)	0.00260	0.00263	0.00260
	(!A * !C * !X)	-0.00184	-0.00192	-0.00193
	(!A * !C * !X)	0.00260	0.00263	0.00260
	(!A * !B * C * !X)	-0.00177	-0.00192	-0.00192
	(!A * !B * C * !X)	0.00261	0.00263	0.00260

SKY130_FD_SC_HS__BUFx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00237	1.12716
sky130_fd_sc_hs__buf_16	0.01499	17.23411
sky130_fd_sc_hs__buf_2	0.00251	2.08770
sky130_fd_sc_hs__buf_4	0.00340	4.32936
sky130_fd_sc_hs__buf_8	0.00769	8.17341
sky130_fd_sc_hs__bufbuf_16	0.00277	17.26042
sky130_fd_sc_hs__bufbuf_8	0.00221	8.30726

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__buf_1	0.00000	0.13115	0.22928
sky130_fd_sc_hs__buf_16	0.00000	0.36387	0.52268
sky130_fd_sc_hs__buf_2	0.00000	0.06263	0.06613
sky130_fd_sc_hs__buf_4	0.00000	0.29511	0.45987
sky130_fd_sc_hs__buf_8	0.00000	0.18194	0.26134
sky130_fd_sc_hs__bufbuf_16	0.00000	0.43003	0.62060
sky130_fd_sc_hs__bufbuf_8	0.00000	0.31308	0.33181

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)	0.04597	0.48935	5.80033
sky130_fd_sc_hs__buf_16	A->X (RR)	0.04827	0.23642	5.79317
sky130_fd_sc_hs__buf_2	A->X (RR)	0.04771	0.40709	5.57003
sky130_fd_sc_hs__buf_4	A->X (RR)	0.05710	0.38140	6.20019
sky130_fd_sc_hs__buf_8	A->X (RR)	0.04774	0.28574	5.75489
sky130_fd_sc_hs__bufbuf_16	A->X (RR)	0.14241	0.34255	5.86335
sky130_fd_sc_hs__bufbuf_8	A->X (RR)	0.15296	0.36599	5.78846

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__buf_1	A->X (FF)	0.05777	0.43904	4.17360
sky130_fd_sc_hs__buf_16	A->X (FF)	0.07040	0.41371	4.57712
sky130_fd_sc_hs__buf_2	A->X (FF)	0.06901	0.45646	4.25565
sky130_fd_sc_hs__buf_4	A->X (FF)	0.06786	0.42242	4.23366
sky130_fd_sc_hs__buf_8	A->X (FF)	0.07150	0.43903	4.68376
sky130_fd_sc_hs__bufbuf_16	A->X (FF)	0.17516	0.51931	4.46573
sky130_fd_sc_hs__bufbuf_8	A->X (FF)	0.15356	0.46015	4.21735

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00512	0.00550	0.02220
	A	0.00224	0.00263	0.01939
sky130_fd_sc_hs__buf_16	A	0.04994	0.05363	0.15114
	A	0.03175	0.03546	0.13414
sky130_fd_sc_hs__buf_2	A	0.00741	0.00777	0.02076
	A	0.00437	0.00476	0.01807
sky130_fd_sc_hs__buf_4	A	0.01181	0.01265	0.04512
	A	0.00768	0.00854	0.04196
sky130_fd_sc_hs__buf_8	A	0.02547	0.02735	0.07319
	A	0.01610	0.01810	0.06434
sky130_fd_sc_hs__bufbuf_16	A	0.05982	0.06444	0.08573
	A	0.05644	0.06130	0.08720
sky130_fd_sc_hs__bufbuf_8	A	0.03004	0.03237	0.05571
	A	0.02736	0.02976	0.05343

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__buf_1	A	0.00228	0.00356	0.02331
	A	0.00515	0.00636	0.02597
sky130_fd_sc_hs__buf_16	A	0.03361	0.03972	0.14485
	A	0.05181	0.05791	0.15630
sky130_fd_sc_hs__buf_2	A	0.00415	0.00535	0.02137
	A	0.00720	0.00837	0.02435
sky130_fd_sc_hs__buf_4	A	0.00864	0.01108	0.04482
	A	0.01276	0.01513	0.04763
sky130_fd_sc_hs__buf_8	A	0.01665	0.02056	0.06861
	A	0.02597	0.02981	0.07670
sky130_fd_sc_hs__bufbuf_16	A	0.05851	0.06332	0.08748
	A	0.06187	0.06662	0.08689
sky130_fd_sc_hs__bufbuf_8	A	0.02734	0.03061	0.05463
	A	0.03002	0.03315	0.05603

SKY130_FD_SC_HS__CLKBUFx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00248	1.14914
sky130_fd_sc_hs__clkbuf_16	0.00829	17.44869
sky130_fd_sc_hs__clkbuf_2	0.00250	1.95027
sky130_fd_sc_hs__clkbuf_4	0.00228	4.25314
sky130_fd_sc_hs__clkbuf_8	0.00426	8.24021

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkbuf_1	0.00000	0.03258	0.03258
sky130_fd_sc_hs__clkbuf_16	0.00000	0.32584	0.51938
sky130_fd_sc_hs__clkbuf_2	0.00000	0.04888	0.06500
sky130_fd_sc_hs__clkbuf_4	0.00000	0.08146	0.12985
sky130_fd_sc_hs__clkbuf_8	0.00000	0.16292	0.25969

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)	0.04982	0.51537	5.98433
sky130_fd_sc_hs__clkbuf_16	A->X (RR)	0.06686	0.32297	6.23358
sky130_fd_sc_hs__clkbuf_2	A->X (RR)	0.05517	0.45951	5.83900
sky130_fd_sc_hs__clkbuf_4	A->X (RR)	0.07022	0.43276	6.14427
sky130_fd_sc_hs__clkbuf_8	A->X (RR)	0.06648	0.36555	6.08828

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkbuf_1	A->X (FF)	0.05471	0.55026	5.98315
sky130_fd_sc_hs__clkbuf_16	A->X (FF)	0.08322	0.48460	6.46543
sky130_fd_sc_hs__clkbuf_2	A->X (FF)	0.06487	0.51917	5.56576
sky130_fd_sc_hs__clkbuf_4	A->X (FF)	0.08296	0.54878	6.24132
sky130_fd_sc_hs__clkbuf_8	A->X (FF)	0.07998	0.50565	6.23090

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00497	0.00503	0.01428
	A	0.00196	0.00202	0.01153
sky130_fd_sc_hs__clkbuf_16	A	0.03807	0.04010	0.08282
	A	0.02800	0.03014	0.07636
sky130_fd_sc_hs__clkbuf_2	A	0.00665	0.00667	0.01367
	A	0.00371	0.00375	0.01082
sky130_fd_sc_hs__clkbuf_4	A	0.01016	0.01059	0.01928
	A	0.00741	0.00791	0.01761
sky130_fd_sc_hs__clkbuf_8	A	0.01940	0.02042	0.04047
	A	0.01421	0.01540	0.03762

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkbuf_1	A	0.00190	0.00270	0.01501
	A	0.00490	0.00571	0.01754
sky130_fd_sc_hs__clkbuf_16	A	0.02607	0.03115	0.07987
	A	0.03613	0.04104	0.08849
sky130_fd_sc_hs__clkbuf_2	A	0.00312	0.00384	0.01512
	A	0.00605	0.00676	0.01717
sky130_fd_sc_hs__clkbuf_4	A	0.00670	0.00788	0.02006
	A	0.00947	0.01063	0.02162
sky130_fd_sc_hs__clkbuf_8	A	0.01302	0.01546	0.04108
	A	0.01819	0.02057	0.04396

SKY130_FD_SC_HS__CLKDLYINVx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00235	1.16833
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00238	1.15408
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00241	1.16629
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00234	1.16099
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00237	1.15822
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00241	1.15200

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__clkdlyinv3sd1_1	0.00000	0.06157	0.06500
sky130_fd_sc_hs__clkdlyinv3sd2_1	0.00000	0.03265	0.06492
sky130_fd_sc_hs__clkdlyinv3sd3_1	0.00000	0.03276	0.06492
sky130_fd_sc_hs__clkdlyinv5sd1_1	0.00000	0.11955	0.12298
sky130_fd_sc_hs__clkdlyinv5sd2_1	0.00000	0.03279	0.06506
sky130_fd_sc_hs__clkdlyinv5sd3_1	0.00000	0.03310	0.06527

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)	0.08431	0.71643	8.19456
sky130_fd_sc_hs__clkdlyinv3sd2_1	A->Y (FR)	0.09335	0.73437	8.15848
sky130_fd_sc_hs__clkdlyinv3sd3_1	A->Y (FR)	0.10657	0.76858	8.29387
sky130_fd_sc_hs__clkdlyinv5sd1_1	A->Y (FR)	0.15002	0.77997	8.22838
sky130_fd_sc_hs__clkdlyinv5sd2_1	A->Y (FR)	0.21955	0.86347	8.34292
sky130_fd_sc_hs__clkdlyinv5sd3_1	A->Y (FR)	0.41860	1.07855	8.57752

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A->Y (RF)	0.07840	0.39187	3.57427
sky130_fd_sc_hs__clkdlyinv3sd2_1	A->Y (RF)	0.11947	0.45253	3.77848
sky130_fd_sc_hs__clkdlyinv3sd3_1	A->Y (RF)	0.22376	0.60057	4.11911
sky130_fd_sc_hs__clkdlyinv5sd1_1	A->Y (RF)	0.14465	0.45733	3.59354
sky130_fd_sc_hs__clkdlyinv5sd2_1	A->Y (RF)	0.25201	0.58723	3.93115
sky130_fd_sc_hs__clkdlyinv5sd3_1	A->Y (RF)	0.55220	0.93027	4.41350

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	A	0.00394	0.00484	0.01892
	A	0.00678	0.00769	0.02183
sky130_fd_sc_hs__clkdlyinv3sd2_1	A	0.00422	0.00495	0.01812
	A	0.00712	0.00783	0.02109
sky130_fd_sc_hs__clkdlyinv3sd3_1	A	0.00468	0.00521	0.01785
	A	0.00760	0.00816	0.02079
sky130_fd_sc_hs__clkdlyinv5sd1_1	A	0.00882	0.00945	0.02352
	A	0.01165	0.01232	0.02640
sky130_fd_sc_hs__clkdlyinv5sd2_1	A	0.00975	0.01021	0.02322
	A	0.01264	0.01312	0.02609
sky130_fd_sc_hs__clkdlyinv5sd3_1	A	0.01153	0.01185	0.02428
	A	0.01445	0.01459	0.02724

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkdlyinv3sd1_1	**A**	0.00682	0.00700	0.02128
	A	0.00396	0.00410	0.01815
sky130_fd_sc_hs__clkdlyinv3sd2_1	**A**	0.00729	0.00740	0.02039
	A	0.00439	0.00449	0.01740
sky130_fd_sc_hs__clkdlyinv3sd3_1	**A**	0.00852	0.00867	0.02243
	A	0.00559	0.00574	0.01821
sky130_fd_sc_hs__clkdlyinv5sd1_1	**A**	0.01154	0.01158	0.02580
	A	0.00869	0.00870	0.02270
sky130_fd_sc_hs__clkdlyinv5sd2_1	**A**	0.01265	0.01266	0.02545
	A	0.00977	0.00976	0.02240
sky130_fd_sc_hs__clkdlyinv5sd3_1	**A**	0.01546	0.01527	0.02853
	A	0.01252	0.01256	0.02481

SKY130_FD_SC_HS__CLKINVx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00299	1.56868
sky130_fd_sc_hs__clkinv_16	0.04369	24.97490
sky130_fd_sc_hs__clkinv_2	0.00563	3.01515
sky130_fd_sc_hs__clkinv_4	0.01116	5.92909
sky130_fd_sc_hs__clkinv_8	0.02234	11.21231

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__clkinv_1	0.00000	0.22870	0.45724
sky130_fd_sc_hs__clkinv_16	0.00000	0.39035	0.77809
sky130_fd_sc_hs__clkinv_2	0.00000	0.04879	0.09726
sky130_fd_sc_hs__clkinv_4	0.00000	0.09759	0.19452
sky130_fd_sc_hs__clkinv_8	0.00000	0.19518	0.38905

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)	0.02098	0.68833	10.53980
sky130_fd_sc_hs__clkinv_16	A->Y (FR)	0.01541	0.45204	11.03780
sky130_fd_sc_hs__clkinv_2	A->Y (FR)	0.01969	0.64000	11.02230
sky130_fd_sc_hs__clkinv_4	A->Y (FR)	0.01742	0.56882	10.97650
sky130_fd_sc_hs__clkinv_8	A->Y (FR)	0.01773	0.50875	10.86950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__clkinv_1	A->Y (RF)	0.02070	0.60258	9.28150
sky130_fd_sc_hs__clkinv_16	A->Y (RF)	0.01502	0.31619	9.60879
sky130_fd_sc_hs__clkinv_2	A->Y (RF)	0.01832	0.50445	9.05368
sky130_fd_sc_hs__clkinv_4	A->Y (RF)	0.01635	0.43160	9.11928
sky130_fd_sc_hs__clkinv_8	A->Y (RF)	0.01674	0.36138	8.99437

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	-0.00032	0.00028	0.00426
	A	0.00329	0.00369	0.00819
sky130_fd_sc_hs__clkinv_16	A	-0.01040	0.00019	0.02099
	A	0.04241	0.05400	0.07499
sky130_fd_sc_hs__clkinv_2	A	-0.00091	-0.00015	0.00299
	A	0.00591	0.00671	0.01001
sky130_fd_sc_hs__clkinv_4	A	-0.00201	-0.00014	0.00668
	A	0.01148	0.01345	0.02047
sky130_fd_sc_hs__clkinv_8	A	-0.00399	-0.00077	0.01708
	A	0.02305	0.02628	0.04504

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__clkinv_1	A	0.00277	0.00281	0.00346
	A	-0.00084	-0.00083	-0.00025
sky130_fd_sc_hs__clkinv_16	A	0.03812	0.03917	0.03826
	A	-0.01480	-0.01380	-0.00408
sky130_fd_sc_hs__clkinv_2	A	0.00546	0.00559	0.00692
	A	-0.00136	-0.00129	-0.00021
sky130_fd_sc_hs__clkinv_4	A	0.00990	0.01016	0.01327
	A	-0.00358	-0.00336	-0.00087
sky130_fd_sc_hs__clkinv_8	A	0.01956	0.02122	0.02780
	A	-0.00750	-0.00612	-0.00062

SKY130_FD_SC_HS__CONB

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00158	1.15422
sky130_fd_sc_hs__dlymetal6s4s_1	0.00157	1.14949
sky130_fd_sc_hs__dlymetal6s6s_1	0.00157	1.14857

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlymetal6s2s_1	0.00000	0.06448	0.09775
sky130_fd_sc_hs__dlymetal6s4s_1	0.00000	0.06448	0.09775
sky130_fd_sc_hs__dlymetal6s6s_1	0.00000	0.06448	0.09775

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)**	0.05775	0.51920	5.72866
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (RR)**	0.11439	0.57410	5.68190
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (RR)**	0.16378	0.62086	5.72357

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlymetal6s2s_1	**A->X (FF)**	0.08791	0.54803	4.69684
sky130_fd_sc_hs__dlymetal6s4s_1	**A->X (FF)**	0.17491	0.62082	4.65423
sky130_fd_sc_hs__dlymetal6s6s_1	**A->X (FF)**	0.25666	0.70431	4.73547

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01311	0.01305	0.02262
	A	0.01120	0.01114	0.02077
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01310	0.01309	0.02552
	A	0.01119	0.01119	0.02386
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01313	0.01310	0.01931
	A	0.01122	0.01120	0.01749

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlymetal6s2s_1	A	0.01117	0.01121	0.01674
	A	0.01307	0.01311	0.01850
sky130_fd_sc_hs__dlymetal6s4s_1	A	0.01119	0.01119	0.01881
	A	0.01310	0.01310	0.02064
sky130_fd_sc_hs__dlymetal6s6s_1	A	0.01123	0.01133	0.01735
	A	0.01315	0.01324	0.01893

SKY130_FD_SC_HS__DFBBNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00172	0.00165	0.00513	0.00277	1.14531	1.05842
sky130_fd_sc_hs__dfbbn_2	0.00172	0.00167	0.00509	0.00277	2.19434	2.15374

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbn_1	0.00000	0.51397	1.13475
sky130_fd_sc_hs__dfbbn_2	0.00000	0.44501	0.99702

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)	0.33826	1.02088	8.76947
	SET_B->Q (FR)	0.17094	0.87910	8.71241
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FR)	0.37551	0.95597	8.76848
	SET_B->Q (FR)	0.19273	0.81134	8.72802

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)	0.33843	0.76058	4.62415
	RESET_B->Q (FF)	0.20944	0.65685	4.49343
	SET_B->Q (RF)	0.11393	0.34294	1.67174
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q (FF)	0.36699	0.75214	4.53729
	RESET_B->Q (FF)	0.23609	0.64996	4.43751
	SET_B->Q (RF)	0.13993	0.34957	1.70910

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)	0.31239	1.02270	8.85103
	RESET_B->Q_N (FR)	0.18487	0.92491	8.73979
	SET_B->Q_N (RR)	0.08882	0.61175	6.12586
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FR)	0.31627	0.92338	8.81667
	RESET_B->Q_N (FR)	0.18798	0.82481	8.73191
	SET_B->Q_N (RR)	0.09139	0.52511	6.16665

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)	0.27246	0.74962	4.51513
	SET_B->Q_N (FF)	0.11063	0.60693	4.71875
sky130_fd_sc_hs__dfbbn_2	CLK_N->Q_N (FF)	0.29651	0.75718	4.50715
	SET_B->Q_N (FF)	0.11925	0.60139	4.77163

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)	0.01441	0.10550	2.71514
	setup	CLK_N (F)	0.09017	-0.02428	-2.70317
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01484	0.10937	2.71705
	setup	CLK_N (F)	0.08519	-0.02833	-2.70751

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)	-0.11807	-0.16673	-0.69960
	setup	CLK_N (F)	0.14224	0.19519	0.70920
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.11814	-0.16705	-0.69589
	setup	CLK_N (F)	0.14432	0.19500	0.70964

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)	0.01441	0.10550	2.71514
	setup	CLK_N (F)	0.09017	-0.02428	-2.70317
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	0.01484	0.10937	2.71705
	setup	CLK_N (F)	0.08519	-0.02833	-2.70751

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)	-0.11807	-0.16673	-0.69960
	setup	CLK_N (F)	0.14224	0.19519	0.70920
sky130_fd_sc_hs__dfbbn_2	hold	CLK_N (F)	-0.11814	-0.16705	-0.69589
	setup	CLK_N (F)	0.14432	0.19500	0.70964

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)	0.08985	-0.02000	-2.65439
	removal	CLK_N (F)	0.02303	0.11857	2.68489
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08603	-0.02556	-2.65827
	removal	CLK_N (F)	0.02363	0.11844	2.68737

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)	0.08985	-0.02000	-2.65439
	removal	CLK_N (F)	0.02303	0.11857	2.68489
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	0.08603	-0.02556	-2.65827
	removal	CLK_N (F)	0.02363	0.11844	2.68737

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 ()	0.18299	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.15915	0.63599	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	RESET_B ()	0.19253	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.16630	0.63599	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)	-0.03000	-0.15201	-2.52690
	removal	CLK_N (F)	0.03926	0.16468	2.92762
	hold	RESET_B (R)	-0.03941	-0.07961	-0.38164
	setup	RESET_B (R)	0.08991	0.12297	0.64014
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03048	-0.15401	-2.28090
	removal	CLK_N (F)	0.04325	0.16468	2.93055
	hold	RESET_B (R)	-0.05437	-0.09959	-0.48406
	setup	RESET_B (R)	0.09695	0.14504	0.80596

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)	-0.03000	-0.15201	-2.52690
	removal	CLK_N (F)	0.03926	0.16468	2.92762
	hold	RESET_B (R)	-0.04056	-0.07961	-0.38164
	hold	RESET_B (R)	-0.03941	-0.08122	-0.38196
	setup	RESET_B (R)	0.08991	0.12297	0.63511
	setup	RESET_B (R)	0.06310	0.10419	0.64014
sky130_fd_sc_hs__dfbbn_2	recovery	CLK_N (F)	-0.03048	-0.15401	-2.28090
	removal	CLK_N (F)	0.04325	0.16468	2.93055
	hold	RESET_B (R)	-0.05585	-0.10966	-0.51277
	hold	RESET_B (R)	-0.05437	-0.09959	-0.48406
	setup	RESET_B (R)	0.09695	0.14504	0.79082
	setup	RESET_B (R)	0.06805	0.13375	0.80596

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 ()	0.13054	0.63599	16.50020
	min_pulse_width	SET_B ()	0.11623	0.63599	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	SET_B ()	0.15438	0.63599	16.50020
	min_pulse_width	SET_B ()	0.13054	0.63599	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 ()	0.15200	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.12815	0.63599	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.14723	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.12815	0.63599	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 ()	0.14723	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.18538	0.63599	16.50020
sky130_fd_sc_hs__dfbbn_2	min_pulse_width	CLK_N ()	0.17107	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.19491	0.63599	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	0.01022	0.01070	0.02014
	CLK_N	0.01187	0.01236	0.02143
	SET_B	0.01060	0.01147	0.03128
	SET_B	0.01372	0.01459	0.03406
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01244	0.01307	0.02279
	CLK_N	0.01412	0.01472	0.02393
	SET_B	0.01271	0.01369	0.03396
	SET_B	0.01583	0.01682	0.03650

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01116	0.01174	0.02044
	CLK_N	0.01267	0.01326	0.02179
	RESET_B	0.01320	0.01357	0.01927
	RESET_B	0.01411	0.01448	0.02000
	SET_B	0.01389	0.01383	0.03033
	SET_B	0.01076	0.01068	0.02718
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01326	0.01411	0.02307
	CLK_N	0.01475	0.01559	0.02424
	RESET_B	0.01534	0.01594	0.02222
	RESET_B	0.01625	0.01685	0.02264
	SET_B	0.01601	0.01616	0.03220
	SET_B	0.01288	0.01302	0.02906

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01117	0.01176	0.02081
	CLK_N	0.01268	0.01327	0.02208
	RESET_B	0.01321	0.01358	0.01958
	RESET_B	0.01412	0.01448	0.02034
	SET_B	0.01390	0.01382	0.03055
	SET_B	0.01077	0.01068	0.02749
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01327	0.01405	0.02338
	CLK_N	0.01476	0.01560	0.02452
	RESET_B	0.01535	0.01597	0.02244
	RESET_B	0.01626	0.01687	0.02296
	SET_B	0.01602	0.01616	0.03260
	SET_B	0.01289	0.01303	0.02961

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbn_1	CLK_N	0.01020	0.01068	0.01980
	CLK_N	0.01186	0.01234	0.02125
	SET_B	0.01057	0.01143	0.03085
	SET_B	0.01368	0.01454	0.03371
sky130_fd_sc_hs__dfbbn_2	CLK_N	0.01242	0.01306	0.02216
	CLK_N	0.01410	0.01473	0.02354
	SET_B	0.01268	0.01365	0.03333
	SET_B	0.01579	0.01677	0.03605

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)	0.00816	0.00803	0.01375
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00647	0.00634	0.01206
	(CLK_N * !SET_B * Q * !Q_N)	0.00529	0.00529	0.01014
	(CLK_N * !SET_B * Q * !Q_N)	0.00316	0.00316	0.00802
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00455	0.00454	0.00936
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00245	0.00245	0.00727
	!CLK_N	0.00286	0.00294	0.00824
	!CLK_N	0.00077	0.00084	0.00615
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00820	0.00806	0.01380
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00650	0.00637	0.01211
	(CLK_N * !SET_B * Q * !Q_N)	0.00530	0.00530	0.01016
	(CLK_N * !SET_B * Q * !Q_N)	0.00318	0.00317	0.00804
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00453	0.00452	0.00935
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00243	0.00243	0.00725
	!CLK_N	0.00286	0.00294	0.00824
	!CLK_N	0.00076	0.00083	0.00615

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)	0.00763	0.00755	0.01265
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00930	0.00923	0.01433
	(CLK_N * !SET_B * Q * !Q_N)	0.00203	0.00203	0.00630
	(CLK_N * !SET_B * Q * !Q_N)	0.00415	0.00416	0.00842
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00273	0.00275	0.00708
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00481	0.00484	0.00917
	!CLK_N	0.00103	0.00109	0.00599
	!CLK_N	0.00312	0.00318	0.00808
sky130_fd_sc_hs__dfbbn_2	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00761	0.00753	0.01264
	(CLK_N * RESET_B * SET_B * Q * !Q_N) + (CLK_N * RESET_B * SET_B * !Q * Q_N)	0.00929	0.00922	0.01433
	(CLK_N * !SET_B * Q * !Q_N)	0.00197	0.00198	0.00626
	(CLK_N * !SET_B * Q * !Q_N)	0.00409	0.00411	0.00838
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00271	0.00274	0.00707
	(CLK_N * !RESET_B * SET_B * !Q * Q_N)	0.00480	0.00483	0.00917
	!CLK_N	0.00101	0.00107	0.00598
	!CLK_N	0.00310	0.00317	0.00807

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)	0.00884	0.00875	0.02019
	(CLK_N * D * SET_B * !Q * Q_N)	0.00687	0.00678	0.01822
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00520	0.00526	0.01661
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00283	0.00288	0.01424
	(!SET_B * Q * !Q_N)	0.00523	0.00528	0.01695
	(!SET_B * Q * !Q_N)	0.00280	0.00284	0.01451
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00888	0.00879	0.02029
	(CLK_N * D * SET_B * !Q * Q_N)	0.00688	0.00678	0.01828
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00519	0.00525	0.01667
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00279	0.00284	0.01426
	(!SET_B * Q * !Q_N)	0.00524	0.00529	0.01700
	(!SET_B * Q * !Q_N)	0.00278	0.00282	0.01454

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)	0.00774	0.00806	0.02013
	(CLK_N * D * SET_B * !Q * Q_N)	0.00971	0.01003	0.02211
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00259	0.00297	0.01470
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00498	0.00535	0.01707
	(!SET_B * Q * !Q_N)	0.00173	0.00215	0.01400
	(!SET_B * Q * !Q_N)	0.00418	0.00461	0.01643
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * SET_B * !Q * Q_N)	0.00777	0.00809	0.02021
	(CLK_N * D * SET_B * !Q * Q_N)	0.00977	0.01010	0.02221
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00262	0.00300	0.01476
	(CLK_N * !D * SET_B * !Q * Q_N) + (!CLK_N * SET_B * !Q * Q_N)	0.00502	0.00541	0.01717
	(!SET_B * Q * !Q_N)	0.00173	0.00216	0.01403
	(!SET_B * Q * !Q_N)	0.00421	0.00464	0.01649

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)	0.00264	0.00264	0.00263
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00275	-0.00275	-0.00274
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00830	0.00826	0.02657
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00240	0.00233	0.02065
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00261	0.00263	0.00260
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00273	-0.00274	-0.00273
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00829	0.00823	0.02656
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00246	0.00240	0.02070

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)	-0.00260	-0.00264	-0.00262
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00278	0.00279	0.00276
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00086	0.00158	0.02174
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00674	0.00751	0.02766
sky130_fd_sc_hs__dfbbn_2	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	-0.00255	-0.00259	-0.00260
	(CLK_N * D * RESET_B * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00273	0.00274	0.00274
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00083	0.00155	0.02170
	(CLK_N * !D * RESET_B * Q * !Q_N)	0.00665	0.00743	0.02757

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)**	0.01510	0.01527	0.03278
	(D * RESET_B * SET_B * !Q * Q_N)	0.01235	0.01250	0.03002
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00964	0.00985	0.02677
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00649	0.00668	0.02360
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01142	0.01158	0.02913
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00827	0.00842	0.02596
	(!D * SET_B * !Q * Q_N)	0.00902	0.00909	0.02627
	(!D * SET_B * !Q * Q_N)	0.00586	0.00592	0.02311
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01586	0.01598	0.03291
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01230	0.01239	0.02934
	(!D * !SET_B * Q * !Q_N)	0.01011	0.01025	0.02729
	(!D * !SET_B * Q * !Q_N)	0.00698	0.00709	0.02415

sky130_fd_sc_hs__dfbbn_2	**(D * RESET_B * SET_B * !Q * Q_N)**	0.01515	0.01532	0.03285
	(D * RESET_B * SET_B * !Q * Q_N)	0.01239	0.01254	0.03008
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00963	0.00984	0.02675
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00648	0.00667	0.02358
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01143	0.01158	0.02912
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00828	0.00843	0.02595
	(!D * SET_B * !Q * Q_N)	0.00903	0.00910	0.02628
	(!D * SET_B * !Q * Q_N)	0.00588	0.00593	0.02311
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01586	0.01598	0.03291
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01231	0.01241	0.02934
	(!D * !SET_B * Q * !Q_N)	0.01006	0.01008	0.02724
	(!D * !SET_B * Q * !Q_N)	0.00694	0.00694	0.02409

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)	0.00738	0.00783	0.02542
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01054	0.01099	0.02860
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01032	0.01067	0.02811
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01348	0.01385	0.03127
	(!D * SET_B * !Q * Q_N)	0.00792	0.00836	0.02583
	(!D * SET_B * !Q * Q_N)	0.01108	0.01153	0.02900
	(!D * !SET_B * Q * !Q_N)	0.01015	0.01055	0.02845
	(!D * !SET_B * Q * !Q_N)	0.01329	0.01370	0.03160
sky130_fd_sc_hs__dfbbn_2	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00738	0.00783	0.02543
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.01054	0.01099	0.02859
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01029	0.01065	0.02799
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01345	0.01382	0.03115
	(!D * SET_B * !Q * Q_N)	0.00790	0.00834	0.02581
	(!D * SET_B * !Q * Q_N)	0.01106	0.01152	0.02898
	(!D * !SET_B * Q * !Q_N)	0.01019	0.01058	0.02849
	(!D * !SET_B * Q * !Q_N)	0.01333	0.01374	0.03164

SKY130_FD_SC_HS__DFBBP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00150	0.00181	0.00595	0.00274	1.16156	1.03449

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfbbp_1	0.00000	0.51397	1.13475

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)	0.32243	0.78673	5.92024
	SET_B->Q (FR)	0.15460	0.86166	8.74768

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfbbp_1	CLK->Q (RF)	0.24726	0.44851	1.71121
	RESET_B->Q (FF)	0.20294	0.64840	4.53051
	SET_B->Q (RF)	0.11665	0.33728	1.70238

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)	0.22261	0.70492	5.79388
	RESET_B->Q_N (FR)	0.17944	0.91273	8.63463
	SET_B->Q_N (RR)	0.09246	0.60247	6.00304

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)	0.25866	0.50561	1.49901
	SET_B->Q_N (FF)	0.10009	0.57990	4.58383

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)	-0.02913	-0.06778	-0.46780
	setup	CLK (R)	0.06961	0.08950	0.50013

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)	-0.08241	-0.23428	-3.54632
	setup	CLK (R)	0.13211	0.27492	3.61353

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)	-0.02913	-0.06778	-0.46780
	setup	CLK (R)	0.06961	0.08950	0.50013

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)	-0.08241	-0.23428	-3.54632
	setup	CLK (R)	0.13211	0.27492	3.61353

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)	0.07839	0.09354	0.34879
	removal	CLK (R)	-0.03265	-0.05376	-0.25474

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)	0.07839	0.09354	0.34879
	removal	CLK (R)	-0.03265	-0.05376	-0.25474

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 ()	0.16153	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.16630	0.63599	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)	0.00458	0.00662	1.25538
	removal	CLK (R)	0.05735	0.07601	0.11843
	hold	RESET_B (R)	-0.04239	-0.08674	-0.40899
	setup	RESET_B (R)	0.08207	0.12362	0.65417

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)	0.00458	0.00662	1.25538
	removal	CLK (R)	0.05735	0.07601	0.11843
	hold	RESET_B (R)	-0.04301	-0.08674	-0.40899
	hold	RESET_B (R)	-0.04239	-0.08741	-0.40951
	setup	RESET_B (R)	0.07844	0.11698	0.65417
	setup	RESET_B (R)	0.08207	0.12362	0.65163

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 ()	0.10431	0.63599	16.50020
	min_pulse_width	SET_B ()	0.11385	0.63599	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 ()	0.08047	0.63599	16.50020
	min_pulse_width	CLK ()	0.11146	0.63599	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 ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.19014	0.63599	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	0.01199	0.01232	0.02126
	CLK	0.01040	0.01067	0.01974
	SET_B	0.01048	0.01120	0.03153
	SET_B	0.01389	0.01462	0.03460

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01198	0.01222	0.02123
	CLK	0.01022	0.01047	0.01949
	RESET_B	0.01213	0.01248	0.01835
	RESET_B	0.01307	0.01341	0.01913
	SET_B	0.01325	0.01309	0.02987
	SET_B	0.00982	0.00965	0.02643

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01200	0.01227	0.02156
	CLK	0.01024	0.01048	0.01982
	RESET_B	0.01214	0.01248	0.01835
	RESET_B	0.01308	0.01342	0.01928
	SET_B	0.01326	0.01310	0.03007
	SET_B	0.00984	0.00965	0.02673

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.01197	0.01225	0.02094
	CLK	0.01038	0.01065	0.01941
	SET_B	0.01044	0.01121	0.03091
	SET_B	0.01385	0.01460	0.03423

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	0.00192	0.00209	0.00790
	CLK	0.00009	0.00024	0.00607
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00772	0.00767	0.01341
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00609	0.00603	0.01177
	(!CLK * !SET_B * Q * !Q_N)	0.00448	0.00456	0.00965
	(!CLK * !SET_B * Q * !Q_N)	0.00243	0.00251	0.00761
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00364	0.00372	0.00877
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00161	0.00169	0.00674

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfbbp_1	CLK	-0.00017	0.00003	0.00561
	CLK	0.00166	0.00186	0.00743
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00574	0.00572	0.01105
	(!CLK * RESET_B * SET_B * Q * !Q_N) + (!CLK * RESET_B * SET_B * !Q * Q_N)	0.00737	0.00734	0.01269
	(!CLK * !SET_B * Q * !Q_N)	0.00135	0.00144	0.00595
	(!CLK * !SET_B * Q * !Q_N)	0.00340	0.00348	0.00799
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00211	0.00221	0.00682
	(!CLK * !RESET_B * SET_B * !Q * Q_N)	0.00414	0.00424	0.00884

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)	0.00472	0.00477	0.01635
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00249	0.00252	0.01411
	(!SET_B * Q * !Q_N)	0.00513	0.00528	0.01708
	(!SET_B * Q * !Q_N)	0.00284	0.00297	0.01479
	(!CLK * D * SET_B * !Q * Q_N)	0.00892	0.00877	0.02040
	(!CLK * D * SET_B * !Q * Q_N)	0.00709	0.00692	0.01856

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)	0.00250	0.00288	0.01471
	(CLK * SET_B * !Q * Q_N) + (!CLK * !D * SET_B * !Q * Q_N)	0.00474	0.00512	0.01696
	(!SET_B * Q * !Q_N)	0.00124	0.00167	0.01365
	(!SET_B * Q * !Q_N)	0.00355	0.00398	0.01595
	(!CLK * D * SET_B * !Q * Q_N)	0.00654	0.00682	0.01900
	(!CLK * D * SET_B * !Q * Q_N)	0.00837	0.00865	0.02084

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)	0.00263	0.00268	0.00265
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	-0.00351	-0.00356	-0.00353
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00691	0.00687	0.02542
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00022	0.00014	0.01872

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)	-0.00260	-0.00266	-0.00264
	(CLK * RESET_B * Q * !Q_N) + (!CLK * D * RESET_B * Q * !Q_N)	0.00355	0.00357	0.00355
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00156	0.00230	0.02245
	(!CLK * !D * RESET_B * Q * !Q_N)	0.00823	0.00900	0.02914

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)	0.01110	0.01128	0.02838
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00775	0.00790	0.02503
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01332	0.01338	0.03066
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01017	0.01022	0.02750
	(!D * SET_B * !Q * Q_N)	0.01115	0.01127	0.02847
	(!D * SET_B * !Q * Q_N)	0.00780	0.00792	0.02511
	(!D * !SET_B * Q * !Q_N)	0.01396	0.01417	0.03145
	(!D * !SET_B * Q * !Q_N)	0.01040	0.01060	0.02788

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)	0.01170	0.01200	0.03015
	(D * RESET_B * SET_B * !Q * Q_N)	0.01525	0.01556	0.03369
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00591	0.00638	0.02418
	(D * RESET_B * Q * !Q_N) + (D * !RESET_B * !SET_B * Q * !Q_N)	0.00927	0.00975	0.02754
	(D * !RESET_B * SET_B * !Q * Q_N)	0.00739	0.00778	0.02591
	(D * !RESET_B * SET_B * !Q * Q_N)	0.01055	0.01094	0.02907
	(!D * SET_B * !Q * Q_N)	0.00577	0.00621	0.02396
	(!D * SET_B * !Q * Q_N)	0.00913	0.00957	0.02732
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01243	0.01299	0.03133
	(!D * RESET_B * SET_B * Q * !Q_N)	0.01561	0.01617	0.03450
	(!D * !SET_B * Q * !Q_N)	0.00798	0.00855	0.02681
	(!D * !SET_B * Q * !Q_N)	0.01156	0.01212	0.03038

SKY130_FD_SC_HS__DFRBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00178	0.00538	0.00280	1.18800	1.15748
sky130_fd_sc_hs__dfrbp_2	0.00163	0.00519	0.00280	2.30867	2.25366

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrbp_1	0.00000	0.21424	0.43162
sky130_fd_sc_hs__dfrbp_2	0.00000	0.19053	0.29326

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)	0.19910	0.66333	5.89065
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RR)	0.23419	0.62081	6.45825

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrbp_1	CLK->Q (RF)	0.18211	0.38247	1.55174
	RESET_B->Q (FF)	0.26064	0.74543	4.96824
sky130_fd_sc_hs__dfrbp_2	CLK->Q (RF)	0.20783	0.38063	1.61937
	RESET_B->Q (FF)	0.30788	0.77344	5.14006

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)	0.15715	0.63864	5.84517
	RESET_B->Q_N (FR)	0.23510	0.99631	9.24829
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RR)	0.15472	0.53733	5.67975
	RESET_B->Q_N (FR)	0.25476	0.92779	9.19552

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)	0.15014	0.40262	1.58166
sky130_fd_sc_hs__dfrbp_2	CLK->Q_N (RF)	0.15243	0.40131	1.64497

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)	-0.04367	-0.11128	-0.72198
	setup	CLK (R)	0.08680	0.14699	0.74321
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04329	-0.11423	-0.75092
	setup	CLK (R)	0.10157	0.15401	0.77923

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)	-0.06322	-0.22350	-3.70415
	setup	CLK (R)	0.14527	0.30672	3.77804
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08134	-0.25175	-3.78396
	setup	CLK (R)	0.16675	0.32274	3.85957

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)	-0.04367	-0.11128	-0.72198
	setup	CLK (R)	0.08680	0.14699	0.74321
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.04329	-0.11423	-0.75092
	setup	CLK (R)	0.10157	0.15401	0.77923

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)	-0.06322	-0.22350	-3.70415
	setup	CLK (R)	0.14527	0.30672	3.77804
sky130_fd_sc_hs__dfrbp_2	hold	CLK (R)	-0.08134	-0.25175	-3.78396
	setup	CLK (R)	0.16675	0.32274	3.85957

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)	0.09659	0.15005	0.93243
	removal	CLK (R)	-0.07061	-0.13301	-0.92581
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.11034	0.15619	0.95438
	removal	CLK (R)	-0.07812	-0.14146	-0.94777

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)	0.09659	0.15005	0.93243
	removal	CLK (R)	-0.07061	-0.13301	-0.92581
sky130_fd_sc_hs__dfrbp_2	recovery	CLK (R)	0.11034	0.15619	0.95438
	removal	CLK (R)	-0.07812	-0.14146	-0.94777

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 ()	0.14008	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11623	0.63599	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	RESET_B ()	0.15200	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.12339	0.63599	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 ()	0.10908	0.63599	16.50020
	min_pulse_width	CLK ()	0.07093	0.63599	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.08047	0.63599	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 ()	0.14246	0.63599	16.50020
	min_pulse_width	CLK ()	0.18299	0.63599	16.50020
sky130_fd_sc_hs__dfrbp_2	min_pulse_width	CLK ()	0.15676	0.63599	16.50020
	min_pulse_width	CLK ()	0.18776	0.63599	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	0.01115	0.01133	0.02025
	CLK	0.00946	0.00961	0.01864
sky130_fd_sc_hs__dfrbp_2	CLK	0.01234	0.01279	0.02165
	CLK	0.01068	0.01112	0.02005

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01133	0.01166	0.02049
	CLK	0.00960	0.00990	0.01878
	RESET_B	0.00865	0.00871	0.01554
	RESET_B	0.01219	0.01226	0.01867
sky130_fd_sc_hs__dfrbp_2	CLK	0.01257	0.01323	0.02223
	CLK	0.01091	0.01157	0.02067
	RESET_B	0.01089	0.01137	0.01791
	RESET_B	0.01418	0.01465	0.02090

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01134	0.01166	0.02087
	CLK	0.00961	0.00991	0.01927
	RESET_B	0.00866	0.00872	0.01577
	RESET_B	0.01220	0.01226	0.01891
sky130_fd_sc_hs__dfrbp_2	CLK	0.01258	0.01324	0.02264
	CLK	0.01092	0.01158	0.02106
	RESET_B	0.01091	0.01128	0.01995
	RESET_B	0.01420	0.01466	0.02151

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	CLK	0.01114	0.01129	0.01987
	CLK	0.00945	0.00959	0.01821
sky130_fd_sc_hs__dfrbp_2	CLK	0.01233	0.01280	0.02147
	CLK	0.01068	0.01111	0.01988

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00305	0.00311	0.00836
	(CLK * RESET_B)	0.00067	0.00071	0.00598
	(CLK * !RESET_B)	0.00033	0.00033	0.00032
	(CLK * !RESET_B)	-0.00102	-0.00101	-0.00102
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00847	0.00851	0.01423
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00598	0.00600	0.01173
	(!CLK * !RESET_B)	0.00033	0.00033	0.00032
	(!CLK * !RESET_B)	-0.00101	-0.00102	-0.00102
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00350	0.00357	0.00866
	(CLK * RESET_B)	0.00142	0.00148	0.00657
	(CLK * !RESET_B)	0.00038	0.00037	0.00037
	(CLK * !RESET_B)	-0.00087	-0.00086	-0.00088
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.01036	0.01045	0.01601
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00840	0.00848	0.01405
	(!CLK * !RESET_B)	0.00037	0.00038	0.00037
	(!CLK * !RESET_B)	-0.00086	-0.00087	-0.00088

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrbp_1	(CLK * RESET_B)	0.00035	0.00040	0.00533
	(CLK * RESET_B)	0.00273	0.00279	0.00772
	(CLK * !RESET_B)	-0.00032	-0.00032	-0.00032
	(CLK * !RESET_B)	0.00103	0.00103	0.00103
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00514	0.00528	0.01134
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00765	0.00778	0.01384
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00032
	(!CLK * !RESET_B)	0.00104	0.00104	0.00103
sky130_fd_sc_hs__dfrbp_2	(CLK * RESET_B)	0.00063	0.00067	0.00541
	(CLK * RESET_B)	0.00272	0.00275	0.00750
	(CLK * !RESET_B)	-0.00037	-0.00037	-0.00036
	(CLK * !RESET_B)	0.00089	0.00090	0.00088
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00624	0.00623	0.01185
	(!CLK * RESET_B * Q * !Q_N) + (!CLK * RESET_B * !Q * Q_N)	0.00821	0.00819	0.01381
	(!CLK * !RESET_B)	-0.00037	-0.00037	-0.00036
	(!CLK * !RESET_B)	0.00089	0.00089	0.00088

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)	0.00577	0.00570	0.01008
	(CLK * D * !Q * Q_N)	-0.00113	-0.00124	0.00315
	(CLK * !D * !Q * Q_N)	0.00277	0.00281	0.00278
	(CLK * !D * !Q * Q_N)	-0.00298	-0.00300	-0.00299
	(!CLK * D * !Q * Q_N)	0.01146	0.01110	0.01797
	(!CLK * D * !Q * Q_N)	0.00444	0.00405	0.01093
	(!CLK * !D * !Q * Q_N)	0.00270	0.00273	0.00271
	(!CLK * !D * !Q * Q_N)	-0.00305	-0.00306	-0.00305
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	0.00642	0.00640	0.01064
	(CLK * D * !Q * Q_N)	-0.00016	-0.00024	0.00404
	(CLK * !D * !Q * Q_N)	0.00302	0.00305	0.00302
	(CLK * !D * !Q * Q_N)	-0.00262	-0.00263	-0.00262
	(!CLK * D * !Q * Q_N)	0.01353	0.01320	0.01989
	(!CLK * D * !Q * Q_N)	0.00707	0.00671	0.01343
	(!CLK * !D * !Q * Q_N)	0.00298	0.00301	0.00298
	(!CLK * !D * !Q * Q_N)	-0.00266	-0.00268	-0.00266

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)	-0.00167	-0.00169	0.00279
	(CLK * D * !Q * Q_N)	0.00524	0.00525	0.00972
	(CLK * !D * !Q * Q_N)	-0.00271	-0.00277	-0.00278
	(CLK * !D * !Q * Q_N)	0.00301	0.00300	0.00299
	(!CLK * D * !Q * Q_N)	0.00388	0.00346	0.01145
	(!CLK * D * !Q * Q_N)	0.01088	0.01049	0.01850
	(!CLK * !D * !Q * Q_N)	-0.00264	-0.00273	-0.00271
	(!CLK * !D * !Q * Q_N)	0.00307	0.00309	0.00306
sky130_fd_sc_hs__dfrbp_2	(CLK * D * !Q * Q_N)	-0.00168	-0.00168	0.00273
	(CLK * D * !Q * Q_N)	0.00491	0.00494	0.00934
	(CLK * !D * !Q * Q_N)	-0.00297	-0.00303	-0.00302
	(CLK * !D * !Q * Q_N)	0.00267	0.00264	0.00263
	(!CLK * D * !Q * Q_N)	0.00479	0.00448	0.01184
	(!CLK * D * !Q * Q_N)	0.01129	0.01095	0.01833
	(!CLK * !D * !Q * Q_N)	-0.00293	-0.00301	-0.00298
	(!CLK * !D * !Q * Q_N)	0.00271	0.00269	0.00267

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)	0.01056	0.01062	0.02722
	(D * RESET_B * Q * !Q_N)	0.00713	0.00718	0.02380
	(D * !RESET_B * !Q * Q_N)	0.01092	0.01097	0.02761
	(D * !RESET_B * !Q * Q_N)	0.00750	0.00753	0.02418
	(!D * !Q * Q_N)	0.01092	0.01096	0.02760
	(!D * !Q * Q_N)	0.00750	0.00753	0.02418
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00955	0.00965	0.02636
	(D * RESET_B * Q * !Q_N)	0.00621	0.00631	0.02302
	(D * !RESET_B * !Q * Q_N)	0.00960	0.00971	0.02642
	(D * !RESET_B * !Q * Q_N)	0.00626	0.00637	0.02310
	(!D * !Q * Q_N)	0.00960	0.00971	0.02641
	(!D * !Q * Q_N)	0.00626	0.00636	0.02308

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)	0.00597	0.00645	0.02362
	(D * RESET_B * Q * !Q_N)	0.00939	0.00987	0.02705
	(D * RESET_B * !Q * Q_N)	0.01082	0.01119	0.02896
	(D * RESET_B * !Q * Q_N)	0.01412	0.01451	0.03227
	(D * !RESET_B * !Q * Q_N)	0.00554	0.00601	0.02321
	(D * !RESET_B * !Q * Q_N)	0.00896	0.00944	0.02664
	(!D * RESET_B * Q * !Q_N)	0.01155	0.01215	0.02982
	(!D * RESET_B * Q * !Q_N)	0.01507	0.01569	0.03336
	(!D * !Q * Q_N)	0.00554	0.00601	0.02323
	(!D * !Q * Q_N)	0.00896	0.00944	0.02666
sky130_fd_sc_hs__dfrbp_2	(D * RESET_B * Q * !Q_N)	0.00602	0.00648	0.02369
	(D * RESET_B * Q * !Q_N)	0.00936	0.00981	0.02703
	(D * RESET_B * !Q * Q_N)	0.01321	0.01351	0.03123
	(D * RESET_B * !Q * Q_N)	0.01666	0.01695	0.03467
	(D * !RESET_B * !Q * Q_N)	0.00596	0.00643	0.02367
	(D * !RESET_B * !Q * Q_N)	0.00930	0.00976	0.02701
	(!D * RESET_B * Q * !Q_N)	0.01259	0.01313	0.03089
	(!D * RESET_B * Q * !Q_N)	0.01580	0.01634	0.03409
	(!D * !Q * Q_N)	0.00596	0.00641	0.02367
	(!D * !Q * Q_N)	0.00930	0.00976	0.02701

SKY130_FD_SC_HS__DFRTN

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00175	0.00520	0.00267	1.10883

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfrtn_1	0.00000	0.20267	0.39857

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)	0.21857	0.92000	8.68542

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)	0.17386	0.59900	4.37340
	RESET_B->Q (FF)	0.24154	0.71899	4.78749

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)	0.02779	0.11197	2.58471
	setup	CLK_N (F)	0.04130	-0.04883	-2.53480

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)	-0.04727	-0.09897	-0.59601
	setup	CLK_N (F)	0.17876	0.20601	0.64468

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)	0.02779	0.11197	2.58471
	setup	CLK_N (F)	0.04130	-0.04883	-2.53480

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)	-0.04727	-0.09897	-0.59601
	setup	CLK_N (F)	0.17876	0.20601	0.64468

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)	0.05045	-0.05160	-2.38070
	removal	CLK_N (F)	-0.01200	0.07389	2.38813

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)	0.05045	-0.05160	-2.38070
	removal	CLK_N (F)	-0.01200	0.07389	2.38813

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 ()	0.10908	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.13769	0.63599	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 ()	0.10193	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.17107	0.63599	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 ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.11146	0.63599	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	0.01758	0.01866	0.03716
	CLK_N	0.02077	0.02186	0.04043

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtn_1	CLK_N	0.01621	0.01685	0.03479
	CLK_N	0.01931	0.01995	0.03786
	RESET_B	0.01553	0.01534	0.02828
	RESET_B	0.02214	0.02191	0.03462

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)	0.00839	0.00843	0.01408
	(CLK_N * RESET_B)	0.00620	0.00624	0.01189
	(CLK_N * !RESET_B)	0.00033	0.00034	0.00033
	(CLK_N * !RESET_B)	-0.00100	-0.00101	-0.00101
	(!CLK_N * RESET_B)	0.00297	0.00302	0.00828
	(!CLK_N * RESET_B)	0.00071	0.00075	0.00602
	(!CLK_N * !RESET_B)	0.00033	0.00033	0.00033
	(!CLK_N * !RESET_B)	-0.00100	-0.00100	-0.00101

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)	0.00583	0.00603	0.01176
	(CLK_N * RESET_B)	0.00802	0.00823	0.01395
	(CLK_N * !RESET_B)	-0.00032	-0.00033	-0.00032
	(CLK_N * !RESET_B)	0.00101	0.00103	0.00102
	(!CLK_N * RESET_B)	0.00043	0.00048	0.00541
	(!CLK_N * RESET_B)	0.00269	0.00274	0.00767
	(!CLK_N * !RESET_B)	-0.00033	-0.00032	-0.00032
	(!CLK_N * !RESET_B)	0.00102	0.00102	0.00102

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)	0.01133	0.01104	0.01783
	(CLK_N * D * !Q)	0.00484	0.00450	0.01131
	(CLK_N * !D * !Q)	0.00291	0.00294	0.00291
	(CLK_N * !D * !Q)	-0.00264	-0.00265	-0.00264
	(!CLK_N * D * !Q)	0.00551	0.00549	0.00985
	(!CLK_N * D * !Q)	-0.00107	-0.00115	0.00324
	(!CLK_N * !D * !Q)	0.00284	0.00288	0.00285
	(!CLK_N * !D * !Q)	-0.00270	-0.00273	-0.00271

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)	0.00451	0.00423	0.01191
	(CLK_N * D * !Q)	0.01100	0.01075	0.01845
	(CLK_N * !D * !Q)	-0.00287	-0.00293	-0.00291
	(CLK_N * !D * !Q)	0.00269	0.00267	0.00265
	(!CLK_N * D * !Q)	-0.00149	-0.00147	0.00300
	(!CLK_N * D * !Q)	0.00509	0.00513	0.00961
	(!CLK_N * !D * !Q)	-0.00280	-0.00286	-0.00285
	(!CLK_N * !D * !Q)	0.00276	0.00274	0.00272

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)	0.01021	0.01027	0.02711
	(D * RESET_B * Q)	0.00707	0.00711	0.02396
	(D * RESET_B * !Q)	0.01580	0.01577	0.03297
	(D * RESET_B * !Q)	0.01273	0.01267	0.02988
	(D * !RESET_B * !Q)	0.01003	0.00989	0.02690
	(D * !RESET_B * !Q)	0.00689	0.00675	0.02375
	(!D * RESET_B * Q)	0.01537	0.01532	0.03233
	(!D * RESET_B * Q)	0.01216	0.01209	0.02911
	(!D * !Q)	0.01003	0.00996	0.02688
	(!D * !Q)	0.00689	0.00680	0.02374

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)	0.00726	0.00765	0.02503
	(D * RESET_B * Q)	0.01042	0.01080	0.02819
	(D * !RESET_B * !Q)	0.00741	0.00778	0.02517
	(D * !RESET_B * !Q)	0.01056	0.01093	0.02833
	(!D * !Q)	0.00740	0.00777	0.02516
	(!D * !Q)	0.01055	0.01092	0.02831

SKY130_FD_SC_HS__DFRTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00176	0.00537	0.00282	1.17864
sky130_fd_sc_hs__dfrtp_2	0.00176	0.00528	0.00280	2.26136
sky130_fd_sc_hs__dfrtp_4	0.00177	0.00548	0.00280	4.49784

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dfrtp_1	0.00000	0.20267	0.39857
sky130_fd_sc_hs__dfrtp_2	0.00000	0.22455	0.39923
sky130_fd_sc_hs__dfrtp_4	0.00000	0.34442	0.62917

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)	0.17009	0.63360	5.76127
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RR)	0.16934	0.53508	5.71611
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RR)	0.22128	0.51864	5.87750

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfrtp_1	CLK->Q (RF)	0.17603	0.37594	1.53332
	RESET_B->Q (FF)	0.24870	0.73320	4.94755
sky130_fd_sc_hs__dfrtp_2	CLK->Q (RF)	0.19465	0.37069	1.47547
	RESET_B->Q (FF)	0.26620	0.72585	4.89191
sky130_fd_sc_hs__dfrtp_4	CLK->Q (RF)	0.19579	0.35327	1.66907
	RESET_B->Q (FF)	0.27422	0.71377	5.09454

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)	-0.04741	-0.11823	-0.73199
	setup	CLK (R)	0.10895	0.16062	0.77057
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04638	-0.11423	-0.72784
	setup	CLK (R)	0.10491	0.15930	0.75674
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04626	-0.11423	-0.72011
	setup	CLK (R)	0.10240	0.15882	0.74834

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)	-0.05044	-0.20906	-3.60561
	setup	CLK (R)	0.14661	0.30716	3.77997
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04791	-0.20656	-3.60273
	setup	CLK (R)	0.14415	0.30316	3.77996
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06882	-0.22276	-3.72965
	setup	CLK (R)	0.15634	0.31492	3.80844

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)	-0.04741	-0.11823	-0.73199
	setup	CLK (R)	0.10895	0.16062	0.77057
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04638	-0.11423	-0.72784
	setup	CLK (R)	0.10491	0.15930	0.75674
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.04626	-0.11423	-0.72011
	setup	CLK (R)	0.10240	0.15882	0.74834

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)	-0.05044	-0.20906	-3.60561
	setup	CLK (R)	0.14661	0.30716	3.77997
sky130_fd_sc_hs__dfrtp_2	hold	CLK (R)	-0.04791	-0.20656	-3.60273
	setup	CLK (R)	0.14415	0.30316	3.77996
sky130_fd_sc_hs__dfrtp_4	hold	CLK (R)	-0.06882	-0.22276	-3.72965
	setup	CLK (R)	0.15634	0.31492	3.80844

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)	0.11719	0.16079	0.98234
	removal	CLK (R)	-0.07030	-0.13512	-0.93170
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.11544	0.15913	0.97505
	removal	CLK (R)	-0.06842	-0.13301	-0.92794
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.11143	0.15839	0.94759
	removal	CLK (R)	-0.07480	-0.13512	-0.92183

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)	0.11719	0.16079	0.98234
	removal	CLK (R)	-0.07030	-0.13512	-0.93170
sky130_fd_sc_hs__dfrtp_2	recovery	CLK (R)	0.11544	0.15913	0.97505
	removal	CLK (R)	-0.06842	-0.13301	-0.92794
sky130_fd_sc_hs__dfrtp_4	recovery	CLK (R)	0.11143	0.15839	0.94759
	removal	CLK (R)	-0.07480	-0.13512	-0.92183

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 ()	0.13769	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.10908	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	RESET_B ()	0.14008	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11385	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	RESET_B ()	0.14484	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11385	0.63599	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 ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.08524	0.63599	16.50020
	min_pulse_width	CLK ()	0.06855	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.11862	0.63599	16.50020
	min_pulse_width	CLK ()	0.07332	0.63599	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 ()	0.16153	0.63599	16.50020
	min_pulse_width	CLK ()	0.18299	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_2	min_pulse_width	CLK ()	0.16153	0.63599	16.50020
	min_pulse_width	CLK ()	0.18299	0.63599	16.50020
sky130_fd_sc_hs__dfrtp_4	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.19730	0.63599	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	0.01996	0.02027	0.03807
	CLK	0.01659	0.01690	0.03476
sky130_fd_sc_hs__dfrtp_2	CLK	0.02187	0.02240	0.04036
	CLK	0.01852	0.01905	0.03717
sky130_fd_sc_hs__dfrtp_4	CLK	0.02738	0.02845	0.04644
	CLK	0.02389	0.02502	0.04420

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	CLK	0.02144	0.02191	0.03966
	CLK	0.01787	0.01828	0.03604
	RESET_B	0.01574	0.01565	0.02866
	RESET_B	0.02278	0.02265	0.03544
sky130_fd_sc_hs__dfrtp_2	CLK	0.02299	0.02369	0.04147
	CLK	0.01945	0.02012	0.03784
	RESET_B	0.01742	0.01756	0.03072
	RESET_B	0.02435	0.02448	0.03729
sky130_fd_sc_hs__dfrtp_4	CLK	0.02961	0.03084	0.04877
	CLK	0.02594	0.02712	0.04463
	RESET_B	0.02363	0.02422	0.04025
	RESET_B	0.03077	0.03136	0.04422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00302	0.00308	0.00834
	(CLK * RESET_B)	0.00066	0.00070	0.00597
	(CLK * !RESET_B)	0.00033	0.00032	0.00032
	(CLK * !RESET_B)	-0.00100	-0.00100	-0.00101
	(!CLK * RESET_B)	0.00865	0.00868	0.01439
	(!CLK * RESET_B)	0.00614	0.00616	0.01189
	(!CLK * !RESET_B)	0.00032	0.00033	0.00032
	(!CLK * !RESET_B)	-0.00099	-0.00100	-0.00101
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00294	0.00300	0.00828
	(CLK * RESET_B)	0.00061	0.00066	0.00594
	(CLK * !RESET_B)	0.00033	0.00032	0.00032
	(CLK * !RESET_B)	-0.00100	-0.00100	-0.00101
	(!CLK * RESET_B)	0.00835	0.00839	0.01414
	(!CLK * RESET_B)	0.00589	0.00592	0.01169
	(!CLK * !RESET_B)	0.00032	0.00033	0.00032
	(!CLK * !RESET_B)	-0.00099	-0.00100	-0.00101
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00305	0.00310	0.00835
	(CLK * RESET_B)	0.00068	0.00072	0.00599
	(CLK * !RESET_B)	0.00033	0.00033	0.00032
	(CLK * !RESET_B)	-0.00100	-0.00100	-0.00101
	(!CLK * RESET_B)	0.00939	0.00940	0.01501
	(!CLK * RESET_B)	0.00689	0.00690	0.01251
	(!CLK * !RESET_B)	0.00033	0.00033	0.00032
	(!CLK * !RESET_B)	-0.00100	-0.00101	-0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * RESET_B)	0.00034	0.00039	0.00533
	(CLK * RESET_B)	0.00270	0.00276	0.00770
	(CLK * !RESET_B)	-0.00032	-0.00031	-0.00031
	(CLK * !RESET_B)	0.00102	0.00101	0.00101
	(!CLK * RESET_B)	0.00535	0.00548	0.01141
	(!CLK * RESET_B)	0.00787	0.00799	0.01392
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B)	0.00102	0.00102	0.00101
sky130_fd_sc_hs__dfrtp_2	(CLK * RESET_B)	0.00034	0.00040	0.00536
	(CLK * RESET_B)	0.00267	0.00274	0.00770
	(CLK * !RESET_B)	-0.00032	-0.00031	-0.00031
	(CLK * !RESET_B)	0.00102	0.00101	0.00101
	(!CLK * RESET_B)	0.00536	0.00562	0.01148
	(!CLK * RESET_B)	0.00782	0.00808	0.01393
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B)	0.00102	0.00103	0.00101
sky130_fd_sc_hs__dfrtp_4	(CLK * RESET_B)	0.00035	0.00040	0.00533
	(CLK * RESET_B)	0.00271	0.00276	0.00770
	(CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(CLK * !RESET_B)	0.00102	0.00102	0.00102
	(!CLK * RESET_B)	0.00549	0.00559	0.01147
	(!CLK * RESET_B)	0.00800	0.00809	0.01397
	(!CLK * !RESET_B)	-0.00032	-0.00032	-0.00031
	(!CLK * !RESET_B)	0.00102	0.00103	0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfrtp_1	(CLK * D * !Q)	0.00576	0.00569	0.01006
	(CLK * D * !Q)	-0.00113	-0.00125	0.00315
	(CLK * !D * !Q)	0.00276	0.00279	0.00277
	(CLK * !D * !Q)	-0.00297	-0.00298	-0.00297
	(!CLK * D * !Q)	0.01168	0.01134	0.01818
	(!CLK * D * !Q)	0.00465	0.00430	0.01115
	(!CLK * !D * !Q)	0.00267	0.00269	0.00267
	(!CLK * !D * !Q)	-0.00306	-0.00307	-0.00306
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	0.00564	0.00558	0.00997
	(CLK * D * !Q)	-0.00116	-0.00126	0.00316
	(CLK * !D * !Q)	0.00274	0.00277	0.00274
	(CLK * !D * !Q)	-0.00292	-0.00294	-0.00292
	(!CLK * D * !Q)	0.01131	0.01098	0.01792
	(!CLK * D * !Q)	0.00440	0.00408	0.01099
	(!CLK * !D * !Q)	0.00265	0.00269	0.00266
	(!CLK * !D * !Q)	-0.00301	-0.00302	-0.00301
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	0.00592	0.00585	0.01022
	(CLK * D * !Q)	-0.00108	-0.00118	0.00321
	(CLK * !D * !Q)	0.00292	0.00296	0.00293
	(CLK * !D * !Q)	-0.00292	-0.00294	-0.00292
	(!CLK * D * !Q)	0.01233	0.01198	0.01873
	(!CLK * D * !Q)	0.00522	0.00483	0.01160
	(!CLK * !D * !Q)	0.00268	0.00271	0.00269
	(!CLK * !D * !Q)	-0.00315	-0.00316	-0.00315

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)	-0.00168	-0.00171	0.00278
	(CLK * D * !Q)	0.00521	0.00520	0.00969
	(CLK * !D * !Q)	-0.00270	-0.00278	-0.00277
	(CLK * !D * !Q)	0.00300	0.00301	0.00298
	(!CLK * D * !Q)	0.00403	0.00359	0.01148
	(!CLK * D * !Q)	0.01104	0.01062	0.01854
	(!CLK * !D * !Q)	-0.00261	-0.00269	-0.00267
	(!CLK * !D * !Q)	0.00309	0.00310	0.00307
sky130_fd_sc_hs__dfrtp_2	(CLK * D * !Q)	-0.00165	-0.00167	0.00283
	(CLK * D * !Q)	0.00514	0.00515	0.00965
	(CLK * !D * !Q)	-0.00268	-0.00276	-0.00274
	(CLK * !D * !Q)	0.00295	0.00295	0.00293
	(!CLK * D * !Q)	0.00405	0.00364	0.01158
	(!CLK * D * !Q)	0.01094	0.01058	0.01853
	(!CLK * !D * !Q)	-0.00259	-0.00266	-0.00266
	(!CLK * !D * !Q)	0.00303	0.00302	0.00302
sky130_fd_sc_hs__dfrtp_4	(CLK * D * !Q)	-0.00182	-0.00184	0.00264
	(CLK * D * !Q)	0.00516	0.00517	0.00965
	(CLK * !D * !Q)	-0.00285	-0.00294	-0.00293
	(CLK * !D * !Q)	0.00295	0.00296	0.00293
	(!CLK * D * !Q)	0.00428	0.00380	0.01164
	(!CLK * D * !Q)	0.01139	0.01093	0.01878
	(!CLK * !D * !Q)	-0.00262	-0.00271	-0.00269
	(!CLK * !D * !Q)	0.00318	0.00319	0.00316

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)	0.01092	0.01094	0.02753
	(D * RESET_B * Q)	0.00745	0.00747	0.02406
	(D * !RESET_B * !Q)	0.01141	0.01143	0.02804
	(D * !RESET_B * !Q)	0.00794	0.00794	0.02457
	(!D * !Q)	0.01141	0.01142	0.02804
	(!D * !Q)	0.00794	0.00794	0.02457
sky130_fd_sc_hs__dfrtp_2	(D * RESET_B * Q)	0.01086	0.01089	0.02746
	(D * RESET_B * Q)	0.00741	0.00742	0.02401
	(D * !RESET_B * !Q)	0.01135	0.01137	0.02798
	(D * !RESET_B * !Q)	0.00790	0.00791	0.02453
	(!D * !Q)	0.01135	0.01137	0.02798
	(!D * !Q)	0.00790	0.00790	0.02453
sky130_fd_sc_hs__dfrtp_4	(D * RESET_B * Q)	0.01149	0.01154	0.02786
	(D * RESET_B * Q)	0.00790	0.00794	0.02428
	(D * !RESET_B * !Q)	0.01189	0.01193	0.02828
	(D * !RESET_B * !Q)	0.00831	0.00833	0.02469
	(!D * !Q)	0.01189	0.01192	0.02828
	(!D * !Q)	0.00831	0.00831	0.02469

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)**	0.00601	0.00648	0.02361
	(D * RESET_B * Q)	0.00948	0.00994	0.02709
	(D * RESET_B * !Q)	0.01109	0.01146	0.02919
	(D * RESET_B * !Q)	0.01441	0.01479	0.03252
	(D * !RESET_B * !Q)	0.00552	0.00598	0.02315
	(D * !RESET_B * !Q)	0.00898	0.00945	0.02663
	(!D * RESET_B * Q)	0.01184	0.01239	0.03006
	(!D * RESET_B * Q)	0.01544	0.01601	0.03368
	(!D * !Q)	0.00552	0.00598	0.02316
	(!D * !Q)	0.00898	0.00945	0.02663
sky130_fd_sc_hs__dfrtp_2	**(D * RESET_B * Q)**	0.00603	0.00650	0.02363
	(D * RESET_B * Q)	0.00947	0.00994	0.02708
	(D * RESET_B * !Q)	0.01088	0.01125	0.02899
	(D * RESET_B * !Q)	0.01420	0.01459	0.03232
	(D * !RESET_B * !Q)	0.00554	0.00600	0.02317
	(D * !RESET_B * !Q)	0.00898	0.00945	0.02663
	(!D * RESET_B * Q)	0.01186	0.01240	0.03008
	(!D * RESET_B * Q)	0.01542	0.01598	0.03365
	(!D * !Q)	0.00554	0.00600	0.02318
	(!D * !Q)	0.00898	0.00945	0.02663
sky130_fd_sc_hs__dfrtp_4	**(D * RESET_B * Q)**	0.00626	0.00672	0.02373
	(D * RESET_B * Q)	0.00985	0.01031	0.02732
	(D * RESET_B * !Q)	0.01215	0.01248	0.03002
	(D * RESET_B * !Q)	0.01559	0.01593	0.03347
	(D * !RESET_B * !Q)	0.00586	0.00631	0.02334
	(D * !RESET_B * !Q)	0.00944	0.00991	0.02694
	(!D * RESET_B * Q)	0.01216	0.01273	0.03023
	(!D * RESET_B * Q)	0.01588	0.01647	0.03396
	(!D * !Q)	0.00586	0.00631	0.02335
	(!D * !Q)	0.00944	0.00991	0.02693

SKY130_FD_SC_HS__DFSBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00174	0.00322	0.00277	1.11861	1.05877
sky130_fd_sc_hs__dfsbp_2	0.00174	0.00319	0.00278	2.28155	2.19704

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfsbp_1	0.00000	0.25587	0.32574
sky130_fd_sc_hs__dfsbp_2	0.00000	0.17531	0.18801

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)	0.23165	0.69193	5.79658
	SET_B->Q (FR)	0.23996	1.01304	9.36138
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RR)	0.27401	0.62164	5.80391
	SET_B->Q (FR)	0.28973	0.95430	9.47589

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfsbp_1	CLK->Q (RF)	0.20462	0.39748	1.44728
sky130_fd_sc_hs__dfsbp_2	CLK->Q (RF)	0.22831	0.39177	1.52645

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)	0.17956	0.67314	5.82902
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RR)	0.17866	0.56141	5.77140

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)	0.17635	0.43144	1.50876
	SET_B->Q_N (FF)	0.18024	0.75482	5.12165
sky130_fd_sc_hs__dfsbp_2	CLK->Q_N (RF)	0.19143	0.43132	1.59847
	SET_B->Q_N (FF)	0.20062	0.76510	5.33222

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)	-0.04403	-0.11423	-0.73651
	setup	CLK (R)	0.07767	0.14254	0.74458
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04251	-0.11068	-0.72692
	setup	CLK (R)	0.07306	0.13512	0.73473

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)	-0.04469	-0.20300	-3.61922
	setup	CLK (R)	0.16606	0.32700	3.85424
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05192	-0.20881	-3.62118
	setup	CLK (R)	0.16162	0.32263	3.84812

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)	-0.04403	-0.11423	-0.73651
	setup	CLK (R)	0.07767	0.14254	0.74458
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.04251	-0.11068	-0.72692
	setup	CLK (R)	0.07306	0.13512	0.73473

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)	-0.04469	-0.20300	-3.61922
	setup	CLK (R)	0.16606	0.32700	3.85424
sky130_fd_sc_hs__dfsbp_2	hold	CLK (R)	-0.05192	-0.20881	-3.62118
	setup	CLK (R)	0.16162	0.32263	3.84812

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)	-0.08551	-0.11423	-0.26092
	removal	CLK (R)	0.10203	0.13301	0.34121
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08420	-0.11296	-0.27354
	removal	CLK (R)	0.10603	0.13301	0.30787

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)	-0.08551	-0.11423	-0.26092
	removal	CLK (R)	0.10203	0.13301	0.34121
sky130_fd_sc_hs__dfsbp_2	recovery	CLK (R)	-0.08420	-0.11296	-0.27354
	removal	CLK (R)	0.10603	0.13301	0.30787

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 ()	0.18776	0.63599	16.50020
	min_pulse_width	SET_B ()	0.19253	0.63599	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	SET_B ()	0.20206	0.63599	16.50020
	min_pulse_width	SET_B ()	0.23306	0.63599	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 ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.08524	0.63599	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.17584	0.63599	16.50020
	min_pulse_width	CLK ()	0.09478	0.63599	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 ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.21399	0.63599	16.50020
sky130_fd_sc_hs__dfsbp_2	min_pulse_width	CLK ()	0.13531	0.63599	16.50020
	min_pulse_width	CLK ()	0.20922	0.63599	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	0.01155	0.01169	0.02061
	CLK	0.00988	0.01001	0.01895
	SET_B	0.01105	0.01100	0.01496
	SET_B	0.01279	0.01276	0.01661
sky130_fd_sc_hs__dfsbp_2	CLK	0.01354	0.01381	0.02275
	CLK	0.01185	0.01210	0.02112
	SET_B	0.01277	0.01305	0.01734
	SET_B	0.01047	0.01063	0.01591

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01199	0.01223	0.02061
	CLK	0.01041	0.01063	0.01905
sky130_fd_sc_hs__dfsbp_2	CLK	0.01395	0.01445	0.02289
	CLK	0.01232	0.01281	0.02132

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01201	0.01226	0.02100
	CLK	0.01043	0.01064	0.01944
sky130_fd_sc_hs__dfsbp_2	CLK	0.01396	0.01448	0.02329
	CLK	0.01234	0.01283	0.02171

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.01154	0.01168	0.02025
	CLK	0.00986	0.00999	0.01860
	SET_B	0.01103	0.01097	0.01482
	SET_B	0.01277	0.01275	0.01637
sky130_fd_sc_hs__dfsbp_2	CLK	0.01353	0.01378	0.02236
	CLK	0.01184	0.01208	0.02077
	SET_B	0.01276	0.01302	0.01710
	SET_B	0.01047	0.01062	0.01568

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00271	0.00281	0.00833
	CLK	0.00060	0.00068	0.00621
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00788	0.00785	0.01259
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00555	0.00552	0.01026
	(!CLK * !SET_B * Q * !Q_N)	0.00617	0.00620	0.01080
	(!CLK * !SET_B * Q * !Q_N)	0.00374	0.00377	0.00837
sky130_fd_sc_hs__dfsbp_2	CLK	0.00271	0.00280	0.00833
	CLK	0.00059	0.00066	0.00620
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00780	0.00777	0.01253
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00539	0.00536	0.01012
	(!CLK * !SET_B * Q * !Q_N)	0.00616	0.00619	0.01080
	(!CLK * !SET_B * Q * !Q_N)	0.00367	0.00369	0.00831

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfsbp_1	CLK	0.00016	0.00028	0.00545
	CLK	0.00227	0.00240	0.00757
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00566	0.00568	0.01024
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00798	0.00801	0.01258
	(!CLK * !SET_B * Q * !Q_N)	0.00319	0.00319	0.00726
	(!CLK * !SET_B * Q * !Q_N)	0.00562	0.00562	0.00969
sky130_fd_sc_hs__dfsbp_2	CLK	0.00016	0.00028	0.00545
	CLK	0.00227	0.00241	0.00757
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00542	0.00544	0.01003
	(!CLK * SET_B * Q * !Q_N) + (!CLK * SET_B * !Q * Q_N)	0.00782	0.00785	0.01244
	(!CLK * !SET_B * Q * !Q_N)	0.00307	0.00308	0.00716
	(!CLK * !SET_B * Q * !Q_N)	0.00557	0.00558	0.00965

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)	0.00207	0.00210	0.00208
	(CLK * Q * !Q_N)	-0.00168	-0.00169	-0.00168
	(!CLK * D * Q * !Q_N)	0.00227	0.00230	0.00228
	(!CLK * D * Q * !Q_N)	-0.00148	-0.00149	-0.00148
	(!CLK * !D * Q * !Q_N)	0.00427	0.00426	0.00863
	(!CLK * !D * Q * !Q_N)	0.00034	0.00032	0.00470
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	0.00210	0.00213	0.00210
	(CLK * Q * !Q_N)	-0.00163	-0.00164	-0.00163
	(!CLK * D * Q * !Q_N)	0.00225	0.00228	0.00225
	(!CLK * D * Q * !Q_N)	-0.00148	-0.00149	-0.00148
	(!CLK * !D * Q * !Q_N)	0.00408	0.00410	0.00849
	(!CLK * !D * Q * !Q_N)	0.00022	0.00019	0.00460

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)	-0.00205	-0.00209	-0.00208
	(CLK * Q * !Q_N)	0.00171	0.00171	0.00169
	(!CLK * D * Q * !Q_N)	-0.00225	-0.00229	-0.00227
	(!CLK * D * Q * !Q_N)	0.00152	0.00151	0.00150
	(!CLK * !D * Q * !Q_N)	-0.00027	-0.00007	0.00430
	(!CLK * !D * Q * !Q_N)	0.00364	0.00385	0.00823
sky130_fd_sc_hs__dfsbp_2	(CLK * Q * !Q_N)	-0.00208	-0.00211	-0.00210
	(CLK * Q * !Q_N)	0.00166	0.00165	0.00164
	(!CLK * D * Q * !Q_N)	-0.00223	-0.00226	-0.00225
	(!CLK * D * Q * !Q_N)	0.00152	0.00150	0.00149
	(!CLK * !D * Q * !Q_N)	-0.00025	-0.00007	0.00436
	(!CLK * !D * Q * !Q_N)	0.00363	0.00382	0.00825

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)	0.01132	0.01132	0.02795
	(D * Q * !Q_N)	0.00806	0.00804	0.02468
	(!D * SET_B * !Q * Q_N)	0.01116	0.01113	0.02780
	(!D * SET_B * !Q * Q_N)	0.00791	0.00786	0.02453
	(!D * !SET_B * Q * !Q_N)	0.02072	0.02089	0.03834
	(!D * !SET_B * Q * !Q_N)	0.01716	0.01730	0.03476
sky130_fd_sc_hs__dfsbp_2	(D * Q * !Q_N)	0.01118	0.01119	0.02785
	(D * Q * !Q_N)	0.00787	0.00785	0.02452
	(!D * SET_B * !Q * Q_N)	0.01110	0.01107	0.02778
	(!D * SET_B * !Q * Q_N)	0.00779	0.00774	0.02445
	(!D * !SET_B * Q * !Q_N)	0.02045	0.02064	0.03823
	(!D * !SET_B * Q * !Q_N)	0.01678	0.01696	0.03453

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)	0.01144	0.01186	0.02946
	(D * SET_B * !Q * Q_N)	0.01450	0.01492	0.03252
	(D * Q * !Q_N)	0.00662	0.00711	0.02428
	(D * Q * !Q_N)	0.00987	0.01039	0.02755
	(!D * SET_B * Q * !Q_N)	0.01340	0.01398	0.03154
	(!D * SET_B * Q * !Q_N)	0.01686	0.01746	0.03502
	(!D * SET_B * !Q * Q_N)	0.00675	0.00727	0.02448
	(!D * SET_B * !Q * Q_N)	0.01002	0.01054	0.02775
	(!D * !SET_B * Q * !Q_N)	0.01092	0.01149	0.02904
	(!D * !SET_B * Q * !Q_N)	0.01451	0.01508	0.03262
sky130_fd_sc_hs__dfsbp_2	(D * SET_B * !Q * Q_N)	0.01124	0.01166	0.02930
	(D * SET_B * !Q * Q_N)	0.01429	0.01471	0.03235
	(D * Q * !Q_N)	0.00651	0.00701	0.02422
	(D * Q * !Q_N)	0.00984	0.01034	0.02754
	(!D * SET_B * Q * !Q_N)	0.01304	0.01361	0.03119
	(!D * SET_B * Q * !Q_N)	0.01665	0.01722	0.03481
	(!D * SET_B * !Q * Q_N)	0.00658	0.00709	0.02434
	(!D * SET_B * !Q * Q_N)	0.00991	0.01043	0.02767
	(!D * !SET_B * Q * !Q_N)	0.01067	0.01124	0.02882
	(!D * !SET_B * Q * !Q_N)	0.01437	0.01494	0.03251

SKY130_FD_SC_HS__DFSTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00173	0.00336	0.00276	1.15734
sky130_fd_sc_hs__dfstp_2	0.00174	0.00314	0.00278	2.27432
sky130_fd_sc_hs__dfstp_4	0.00173	0.00317	0.00279	4.32965

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfstp_1	0.00000	0.23403	0.29332
sky130_fd_sc_hs__dfstp_2	0.00000	0.13164	0.18506
sky130_fd_sc_hs__dfstp_4	0.00000	0.42020	0.52392

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)	0.19019	0.64601	5.70747
	SET_B->Q (FR)	0.19808	0.95370	9.13999
sky130_fd_sc_hs__dfstp_2	CLK->Q (RR)	0.19719	0.55622	5.72301
	SET_B->Q (FR)	0.20613	0.86945	9.17841
sky130_fd_sc_hs__dfstp_4	CLK->Q (RR)	0.23473	0.52723	5.86726
	SET_B->Q (FR)	0.24477	0.84871	9.38279

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfstp_1	CLK->Q (RF)	0.19086	0.38486	1.51215
sky130_fd_sc_hs__dfstp_2	CLK->Q (RF)	0.20185	0.36836	1.51491
sky130_fd_sc_hs__dfstp_4	CLK->Q (RF)	0.20775	0.35173	1.50903

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)	-0.04080	-0.11082	-0.72581
	setup	CLK (R)	0.07671	0.13912	0.73377
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04343	-0.11584	-0.73135
	setup	CLK (R)	0.07638	0.14178	0.74393
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04075	-0.11360	-0.72210
	setup	CLK (R)	0.07217	0.13512	0.72642

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)	-0.04221	-0.19610	-3.60721
	setup	CLK (R)	0.16033	0.32222	3.83757
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04173	-0.19802	-3.61957
	setup	CLK (R)	0.16161	0.32375	3.84789
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04721	-0.20605	-3.62450
	setup	CLK (R)	0.15638	0.32192	3.83471

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)	-0.04080	-0.11082	-0.72581
	setup	CLK (R)	0.07671	0.13912	0.73377
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04343	-0.11584	-0.73135
	setup	CLK (R)	0.07638	0.14178	0.74393
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04075	-0.11360	-0.72210
	setup	CLK (R)	0.07217	0.13512	0.72642

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)	-0.04221	-0.19610	-3.60721
	setup	CLK (R)	0.16033	0.32222	3.83757
sky130_fd_sc_hs__dfstp_2	hold	CLK (R)	-0.04173	-0.19802	-3.61957
	setup	CLK (R)	0.16161	0.32375	3.84789
sky130_fd_sc_hs__dfstp_4	hold	CLK (R)	-0.04721	-0.20605	-3.62450
	setup	CLK (R)	0.15638	0.32192	3.83471

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)	-0.08270	-0.11823	-0.26085
	removal	CLK (R)	0.10325	0.13090	0.42704
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.08687	-0.12023	-0.26578
	removal	CLK (R)	0.10305	0.13301	0.37960
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08503	-0.11397	-0.25331
	removal	CLK (R)	0.09915	0.12879	0.33076

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)	-0.08270	-0.11823	-0.26085
	removal	CLK (R)	0.10325	0.13090	0.42704
sky130_fd_sc_hs__dfstp_2	recovery	CLK (R)	-0.08687	-0.12023	-0.26578
	removal	CLK (R)	0.10305	0.13301	0.37960
sky130_fd_sc_hs__dfstp_4	recovery	CLK (R)	-0.08503	-0.11397	-0.25331
	removal	CLK (R)	0.09915	0.12879	0.33076

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 ()	0.16869	0.63599	16.50020
	min_pulse_width	SET_B ()	0.14961	0.63599	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	SET_B ()	0.17584	0.63599	16.50020
	min_pulse_width	SET_B ()	0.15438	0.63599	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	SET_B ()	0.18299	0.63599	16.50020
	min_pulse_width	SET_B ()	0.17822	0.63599	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 ()	0.10193	0.63599	16.50020
	min_pulse_width	CLK ()	0.07809	0.63599	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.10670	0.63599	16.50020
	min_pulse_width	CLK ()	0.08047	0.63599	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.13531	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	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 ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
sky130_fd_sc_hs__dfstp_2	min_pulse_width	CLK ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.20922	0.63599	16.50020
sky130_fd_sc_hs__dfstp_4	min_pulse_width	CLK ()	0.13531	0.63599	16.50020
	min_pulse_width	CLK ()	0.20445	0.63599	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	0.01981	0.01979	0.03755
	CLK	0.01661	0.01659	0.03443
	SET_B	0.01871	0.01831	0.02598
	SET_B	0.02244	0.02203	0.02984
sky130_fd_sc_hs__dfstp_2	CLK	0.02226	0.02249	0.04028
	CLK	0.01890	0.01913	0.03709
	SET_B	0.02122	0.02111	0.02874
	SET_B	0.02463	0.02451	0.03245
sky130_fd_sc_hs__dfstp_4	CLK	0.02729	0.02794	0.04588
	CLK	0.02390	0.02462	0.04368
	SET_B	0.02598	0.02640	0.03403
	SET_B	0.02941	0.02982	0.03824

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.02164	0.02183	0.03872
	CLK	0.01828	0.01839	0.03534
sky130_fd_sc_hs__dfstp_2	CLK	0.02382	0.02423	0.04114
	CLK	0.02056	0.02092	0.03784
sky130_fd_sc_hs__dfstp_4	CLK	0.02937	0.03047	0.04768
	CLK	0.02609	0.02714	0.04418

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00272	0.00281	0.00832
	CLK	0.00062	0.00069	0.00621
	(!CLK * SET_B)	0.00778	0.00776	0.01252
	(!CLK * SET_B)	0.00546	0.00544	0.01020
	(!CLK * !SET_B * Q)	0.00613	0.00616	0.01078
	(!CLK * !SET_B * Q)	0.00369	0.00372	0.00834
sky130_fd_sc_hs__dfstp_2	CLK	0.00274	0.00283	0.00834
	CLK	0.00063	0.00070	0.00622
	(!CLK * SET_B)	0.00778	0.00775	0.01250
	(!CLK * SET_B)	0.00545	0.00543	0.01017
	(!CLK * !SET_B * Q)	0.00612	0.00615	0.01075
	(!CLK * !SET_B * Q)	0.00368	0.00370	0.00830
sky130_fd_sc_hs__dfstp_4	CLK	0.00273	0.00283	0.00833
	CLK	0.00063	0.00070	0.00622
	(!CLK * SET_B)	0.00774	0.00772	0.01249
	(!CLK * SET_B)	0.00540	0.00538	0.01014
	(!CLK * !SET_B * Q)	0.00606	0.00609	0.01071
	(!CLK * !SET_B * Q)	0.00362	0.00364	0.00827

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	CLK	0.00021	0.00034	0.00548
	CLK	0.00233	0.00245	0.00760
	(!CLK * SET_B)	0.00542	0.00542	0.00989
	(!CLK * SET_B)	0.00774	0.00775	0.01221
	(!CLK * !SET_B * Q)	0.00307	0.00307	0.00715
	(!CLK * !SET_B * Q)	0.00551	0.00551	0.00959
sky130_fd_sc_hs__dfstp_2	CLK	0.00020	0.00032	0.00547
	CLK	0.00232	0.00245	0.00759
	(!CLK * SET_B)	0.00558	0.00559	0.01016
	(!CLK * SET_B)	0.00790	0.00792	0.01249
	(!CLK * !SET_B * Q)	0.00323	0.00323	0.00730
	(!CLK * !SET_B * Q)	0.00568	0.00568	0.00975
sky130_fd_sc_hs__dfstp_4	CLK	0.00022	0.00034	0.00548
	CLK	0.00234	0.00246	0.00760
	(!CLK * SET_B)	0.00536	0.00536	0.00983
	(!CLK * SET_B)	0.00770	0.00769	0.01217
	(!CLK * !SET_B * Q)	0.00306	0.00307	0.00715
	(!CLK * !SET_B * Q)	0.00550	0.00551	0.00960

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	0.00199	0.00201	0.00199
	(CLK * Q)	-0.00184	-0.00185	-0.00184
	(!CLK * D * Q)	0.00216	0.00218	0.00215
	(!CLK * D * Q)	-0.00168	-0.00169	-0.00168
	(!CLK * !D * Q)	0.00406	0.00407	0.00845
	(!CLK * !D * Q)	0.00007	0.00003	0.00443
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	0.00195	0.00198	0.00195
	(CLK * Q)	-0.00169	-0.00170	-0.00169
	(!CLK * D * Q)	0.00211	0.00214	0.00211
	(!CLK * D * Q)	-0.00153	-0.00154	-0.00153
	(!CLK * !D * Q)	0.00402	0.00403	0.00841
	(!CLK * !D * Q)	0.00022	0.00017	0.00457
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	0.00205	0.00208	0.00206
	(CLK * Q)	-0.00164	-0.00165	-0.00164
	(!CLK * D * Q)	0.00220	0.00223	0.00220
	(!CLK * D * Q)	-0.00150	-0.00151	-0.00150
	(!CLK * !D * Q)	0.00406	0.00406	0.00844
	(!CLK * !D * Q)	0.00019	0.00017	0.00457

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(CLK * Q)	-0.00197	-0.00200	-0.00199
	(CLK * Q)	0.00187	0.00186	0.00185
	(!CLK * D * Q)	-0.00213	-0.00217	-0.00215
	(!CLK * D * Q)	0.00171	0.00171	0.00169
	(!CLK * !D * Q)	-0.00016	-0.00002	0.00441
	(!CLK * !D * Q)	0.00382	0.00399	0.00843
sky130_fd_sc_hs__dfstp_2	(CLK * Q)	-0.00193	-0.00196	-0.00195
	(CLK * Q)	0.00172	0.00170	0.00169
	(!CLK * D * Q)	-0.00209	-0.00212	-0.00211
	(!CLK * D * Q)	0.00156	0.00155	0.00154
	(!CLK * !D * Q)	-0.00011	0.00008	0.00447
	(!CLK * !D * Q)	0.00370	0.00391	0.00830
sky130_fd_sc_hs__dfstp_4	(CLK * Q)	-0.00203	-0.00207	-0.00205
	(CLK * Q)	0.00168	0.00168	0.00165
	(!CLK * D * Q)	-0.00217	-0.00220	-0.00220
	(!CLK * D * Q)	0.00154	0.00152	0.00151
	(!CLK * !D * Q)	-0.00016	0.00003	0.00443
	(!CLK * !D * Q)	0.00371	0.00391	0.00830

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfstp_1	(D * Q)	0.01119	0.01119	0.02780
	(D * Q)	0.00791	0.00789	0.02451
	(!D * SET_B * !Q)	0.01115	0.01111	0.02777
	(!D * SET_B * !Q)	0.00787	0.00782	0.02448
	(!D * !SET_B * Q)	0.02018	0.02034	0.03781
	(!D * !SET_B * Q)	0.01658	0.01672	0.03419
sky130_fd_sc_hs__dfstp_2	(D * Q)	0.01135	0.01135	0.02798
	(D * Q)	0.00805	0.00802	0.02466
	(!D * SET_B * !Q)	0.01119	0.01115	0.02782
	(!D * SET_B * !Q)	0.00789	0.00783	0.02451
	(!D * !SET_B * Q)	0.02045	0.02059	0.03804
	(!D * !SET_B * Q)	0.01682	0.01694	0.03440
sky130_fd_sc_hs__dfstp_4	(D * Q)	0.01121	0.01122	0.02785
	(D * Q)	0.00788	0.00786	0.02451
	(!D * SET_B * !Q)	0.01119	0.01116	0.02784
	(!D * SET_B * !Q)	0.00786	0.00781	0.02449
	(!D * !SET_B * Q)	0.02006	0.02022	0.03779
	(!D * !SET_B * Q)	0.01640	0.01655	0.03411

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)**	0.01139	0.01179	0.02941
	(D * SET_B * !Q)	0.01449	0.01488	0.03250
	(D * Q)	0.00665	0.00715	0.02431
	(D * Q)	0.00994	0.01044	0.02759
	(!D * SET_B * Q)	0.01306	0.01364	0.03126
	(!D * SET_B * Q)	0.01656	0.01713	0.03476
	(!D * SET_B * !Q)	0.00667	0.00718	0.02439
	(!D * SET_B * !Q)	0.00997	0.01047	0.02769
	(!D * !SET_B * Q)	0.01070	0.01127	0.02880
	(!D * !SET_B * Q)	0.01432	0.01489	0.03242
sky130_fd_sc_hs__dfstp_2	**(D * SET_B * !Q)**	0.01131	0.01172	0.02935
	(D * SET_B * !Q)	0.01443	0.01483	0.03247
	(D * Q)	0.00653	0.00702	0.02421
	(D * Q)	0.00985	0.01035	0.02753
	(!D * SET_B * Q)	0.01314	0.01371	0.03129
	(!D * SET_B * Q)	0.01667	0.01722	0.03482
	(!D * SET_B * !Q)	0.00667	0.00718	0.02441
	(!D * SET_B * !Q)	0.00999	0.01051	0.02774
	(!D * !SET_B * Q)	0.01078	0.01135	0.02892
	(!D * !SET_B * Q)	0.01444	0.01500	0.03257
sky130_fd_sc_hs__dfstp_4	**(D * SET_B * !Q)**	0.01125	0.01166	0.02931
	(D * SET_B * !Q)	0.01437	0.01478	0.03243
	(D * Q)	0.00657	0.00707	0.02427
	(D * Q)	0.00992	0.01042	0.02761
	(!D * SET_B * Q)	0.01288	0.01346	0.03105
	(!D * SET_B * Q)	0.01643	0.01703	0.03461
	(!D * SET_B * !Q)	0.00658	0.00709	0.02433
	(!D * SET_B * !Q)	0.00992	0.01044	0.02767
	(!D * !SET_B * Q)	0.01058	0.01115	0.02874
	(!D * !SET_B * Q)	0.01426	0.01484	0.03242

SKY130_FD_SC_HS__DFXBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00177	0.00277	1.13100	1.12831
sky130_fd_sc_hs__dfxbp_2	0.00172	0.00278	1.95110	2.23402

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxbp_1	0.00000	0.39442	0.58352
sky130_fd_sc_hs__dfxbp_2	0.00000	0.54149	1.01604

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)	0.17373	0.64272	5.79620
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RR)	0.20553	0.58939	5.67922

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxbp_1	CLK->Q (RF)	0.18837	0.40569	1.59230
sky130_fd_sc_hs__dfxbp_2	CLK->Q (RF)	0.18300	0.35508	1.20263

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)	0.22379	0.69761	5.86248
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RR)	0.23389	0.59984	5.72495

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)	0.20100	0.39625	1.48141
sky130_fd_sc_hs__dfxbp_2	CLK->Q_N (RF)	0.25028	0.41709	1.56290

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)	-0.01946	-0.05512	-0.46449
	setup	CLK (R)	0.07244	0.10134	0.54893
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.01761	-0.05067	-0.43777
	setup	CLK (R)	0.05092	0.08845	0.51797

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)	-0.03777	-0.18273	-3.42552
	setup	CLK (R)	0.11368	0.26540	3.60152
sky130_fd_sc_hs__dfxbp_2	hold	CLK (R)	-0.04171	-0.17822	-3.40937
	setup	CLK (R)	0.11150	0.25828	3.58293

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 ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.10908	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	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 ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.17107	0.63599	16.50020
sky130_fd_sc_hs__dfxbp_2	min_pulse_width	CLK ()	0.12339	0.63599	16.50020
	min_pulse_width	CLK ()	0.17107	0.63599	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	0.01096	0.01091	0.01997
	CLK	0.00941	0.00933	0.01844
sky130_fd_sc_hs__dfxbp_2	CLK	0.01340	0.01371	0.02276
	CLK	0.01184	0.01212	0.02125

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01137	0.01163	0.02067
	CLK	0.00982	0.01007	0.01916
sky130_fd_sc_hs__dfxbp_2	CLK	0.01403	0.01456	0.02347
	CLK	0.01246	0.01298	0.02211

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01137	0.01168	0.02122
	CLK	0.00983	0.01008	0.01977
sky130_fd_sc_hs__dfxbp_2	CLK	0.01404	0.01457	0.02381
	CLK	0.01247	0.01299	0.02231

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.01095	0.01088	0.01968
	CLK	0.00940	0.00932	0.01814
sky130_fd_sc_hs__dfxbp_2	CLK	0.01339	0.01371	0.02231
	CLK	0.01183	0.01211	0.02077

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	0.00198	0.00211	0.00781
	CLK	-0.00018	-0.00005	0.00567
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00699	0.00705	0.01315
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00484	0.00489	0.01100
sky130_fd_sc_hs__dfxbp_2	CLK	0.00187	0.00202	0.00773
	CLK	-0.00023	-0.00008	0.00565
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00685	0.00692	0.01301
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00476	0.00482	0.01092

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxbp_1	CLK	-0.00017	0.00012	0.00549
	CLK	0.00199	0.00227	0.00765
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00398	0.00406	0.01007
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00614	0.00622	0.01223
sky130_fd_sc_hs__dfxbp_2	CLK	-0.00017	0.00011	0.00553
	CLK	0.00193	0.00221	0.00762
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00371	0.00380	0.00983
	(!CLK * Q * !Q_N) + (!CLK * !Q * Q_N)	0.00580	0.00589	0.01193

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)	0.00998	0.01001	0.02698
	(D * Q * !Q_N)	0.00688	0.00690	0.02389
	(!D * !Q * Q_N)	0.01023	0.01035	0.02726
	(!D * !Q * Q_N)	0.00714	0.00725	0.02416
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.01004	0.01008	0.02697
	(D * Q * !Q_N)	0.00690	0.00692	0.02382
	(!D * !Q * Q_N)	0.01018	0.01021	0.02711
	(!D * !Q * Q_N)	0.00704	0.00705	0.02396

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)	0.00775	0.00816	0.02554
	(D * Q * !Q_N)	0.01084	0.01127	0.02864
	(D * !Q * Q_N)	0.01232	0.01257	0.03071
	(D * !Q * Q_N)	0.01541	0.01568	0.03382
	(!D * Q * !Q_N)	0.01306	0.01355	0.03145
	(!D * Q * !Q_N)	0.01615	0.01666	0.03455
	(!D * !Q * Q_N)	0.00745	0.00784	0.02526
	(!D * !Q * Q_N)	0.01054	0.01095	0.02837
sky130_fd_sc_hs__dfxbp_2	(D * Q * !Q_N)	0.00773	0.00812	0.02550
	(D * Q * !Q_N)	0.01087	0.01128	0.02865
	(D * !Q * Q_N)	0.01237	0.01262	0.03075
	(D * !Q * Q_N)	0.01551	0.01578	0.03390
	(!D * Q * !Q_N)	0.01268	0.01315	0.03104
	(!D * Q * !Q_N)	0.01582	0.01630	0.03419
	(!D * !Q * Q_N)	0.00754	0.00793	0.02534
	(!D * !Q * Q_N)	0.01068	0.01108	0.02849

SKY130_FD_SC_HS__DFXTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00173	0.00277	1.13352
sky130_fd_sc_hs__dfxtp_2	0.00177	0.00277	2.28825
sky130_fd_sc_hs__dfxtp_4	0.00176	0.00278	4.25667

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dfxtp_1	0.00000	0.34833	0.72062
sky130_fd_sc_hs__dfxtp_2	0.00000	0.27946	0.55047
sky130_fd_sc_hs__dfxtp_4	0.00000	0.51194	0.95123

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)**	0.15781	0.62917	5.77198
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RR)**	0.16729	0.53663	5.78003
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RR)**	0.20129	0.50276	5.84367

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dfxtp_1	**CLK->Q (RF)**	0.17937	0.39288	1.57713
sky130_fd_sc_hs__dfxtp_2	**CLK->Q (RF)**	0.18417	0.36862	1.60451
sky130_fd_sc_hs__dfxtp_4	**CLK->Q (RF)**	0.19006	0.35033	1.60126

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)	-0.01563	-0.05467	-0.45031
	setup	CLK (R)	0.07271	0.10134	0.54252
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.01705	-0.05467	-0.44882
	setup	CLK (R)	0.07221	0.09734	0.53837
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.01639	-0.05067	-0.44110
	setup	CLK (R)	0.06289	0.09508	0.53233

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)	-0.03952	-0.18558	-3.43491
	setup	CLK (R)	0.11926	0.26857	3.62176
sky130_fd_sc_hs__dfxtp_2	hold	CLK (R)	-0.03391	-0.17837	-3.40036
	setup	CLK (R)	0.11252	0.25994	3.58633
sky130_fd_sc_hs__dfxtp_4	hold	CLK (R)	-0.03351	-0.17412	-3.39064
	setup	CLK (R)	0.11216	0.25885	3.57799

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 ()	0.07332	0.63599	16.50020
	min_pulse_width	CLK ()	0.06378	0.63599	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.08047	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.10670	0.63599	16.50020
	min_pulse_width	CLK ()	0.06855	0.63599	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 ()	0.14484	0.63599	16.50020
	min_pulse_width	CLK ()	0.17584	0.63599	16.50020
sky130_fd_sc_hs__dfxtp_2	min_pulse_width	CLK ()	0.14008	0.63599	16.50020
	min_pulse_width	CLK ()	0.17107	0.63599	16.50020
sky130_fd_sc_hs__dfxtp_4	min_pulse_width	CLK ()	0.13292	0.63599	16.50020
	min_pulse_width	CLK ()	0.17345	0.63599	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	0.01704	0.01692	0.03508
	CLK	0.01389	0.01379	0.03199
sky130_fd_sc_hs__dfxtp_2	CLK	0.01915	0.01927	0.03738
	CLK	0.01598	0.01612	0.03437
sky130_fd_sc_hs__dfxtp_4	CLK	0.02387	0.02440	0.04242
	CLK	0.02074	0.02145	0.03932

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.01798	0.01837	0.03662
	CLK	0.01485	0.01524	0.03343
sky130_fd_sc_hs__dfxtp_2	CLK	0.02004	0.02069	0.03909
	CLK	0.01688	0.01753	0.03585
sky130_fd_sc_hs__dfxtp_4	CLK	0.02558	0.02695	0.04534
	CLK	0.02246	0.02376	0.04189

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00184	0.00197	0.00766
	CLK	-0.00026	-0.00014	0.00556
	!CLK	0.00690	0.00696	0.01306
	!CLK	0.00480	0.00485	0.01096
sky130_fd_sc_hs__dfxtp_2	CLK	0.00196	0.00209	0.00781
	CLK	-0.00020	-0.00007	0.00566
	!CLK	0.00684	0.00690	0.01297
	!CLK	0.00468	0.00473	0.01082
sky130_fd_sc_hs__dfxtp_4	CLK	0.00186	0.00201	0.00773
	CLK	-0.00029	-0.00015	0.00559
	!CLK	0.00685	0.00692	0.01300
	!CLK	0.00471	0.00476	0.01085

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	CLK	0.00009	0.00037	0.00568
	CLK	0.00219	0.00248	0.00779
	!CLK	0.00424	0.00432	0.01031
	!CLK	0.00634	0.00643	0.01242
sky130_fd_sc_hs__dfxtp_2	CLK	-0.00021	0.00009	0.00548
	CLK	0.00194	0.00225	0.00763
	!CLK	0.00406	0.00413	0.01014
	!CLK	0.00621	0.00629	0.01230
sky130_fd_sc_hs__dfxtp_4	CLK	-0.00016	0.00010	0.00555
	CLK	0.00198	0.00226	0.00769
	!CLK	0.00400	0.00407	0.01008
	!CLK	0.00614	0.00622	0.01222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.01005	0.01006	0.02690
	(D * Q)	0.00691	0.00690	0.02377
	(!D * !Q)	0.01045	0.01047	0.02733
	(!D * !Q)	0.00732	0.00732	0.02419
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.01008	0.01009	0.02697
	(D * Q)	0.00692	0.00692	0.02382
	(!D * !Q)	0.01040	0.01042	0.02732
	(!D * !Q)	0.00724	0.00725	0.02415
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.01001	0.01004	0.02687
	(D * Q)	0.00689	0.00690	0.02375
	(!D * !Q)	0.01034	0.01043	0.02722
	(!D * !Q)	0.00722	0.00732	0.02409

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dfxtp_1	(D * Q)	0.00809	0.00847	0.02582
	(D * Q)	0.01122	0.01162	0.02896
	(D * !Q)	0.01258	0.01281	0.03092
	(D * !Q)	0.01571	0.01596	0.03406
	(!D * Q)	0.01335	0.01383	0.03175
	(!D * Q)	0.01649	0.01697	0.03489
	(!D * !Q)	0.00762	0.00799	0.02538
	(!D * !Q)	0.01075	0.01114	0.02852
sky130_fd_sc_hs__dfxtp_2	(D * Q)	0.00792	0.00830	0.02567
	(D * Q)	0.01107	0.01147	0.02883
	(D * !Q)	0.01230	0.01256	0.03065
	(D * !Q)	0.01546	0.01572	0.03382
	(!D * Q)	0.01324	0.01373	0.03169
	(!D * Q)	0.01640	0.01688	0.03485
	(!D * !Q)	0.00754	0.00791	0.02532
	(!D * !Q)	0.01069	0.01108	0.02848
sky130_fd_sc_hs__dfxtp_4	(D * Q)	0.00823	0.00861	0.02592
	(D * Q)	0.01135	0.01173	0.02904
	(D * !Q)	0.01265	0.01290	0.03091
	(D * !Q)	0.01576	0.01602	0.03404
	(!D * Q)	0.01357	0.01405	0.03189
	(!D * Q)	0.01668	0.01717	0.03501
	(!D * !Q)	0.00784	0.00821	0.02554
	(!D * !Q)	0.01095	0.01134	0.02867

SKY130_FD_SC_HS__DIODE_2

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00244	0.00418	1.17385
sky130_fd_sc_hs__dlclkp_2	0.00244	0.00448	2.26906
sky130_fd_sc_hs__dlclkp_4	0.00242	0.00467	4.50307

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlclkp_1	0.00000	0.43697	0.75240
sky130_fd_sc_hs__dlclkp_2	0.00000	0.34464	0.41145
sky130_fd_sc_hs__dlclkp_4	0.00000	0.37138	0.39350

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)**	0.05698	0.49961	5.88027
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (RR)**	0.05809	0.42150	5.74387
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (RR)**	0.08014	0.41680	6.04704

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlclkp_1	**CLK->GCLK (FF)**	0.07006	0.47498	4.49633
sky130_fd_sc_hs__dlclkp_2	**CLK->GCLK (FF)**	0.07596	0.48054	4.52537
sky130_fd_sc_hs__dlclkp_4	**CLK->GCLK (FF)**	0.10089	0.53215	4.85271

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)	-0.02116	-0.06123	-0.40064
	setup	CLK (R)	0.10538	0.18237	0.57009
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.02347	-0.05912	-0.39289
	setup	CLK (R)	0.11246	0.16467	0.56925
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.01963	-0.05700	-0.38033
	setup	CLK (R)	0.11096	0.13112	0.62927

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)	-0.04848	-0.17267	-3.11666
	setup	CLK (R)	0.09597	0.23718	3.33226
sky130_fd_sc_hs__dlclkp_2	hold	CLK (R)	-0.04499	-0.16837	-3.09933
	setup	CLK (R)	0.09251	0.21998	3.18385
sky130_fd_sc_hs__dlclkp_4	hold	CLK (R)	-0.04459	-0.16757	-3.08818
	setup	CLK (R)	0.07999	0.18701	3.17550

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 ()	0.03994	0.63599	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.04471	0.63599	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.06617	0.63599	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 ()	0.15915	0.63599	16.50020
	min_pulse_width	CLK ()	0.14484	0.63599	16.50020
sky130_fd_sc_hs__dlclkp_2	min_pulse_width	CLK ()	0.16869	0.63599	16.50020
	min_pulse_width	CLK ()	0.14961	0.63599	16.50020
sky130_fd_sc_hs__dlclkp_4	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.14723	0.63599	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	0.01262	0.01355	0.06103
	CLK	0.00753	0.00846	0.05622
sky130_fd_sc_hs__dlclkp_2	CLK	0.01497	0.01585	0.05822
	CLK	0.00955	0.01042	0.05294
sky130_fd_sc_hs__dlclkp_4	CLK	0.01932	0.02030	0.05759
	CLK	0.01375	0.01478	0.05315

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.01384	0.01624	0.06159
	CLK	0.01903	0.02132	0.06662
sky130_fd_sc_hs__dlclkp_2	CLK	0.01631	0.01908	0.06058
	CLK	0.02182	0.02452	0.06560
sky130_fd_sc_hs__dlclkp_4	CLK	0.01426	0.01690	0.05791
	CLK	0.01977	0.02200	0.06202

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	0.00141	0.00128	0.00127
	CLK	-0.00117	-0.00132	-0.00132
	(!CLK * !GCLK)	0.00902	0.00894	0.01771
	(!CLK * !GCLK)	0.00625	0.00615	0.01492
sky130_fd_sc_hs__dlclkp_2	CLK	0.00111	0.00112	0.00111
	CLK	-0.00147	-0.00148	-0.00148
	(!CLK * !GCLK)	0.00912	0.00904	0.01778
	(!CLK * !GCLK)	0.00636	0.00625	0.01502
sky130_fd_sc_hs__dlclkp_4	CLK	0.00107	0.00108	0.00108
	CLK	-0.00146	-0.00148	-0.00148
	(!CLK * !GCLK)	0.00890	0.00883	0.01755
	(!CLK * !GCLK)	0.00629	0.00619	0.01493

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	CLK	-0.00124	-0.00126	-0.00125
	CLK	0.00133	0.00134	0.00134
	(!CLK * !GCLK)	0.00590	0.00574	0.01415
	(!CLK * !GCLK)	0.00870	0.00854	0.01695
sky130_fd_sc_hs__dlclkp_2	CLK	-0.00105	-0.00110	-0.00110
	CLK	0.00153	0.00150	0.00149
	(!CLK * !GCLK)	0.00615	0.00598	0.01438
	(!CLK * !GCLK)	0.00893	0.00877	0.01716
sky130_fd_sc_hs__dlclkp_4	CLK	-0.00102	-0.00107	-0.00107
	CLK	0.00152	0.00150	0.00148
	(!CLK * !GCLK)	0.00661	0.00645	0.01482
	(!CLK * !GCLK)	0.00924	0.00908	0.01745

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(!GATE * !GCLK)	0.00793	0.00853	0.03424
	(!GATE * !GCLK)	0.00309	0.00367	0.02940
sky130_fd_sc_hs__dlclkp_2	(!GATE * !GCLK)	0.00834	0.00876	0.03451
	(!GATE * !GCLK)	0.00317	0.00356	0.02933
sky130_fd_sc_hs__dlclkp_4	(!GATE * !GCLK)	0.00831	0.00863	0.03426
	(!GATE * !GCLK)	0.00297	0.00329	0.02892

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlclkp_1	(GATE * !GCLK)	0.01069	0.01178	0.04103
	(GATE * !GCLK)	0.01551	0.01665	0.04587
	(!GATE * !GCLK)	0.00355	0.00457	0.03064
	(!GATE * !GCLK)	0.00839	0.00944	0.03550
sky130_fd_sc_hs__dlclkp_2	(GATE * !GCLK)	0.01102	0.01210	0.04071
	(GATE * !GCLK)	0.01620	0.01731	0.04592
	(!GATE * !GCLK)	0.00376	0.00477	0.03079
	(!GATE * !GCLK)	0.00892	0.00996	0.03598
sky130_fd_sc_hs__dlclkp_4	(GATE * !GCLK)	0.01065	0.01159	0.03986
	(GATE * !GCLK)	0.01612	0.01708	0.04534
	(!GATE * !GCLK)	0.00352	0.00447	0.03008
	(!GATE * !GCLK)	0.00883	0.00983	0.03543

SKY130_FD_SC_HS__DLRBNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00221	0.00242	0.00264	1.12886	1.14881
sky130_fd_sc_hs__dlrbn_2	0.00222	0.00242	0.00274	1.96157	2.23074

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbn_1	0.00000	0.57630	0.78482
sky130_fd_sc_hs__dlrbn_2	0.00000	0.49002	0.64710

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)	0.21856	0.66153	5.82214
	GATE_N->Q (-R)	0.26237	0.92187	8.59650
	RESET_B->Q (RR)	0.07204	0.54992	5.80776
sky130_fd_sc_hs__dlrbn_2	D->Q (RR)	0.22433	0.59079	5.77356
	GATE_N->Q (-R)	0.27099	0.85628	8.57307
	RESET_B->Q (RR)	0.07793	0.49600	5.81818

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbn_1	D->Q (FF)	0.16746	0.54860	4.09684
	GATE_N->Q (-F)	0.18479	0.59937	4.30912
	RESET_B->Q (FF)	0.08154	0.53888	4.54999
sky130_fd_sc_hs__dlrbn_2	D->Q (FF)	0.18494	0.54009	3.87615
	GATE_N->Q (-F)	0.20283	0.59136	4.08705
	RESET_B->Q (FF)	0.09497	0.54217	4.43280

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)	0.20665	0.84197	8.35650
	GATE_N->Q_N (-R)	0.22410	0.89246	8.56759
	RESET_B->Q_N (FR)	0.12228	0.81191	8.55766
sky130_fd_sc_hs__dlrbn_2	D->Q_N (FR)	0.24203	0.79248	8.68325
	GATE_N->Q_N (-R)	0.26010	0.84337	8.89402
	RESET_B->Q_N (FR)	0.15414	0.77896	8.96943

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)	0.24510	0.41698	1.59887
	GATE_N->Q_N (-F)	0.28895	0.67737	4.37361
	RESET_B->Q_N (RF)	0.09889	0.30134	1.44278
sky130_fd_sc_hs__dlrbn_2	D->Q_N (RF)	0.27732	0.43549	1.83511
	GATE_N->Q_N (-F)	0.32401	0.70093	4.63525
	RESET_B->Q_N (RF)	0.13066	0.33876	1.79189

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 ()**	0.10193	0.63599	16.50020
sky130_fd_sc_hs__dlrbn_2	**min_pulse_width**	**RESET_B ()**	0.12815	0.63599	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	0.00923	0.00953	0.02083
	D	0.00783	0.00810	0.01945
	GATE_N	0.00949	0.01014	0.02281
	GATE_N	0.01080	0.01144	0.02403
	RESET_B	0.00609	0.00613	0.01117
	RESET_B	0.00449	0.00453	0.00959
sky130_fd_sc_hs__dlrbn_2	D	0.01111	0.01172	0.02288
	D	0.00973	0.01031	0.02154
	GATE_N	0.01138	0.01231	0.02480
	GATE_N	0.01269	0.01362	0.02603
	RESET_B	0.00814	0.00844	0.01227
	RESET_B	0.00650	0.00679	0.01063

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00720	0.00801	0.01916
	D	0.00860	0.00940	0.02055
	GATE_N	0.00880	0.00961	0.02281
	GATE_N	0.01029	0.01108	0.02415
	RESET_B	0.00638	0.00665	0.01340
	RESET_B	0.00786	0.00812	0.01484
sky130_fd_sc_hs__dlrbn_2	D	0.00927	0.01042	0.02160
	D	0.01064	0.01179	0.02287
	GATE_N	0.01085	0.01210	0.02515
	GATE_N	0.01231	0.01348	0.02644
	RESET_B	0.00836	0.00881	0.01545
	RESET_B	0.00989	0.01033	0.01692

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00722	0.00804	0.01942
	D	0.00862	0.00942	0.02081
	GATE_N	0.00882	0.00960	0.02288
	GATE_N	0.01030	0.01108	0.02435
	RESET_B	0.00639	0.00666	0.01365
	RESET_B	0.00788	0.00813	0.01510
sky130_fd_sc_hs__dlrbn_2	D	0.00928	0.01055	0.02205
	D	0.01066	0.01182	0.02313
	GATE_N	0.01086	0.01201	0.02554
	GATE_N	0.01232	0.01346	0.02660
	RESET_B	0.00837	0.00882	0.01606
	RESET_B	0.00990	0.01034	0.01725

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbn_1	D	0.00922	0.00952	0.02058
	D	0.00782	0.00809	0.01922
	GATE_N	0.00948	0.01012	0.02266
	GATE_N	0.01079	0.01143	0.02380
	RESET_B	0.00608	0.00613	0.01105
	RESET_B	0.00448	0.00452	0.00945
sky130_fd_sc_hs__dlrbn_2	D	0.01110	0.01170	0.02255
	D	0.00973	0.01030	0.02117
	GATE_N	0.01137	0.01231	0.02454
	GATE_N	0.01268	0.01361	0.02571
	RESET_B	0.00814	0.00843	0.01211
	RESET_B	0.00649	0.00678	0.01045

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)	0.00409	0.00452	0.02692
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00147	0.00189	0.02430
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00750	0.00783	0.03036
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00507	0.00538	0.02791
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)	0.00405	0.00447	0.02656
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00148	0.00187	0.02396
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00709	0.00751	0.02962
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00468	0.00509	0.02720

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)	0.00114	0.00224	0.02491
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00375	0.00487	0.02752
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00543	0.00643	0.02928
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00788	0.00889	0.03173
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)	0.00107	0.00216	0.02446
	(GATE_N * RESET_B * Q * !Q_N) + (GATE_N * RESET_B * !Q * Q_N) + (GATE_N * !RESET_B * !Q * Q_N)	0.00366	0.00476	0.02706
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00559	0.00662	0.02907
	(!GATE_N * !RESET_B * !Q * Q_N)	0.00801	0.00905	0.03149

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)	0.00724	0.00762	0.03333
	(D * RESET_B * Q * !Q_N)	0.00446	0.00481	0.03053
	(D * !RESET_B * !Q * Q_N)	0.01119	0.01153	0.03697
	(D * !RESET_B * !Q * Q_N)	0.00824	0.00857	0.03400
	(!D * !Q * Q_N)	0.00773	0.00817	0.03363
	(!D * !Q * Q_N)	0.00492	0.00537	0.03083
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00725	0.00761	0.03264
	(D * RESET_B * Q * !Q_N)	0.00449	0.00482	0.02987
	(D * !RESET_B * !Q * Q_N)	0.01133	0.01164	0.03674
	(D * !RESET_B * !Q * Q_N)	0.00841	0.00869	0.03380
	(!D * !Q * Q_N)	0.00765	0.00799	0.03324
	(!D * !Q * Q_N)	0.00488	0.00520	0.03046

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)	0.00557	0.00660	0.03227
	(D * RESET_B * Q * !Q_N)	0.00836	0.00940	0.03506
	(D * !RESET_B * !Q * Q_N)	0.00802	0.00893	0.03403
	(D * !RESET_B * !Q * Q_N)	0.01098	0.01190	0.03700
	(!D * !Q * Q_N)	0.00511	0.00617	0.03192
	(!D * !Q * Q_N)	0.00791	0.00897	0.03471
sky130_fd_sc_hs__dlrbn_2	(D * RESET_B * Q * !Q_N)	0.00547	0.00650	0.03176
	(D * RESET_B * Q * !Q_N)	0.00824	0.00928	0.03454
	(D * !RESET_B * !Q * Q_N)	0.00763	0.00853	0.03323
	(D * !RESET_B * !Q * Q_N)	0.01058	0.01149	0.03618
	(!D * !Q * Q_N)	0.00511	0.00615	0.03150
	(!D * !Q * Q_N)	0.00788	0.00893	0.03428

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)	0.00125	0.00125	0.00125
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00148	-0.00148	-0.00148
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00132	0.00134	0.00132
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00150	-0.00151	-0.00150

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)	-0.00119	-0.00124	-0.00123
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00153	0.00151	0.00150
sky130_fd_sc_hs__dlrbn_2	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	-0.00127	-0.00133	-0.00132
	(D * GATE_N * !Q * Q_N) + (!D * !Q * Q_N)	0.00155	0.00153	0.00152

SKY130_FD_SC_HS__DLRBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00204	0.00232	0.00273	1.12527	1.12354
sky130_fd_sc_hs__dlrbp_2	0.00205	0.00231	0.00273	2.24515	2.29639

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlrbp_1	0.00000	0.57630	0.78482
sky130_fd_sc_hs__dlrbp_2	0.00000	0.49002	0.64710

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)	0.21168	0.65203	5.81536
	GATE->Q (-R)	0.18765	0.63454	5.73117
	RESET_B->Q (RR)	0.07339	0.55493	5.84207
sky130_fd_sc_hs__dlrbp_2	D->Q (RR)	0.21748	0.55947	5.77707
	GATE->Q (-R)	0.19146	0.53858	5.68802
	RESET_B->Q (RR)	0.07638	0.47560	5.89254

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrbp_1	D->Q (FF)	0.16642	0.54531	4.09926
	GATE->Q (-F)	0.17897	0.36449	1.38441
	RESET_B->Q (FF)	0.08299	0.54306	4.56398
sky130_fd_sc_hs__dlrbp_2	D->Q (FF)	0.18333	0.54713	4.20975
	GATE->Q (-F)	0.19533	0.36428	1.49004
	RESET_B->Q (FF)	0.09013	0.54408	4.75053

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)	0.20764	0.84570	8.39314
	GATE->Q_N (-R)	0.22026	0.66491	5.67871
	RESET_B->Q_N (FR)	0.12581	0.82295	8.60235
sky130_fd_sc_hs__dlrbp_2	D->Q_N (FR)	0.23915	0.76846	8.40268
	GATE->Q_N (-R)	0.25131	0.58570	5.67993
	RESET_B->Q_N (FR)	0.14554	0.75087	8.66410

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)	0.23962	0.40429	1.50682
	GATE->Q_N (-F)	0.21553	0.38685	1.42205
	RESET_B->Q_N (RF)	0.10144	0.30295	1.39282
sky130_fd_sc_hs__dlrbp_2	D->Q_N (RF)	0.26393	0.40287	1.63595
	GATE->Q_N (-F)	0.23796	0.38204	1.54668
	RESET_B->Q_N (RF)	0.12255	0.31631	1.62944

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 ()**	0.10193	0.63599	16.50020
sky130_fd_sc_hs__dlrbp_2	**min_pulse_width**	**RESET_B ()**	0.12100	0.63599	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	0.00872	0.00904	0.02019
	D	0.00741	0.00769	0.01890
	GATE	0.00997	0.01014	0.02327
	GATE	0.00851	0.00869	0.02192
	RESET_B	0.00614	0.00612	0.01116
	RESET_B	0.00449	0.00447	0.00951
sky130_fd_sc_hs__dlrbp_2	D	0.01089	0.01147	0.02267
	D	0.00959	0.01014	0.02139
	GATE	0.01210	0.01257	0.02575
	GATE	0.01065	0.01112	0.02435
	RESET_B	0.00823	0.00847	0.01394
	RESET_B	0.00658	0.00681	0.01249

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00749	0.00830	0.01935
	D	0.00879	0.00960	0.02061
	GATE	0.01030	0.01072	0.02326
	GATE	0.00906	0.00945	0.02207
	RESET_B	0.00646	0.00673	0.01351
	RESET_B	0.00800	0.00825	0.01495
sky130_fd_sc_hs__dlrbp_2	D	0.00956	0.01071	0.02210
	D	0.01087	0.01196	0.02305
	GATE	0.01237	0.01306	0.02570
	GATE	0.01110	0.01179	0.02450
	RESET_B	0.00851	0.00906	0.01639
	RESET_B	0.01004	0.01052	0.01754

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00750	0.00834	0.01957
	D	0.00880	0.00962	0.02086
	GATE	0.01032	0.01076	0.02363
	GATE	0.00908	0.00947	0.02243
	RESET_B	0.00647	0.00674	0.01370
	RESET_B	0.00801	0.00826	0.01520
sky130_fd_sc_hs__dlrbp_2	D	0.00958	0.01067	0.02514
	D	0.01088	0.01197	0.02366
	GATE	0.01238	0.01312	0.02603
	GATE	0.01112	0.01182	0.02483
	RESET_B	0.00852	0.00909	0.01671
	RESET_B	0.01005	0.01053	0.01781

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrbp_1	D	0.00871	0.00901	0.01992
	D	0.00740	0.00768	0.01862
	GATE	0.00996	0.01014	0.02296
	GATE	0.00850	0.00868	0.02156
	RESET_B	0.00613	0.00612	0.01109
	RESET_B	0.00448	0.00446	0.00946
sky130_fd_sc_hs__dlrbp_2	D	0.01089	0.01144	0.02237
	D	0.00958	0.01013	0.02114
	GATE	0.01210	0.01256	0.02527
	GATE	0.01065	0.01111	0.02383
	RESET_B	0.00822	0.00848	0.01357
	RESET_B	0.00657	0.00682	0.01193

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)	0.00643	0.00681	0.02906
	(GATE * !RESET_B * !Q * Q_N)	0.00422	0.00458	0.02684
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00394	0.00441	0.02655
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00155	0.00199	0.02416
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00649	0.00686	0.02910
	(GATE * !RESET_B * !Q * Q_N)	0.00427	0.00463	0.02688
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00394	0.00440	0.02653
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00153	0.00197	0.02411

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)	0.00570	0.00673	0.02928
	(GATE * !RESET_B * !Q * Q_N)	0.00793	0.00896	0.03150
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00085	0.00199	0.02434
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00326	0.00439	0.02674
sky130_fd_sc_hs__dlrbp_2	(GATE * !RESET_B * !Q * Q_N)	0.00577	0.00679	0.02935
	(GATE * !RESET_B * !Q * Q_N)	0.00799	0.00903	0.03159
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00093	0.00206	0.02440
	(!GATE * RESET_B * Q * !Q_N) + (!GATE * RESET_B * !Q * Q_N) + (!GATE * !RESET_B * !Q * Q_N)	0.00335	0.00448	0.02682

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)	0.00739	0.00779	0.03296
	(D * RESET_B * Q * !Q_N)	0.00468	0.00506	0.03026
	(D * !RESET_B * !Q * Q_N)	0.00864	0.00888	0.03520
	(D * !RESET_B * !Q * Q_N)	0.00611	0.00635	0.03267
	(!D * !Q * Q_N)	0.00745	0.00784	0.03321
	(!D * !Q * Q_N)	0.00474	0.00512	0.03050
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00741	0.00781	0.03300
	(D * RESET_B * Q * !Q_N)	0.00470	0.00507	0.03029
	(D * !RESET_B * !Q * Q_N)	0.00864	0.00888	0.03523
	(D * !RESET_B * !Q * Q_N)	0.00612	0.00635	0.03270
	(!D * !Q * Q_N)	0.00743	0.00783	0.03323
	(!D * !Q * Q_N)	0.00472	0.00510	0.03051

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)	0.00468	0.00573	0.03103
	(D * RESET_B * Q * !Q_N)	0.00738	0.00844	0.03374
	(D * !RESET_B * !Q * Q_N)	0.00784	0.00881	0.03506
	(D * !RESET_B * !Q * Q_N)	0.01037	0.01135	0.03760
	(!D * !Q * Q_N)	0.00466	0.00569	0.03113
	(!D * !Q * Q_N)	0.00736	0.00840	0.03383
sky130_fd_sc_hs__dlrbp_2	(D * RESET_B * Q * !Q_N)	0.00465	0.00571	0.03101
	(D * RESET_B * Q * !Q_N)	0.00736	0.00843	0.03373
	(D * !RESET_B * !Q * Q_N)	0.00779	0.00877	0.03501
	(D * !RESET_B * !Q * Q_N)	0.01031	0.01131	0.03754
	(!D * !Q * Q_N)	0.00466	0.00573	0.03114
	(!D * !Q * Q_N)	0.00738	0.00845	0.03387

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)	0.00127	0.00127	0.00127
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00152	-0.00153	-0.00152
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00128	0.00129	0.00128
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00152	-0.00152	-0.00152

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)	-0.00121	-0.00126	-0.00125
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00157	0.00155	0.00154
sky130_fd_sc_hs__dlrbp_2	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	-0.00123	-0.00128	-0.00127
	(D * !GATE * !Q * Q_N) + (!D * !Q * Q_N)	0.00157	0.00155	0.00153

SKY130_FD_SC_HS__DLRTNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00203	0.00234	0.00261	1.14893
sky130_fd_sc_hs__dlrtn_2	0.00205	0.00232	0.00269	2.25030
sky130_fd_sc_hs__dlrtn_4	0.00204	0.00233	0.00442	4.22106

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtn_1	0.00000	0.42113	0.57521
sky130_fd_sc_hs__dlrtn_2	0.00000	0.42879	0.58797
sky130_fd_sc_hs__dlrtn_4	0.00000	0.73021	1.37604

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)	0.20316	0.63948	5.75871
	GATE_N->Q (-R)	0.23831	0.88392	8.48241
	RESET_B->Q (RR)	0.06330	0.51980	5.74903
sky130_fd_sc_hs__dlrtn_2	D->Q (RR)	0.21018	0.55514	5.81805
	GATE_N->Q (-R)	0.24537	0.79932	8.54013
	RESET_B->Q (RR)	0.06677	0.44760	5.80140
sky130_fd_sc_hs__dlrtn_4	D->Q (RR)	0.23331	0.51164	5.87839
	GATE_N->Q (-R)	0.26908	0.75812	8.59260
	RESET_B->Q (RR)	0.07278	0.38223	5.94969

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtn_1	D->Q (FF)	0.15535	0.53019	4.11639
	GATE_N->Q (-F)	0.16701	0.57020	4.29431
	RESET_B->Q (FF)	0.07348	0.50149	4.41347
sky130_fd_sc_hs__dlrtn_2	D->Q (FF)	0.16229	0.50831	4.06770
	GATE_N->Q (-F)	0.17382	0.54834	4.24778
	RESET_B->Q (FF)	0.07972	0.50633	4.55629
sky130_fd_sc_hs__dlrtn_4	D->Q (FF)	0.17234	0.50084	4.15495
	GATE_N->Q (-F)	0.18684	0.54732	4.34913
	RESET_B->Q (FF)	0.08578	0.47447	4.58279

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 ()**	0.09001	0.63599	16.50020
sky130_fd_sc_hs__dlrtn_2	**min_pulse_width**	**RESET_B ()**	0.10670	0.63599	16.50020
sky130_fd_sc_hs__dlrtn_4	**min_pulse_width**	**RESET_B ()**	0.12577	0.63599	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	0.01288	0.01334	0.03586
	D	0.01030	0.01077	0.03335
	GATE_N	0.01331	0.01460	0.03980
	GATE_N	0.01585	0.01714	0.04233
	RESET_B	0.00775	0.00770	0.02110
	RESET_B	0.00458	0.00453	0.01800
sky130_fd_sc_hs__dlrtn_2	D	0.01473	0.01557	0.03814
	D	0.01217	0.01302	0.03571
	GATE_N	0.01519	0.01687	0.04219
	GATE_N	0.01774	0.01944	0.04473
	RESET_B	0.00952	0.00967	0.01899
	RESET_B	0.00627	0.00643	0.01591
sky130_fd_sc_hs__dlrtn_4	D	0.02103	0.02261	0.04563
	D	0.01830	0.01995	0.04411
	GATE_N	0.02153	0.02399	0.04961
	GATE_N	0.02390	0.02636	0.05197
	RESET_B	0.01667	0.01761	0.05408
	RESET_B	0.01133	0.01225	0.04987

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	D	0.01057	0.01187	0.03451
	D	0.01314	0.01438	0.03701
	GATE_N	0.01275	0.01430	0.04100
	GATE_N	0.01568	0.01721	0.04356
	RESET_B	0.00841	0.00921	0.02500
	RESET_B	0.01135	0.01212	0.02765
sky130_fd_sc_hs__dlrtn_2	D	0.01274	0.01448	0.03701
	D	0.01529	0.01687	0.03949
	GATE_N	0.01502	0.01726	0.04363
	GATE_N	0.01788	0.01973	0.04601
	RESET_B	0.01054	0.01167	0.02485
	RESET_B	0.01355	0.01421	0.02697
sky130_fd_sc_hs__dlrtn_4	D	0.01822	0.02058	0.04493
	D	0.02095	0.02311	0.04583
	GATE_N	0.02053	0.02294	0.05127
	GATE_N	0.02358	0.02598	0.05252
	RESET_B	0.01639	0.01841	0.05669
	RESET_B	0.02144	0.02334	0.06102

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)	0.00380	0.00426	0.02654
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00142	0.00187	0.02416
	(!GATE_N * !RESET_B * !Q)	0.00631	0.00667	0.02908
	(!GATE_N * !RESET_B * !Q)	0.00412	0.00447	0.02688
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00384	0.00428	0.02657
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00143	0.00187	0.02416
	(!GATE_N * !RESET_B * !Q)	0.00634	0.00670	0.02910
	(!GATE_N * !RESET_B * !Q)	0.00413	0.00447	0.02689
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00383	0.00428	0.02659
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00143	0.00188	0.02420
	(!GATE_N * !RESET_B * !Q)	0.00669	0.00705	0.02946
	(!GATE_N * !RESET_B * !Q)	0.00451	0.00485	0.02726

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)	0.00119	0.00232	0.02486
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00357	0.00470	0.02723
	(!GATE_N * !RESET_B * !Q)	0.00608	0.00709	0.02984
	(!GATE_N * !RESET_B * !Q)	0.00829	0.00930	0.03205
sky130_fd_sc_hs__dlrtn_2	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00117	0.00230	0.02484
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00358	0.00471	0.02724
	(!GATE_N * !RESET_B * !Q)	0.00611	0.00712	0.02987
	(!GATE_N * !RESET_B * !Q)	0.00834	0.00935	0.03210
sky130_fd_sc_hs__dlrtn_4	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00114	0.00227	0.02483
	(GATE_N * RESET_B) + (GATE_N * !RESET_B * !Q)	0.00354	0.00467	0.02722
	(!GATE_N * !RESET_B * !Q)	0.00703	0.00804	0.03079
	(!GATE_N * !RESET_B * !Q)	0.00923	0.01025	0.03300

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)	0.00713	0.00749	0.03339
	(D * RESET_B * Q)	0.00440	0.00475	0.03066
	(D * !RESET_B * !Q)	0.01108	0.01144	0.03710
	(D * !RESET_B * !Q)	0.00819	0.00852	0.03420
	(!D * !Q)	0.00710	0.00748	0.03324
	(!D * !Q)	0.00437	0.00475	0.03050
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00709	0.00746	0.03338
	(D * RESET_B * Q)	0.00439	0.00475	0.03067
	(D * !RESET_B * !Q)	0.01110	0.01146	0.03714
	(D * !RESET_B * !Q)	0.00823	0.00857	0.03427
	(!D * !Q)	0.00705	0.00744	0.03321
	(!D * !Q)	0.00435	0.00474	0.03050
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00717	0.00752	0.03341
	(D * RESET_B * Q)	0.00446	0.00480	0.03069
	(D * !RESET_B * !Q)	0.01205	0.01241	0.03812
	(D * !RESET_B * !Q)	0.00916	0.00950	0.03522
	(!D * !Q)	0.00707	0.00745	0.03320
	(!D * !Q)	0.00436	0.00474	0.03049

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)	0.00467	0.00572	0.03150
	(D * RESET_B * Q)	0.00740	0.00846	0.03424
	(D * !RESET_B * !Q)	0.00674	0.00768	0.03290
	(D * !RESET_B * !Q)	0.00964	0.01059	0.03581
	(!D * !Q)	0.00470	0.00577	0.03163
	(!D * !Q)	0.00743	0.00852	0.03436
sky130_fd_sc_hs__dlrtn_2	(D * RESET_B * Q)	0.00473	0.00578	0.03158
	(D * RESET_B * Q)	0.00742	0.00849	0.03429
	(D * !RESET_B * !Q)	0.00681	0.00775	0.03299
	(D * !RESET_B * !Q)	0.00969	0.01064	0.03587
	(!D * !Q)	0.00478	0.00585	0.03172
	(!D * !Q)	0.00748	0.00856	0.03442
sky130_fd_sc_hs__dlrtn_4	(D * RESET_B * Q)	0.00475	0.00580	0.03158
	(D * RESET_B * Q)	0.00746	0.00852	0.03430
	(D * !RESET_B * !Q)	0.00718	0.00814	0.03336
	(D * !RESET_B * !Q)	0.01009	0.01106	0.03626
	(!D * !Q)	0.00484	0.00590	0.03175
	(!D * !Q)	0.00754	0.00862	0.03446

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)	0.00125	0.00127	0.00126
	(D * GATE_N * !Q) + (!D * !Q)	-0.00140	-0.00142	-0.00141
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	0.00129	0.00130	0.00129
	(D * GATE_N * !Q) + (!D * !Q)	-0.00150	-0.00150	-0.00150
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	0.00218	0.00219	0.00218
	(D * GATE_N * !Q) + (!D * !Q)	-0.00232	-0.00233	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtn_1	(D * GATE_N * !Q) + (!D * !Q)	-0.00121	-0.00126	-0.00125
	(D * GATE_N * !Q) + (!D * !Q)	0.00146	0.00144	0.00142
sky130_fd_sc_hs__dlrtn_2	(D * GATE_N * !Q) + (!D * !Q)	-0.00124	-0.00129	-0.00128
	(D * GATE_N * !Q) + (!D * !Q)	0.00155	0.00153	0.00151
sky130_fd_sc_hs__dlrtn_4	(D * GATE_N * !Q) + (!D * !Q)	-0.00208	-0.00218	-0.00218
	(D * GATE_N * !Q) + (!D * !Q)	0.00239	0.00236	0.00234

SKY130_FD_SC_HS__DLRTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00219	0.00236	0.00267	1.16136
sky130_fd_sc_hs__dlrtp_2	0.00216	0.00231	0.00274	2.25460
sky130_fd_sc_hs__dlrtp_4	0.00215	0.00230	0.00421	4.24227

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__dlrtp_1	0.00000	0.42113	0.57521
sky130_fd_sc_hs__dlrtp_2	0.00000	0.42879	0.58797
sky130_fd_sc_hs__dlrtp_4	0.00000	0.73021	1.37604

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)	0.20113	0.63574	5.79075
	GATE->Q (-R)	0.17652	0.61847	5.70262
	RESET_B->Q (RR)	0.06403	0.52243	5.80837
sky130_fd_sc_hs__dlrtp_2	D->Q (RR)	0.20903	0.55058	5.78402
	GATE->Q (-R)	0.18393	0.53000	5.69768
	RESET_B->Q (RR)	0.06649	0.44727	5.81036
sky130_fd_sc_hs__dlrtp_4	D->Q (RR)	0.23194	0.50831	5.85563
	GATE->Q (-R)	0.20942	0.49193	5.78342
	RESET_B->Q (RR)	0.07258	0.38127	5.95408

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlrtp_1	D->Q (FF)	0.16259	0.54771	4.28199
	GATE->Q (-F)	0.17462	0.36761	1.57453
	RESET_B->Q (FF)	0.07425	0.50834	4.51689
sky130_fd_sc_hs__dlrtp_2	D->Q (FF)	0.17117	0.52503	4.18574
	GATE->Q (-F)	0.18134	0.34001	1.46328
	RESET_B->Q (FF)	0.07727	0.50404	4.60338
sky130_fd_sc_hs__dlrtp_4	D->Q (FF)	0.17896	0.51048	4.19081
	GATE->Q (-F)	0.18885	0.32730	1.47565
	RESET_B->Q (FF)	0.08495	0.47385	4.59289

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 ()**	0.09001	0.63599	16.50020
sky130_fd_sc_hs__dlrtp_2	**min_pulse_width**	**RESET_B ()**	0.10431	0.63599	16.50020
sky130_fd_sc_hs__dlrtp_4	**min_pulse_width**	**RESET_B ()**	0.12339	0.63599	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	0.01296	0.01324	0.03556
	D	0.01010	0.01039	0.03278
	GATE	0.01554	0.01564	0.04185
	GATE	0.01257	0.01275	0.03895
	RESET_B	0.00746	0.00730	0.02039
	RESET_B	0.00423	0.00407	0.01721
sky130_fd_sc_hs__dlrtp_2	D	0.01516	0.01587	0.03824
	D	0.01230	0.01302	0.03549
	GATE	0.01755	0.01812	0.04477
	GATE	0.01460	0.01517	0.04201
	RESET_B	0.00954	0.00964	0.01998
	RESET_B	0.00621	0.00632	0.01675
sky130_fd_sc_hs__dlrtp_4	D	0.02127	0.02282	0.04543
	D	0.01835	0.01997	0.04255
	GATE	0.02365	0.02500	0.05152
	GATE	0.02063	0.02200	0.04870
	RESET_B	0.01647	0.01746	0.05537
	RESET_B	0.01138	0.01237	0.05142

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlrtp_1	D	0.01026	0.01150	0.03400
	D	0.01311	0.01435	0.03681
	GATE	0.01617	0.01683	0.04219
	GATE	0.01357	0.01422	0.03956
	RESET_B	0.00841	0.00933	0.02501
	RESET_B	0.01140	0.01222	0.02749
sky130_fd_sc_hs__dlrtp_2	D	0.01224	0.01407	0.03693
	D	0.01509	0.01690	0.03904
	GATE	0.01792	0.01892	0.04445
	GATE	0.01538	0.01638	0.04180
	RESET_B	0.01031	0.01120	0.02475
	RESET_B	0.01340	0.01411	0.02712
sky130_fd_sc_hs__dlrtp_4	D	0.01799	0.02022	0.04409
	D	0.02090	0.02303	0.04546
	GATE	0.02350	0.02514	0.05071
	GATE	0.02103	0.02263	0.04800
	RESET_B	0.01641	0.01851	0.05792
	RESET_B	0.02122	0.02319	0.06125

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)	0.00673	0.00714	0.02926
	(GATE * !RESET_B * !Q)	0.00426	0.00467	0.02679
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00415	0.00456	0.02668
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00150	0.00188	0.02401
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00681	0.00721	0.02931
	(GATE * !RESET_B * !Q)	0.00435	0.00474	0.02684
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00419	0.00458	0.02667
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00154	0.00192	0.02402
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00704	0.00743	0.02938
	(GATE * !RESET_B * !Q)	0.00460	0.00497	0.02692
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00417	0.00456	0.02654
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00153	0.00190	0.02389

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)	0.00562	0.00663	0.02914
	(GATE * !RESET_B * !Q)	0.00809	0.00911	0.03160
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00083	0.00194	0.02425
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00349	0.00461	0.02692
sky130_fd_sc_hs__dlrtp_2	(GATE * !RESET_B * !Q)	0.00575	0.00675	0.02924
	(GATE * !RESET_B * !Q)	0.00822	0.00922	0.03170
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00088	0.00198	0.02428
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00352	0.00464	0.02693
sky130_fd_sc_hs__dlrtp_4	(GATE * !RESET_B * !Q)	0.00662	0.00762	0.02998
	(GATE * !RESET_B * !Q)	0.00908	0.01010	0.03244
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00085	0.00195	0.02414
	(!GATE * RESET_B) + (!GATE * !RESET_B * !Q)	0.00348	0.00460	0.02678

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)	0.00772	0.00808	0.03347
	(D * RESET_B * Q)	0.00492	0.00528	0.03068
	(D * !RESET_B * !Q)	0.00901	0.00924	0.03545
	(D * !RESET_B * !Q)	0.00641	0.00663	0.03286
	(!D * !Q)	0.00767	0.00804	0.03336
	(!D * !Q)	0.00487	0.00525	0.03057
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00757	0.00794	0.03336
	(D * RESET_B * Q)	0.00481	0.00517	0.03062
	(D * !RESET_B * !Q)	0.00891	0.00913	0.03540
	(D * !RESET_B * !Q)	0.00634	0.00655	0.03283
	(!D * !Q)	0.00750	0.00787	0.03324
	(!D * !Q)	0.00475	0.00512	0.03050
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00745	0.00781	0.03307
	(D * RESET_B * Q)	0.00470	0.00507	0.03033
	(D * !RESET_B * !Q)	0.00914	0.00933	0.03532
	(D * !RESET_B * !Q)	0.00658	0.00677	0.03276
	(!D * !Q)	0.00743	0.00779	0.03298
	(!D * !Q)	0.00469	0.00505	0.03024

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)	0.00466	0.00570	0.03099
	(D * RESET_B * Q)	0.00745	0.00849	0.03378
	(D * !RESET_B * !Q)	0.00788	0.00883	0.03511
	(D * !RESET_B * !Q)	0.01047	0.01144	0.03771
	(!D * !Q)	0.00475	0.00577	0.03120
	(!D * !Q)	0.00755	0.00857	0.03399
sky130_fd_sc_hs__dlrtp_2	(D * RESET_B * Q)	0.00469	0.00574	0.03100
	(D * RESET_B * Q)	0.00743	0.00849	0.03375
	(D * !RESET_B * !Q)	0.00801	0.00897	0.03522
	(D * !RESET_B * !Q)	0.01057	0.01155	0.03779
	(!D * !Q)	0.00480	0.00585	0.03123
	(!D * !Q)	0.00754	0.00860	0.03398
sky130_fd_sc_hs__dlrtp_4	(D * RESET_B * Q)	0.00466	0.00568	0.03087
	(D * RESET_B * Q)	0.00740	0.00843	0.03362
	(D * !RESET_B * !Q)	0.00891	0.00984	0.03586
	(D * !RESET_B * !Q)	0.01148	0.01240	0.03843
	(!D * !Q)	0.00470	0.00574	0.03103
	(!D * !Q)	0.00744	0.00848	0.03378

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)	0.00125	0.00127	0.00126
	(D * !GATE * !Q) + (!D * !Q)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	0.00127	0.00128	0.00127
	(D * !GATE * !Q) + (!D * !Q)	-0.00153	-0.00154	-0.00153
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	0.00213	0.00213	0.00213
	(D * !GATE * !Q) + (!D * !Q)	-0.00221	-0.00221	-0.00220

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)	-0.00121	-0.00125	-0.00125
	(D * !GATE * !Q) + (!D * !Q)	0.00150	0.00149	0.00147
sky130_fd_sc_hs__dlrtp_2	(D * !GATE * !Q) + (!D * !Q)	-0.00122	-0.00127	-0.00126
	(D * !GATE * !Q) + (!D * !Q)	0.00158	0.00156	0.00155
sky130_fd_sc_hs__dlrtp_4	(D * !GATE * !Q) + (!D * !Q)	-0.00202	-0.00212	-0.00212
	(D * !GATE * !Q) + (!D * !Q)	0.00227	0.00225	0.00222

SKY130_FD_SC_HS__DLXBNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00218	0.00236	1.12264	1.15363
sky130_fd_sc_hs__dlxbn_2	0.00206	0.00234	1.94404	2.25512

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbn_1	0.00000	0.52441	0.78482
sky130_fd_sc_hs__dlxbn_2	0.00000	0.47243	0.64710

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)	0.20569	0.65504	5.82140
	GATE_N->Q (-R)	0.24198	0.90181	8.54870
sky130_fd_sc_hs__dlxbn_2	D->Q (RR)	0.21169	0.57512	5.69637
	GATE_N->Q (-R)	0.24770	0.82138	8.41782

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbn_1	D->Q (FF)	0.16529	0.55003	4.19439
	GATE_N->Q (-F)	0.17785	0.59186	4.37972
sky130_fd_sc_hs__dlxbn_2	D->Q (FF)	0.17187	0.51921	3.84619
	GATE_N->Q (-F)	0.18481	0.56152	4.03143

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)	0.20627	0.88713	9.08979
	GATE_N->Q_N (-R)	0.21892	0.92882	9.27573
sky130_fd_sc_hs__dlxbn_2	D->Q_N (FR)	0.22669	0.77768	8.75686
	GATE_N->Q_N (-R)	0.23980	0.81979	8.94179

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)	0.23390	0.41336	1.72742
	GATE_N->Q_N (-F)	0.27023	0.66022	4.45698
sky130_fd_sc_hs__dlxbn_2	D->Q_N (RF)	0.26231	0.42091	1.84216
	GATE_N->Q_N (-F)	0.29836	0.66711	4.56457

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00872	0.00933	0.02064
	D	0.00744	0.00800	0.01939
	GATE_N	0.00888	0.00988	0.02252
	GATE_N	0.01026	0.01126	0.02389
sky130_fd_sc_hs__dlxbn_2	D	0.01076	0.01164	0.02299
	D	0.00954	0.01039	0.02185
	GATE_N	0.01095	0.01222	0.02498
	GATE_N	0.01232	0.01359	0.02630

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00760	0.00844	0.01970
	D	0.00888	0.00971	0.02097
	GATE_N	0.00885	0.00983	0.02329
	GATE_N	0.01023	0.01121	0.02433
sky130_fd_sc_hs__dlxbn_2	D	0.00959	0.01081	0.02210
	D	0.01080	0.01193	0.02325
	GATE_N	0.01082	0.01208	0.02526
	GATE_N	0.01219	0.01343	0.02652

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00762	0.00850	0.01995
	D	0.00890	0.00973	0.02121
	GATE_N	0.00887	0.00987	0.02368
	GATE_N	0.01025	0.01124	0.02451
sky130_fd_sc_hs__dlxbn_2	D	0.00961	0.01074	0.02274
	D	0.01082	0.01194	0.02358
	GATE_N	0.01083	0.01216	0.02566
	GATE_N	0.01220	0.01347	0.02674

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbn_1	D	0.00871	0.00930	0.02035
	D	0.00743	0.00799	0.01911
	GATE_N	0.00887	0.00987	0.02253
	GATE_N	0.01025	0.01125	0.02368
sky130_fd_sc_hs__dlxbn_2	D	0.01075	0.01159	0.02268
	D	0.00953	0.01038	0.02149
	GATE_N	0.01094	0.01221	0.02456
	GATE_N	0.01231	0.01359	0.02592

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)	0.00404	0.00446	0.02677
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00148	0.00190	0.02423
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00394	0.00439	0.02670
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00151	0.00195	0.02427

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)	0.00100	0.00211	0.02468
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00354	0.00467	0.02723
sky130_fd_sc_hs__dlxbn_2	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00105	0.00218	0.02476
	(GATE_N * Q * !Q_N) + (GATE_N * !Q * Q_N)	0.00347	0.00462	0.02718

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)	0.00737	0.00771	0.03358
	(D * Q * !Q_N)	0.00461	0.00494	0.03081
	(!D * !Q * Q_N)	0.00727	0.00765	0.03336
	(!D * !Q * Q_N)	0.00452	0.00487	0.03059
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00735	0.00770	0.03357
	(D * Q * !Q_N)	0.00460	0.00493	0.03081
	(!D * !Q * Q_N)	0.00725	0.00764	0.03335
	(!D * !Q * Q_N)	0.00451	0.00487	0.03059

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)	0.00476	0.00580	0.03155
	(D * Q * !Q_N)	0.00752	0.00856	0.03432
	(!D * !Q * Q_N)	0.00487	0.00592	0.03174
	(!D * !Q * Q_N)	0.00762	0.00869	0.03451
sky130_fd_sc_hs__dlxbn_2	(D * Q * !Q_N)	0.00473	0.00577	0.03152
	(D * Q * !Q_N)	0.00748	0.00852	0.03428
	(!D * !Q * Q_N)	0.00483	0.00592	0.03170
	(!D * !Q * Q_N)	0.00758	0.00868	0.03445

SKY130_FD_SC_HS__DLXBP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00216	0.00237	1.13996	1.14861

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxbp_1	0.00000	0.52441	0.78482

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)	0.20146	0.65273	5.89260
	GATE->Q (-R)	0.17688	0.63307	5.80046

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxbp_1	D->Q (FF)	0.17251	0.56264	4.25723
	GATE->Q (-F)	0.18009	0.37504	1.52894

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)	0.21417	0.89512	9.08144
	GATE->Q_N (-R)	0.22179	0.70759	6.35342

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)	0.22984	0.40689	1.68946
	GATE->Q_N (-F)	0.20528	0.38727	1.59639

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00873	0.00935	0.02057
	D	0.00746	0.00803	0.01941
	GATE	0.00988	0.01037	0.02344
	GATE	0.00850	0.00898	0.02207

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00747	0.00840	0.01954
	D	0.00873	0.00966	0.02072
	GATE	0.01023	0.01079	0.02340
	GATE	0.00885	0.00938	0.02206

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00749	0.00844	0.01968
	D	0.00875	0.00968	0.02093
	GATE	0.01025	0.01080	0.02359
	GATE	0.00886	0.00940	0.02228

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxbp_1	D	0.00872	0.00928	0.02026
	D	0.00745	0.00801	0.01904
	GATE	0.00987	0.01037	0.02318
	GATE	0.00849	0.00897	0.02181

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)	0.00414	0.00457	0.02665
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00160	0.00202	0.02412

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)	0.00089	0.00200	0.02430
	(!GATE * Q * !Q_N) + (!GATE * !Q * Q_N)	0.00341	0.00452	0.02683

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)	0.00733	0.00774	0.03317
	(D * Q * !Q_N)	0.00457	0.00496	0.03040
	(!D * !Q * Q_N)	0.00744	0.00784	0.03319
	(!D * !Q * Q_N)	0.00466	0.00506	0.03042

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)	0.00457	0.00562	0.03091
	(D * Q * !Q_N)	0.00734	0.00840	0.03369
	(!D * !Q * Q_N)	0.00450	0.00557	0.03096
	(!D * !Q * Q_N)	0.00727	0.00835	0.03374

SKY130_FD_SC_HS__DLXTNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00216	0.00240	1.14781
sky130_fd_sc_hs__dlxtn_2	0.00221	0.00239	2.15072
sky130_fd_sc_hs__dlxtn_4	0.00220	0.00238	4.26635

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtn_1	0.00000	0.40627	0.55618
sky130_fd_sc_hs__dlxtn_2	0.00000	0.40980	0.58797
sky130_fd_sc_hs__dlxtn_4	0.00000	0.65625	0.91880

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)	0.19085	0.63169	5.75658
	GATE_N->Q (-R)	0.22761	0.87951	8.48851
sky130_fd_sc_hs__dlxtn_2	D->Q (RR)	0.19393	0.53629	5.62487
	GATE_N->Q (-R)	0.22920	0.78084	8.34700
sky130_fd_sc_hs__dlxtn_4	D->Q (RR)	0.21697	0.49242	5.88079
	GATE_N->Q (-R)	0.25126	0.73655	8.59086

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtn_1	D->Q (FF)	0.15246	0.52679	4.09322
	GATE_N->Q (-F)	0.16659	0.57081	4.28022
sky130_fd_sc_hs__dlxtn_2	D->Q (FF)	0.15902	0.50328	3.99136
	GATE_N->Q (-F)	0.17187	0.54541	4.17845
sky130_fd_sc_hs__dlxtn_4	D->Q (FF)	0.17108	0.50306	4.23668
	GATE_N->Q (-F)	0.18653	0.55076	4.43699

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01237	0.01307	0.03561
	D	0.00973	0.01044	0.03304
	GATE_N	0.01263	0.01420	0.03938
	GATE_N	0.01547	0.01705	0.04221
sky130_fd_sc_hs__dlxtn_2	D	0.01438	0.01532	0.03789
	D	0.01169	0.01264	0.03554
	GATE_N	0.01457	0.01642	0.04167
	GATE_N	0.01738	0.01925	0.04448
sky130_fd_sc_hs__dlxtn_4	D	0.02038	0.02164	0.04434
	D	0.01770	0.01896	0.04284
	GATE_N	0.02058	0.02277	0.04801
	GATE_N	0.02340	0.02559	0.05098

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	D	0.01043	0.01169	0.03446
	D	0.01306	0.01428	0.03692
	GATE_N	0.01284	0.01438	0.04065
	GATE_N	0.01567	0.01720	0.04348
sky130_fd_sc_hs__dlxtn_2	D	0.01234	0.01386	0.03649
	D	0.01502	0.01648	0.03913
	GATE_N	0.01472	0.01676	0.04342
	GATE_N	0.01753	0.01930	0.04548
sky130_fd_sc_hs__dlxtn_4	D	0.01810	0.02009	0.04399
	D	0.02078	0.02276	0.04555
	GATE_N	0.02051	0.02305	0.04948
	GATE_N	0.02333	0.02561	0.05228

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00405	0.00444	0.02664
	GATE_N	0.00140	0.00179	0.02400
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00406	0.00445	0.02666
	GATE_N	0.00136	0.00175	0.02397
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00407	0.00446	0.02666
	GATE_N	0.00138	0.00176	0.02397

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	GATE_N	0.00125	0.00235	0.02482
	GATE_N	0.00388	0.00499	0.02746
sky130_fd_sc_hs__dlxtn_2	GATE_N	0.00124	0.00233	0.02482
	GATE_N	0.00392	0.00504	0.02751
sky130_fd_sc_hs__dlxtn_4	GATE_N	0.00126	0.00236	0.02483
	GATE_N	0.00394	0.00506	0.02752

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00770	0.00802	0.03369
	(D * Q)	0.00486	0.00518	0.03085
	(!D * !Q)	0.00759	0.00794	0.03345
	(!D * !Q)	0.00475	0.00509	0.03061
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00752	0.00787	0.03361
	(D * Q)	0.00471	0.00504	0.03078
	(!D * !Q)	0.00738	0.00775	0.03334
	(!D * !Q)	0.00456	0.00492	0.03051
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00759	0.00792	0.03364
	(D * Q)	0.00478	0.00509	0.03081
	(!D * !Q)	0.00745	0.00780	0.03336
	(!D * !Q)	0.00462	0.00496	0.03053

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtn_1	(D * Q)	0.00479	0.00581	0.03148
	(D * Q)	0.00762	0.00865	0.03432
	(!D * !Q)	0.00491	0.00595	0.03169
	(!D * !Q)	0.00774	0.00879	0.03453
sky130_fd_sc_hs__dlxtn_2	(D * Q)	0.00472	0.00575	0.03146
	(D * Q)	0.00753	0.00858	0.03429
	(!D * !Q)	0.00488	0.00593	0.03170
	(!D * !Q)	0.00769	0.00875	0.03452
sky130_fd_sc_hs__dlxtn_4	(D * Q)	0.00477	0.00580	0.03149
	(D * Q)	0.00758	0.00862	0.03431
	(!D * !Q)	0.00492	0.00597	0.03172
	(!D * !Q)	0.00773	0.00879	0.03454

SKY130_FD_SC_HS__DLXTP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00212	0.00244	1.12501

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlxtp_1	0.00000	0.39308	0.55555

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)	0.23055	0.67400	5.88794
	GATE->Q (-R)	0.18388	0.63495	5.79117

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlxtp_1	D->Q (FF)	0.16627	0.54848	4.23133
	GATE->Q (-F)	0.17836	0.37122	1.53841

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01340	0.01413	0.03674
	D	0.01067	0.01142	0.03434
	GATE	0.01604	0.01632	0.03570
	GATE	0.01307	0.01337	0.03280

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	D	0.01177	0.01305	0.03668
	D	0.01449	0.01576	0.03847
	GATE	0.01731	0.01796	0.03998
	GATE	0.01463	0.01527	0.03725

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00379	0.00429	0.02680
	!GATE	0.00120	0.00170	0.02422

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	!GATE	0.00095	0.00200	0.02468
	!GATE	0.00353	0.00459	0.02726

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00798	0.00837	0.03414
	(D * Q)	0.00518	0.00553	0.03132
	(!D * !Q)	0.00775	0.00823	0.03382
	(!D * !Q)	0.00493	0.00540	0.03100

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlxtp_1	(D * Q)	0.00402	0.00507	0.03083
	(D * Q)	0.00683	0.00790	0.03365
	(!D * !Q)	0.00437	0.00543	0.03125
	(!D * !Q)	0.00718	0.00825	0.03407

SKY130_FD_SC_HS__DLYGATE4SDx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00178	1.14209
sky130_fd_sc_hs__dlygate4sd2_1	0.00180	1.14161
sky130_fd_sc_hs__dlygate4sd3_1	0.00182	1.15297

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__dlygate4sd1_1	0.00000	0.02249	0.03358
sky130_fd_sc_hs__dlygate4sd2_1	0.00000	0.02163	0.03272
sky130_fd_sc_hs__dlygate4sd3_1	0.00000	0.02184	0.03293

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)**	0.13906	0.59506	5.71138
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (RR)**	0.18248	0.64667	5.83762
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (RR)**	0.37219	0.86065	6.24514

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__dlygate4sd1_1	**A->X (FF)**	0.17650	0.62832	4.67343
sky130_fd_sc_hs__dlygate4sd2_1	**A->X (FF)**	0.21995	0.68832	4.78380
sky130_fd_sc_hs__dlygate4sd3_1	**A->X (FF)**	0.36496	0.88312	5.10880

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00953	0.00931	0.01472
	A	0.00737	0.00715	0.01266
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00999	0.00979	0.01491
	A	0.00781	0.00761	0.01276
sky130_fd_sc_hs__dlygate4sd3_1	A	0.01135	0.01125	0.01619
	A	0.00915	0.00906	0.01422

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__dlygate4sd1_1	A	0.00713	0.00715	0.01211
	A	0.00929	0.00930	0.01417
sky130_fd_sc_hs__dlygate4sd2_1	A	0.00763	0.00758	0.01257
	A	0.00982	0.00975	0.01427
sky130_fd_sc_hs__dlygate4sd3_1	A	0.00936	0.00916	0.01314
	A	0.01156	0.01142	0.01534

SKY130_FD_SC_HS__EBUFNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00221	0.00405	0.58125
sky130_fd_sc_hs__ebufn_2	0.00238	0.00519	0.96434
sky130_fd_sc_hs__ebufn_4	0.00259	0.00785	1.90312
sky130_fd_sc_hs__ebufn_8	0.00498	0.01298	3.30758

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ebufn_1	0.00000	0.27281	0.45730
sky130_fd_sc_hs__ebufn_2	0.00000	0.07971	0.11576
sky130_fd_sc_hs__ebufn_4	0.00000	0.06074	0.13100
sky130_fd_sc_hs__ebufn_8	0.00000	0.09965	0.26134

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)	0.06767	0.66100	6.10178
	TE_B->Z (RR)	0.02141	0.34040	4.59500
	TE_B->Z (FR)	0.05626	0.95696	11.32290
sky130_fd_sc_hs__ebufn_2	A->Z (RR)	0.06206	0.56908	6.11427
	TE_B->Z (RR)	0.02299	0.34111	4.59574
	TE_B->Z (FR)	0.05653	0.85511	11.33690
sky130_fd_sc_hs__ebufn_4	A->Z (RR)	0.06759	0.49674	6.17032
	TE_B->Z (RR)	0.02988	0.34290	4.59747
	TE_B->Z (FR)	0.05294	0.72964	11.22260
sky130_fd_sc_hs__ebufn_8	A->Z (RR)	0.07413	0.42904	6.19264
	TE_B->Z (RR)	0.04926	0.34679	4.60126
	TE_B->Z (FR)	0.06037	0.65136	11.05880

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ebufn_1	A->Z (FF)	0.06653	0.44293	3.72986
	TE_B->Z (RF)	0.02127	0.34038	4.59500
	TE_B->Z (FF)	0.05497	0.40938	3.65958
sky130_fd_sc_hs__ebufn_2	A->Z (FF)	0.07555	0.45786	3.84302
	TE_B->Z (RF)	0.02284	0.34110	4.59571
	TE_B->Z (FF)	0.05900	0.40457	3.72982
sky130_fd_sc_hs__ebufn_4	A->Z (FF)	0.10025	0.51975	4.18269
	TE_B->Z (RF)	0.02956	0.34286	4.59749
	TE_B->Z (FF)	0.07127	0.43827	3.95293
sky130_fd_sc_hs__ebufn_8	A->Z (FF)	0.09790	0.49707	4.32649
	TE_B->Z (RF)	0.04850	0.34670	4.60131
	TE_B->Z (FF)	0.10108	0.49267	4.28666

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00534	0.00606	0.02837
	A	0.00258	0.00331	0.02574
	TE_B	0.00228	0.00351	0.02627
	TE_B	0.00713	0.00837	0.03111
sky130_fd_sc_hs__ebufn_2	A	0.00754	0.00832	0.03041
	A	0.00462	0.00541	0.02770
	TE_B	0.00454	0.00549	0.02774
	TE_B	0.01072	0.01170	0.03393
sky130_fd_sc_hs__ebufn_4	A	0.01190	0.01296	0.02956
	A	0.00872	0.00979	0.02681
	TE_B	0.00922	0.00982	0.02719
	TE_B	0.01865	0.01928	0.03667
sky130_fd_sc_hs__ebufn_8	A	0.02300	0.02538	0.05928
	A	0.01682	0.01924	0.05385
	TE_B	0.01899	0.01939	0.03572
	TE_B	0.03464	0.03510	0.05154

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	A	0.00253	0.00384	0.02599
	A	0.00528	0.00658	0.02871
	TE_B	0.00274	0.00427	0.02671
	TE_B	0.00749	0.00901	0.03140
sky130_fd_sc_hs__ebufn_2	A	0.00461	0.00611	0.02734
	A	0.00752	0.00901	0.03006
	TE_B	0.00548	0.00660	0.02872
	TE_B	0.01140	0.01253	0.03451
sky130_fd_sc_hs__ebufn_4	A	0.00878	0.01058	0.02718
	A	0.01195	0.01364	0.02986
	TE_B	0.01092	0.01177	0.02913
	TE_B	0.01996	0.02079	0.03784
sky130_fd_sc_hs__ebufn_8	A	0.01736	0.02116	0.05383
	A	0.02354	0.02720	0.05995
	TE_B	0.02228	0.02297	0.03927
	TE_B	0.03718	0.03779	0.05380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00357	0.00425	0.02646
	(TE_B * Z)	0.00080	0.00146	0.02367
	(TE_B * !Z)	0.00352	0.00417	0.02631
	(TE_B * !Z)	0.00074	0.00139	0.02353
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00488	0.00539	0.02744
	(TE_B * Z)	0.00186	0.00237	0.02443
	(TE_B * !Z)	0.00465	0.00507	0.02707
	(TE_B * !Z)	0.00165	0.00206	0.02407
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00713	0.00723	0.02378
	(TE_B * Z)	0.00383	0.00391	0.02048
	(TE_B * !Z)	0.00675	0.00678	0.02314
	(TE_B * !Z)	0.00346	0.00349	0.01986
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.01320	0.01346	0.04725
	(TE_B * Z)	0.00679	0.00702	0.04085
	(TE_B * !Z)	0.01244	0.01289	0.04599
	(TE_B * !Z)	0.00606	0.00649	0.03962

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(TE_B * Z)	0.00041	0.00157	0.02392
	(TE_B * Z)	0.00321	0.00438	0.02673
	(TE_B * !Z)	0.00046	0.00166	0.02407
	(TE_B * !Z)	0.00324	0.00444	0.02685
sky130_fd_sc_hs__ebufn_2	(TE_B * Z)	0.00094	0.00177	0.02342
	(TE_B * Z)	0.00399	0.00485	0.02650
	(TE_B * !Z)	0.00116	0.00206	0.02390
	(TE_B * !Z)	0.00415	0.00505	0.02689
sky130_fd_sc_hs__ebufn_4	(TE_B * Z)	0.00184	0.00234	0.01898
	(TE_B * Z)	0.00524	0.00576	0.02241
	(TE_B * !Z)	0.00226	0.00281	0.01971
	(TE_B * !Z)	0.00552	0.00608	0.02298
sky130_fd_sc_hs__ebufn_8	(TE_B * Z)	0.00310	0.00429	0.03811
	(TE_B * Z)	0.00970	0.01091	0.04477
	(TE_B * !Z)	0.00397	0.00524	0.03967
	(TE_B * !Z)	0.01029	0.01157	0.04601

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00306	0.00352	0.02597
	(A * Z)	-0.00170	-0.00125	0.02119
	(!A * !Z)	0.00311	0.00355	0.02599
	(!A * !Z)	-0.00165	-0.00124	0.02124
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00336	0.00357	0.02580
	(A * Z)	-0.00259	-0.00241	0.01985
	(!A * !Z)	0.00348	0.00365	0.02589
	(!A * !Z)	-0.00247	-0.00232	0.01993
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00416	0.00373	0.02054
	(A * Z)	-0.00485	-0.00537	0.01147
	(!A * !Z)	0.00424	0.00381	0.02061
	(!A * !Z)	-0.00475	-0.00525	0.01155
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00567	0.00477	0.01966
	(A * Z)	-0.00918	-0.01021	0.00469
	(!A * !Z)	0.00559	0.00478	0.01979
	(!A * !Z)	-0.00920	-0.01016	0.00487

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ebufn_1	(A * Z)	0.00064	0.00192	0.02450
	(A * Z)	0.00539	0.00672	0.02928
	(!A * !Z)	0.00061	0.00206	0.02448
	(!A * !Z)	0.00537	0.00683	0.02925
sky130_fd_sc_hs__ebufn_2	(A * Z)	0.00169	0.00271	0.02484
	(A * Z)	0.00765	0.00870	0.03082
	(!A * !Z)	0.00166	0.00271	0.02480
	(!A * !Z)	0.00761	0.00870	0.03077
sky130_fd_sc_hs__ebufn_4	(A * Z)	0.00365	0.00430	0.02163
	(A * Z)	0.01268	0.01336	0.03071
	(!A * !Z)	0.00372	0.00440	0.02169
	(!A * !Z)	0.01272	0.01346	0.03071
sky130_fd_sc_hs__ebufn_8	(A * Z)	0.00763	0.00828	0.02436
	(A * Z)	0.02251	0.02325	0.03930
	(!A * !Z)	0.00779	0.00841	0.02455
	(!A * !Z)	0.02265	0.02329	0.03948

SKY130_FD_SC_HS__EDFXBP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00182	0.00353	0.00272	1.16569	1.18409

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxbp_1	0.00000	0.30567	0.52556

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)	0.16367	0.63184	5.76562

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxbp_1	CLK->Q (RF)	0.15313	0.39899	1.67785

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)	0.22690	0.68183	5.89306

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)	0.21784	0.42930	1.61257

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)	-0.06918	-0.15593	-0.86483
	setup	CLK (R)	0.09559	0.17145	0.86152

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)	-0.26447	-0.43573	-4.28620
	setup	CLK (R)	0.35330	0.50256	4.37699

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)	-0.06918	-0.15593	-0.86483
	setup	CLK (R)	0.09559	0.17145	0.86152

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)	-0.26447	-0.43573	-4.28620
	setup	CLK (R)	0.35330	0.50256	4.37699

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)	0.00072	0.00211	0.04088
	setup	CLK (R)	0.38113	0.40829	0.88165

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)	-0.13225	-0.28252	-3.23690
	setup	CLK (R)	0.31206	0.46786	4.29295

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)	0.00072	0.00211	0.04088
	hold	CLK (R)	-0.14896	-0.18932	-0.52885
	setup	CLK (R)	0.09494	0.16246	0.88165
	setup	CLK (R)	0.38113	0.40829	0.71764

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)	-0.28713	-0.45085	-4.28559
	hold	CLK (R)	-0.13225	-0.28252	-3.23690
	setup	CLK (R)	0.31206	0.46786	4.29295
	setup	CLK (R)	0.14441	0.29237	3.24541

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 ()	0.07332	0.63599	16.50020
	min_pulse_width	CLK ()	0.11862	0.63599	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 ()	0.13531	0.63599	16.50020
	min_pulse_width	CLK ()	0.23067	0.63599	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	0.01218	0.01239	0.02124
	CLK	0.01062	0.01079	0.01971

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01184	0.01184	0.02061
	CLK	0.01015	0.01013	0.01895

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01186	0.01191	0.02102
	CLK	0.01017	0.01015	0.01940

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.01217	0.01237	0.02094
	CLK	0.01060	0.01077	0.01938

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00480	0.00476	0.00905
	(CLK * DE)	0.00248	0.00243	0.00673
	(CLK * !DE)	0.00096	0.00097	0.00097
	(CLK * !DE)	-0.00053	-0.00054	-0.00053
	(!CLK * DE * Q * !Q_N)	0.01062	0.01061	0.01564
	(!CLK * DE * Q * !Q_N)	0.00830	0.00827	0.01331
	(!CLK * DE * !Q * Q_N)	0.01008	0.01007	0.01505
	(!CLK * DE * !Q * Q_N)	0.00774	0.00771	0.01270
	(!CLK * !DE)	0.00096	0.00097	0.00097
	(!CLK * !DE)	-0.00053	-0.00053	-0.00053

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	(CLK * DE)	0.00164	0.00158	0.00537
	(CLK * DE)	0.00398	0.00393	0.00773
	(CLK * !DE)	-0.00029	-0.00030	-0.00029
	(CLK * !DE)	0.00116	0.00117	0.00116
	(!CLK * DE * Q * !Q_N)	0.00754	0.00751	0.01328
	(!CLK * DE * Q * !Q_N)	0.00988	0.00984	0.01559
	(!CLK * DE * !Q * Q_N)	0.00800	0.00801	0.01380
	(!CLK * DE * !Q * Q_N)	0.01036	0.01035	0.01615
	(!CLK * !DE)	-0.00029	-0.00030	-0.00029
	(!CLK * !DE)	0.00116	0.00116	0.00116

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00756	0.00764	0.02317
	CLK	0.00232	0.00237	0.01792
	(!CLK * D * Q * !Q_N)	0.00422	0.00428	0.01688
	(!CLK * D * Q * !Q_N)	-0.00004	0.00001	0.01263
	(!CLK * D * !Q * Q_N)	0.01333	0.01341	0.02949
	(!CLK * D * !Q * Q_N)	0.00810	0.00817	0.02425
	(!CLK * !D * Q * !Q_N)	0.01270	0.01276	0.02534
	(!CLK * !D * Q * !Q_N)	0.00930	0.00937	0.02194
	(!CLK * !D * !Q * Q_N)	0.00420	0.00432	0.01691
	(!CLK * !D * !Q * Q_N)	-0.00000	0.00009	0.01270

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxbp_1	CLK	0.00227	0.00265	0.01795
	CLK	0.00752	0.00790	0.02319
	(!CLK * D * Q * !Q_N)	-0.00016	0.00039	0.01300
	(!CLK * D * Q * !Q_N)	0.00409	0.00465	0.01725
	(!CLK * D * !Q * Q_N)	0.00860	0.00898	0.02592
	(!CLK * D * !Q * Q_N)	0.01382	0.01423	0.03115
	(!CLK * !D * Q * !Q_N)	0.01022	0.01073	0.02316
	(!CLK * !D * Q * !Q_N)	0.01360	0.01413	0.02656
	(!CLK * !D * !Q * Q_N)	-0.00018	0.00045	0.01297
	(!CLK * !D * !Q * Q_N)	0.00401	0.00467	0.01719

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)	0.01163	0.01174	0.02861
	(D * Q * !Q_N)	0.00837	0.00847	0.02535
	(D * !DE * !Q * Q_N)	0.01121	0.01121	0.02826
	(D * !DE * !Q * Q_N)	0.00796	0.00794	0.02500
	(!D * !Q * Q_N)	0.01122	0.01122	0.02826
	(!D * !Q * Q_N)	0.00796	0.00794	0.02500
	(!D * !DE * Q * !Q_N)	0.01162	0.01174	0.02860
	(!D * !DE * Q * !Q_N)	0.00837	0.00847	0.02535

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)	0.00603	0.00649	0.02383
	(D * Q * !Q_N)	0.00928	0.00976	0.02710
	(D * DE * !Q * Q_N)	0.01195	0.01229	0.03004
	(D * DE * !Q * Q_N)	0.01520	0.01554	0.03330
	(D * !DE * !Q * Q_N)	0.00629	0.00664	0.02404
	(D * !DE * !Q * Q_N)	0.00954	0.00989	0.02730
	(!D * DE * Q * !Q_N)	0.01337	0.01391	0.03170
	(!D * DE * Q * !Q_N)	0.01662	0.01717	0.03496
	(!D * !Q * Q_N)	0.00629	0.00664	0.02404
	(!D * !Q * Q_N)	0.00954	0.00989	0.02730
	(!D * !DE * Q * !Q_N)	0.00603	0.00649	0.02383
	(!D * !DE * Q * !Q_N)	0.00928	0.00976	0.02710

SKY130_FD_SC_HS__EDFXTP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00185	0.00340	0.00266	1.16973

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__edfxtp_1	0.00000	0.33255	0.61288

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)	0.15577	0.62240	5.77269

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__edfxtp_1	CLK->Q (RF)	0.14259	0.37402	1.56796

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)	-0.07081	-0.15467	-0.86472
	setup	CLK (R)	0.09066	0.17090	0.86804

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)	-0.25900	-0.43157	-4.27290
	setup	CLK (R)	0.34888	0.50188	4.37507

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)	-0.00332	0.00000	0.03499
	setup	CLK (R)	0.37664	0.40379	0.88802

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)	-0.12956	-0.28376	-3.24941
	setup	CLK (R)	0.30754	0.46646	4.28219

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)	-0.00332	0.00000	0.03499
	hold	CLK (R)	-0.14531	-0.18225	-0.52262
	setup	CLK (R)	0.09308	0.16246	0.88802
	setup	CLK (R)	0.37664	0.40379	0.73453

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)	-0.28298	-0.45024	-4.27505
	hold	CLK (R)	-0.12956	-0.28376	-3.24941
	setup	CLK (R)	0.30754	0.46646	4.28219
	setup	CLK (R)	0.14257	0.29250	3.25646

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 ()	0.06855	0.63599	16.50020
	min_pulse_width	CLK ()	0.11146	0.63599	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 ()	0.13054	0.63599	16.50020
	min_pulse_width	CLK ()	0.23067	0.63599	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	0.02050	0.02082	0.03876
	CLK	0.01743	0.01775	0.03574

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.01985	0.01995	0.03802
	CLK	0.01656	0.01665	0.03467

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00466	0.00461	0.00894
	(CLK * DE)	0.00232	0.00226	0.00659
	(CLK * !DE)	0.00097	0.00098	0.00098
	(CLK * !DE)	-0.00055	-0.00055	-0.00054
	(!CLK * DE * Q)	0.01045	0.01044	0.01553
	(!CLK * DE * Q)	0.00811	0.00808	0.01318
	(!CLK * DE * !Q)	0.00991	0.00989	0.01491
	(!CLK * DE * !Q)	0.00754	0.00751	0.01254
	(!CLK * !DE)	0.00097	0.00097	0.00097
	(!CLK * !DE)	-0.00054	-0.00055	-0.00054

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(CLK * DE)	0.00158	0.00152	0.00534
	(CLK * DE)	0.00394	0.00389	0.00771
	(CLK * !DE)	-0.00028	-0.00029	-0.00028
	(CLK * !DE)	0.00118	0.00120	0.00119
	(!CLK * DE * Q)	0.00715	0.00711	0.01291
	(!CLK * DE * Q)	0.00951	0.00946	0.01527
	(!CLK * DE * !Q)	0.00763	0.00762	0.01348
	(!CLK * DE * !Q)	0.01002	0.00999	0.01586
	(!CLK * !DE)	-0.00028	-0.00029	-0.00028
	(!CLK * !DE)	0.00119	0.00120	0.00119

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00732	0.00742	0.02301
	CLK	0.00225	0.00232	0.01793
	(!CLK * D * Q)	0.00408	0.00417	0.01682
	(!CLK * D * Q)	0.00001	0.00007	0.01272
	(!CLK * D * !Q)	0.01303	0.01314	0.02928
	(!CLK * D * !Q)	0.00796	0.00805	0.02420
	(!CLK * !D * Q)	0.01219	0.01231	0.02489
	(!CLK * !D * Q)	0.00897	0.00907	0.02165
	(!CLK * !D * !Q)	0.00409	0.00425	0.01686
	(!CLK * !D * !Q)	0.00004	0.00017	0.01281

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	CLK	0.00224	0.00262	0.01795
	CLK	0.00733	0.00771	0.02302
	(!CLK * D * Q)	-0.00012	0.00043	0.01305
	(!CLK * D * Q)	0.00396	0.00453	0.01714
	(!CLK * D * !Q)	0.00827	0.00866	0.02563
	(!CLK * D * !Q)	0.01335	0.01373	0.03070
	(!CLK * !D * Q)	0.01007	0.01058	0.02303
	(!CLK * !D * Q)	0.01328	0.01381	0.02628
	(!CLK * !D * !Q)	-0.00016	0.00049	0.01300
	(!CLK * !D * !Q)	0.00387	0.00456	0.01705

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.01112	0.01115	0.02825
	(D * Q)	0.00794	0.00796	0.02506
	(D * !DE * !Q)	0.01108	0.01103	0.02831
	(D * !DE * !Q)	0.00790	0.00784	0.02512
	(!D * !Q)	0.01108	0.01103	0.02831
	(!D * !Q)	0.00790	0.00784	0.02512
	(!D * !DE * Q)	0.01112	0.01115	0.02825
	(!D * !DE * Q)	0.00793	0.00796	0.02506

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__edfxtp_1	(D * Q)	0.00603	0.00643	0.02396
	(D * Q)	0.00923	0.00962	0.02715
	(D * DE * !Q)	0.01154	0.01181	0.02978
	(D * DE * !Q)	0.01473	0.01499	0.03297
	(D * !DE * !Q)	0.00591	0.00629	0.02377
	(D * !DE * !Q)	0.00911	0.00948	0.02696
	(!D * DE * Q)	0.01295	0.01342	0.03139
	(!D * DE * Q)	0.01615	0.01661	0.03458
	(!D * !Q)	0.00591	0.00629	0.02377
	(!D * !Q)	0.00911	0.00948	0.02696
	(!D * !DE * Q)	0.00603	0.00643	0.02396
	(!D * !DE * Q)	0.00923	0.00962	0.02715

SKY130_FD_SC_HS__EINVNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00264	0.00296	0.58853
sky130_fd_sc_hs__einvn_2	0.00493	0.00443	1.02838
sky130_fd_sc_hs__einvn_4	0.00984	0.00781	2.01956
sky130_fd_sc_hs__einvn_8	0.01969	0.01292	3.56414

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvn_1	0.00000	0.10284	0.14596
sky130_fd_sc_hs__einvn_2	0.00000	0.10843	0.14613
sky130_fd_sc_hs__einvn_4	0.00000	0.04420	0.13034
sky130_fd_sc_hs__einvn_8	0.00000	0.06657	0.26002

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)	0.04761	0.93405	11.21590
	TE_B->Z (RR)	0.02303	0.34009	4.59471
	TE_B->Z (FR)	0.05571	0.96201	11.41150
sky130_fd_sc_hs__einvn_2	A->Z (FR)	0.03287	0.79228	10.95750
	TE_B->Z (RR)	0.02971	0.34163	4.59626
	TE_B->Z (FR)	0.04999	0.82339	11.13630
sky130_fd_sc_hs__einvn_4	A->Z (FR)	0.03014	0.69652	11.14960
	TE_B->Z (RR)	0.03048	0.34291	4.59751
	TE_B->Z (FR)	0.04760	0.71473	11.17670
sky130_fd_sc_hs__einvn_8	A->Z (FR)	0.03186	0.62527	11.08240
	TE_B->Z (RR)	0.04835	0.34865	4.60314
	TE_B->Z (FR)	0.05637	0.63500	10.93850

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvn_1	A->Z (RF)	0.01666	0.33141	3.89847
	TE_B->Z (RF)	0.02258	0.34009	4.59473
	TE_B->Z (FF)	0.05599	0.42198	3.51663
sky130_fd_sc_hs__einvn_2	A->Z (RF)	0.01428	0.28702	3.96160
	TE_B->Z (RF)	0.02944	0.34164	4.59626
	TE_B->Z (FF)	0.06527	0.43334	3.70871
sky130_fd_sc_hs__einvn_4	A->Z (RF)	0.01383	0.24523	4.11154
	TE_B->Z (RF)	0.02997	0.34291	4.59754
	TE_B->Z (FF)	0.06428	0.42053	3.95060
sky130_fd_sc_hs__einvn_8	A->Z (RF)	0.01560	0.22541	4.41871
	TE_B->Z (RF)	0.04770	0.34860	4.60323
	TE_B->Z (FF)	0.09019	0.47032	4.30314

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	-0.00045	-0.00018	0.00310
	A	0.00264	0.00293	0.00621
	TE_B	0.00159	0.00220	0.01541
	TE_B	0.00615	0.00679	0.01999
sky130_fd_sc_hs__einvn_2	A	-0.00166	-0.00100	0.00551
	A	0.00431	0.00499	0.01154
	TE_B	0.00246	0.00303	0.01597
	TE_B	0.00982	0.01039	0.02336
sky130_fd_sc_hs__einvn_4	A	-0.00332	-0.00139	0.01065
	A	0.00862	0.01051	0.02262
	TE_B	0.00514	0.00581	0.02370
	TE_B	0.01864	0.01933	0.03726
sky130_fd_sc_hs__einvn_8	A	-0.00620	-0.00336	0.02120
	A	0.01769	0.02048	0.04523
	TE_B	0.01078	0.01127	0.02822
	TE_B	0.03462	0.03512	0.05233

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	A	0.00290	0.00295	0.00397
	A	-0.00019	-0.00015	0.00082
	TE_B	0.00310	0.00399	0.01581
	TE_B	0.00551	0.00636	0.01820
sky130_fd_sc_hs__einvn_2	A	0.00479	0.00501	0.00736
	A	-0.00117	-0.00097	0.00103
	TE_B	0.00532	0.00602	0.01873
	TE_B	0.00845	0.00912	0.02185
sky130_fd_sc_hs__einvn_4	A	0.00970	0.01016	0.01471
	A	-0.00220	-0.00180	0.00218
	TE_B	0.01104	0.01192	0.02972
	TE_B	0.01590	0.01676	0.03431
sky130_fd_sc_hs__einvn_8	A	0.01929	0.02019	0.02960
	A	-0.00452	-0.00368	0.00445
	TE_B	0.02236	0.02296	0.03952
	TE_B	0.02871	0.02926	0.04585

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	0.00065	0.00065	0.00064
	(TE_B * Z)	-0.00102	-0.00101	-0.00101
	(TE_B * !Z)	0.00071	0.00071	0.00071
	(TE_B * !Z)	-0.00093	-0.00094	-0.00093
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	0.00122	0.00123	0.00119
	(TE_B * Z)	-0.00194	-0.00194	-0.00196
	(TE_B * !Z)	0.00143	0.00144	0.00143
	(TE_B * !Z)	-0.00167	-0.00168	-0.00167
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	0.00223	0.00224	0.00216
	(TE_B * Z)	-0.00390	-0.00394	-0.00390
	(TE_B * !Z)	0.00259	0.00262	0.00260
	(TE_B * !Z)	-0.00341	-0.00344	-0.00342
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	0.00422	0.00429	0.00414
	(TE_B * Z)	-0.00775	-0.00777	-0.00770
	(TE_B * !Z)	0.00506	0.00509	0.00508
	(TE_B * !Z)	-0.00676	-0.00681	-0.00676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(TE_B * Z)	-0.00063	-0.00063	-0.00063
	(TE_B * Z)	0.00102	0.00101	0.00101
	(TE_B * !Z)	-0.00071	-0.00071	-0.00071
	(TE_B * !Z)	0.00096	0.00096	0.00095
sky130_fd_sc_hs__einvn_2	(TE_B * Z)	-0.00116	-0.00116	-0.00117
	(TE_B * Z)	0.00194	0.00194	0.00196
	(TE_B * !Z)	-0.00143	-0.00144	-0.00143
	(TE_B * !Z)	0.00173	0.00174	0.00167
sky130_fd_sc_hs__einvn_4	(TE_B * Z)	-0.00213	-0.00215	-0.00213
	(TE_B * Z)	0.00390	0.00394	0.00390
	(TE_B * !Z)	-0.00259	-0.00262	-0.00260
	(TE_B * !Z)	0.00352	0.00354	0.00342
sky130_fd_sc_hs__einvn_8	(TE_B * Z)	-0.00414	-0.00416	-0.00411
	(TE_B * Z)	0.00775	0.00777	0.00770
	(TE_B * !Z)	-0.00506	-0.00509	-0.00508
	(TE_B * !Z)	0.00696	0.00701	0.00676

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00221	0.00237	0.01544
	(A * !Z)	-0.00126	-0.00116	0.01193
	(!A * Z)	0.00212	0.00233	0.01541
	(!A * Z)	-0.00125	-0.00114	0.01194
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00264	0.00260	0.01516
	(A * !Z)	-0.00267	-0.00277	0.00985
	(!A * Z)	0.00242	0.00247	0.01508
	(!A * Z)	-0.00259	-0.00275	0.00988
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00430	0.00396	0.02121
	(A * !Z)	-0.00491	-0.00538	0.01195
	(!A * Z)	0.00384	0.00375	0.02105
	(!A * Z)	-0.00481	-0.00527	0.01202
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00521	0.00455	0.02004
	(A * !Z)	-0.00973	-0.01073	0.00485
	(!A * Z)	0.00436	0.00404	0.01969
	(!A * Z)	-0.00957	-0.01050	0.00495

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvn_1	(A * !Z)	0.00099	0.00178	0.01480
	(A * !Z)	0.00451	0.00532	0.01833
	(!A * Z)	0.00102	0.00170	0.01485
	(!A * Z)	0.00445	0.00514	0.01829
sky130_fd_sc_hs__einvn_2	(A * !Z)	0.00176	0.00233	0.01515
	(A * !Z)	0.00709	0.00770	0.02051
	(!A * Z)	0.00187	0.00243	0.01528
	(!A * Z)	0.00701	0.00762	0.02044
sky130_fd_sc_hs__einvn_4	(A * !Z)	0.00353	0.00425	0.02200
	(A * !Z)	0.01286	0.01364	0.03136
	(!A * Z)	0.00379	0.00446	0.02228
	(!A * Z)	0.01269	0.01344	0.03125
sky130_fd_sc_hs__einvn_8	(A * !Z)	0.00756	0.00814	0.02489
	(A * !Z)	0.02283	0.02346	0.04023
	(!A * Z)	0.00793	0.00846	0.02532
	(!A * Z)	0.02239	0.02295	0.03985

SKY130_FD_SC_HS__EINVPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00267	0.00276	0.51783
sky130_fd_sc_hs__einvp_2	0.00486	0.00423	1.06113
sky130_fd_sc_hs__einvp_4	0.00984	0.00755	1.97761
sky130_fd_sc_hs__einvp_8	0.01971	0.01194	3.42195

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__einvp_1	0.00000	0.01319	0.06756
sky130_fd_sc_hs__einvp_2	0.00000	0.05989	0.21063
sky130_fd_sc_hs__einvp_4	0.00000	0.03361	0.16210
sky130_fd_sc_hs__einvp_8	0.00000	0.05598	0.29178

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)	0.05077	0.92848	10.76680
	TE->Z (FR)	0.07959	0.37255	4.59467
	TE->Z (RR)	0.07309	0.67405	5.65595
sky130_fd_sc_hs__einvp_2	A->Z (FR)	0.03196	0.78833	10.98980
	TE->Z (FR)	0.07532	0.34140	4.59568
	TE->Z (RR)	0.07132	0.55756	6.07704
sky130_fd_sc_hs__einvp_4	A->Z (FR)	0.03014	0.68947	10.97920
	TE->Z (FR)	0.08162	0.36291	4.59745
	TE->Z (RR)	0.06928	0.44872	5.87941
sky130_fd_sc_hs__einvp_8	A->Z (FR)	0.03196	0.62236	10.90850
	TE->Z (FR)	0.13581	0.45072	4.60281
	TE->Z (RR)	0.08747	0.43025	5.95747

Delay(ns) to Z falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__einvp_1	A->Z (RF)	0.01696	0.31480	3.54393
	TE->Z (FF)	0.08079	0.37588	4.59461
	TE->Z (RF)	0.01807	0.30180	3.36582
sky130_fd_sc_hs__einvp_2	A->Z (RF)	0.01379	0.27699	3.86094
	TE->Z (FF)	0.07550	0.34291	4.59558
	TE->Z (RF)	0.01714	0.26133	3.56044
sky130_fd_sc_hs__einvp_4	A->Z (RF)	0.01409	0.24694	4.09722
	TE->Z (FF)	0.08237	0.36835	4.59718
	TE->Z (RF)	0.01847	0.21440	3.45036
sky130_fd_sc_hs__einvp_8	A->Z (RF)	0.01574	0.23016	4.45458
	TE->Z (FF)	0.13656	0.45389	4.60213
	TE->Z (RF)	0.02340	0.17646	3.24377

Power Information

Internal switching power(pJ) to Z rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	-0.00063	-0.00021	0.00437
	A	0.00257	0.00300	0.00763
	TE	0.00528	0.00532	0.01043
	TE	0.00322	0.00326	0.00844
sky130_fd_sc_hs__einvp_2	A	-0.00165	-0.00072	0.00559
	A	0.00422	0.00517	0.01153
	TE	0.00816	0.00835	0.02112
	TE	0.00543	0.00559	0.01861
sky130_fd_sc_hs__einvp_4	A	-0.00320	-0.00178	0.01087
	A	0.00873	0.00992	0.02290
	TE	0.01541	0.01545	0.03285
	TE	0.01112	0.01119	0.02865
sky130_fd_sc_hs__einvp_8	A	-0.00618	-0.00353	0.01972
	A	0.01773	0.02032	0.04386
	TE	0.02689	0.02698	0.04269
	TE	0.02219	0.02231	0.03807

Internal switching power(pJ) to Z falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	A	0.00303	0.00310	0.00431
	A	-0.00017	-0.00013	0.00098
	TE	0.00678	0.00682	0.01239
	TE	0.00234	0.00236	0.00784
sky130_fd_sc_hs__einvp_2	A	0.00482	0.00501	0.00703
	A	-0.00104	-0.00085	0.00116
	TE	0.01073	0.01093	0.02388
	TE	0.00358	0.00376	0.01642
sky130_fd_sc_hs__einvp_4	A	0.00953	0.00989	0.01455
	A	-0.00236	-0.00205	0.00214
	TE	0.02050	0.02062	0.03813
	TE	0.00719	0.00724	0.02455
sky130_fd_sc_hs__einvp_8	A	0.01920	0.02015	0.02947
	A	-0.00461	-0.00383	0.00419
	TE	0.03707	0.03708	0.05275
	TE	0.01412	0.01403	0.02979

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	0.00054	0.00055	0.00054
	(!TE * Z)	-0.00104	-0.00105	-0.00104
	(!TE * !Z)	0.00061	0.00062	0.00061
	(!TE * !Z)	-0.00096	-0.00098	-0.00096
sky130_fd_sc_hs__einvp_2	(!TE * Z)	0.00100	0.00101	0.00098
	(!TE * Z)	-0.00208	-0.00209	-0.00207
	(!TE * !Z)	0.00117	0.00118	0.00118
	(!TE * !Z)	-0.00177	-0.00178	-0.00178
sky130_fd_sc_hs__einvp_4	(!TE * Z)	0.00190	0.00191	0.00185
	(!TE * Z)	-0.00408	-0.00415	-0.00410
	(!TE * !Z)	0.00228	0.00229	0.00228
	(!TE * !Z)	-0.00354	-0.00357	-0.00355
sky130_fd_sc_hs__einvp_8	(!TE * Z)	0.00372	0.00370	0.00363
	(!TE * Z)	-0.00795	-0.00798	-0.00791
	(!TE * !Z)	0.00441	0.00446	0.00445
	(!TE * !Z)	-0.00678	-0.00687	-0.00684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(!TE * Z)	-0.00054	-0.00055	-0.00054
	(!TE * Z)	0.00104	0.00105	0.00104
	(!TE * !Z)	-0.00061	-0.00062	-0.00061
	(!TE * !Z)	0.00098	0.00098	0.00097
sky130_fd_sc_hs__einvp_2	(!TE * Z)	-0.00098	-0.00098	-0.00097
	(!TE * Z)	0.00208	0.00209	0.00207
	(!TE * !Z)	-0.00117	-0.00118	-0.00118
	(!TE * !Z)	0.00186	0.00187	0.00179
sky130_fd_sc_hs__einvp_4	(!TE * Z)	-0.00185	-0.00188	-0.00185
	(!TE * Z)	0.00408	0.00415	0.00410
	(!TE * !Z)	-0.00228	-0.00229	-0.00228
	(!TE * !Z)	0.00369	0.00371	0.00356
sky130_fd_sc_hs__einvp_8	(!TE * Z)	-0.00368	-0.00369	-0.00363
	(!TE * Z)	0.00795	0.00798	0.00791
	(!TE * !Z)	-0.00441	-0.00446	-0.00445
	(!TE * !Z)	0.00706	0.00712	0.00684

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	0.00471	0.00477	0.01029
	(A * !Z)	0.00163	0.00167	0.00722
	(!A * Z)	0.00468	0.00474	0.01025
	(!A * Z)	0.00156	0.00159	0.00713
sky130_fd_sc_hs__einvp_2	(A * !Z)	0.00712	0.00734	0.02000
	(A * !Z)	0.00249	0.00268	0.01535
	(!A * Z)	0.00717	0.00739	0.02002
	(!A * Z)	0.00235	0.00252	0.01518
sky130_fd_sc_hs__einvp_4	(A * !Z)	0.01339	0.01353	0.03077
	(A * !Z)	0.00520	0.00528	0.02259
	(!A * Z)	0.01345	0.01356	0.03082
	(!A * Z)	0.00491	0.00496	0.02224
sky130_fd_sc_hs__einvp_8	(A * !Z)	0.02294	0.02301	0.03875
	(A * !Z)	0.01039	0.01035	0.02613
	(!A * Z)	0.02311	0.02316	0.03881
	(!A * Z)	0.00978	0.00972	0.02542

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__einvp_1	(A * !Z)	-0.00107	-0.00098	0.00390
	(A * !Z)	0.00197	0.00211	0.00697
	(!A * Z)	-0.00110	-0.00098	0.00390
	(!A * Z)	0.00203	0.00215	0.00702
sky130_fd_sc_hs__einvp_2	(A * !Z)	-0.00246	-0.00219	0.01043
	(A * !Z)	0.00212	0.00247	0.01506
	(!A * Z)	-0.00261	-0.00223	0.01038
	(!A * Z)	0.00223	0.00258	0.01514
sky130_fd_sc_hs__einvp_4	(A * !Z)	-0.00445	-0.00420	0.01286
	(A * !Z)	0.00360	0.00401	0.02102
	(!A * Z)	-0.00472	-0.00428	0.01278
	(!A * Z)	0.00385	0.00424	0.02118
sky130_fd_sc_hs__einvp_8	(A * !Z)	-0.00821	-0.00854	0.00728
	(A * !Z)	0.00404	0.00407	0.01985
	(!A * Z)	-0.00866	-0.00872	0.00710
	(!A * Z)	0.00453	0.00455	0.02018

SKY130_FD_SC_HS__FAHCIN

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00271	0.00671	0.00475	0.57930	1.15018

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcin_1	0.00000	0.98932	1.11119

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)	0.14512	0.65598	4.06557
	B->COUT (RR)	0.13456	0.58080	3.90943
	CIN->COUT (FR)	0.06527	0.77369	8.99837

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fahcin_1	A->COUT (FF)	0.16523	0.69315	4.41797
	B->COUT (FF)	0.16203	0.63633	4.29618
	CIN->COUT (RF)	0.03203	0.34966	3.79738

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)	-	0.21886	0.95410	9.08810
	B->SUM (-R)	-	0.21968	0.92881	8.99434
	CIN->SUM (RR)	(A * !B) + (!A * B)	0.07834	0.58467	6.04132
	CIN->SUM (FR)	(A * B) + (!A * !B)	0.12629	0.79155	8.51122

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)	-	0.25476	0.74877	4.84142
	B->SUM (-F)	-	0.20882	0.66753	4.63404
	CIN->SUM (FF)	(A * !B) + (!A * B)	0.11024	0.63643	5.03381
	CIN->SUM (RF)	(A * B) + (!A * !B)	0.11156	0.32136	1.52787

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01192	0.01206	0.02032
	A	0.01039	0.01052	0.01880
	B	0.01275	0.01338	0.03520
	B	0.00885	0.00949	0.03317
	CIN	0.00490	0.00567	0.01755
	CIN	0.00778	0.00855	0.02048

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcin_1	A	0.01051	0.01084	0.01999
	A	0.01204	0.01238	0.02154
	B	0.00911	0.01010	0.03384
	B	0.01296	0.01397	0.03776
	CIN	0.00825	0.00853	0.01922
	CIN	0.00537	0.00564	0.01632

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02325	0.02378	0.04085
	A	-	0.02017	0.02072	0.03808
	B	-	0.02383	0.02566	0.07811
	B	-	0.01570	0.01754	0.07000
	CIN	(A * B) + (!A * !B)	0.00735	0.00940	0.04968
	CIN	(A * B) + (!A * !B)	0.01311	0.01519	0.05554
	CIN	(A * !B) + (!A * B)	0.00826	0.00861	0.02000
	CIN	(A * !B) + (!A * B)	0.00538	0.00568	0.01650

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcin_1	A	-	0.02147	0.02261	0.04175
	A	-	0.02452	0.02573	0.04468
	B	-	0.01638	0.02050	0.07113
	B	-	0.02448	0.02862	0.07786
	CIN	(A * B) + (!A * !B)	0.01450	0.01540	0.05610
	CIN	(A * B) + (!A * !B)	0.00875	0.00964	0.05031
	CIN	(A * !B) + (!A * B)	0.00489	0.00563	0.01623
	CIN	(A * !B) + (!A * B)	0.00777	0.00851	0.01899

SKY130_FD_SC_HS__FAHCON

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00269	0.00846	0.00478	0.57826	1.11018

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fahcon_1	0.00000	0.98932	1.13596

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)	0.19938	0.86561	6.65708
	B->COUT_N (FR)	0.14413	0.81727	9.03474
	CI->COUT_N (FR)	0.05983	0.75393	8.85259

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)	0.14442	0.40349	1.23047
	B->COUT_N (RF)	0.09550	0.40246	4.01330
	CI->COUT_N (RF)	0.03154	0.34423	3.79237

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)	-	0.19655	0.91897	8.75823
	B->SUM (-R)	-	0.17643	0.86775	8.60843
	CI->SUM (RR)	(A * B) + (!A * !B)	0.07521	0.57000	5.86236
	CI->SUM (FR)	(A * !B) + (!A * B)	0.12468	0.79905	8.54324

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)	-	0.23554	0.71989	4.72314
	B->SUM (-F)	-	0.17962	0.61233	4.43092
	CI->SUM (FF)	(A * B) + (!A * !B)	0.10832	0.60916	4.87148
	CI->SUM (RF)	(A * !B) + (!A * B)	0.12110	0.32584	1.51132

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	0.01025	0.01035	0.01950
	A	0.01183	0.01193	0.02109
	B	0.00693	0.00830	0.03888
	B	0.01198	0.01337	0.04416
	CI	0.00483	0.00547	0.01759
	CI	0.00773	0.00837	0.02055

Internal switching power(pJ) to COUT_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fahcon_1	A	0.01104	0.01095	0.01918
	A	0.00946	0.00935	0.01759
	B	0.01198	0.01300	0.04372
	B	0.00692	0.00795	0.03866
	CI	0.00837	0.00847	0.02012
	CI	0.00548	0.00556	0.01713

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.02019	0.02049	0.03778
	A	-	0.01699	0.01762	0.03527
	B	-	0.02389	0.03179	0.10958
	B	-	0.01381	0.02170	0.09943
	CI	(A * B) + (!A * !B)	0.01420	0.01524	0.05543
	CI	(A * B) + (!A * !B)	0.00839	0.00943	0.04964
	CI	(A * !B) + (!A * B)	0.00482	0.00540	0.01688
	CI	(A * !B) + (!A * B)	0.00773	0.00831	0.01991

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fahcon_1	A	-	0.01996	0.02137	0.04063
	A	-	0.02311	0.02439	0.04329
	B	-	0.01485	0.02212	0.09744
	B	-	0.02497	0.03223	0.10706
	CI	(A * B) + (!A * !B)	0.00853	0.01029	0.05105
	CI	(A * B) + (!A * !B)	0.01434	0.01610	0.05682
	CI	(A * !B) + (!A * B)	0.00837	0.00850	0.02015
	CI	(A * !B) + (!A * B)	0.00547	0.00558	0.01685

SKY130_FD_SC_HS__FAHx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00453	0.00674	0.00240	0.99418	1.11056
sky130_fd_sc_hs__fah_2	0.00457	0.00769	0.00254	1.95718	2.20091
sky130_fd_sc_hs__fah_4	0.00449	0.00694	0.00242	3.60545	4.26492

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__fah_1	0.00000	0.98932	1.16071
sky130_fd_sc_hs__fah_2	0.00000	1.02239	1.19379
sky130_fd_sc_hs__fah_4	0.00000	1.08855	1.25995

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)	0.22388	0.72730	6.19620
	B->COUT (RR)	0.18525	0.74652	6.27942
	CI->COUT (RR)	0.10975	0.68952	6.68062
sky130_fd_sc_hs__fah_2	A->COUT (RR)	0.22617	0.59336	5.67764
	B->COUT (RR)	0.16678	0.59829	6.12959
	CI->COUT (RR)	0.09609	0.53040	5.93055
sky130_fd_sc_hs__fah_4	A->COUT (RR)	0.23326	0.55027	6.14801
	B->COUT (RR)	0.19242	0.56898	6.26978
	CI->COUT (RR)	0.12337	0.52603	6.65760

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fah_1	A->COUT (FF)	0.22153	0.63099	4.25456
	B->COUT (FF)	0.21397	0.69864	4.94935
	CI->COUT (FF)	0.14240	0.67207	4.97897
sky130_fd_sc_hs__fah_2	A->COUT (FF)	0.23578	0.63967	4.15309
	B->COUT (FF)	0.22901	0.69743	5.00898
	CI->COUT (FF)	0.13593	0.64354	4.70009
sky130_fd_sc_hs__fah_4	A->COUT (FF)	0.26323	0.68593	4.29942
	B->COUT (FF)	0.24059	0.72044	5.23695
	CI->COUT (FF)	0.16036	0.67689	5.07801

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)	-	0.22631	0.98247	9.40172
	B->SUM (-R)	-	0.21146	0.94084	9.26092
	CI->SUM (RR)	(A * B) + (!A * !B)	0.10647	0.61857	5.96242
	CI->SUM (FR)	(A * !B) + (!A * B)	0.21076	0.97986	9.44271
sky130_fd_sc_hs__fah_2	A->SUM (-R)	-	0.23117	0.85667	8.88799
	B->SUM (-R)	-	0.21988	0.82605	8.85728
	CI->SUM (RR)	(A * B) + (!A * !B)	0.09702	0.52406	6.07144
	CI->SUM (FR)	(A * !B) + (!A * B)	0.20636	0.83728	8.90369
sky130_fd_sc_hs__fah_4	A->SUM (-R)	-	0.24086	0.80467	9.39270
	B->SUM (-R)	-	0.22507	0.77130	9.33716
	CI->SUM (RR)	(A * B) + (!A * !B)	0.12905	0.51014	6.17786
	CI->SUM (FR)	(A * !B) + (!A * B)	0.26174	0.86346	9.61182

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)	-	0.22315	0.64897	4.42556
	B->SUM (-F)	-	0.22406	0.70669	7.26747
	CI->SUM (FF)	(A * B) + (!A * !B)	0.13804	0.66703	4.89381
	CI->SUM (RF)	(A * !B) + (!A * B)	0.18707	0.48888	2.02862
sky130_fd_sc_hs__fah_2	A->SUM (-F)	-	0.24560	0.65465	4.39779
	B->SUM (-F)	-	0.23692	0.69359	7.82442
	CI->SUM (FF)	(A * B) + (!A * !B)	0.14277	0.64738	4.93593
	CI->SUM (RF)	(A * !B) + (!A * B)	0.16290	0.42566	1.74807
sky130_fd_sc_hs__fah_4	A->SUM (-F)	-	0.25895	0.69922	4.55568
	B->SUM (-F)	-	0.24985	0.73750	7.35018
	CI->SUM (FF)	(A * B) + (!A * !B)	0.17019	0.68235	5.16537
	CI->SUM (RF)	(A * !B) + (!A * B)	0.24437	0.55807	2.36402

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01531	0.01582	0.03823
	A	0.01265	0.01306	0.03559
	B	0.01416	0.01473	0.03943
	B	0.01039	0.01093	0.03572
	CI	0.00955	0.00980	0.01892
	CI	0.00828	0.00845	0.01766
sky130_fd_sc_hs__fah_2	A	0.01718	0.01794	0.03970
	A	0.01437	0.01510	0.03699
	B	0.01597	0.01689	0.03761
	B	0.01151	0.01242	0.03335
	CI	0.00993	0.01026	0.02012
	CI	0.00840	0.00873	0.01885
sky130_fd_sc_hs__fah_4	A	0.02055	0.02125	0.04417
	A	0.01790	0.01846	0.04172
	B	0.01924	0.02018	0.04452
	B	0.01517	0.01602	0.04069
	CI	0.01566	0.01616	0.02541
	CI	0.01433	0.01469	0.02412

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fah_1	A	0.01270	0.01383	0.03556
	A	0.01525	0.01637	0.03809
	B	0.01058	0.01192	0.03635
	B	0.01447	0.01582	0.04014
	CI	0.00802	0.00864	0.01841
	CI	0.00930	0.00992	0.01949
sky130_fd_sc_hs__fah_2	A	0.01439	0.01570	0.03734
	A	0.01722	0.01852	0.04000
	B	0.01072	0.01226	0.03542
	B	0.01521	0.01678	0.03950
	CI	0.00857	0.00924	0.01879
	CI	0.01010	0.01078	0.02013
sky130_fd_sc_hs__fah_4	A	0.01753	0.01885	0.04082
	A	0.02012	0.02144	0.04313
	B	0.01539	0.01689	0.04129
	B	0.01939	0.02090	0.04489
	CI	0.01387	0.01447	0.02410
	CI	0.01521	0.01583	0.02506

Internal switching power(pJ) to SUM rising (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02679	0.02714	0.07153
	A	-	0.02136	0.02170	0.06617
	B	-	0.02428	0.02791	0.08336
	B	-	0.01638	0.02000	0.07572
	CI	(A * B) + (!A * !B)	0.01293	0.01276	0.02837
	CI	(A * B) + (!A * !B)	0.01003	0.00985	0.02575
	CI	(A * !B) + (!A * B)	0.00803	0.00864	0.01933
	CI	(A * !B) + (!A * B)	0.00931	0.00993	0.01970
sky130_fd_sc_hs__fah_2	A	-	0.02842	0.02913	0.07225
	A	-	0.02277	0.02349	0.06660
	B	-	0.02604	0.03019	0.08282
	B	-	0.01706	0.02122	0.07441
	CI	(A * B) + (!A * !B)	0.01320	0.01389	0.03456
	CI	(A * B) + (!A * !B)	0.01013	0.01081	0.03155
	CI	(A * !B) + (!A * B)	0.00858	0.00925	0.01956
	CI	(A * !B) + (!A * B)	0.01011	0.01078	0.02045
sky130_fd_sc_hs__fah_4	A	-	0.03009	0.03118	0.07623
	A	-	0.02462	0.02575	0.07111
	B	-	0.02848	0.03410	0.09308
	B	-	0.02022	0.02583	0.08594
	CI	(A * B) + (!A * !B)	0.01880	0.01919	0.03608
	CI	(A * B) + (!A * !B)	0.01587	0.01631	0.03418
	CI	(A * !B) + (!A * B)	0.01388	0.01454	0.02604
	CI	(A * !B) + (!A * B)	0.01522	0.01587	0.02539

Internal switching power(pJ) to SUM falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__fah_1	A	-	0.02026	0.02237	0.06514
	A	-	0.02597	0.02807	0.07045
	B	-	0.01793	0.02359	0.32328
	B	-	0.02605	0.03175	0.33079
	CI	(A * B) + (!A * !B)	0.00958	0.01011	0.02873
	CI	(A * B) + (!A * !B)	0.01247	0.01301	0.03142
	CI	(A * !B) + (!A * B)	0.00954	0.00972	0.01864
	CI	(A * !B) + (!A * B)	0.00827	0.00845	0.01736
sky130_fd_sc_hs__fah_2	A	-	0.02260	0.02476	0.06719
	A	-	0.02827	0.03041	0.07236
	B	-	0.01765	0.02317	0.39971
	B	-	0.02664	0.03222	0.40861
	CI	(A * B) + (!A * !B)	0.01091	0.01153	0.03303
	CI	(A * B) + (!A * !B)	0.01399	0.01488	0.03561
	CI	(A * !B) + (!A * B)	0.00992	0.01028	0.01968
	CI	(A * !B) + (!A * B)	0.00839	0.00873	0.01819
sky130_fd_sc_hs__fah_4	A	-	0.02541	0.02749	0.07052
	A	-	0.03097	0.03316	0.07588
	B	-	0.02493	0.03416	0.32426
	B	-	0.03331	0.04285	0.33187
	CI	(A * B) + (!A * !B)	0.01628	0.01647	0.03749
	CI	(A * B) + (!A * !B)	0.01922	0.01940	0.03846
	CI	(A * !B) + (!A * B)	0.01565	0.01603	0.02504
	CI	(A * !B) + (!A * B)	0.01432	0.01470	0.02355

SKY130_FD_SC_HS__FAx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00959	0.00936	0.00680	1.15816	1.16530
sky130_fd_sc_hs__fa_2	0.01015	0.00974	0.00726	1.97395	2.12073
sky130_fd_sc_hs__fa_4	0.01010	0.01010	0.00710	4.26699	4.23437

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__fa_1	0.00000	0.10593	0.15097
sky130_fd_sc_hs__fa_2	0.00000	0.13804	0.18302
sky130_fd_sc_hs__fa_4	0.00000	0.20420	0.26106

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)	0.08513	0.58030	5.79831
	B->COUT (RR)	0.09598	0.58571	5.75351
	CIN->COUT (RR)	0.08145	0.57755	5.93598
sky130_fd_sc_hs__fa_2	A->COUT (RR)	0.08955	0.51849	5.88199
	B->COUT (RR)	0.09412	0.52591	5.85027
	CIN->COUT (RR)	0.08346	0.52163	5.96181
sky130_fd_sc_hs__fa_4	A->COUT (RR)	0.12166	0.49586	6.11129
	B->COUT (RR)	0.10221	0.48692	6.07472
	CIN->COUT (RR)	0.10422	0.49645	6.17922

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->COUT (FF)	0.18207	0.68283	5.13549
	B->COUT (FF)	0.16299	0.65834	5.05924
	CIN->COUT (FF)	0.13927	0.64009	5.00872
sky130_fd_sc_hs__fa_2	A->COUT (FF)	0.21199	0.70013	5.03861
	B->COUT (FF)	0.18915	0.67502	4.96281
	CIN->COUT (FF)	0.19091	0.67391	4.86864
sky130_fd_sc_hs__fa_4	A->COUT (FF)	0.28922	0.78890	5.55261
	B->COUT (FF)	0.26106	0.75999	5.48227
	CIN->COUT (FF)	0.25858	0.75140	5.38647

Delay(ns) to SUM rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-R)	0.25907	0.96065	9.06092
	B->SUM (-R)	0.24561	0.93442	8.93097
	CIN->SUM (-R)	0.22401	0.89959	8.72232
sky130_fd_sc_hs__fa_2	A->SUM (-R)	0.32935	0.94514	9.20639
	B->SUM (-R)	0.29997	0.90833	9.07917
	CIN->SUM (-R)	0.30895	0.90964	8.92092
sky130_fd_sc_hs__fa_4	A->SUM (-R)	0.47331	1.00826	9.52971
	B->SUM (-R)	0.43312	0.96766	9.42295
	CIN->SUM (-R)	0.44154	0.96724	9.26072

Delay(ns) to SUM falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__fa_1	A->SUM (-F)	0.20919	0.67653	5.06501
	B->SUM (-F)	0.21378	0.69749	5.16580
	CIN->SUM (-F)	0.17197	0.63834	4.97393
sky130_fd_sc_hs__fa_2	A->SUM (-F)	0.25983	0.72452	5.04567
	B->SUM (-F)	0.27164	0.75417	5.15519
	CIN->SUM (-F)	0.23178	0.69374	4.93383
sky130_fd_sc_hs__fa_4	A->SUM (-F)	0.35904	0.82649	5.51698
	B->SUM (-F)	0.32077	0.81765	5.61671
	CIN->SUM (-F)	0.30424	0.77090	5.40019

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00900	0.00912	0.01321
	A	0.00329	0.00329	0.00749
	B	0.00804	0.00813	0.01567
	B	0.00261	0.00264	0.01025
	CIN	0.00760	0.00763	0.01657
	CIN	0.00414	0.00412	0.01324
sky130_fd_sc_hs__fa_2	A	0.01142	0.01134	0.01491
	A	0.00521	0.00501	0.00873
	B	0.01058	0.01042	0.01731
	B	0.00484	0.00466	0.01167
	CIN	0.01013	0.00993	0.01763
	CIN	0.00622	0.00596	0.01399
sky130_fd_sc_hs__fa_4	A	0.01599	0.01605	0.02027
	A	0.00947	0.00950	0.01367
	B	0.01568	0.01546	0.02224
	B	0.01025	0.01002	0.01672
	CIN	0.01486	0.01470	0.02254
	CIN	0.01121	0.01106	0.01888

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00332	0.00340	0.00734
	A	0.00892	0.00904	0.01294
	B	0.00400	0.00416	0.01235
	B	0.00940	0.00958	0.01766
	CIN	0.00447	0.00477	0.01343
	CIN	0.00795	0.00828	0.01680
sky130_fd_sc_hs__fa_2	A	0.00536	0.00514	0.00919
	A	0.01148	0.01127	0.01473
	B	0.00608	0.00599	0.01360
	B	0.01176	0.01169	0.01923
	CIN	0.00651	0.00661	0.01440
	CIN	0.01045	0.01055	0.01821
sky130_fd_sc_hs__fa_4	A	0.01066	0.01025	0.01332
	A	0.01730	0.01682	0.01976
	B	0.01124	0.01086	0.01906
	B	0.01662	0.01628	0.02362
	CIN	0.01189	0.01160	0.01962
	CIN	0.01557	0.01528	0.02258

Internal switching power(pJ) to SUM rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.01308	0.01315	0.01883
	A	0.00897	0.00909	0.01305
	B	0.01130	0.01105	0.01837
	B	0.00943	0.00960	0.01795
	CIN	0.00904	0.00916	0.02016
	CIN	0.00792	0.00814	0.01703
sky130_fd_sc_hs__fa_2	A	0.01546	0.01582	0.02171
	A	0.01151	0.01129	0.01488
	B	0.01391	0.01416	0.02103
	B	0.01178	0.01170	0.01953
	CIN	0.01137	0.01170	0.02370
	CIN	0.01047	0.01059	0.01858
sky130_fd_sc_hs__fa_4	A	0.01960	0.02032	0.02520
	A	0.01732	0.01683	0.02025
	B	0.01853	0.01870	0.02475
	B	0.01664	0.01629	0.02426
	CIN	0.01547	0.01614	0.02448
	CIN	0.01560	0.01529	0.02332

Internal switching power(pJ) to SUM falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__fa_1	A	0.00896	0.00901	0.01308
	A	0.01239	0.01240	0.01864
	B	0.00803	0.00811	0.01556
	B	0.01284	0.01294	0.01949
	CIN	0.00242	0.00264	0.01613
	CIN	0.01026	0.01052	0.02394
sky130_fd_sc_hs__fa_2	A	0.01141	0.01135	0.01468
	A	0.01496	0.01513	0.02172
	B	0.01058	0.01046	0.01696
	B	0.01510	0.01510	0.02121
	CIN	0.00504	0.00509	0.01822
	CIN	0.01310	0.01320	0.02625
sky130_fd_sc_hs__fa_4	A	0.00777	0.00724	0.01365
	A	0.02155	0.02136	0.02741
	B	0.01567	0.01545	0.02175
	B	0.02063	0.01930	0.02480
	CIN	0.01059	0.00912	0.02135
	CIN	0.01868	0.01727	0.02959

SKY130_FD_SC_HS__HAx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00457	0.00425	1.11726	1.03822
sky130_fd_sc_hs__ha_2	0.00457	0.00483	1.96377	2.03752
sky130_fd_sc_hs__ha_4	0.00880	0.00793	3.68731	4.18340

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__ha_1	0.00000	0.29083	0.49161
sky130_fd_sc_hs__ha_2	0.00000	0.16041	0.18244
sky130_fd_sc_hs__ha_4	0.00000	0.66370	1.04938

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)	0.06761	0.54139	5.84950
	B->COUT (RR)	0.06347	0.53307	5.94574
sky130_fd_sc_hs__ha_2	A->COUT (RR)	0.07245	0.48897	5.92499
	B->COUT (RR)	0.06969	0.48564	5.92701
sky130_fd_sc_hs__ha_4	A->COUT (RR)	0.08925	0.42423	5.93829
	B->COUT (RR)	0.07701	0.41211	5.98768

Delay(ns) to COUT falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__ha_1	A->COUT (FF)	0.08835	0.53015	4.46779
	B->COUT (FF)	0.07710	0.50601	4.42562
sky130_fd_sc_hs__ha_2	A->COUT (FF)	0.10117	0.53886	4.40601
	B->COUT (FF)	0.09329	0.52079	4.36061
sky130_fd_sc_hs__ha_4	A->COUT (FF)	0.11999	0.52080	4.43027
	B->COUT (FF)	0.10103	0.49146	4.40353

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	0.06921	0.55153	5.70136
	A->SUM (FR)	B	0.14016	0.83027	8.54704
	B->SUM (RR)	!A	0.06028	0.53125	5.78458
	B->SUM (FR)	A	0.13718	0.81500	8.47446
sky130_fd_sc_hs__ha_2	A->SUM (RR)	!B	0.07384	0.46731	5.63051
	A->SUM (FR)	B	0.18249	0.78958	8.54032
	B->SUM (RR)	!A	0.06703	0.45243	5.67894
	B->SUM (FR)	A	0.17845	0.77513	8.46740
sky130_fd_sc_hs__ha_4	A->SUM (RR)	!B	0.08273	0.40907	5.81792
	A->SUM (FR)	B	0.20592	0.72322	8.69796
	B->SUM (RR)	!A	0.07226	0.38683	5.86929
	B->SUM (FR)	A	0.19204	0.70283	8.61546

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	0.12120	0.55950	4.57164
	A->SUM (RF)	B	0.10257	0.29442	1.26320
	B->SUM (FF)	!A	0.10707	0.53139	4.45512
	B->SUM (RF)	A	0.09848	0.28473	1.28411
sky130_fd_sc_hs__ha_2	A->SUM (FF)	!B	0.15982	0.61190	4.79186
	A->SUM (RF)	B	0.12409	0.31874	1.50797
	B->SUM (FF)	!A	0.14579	0.58646	4.63127
	B->SUM (RF)	A	0.12144	0.31490	1.49862
sky130_fd_sc_hs__ha_4	A->SUM (FF)	!B	0.16408	0.59027	4.99576
	A->SUM (RF)	B	0.15434	0.32684	1.66590
	B->SUM (FF)	!A	0.14556	0.56211	4.85810
	B->SUM (RF)	A	0.14209	0.31398	1.67442

Power Information

Internal switching power(pJ) to COUT rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00621	0.00629	0.01455
	A	0.00303	0.00308	0.01136
	B	0.00585	0.00603	0.01906
	B	0.00329	0.00346	0.01666
sky130_fd_sc_hs__ha_2	A	0.00843	0.00867	0.01716
	A	0.00526	0.00548	0.01416
	B	0.00823	0.00849	0.01826
	B	0.00542	0.00567	0.01569
sky130_fd_sc_hs__ha_4	A	0.01582	0.01667	0.03477
	A	0.00999	0.01082	0.02919
	B	0.01482	0.01584	0.04030
	B	0.01029	0.01133	0.03623

Internal switching power(pJ) to COUT falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__ha_1	A	0.00310	0.00381	0.01444
	A	0.00628	0.00697	0.01754
	B	0.00368	0.00435	0.01577
	B	0.00621	0.00686	0.01811
sky130_fd_sc_hs__ha_2	A	0.00577	0.00636	0.01562
	A	0.00894	0.00952	0.01868
	B	0.00606	0.00646	0.01569
	B	0.00883	0.00910	0.01834
sky130_fd_sc_hs__ha_4	A	0.01041	0.01205	0.03437
	A	0.01625	0.01772	0.03998
	B	0.01149	0.01306	0.03680
	B	0.01587	0.01731	0.04102

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	0.00310	0.00380	0.01466
	A	B	0.00628	0.00697	0.01784
	A	!B	0.00906	0.00927	0.01764
	A	!B	0.00302	0.00321	0.01167
	B	A	0.00370	0.00438	0.01583
	B	A	0.00622	0.00687	0.01833
	B	!A	0.00679	0.00707	0.02327
	B	!A	0.00208	0.00237	0.01863
sky130_fd_sc_hs__ha_2	A	B	0.00577	0.00646	0.01595
	A	B	0.00894	0.00954	0.01894
	A	!B	0.01141	0.01175	0.01881
	A	!B	0.00546	0.00582	0.01316
	B	A	0.00608	0.00635	0.01612
	B	A	0.00884	0.00911	0.01873
	B	!A	0.00952	0.00987	0.02389
	B	!A	0.00439	0.00476	0.01898
sky130_fd_sc_hs__ha_4	A	B	0.01042	0.01208	0.03559
	A	B	0.01627	0.01776	0.04056
	A	!B	0.02316	0.02383	0.03932
	A	!B	0.01071	0.01148	0.02703
	B	A	0.01154	0.01318	0.03775
	B	A	0.01591	0.01738	0.04162
	B	!A	0.01813	0.01892	0.04818
	B	!A	0.00863	0.00941	0.03867

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	0.00621	0.00629	0.01445
	A	B	0.00303	0.00308	0.01129
	A	!B	0.00169	0.00182	0.00991
	A	!B	0.00756	0.00766	0.01568
	B	A	0.00584	0.00603	0.01873
	B	A	0.00329	0.00346	0.01627
	B	!A	0.00258	0.00354	0.02003
	B	!A	0.00731	0.00823	0.02472
sky130_fd_sc_hs__ha_2	A	B	0.00843	0.00867	0.01687
	A	B	0.00526	0.00547	0.01373
	A	!B	0.00400	0.00414	0.01109
	A	!B	0.00974	0.00989	0.01689
	B	A	0.00823	0.00848	0.01783
	B	A	0.00542	0.00567	0.01514
	B	!A	0.00446	0.00544	0.02129
	B	!A	0.00963	0.01060	0.02574
sky130_fd_sc_hs__ha_4	A	B	0.01581	0.01671	0.03417
	A	B	0.00999	0.01085	0.02823
	A	!B	0.00786	0.00818	0.02430
	A	!B	0.01994	0.02030	0.03489
	B	A	0.01481	0.01587	0.03974
	B	A	0.01028	0.01135	0.03533
	B	!A	0.00978	0.01163	0.04318
	B	!A	0.01949	0.02133	0.05185

SKY130_FD_SC_HS__INVx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00769	17.43062
sky130_fd_sc_hs__bufinv_8	0.00265	6.92150
sky130_fd_sc_hs__inv_1	0.00268	1.11858
sky130_fd_sc_hs__inv_16	0.04047	16.95529
sky130_fd_sc_hs__inv_2	0.00490	2.19544
sky130_fd_sc_hs__inv_4	0.00989	4.09657
sky130_fd_sc_hs__inv_8	0.01956	8.05580

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__bufinv_16	0.00000	0.41349	0.61994
sky130_fd_sc_hs__bufinv_8	0.00000	0.19848	0.29376
sky130_fd_sc_hs__inv_1	0.00000	0.01654	0.03242
sky130_fd_sc_hs__inv_16	0.00000	0.26463	0.51873
sky130_fd_sc_hs__inv_2	0.00000	0.03308	0.06484
sky130_fd_sc_hs__inv_4	0.00000	0.06616	0.12968
sky130_fd_sc_hs__inv_8	0.00000	0.13232	0.25936

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)	0.11085	0.51313	8.62032
sky130_fd_sc_hs__bufinv_8	A->Y (FR)	0.14387	0.63687	8.62740
sky130_fd_sc_hs__inv_1	A->Y (FR)	0.02665	0.78000	11.07860
sky130_fd_sc_hs__inv_16	A->Y (FR)	0.01825	0.49044	11.11730
sky130_fd_sc_hs__inv_2	A->Y (FR)	0.02084	0.68147	11.07730
sky130_fd_sc_hs__inv_4	A->Y (FR)	0.01942	0.61045	11.04910
sky130_fd_sc_hs__inv_8	A->Y (FR)	0.01900	0.54709	11.02560

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__bufinv_16	A->Y (RF)	0.09532	0.19153	1.43413
sky130_fd_sc_hs__bufinv_8	A->Y (RF)	0.11424	0.25491	1.25945
sky130_fd_sc_hs__inv_1	A->Y (RF)	0.01338	0.35331	5.02802
sky130_fd_sc_hs__inv_16	A->Y (RF)	0.01014	0.15749	5.04967
sky130_fd_sc_hs__inv_2	A->Y (RF)	0.01109	0.29001	4.97091
sky130_fd_sc_hs__inv_4	A->Y (RF)	0.01049	0.24519	5.02391
sky130_fd_sc_hs__inv_8	A->Y (RF)	0.01053	0.19909	5.01038

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.04776	0.05360	0.11083
	A	0.05706	0.06307	0.12014
sky130_fd_sc_hs__bufinv_8	A	0.02511	0.02725	0.04756
	A	0.02830	0.03049	0.05074
sky130_fd_sc_hs__inv_1	A	-0.00071	-0.00035	0.00238
	A	0.00253	0.00258	0.00511
sky130_fd_sc_hs__inv_16	A	-0.01384	-0.00521	0.03677
	A	0.03512	0.04417	0.07685
sky130_fd_sc_hs__inv_2	A	-0.00166	-0.00094	0.00458
	A	0.00427	0.00475	0.01055
sky130_fd_sc_hs__inv_4	A	-0.00327	-0.00094	0.00904
	A	0.00869	0.01084	0.02117
sky130_fd_sc_hs__inv_8	A	-0.00651	-0.00219	0.02180
	A	0.01715	0.02169	0.04599

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__bufinv_16	A	0.05983	0.06404	0.12064
	A	0.05050	0.05468	0.11072
sky130_fd_sc_hs__bufinv_8	A	0.02878	0.03015	0.04628
	A	0.02560	0.02694	0.04303
sky130_fd_sc_hs__inv_1	A	0.00292	0.00297	0.00413
	A	-0.00032	-0.00028	0.00046
sky130_fd_sc_hs__inv_16	A	0.03859	0.04052	0.05466
	A	-0.01040	-0.00877	0.00450
sky130_fd_sc_hs__inv_2	A	0.00473	0.00494	0.00922
	A	-0.00120	-0.00105	0.00047
sky130_fd_sc_hs__inv_4	A	0.00961	0.00999	0.01483
	A	-0.00236	-0.00206	0.00111
sky130_fd_sc_hs__inv_8	A	0.01871	0.01993	0.03017
	A	-0.00496	-0.00391	0.00339

SKY130_FD_SC_HS__MAJ3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00502	0.00469	0.00490	1.15745
sky130_fd_sc_hs__maj3_2	0.00532	0.00506	0.00520	2.26236
sky130_fd_sc_hs__maj3_4	0.00976	0.00919	0.00961	4.26780

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__maj3_1	0.00000	0.04781	0.11713
sky130_fd_sc_hs__maj3_2	0.00000	0.06394	0.11779
sky130_fd_sc_hs__maj3_4	0.00000	0.12869	0.23557

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)	0.07758	0.56281	5.72458
	B->X (RR)	0.07399	0.54763	5.78603
	C->X (RR)	0.07736	0.55845	5.69072
sky130_fd_sc_hs__maj3_2	A->X (RR)	0.08393	0.48887	5.79903
	B->X (RR)	0.07392	0.47462	5.82469
	C->X (RR)	0.07620	0.48275	5.75682
sky130_fd_sc_hs__maj3_4	A->X (RR)	0.08082	0.41202	5.81364
	B->X (RR)	0.07564	0.39876	5.85434
	C->X (RR)	0.07745	0.40268	5.87023

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__maj3_1	A->X (FF)	0.13991	0.62559	5.00366
	B->X (FF)	0.13261	0.59665	4.86688
	C->X (FF)	0.12663	0.61077	4.98817
sky130_fd_sc_hs__maj3_2	A->X (FF)	0.19070	0.65931	5.01293
	B->X (FF)	0.14816	0.60698	4.80024
	C->X (FF)	0.15378	0.62303	4.95212
sky130_fd_sc_hs__maj3_4	A->X (FF)	0.17413	0.61328	5.07266
	B->X (FF)	0.13337	0.55785	4.92692
	C->X (FF)	0.14444	0.58201	5.01439

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.01192	0.01188	0.01835
	A	0.00326	0.00322	0.00977
	B	0.00989	0.00948	0.02625
	B	0.00314	0.00271	0.01950
	C	0.00970	0.00961	0.02489
	C	0.00195	0.00185	0.01717
sky130_fd_sc_hs__maj3_2	A	0.01354	0.01358	0.02056
	A	0.00486	0.00497	0.01109
	B	0.01247	0.01238	0.02796
	B	0.00518	0.00509	0.02073
	C	0.01243	0.01245	0.02616
	C	0.00396	0.00398	0.01770
sky130_fd_sc_hs__maj3_4	A	0.02620	0.02637	0.04120
	A	0.00981	0.01003	0.02509
	B	0.02130	0.02155	0.05589
	B	0.00957	0.00983	0.04345
	C	0.02205	0.02228	0.04839
	C	0.00700	0.00720	0.03331

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	A	0.00188	0.00186	0.00860
	A	0.01049	0.01049	0.01701
	B	0.00274	0.00294	0.01932
	B	0.00947	0.00970	0.02608
	C	0.00302	0.00330	0.01916
	C	0.01060	0.01087	0.02672
sky130_fd_sc_hs__maj3_2	A	0.00454	0.00454	0.01131
	A	0.01381	0.01382	0.02047
	B	0.00484	0.00500	0.02122
	B	0.01218	0.01237	0.02766
	C	0.00524	0.00542	0.02129
	C	0.01349	0.01374	0.02885
sky130_fd_sc_hs__maj3_4	A	0.00853	0.00866	0.02495
	A	0.02488	0.02506	0.03902
	B	0.00928	0.01002	0.04293
	B	0.02218	0.02303	0.05543
	C	0.00990	0.01074	0.04191
	C	0.02460	0.02550	0.05559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	0.00306	0.00281	0.00278
	(B * C * X)	-0.00207	-0.00237	-0.00238
	(!B * !C * !X)	0.00248	0.00251	0.00249
	(!B * !C * !X)	-0.00259	-0.00261	-0.00260
sky130_fd_sc_hs__maj3_2	(B * C * X)	0.00290	0.00268	0.00265
	(B * C * X)	-0.00249	-0.00277	-0.00278
	(!B * !C * !X)	0.00225	0.00227	0.00226
	(!B * !C * !X)	-0.00309	-0.00310	-0.00309
sky130_fd_sc_hs__maj3_4	(B * C * X)	0.00543	0.00500	0.00495
	(B * C * X)	-0.00428	-0.00481	-0.00484
	(!B * !C * !X)	0.00433	0.00440	0.00436
	(!B * !C * !X)	-0.00528	-0.00533	-0.00530

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(B * C * X)	-0.00276	-0.00278	-0.00277
	(B * C * X)	0.00236	0.00239	0.00238
	(!B * !C * !X)	-0.00237	-0.00251	-0.00249
	(!B * !C * !X)	0.00268	0.00263	0.00261
sky130_fd_sc_hs__maj3_2	(B * C * X)	-0.00264	-0.00264	-0.00264
	(B * C * X)	0.00276	0.00277	0.00278
	(!B * !C * !X)	-0.00214	-0.00227	-0.00226
	(!B * !C * !X)	0.00316	0.00313	0.00310
sky130_fd_sc_hs__maj3_4	(B * C * X)	-0.00491	-0.00495	-0.00492
	(B * C * X)	0.00479	0.00487	0.00484
	(!B * !C * !X)	-0.00418	-0.00437	-0.00436
	(!B * !C * !X)	0.00537	0.00535	0.00531

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	0.00231	0.00234	0.00231
	(A * C * X)	-0.00129	-0.00130	-0.00127
	(!A * !C * !X)	0.00058	0.00059	0.00056
	(!A * !C * !X)	-0.00297	-0.00299	-0.00301
sky130_fd_sc_hs__maj3_2	(A * C * X)	0.00270	0.00274	0.00269
	(A * C * X)	-0.00123	-0.00124	-0.00122
	(!A * !C * !X)	0.00071	0.00071	0.00068
	(!A * !C * !X)	-0.00304	-0.00305	-0.00307
sky130_fd_sc_hs__maj3_4	(A * C * X)	0.00454	0.00462	0.00454
	(A * C * X)	-0.00257	-0.00260	-0.00255
	(!A * !C * !X)	0.00134	0.00137	0.00129
	(!A * !C * !X)	-0.00575	-0.00581	-0.00587

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * C * X)	-0.00222	-0.00225	-0.00230
	(A * C * X)	0.00134	0.00135	0.00129
	(!A * !C * !X)	-0.00055	-0.00055	-0.00055
	(!A * !C * !X)	0.00300	0.00302	0.00301
sky130_fd_sc_hs__maj3_2	(A * C * X)	-0.00260	-0.00263	-0.00268
	(A * C * X)	0.00128	0.00130	0.00124
	(!A * !C * !X)	-0.00068	-0.00068	-0.00067
	(!A * !C * !X)	0.00308	0.00309	0.00308
sky130_fd_sc_hs__maj3_4	(A * C * X)	-0.00436	-0.00439	-0.00452
	(A * C * X)	0.00273	0.00274	0.00260
	(!A * !C * !X)	-0.00127	-0.00127	-0.00126
	(!A * !C * !X)	0.00588	0.00589	0.00589

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	0.00253	0.00241	0.00238
	(A * B * X)	-0.00170	-0.00185	-0.00185
	(!A * !B * !X)	0.00125	0.00126	0.00124
	(!A * !B * !X)	-0.00294	-0.00295	-0.00296
sky130_fd_sc_hs__maj3_2	(A * B * X)	0.00286	0.00275	0.00272
	(A * B * X)	-0.00166	-0.00182	-0.00181
	(!A * !B * !X)	0.00150	0.00152	0.00149
	(!A * !B * !X)	-0.00289	-0.00291	-0.00292
sky130_fd_sc_hs__maj3_4	(A * B * X)	0.00499	0.00477	0.00474
	(A * B * X)	-0.00338	-0.00366	-0.00367
	(!A * !B * !X)	0.00281	0.00283	0.00279
	(!A * !B * !X)	-0.00553	-0.00556	-0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__maj3_1	(A * B * X)	-0.00233	-0.00234	-0.00237
	(A * B * X)	0.00186	0.00188	0.00186
	(!A * !B * !X)	-0.00117	-0.00124	-0.00124
	(!A * !B * !X)	0.00299	0.00298	0.00296
sky130_fd_sc_hs__maj3_2	(A * B * X)	-0.00267	-0.00268	-0.00271
	(A * B * X)	0.00184	0.00184	0.00182
	(!A * !B * !X)	-0.00143	-0.00151	-0.00149
	(!A * !B * !X)	0.00294	0.00295	0.00293
sky130_fd_sc_hs__maj3_4	(A * B * X)	-0.00463	-0.00466	-0.00472
	(A * B * X)	0.00371	0.00376	0.00368
	(!A * !B * !X)	-0.00267	-0.00278	-0.00278
	(!A * !B * !X)	0.00563	0.00565	0.00561

SKY130_FD_SC_HS__MUX2Ix

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00267	0.00252	0.00471	0.52981
sky130_fd_sc_hs__mux2i_2	0.00499	0.00529	0.00760	0.87802
sky130_fd_sc_hs__mux2i_4	0.00986	0.00984	0.01315	1.51654

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2i_1	0.00000	0.13464	0.27377
sky130_fd_sc_hs__mux2i_2	0.00000	0.06962	0.14810
sky130_fd_sc_hs__mux2i_4	0.00000	0.30909	0.63782

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)	-	0.08555	0.97873	11.07960
	A1->Y (FR)	-	0.07676	0.97085	11.08480
	S->Y (RR)	(A0 * !A1)	0.11477	0.72504	6.08483
	S->Y (FR)	(!A0 * A1)	0.09750	1.00543	11.18430
sky130_fd_sc_hs__mux2i_2	A0->Y (FR)	-	0.09706	0.88363	11.09580
	A1->Y (FR)	-	0.08864	0.84392	10.64360
	S->Y (RR)	(A0 * !A1)	0.12400	0.60064	5.52496
	S->Y (FR)	(!A0 * A1)	0.10603	0.89341	10.98910
sky130_fd_sc_hs__mux2i_4	A0->Y (FR)	-	0.09053	0.76026	10.67230
	A1->Y (FR)	-	0.09056	0.77655	10.97400
	S->Y (RR)	(A0 * !A1)	0.14243	0.59754	6.31485
	S->Y (FR)	(!A0 * A1)	0.10123	0.76342	10.46660

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)	-	0.02247	0.33884	3.71602
	A1->Y (RF)	-	0.02401	0.36555	4.03318
	S->Y (FF)	(A0 * !A1)	0.07518	0.44107	3.56177
	S->Y (RF)	(!A0 * A1)	0.02842	0.33209	3.58949
sky130_fd_sc_hs__mux2i_2	A0->Y (RF)	-	0.02939	0.34178	4.19082
	A1->Y (RF)	-	0.02805	0.32830	4.03760
	S->Y (FF)	(A0 * !A1)	0.09091	0.46870	3.82466
	S->Y (RF)	(!A0 * A1)	0.03040	0.26933	3.22127
sky130_fd_sc_hs__mux2i_4	A0->Y (RF)	-	0.02725	0.28305	3.95775
	A1->Y (RF)	-	0.03157	0.31886	4.44347
	S->Y (FF)	(A0 * !A1)	0.09354	0.43012	3.50287
	S->Y (RF)	(!A0 * A1)	0.03342	0.22415	3.04311

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	-	0.00080	0.00095	0.00434
	A0	-	0.00517	0.00532	0.00871
	A1	-	0.00056	0.00068	0.00396
	A1	-	0.00456	0.00469	0.00797
	S	(A0 * !A1)	0.00728	0.00769	0.03022
	S	(A0 * !A1)	0.00377	0.00414	0.02674
	S	(!A0 * A1)	0.00132	0.00245	0.02611
	S	(!A0 * A1)	0.00919	0.01034	0.03398
sky130_fd_sc_hs__mux2i_2	A0	-	0.00188	0.00197	0.00799
	A0	-	0.01032	0.01042	0.01646
	A1	-	0.00174	0.00192	0.00820
	A1	-	0.01014	0.01030	0.01664
	S	(A0 * !A1)	0.01216	0.01232	0.03143
	S	(A0 * !A1)	0.00787	0.00799	0.02708
	S	(!A0 * A1)	0.00337	0.00383	0.02745
	S	(!A0 * A1)	0.01677	0.01724	0.04088
sky130_fd_sc_hs__mux2i_4	A0	-	0.00215	0.00217	0.01481
	A0	-	0.01893	0.01897	0.03172
	A1	-	0.00225	0.00248	0.01358
	A1	-	0.01818	0.01842	0.02956
	S	(A0 * !A1)	0.02087	0.02102	0.05710
	S	(A0 * !A1)	0.01440	0.01442	0.05072
	S	(!A0 * A1)	0.00559	0.00661	0.04810
	S	(!A0 * A1)	0.02970	0.03085	0.07245

Internal switching power(pJ) to Y falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2i_1	A0	-	0.00533	0.00536	0.00640
	A0	-	0.00118	0.00119	0.00215
	A1	-	0.00516	0.00516	0.00613
	A1	-	0.00109	0.00111	0.00204
	S	(A0 * !A1)	0.00427	0.00548	0.02785
	S	(A0 * !A1)	0.00780	0.00899	0.03138
	S	(!A0 * A1)	0.01002	0.01034	0.03344
	S	(!A0 * A1)	0.00213	0.00245	0.02556
sky130_fd_sc_hs__mux2i_2	A0	-	0.01092	0.01091	0.01306
	A0	-	0.00298	0.00293	0.00478
	A1	-	0.01059	0.01058	0.01291
	A1	-	0.00216	0.00210	0.00404
	S	(A0 * !A1)	0.00936	0.01036	0.02833
	S	(A0 * !A1)	0.01353	0.01457	0.03260
	S	(!A0 * A1)	0.01778	0.01788	0.04126
	S	(!A0 * A1)	0.00433	0.00437	0.02763
sky130_fd_sc_hs__mux2i_4	A0	-	0.02027	0.02021	0.02480
	A0	-	0.00443	0.00438	0.00827
	A1	-	0.02018	0.02001	0.02422
	A1	-	0.00410	0.00390	0.00768
	S	(A0 * !A1)	0.01790	0.01936	0.05659
	S	(A0 * !A1)	0.02420	0.02566	0.06304
	S	(!A0 * A1)	0.03284	0.03255	0.07163
	S	(!A0 * A1)	0.00856	0.00820	0.04687

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	0.00148	0.00148	0.00148
	(A1 * S * !Y)	-0.00074	-0.00074	-0.00074
	(!A1 * S * Y)	0.00064	0.00062	0.00060
	(!A1 * S * Y)	-0.00157	-0.00164	-0.00165
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	0.00267	0.00269	0.00268
	(A1 * S * !Y)	-0.00135	-0.00136	-0.00135
	(!A1 * S * Y)	0.00092	0.00093	0.00088
	(!A1 * S * Y)	-0.00309	-0.00321	-0.00324
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	0.00519	0.00522	0.00521
	(A1 * S * !Y)	-0.00277	-0.00279	-0.00278
	(!A1 * S * Y)	0.00178	0.00177	0.00169
	(!A1 * S * Y)	-0.00627	-0.00644	-0.00651

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A1 * S * !Y)	-0.00138	-0.00140	-0.00147
	(A1 * S * !Y)	0.00081	0.00081	0.00076
	(!A1 * S * Y)	-0.00060	-0.00060	-0.00060
	(!A1 * S * Y)	0.00165	0.00166	0.00165
sky130_fd_sc_hs__mux2i_2	(A1 * S * !Y)	-0.00250	-0.00260	-0.00268
	(A1 * S * !Y)	0.00144	0.00145	0.00138
	(!A1 * S * Y)	-0.00086	-0.00086	-0.00086
	(!A1 * S * Y)	0.00324	0.00325	0.00324
sky130_fd_sc_hs__mux2i_4	(A1 * S * !Y)	-0.00487	-0.00498	-0.00521
	(A1 * S * !Y)	0.00299	0.00297	0.00284
	(!A1 * S * Y)	-0.00163	-0.00165	-0.00164
	(!A1 * S * Y)	0.00648	0.00652	0.00651

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	0.00133	0.00134	0.00133
	(A0 * !S * !Y)	-0.00074	-0.00075	-0.00075
	(!A0 * !S * Y)	0.00050	0.00049	0.00047
	(!A0 * !S * Y)	-0.00159	-0.00162	-0.00165
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	0.00277	0.00279	0.00279
	(A0 * !S * !Y)	-0.00151	-0.00153	-0.00152
	(!A0 * !S * Y)	0.00099	0.00099	0.00095
	(!A0 * !S * Y)	-0.00322	-0.00328	-0.00333
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	0.00508	0.00514	0.00512
	(A0 * !S * !Y)	-0.00278	-0.00282	-0.00280
	(!A0 * !S * Y)	0.00157	0.00157	0.00150
	(!A0 * !S * Y)	-0.00633	-0.00644	-0.00656

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * !S * !Y)	-0.00117	-0.00126	-0.00133
	(A0 * !S * !Y)	0.00085	0.00083	0.00076
	(!A0 * !S * Y)	-0.00046	-0.00046	-0.00046
	(!A0 * !S * Y)	0.00165	0.00165	0.00165
sky130_fd_sc_hs__mux2i_2	(A0 * !S * !Y)	-0.00251	-0.00269	-0.00279
	(A0 * !S * !Y)	0.00165	0.00165	0.00155
	(!A0 * !S * Y)	-0.00094	-0.00093	-0.00093
	(!A0 * !S * Y)	0.00334	0.00334	0.00333
sky130_fd_sc_hs__mux2i_4	(A0 * !S * !Y)	-0.00462	-0.00500	-0.00512
	(A0 * !S * !Y)	0.00303	0.00305	0.00286
	(!A0 * !S * Y)	-0.00147	-0.00147	-0.00146
	(!A0 * !S * Y)	0.00657	0.00657	0.00656

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	0.00548	0.00590	0.02827
	(A0 * A1 * !Y)	-0.00005	0.00030	0.02270
	(!A0 * !A1 * Y)	0.00555	0.00593	0.02830
	(!A0 * !A1 * Y)	-0.00003	0.00032	0.02271
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	0.00851	0.00853	0.03033
	(A0 * A1 * !Y)	-0.00007	-0.00010	0.02170
	(!A0 * !A1 * Y)	0.00824	0.00849	0.03029
	(!A0 * !A1 * Y)	-0.00033	-0.00012	0.02173
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	0.01485	0.01458	0.05101
	(A0 * A1 * !Y)	0.00008	-0.00032	0.03612
	(!A0 * !A1 * Y)	0.01448	0.01458	0.05096
	(!A0 * !A1 * Y)	-0.00028	-0.00027	0.03619

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2i_1	(A0 * A1 * !Y)	-0.00041	0.00076	0.02324
	(A0 * A1 * !Y)	0.00515	0.00634	0.02880
	(!A0 * !A1 * Y)	-0.00049	0.00069	0.02322
	(!A0 * !A1 * Y)	0.00509	0.00630	0.02879
sky130_fd_sc_hs__mux2i_2	(A0 * A1 * !Y)	-0.00055	0.00046	0.02165
	(A0 * A1 * !Y)	0.00806	0.00909	0.03024
	(!A0 * !A1 * Y)	-0.00052	0.00051	0.02164
	(!A0 * !A1 * Y)	0.00797	0.00911	0.03024
sky130_fd_sc_hs__mux2i_4	(A0 * A1 * !Y)	-0.00033	0.00097	0.03868
	(A0 * A1 * !Y)	0.01442	0.01585	0.05348
	(!A0 * !A1 * Y)	-0.00048	0.00082	0.03860
	(!A0 * !A1 * Y)	0.01415	0.01560	0.05343

SKY130_FD_SC_HS__MUX2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00260	0.00306	0.00434	1.16447
sky130_fd_sc_hs__mux2_2	0.00239	0.00272	0.00516	1.97541
sky130_fd_sc_hs__mux2_4	0.00460	0.00462	0.00778	3.66319

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__mux2_1	0.00000	0.16611	0.30855
sky130_fd_sc_hs__mux2_2	0.00000	0.18265	0.30921
sky130_fd_sc_hs__mux2_4	0.00000	0.16649	0.21900

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)	-	0.06043	0.52308	5.78075
	A1->X (RR)	-	0.06077	0.52533	5.75026
	S->X (RR)	(!A0 * A1)	0.06284	0.52888	5.66150
	S->X (FR)	(A0 * !A1)	0.12392	0.76614	8.38567
sky130_fd_sc_hs__mux2_2	A0->X (RR)	-	0.07377	0.49102	5.84045
	A1->X (RR)	-	0.06999	0.48265	5.83323
	S->X (RR)	(!A0 * A1)	0.07172	0.48103	5.74584
	S->X (FR)	(A0 * !A1)	0.13268	0.69989	8.34810
sky130_fd_sc_hs__mux2_4	A0->X (RR)	-	0.10340	0.46207	5.85945
	A1->X (RR)	-	0.10486	0.46364	5.89756
	S->X (RR)	(!A0 * A1)	0.10751	0.44074	5.72849
	S->X (FR)	(A0 * !A1)	0.17613	0.71069	8.55263

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)	-	0.10760	0.57261	4.75708
	A1->X (FF)	-	0.10486	0.56918	4.86087
	S->X (FF)	(!A0 * A1)	0.14471	0.61473	4.98442
	S->X (RF)	(A0 * !A1)	0.16104	0.36646	1.73803
sky130_fd_sc_hs__mux2_2	A0->X (FF)	-	0.13662	0.58831	4.60799
	A1->X (FF)	-	0.13962	0.59720	4.64948
	S->X (FF)	(!A0 * A1)	0.17298	0.61984	4.69849
	S->X (RF)	(A0 * !A1)	0.20082	0.38007	1.41485
sky130_fd_sc_hs__mux2_4	A0->X (FF)	-	0.16202	0.59249	4.58864
	A1->X (FF)	-	0.16305	0.59545	4.56761
	S->X (FF)	(!A0 * A1)	0.19564	0.61075	4.61162
	S->X (RF)	(A0 * !A1)	0.21976	0.38418	1.23455

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	-	0.00756	0.00762	0.02323
	A0	-	0.00348	0.00354	0.01921
	A1	-	0.00790	0.00814	0.02147
	A1	-	0.00344	0.00369	0.01711
	S	(A0 * !A1)	0.00697	0.00769	0.03012
	S	(A0 * !A1)	0.00968	0.01045	0.03458
	S	(!A0 * A1)	0.01251	0.01305	0.04203
	S	(!A0 * A1)	0.00499	0.00553	0.03461
sky130_fd_sc_hs__mux2_2	A0	-	0.00976	0.01024	0.02505
	A0	-	0.00573	0.00622	0.02109
	A1	-	0.01021	0.01067	0.02565
	A1	-	0.00600	0.00646	0.02154
	S	(A0 * !A1)	0.00883	0.01078	0.03141
	S	(A0 * !A1)	0.01221	0.01418	0.03483
	S	(!A0 * A1)	0.01501	0.01539	0.03551
	S	(!A0 * A1)	0.00684	0.00723	0.02748
sky130_fd_sc_hs__mux2_4	A0	-	0.01724	0.01800	0.04272
	A0	-	0.01097	0.01181	0.03590
	A1	-	0.01850	0.01915	0.04801
	A1	-	0.01106	0.01172	0.04058
	S	(A0 * !A1)	0.01664	0.01832	0.03885
	S	(A0 * !A1)	0.02145	0.02321	0.04378
	S	(!A0 * A1)	0.02635	0.02658	0.05303
	S	(!A0 * A1)	0.01331	0.01360	0.04031

Internal switching power(pJ) to X falling (conditional):

Cell Name	Input	When	Power(pJ)		
			first	mid	last
sky130_fd_sc_hs__mux2_1	A0	-	0.00318	0.00404	0.01810
	A0	-	0.00749	0.00835	0.02225
	A1	-	0.00369	0.00439	0.01999
	A1	-	0.00817	0.00888	0.02441
	S	(A0 * !A1)	0.01079	0.01097	0.03298
	S	(A0 * !A1)	0.00800	0.00815	0.03007
	S	(!A0 * A1)	0.00389	0.00505	0.03483
	S	(!A0 * A1)	0.01138	0.01251	0.04149
sky130_fd_sc_hs__mux2_2	A0	-	0.00504	0.00581	0.02110
	A0	-	0.00928	0.01005	0.02475
	A1	-	0.00578	0.00646	0.02181
	A1	-	0.01002	0.01070	0.02533
	S	(A0 * !A1)	0.01253	0.01305	0.03146
	S	(A0 * !A1)	0.00907	0.00959	0.02796
	S	(!A0 * A1)	0.00549	0.00639	0.03293
	S	(!A0 * A1)	0.01364	0.01453	0.04100
sky130_fd_sc_hs__mux2_4	A0	-	0.01189	0.01255	0.04045
	A0	-	0.01960	0.02027	0.04750
	A1	-	0.01237	0.01316	0.04093
	A1	-	0.01967	0.02047	0.04759
	S	(A0 * !A1)	0.02296	0.02368	0.04324
	S	(A0 * !A1)	0.01803	0.01861	0.03815
	S	(!A0 * A1)	0.01307	0.01305	0.04455
	S	(!A0 * A1)	0.02604	0.02603	0.05745

Passive power(pJ) for A0 rising (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	0.00138	0.00140	0.00138
	(A1 * S * X)	-0.00061	-0.00062	-0.00061
	(!A1 * S * !X)	0.00052	0.00052	0.00049
	(!A1 * S * !X)	-0.00145	-0.00148	-0.00151
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	0.00131	0.00132	0.00131
	(A1 * S * X)	-0.00066	-0.00067	-0.00066
	(!A1 * S * !X)	0.00058	0.00058	0.00055
	(!A1 * S * !X)	-0.00136	-0.00140	-0.00144
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	0.00238	0.00238	0.00239
	(A1 * S * X)	-0.00131	-0.00131	-0.00131
	(!A1 * S * !X)	0.00089	0.00088	0.00084
	(!A1 * S * !X)	-0.00284	-0.00294	-0.00297

Passive power(pJ) for A0 falling (conditional):

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A1 * S * X)	-0.00130	-0.00133	-0.00138
	(A1 * S * X)	0.00067	0.00067	0.00063
	(!A1 * S * !X)	-0.00048	-0.00048	-0.00048
	(!A1 * S * !X)	0.00152	0.00151	0.00151
sky130_fd_sc_hs__mux2_2	(A1 * S * X)	-0.00120	-0.00123	-0.00131
	(A1 * S * X)	0.00074	0.00074	0.00069
	(!A1 * S * !X)	-0.00053	-0.00053	-0.00053
	(!A1 * S * !X)	0.00144	0.00144	0.00144
sky130_fd_sc_hs__mux2_4	(A1 * S * X)	-0.00224	-0.00230	-0.00238
	(A1 * S * X)	0.00142	0.00142	0.00134
	(!A1 * S * !X)	-0.00083	-0.00084	-0.00083
	(!A1 * S * !X)	0.00297	0.00298	0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	0.00152	0.00153	0.00153
	(A0 * !S * X)	-0.00074	-0.00075	-0.00075
	(!A0 * !S * !X)	0.00046	0.00046	0.00045
	(!A0 * !S * !X)	-0.00176	-0.00178	-0.00179
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	0.00142	0.00142	0.00142
	(A0 * !S * X)	-0.00064	-0.00064	-0.00064
	(!A0 * !S * !X)	0.00041	0.00041	0.00040
	(!A0 * !S * !X)	-0.00158	-0.00160	-0.00161
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	0.00237	0.00241	0.00239
	(A0 * !S * X)	-0.00130	-0.00133	-0.00131
	(!A0 * !S * !X)	0.00071	0.00071	0.00068
	(!A0 * !S * !X)	-0.00301	-0.00304	-0.00309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * !S * X)	-0.00145	-0.00150	-0.00153
	(A0 * !S * X)	0.00080	0.00079	0.00076
	(!A0 * !S * !X)	-0.00044	-0.00044	-0.00044
	(!A0 * !S * !X)	0.00179	0.00179	0.00179
sky130_fd_sc_hs__mux2_2	(A0 * !S * X)	-0.00131	-0.00136	-0.00142
	(A0 * !S * X)	0.00071	0.00071	0.00066
	(!A0 * !S * !X)	-0.00039	-0.00039	-0.00039
	(!A0 * !S * !X)	0.00162	0.00162	0.00161
sky130_fd_sc_hs__mux2_4	(A0 * !S * X)	-0.00218	-0.00232	-0.00239
	(A0 * !S * X)	0.00143	0.00141	0.00134
	(!A0 * !S * !X)	-0.00067	-0.00067	-0.00066
	(!A0 * !S * !X)	0.00310	0.00310	0.00309

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	0.00557	0.00589	0.02790
	(A0 * A1 * X)	0.00053	0.00082	0.02284
	(!A0 * !A1 * !X)	0.00566	0.00605	0.02805
	(!A0 * !A1 * !X)	0.00063	0.00102	0.02304
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	0.00564	0.00601	0.02805
	(A0 * A1 * X)	-0.00006	0.00026	0.02232
	(!A0 * !A1 * !X)	0.00538	0.00578	0.02781
	(!A0 * !A1 * !X)	-0.00031	0.00007	0.02213
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	0.00876	0.00886	0.03038
	(A0 * A1 * X)	0.00010	0.00008	0.02166
	(!A0 * !A1 * !X)	0.00883	0.00898	0.03043
	(!A0 * !A1 * !X)	0.00012	0.00022	0.02170

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux2_1	(A0 * A1 * X)	-0.00010	0.00096	0.02316
	(A0 * A1 * X)	0.00495	0.00602	0.02821
	(!A0 * !A1 * !X)	-0.00030	0.00071	0.02297
	(!A0 * !A1 * !X)	0.00469	0.00576	0.02800
sky130_fd_sc_hs__mux2_2	(A0 * A1 * X)	-0.00064	0.00041	0.02267
	(A0 * A1 * X)	0.00509	0.00613	0.02838
	(!A0 * !A1 * !X)	-0.00044	0.00061	0.02281
	(!A0 * !A1 * !X)	0.00524	0.00630	0.02852
sky130_fd_sc_hs__mux2_4	(A0 * A1 * X)	-0.00041	0.00018	0.02130
	(A0 * A1 * X)	0.00831	0.00892	0.03002
	(!A0 * !A1 * !X)	-0.00063	-0.00002	0.02111
	(!A0 * !A1 * !X)	0.00805	0.00872	0.02982

SKY130_FD_SC_HS__MUX4x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00225	0.00236	0.00234	0.00261	0.00798	0.00508	1.10315
sky130_fd_sc_hs__mux4_2	0.00255	0.00240	0.00251	0.00244	0.00907	0.00525	2.22677
sky130_fd_sc_hs__mux4_4	0.00447	0.00428	0.00446	0.00447	0.01255	0.00782	4.21507

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__mux4_1	0.00000	0.15798	0.28875
sky130_fd_sc_hs__mux4_2	0.00000	0.17345	0.31947
sky130_fd_sc_hs__mux4_4	0.00000	0.26391	0.47592

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)	0.10710	0.61384	5.83256
	A1->X (RR)	0.10859	0.61532	5.83157
	A2->X (RR)	0.10738	0.61976	5.85551
	A3->X (RR)	0.10509	0.61382	5.83580
	S0->X (-R)	0.17693	0.86686	8.57071
	S1->X (-R)	0.10612	0.75465	8.41500
sky130_fd_sc_hs__mux4_2	A0->X (RR)	0.11428	0.53489	5.93429
	A1->X (RR)	0.10908	0.53252	5.93173
	A2->X (RR)	0.10485	0.52482	5.90776
	A3->X (RR)	0.09925	0.51940	5.89603
	S0->X (-R)	0.16555	0.75790	8.57376
	S1->X (-R)	0.11346	0.66991	8.39338
sky130_fd_sc_hs__mux4_4	A0->X (RR)	0.13243	0.47733	5.98149
	A1->X (RR)	0.13631	0.48061	5.98693
	A2->X (RR)	0.13701	0.48400	5.98529
	A3->X (RR)	0.12982	0.47888	5.97688
	S0->X (-R)	0.23751	0.80276	8.89314
	S1->X (-R)	0.13387	0.66820	8.63256

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__mux4_1	A0->X (FF)	0.18851	0.70581	4.98936
	A1->X (FF)	0.19844	0.72107	5.03309
	A2->X (FF)	0.20407	0.73384	5.06545
	A3->X (FF)	0.20395	0.73370	5.05337
	S0->X (-F)	0.18710	0.70341	4.92296
	S1->X (-F)	0.09169	0.54601	4.65797
sky130_fd_sc_hs__mux4_2	A0->X (FF)	0.23186	0.76508	5.28110
	A1->X (FF)	0.23019	0.76058	5.26554
	A2->X (FF)	0.22940	0.75759	5.25039
	A3->X (FF)	0.22226	0.74675	5.21147
	S0->X (-F)	0.21116	0.73274	5.09099
	S1->X (-F)	0.10955	0.57381	4.85205
sky130_fd_sc_hs__mux4_4	A0->X (FF)	0.23479	0.72674	5.30325
	A1->X (FF)	0.22970	0.72058	5.28036
	A2->X (FF)	0.25667	0.75297	5.33251
	A3->X (FF)	0.24421	0.73875	5.31347
	S0->X (-F)	0.23123	0.73759	5.29670
	S1->X (-F)	0.11807	0.57564	5.00559

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__mux4_1	A0	0.01224	0.01241	0.01998
	A0	0.00747	0.00764	0.01525
	A1	0.01121	0.01135	0.01880
	A1	0.00638	0.00652	0.01400
	A2	0.01103	0.01123	0.01864
	A2	0.00630	0.00649	0.01393
	A3	0.01031	0.01046	0.01796
	A3	0.00525	0.00541	0.01295
	S0	0.01998	0.02102	0.07848
	S0	0.00805	0.00909	0.06657
	S1	0.00938	0.01020	0.04310
	S1	0.00920	0.01173	0.04767
sky130_fd_sc_hs__mux4_2	A0	0.01490	0.01523	0.02176
	A0	0.00955	0.00988	0.01705
	A1	0.01384	0.01421	0.02081
	A1	0.00844	0.00881	0.01606
	A2	0.01301	0.01339	0.01994
	A2	0.00788	0.00826	0.01547
	A3	0.01226	0.01266	0.01935
	A3	0.00712	0.00752	0.01420
	S0	0.02351	0.02449	0.07947
	S0	0.01119	0.01216	0.06773
	S1	0.01128	0.01222	0.04444
	S1	0.01146	0.01423	0.05081

sky130_fd_sc_hs__mux4_4	**A0**	0.02729	0.02796	0.04256
	A0	0.01797	0.01867	0.03440
	A1	0.02515	0.02580	0.04052
	A1	0.01583	0.01648	0.03234
	A2	0.02514	0.02583	0.04031
	A2	0.01580	0.01651	0.03213
	A3	0.02385	0.02452	0.03917
	A3	0.01423	0.01490	0.03070
	S0	0.03948	0.04081	0.12050
	S0	0.02074	0.02210	0.10274
	S1	0.01999	0.02078	0.06114
	S1	0.02041	0.02399	0.06378

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__mux4_1	**A0**	0.00396	0.00404	0.01142
	A0	0.00873	0.00881	0.01596
	A1	0.00510	0.00513	0.01217
	A1	0.00990	0.01000	0.01695
	A2	0.00592	0.00598	0.01322
	A2	0.01066	0.01073	0.01762
	A3	0.00667	0.00667	0.01436
	A3	0.01170	0.01169	0.01866
	S0	0.00631	0.00860	0.06521
	S0	0.01823	0.02057	0.07664
	S1	0.00963	0.01106	0.04434
	S1	0.00819	0.01018	0.04431

sky130_fd_sc_hs__mux4_2	**A0**	0.00771	0.00727	0.01458
	A0	0.01305	0.01283	0.01934
	A1	0.00872	0.00831	0.01505
	A1	0.01409	0.01392	0.02039
	A2	0.00849	0.00813	0.01476
	A2	0.01362	0.01336	0.01985
	A3	0.00911	0.00880	0.01569
	A3	0.01422	0.01406	0.02063
	S0	0.00877	0.01066	0.06552
	S0	0.02128	0.02327	0.07764
	S1	0.01278	0.01369	0.04521
	S1	0.01133	0.01328	0.04632
sky130_fd_sc_hs__mux4_4	**A0**	0.01431	0.01378	0.02994
	A0	0.02364	0.02309	0.03663
	A1	0.01666	0.01629	0.03162
	A1	0.02595	0.02557	0.03909
	A2	0.01666	0.01555	0.03174
	A2	0.02600	0.02526	0.03853
	A3	0.01825	0.01748	0.03326
	A3	0.02780	0.02721	0.04062
	S0	0.01661	0.01897	0.09916
	S0	0.03531	0.03787	0.11576
	S1	0.02286	0.02472	0.06311
	S1	0.01990	0.02134	0.06219

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)**	0.00653	0.00648	0.01482
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00270	0.00265	0.01101
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00123	0.00115	0.00113
	(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)	-0.00109	-0.00121	-0.00122
sky130_fd_sc_hs__mux4_2	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00731	0.00722	0.01469
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00294	0.00282	0.01032
	(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)	0.00137	0.00124	0.00123
	(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)	-0.00103	-0.00118	-0.00119
sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.01225	0.01217	0.02866
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00477	0.00467	0.02120
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00240	0.00215	0.00211
	(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)	-0.00221	-0.00252	-0.00253

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)	0.00102	0.00095	0.00909
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00483	0.00477	0.01290
	(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)	-0.00111	-0.00112	-0.00113
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00121	0.00121	0.00122
sky130_fd_sc_hs__mux4_2	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00154	0.00144	0.00885
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00592	0.00582	0.01323
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00120	-0.00123	-0.00122
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00119	0.00120	0.00120

sky130_fd_sc_hs__mux4_4	**(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)**	0.00229	0.00215	0.01816
	(A2 * !S0 * S1 * X) + (!A2 * !S0 * S1 * !X)	0.00976	0.00964	0.02562
	(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)	-0.00206	-0.00211	-0.00211
	(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)	0.00253	0.00255	0.00253

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)**	0.00552	0.00544	0.01370
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00165	0.00158	0.00983
	(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)	0.00117	0.00103	0.00102
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00121	-0.00136	-0.00136

sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00627	0.00620	0.01366
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00185	0.00177	0.00925
	(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)	0.00118	0.00110	0.00109
	(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)	-0.00120	-0.00130	-0.00130
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.01012	0.01003	0.02661
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00270	0.00258	0.01920
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00229	0.00206	0.00202
	(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)	-0.00218	-0.00248	-0.00249

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)**	0.00212	0.00203	0.00997
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00598	0.00591	0.01382
	(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)	-0.00098	-0.00102	-0.00102
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00136	0.00137	0.00137
sky130_fd_sc_hs__mux4_2	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00255	0.00245	0.00992
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.00697	0.00688	0.01432
	(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)	-0.00105	-0.00109	-0.00109
	(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)	0.00130	0.00131	0.00131
sky130_fd_sc_hs__mux4_4	**(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)**	0.00466	0.00455	0.02058
	(A3 * S0 * S1 * X) + (!A3 * S0 * S1 * !X)	0.01207	0.01199	0.02797
	(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)	-0.00197	-0.00204	-0.00202
	(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)	0.00247	0.00250	0.00249

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)	0.00133	0.00121	0.00119
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00102	-0.00117	-0.00118
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00670	0.00664	0.01476
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00284	0.00277	0.01091
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)	0.00151	0.00137	0.00135
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	-0.00102	-0.00118	-0.00119
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00691	0.00681	0.01421
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00273	0.00261	0.01003

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)**	0.00250	0.00225	0.00221
	(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)	-0.00207	-0.00238	-0.00239
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.01246	0.01235	0.02862
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00482	0.00469	0.02101

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)**	-0.00117	-0.00119	-0.00119
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00117	0.00118	0.00118
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00163	0.00156	0.00938
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00549	0.00542	0.01323

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)**	-0.00133	-0.00135	-0.00135
	(A1 * A3 * S0 * X) + (A1 * !A3 * S0 * S1 * !X) + (A1 * !A3 * S0 * !S1 * X) + (!A1 * A3 * S0 * S1 * X) + (!A1 * A3 * S0 * !S1 * !X) + (!A1 * !A3 * S0 * !X)	0.00118	0.00119	0.00119
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00167	0.00156	0.00891
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00585	0.00575	0.01309
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)**	-0.00217	-0.00221	-0.00221
	(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)	0.00237	0.00240	0.00239
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00218	0.00205	0.01776
	(A0 * !S0 * !S1 * X) + (!A0 * !S0 * !S1 * !X)	0.00981	0.00968	0.02538

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)**	0.00597	0.00588	0.01408
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00183	0.00171	0.00992
	(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	0.00134	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)	-0.00115	-0.00131	-0.00132
sky130_fd_sc_hs__mux4_2	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00616	0.00609	0.01357
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00199	0.00190	0.00940
	(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)	0.00127	0.00118	0.00117
	(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)	-0.00114	-0.00126	-0.00126
sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.01115	0.01101	0.02744
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00331	0.00315	0.01960
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	0.00238	0.00217	0.00213
	(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)	-0.00213	-0.00240	-0.00241

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)	0.00235	0.00224	0.01013
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00651	0.00640	0.01427
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00129	-0.00133	-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)	0.00132	0.00133	0.00132
sky130_fd_sc_hs__mux4_2	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00234	0.00225	0.00974
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.00652	0.00643	0.01389
	(A0 * A2 * !S0 * X) + (A0 * !A2 * !S0 * S1 * !X) + (A0 * !A2 * !S0 * !S1 * X) + (!A0 * A2 * !S0 * S1 * X) + (!A0 * A2 * !S0 * !S1 * !X) + (!A0 * !A2 * !S0 * !X)	-0.00113	-0.00117	-0.00117
	(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)	0.00125	0.00126	0.00126

sky130_fd_sc_hs__mux4_4	**(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)**	0.00395	0.00378	0.01963
	(A1 * S0 * !S1 * X) + (!A1 * S0 * !S1 * !X)	0.01179	0.01163	0.02744
	(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)	-0.00206	-0.00213	-0.00213
	(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)	0.00240	0.00240	0.00241

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)**	0.00750	0.00775	0.02955
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00086	-0.00067	0.02117
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01101	0.01100	0.03359
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00394	0.00387	0.02656
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01066	0.01132	0.05141
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00101	0.00162	0.04175
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00770	0.00796	0.02982
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00068	-0.00044	0.02142
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01037	0.01058	0.03320
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00322	0.00337	0.02608
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01010	0.01033	0.03306
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00291	0.00310	0.02590
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01038	0.01104	0.05105
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00074	0.00141	0.04141
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01102	0.01171	0.05177
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00137	0.00204	0.04209
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01071	0.01066	0.03336
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00354	0.00349	0.02624
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01130	0.01194	0.05201
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00158	0.00218	0.04226

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.00831	0.00865	0.03063
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00013	0.00039	0.02239
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01187	0.01152	0.03438
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00514	0.00475	0.02769
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01155	0.01207	0.05130
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00191	0.00239	0.04164
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00815	0.00847	0.03057
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00002	0.00028	0.02240
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01228	0.01172	0.03430
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00582	0.00524	0.02789
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01177	0.01123	0.03395
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00540	0.00479	0.02759
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01161	0.01209	0.05150
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00170	0.00214	0.04162
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01176	0.01230	0.05176
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00191	0.00245	0.04190
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01114	0.01076	0.03378
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00448	0.00409	0.02714
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01230	0.01286	0.05212
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00272	0.00329	0.04253

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	0.01169	0.01175	0.02810
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	-0.00013	-0.00004	0.01627
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01806	0.01685	0.03419
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00885	0.00760	0.02507
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01741	0.01793	0.06675
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00307	0.00351	0.05239
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01158	0.01171	0.02813
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00017	-0.00009	0.01634
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01823	0.01760	0.03484
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00854	0.00788	0.02530
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01738	0.01679	0.03427
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00776	0.00711	0.02475
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01666	0.01737	0.06759
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00259	0.00327	0.05354
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01724	0.01799	0.06836
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00326	0.00396	0.05432
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01767	0.01644	0.03418
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00841	0.00713	0.02497
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01854	0.01905	0.06801
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00414	0.00458	0.05355

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)**	0.00047	0.00115	0.02278
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00880	0.00951	0.03116
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00515	0.00590	0.02857
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01222	0.01300	0.03552
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00182	0.00322	0.04285
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01146	0.01288	0.05253
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00026	0.00096	0.02248
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00863	0.00938	0.03090
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00491	0.00565	0.02835
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01206	0.01284	0.03534
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00516	0.00590	0.02846
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01236	0.01314	0.03547
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00122	0.00261	0.04218
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01084	0.01227	0.05183
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00056	0.00205	0.04145
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01021	0.01173	0.05113
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00547	0.00618	0.02877
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01265	0.01338	0.03579
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00117	0.00256	0.04215
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01090	0.01230	0.05192

sky130_fd_sc_hs__mux4_2	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00090	-0.00014	0.02181
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.00728	0.00810	0.03002
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00391	0.00462	0.02749
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01063	0.01136	0.03405
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00064	0.00204	0.04101
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01025	0.01171	0.05066
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00078	-0.00004	0.02183
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.00737	0.00816	0.03002
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00439	0.00510	0.02799
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01083	0.01159	0.03423
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00485	0.00554	0.02833
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01125	0.01195	0.03455
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00015	0.00152	0.04076
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01004	0.01145	0.05069
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00005	0.00128	0.04048
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.00979	0.01117	0.05036
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00459	0.00527	0.02809
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01126	0.01199	0.03459
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00016	0.00122	0.04015
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.00941	0.01084	0.04976

sky130_fd_sc_hs__mux4_4	**(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)**	-0.00125	-0.00052	0.01642
	(A0 * A1 * A2 * A3 * X) + (A0 * A1 * !A2 * !A3 * !S1 * X) + (!A0 * !A1 * A2 * A3 * S1 * X)	0.01051	0.01125	0.02824
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.00799	0.00835	0.02722
	(A0 * A1 * A2 * !A3 * !S1 * X)	0.01716	0.01754	0.03604
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.00073	0.00242	0.05108
	(A0 * A1 * !A2 * A3 * !S1 * X)	0.01504	0.01676	0.06542
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	-0.00118	-0.00047	0.01638
	(A0 * A1 * !A2 * !A3 * S1 * !X) + (!A0 * !A1 * A2 * A3 * !S1 * !X) + (!A0 * !A1 * !A2 * !A3 * !X)	0.01057	0.01130	0.02812
	(A0 * !A1 * A2 * A3 * S1 * X)	0.00698	0.00767	0.02641
	(A0 * !A1 * A2 * A3 * S1 * X)	0.01665	0.01733	0.03577
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.00783	0.00848	0.02692
	(A0 * !A1 * !A2 * !A3 * S1 * !X)	0.01750	0.01816	0.03626
	(!A0 * A1 * A2 * A3 * S1 * X)	0.00046	0.00253	0.05304
	(!A0 * A1 * A2 * A3 * S1 * X)	0.01449	0.01655	0.06710
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	-0.00018	0.00186	0.05228
	(!A0 * A1 * !A2 * !A3 * S1 * !X)	0.01384	0.01589	0.06627
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.00846	0.00875	0.02737
	(!A0 * !A1 * A2 * !A3 * !S1 * !X)	0.01777	0.01807	0.03629
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	-0.00042	0.00112	0.04979
	(!A0 * !A1 * !A2 * A3 * !S1 * !X)	0.01403	0.01557	0.06423

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)	0.00495	0.00560	0.02844
	(A1 * A3 * S0 * X)	-0.00027	0.00033	0.02320
	(A0 * A2 * !S0 * X)	0.00495	0.00560	0.02844
	(A0 * A2 * !S0 * X)	-0.00027	0.00033	0.02320
	(!A1 * !A3 * S0 * !X)	0.00508	0.00573	0.02860
	(!A1 * !A3 * S0 * !X)	-0.00022	0.00041	0.02330
	(!A0 * !A2 * !S0 * !X)	0.00508	0.00573	0.02860
	(!A0 * !A2 * !S0 * !X)	-0.00022	0.00041	0.02330
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	0.00519	0.00584	0.02853
	(A1 * A3 * S0 * X)	-0.00024	0.00036	0.02308
	(A0 * A2 * !S0 * X)	0.00519	0.00583	0.02853
	(A0 * A2 * !S0 * X)	-0.00024	0.00037	0.02308
	(!A1 * !A3 * S0 * !X)	0.00513	0.00584	0.02856
	(!A1 * !A3 * S0 * !X)	-0.00032	0.00037	0.02310
	(!A0 * !A2 * !S0 * !X)	0.00513	0.00584	0.02856
	(!A0 * !A2 * !S0 * !X)	-0.00032	0.00036	0.02310
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	0.00757	0.00773	0.02537
	(A1 * A3 * S0 * X)	-0.00017	-0.00006	0.01766
	(A0 * A2 * !S0 * X)	0.00757	0.00773	0.02537
	(A0 * A2 * !S0 * X)	-0.00017	-0.00005	0.01766
	(!A1 * !A3 * S0 * !X)	0.00743	0.00757	0.02537
	(!A1 * !A3 * S0 * !X)	-0.00045	-0.00029	0.01749
	(!A0 * !A2 * !S0 * !X)	0.00743	0.00759	0.02537
	(!A0 * !A2 * !S0 * !X)	-0.00045	-0.00033	0.01749

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)	-0.00076	0.00033	0.02300
	(A1 * A3 * S0 * X)	0.00446	0.00557	0.02823
	(A0 * A2 * !S0 * X)	-0.00076	0.00062	0.02301
	(A0 * A2 * !S0 * X)	0.00445	0.00587	0.02822
	(!A1 * !A3 * S0 * !X)	-0.00081	0.00027	0.02282
	(!A1 * !A3 * S0 * !X)	0.00448	0.00557	0.02814
	(!A0 * !A2 * !S0 * !X)	-0.00081	0.00025	0.02282
	(!A0 * !A2 * !S0 * !X)	0.00448	0.00557	0.02814
sky130_fd_sc_hs__mux4_2	(A1 * A3 * S0 * X)	-0.00085	0.00055	0.02280
	(A1 * A3 * S0 * X)	0.00460	0.00601	0.02825
	(A0 * A2 * !S0 * X)	-0.00085	0.00046	0.02280
	(A0 * A2 * !S0 * X)	0.00459	0.00593	0.02825
	(!A1 * !A3 * S0 * !X)	-0.00078	0.00055	0.02276
	(!A1 * !A3 * S0 * !X)	0.00468	0.00603	0.02823
	(!A0 * !A2 * !S0 * !X)	-0.00078	0.00055	0.02276
	(!A0 * !A2 * !S0 * !X)	0.00468	0.00604	0.02822
sky130_fd_sc_hs__mux4_4	(A1 * A3 * S0 * X)	-0.00117	-0.00039	0.01752
	(A1 * A3 * S0 * X)	0.00653	0.00734	0.02526
	(A0 * A2 * !S0 * X)	-0.00117	-0.00039	0.01752
	(A0 * A2 * !S0 * X)	0.00653	0.00733	0.02526
	(!A1 * !A3 * S0 * !X)	-0.00087	-0.00012	0.01757
	(!A1 * !A3 * S0 * !X)	0.00698	0.00778	0.02546
	(!A0 * !A2 * !S0 * !X)	-0.00087	-0.00011	0.01757
	(!A0 * !A2 * !S0 * !X)	0.00698	0.00779	0.02546

SKY130_FD_SC_HS__NAND2Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00222	0.00260	1.05388
sky130_fd_sc_hs__nand2b_2	0.00247	0.00491	1.91983
sky130_fd_sc_hs__nand2b_4	0.00361	0.00765	2.30184

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nand2b_1	0.00000	0.13114	0.22928
sky130_fd_sc_hs__nand2b_2	0.00000	0.06261	0.13097
sky130_fd_sc_hs__nand2b_4	0.00000	0.26264	0.45987

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)	0.05189	0.51359	5.96423
	B->Y (FR)	0.03644	0.78606	10.89560
sky130_fd_sc_hs__nand2b_2	A_N->Y (RR)	0.05045	0.40167	5.27384
	B->Y (FR)	0.03492	0.70892	10.99940
sky130_fd_sc_hs__nand2b_4	A_N->Y (RR)	0.06126	0.42743	5.88520
	B->Y (FR)	0.04416	0.70635	11.16520

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)	0.06507	0.49639	4.94038
	B->Y (RF)	0.02117	0.40210	5.53393
sky130_fd_sc_hs__nand2b_2	A_N->Y (FF)	0.07131	0.49638	5.29218
	B->Y (RF)	0.02174	0.34129	5.47477
sky130_fd_sc_hs__nand2b_4	A_N->Y (FF)	0.05728	0.38827	3.92038
	B->Y (RF)	0.01910	0.23256	3.92133

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	0.00555	0.00624	0.02888
	A_N	0.00279	0.00349	0.02639
	B	0.00005	0.00037	0.00290
	B	0.00308	0.00310	0.00599
sky130_fd_sc_hs__nand2b_2	A_N	0.00723	0.00792	0.02498
	A_N	0.00444	0.00516	0.02218
	B	-0.00011	0.00061	0.00536
	B	0.00579	0.00650	0.01135
sky130_fd_sc_hs__nand2b_4	A_N	0.00969	0.01092	0.04550
	A_N	0.00567	0.00695	0.04169
	B	-0.00058	0.00027	0.00773
	B	0.00862	0.00944	0.01354

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	A_N	0.00283	0.00444	0.02540
	A_N	0.00558	0.00712	0.02814
	B	0.00396	0.00403	0.00450
	B	0.00092	0.00090	0.00136
sky130_fd_sc_hs__nand2b_2	A_N	0.00496	0.00631	0.02843
	A_N	0.00777	0.00899	0.02966
	B	0.00767	0.00769	0.01003
	B	0.00171	0.00167	0.00264
sky130_fd_sc_hs__nand2b_4	A_N	0.00878	0.01089	0.04986
	A_N	0.01280	0.01486	0.05305
	B	0.01349	0.01351	0.01501
	B	0.00423	0.00419	0.00560

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	0.00454	0.00515	0.02779
	(!B * Y)	0.00161	0.00220	0.02486
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00623	0.00662	0.02873
	(!B * Y)	0.00302	0.00339	0.02552
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00774	0.00840	0.04681
	(!B * Y)	0.00306	0.00369	0.04212

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(!B * Y)	-0.00006	0.00113	0.02391
	(!B * Y)	0.00288	0.00408	0.02685
sky130_fd_sc_hs__nand2b_2	(!B * Y)	0.00049	0.00133	0.02299
	(!B * Y)	0.00374	0.00457	0.02622
sky130_fd_sc_hs__nand2b_4	(!B * Y)	0.00093	0.00273	0.04162
	(!B * Y)	0.00567	0.00747	0.04634

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	0.00141	0.00142	0.00141
	(A_N * Y)	-0.00132	-0.00133	-0.00133
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	0.00243	0.00245	0.00243
	(A_N * Y)	-0.00274	-0.00276	-0.00274
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	0.00484	0.00488	0.00486
	(A_N * Y)	-0.00290	-0.00292	-0.00291

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2b_1	(A_N * Y)	-0.00137	-0.00142	-0.00141
	(A_N * Y)	0.00137	0.00135	0.00134
sky130_fd_sc_hs__nand2b_2	(A_N * Y)	-0.00233	-0.00243	-0.00243
	(A_N * Y)	0.00278	0.00278	0.00275
sky130_fd_sc_hs__nand2b_4	(A_N * Y)	-0.00464	-0.00487	-0.00486
	(A_N * Y)	0.00304	0.00296	0.00293

SKY130_FD_SC_HS__NAND2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00261	0.00252	1.12391
sky130_fd_sc_hs__nand2_2	0.00499	0.00493	2.16068
sky130_fd_sc_hs__nand2_4	0.00773	0.00746	2.22836
sky130_fd_sc_hs__nand2_8	0.01475	0.01474	4.02994

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand2_1	0.00000	0.01653	0.06484
sky130_fd_sc_hs__nand2_2	0.00000	0.03306	0.12968
sky130_fd_sc_hs__nand2_4	0.00000	0.03369	0.12968
sky130_fd_sc_hs__nand2_8	0.00000	0.06739	0.25936

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)	0.02831	0.78184	11.09980
	B->Y (FR)	0.03523	0.78885	11.11060
sky130_fd_sc_hs__nand2_2	A->Y (FR)	0.02464	0.68598	11.06860
	B->Y (FR)	0.03369	0.69238	11.02570
sky130_fd_sc_hs__nand2_4	A->Y (FR)	0.03400	0.70048	11.23590
	B->Y (FR)	0.05177	0.71506	11.18310
sky130_fd_sc_hs__nand2_8	A->Y (FR)	0.02764	0.61322	10.87820
	B->Y (FR)	0.04324	0.61165	10.42530

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand2_1	A->Y (RF)	0.01677	0.42860	6.09031
	B->Y (RF)	0.01968	0.41122	5.78689
sky130_fd_sc_hs__nand2_2	A->Y (RF)	0.01654	0.39488	6.64424
	B->Y (RF)	0.02128	0.37173	6.17628
sky130_fd_sc_hs__nand2_4	A->Y (RF)	0.01523	0.27142	4.62871
	B->Y (RF)	0.01920	0.23793	3.95799
sky130_fd_sc_hs__nand2_8	A->Y (RF)	0.01402	0.23800	4.87364
	B->Y (RF)	0.01785	0.18383	3.71981

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	-0.00052	-0.00021	0.00225
	A	0.00269	0.00268	0.00506
	B	-0.00014	0.00011	0.00259
	B	0.00382	0.00377	0.00648
sky130_fd_sc_hs__nand2_2	A	-0.00134	-0.00039	0.00389
	A	0.00486	0.00558	0.00901
	B	-0.00001	0.00065	0.00504
	B	0.00784	0.00822	0.01297
sky130_fd_sc_hs__nand2_4	A	-0.00261	-0.00162	0.00588
	A	0.00699	0.00796	0.01549
	B	-0.00016	0.00050	0.00798
	B	0.01260	0.01327	0.01753
sky130_fd_sc_hs__nand2_8	A	-0.00563	-0.00377	0.01492
	A	0.01299	0.01461	0.03380
	B	-0.00130	0.00008	0.01587
	B	0.02391	0.02506	0.04186

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	A	0.00307	0.00312	0.00418
	A	-0.00014	-0.00013	0.00055
	B	0.00388	0.00397	0.00499
	B	-0.00011	-0.00014	0.00031
sky130_fd_sc_hs__nand2_2	A	0.00603	0.00616	0.00743
	A	-0.00018	-0.00011	0.00123
	B	0.00784	0.00795	0.01055
	B	-0.00011	-0.00016	0.00073
sky130_fd_sc_hs__nand2_4	A	0.01108	0.01116	0.01380
	A	0.00153	0.00157	0.00364
	B	0.01461	0.01454	0.01616
	B	0.00167	0.00157	0.00299
sky130_fd_sc_hs__nand2_8	A	0.01796	0.01833	0.02331
	A	-0.00059	-0.00032	0.00475
	B	0.02531	0.02531	0.02840
	B	-0.00028	-0.00040	0.00277

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	0.00042	0.00042	0.00041
	(!B * Y)	-0.00166	-0.00167	-0.00169
sky130_fd_sc_hs__nand2_2	(!B * Y)	0.00079	0.00079	0.00076
	(!B * Y)	-0.00322	-0.00324	-0.00330
sky130_fd_sc_hs__nand2_4	(!B * Y)	0.00154	0.00154	0.00148
	(!B * Y)	-0.00395	-0.00398	-0.00409
sky130_fd_sc_hs__nand2_8	(!B * Y)	0.00306	0.00305	0.00294
	(!B * Y)	-0.00762	-0.00764	-0.00786

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!B * Y)	-0.00041	-0.00041	-0.00041
	(!B * Y)	0.00169	0.00172	0.00169
sky130_fd_sc_hs__nand2_2	(!B * Y)	-0.00073	-0.00075	-0.00074
	(!B * Y)	0.00329	0.00336	0.00330
sky130_fd_sc_hs__nand2_4	(!B * Y)	-0.00146	-0.00145	-0.00144
	(!B * Y)	0.00410	0.00411	0.00409
sky130_fd_sc_hs__nand2_8	(!B * Y)	-0.00287	-0.00288	-0.00287
	(!B * Y)	0.00785	0.00790	0.00786

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	0.00118	0.00119	0.00118
	(!A * Y)	-0.00140	-0.00141	-0.00140
sky130_fd_sc_hs__nand2_2	(!A * Y)	0.00229	0.00233	0.00230
	(!A * Y)	-0.00273	-0.00276	-0.00274
sky130_fd_sc_hs__nand2_4	(!A * Y)	0.00453	0.00457	0.00454
	(!A * Y)	-0.00288	-0.00290	-0.00289
sky130_fd_sc_hs__nand2_8	(!A * Y)	0.00909	0.00914	0.00910
	(!A * Y)	-0.00578	-0.00579	-0.00578

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand2_1	(!A * Y)	-0.00113	-0.00119	-0.00118
	(!A * Y)	0.00145	0.00142	0.00141
sky130_fd_sc_hs__nand2_2	(!A * Y)	-0.00216	-0.00229	-0.00230
	(!A * Y)	0.00279	0.00278	0.00275
sky130_fd_sc_hs__nand2_4	(!A * Y)	-0.00428	-0.00456	-0.00454
	(!A * Y)	0.00301	0.00293	0.00290
sky130_fd_sc_hs__nand2_8	(!A * Y)	-0.00858	-0.00914	-0.00910
	(!A * Y)	0.00600	0.00583	0.00579

SKY130_FD_SC_HS__NAND3Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00208	0.00262	0.00253	1.14846
sky130_fd_sc_hs__nand3b_2	0.00244	0.00496	0.00493	2.16799
sky130_fd_sc_hs__nand3b_4	0.00342	0.00723	0.00730	1.97653

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3b_1	0.00000	0.12702	0.22928
sky130_fd_sc_hs__nand3b_2	0.00000	0.05439	0.19581
sky130_fd_sc_hs__nand3b_4	0.00000	0.25430	0.45987

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)	0.05328	0.50022	5.98134
	B->Y (FR)	0.04154	0.81520	11.43710
	C->Y (FR)	0.04647	0.80859	11.25220
sky130_fd_sc_hs__nand3b_2	A_N->Y (RR)	0.05309	0.40297	5.61724
	B->Y (FR)	0.03613	0.69462	11.04570
	C->Y (FR)	0.04290	0.71018	11.15620
sky130_fd_sc_hs__nand3b_4	A_N->Y (RR)	0.06690	0.44243	5.67703
	B->Y (FR)	0.04981	0.69480	10.57110
	C->Y (FR)	0.06859	0.73367	10.92760

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)	0.07005	0.56980	6.20421
	B->Y (RF)	0.02911	0.49360	6.92849
	C->Y (RF)	0.03192	0.45446	6.32789
sky130_fd_sc_hs__nand3b_2	A_N->Y (FF)	0.08196	0.59560	7.18426
	B->Y (RF)	0.03107	0.46709	7.71967
	C->Y (RF)	0.03336	0.40112	6.71989
sky130_fd_sc_hs__nand3b_4	A_N->Y (FF)	0.07217	0.51412	5.99676
	B->Y (RF)	0.03660	0.42975	6.80900
	C->Y (RF)	0.03882	0.29292	4.72141

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	0.00536	0.00609	0.02885
	A_N	0.00296	0.00369	0.02672
	B	0.00027	0.00047	0.00266
	B	0.00339	0.00359	0.00585
	C	0.00061	0.00081	0.00304
	C	0.00430	0.00451	0.00671
sky130_fd_sc_hs__nand3b_2	A_N	0.00753	0.00825	0.03024
	A_N	0.00489	0.00566	0.02794
	B	0.00036	0.00087	0.00480
	B	0.00662	0.00674	0.01111
	C	0.00103	0.00149	0.00548
	C	0.00881	0.00927	0.01157
sky130_fd_sc_hs__nand3b_4	A_N	0.01016	0.01180	0.04885
	A_N	0.00618	0.00784	0.04523
	B	0.00049	0.00057	0.00690
	B	0.00948	0.00919	0.01619
	C	0.00144	0.00196	0.00820
	C	0.01385	0.01438	0.02067

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3b_1	A_N	0.00368	0.00521	0.02714
	A_N	0.00608	0.00760	0.02915
	B	0.00474	0.00470	0.00531
	B	0.00161	0.00157	0.00197
	C	0.00550	0.00549	0.00586
	C	0.00174	0.00170	0.00209
sky130_fd_sc_hs__nand3b_2	A_N	0.00671	0.00805	0.02741
	A_N	0.00935	0.01067	0.03003
	B	0.00901	0.00898	0.01014
	B	0.00271	0.00263	0.00341
	C	0.01067	0.01059	0.01245
	C	0.00272	0.00264	0.00345
sky130_fd_sc_hs__nand3b_4	A_N	0.00935	0.01143	0.04842
	A_N	0.01331	0.01537	0.05159
	B	0.01347	0.01346	0.01521
	B	0.00442	0.00435	0.00541
	C	0.01777	0.01775	0.01905
	C	0.00501	0.00491	0.00624

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)	0.00430	0.00496	0.02775
	(B * !C * Y)	0.00157	0.00223	0.02502
	(!B * Y)	0.00428	0.00486	0.02773
	(!B * Y)	0.00157	0.00213	0.02501
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00650	0.00688	0.02899
	(B * !C * Y)	0.00306	0.00342	0.02554
	(!B * Y)	0.00639	0.00678	0.02890
	(!B * Y)	0.00306	0.00343	0.02557
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00780	0.00857	0.04590
	(B * !C * Y)	0.00300	0.00374	0.04109
	(!B * Y)	0.00765	0.00844	0.04588
	(!B * Y)	0.00297	0.00372	0.04119

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)	0.00009	0.00125	0.02420
	(B * !C * Y)	0.00289	0.00406	0.02700
	(!B * Y)	0.00010	0.00127	0.02422
	(!B * Y)	0.00283	0.00400	0.02695
sky130_fd_sc_hs__nand3b_2	(B * !C * Y)	0.00042	0.00124	0.02288
	(B * !C * Y)	0.00399	0.00482	0.02642
	(!B * Y)	0.00055	0.00137	0.02302
	(!B * Y)	0.00390	0.00474	0.02636
sky130_fd_sc_hs__nand3b_4	(B * !C * Y)	0.00102	0.00276	0.04066
	(B * !C * Y)	0.00609	0.00786	0.04568
	(!B * Y)	0.00119	0.00295	0.04099
	(!B * Y)	0.00592	0.00770	0.04570

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)	0.00130	0.00132	0.00131
	(A_N * C * Y)	-0.00136	-0.00138	-0.00137
	(A_N * !C * Y)	0.00079	0.00080	0.00079
	(A_N * !C * Y)	-0.00137	-0.00138	-0.00137
	(!A_N * !C * Y)	0.00045	0.00046	0.00046
	(!A_N * !C * Y)	-0.00162	-0.00165	-0.00164
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	0.00243	0.00243	0.00243
	(A_N * C * Y)	-0.00284	-0.00283	-0.00283
	(A_N * !C * Y)	0.00142	0.00144	0.00142
	(A_N * !C * Y)	-0.00285	-0.00287	-0.00284
	(!A_N * !C * Y)	0.00100	0.00101	0.00101
	(!A_N * !C * Y)	-0.00307	-0.00310	-0.00307
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	0.00491	0.00497	0.00492
	(A_N * C * Y)	-0.00275	-0.00276	-0.00274
	(A_N * !C * Y)	0.00259	0.00257	0.00258
	(A_N * !C * Y)	-0.00309	-0.00307	-0.00308
	(!A_N * !C * Y)	0.00186	0.00188	0.00190
	(!A_N * !C * Y)	-0.00340	-0.00342	-0.00339

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)	-0.00125	-0.00131	-0.00131
	(A_N * C * Y)	0.00140	0.00139	0.00138
	(A_N * !C * Y)	-0.00079	-0.00080	-0.00079
	(A_N * !C * Y)	0.00143	0.00144	0.00139
	(!A_N * !C * Y)	-0.00044	-0.00044	-0.00045
	(!A_N * !C * Y)	0.00166	0.00168	0.00165
sky130_fd_sc_hs__nand3b_2	(A_N * C * Y)	-0.00231	-0.00243	-0.00243
	(A_N * C * Y)	0.00289	0.00284	0.00284
	(A_N * !C * Y)	-0.00142	-0.00144	-0.00142
	(A_N * !C * Y)	0.00290	0.00292	0.00285
	(!A_N * !C * Y)	-0.00095	-0.00096	-0.00098
	(!A_N * !C * Y)	0.00315	0.00317	0.00310
sky130_fd_sc_hs__nand3b_4	(A_N * C * Y)	-0.00428	-0.00493	-0.00492
	(A_N * C * Y)	0.00331	0.00279	0.00276
	(A_N * !C * Y)	-0.00259	-0.00257	-0.00258
	(A_N * !C * Y)	0.00324	0.00326	0.00314
	(!A_N * !C * Y)	-0.00181	-0.00182	-0.00184
	(!A_N * !C * Y)	0.00350	0.00351	0.00342

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)	0.00114	0.00114	0.00114
	(A_N * B * Y)	-0.00135	-0.00135	-0.00135
	(A_N * !B * Y)	0.00114	0.00116	0.00114
	(A_N * !B * Y)	-0.00134	-0.00136	-0.00135
	(!A_N * !B * Y)	0.00109	0.00111	0.00110
	(!A_N * !B * Y)	-0.00139	-0.00140	-0.00139
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	0.00246	0.00247	0.00246
	(A_N * B * Y)	-0.00271	-0.00272	-0.00271
	(A_N * !B * Y)	0.00248	0.00249	0.00248
	(A_N * !B * Y)	-0.00271	-0.00272	-0.00271
	(!A_N * !B * Y)	0.00218	0.00222	0.00219
	(!A_N * !B * Y)	-0.00299	-0.00301	-0.00299
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	0.00475	0.00476	0.00474
	(A_N * B * Y)	-0.00279	-0.00279	-0.00279
	(A_N * !B * Y)	0.00474	0.00478	0.00476
	(A_N * !B * Y)	-0.00281	-0.00283	-0.00282
	(!A_N * !B * Y)	0.00436	0.00441	0.00438
	(!A_N * !B * Y)	-0.00319	-0.00321	-0.00319

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)	-0.00109	-0.00114	-0.00114
	(A_N * B * Y)	0.00136	0.00136	0.00135
	(A_N * !B * Y)	-0.00111	-0.00116	-0.00114
	(A_N * !B * Y)	0.00136	0.00136	0.00135
	(!A_N * !B * Y)	-0.00106	-0.00111	-0.00110
	(!A_N * !B * Y)	0.00141	0.00141	0.00140
sky130_fd_sc_hs__nand3b_2	(A_N * B * Y)	-0.00235	-0.00247	-0.00246
	(A_N * B * Y)	0.00271	0.00274	0.00272
	(A_N * !B * Y)	-0.00239	-0.00249	-0.00248
	(A_N * !B * Y)	0.00271	0.00275	0.00272
	(!A_N * !B * Y)	-0.00210	-0.00222	-0.00219
	(!A_N * !B * Y)	0.00300	0.00302	0.00300
sky130_fd_sc_hs__nand3b_4	(A_N * B * Y)	-0.00449	-0.00476	-0.00474
	(A_N * B * Y)	0.00282	0.00282	0.00279
	(A_N * !B * Y)	-0.00448	-0.00473	-0.00476
	(A_N * !B * Y)	0.00289	0.00287	0.00283
	(!A_N * !B * Y)	-0.00410	-0.00435	-0.00438
	(!A_N * !B * Y)	0.00328	0.00324	0.00319

SKY130_FD_SC_HS__NAND3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00265	0.00269	0.00260	1.12439
sky130_fd_sc_hs__nand3_2	0.00495	0.00538	0.00490	1.75856
sky130_fd_sc_hs__nand3_4	0.00747	0.00735	0.00738	2.17373

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand3_1	0.00000	0.01242	0.09726
sky130_fd_sc_hs__nand3_2	0.00000	0.02483	0.19452
sky130_fd_sc_hs__nand3_4	0.00000	0.02535	0.19452

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)	0.03403	0.78628	11.09690
	B->Y (FR)	0.04173	0.79205	11.07660
	C->Y (FR)	0.04728	0.80332	11.10210
sky130_fd_sc_hs__nand3_2	A->Y (FR)	0.03216	0.72125	11.11760
	B->Y (FR)	0.03748	0.66664	9.99346
	C->Y (FR)	0.04493	0.67771	10.04490
sky130_fd_sc_hs__nand3_4	A->Y (FR)	0.03358	0.69357	11.07400
	B->Y (FR)	0.05175	0.70588	10.97980
	C->Y (FR)	0.06319	0.71242	10.83590

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand3_1	A->Y (RF)	0.02362	0.50460	7.11303
	B->Y (RF)	0.02857	0.49076	6.84834
	C->Y (RF)	0.03082	0.45146	6.25119
sky130_fd_sc_hs__nand3_2	A->Y (RF)	0.02037	0.41583	6.59295
	B->Y (RF)	0.02745	0.40918	6.35765
	C->Y (RF)	0.03122	0.37101	5.71642
sky130_fd_sc_hs__nand3_4	A->Y (RF)	0.01688	0.32569	5.49162
	B->Y (RF)	0.02368	0.30274	4.96766
	C->Y (RF)	0.02627	0.25095	4.08381

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	-0.00039	-0.00017	0.00222
	A	0.00304	0.00295	0.00565
	B	0.00011	0.00026	0.00252
	B	0.00429	0.00414	0.00669
	C	0.00036	0.00053	0.00280
	C	0.00535	0.00553	0.00717
sky130_fd_sc_hs__nand3_2	A	-0.00123	-0.00046	0.00401
	A	0.00525	0.00602	0.00953
	B	0.00013	0.00065	0.00527
	B	0.00845	0.00900	0.01384
	C	0.00115	0.00168	0.00668
	C	0.01087	0.01142	0.01638
sky130_fd_sc_hs__nand3_4	A	-0.00252	-0.00167	0.00546
	A	0.00717	0.00762	0.01412
	B	0.00004	0.00057	0.00751
	B	0.01290	0.01340	0.02041
	C	0.00143	0.00192	0.00920
	C	0.01769	0.01814	0.02555

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	A	0.00422	0.00424	0.00524
	A	0.00080	0.00078	0.00146
	B	0.00504	0.00500	0.00581
	B	0.00082	0.00079	0.00119
	C	0.00586	0.00582	0.00645
	C	0.00079	0.00074	0.00114
sky130_fd_sc_hs__nand3_2	A	0.00718	0.00717	0.00896
	A	0.00071	0.00070	0.00212
	B	0.00903	0.00898	0.01035
	B	0.00063	0.00051	0.00144
	C	0.01062	0.01062	0.01190
	C	0.00067	0.00055	0.00158
sky130_fd_sc_hs__nand3_4	A	0.01084	0.01086	0.01403
	A	0.00118	0.00120	0.00312
	B	0.01431	0.01423	0.01617
	B	0.00129	0.00119	0.00247
	C	0.01777	0.01769	0.01907
	C	0.00110	0.00099	0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	0.00040	0.00040	0.00038
	(B * !C * Y)	-0.00163	-0.00163	-0.00169
	(!B * Y)	0.00041	0.00041	0.00040
	(!B * Y)	-0.00166	-0.00166	-0.00169
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	0.00077	0.00078	0.00071
	(B * !C * Y)	-0.00301	-0.00304	-0.00316
	(!B * Y)	0.00081	0.00082	0.00079
	(!B * Y)	-0.00308	-0.00310	-0.00316
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	0.00143	0.00144	0.00134
	(B * !C * Y)	-0.00370	-0.00373	-0.00396
	(!B * Y)	0.00150	0.00150	0.00144
	(!B * Y)	-0.00385	-0.00387	-0.00399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(B * !C * Y)	-0.00038	-0.00038	-0.00038
	(B * !C * Y)	0.00169	0.00171	0.00169
	(!B * Y)	-0.00039	-0.00039	-0.00039
	(!B * Y)	0.00169	0.00172	0.00169
sky130_fd_sc_hs__nand3_2	(B * !C * Y)	-0.00071	-0.00073	-0.00071
	(B * !C * Y)	0.00315	0.00322	0.00317
	(!B * Y)	-0.00076	-0.00078	-0.00076
	(!B * Y)	0.00315	0.00321	0.00316
sky130_fd_sc_hs__nand3_4	(B * !C * Y)	-0.00137	-0.00136	-0.00134
	(B * !C * Y)	0.00399	0.00399	0.00398
	(!B * Y)	-0.00142	-0.00141	-0.00141
	(!B * Y)	0.00400	0.00400	0.00399

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	0.00052	0.00053	0.00052
	(A * !C * Y)	-0.00140	-0.00141	-0.00140
	(!A * C * Y)	0.00115	0.00116	0.00115
	(!A * C * Y)	-0.00140	-0.00141	-0.00140
	(!A * !C * Y)	0.00059	0.00059	0.00059
	(!A * !C * Y)	-0.00140	-0.00142	-0.00141
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	0.00104	0.00105	0.00106
	(A * !C * Y)	-0.00296	-0.00296	-0.00295
	(!A * C * Y)	0.00228	0.00230	0.00229
	(!A * C * Y)	-0.00294	-0.00295	-0.00294
	(!A * !C * Y)	0.00123	0.00123	0.00123
	(!A * !C * Y)	-0.00298	-0.00297	-0.00297
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	0.00187	0.00190	0.00190
	(A * !C * Y)	-0.00290	-0.00293	-0.00289
	(!A * C * Y)	0.00451	0.00456	0.00453
	(!A * C * Y)	-0.00290	-0.00292	-0.00291
	(!A * !C * Y)	0.00216	0.00219	0.00217
	(!A * !C * Y)	-0.00293	-0.00297	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !C * Y)	-0.00050	-0.00051	-0.00051
	(A * !C * Y)	0.00143	0.00144	0.00141
	(!A * C * Y)	-0.00108	-0.00116	-0.00115
	(!A * C * Y)	0.00144	0.00142	0.00141
	(!A * !C * Y)	-0.00059	-0.00059	-0.00059
	(!A * !C * Y)	0.00145	0.00147	0.00142
sky130_fd_sc_hs__nand3_2	(A * !C * Y)	-0.00099	-0.00101	-0.00102
	(A * !C * Y)	0.00301	0.00306	0.00298
	(!A * C * Y)	-0.00214	-0.00230	-0.00229
	(!A * C * Y)	0.00300	0.00298	0.00295
	(!A * !C * Y)	-0.00123	-0.00123	-0.00123
	(!A * !C * Y)	0.00300	0.00304	0.00298
sky130_fd_sc_hs__nand3_4	(A * !C * Y)	-0.00179	-0.00181	-0.00184
	(A * !C * Y)	0.00304	0.00307	0.00295
	(!A * C * Y)	-0.00415	-0.00455	-0.00453
	(!A * C * Y)	0.00312	0.00292	0.00291
	(!A * !C * Y)	-0.00216	-0.00219	-0.00217
	(!A * !C * Y)	0.00312	0.00315	0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	0.00122	0.00124	0.00122
	(A * !B * Y)	-0.00141	-0.00143	-0.00141
	(!A * B * Y)	0.00124	0.00125	0.00124
	(!A * B * Y)	-0.00141	-0.00142	-0.00141
	(!A * !B * Y)	0.00122	0.00123	0.00122
	(!A * !B * Y)	-0.00141	-0.00142	-0.00141
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	0.00226	0.00228	0.00226
	(A * !B * Y)	-0.00277	-0.00278	-0.00277
	(!A * B * Y)	0.00223	0.00223	0.00223
	(!A * B * Y)	-0.00277	-0.00277	-0.00277
	(!A * !B * Y)	0.00226	0.00228	0.00226
	(!A * !B * Y)	-0.00277	-0.00278	-0.00277
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	0.00454	0.00461	0.00456
	(A * !B * Y)	-0.00293	-0.00296	-0.00294
	(!A * B * Y)	0.00449	0.00450	0.00448
	(!A * B * Y)	-0.00295	-0.00295	-0.00294
	(!A * !B * Y)	0.00455	0.00458	0.00456
	(!A * !B * Y)	-0.00294	-0.00295	-0.00294

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand3_1	(A * !B * Y)	-0.00119	-0.00124	-0.00122
	(A * !B * Y)	0.00142	0.00143	0.00142
	(!A * B * Y)	-0.00114	-0.00124	-0.00122
	(!A * B * Y)	0.00141	0.00143	0.00142
	(!A * !B * Y)	-0.00119	-0.00123	-0.00122
	(!A * !B * Y)	0.00142	0.00143	0.00142
sky130_fd_sc_hs__nand3_2	(A * !B * Y)	-0.00215	-0.00226	-0.00226
	(A * !B * Y)	0.00277	0.00281	0.00278
	(!A * B * Y)	-0.00206	-0.00223	-0.00223
	(!A * B * Y)	0.00278	0.00280	0.00278
	(!A * !B * Y)	-0.00215	-0.00226	-0.00226
	(!A * !B * Y)	0.00277	0.00281	0.00278
sky130_fd_sc_hs__nand3_4	(A * !B * Y)	-0.00437	-0.00458	-0.00456
	(A * !B * Y)	0.00294	0.00298	0.00295
	(!A * B * Y)	-0.00419	-0.00450	-0.00448
	(!A * B * Y)	0.00295	0.00298	0.00295
	(!A * !B * Y)	-0.00438	-0.00458	-0.00456
	(!A * !B * Y)	0.00294	0.00298	0.00295

SKY130_FD_SC_HS__NAND4BBx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00211	0.00204	0.00268	0.00270	1.04700
sky130_fd_sc_hs__nand4bb_2	0.00239	0.00235	0.00502	0.00495	2.12628
sky130_fd_sc_hs__nand4bb_4	0.00330	0.00341	0.00976	0.00979	3.26004

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4bb_1	0.00000	0.23752	0.45730
sky130_fd_sc_hs__nand4bb_2	0.00000	0.07572	0.26195
sky130_fd_sc_hs__nand4bb_4	0.00000	0.49113	0.91474

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)	0.06326	0.52594	5.98512
	B_N->Y (RR)	0.07245	0.53260	5.94213
	C->Y (FR)	0.05475	0.80144	10.84760
	D->Y (FR)	0.06183	0.81110	10.87400
sky130_fd_sc_hs__nand4bb_2	A_N->Y (RR)	0.05767	0.41756	5.79082
	B_N->Y (RR)	0.06602	0.40487	5.33681
	C->Y (FR)	0.04457	0.69906	10.86790
	D->Y (FR)	0.05182	0.71304	10.96710
sky130_fd_sc_hs__nand4bb_4	A_N->Y (RR)	0.06978	0.35835	4.67291
	B_N->Y (RR)	0.08229	0.37819	4.80792
	C->Y (FR)	0.04367	0.61283	9.95067
	D->Y (FR)	0.05045	0.62536	10.04200

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)	0.08021	0.63768	7.03755
	B_N->Y (FF)	0.08890	0.65234	7.05249
	C->Y (RF)	0.04728	0.53884	7.20889
	D->Y (RF)	0.05149	0.50976	6.70716
sky130_fd_sc_hs__nand4bb_2	A_N->Y (FF)	0.09269	0.68802	8.90696
	B_N->Y (FF)	0.11088	0.71429	8.93569
	C->Y (RF)	0.05038	0.51116	8.44632
	D->Y (RF)	0.05422	0.48423	7.96559
sky130_fd_sc_hs__nand4bb_4	A_N->Y (FF)	0.09478	0.59889	8.03877
	B_N->Y (FF)	0.10824	0.61639	8.03096
	C->Y (RF)	0.05390	0.42092	7.70182
	D->Y (RF)	0.05713	0.38464	7.06816

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	0.00561	0.00623	0.02916
	A_N	0.00354	0.00417	0.02735
	B_N	0.00609	0.00672	0.02936
	B_N	0.00409	0.00472	0.02751
	C	0.00080	0.00090	0.00306
	C	0.00421	0.00406	0.00654
	D	0.00119	0.00128	0.00356
	D	0.00529	0.00514	0.00771
sky130_fd_sc_hs__nand4bb_2	A_N	0.00783	0.00858	0.03059
	A_N	0.00564	0.00641	0.02854
	B_N	0.00959	0.01011	0.03208
	B_N	0.00749	0.00805	0.02997
	C	0.00123	0.00158	0.00515
	C	0.00744	0.00760	0.01149
	D	0.00230	0.00259	0.00617
	D	0.01007	0.01036	0.01403
sky130_fd_sc_hs__nand4bb_4	A_N	0.01290	0.01404	0.05059
	A_N	0.01013	0.01130	0.04880
	B_N	0.01574	0.01644	0.05342
	B_N	0.01285	0.01361	0.05068
	C	0.00195	0.00275	0.01393
	C	0.01422	0.01481	0.02665
	D	0.00366	0.00449	0.01570
	D	0.01908	0.01990	0.03159

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4bb_1	A_N	0.00461	0.00585	0.02888
	A_N	0.00668	0.00792	0.03077
	B_N	0.00576	0.00725	0.02994
	B_N	0.00777	0.00924	0.03178
	C	0.00683	0.00677	0.00735
	C	0.00340	0.00334	0.00371
	D	0.00769	0.00762	0.00850
	D	0.00352	0.00344	0.00384
sky130_fd_sc_hs__nand4bb_2	A_N	0.00795	0.00919	0.03083
	A_N	0.01013	0.01137	0.03289
	B_N	0.01010	0.01132	0.03267
	B_N	0.01221	0.01343	0.03467
	C	0.01211	0.01200	0.01276
	C	0.00586	0.00573	0.00646
	D	0.01379	0.01367	0.01475
	D	0.00583	0.00570	0.00642
sky130_fd_sc_hs__nand4bb_4	A_N	0.01612	0.01821	0.05738
	A_N	0.01889	0.02094	0.05952
	B_N	0.01969	0.02168	0.06066
	B_N	0.02256	0.02455	0.06290
	C	0.02377	0.02344	0.02731
	C	0.01145	0.01106	0.01377
	D	0.02720	0.02692	0.02961
	D	0.01143	0.01102	0.01383

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)	0.00402	0.00464	0.02724
	(B_N * Y)	0.00141	0.00201	0.02463
	(!B_N * C * !D * Y)	0.00442	0.00504	0.02764
	(!B_N * C * !D * Y)	0.00181	0.00240	0.02502
	(!B_N * !C * Y)	0.00442	0.00504	0.02764
	(!B_N * !C * Y)	0.00181	0.00240	0.02502
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00595	0.00635	0.02822
	(B_N * Y)	0.00312	0.00351	0.02540
	(!B_N * C * !D * Y)	0.00644	0.00683	0.02869
	(!B_N * C * !D * Y)	0.00359	0.00397	0.02585
	(!B_N * !C * Y)	0.00643	0.00683	0.02869
	(!B_N * !C * Y)	0.00359	0.00397	0.02585
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00967	0.01019	0.04708
	(B_N * Y)	0.00563	0.00618	0.04305
	(!B_N * C * !D * Y)	0.01033	0.01087	0.04774
	(!B_N * C * !D * Y)	0.00624	0.00677	0.04366
	(!B_N * !C * Y)	0.01032	0.01084	0.04773
	(!B_N * !C * Y)	0.00626	0.00680	0.04368

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)	0.00027	0.00146	0.02413
	(B_N * Y)	0.00289	0.00408	0.02675
	(!B_N * C * !D * Y)	-0.00011	0.00108	0.02373
	(!B_N * C * !D * Y)	0.00259	0.00379	0.02642
	(!B_N * !C * Y)	-0.00012	0.00107	0.02373
	(!B_N * !C * Y)	0.00252	0.00371	0.02637
sky130_fd_sc_hs__nand4bb_2	(B_N * Y)	0.00090	0.00167	0.02305
	(B_N * Y)	0.00372	0.00451	0.02588
	(!B_N * C * !D * Y)	0.00044	0.00124	0.02257
	(!B_N * C * !D * Y)	0.00344	0.00425	0.02554
	(!B_N * !C * Y)	0.00042	0.00122	0.02257
	(!B_N * !C * Y)	0.00329	0.00410	0.02543
sky130_fd_sc_hs__nand4bb_4	(B_N * Y)	0.00191	0.00352	0.04127
	(B_N * Y)	0.00595	0.00756	0.04531
	(!B_N * C * !D * Y)	0.00132	0.00293	0.04062
	(!B_N * C * !D * Y)	0.00575	0.00736	0.04499
	(!B_N * !C * Y)	0.00128	0.00289	0.04062
	(!B_N * !C * Y)	0.00543	0.00705	0.04476

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)	0.00395	0.00438	0.02676
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00142	0.00183	0.02422
	(!C * Y)	0.00403	0.00456	0.02707
	(!C * Y)	0.00141	0.00193	0.02444
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00571	0.00591	0.02731
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00296	0.00314	0.02455
	(!C * Y)	0.00581	0.00619	0.02778
	(!C * Y)	0.00290	0.00325	0.02486
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00948	0.00954	0.04548
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00533	0.00538	0.04134
	(!C * Y)	0.00985	0.01016	0.04660
	(!C * Y)	0.00535	0.00566	0.04211

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)	0.00093	0.00208	0.02466
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00348	0.00463	0.02721
	(!C * Y)	0.00044	0.00159	0.02426
	(!C * Y)	0.00305	0.00420	0.02687
sky130_fd_sc_hs__nand4bb_2	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00227	0.00301	0.02408
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00502	0.00577	0.02684
	(!C * Y)	0.00130	0.00204	0.02334
	(!C * Y)	0.00418	0.00494	0.02622
sky130_fd_sc_hs__nand4bb_4	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00422	0.00582	0.04322
	(A_N * C * Y) + (!A_N * C * !D * Y)	0.00835	0.00998	0.04736
	(!C * Y)	0.00229	0.00391	0.04161
	(!C * Y)	0.00670	0.00834	0.04603

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)**	0.00125	0.00127	0.00126
	(A_N * B_N * D * Y)	-0.00144	-0.00145	-0.00144
	(A_N * B_N * !D * Y)	0.00081	0.00082	0.00081
	(A_N * B_N * !D * Y)	-0.00145	-0.00146	-0.00145
	(A_N * !B_N * D * Y)	0.00107	0.00108	0.00107
	(A_N * !B_N * D * Y)	-0.00163	-0.00164	-0.00163
	(A_N * !B_N * !D * Y)	0.00059	0.00059	0.00059
	(A_N * !B_N * !D * Y)	-0.00177	-0.00178	-0.00177
	(!A_N * B_N * D * Y)	0.00125	0.00126	0.00126
	(!A_N * B_N * D * Y)	-0.00144	-0.00145	-0.00144
	(!A_N * B_N * !D * Y)	0.00077	0.00078	0.00077
	(!A_N * B_N * !D * Y)	-0.00145	-0.00147	-0.00145
	(!A_N * !B_N * !D * Y)	0.00049	0.00049	0.00049
	(!A_N * !B_N * !D * Y)	-0.00164	-0.00166	-0.00165
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	0.00237	0.00239	0.00238
	(A_N * B_N * D * Y)	-0.00281	-0.00283	-0.00282
	(A_N * B_N * !D * Y)	0.00143	0.00144	0.00143
	(A_N * B_N * !D * Y)	-0.00283	-0.00285	-0.00283
	(A_N * !B_N * D * Y)	0.00232	0.00232	0.00231
	(A_N * !B_N * D * Y)	-0.00292	-0.00292	-0.00290
	(A_N * !B_N * !D * Y)	0.00128	0.00129	0.00128
	(A_N * !B_N * !D * Y)	-0.00318	-0.00320	-0.00319
	(!A_N * B_N * D * Y)	0.00238	0.00240	0.00239
	(!A_N * B_N * D * Y)	-0.00282	-0.00283	-0.00282
	(!A_N * B_N * !D * Y)	0.00135	0.00137	0.00135
	(!A_N * B_N * !D * Y)	-0.00283	-0.00286	-0.00283
	(!A_N * !B_N * !D * Y)	0.00106	0.00106	0.00106
	(!A_N * !B_N * !D * Y)	-0.00294	-0.00295	-0.00294

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * D * Y)**	0.00474	0.00481	0.00476
	(A_N * B_N * D * Y)	-0.00549	-0.00555	-0.00551
	(A_N * B_N * !D * Y)	0.00283	0.00281	0.00282
	(A_N * B_N * !D * Y)	-0.00553	-0.00550	-0.00551
	(A_N * !B_N * D * Y)	0.00459	0.00462	0.00459
	(A_N * !B_N * D * Y)	-0.00574	-0.00575	-0.00573
	(A_N * !B_N * !D * Y)	0.00246	0.00246	0.00245
	(A_N * !B_N * !D * Y)	-0.00631	-0.00631	-0.00630
	(!A_N * B_N * D * Y)	0.00474	0.00481	0.00476
	(!A_N * B_N * D * Y)	-0.00551	-0.00555	-0.00551
	(!A_N * B_N * !D * Y)	0.00267	0.00267	0.00267
	(!A_N * B_N * !D * Y)	-0.00554	-0.00554	-0.00553
	(!A_N * !B_N * !D * Y)	0.00203	0.00204	0.00204
	(!A_N * !B_N * !D * Y)	-0.00581	-0.00585	-0.00582

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)**	-0.00122	-0.00126	-0.00125
	(A_N * B_N * D * Y)	0.00145	0.00147	0.00145
	(A_N * B_N * !D * Y)	-0.00081	-0.00082	-0.00081
	(A_N * B_N * !D * Y)	0.00146	0.00148	0.00146
	(A_N * !B_N * D * Y)	-0.00101	-0.00108	-0.00107
	(A_N * !B_N * D * Y)	0.00170	0.00165	0.00163
	(A_N * !B_N * !D * Y)	-0.00059	-0.00059	-0.00059
	(A_N * !B_N * !D * Y)	0.00180	0.00184	0.00182
	(!A_N * B_N * D * Y)	-0.00122	-0.00126	-0.00126
	(!A_N * B_N * D * Y)	0.00145	0.00147	0.00145
	(!A_N * B_N * !D * Y)	-0.00077	-0.00078	-0.00077
	(!A_N * B_N * !D * Y)	0.00148	0.00150	0.00146
	(!A_N * !B_N * !D * Y)	-0.00046	-0.00047	-0.00047
	(!A_N * !B_N * !D * Y)	0.00167	0.00169	0.00166
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * D * Y)**	-0.00232	-0.00238	-0.00238
	(A_N * B_N * D * Y)	0.00282	0.00284	0.00283
	(A_N * B_N * !D * Y)	-0.00143	-0.00144	-0.00143
	(A_N * B_N * !D * Y)	0.00285	0.00287	0.00284
	(A_N * !B_N * D * Y)	-0.00215	-0.00230	-0.00231
	(A_N * !B_N * D * Y)	0.00306	0.00295	0.00290
	(A_N * !B_N * !D * Y)	-0.00128	-0.00129	-0.00128
	(A_N * !B_N * !D * Y)	0.00323	0.00331	0.00329
	(!A_N * B_N * D * Y)	-0.00231	-0.00238	-0.00238
	(!A_N * B_N * D * Y)	0.00284	0.00284	0.00283
	(!A_N * B_N * !D * Y)	-0.00135	-0.00137	-0.00135
	(!A_N * B_N * !D * Y)	0.00288	0.00289	0.00285
	(!A_N * !B_N * !D * Y)	-0.00102	-0.00102	-0.00101
	(!A_N * !B_N * !D * Y)	0.00300	0.00302	0.00298

sky130_fd_sc_hs__nand4bb_4	(A_N * B_N * D * Y)	-0.00462	-0.00475	-0.00474
	(A_N * B_N * D * Y)	0.00553	0.00556	0.00554
	(A_N * B_N * !D * Y)	-0.00283	-0.00281	-0.00282
	(A_N * B_N * !D * Y)	0.00558	0.00560	0.00555
	(A_N * !B_N * D * Y)	-0.00420	-0.00455	-0.00459
	(A_N * !B_N * D * Y)	0.00607	0.00583	0.00573
	(A_N * !B_N * !D * Y)	-0.00246	-0.00246	-0.00245
	(A_N * !B_N * !D * Y)	0.00642	0.00654	0.00651
	(!A_N * B_N * D * Y)	-0.00458	-0.00475	-0.00475
	(!A_N * B_N * D * Y)	0.00559	0.00556	0.00554
	(!A_N * B_N * !D * Y)	-0.00267	-0.00267	-0.00267
	(!A_N * B_N * !D * Y)	0.00566	0.00569	0.00557
	(!A_N * !B_N * !D * Y)	-0.00195	-0.00195	-0.00196
	(!A_N * !B_N * !D * Y)	0.00595	0.00598	0.00589

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)	0.00110	0.00110	0.00109
	(A_N * B_N * C * Y)	-0.00153	-0.00153	-0.00153
	(A_N * !C * Y)	0.00111	0.00112	0.00111
	(A_N * !C * Y)	-0.00153	-0.00154	-0.00153
	(A_N * !B_N * C * Y)	0.00107	0.00108	0.00107
	(A_N * !B_N * C * Y)	-0.00156	-0.00157	-0.00156
	(!A_N * B_N * C * Y)	0.00110	0.00109	0.00109
	(!A_N * B_N * C * Y)	-0.00153	-0.00153	-0.00153
	(!A_N * B_N * !C * Y)	0.00110	0.00111	0.00111
	(!A_N * B_N * !C * Y)	-0.00152	-0.00153	-0.00153
	(!A_N * !B_N * !C * Y)	0.00111	0.00113	0.00111
	(!A_N * !B_N * !C * Y)	-0.00153	-0.00154	-0.00153

sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	0.00229	0.00230	0.00229
	(A_N * B_N * C * Y)	-0.00275	-0.00275	-0.00275
	(A_N * !C * Y)	0.00231	0.00232	0.00232
	(A_N * !C * Y)	-0.00274	-0.00275	-0.00275
	(A_N * !B_N * C * Y)	0.00227	0.00229	0.00227
	(A_N * !B_N * C * Y)	-0.00283	-0.00284	-0.00281
	(!A_N * B_N * C * Y)	0.00231	0.00231	0.00230
	(!A_N * B_N * C * Y)	-0.00275	-0.00275	-0.00275
	(!A_N * B_N * !C * Y)	0.00231	0.00233	0.00232
	(!A_N * B_N * !C * Y)	-0.00274	-0.00276	-0.00275
	(!A_N * !B_N * !C * Y)	0.00230	0.00232	0.00232
	(!A_N * !B_N * !C * Y)	-0.00274	-0.00276	-0.00275
sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	0.00453	0.00457	0.00455
	(A_N * B_N * C * Y)	-0.00545	-0.00548	-0.00547
	(A_N * !C * Y)	0.00460	0.00466	0.00462
	(A_N * !C * Y)	-0.00546	-0.00550	-0.00547
	(A_N * !B_N * C * Y)	0.00460	0.00462	0.00460
	(A_N * !B_N * C * Y)	-0.00560	-0.00560	-0.00559
	(!A_N * B_N * C * Y)	0.00457	0.00458	0.00456
	(!A_N * B_N * C * Y)	-0.00549	-0.00549	-0.00547
	(!A_N * B_N * !C * Y)	0.00459	0.00465	0.00461
	(!A_N * B_N * !C * Y)	-0.00546	-0.00550	-0.00547
	(!A_N * !B_N * !C * Y)	0.00462	0.00470	0.00465
	(!A_N * !B_N * !C * Y)	-0.00545	-0.00552	-0.00548

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)**	-0.00104	-0.00110	-0.00109
	(A_N * B_N * C * Y)	0.00154	0.00155	0.00154
	(A_N * !C * Y)	-0.00107	-0.00110	-0.00111
	(A_N * !C * Y)	0.00155	0.00155	0.00154
	(A_N * !B_N * C * Y)	-0.00100	-0.00108	-0.00107
	(A_N * !B_N * C * Y)	0.00160	0.00157	0.00156
	(!A_N * B_N * C * Y)	-0.00104	-0.00109	-0.00109
	(!A_N * B_N * C * Y)	0.00154	0.00155	0.00154
	(!A_N * B_N * !C * Y)	-0.00107	-0.00110	-0.00111
	(!A_N * B_N * !C * Y)	0.00154	0.00155	0.00154
	(!A_N * !B_N * !C * Y)	-0.00107	-0.00111	-0.00111
	(!A_N * !B_N * !C * Y)	0.00154	0.00155	0.00154
sky130_fd_sc_hs__nand4bb_2	**(A_N * B_N * C * Y)**	-0.00216	-0.00230	-0.00229
	(A_N * B_N * C * Y)	0.00276	0.00279	0.00276
	(A_N * !C * Y)	-0.00222	-0.00232	-0.00232
	(A_N * !C * Y)	0.00275	0.00279	0.00276
	(A_N * !B_N * C * Y)	-0.00210	-0.00229	-0.00227
	(A_N * !B_N * C * Y)	0.00291	0.00284	0.00281
	(!A_N * B_N * C * Y)	-0.00216	-0.00231	-0.00230
	(!A_N * B_N * C * Y)	0.00276	0.00279	0.00276
	(!A_N * B_N * !C * Y)	-0.00222	-0.00233	-0.00232
	(!A_N * B_N * !C * Y)	0.00275	0.00279	0.00276
	(!A_N * !B_N * !C * Y)	-0.00221	-0.00232	-0.00232
	(!A_N * !B_N * !C * Y)	0.00276	0.00279	0.00276

sky130_fd_sc_hs__nand4bb_4	**(A_N * B_N * C * Y)**	-0.00430	-0.00457	-0.00455
	(A_N * B_N * C * Y)	0.00551	0.00556	0.00550
	(A_N * !C * Y)	-0.00441	-0.00463	-0.00462
	(A_N * !C * Y)	0.00548	0.00556	0.00550
	(A_N * !B_N * C * Y)	-0.00420	-0.00462	-0.00460
	(A_N * !B_N * C * Y)	0.00580	0.00566	0.00561
	(!A_N * B_N * C * Y)	-0.00431	-0.00458	-0.00456
	(!A_N * B_N * C * Y)	0.00551	0.00555	0.00550
	(!A_N * B_N * !C * Y)	-0.00441	-0.00463	-0.00461
	(!A_N * B_N * !C * Y)	0.00548	0.00555	0.00549
	(!A_N * !B_N * !C * Y)	-0.00439	-0.00464	-0.00465
	(!A_N * !B_N * !C * Y)	0.00551	0.00555	0.00549

SKY130_FD_SC_HS__NAND4Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00207	0.00263	0.00263	0.00254	1.11487
sky130_fd_sc_hs__nand4b_2	0.00258	0.00517	0.00501	0.00501	2.13517
sky130_fd_sc_hs__nand4b_4	0.00356	0.00744	0.00760	0.00727	2.20062

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4b_1	0.00000	0.12292	0.22928
sky130_fd_sc_hs__nand4b_2	0.00000	0.04617	0.26066
sky130_fd_sc_hs__nand4b_4	0.00000	0.24597	0.45987

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)	0.05569	0.48497	5.59003
	B->Y (FR)	0.04364	0.80895	11.23850
	C->Y (FR)	0.05106	0.81631	11.24010
	D->Y (FR)	0.05422	0.80665	11.05340
sky130_fd_sc_hs__nand4b_2	A_N->Y (RR)	0.05624	0.38920	5.22337
	B->Y (FR)	0.03905	0.69080	10.86070
	C->Y (FR)	0.04668	0.70944	11.05780
	D->Y (FR)	0.05290	0.71460	10.99620
sky130_fd_sc_hs__nand4b_4	A_N->Y (RR)	0.06989	0.43149	5.71839
	B->Y (FR)	0.05285	0.70296	10.89420
	C->Y (FR)	0.06711	0.71774	10.91210
	D->Y (FR)	0.08160	0.74356	11.07540

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)	0.07745	0.64674	7.19734
	B->Y (RF)	0.03614	0.57285	7.96010
	C->Y (RF)	0.04129	0.54217	7.45279
	D->Y (RF)	0.04368	0.51065	6.96616
sky130_fd_sc_hs__nand4b_2	A_N->Y (FF)	0.08641	0.67234	8.81416
	B->Y (RF)	0.04209	0.56753	9.33898
	C->Y (RF)	0.04702	0.50545	8.39571
	D->Y (RF)	0.05130	0.47996	7.92558
sky130_fd_sc_hs__nand4b_4	A_N->Y (FF)	0.06964	0.48607	5.81473
	B->Y (RF)	0.03632	0.39224	6.38007
	C->Y (RF)	0.04215	0.34216	5.51273
	D->Y (RF)	0.04558	0.30759	4.87086

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	0.00541	0.00609	0.02841
	A_N	0.00320	0.00389	0.02638
	B	0.00032	0.00047	0.00255
	B	0.00362	0.00377	0.00585
	C	0.00076	0.00088	0.00296
	C	0.00466	0.00476	0.00684
	D	0.00108	0.00120	0.00332
	D	0.00566	0.00552	0.00725
sky130_fd_sc_hs__nand4b_2	A_N	0.00787	0.00854	0.02683
	A_N	0.00575	0.00647	0.02479
	B	0.00020	0.00054	0.00420
	B	0.00703	0.00710	0.01116
	C	0.00117	0.00151	0.00505
	C	0.00931	0.00966	0.01322
	D	0.00217	0.00250	0.00605
	D	0.01196	0.01229	0.01589
sky130_fd_sc_hs__nand4b_4	A_N	0.01011	0.01142	0.04580
	A_N	0.00708	0.00839	0.04312
	B	0.00012	0.00050	0.00648
	B	0.00987	0.01022	0.01633
	C	0.00172	0.00192	0.00794
	C	0.01465	0.01483	0.02092
	D	0.00348	0.00343	0.00982
	D	0.01930	0.01927	0.02451

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4b_1	A_N	0.00421	0.00548	0.02683
	A_N	0.00642	0.00768	0.02875
	B	0.00514	0.00510	0.00564
	B	0.00182	0.00177	0.00214
	C	0.00592	0.00588	0.00623
	C	0.00197	0.00191	0.00227
	D	0.00665	0.00663	0.00716
	D	0.00195	0.00189	0.00226
sky130_fd_sc_hs__nand4b_2	A_N	0.00773	0.00890	0.03038
	A_N	0.00983	0.01101	0.03235
	B	0.01036	0.01027	0.01110
	B	0.00349	0.00337	0.00407
	C	0.01194	0.01182	0.01256
	C	0.00362	0.00349	0.00423
	D	0.01368	0.01361	0.01469
	D	0.00358	0.00344	0.00417
sky130_fd_sc_hs__nand4b_4	A_N	0.01183	0.01378	0.05239
	A_N	0.01488	0.01680	0.05515
	B	0.01616	0.01603	0.01716
	B	0.00635	0.00623	0.00736
	C	0.01961	0.01954	0.02122
	C	0.00641	0.00625	0.00739
	D	0.02286	0.02278	0.02388
	D	0.00645	0.00630	0.00747

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)	0.00436	0.00489	0.02754
	(B * C * !D * Y)	0.00163	0.00214	0.02480
	(B * !C * Y)	0.00435	0.00489	0.02753
	(B * !C * Y)	0.00163	0.00215	0.02480
	(!B * Y)	0.00433	0.00487	0.02751
	(!B * Y)	0.00163	0.00215	0.02480
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00647	0.00685	0.02915
	(B * C * !D * Y)	0.00308	0.00345	0.02578
	(B * !C * Y)	0.00646	0.00684	0.02914
	(B * !C * Y)	0.00308	0.00345	0.02578
	(!B * Y)	0.00643	0.00680	0.02912
	(!B * Y)	0.00309	0.00346	0.02578
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00773	0.00854	0.04671
	(B * C * !D * Y)	0.00303	0.00383	0.04203
	(B * !C * Y)	0.00772	0.00853	0.04670
	(B * !C * Y)	0.00303	0.00383	0.04203
	(!B * Y)	0.00766	0.00847	0.04665
	(!B * Y)	0.00304	0.00384	0.04203

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	0.00137	0.02412
	(B * C * !D * Y)	0.00308	0.00422	0.02694
	(B * !C * Y)	0.00024	0.00137	0.02411
	(B * !C * Y)	0.00303	0.00417	0.02690
	(!B * Y)	0.00025	0.00139	0.02414
	(!B * Y)	0.00296	0.00411	0.02686
sky130_fd_sc_hs__nand4b_2	(B * C * !D * Y)	0.00032	0.00110	0.02295
	(B * C * !D * Y)	0.00391	0.00470	0.02648
	(B * !C * Y)	0.00030	0.00102	0.02295
	(B * !C * Y)	0.00380	0.00454	0.02642
	(!B * Y)	0.00030	0.00102	0.02298
	(!B * Y)	0.00365	0.00439	0.02633
sky130_fd_sc_hs__nand4b_4	(B * C * !D * Y)	0.00087	0.00266	0.04134
	(B * C * !D * Y)	0.00599	0.00779	0.04636
	(B * !C * Y)	0.00083	0.00262	0.04133
	(B * !C * Y)	0.00579	0.00759	0.04624
	(!B * Y)	0.00084	0.00264	0.04141
	(!B * Y)	0.00550	0.00731	0.04605

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)**	0.00129	0.00130	0.00130
	(A_N * C * D * Y)	-0.00138	-0.00138	-0.00138
	(A_N * C * !D * Y)	0.00079	0.00079	0.00080
	(A_N * C * !D * Y)	-0.00137	-0.00137	-0.00138
	(A_N * !C * Y)	0.00080	0.00081	0.00080
	(A_N * !C * Y)	-0.00138	-0.00139	-0.00138
	(!A_N * C * !D * Y)	0.00045	0.00045	0.00046
	(!A_N * C * !D * Y)	-0.00160	-0.00162	-0.00162
	(!A_N * !C * Y)	0.00047	0.00048	0.00048
	(!A_N * !C * Y)	-0.00161	-0.00164	-0.00163
sky130_fd_sc_hs__nand4b_2	**(A_N * C * D * Y)**	0.00236	0.00238	0.00237
	(A_N * C * D * Y)	-0.00293	-0.00294	-0.00294
	(A_N * C * !D * Y)	0.00141	0.00142	0.00141
	(A_N * C * !D * Y)	-0.00297	-0.00298	-0.00296
	(A_N * !C * Y)	0.00143	0.00143	0.00142
	(A_N * !C * Y)	-0.00297	-0.00297	-0.00297
	(!A_N * C * !D * Y)	0.00096	0.00096	0.00097
	(!A_N * C * !D * Y)	-0.00312	-0.00313	-0.00317
	(!A_N * !C * Y)	0.00102	0.00102	0.00102
	(!A_N * !C * Y)	-0.00317	-0.00318	-0.00318
sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	0.00453	0.00456	0.00455
	(A_N * C * D * Y)	-0.00306	-0.00307	-0.00307
	(A_N * C * !D * Y)	0.00253	0.00254	0.00252
	(A_N * C * !D * Y)	-0.00311	-0.00312	-0.00310
	(A_N * !C * Y)	0.00256	0.00258	0.00255
	(A_N * !C * Y)	-0.00312	-0.00315	-0.00311
	(!A_N * C * !D * Y)	0.00179	0.00181	0.00181
	(!A_N * C * !D * Y)	-0.00331	-0.00335	-0.00341
	(!A_N * !C * Y)	0.00189	0.00192	0.00190
	(!A_N * !C * Y)	-0.00340	-0.00345	-0.00344

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)	-0.00123	-0.00130	-0.00129
	(A_N * C * D * Y)	0.00144	0.00141	0.00139
	(A_N * C * !D * Y)	-0.00079	-0.00079	-0.00080
	(A_N * C * !D * Y)	0.00141	0.00140	0.00138
	(A_N * !C * Y)	-0.00080	-0.00081	-0.00080
	(A_N * !C * Y)	0.00144	0.00144	0.00139
	(!A_N * C * !D * Y)	-0.00044	-0.00045	-0.00045
	(!A_N * C * !D * Y)	0.00165	0.00166	0.00164
	(!A_N * !C * Y)	-0.00045	-0.00046	-0.00046
	(!A_N * !C * Y)	0.00165	0.00167	0.00164
sky130_fd_sc_hs__nand4b_2	(A_N * C * D * Y)	-0.00219	-0.00238	-0.00237
	(A_N * C * D * Y)	0.00310	0.00297	0.00295
	(A_N * C * !D * Y)	-0.00141	-0.00142	-0.00141
	(A_N * C * !D * Y)	0.00298	0.00301	0.00296
	(A_N * !C * Y)	-0.00143	-0.00143	-0.00142
	(A_N * !C * Y)	0.00301	0.00305	0.00298
	(!A_N * C * !D * Y)	-0.00093	-0.00095	-0.00096
	(!A_N * C * !D * Y)	0.00323	0.00327	0.00321
	(!A_N * !C * Y)	-0.00096	-0.00097	-0.00099
	(!A_N * !C * Y)	0.00323	0.00327	0.00321

sky130_fd_sc_hs__nand4b_4	**(A_N * C * D * Y)**	-0.00413	-0.00456	-0.00455
	(A_N * C * D * Y)	0.00344	0.00310	0.00308
	(A_N * C * !D * Y)	-0.00253	-0.00254	-0.00252
	(A_N * C * !D * Y)	0.00318	0.00314	0.00311
	(A_N * !C * Y)	-0.00256	-0.00258	-0.00255
	(A_N * !C * Y)	0.00327	0.00332	0.00315
	(!A_N * C * !D * Y)	-0.00177	-0.00177	-0.00179
	(!A_N * C * !D * Y)	0.00355	0.00357	0.00348
	(!A_N * !C * Y)	-0.00182	-0.00182	-0.00185
	(!A_N * !C * Y)	0.00355	0.00357	0.00348

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)**	0.00112	0.00112	0.00112
	(A_N * B * D * Y)	-0.00138	-0.00137	-0.00137
	(A_N * B * !D * Y)	0.00062	0.00062	0.00062
	(A_N * B * !D * Y)	-0.00137	-0.00138	-0.00137
	(A_N * !B * D * Y)	0.00113	0.00114	0.00113
	(A_N * !B * D * Y)	-0.00137	-0.00138	-0.00137
	(A_N * !B * !D * Y)	0.00061	0.00062	0.00061
	(A_N * !B * !D * Y)	-0.00137	-0.00139	-0.00137
	(!A_N * B * !D * Y)	0.00046	0.00046	0.00046
	(!A_N * B * !D * Y)	-0.00142	-0.00143	-0.00142
	(!A_N * !B * D * Y)	0.00109	0.00109	0.00109
	(!A_N * !B * D * Y)	-0.00142	-0.00142	-0.00142
	(!A_N * !B * !D * Y)	0.00053	0.00053	0.00053
	(!A_N * !B * !D * Y)	-0.00142	-0.00144	-0.00143

sky130_fd_sc_hs__nand4b_2	**(A_N * B * D * Y)**	0.00230	0.00232	0.00230
	(A_N * B * D * Y)	-0.00281	-0.00282	-0.00280
	(A_N * B * !D * Y)	0.00125	0.00126	0.00126
	(A_N * B * !D * Y)	-0.00281	-0.00283	-0.00282
	(A_N * !B * D * Y)	0.00229	0.00231	0.00230
	(A_N * !B * D * Y)	-0.00280	-0.00281	-0.00280
	(A_N * !B * !D * Y)	0.00127	0.00128	0.00127
	(A_N * !B * !D * Y)	-0.00280	-0.00284	-0.00281
	(!A_N * B * !D * Y)	0.00104	0.00104	0.00105
	(!A_N * B * !D * Y)	-0.00280	-0.00280	-0.00278
	(!A_N * !B * D * Y)	0.00228	0.00230	0.00230
	(!A_N * !B * D * Y)	-0.00279	-0.00281	-0.00280
	(!A_N * !B * !D * Y)	0.00120	0.00122	0.00120
	(!A_N * !B * !D * Y)	-0.00281	-0.00284	-0.00282
sky130_fd_sc_hs__nand4b_4	**(A_N * B * D * Y)**	0.00457	0.00461	0.00460
	(A_N * B * D * Y)	-0.00303	-0.00305	-0.00304
	(A_N * B * !D * Y)	0.00243	0.00245	0.00244
	(A_N * B * !D * Y)	-0.00306	-0.00308	-0.00307
	(A_N * !B * D * Y)	0.00461	0.00467	0.00463
	(A_N * !B * D * Y)	-0.00303	-0.00306	-0.00304
	(A_N * !B * !D * Y)	0.00240	0.00244	0.00242
	(A_N * !B * !D * Y)	-0.00303	-0.00307	-0.00304
	(!A_N * B * !D * Y)	0.00202	0.00203	0.00202
	(!A_N * B * !D * Y)	-0.00305	-0.00306	-0.00302
	(!A_N * !B * D * Y)	0.00461	0.00466	0.00463
	(!A_N * !B * D * Y)	-0.00304	-0.00306	-0.00304
	(!A_N * !B * !D * Y)	0.00231	0.00232	0.00229
	(!A_N * !B * !D * Y)	-0.00307	-0.00309	-0.00306

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)	-0.00104	-0.00112	-0.00112
	(A_N * B * D * Y)	0.00138	0.00140	0.00138
	(A_N * B * !D * Y)	-0.00062	-0.00062	-0.00062
	(A_N * B * !D * Y)	0.00137	0.00139	0.00138
	(A_N * !B * D * Y)	-0.00109	-0.00114	-0.00113
	(A_N * !B * D * Y)	0.00138	0.00140	0.00138
	(A_N * !B * !D * Y)	-0.00061	-0.00062	-0.00061
	(A_N * !B * !D * Y)	0.00138	0.00139	0.00138
	(!A_N * B * !D * Y)	-0.00045	-0.00045	-0.00045
	(!A_N * B * !D * Y)	0.00145	0.00147	0.00144
	(!A_N * !B * D * Y)	-0.00104	-0.00109	-0.00109
	(!A_N * !B * D * Y)	0.00143	0.00144	0.00142
	(!A_N * !B * !D * Y)	-0.00053	-0.00053	-0.00053
	(!A_N * !B * !D * Y)	0.00147	0.00148	0.00144
sky130_fd_sc_hs__nand4b_2	(A_N * B * D * Y)	-0.00211	-0.00227	-0.00230
	(A_N * B * D * Y)	0.00283	0.00283	0.00281
	(A_N * B * !D * Y)	-0.00125	-0.00126	-0.00126
	(A_N * B * !D * Y)	0.00281	0.00286	0.00283
	(A_N * !B * D * Y)	-0.00219	-0.00231	-0.00230
	(A_N * !B * D * Y)	0.00280	0.00282	0.00281
	(A_N * !B * !D * Y)	-0.00127	-0.00128	-0.00127
	(A_N * !B * !D * Y)	0.00283	0.00285	0.00282
	(!A_N * B * !D * Y)	-0.00100	-0.00100	-0.00100
	(!A_N * B * !D * Y)	0.00287	0.00289	0.00283
	(!A_N * !B * D * Y)	-0.00218	-0.00230	-0.00230
	(!A_N * !B * D * Y)	0.00282	0.00282	0.00281
	(!A_N * !B * !D * Y)	-0.00120	-0.00122	-0.00120
	(!A_N * !B * !D * Y)	0.00286	0.00288	0.00283

sky130_fd_sc_hs__nand4b_4	(A_N * B * D * Y)	-0.00421	-0.00458	-0.00460
	(A_N * B * D * Y)	0.00308	0.00308	0.00306
	(A_N * B * !D * Y)	-0.00243	-0.00245	-0.00244
	(A_N * B * !D * Y)	0.00308	0.00311	0.00308
	(A_N * !B * D * Y)	-0.00441	-0.00466	-0.00463
	(A_N * !B * D * Y)	0.00305	0.00307	0.00305
	(A_N * !B * !D * Y)	-0.00240	-0.00244	-0.00242
	(A_N * !B * !D * Y)	0.00308	0.00309	0.00306
	(!A_N * B * !D * Y)	-0.00191	-0.00194	-0.00194
	(!A_N * B * !D * Y)	0.00316	0.00319	0.00310
	(!A_N * !B * D * Y)	-0.00436	-0.00466	-0.00463
	(!A_N * !B * D * Y)	0.00311	0.00307	0.00305
	(!A_N * !B * !D * Y)	-0.00231	-0.00232	-0.00229
	(!A_N * !B * !D * Y)	0.00319	0.00320	0.00309

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)	0.00113	0.00114	0.00113
	(A_N * B * C * Y)	-0.00134	-0.00135	-0.00134
	(A_N * !C * Y)	0.00114	0.00115	0.00114
	(A_N * !C * Y)	-0.00134	-0.00134	-0.00134
	(A_N * !B * C * Y)	0.00111	0.00112	0.00112
	(A_N * !B * C * Y)	-0.00134	-0.00134	-0.00134
	(!A_N * B * !C * Y)	0.00109	0.00111	0.00110
	(!A_N * B * !C * Y)	-0.00138	-0.00140	-0.00139
	(!A_N * !B * C * Y)	0.00107	0.00107	0.00107
	(!A_N * !B * C * Y)	-0.00138	-0.00139	-0.00139
	(!A_N * !B * !C * Y)	0.00109	0.00111	0.00110
	(!A_N * !B * !C * Y)	-0.00138	-0.00140	-0.00139

sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	0.00230	0.00232	0.00230
	(A_N * B * C * Y)	-0.00279	-0.00280	-0.00278
	(A_N * !C * Y)	0.00232	0.00235	0.00233
	(A_N * !C * Y)	-0.00277	-0.00280	-0.00278
	(A_N * !B * C * Y)	0.00230	0.00232	0.00230
	(A_N * !B * C * Y)	-0.00279	-0.00280	-0.00278
	(!A_N * B * !C * Y)	0.00232	0.00235	0.00233
	(!A_N * B * !C * Y)	-0.00278	-0.00280	-0.00278
	(!A_N * !B * C * Y)	0.00230	0.00233	0.00230
	(!A_N * !B * C * Y)	-0.00279	-0.00280	-0.00278
	(!A_N * !B * !C * Y)	0.00232	0.00235	0.00233
	(!A_N * !B * !C * Y)	-0.00277	-0.00280	-0.00278
sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	0.00449	0.00452	0.00448
	(A_N * B * C * Y)	-0.00278	-0.00279	-0.00278
	(A_N * !C * Y)	0.00455	0.00460	0.00457
	(A_N * !C * Y)	-0.00276	-0.00277	-0.00277
	(A_N * !B * C * Y)	0.00445	0.00449	0.00448
	(A_N * !B * C * Y)	-0.00276	-0.00277	-0.00277
	(!A_N * B * !C * Y)	0.00453	0.00458	0.00456
	(!A_N * B * !C * Y)	-0.00276	-0.00277	-0.00278
	(!A_N * !B * C * Y)	0.00445	0.00448	0.00447
	(!A_N * !B * C * Y)	-0.00277	-0.00278	-0.00278
	(!A_N * !B * !C * Y)	0.00454	0.00459	0.00456
	(!A_N * !B * !C * Y)	-0.00277	-0.00277	-0.00278

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)**	-0.00105	-0.00114	-0.00113
	(A_N * B * C * Y)	0.00135	0.00136	0.00135
	(A_N * !C * Y)	-0.00111	-0.00114	-0.00114
	(A_N * !C * Y)	0.00135	0.00136	0.00135
	(A_N * !B * C * Y)	-0.00105	-0.00112	-0.00112
	(A_N * !B * C * Y)	0.00134	0.00136	0.00135
	(!A_N * B * !C * Y)	-0.00106	-0.00111	-0.00110
	(!A_N * B * !C * Y)	0.00139	0.00140	0.00139
	(!A_N * !B * C * Y)	-0.00101	-0.00107	-0.00107
	(!A_N * !B * C * Y)	0.00139	0.00140	0.00139
	(!A_N * !B * !C * Y)	-0.00106	-0.00111	-0.00110
	(!A_N * !B * !C * Y)	0.00139	0.00140	0.00139
sky130_fd_sc_hs__nand4b_2	**(A_N * B * C * Y)**	-0.00210	-0.00230	-0.00230
	(A_N * B * C * Y)	0.00280	0.00282	0.00279
	(A_N * !C * Y)	-0.00221	-0.00232	-0.00233
	(A_N * !C * Y)	0.00279	0.00282	0.00279
	(A_N * !B * C * Y)	-0.00211	-0.00229	-0.00230
	(A_N * !B * C * Y)	0.00279	0.00282	0.00279
	(!A_N * B * !C * Y)	-0.00220	-0.00232	-0.00233
	(!A_N * B * !C * Y)	0.00278	0.00282	0.00279
	(!A_N * !B * C * Y)	-0.00211	-0.00229	-0.00230
	(!A_N * !B * C * Y)	0.00280	0.00282	0.00279
	(!A_N * !B * !C * Y)	-0.00221	-0.00232	-0.00233
	(!A_N * !B * !C * Y)	0.00279	0.00282	0.00279

sky130_fd_sc_hs__nand4b_4	**(A_N * B * C * Y)**	-0.00413	-0.00448	-0.00448
	(A_N * B * C * Y)	0.00278	0.00281	0.00279
	(A_N * !C * Y)	-0.00437	-0.00456	-0.00457
	(A_N * !C * Y)	0.00279	0.00277	0.00279
	(A_N * !B * C * Y)	-0.00415	-0.00447	-0.00448
	(A_N * !B * C * Y)	0.00278	0.00281	0.00279
	(!A_N * B * !C * Y)	-0.00436	-0.00456	-0.00456
	(!A_N * B * !C * Y)	0.00279	0.00277	0.00278
	(!A_N * !B * C * Y)	-0.00415	-0.00447	-0.00447
	(!A_N * !B * C * Y)	0.00277	0.00280	0.00278
	(!A_N * !B * !C * Y)	-0.00438	-0.00456	-0.00456
	(!A_N * !B * !C * Y)	0.00279	0.00277	0.00278

SKY130_FD_SC_HS__NAND4x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00256	0.00271	0.00267	0.00266	1.11368
sky130_fd_sc_hs__nand4_2	0.00499	0.00504	0.00509	0.00492	2.08928
sky130_fd_sc_hs__nand4_4	0.00760	0.00739	0.00739	0.00759	2.13354

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nand4_1	0.00000	0.00831	0.12968
sky130_fd_sc_hs__nand4_2	0.00000	0.01662	0.25936
sky130_fd_sc_hs__nand4_4	0.00000	0.01702	0.25936

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)	0.03619	0.78324	11.00130
	B->Y (FR)	0.04629	0.81099	11.24160
	C->Y (FR)	0.05318	0.81887	11.25060
	D->Y (FR)	0.05669	0.81121	11.04660
sky130_fd_sc_hs__nand4_2	A->Y (FR)	0.03064	0.68552	10.87510
	B->Y (FR)	0.03974	0.68875	10.76860
	C->Y (FR)	0.04642	0.69787	10.80960
	D->Y (FR)	0.05280	0.71203	10.90260
sky130_fd_sc_hs__nand4_4	A->Y (FR)	0.03801	0.68357	10.71510
	B->Y (FR)	0.05561	0.69640	10.67930
	C->Y (FR)	0.07264	0.72907	10.99090
	D->Y (FR)	0.08597	0.74620	11.01600

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nand4_1	A->Y (RF)	0.02857	0.57084	8.01177
	B->Y (RF)	0.03611	0.56406	7.81777
	C->Y (RF)	0.04049	0.53156	7.29166
	D->Y (RF)	0.04335	0.50060	6.79588
sky130_fd_sc_hs__nand4_2	A->Y (RF)	0.02816	0.56886	9.43162
	B->Y (RF)	0.03924	0.56443	9.24803
	C->Y (RF)	0.04457	0.50351	8.31704
	D->Y (RF)	0.04834	0.47514	7.82732
sky130_fd_sc_hs__nand4_4	A->Y (RF)	0.02225	0.39936	6.61149
	B->Y (RF)	0.03292	0.38695	6.23616
	C->Y (RF)	0.03884	0.33660	5.36216
	D->Y (RF)	0.04229	0.30106	4.72411

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	-0.00022	-0.00002	0.00208
	A	0.00349	0.00336	0.00583
	B	0.00035	0.00046	0.00252
	B	0.00480	0.00491	0.00697
	C	0.00080	0.00089	0.00301
	C	0.00595	0.00605	0.00814
	D	0.00108	0.00119	0.00335
	D	0.00702	0.00712	0.00864
sky130_fd_sc_hs__nand4_2	A	-0.00109	-0.00038	0.00325
	A	0.00575	0.00622	0.01022
	B	0.00037	0.00074	0.00442
	B	0.00887	0.00914	0.01308
	C	0.00109	0.00144	0.00511
	C	0.01125	0.01139	0.01541
	D	0.00218	0.00247	0.00616
	D	0.01382	0.01412	0.01790
sky130_fd_sc_hs__nand4_4	A	-0.00216	-0.00148	0.00499
	A	0.00802	0.00871	0.01539
	B	0.00035	0.00059	0.00694
	B	0.01368	0.01389	0.02047
	C	0.00195	0.00214	0.00839
	C	0.01833	0.01856	0.02480
	D	0.00367	0.00389	0.01025
	D	0.02350	0.02370	0.03011

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nand4_1	A	0.00460	0.00459	0.00535
	A	0.00091	0.00087	0.00147
	B	0.00546	0.00542	0.00602
	B	0.00096	0.00090	0.00127
	C	0.00621	0.00615	0.00659
	C	0.00096	0.00091	0.00128
	D	0.00703	0.00699	0.00780
	D	0.00094	0.00087	0.00126
sky130_fd_sc_hs__nand4_2	A	0.00838	0.00837	0.00959
	A	0.00155	0.00149	0.00265
	B	0.01017	0.01008	0.01093
	B	0.00159	0.00146	0.00216
	C	0.01197	0.01185	0.01257
	C	0.00158	0.00145	0.00218
	D	0.01357	0.01348	0.01465
	D	0.00154	0.00140	0.00214
sky130_fd_sc_hs__nand4_4	A	0.01307	0.01303	0.01477
	A	0.00289	0.00282	0.00460
	B	0.01645	0.01638	0.01804
	B	0.00296	0.00281	0.00395
	C	0.01984	0.01975	0.02145
	C	0.00300	0.00283	0.00398
	D	0.02335	0.02319	0.02487
	D	0.00281	0.00266	0.00383

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)	0.00045	0.00045	0.00041
	(B * C * !D * Y)	-0.00154	-0.00156	-0.00163
	(B * !C * Y)	0.00044	0.00044	0.00042
	(B * !C * Y)	-0.00158	-0.00159	-0.00164
	(!B * Y)	0.00044	0.00045	0.00043
	(!B * Y)	-0.00161	-0.00163	-0.00164
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	0.00080	0.00081	0.00071
	(B * C * !D * Y)	-0.00305	-0.00308	-0.00326
	(B * !C * Y)	0.00076	0.00077	0.00071
	(B * !C * Y)	-0.00314	-0.00317	-0.00328
	(!B * Y)	0.00080	0.00080	0.00077
	(!B * Y)	-0.00322	-0.00324	-0.00330
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	0.00155	0.00157	0.00141
	(B * C * !D * Y)	-0.00358	-0.00363	-0.00398
	(B * !C * Y)	0.00148	0.00149	0.00139
	(B * !C * Y)	-0.00376	-0.00379	-0.00402
	(!B * Y)	0.00153	0.00155	0.00149
	(!B * Y)	-0.00390	-0.00394	-0.00404

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)	-0.00041	-0.00042	-0.00041
	(B * C * !D * Y)	0.00164	0.00166	0.00164
	(B * !C * Y)	-0.00042	-0.00042	-0.00041
	(B * !C * Y)	0.00164	0.00166	0.00164
	(!B * Y)	-0.00042	-0.00043	-0.00042
	(!B * Y)	0.00164	0.00167	0.00164
sky130_fd_sc_hs__nand4_2	(B * C * !D * Y)	-0.00072	-0.00073	-0.00071
	(B * C * !D * Y)	0.00331	0.00335	0.00330
	(B * !C * Y)	-0.00072	-0.00073	-0.00071
	(B * !C * Y)	0.00331	0.00335	0.00330
	(!B * Y)	-0.00074	-0.00076	-0.00075
	(!B * Y)	0.00328	0.00336	0.00330
sky130_fd_sc_hs__nand4_4	(B * C * !D * Y)	-0.00142	-0.00141	-0.00141
	(B * C * !D * Y)	0.00405	0.00405	0.00404
	(B * !C * Y)	-0.00142	-0.00141	-0.00139
	(B * !C * Y)	0.00405	0.00405	0.00404
	(!B * Y)	-0.00147	-0.00146	-0.00145
	(!B * Y)	0.00406	0.00405	0.00405

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)**	0.00046	0.00047	0.00047
	(A * C * !D * Y)	-0.00146	-0.00148	-0.00146
	(A * !C * Y)	0.00049	0.00050	0.00049
	(A * !C * Y)	-0.00147	-0.00148	-0.00146
	(!A * C * D * Y)	0.00109	0.00110	0.00110
	(!A * C * D * Y)	-0.00146	-0.00147	-0.00146
	(!A * C * !D * Y)	0.00057	0.00057	0.00057
	(!A * C * !D * Y)	-0.00147	-0.00147	-0.00147
	(!A * !C * Y)	0.00057	0.00057	0.00057
	(!A * !C * Y)	-0.00147	-0.00149	-0.00147
sky130_fd_sc_hs__nand4_2	**(A * C * !D * Y)**	0.00097	0.00099	0.00100
	(A * C * !D * Y)	-0.00278	-0.00281	-0.00278
	(A * !C * Y)	0.00099	0.00101	0.00101
	(A * !C * Y)	-0.00278	-0.00281	-0.00278
	(!A * C * D * Y)	0.00232	0.00234	0.00232
	(!A * C * D * Y)	-0.00279	-0.00279	-0.00279
	(!A * C * !D * Y)	0.00121	0.00122	0.00121
	(!A * C * !D * Y)	-0.00279	-0.00281	-0.00280
	(!A * !C * Y)	0.00115	0.00116	0.00115
	(!A * !C * Y)	-0.00280	-0.00283	-0.00280
sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	0.00188	0.00189	0.00191
	(A * C * !D * Y)	-0.00293	-0.00295	-0.00292
	(A * !C * Y)	0.00192	0.00194	0.00194
	(A * !C * Y)	-0.00293	-0.00296	-0.00292
	(!A * C * D * Y)	0.00458	0.00462	0.00458
	(!A * C * D * Y)	-0.00294	-0.00295	-0.00293
	(!A * C * !D * Y)	0.00229	0.00232	0.00230
	(!A * C * !D * Y)	-0.00294	-0.00297	-0.00295
	(!A * !C * Y)	0.00221	0.00222	0.00220
	(!A * !C * Y)	-0.00298	-0.00299	-0.00297

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)	-0.00046	-0.00046	-0.00047
	(A * C * !D * Y)	0.00149	0.00151	0.00147
	(A * !C * Y)	-0.00047	-0.00047	-0.00048
	(A * !C * Y)	0.00149	0.00151	0.00147
	(!A * C * D * Y)	-0.00102	-0.00110	-0.00110
	(!A * C * D * Y)	0.00152	0.00149	0.00147
	(!A * C * !D * Y)	-0.00057	-0.00057	-0.00057
	(!A * C * !D * Y)	0.00149	0.00149	0.00147
	(!A * !C * Y)	-0.00057	-0.00057	-0.00057
	(!A * !C * Y)	0.00152	0.00153	0.00148
sky130_fd_sc_hs__nand4_2	(A * C * !D * Y)	-0.00093	-0.00094	-0.00095
	(A * C * !D * Y)	0.00287	0.00289	0.00281
	(A * !C * Y)	-0.00095	-0.00096	-0.00098
	(A * !C * Y)	0.00287	0.00289	0.00281
	(!A * C * D * Y)	-0.00207	-0.00233	-0.00232
	(!A * C * D * Y)	0.00295	0.00282	0.00279
	(!A * C * !D * Y)	-0.00121	-0.00122	-0.00121
	(!A * C * !D * Y)	0.00281	0.00282	0.00280
	(!A * !C * Y)	-0.00115	-0.00116	-0.00115
	(!A * !C * Y)	0.00288	0.00290	0.00282

sky130_fd_sc_hs__nand4_4	**(A * C * !D * Y)**	-0.00179	-0.00181	-0.00183
	(A * C * !D * Y)	0.00306	0.00309	0.00297
	(A * !C * Y)	-0.00183	-0.00185	-0.00188
	(A * !C * Y)	0.00306	0.00309	0.00297
	(!A * C * D * Y)	-0.00404	-0.00462	-0.00458
	(!A * C * D * Y)	0.00332	0.00296	0.00294
	(!A * C * !D * Y)	-0.00229	-0.00232	-0.00230
	(!A * C * !D * Y)	0.00303	0.00299	0.00295
	(!A * !C * Y)	-0.00221	-0.00222	-0.00220
	(!A * !C * Y)	0.00316	0.00319	0.00301

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)**	0.00046	0.00047	0.00047
	(A * B * !D * Y)	-0.00143	-0.00144	-0.00144
	(A * !B * D * Y)	0.00109	0.00109	0.00109
	(A * !B * D * Y)	-0.00143	-0.00144	-0.00144
	(A * !B * !D * Y)	0.00054	0.00054	0.00054
	(A * !B * !D * Y)	-0.00144	-0.00144	-0.00144
	(!A * B * D * Y)	0.00107	0.00106	0.00107
	(!A * B * D * Y)	-0.00143	-0.00143	-0.00143
	(!A * B * !D * Y)	0.00054	0.00054	0.00054
	(!A * B * !D * Y)	-0.00143	-0.00144	-0.00144
	(!A * !B * D * Y)	0.00109	0.00110	0.00109
	(!A * !B * D * Y)	-0.00143	-0.00144	-0.00144
	(!A * !B * !D * Y)	0.00057	0.00057	0.00057
	(!A * !B * !D * Y)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__nand4_2	**(A * B * !D * Y)**	0.00104	0.00106	0.00104
	(A * B * !D * Y)	-0.00273	-0.00276	-0.00272
	(A * !B * D * Y)	0.00229	0.00232	0.00230
	(A * !B * D * Y)	-0.00278	-0.00280	-0.00278
	(A * !B * !D * Y)	0.00118	0.00118	0.00118
	(A * !B * !D * Y)	-0.00277	-0.00278	-0.00278
	(!A * B * D * Y)	0.00230	0.00233	0.00230
	(!A * B * D * Y)	-0.00279	-0.00280	-0.00278
	(!A * B * !D * Y)	0.00121	0.00122	0.00121
	(!A * B * !D * Y)	-0.00279	-0.00279	-0.00279
	(!A * !B * D * Y)	0.00229	0.00232	0.00230
	(!A * !B * D * Y)	-0.00277	-0.00280	-0.00278
	(!A * !B * !D * Y)	0.00124	0.00124	0.00124
	(!A * !B * !D * Y)	-0.00278	-0.00279	-0.00278
sky130_fd_sc_hs__nand4_4	**(A * B * !D * Y)**	0.00193	0.00196	0.00193
	(A * B * !D * Y)	-0.00280	-0.00283	-0.00278
	(A * !B * D * Y)	0.00443	0.00450	0.00445
	(A * !B * D * Y)	-0.00288	-0.00291	-0.00289
	(A * !B * !D * Y)	0.00219	0.00222	0.00220
	(A * !B * !D * Y)	-0.00288	-0.00292	-0.00289
	(!A * B * D * Y)	0.00435	0.00439	0.00437
	(!A * B * D * Y)	-0.00288	-0.00289	-0.00289
	(!A * B * !D * Y)	0.00222	0.00223	0.00223
	(!A * B * !D * Y)	-0.00290	-0.00291	-0.00290
	(!A * !B * D * Y)	0.00443	0.00450	0.00445
	(!A * !B * D * Y)	-0.00288	-0.00291	-0.00289
	(!A * !B * !D * Y)	0.00230	0.00231	0.00230
	(!A * !B * !D * Y)	-0.00288	-0.00289	-0.00289

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)	-0.00045	-0.00046	-0.00046
	(A * B * !D * Y)	0.00146	0.00147	0.00145
	(A * !B * D * Y)	-0.00104	-0.00109	-0.00109
	(A * !B * D * Y)	0.00143	0.00145	0.00144
	(A * !B * !D * Y)	-0.00054	-0.00054	-0.00054
	(A * !B * !D * Y)	0.00146	0.00148	0.00145
	(!A * B * D * Y)	-0.00098	-0.00106	-0.00107
	(!A * B * D * Y)	0.00143	0.00145	0.00144
	(!A * B * !D * Y)	-0.00054	-0.00054	-0.00054
	(!A * B * !D * Y)	0.00143	0.00145	0.00144
	(!A * !B * D * Y)	-0.00105	-0.00110	-0.00109
	(!A * !B * D * Y)	0.00143	0.00145	0.00144
	(!A * !B * !D * Y)	-0.00057	-0.00057	-0.00057
	(!A * !B * !D * Y)	0.00144	0.00146	0.00145
sky130_fd_sc_hs__nand4_2	(A * B * !D * Y)	-0.00097	-0.00097	-0.00098
	(A * B * !D * Y)	0.00287	0.00289	0.00282
	(A * !B * D * Y)	-0.00217	-0.00231	-0.00230
	(A * !B * D * Y)	0.00278	0.00280	0.00279
	(A * !B * !D * Y)	-0.00118	-0.00118	-0.00118
	(A * !B * !D * Y)	0.00282	0.00282	0.00279
	(!A * B * D * Y)	-0.00205	-0.00226	-0.00230
	(!A * B * D * Y)	0.00280	0.00281	0.00279
	(!A * B * !D * Y)	-0.00121	-0.00122	-0.00121
	(!A * B * !D * Y)	0.00279	0.00282	0.00280
	(!A * !B * D * Y)	-0.00218	-0.00231	-0.00230
	(!A * !B * D * Y)	0.00278	0.00280	0.00279
	(!A * !B * !D * Y)	-0.00124	-0.00124	-0.00124
	(!A * !B * !D * Y)	0.00280	0.00282	0.00279

sky130_fd_sc_hs__nand4_4	(A * B * !D * Y)	-0.00179	-0.00182	-0.00182
	(A * B * !D * Y)	0.00301	0.00304	0.00295
	(A * !B * D * Y)	-0.00418	-0.00450	-0.00445
	(A * !B * D * Y)	0.00288	0.00292	0.00289
	(A * !B * !D * Y)	-0.00219	-0.00222	-0.00220
	(A * !B * !D * Y)	0.00296	0.00296	0.00290
	(!A * B * D * Y)	-0.00391	-0.00438	-0.00437
	(!A * B * D * Y)	0.00292	0.00292	0.00290
	(!A * B * !D * Y)	-0.00222	-0.00223	-0.00223
	(!A * B * !D * Y)	0.00290	0.00294	0.00291
	(!A * !B * D * Y)	-0.00421	-0.00450	-0.00445
	(!A * !B * D * Y)	0.00288	0.00292	0.00289
	(!A * !B * !D * Y)	-0.00230	-0.00231	-0.00230
	(!A * !B * !D * Y)	0.00291	0.00293	0.00290

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)	0.00109	0.00111	0.00110
	(A * B * !C * Y)	-0.00150	-0.00151	-0.00150
	(A * !B * C * Y)	0.00110	0.00111	0.00109
	(A * !B * C * Y)	-0.00150	-0.00151	-0.00150
	(A * !B * !C * Y)	0.00109	0.00111	0.00110
	(A * !B * !C * Y)	-0.00150	-0.00151	-0.00150
	(!A * B * C * Y)	0.00108	0.00109	0.00108
	(!A * B * C * Y)	-0.00150	-0.00151	-0.00150
	(!A * !C * Y)	0.00109	0.00111	0.00110
	(!A * !C * Y)	-0.00150	-0.00151	-0.00150
	(!A * !B * C * Y)	0.00109	0.00110	0.00109
	(!A * !B * C * Y)	-0.00150	-0.00151	-0.00150

sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	0.00234	0.00237	0.00235
	(A * B * !C * Y)	-0.00274	-0.00276	-0.00274
	(A * !B * C * Y)	0.00231	0.00233	0.00231
	(A * !B * C * Y)	-0.00275	-0.00276	-0.00274
	(A * !B * !C * Y)	0.00233	0.00234	0.00233
	(A * !B * !C * Y)	-0.00274	-0.00275	-0.00274
	(!A * B * C * Y)	0.00230	0.00230	0.00230
	(!A * B * C * Y)	-0.00275	-0.00275	-0.00274
	(!A * !C * Y)	0.00230	0.00233	0.00232
	(!A * !C * Y)	-0.00273	-0.00275	-0.00274
	(!A * !B * C * Y)	0.00226	0.00226	0.00225
	(!A * !B * C * Y)	-0.00275	-0.00275	-0.00274
sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	0.00466	0.00471	0.00468
	(A * B * !C * Y)	-0.00295	-0.00297	-0.00295
	(A * !B * C * Y)	0.00458	0.00459	0.00457
	(A * !B * C * Y)	-0.00296	-0.00296	-0.00295
	(A * !B * !C * Y)	0.00468	0.00472	0.00468
	(A * !B * !C * Y)	-0.00295	-0.00297	-0.00295
	(!A * B * C * Y)	0.00449	0.00452	0.00448
	(!A * B * C * Y)	-0.00296	-0.00297	-0.00295
	(!A * !C * Y)	0.00468	0.00472	0.00467
	(!A * !C * Y)	-0.00295	-0.00297	-0.00295
	(!A * !B * C * Y)	0.00458	0.00462	0.00457
	(!A * !B * C * Y)	-0.00296	-0.00297	-0.00295

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)**	-0.00106	-0.00111	-0.00110
	(A * B * !C * Y)	0.00151	0.00151	0.00150
	(A * !B * C * Y)	-0.00102	-0.00111	-0.00109
	(A * !B * C * Y)	0.00150	0.00151	0.00150
	(A * !B * !C * Y)	-0.00106	-0.00111	-0.00110
	(A * !B * !C * Y)	0.00151	0.00151	0.00150
	(!A * B * C * Y)	-0.00101	-0.00109	-0.00108
	(!A * B * C * Y)	0.00151	0.00151	0.00150
	(!A * !C * Y)	-0.00106	-0.00111	-0.00110
	(!A * !C * Y)	0.00151	0.00151	0.00150
	(!A * !B * C * Y)	-0.00102	-0.00110	-0.00109
	(!A * !B * C * Y)	0.00150	0.00151	0.00150
sky130_fd_sc_hs__nand4_2	**(A * B * !C * Y)**	-0.00222	-0.00234	-0.00235
	(A * B * !C * Y)	0.00274	0.00278	0.00275
	(A * !B * C * Y)	-0.00210	-0.00230	-0.00231
	(A * !B * C * Y)	0.00276	0.00278	0.00275
	(A * !B * !C * Y)	-0.00223	-0.00234	-0.00233
	(A * !B * !C * Y)	0.00274	0.00278	0.00275
	(!A * B * C * Y)	-0.00206	-0.00230	-0.00230
	(!A * B * C * Y)	0.00276	0.00278	0.00275
	(!A * !C * Y)	-0.00223	-0.00233	-0.00232
	(!A * !C * Y)	0.00274	0.00278	0.00275
	(!A * !B * C * Y)	-0.00210	-0.00226	-0.00225
	(!A * !B * C * Y)	0.00276	0.00278	0.00275

sky130_fd_sc_hs__nand4_4	**(A * B * !C * Y)**	-0.00445	-0.00471	-0.00468
	(A * B * !C * Y)	0.00295	0.00299	0.00296
	(A * !B * C * Y)	-0.00422	-0.00459	-0.00457
	(A * !B * C * Y)	0.00297	0.00299	0.00296
	(A * !B * !C * Y)	-0.00447	-0.00471	-0.00468
	(A * !B * !C * Y)	0.00295	0.00299	0.00296
	(!A * B * C * Y)	-0.00413	-0.00452	-0.00448
	(!A * B * C * Y)	0.00296	0.00299	0.00296
	(!A * !C * Y)	-0.00447	-0.00471	-0.00467
	(!A * !C * Y)	0.00295	0.00299	0.00296
	(!A * !B * C * Y)	-0.00422	-0.00462	-0.00457
	(!A * !B * C * Y)	0.00297	0.00299	0.00296

SKY130_FD_SC_HS__NOR2Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00256	0.00211	0.58791
sky130_fd_sc_hs__nor2b_2	0.00504	0.00243	1.05410
sky130_fd_sc_hs__nor2b_4	0.00825	0.00346	2.04634

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2b_1	0.00000	0.12638	0.24135
sky130_fd_sc_hs__nor2b_2	0.00000	0.05311	0.08326
sky130_fd_sc_hs__nor2b_4	0.00000	0.27540	0.50814

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)	0.06388	0.96861	11.41760
	B_N->Y (RR)	0.07110	0.66485	6.16602
sky130_fd_sc_hs__nor2b_2	A->Y (FR)	0.06203	0.84404	11.34830
	B_N->Y (RR)	0.06276	0.54318	6.07185
sky130_fd_sc_hs__nor2b_4	A->Y (FR)	0.04811	0.71003	11.10490
	B_N->Y (RR)	0.06121	0.45979	6.28558

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2b_1	A->Y (RF)	0.01575	0.27884	3.19556
	B_N->Y (FF)	0.06020	0.39736	3.26323
sky130_fd_sc_hs__nor2b_2	A->Y (RF)	0.01441	0.22887	3.03963
	B_N->Y (FF)	0.06595	0.40591	3.20613
sky130_fd_sc_hs__nor2b_4	A->Y (RF)	0.02017	0.31198	4.95268
	B_N->Y (FF)	0.06833	0.42636	4.12004

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00053	0.00047	0.00145
	A	0.00358	0.00354	0.00451
	B_N	0.00541	0.00602	0.02680
	B_N	0.00288	0.00349	0.02439
sky130_fd_sc_hs__nor2b_2	A	0.00113	0.00107	0.00305
	A	0.00725	0.00718	0.00918
	B_N	0.00768	0.00822	0.03072
	B_N	0.00523	0.00577	0.02852
sky130_fd_sc_hs__nor2b_4	A	0.00203	0.00197	0.00409
	A	0.01195	0.01189	0.01409
	B_N	0.01151	0.01240	0.04846
	B_N	0.00792	0.00883	0.04532

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	A	0.00363	0.00364	0.00471
	A	0.00060	0.00058	0.00164
	B_N	0.00280	0.00411	0.02640
	B_N	0.00532	0.00662	0.02893
sky130_fd_sc_hs__nor2b_2	A	0.00705	0.00690	0.00917
	A	0.00098	0.00081	0.00311
	B_N	0.00499	0.00640	0.02563
	B_N	0.00744	0.00883	0.02805
sky130_fd_sc_hs__nor2b_4	A	0.01098	0.01066	0.01345
	A	0.00113	0.00075	0.00349
	B_N	0.00718	0.00960	0.04792
	B_N	0.01077	0.01313	0.05101

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	0.00134	0.00122	0.00120
	(!B_N * !Y)	-0.00142	-0.00155	-0.00156
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	0.00272	0.00250	0.00246
	(!B_N * !Y)	-0.00254	-0.00283	-0.00282
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	0.00352	0.00306	0.00300
	(!B_N * !Y)	-0.00506	-0.00562	-0.00565

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(!B_N * !Y)	-0.00119	-0.00120	-0.00120
	(!B_N * !Y)	0.00155	0.00155	0.00156
sky130_fd_sc_hs__nor2b_2	(!B_N * !Y)	-0.00245	-0.00246	-0.00245
	(!B_N * !Y)	0.00282	0.00284	0.00282
sky130_fd_sc_hs__nor2b_4	(!B_N * !Y)	-0.00299	-0.00299	-0.00299
	(!B_N * !Y)	0.00562	0.00562	0.00565

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00339	0.00392	0.02664
	(A * !Y)	0.00063	0.00113	0.02387
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00438	0.00477	0.02707
	(A * !Y)	0.00128	0.00166	0.02398
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00671	0.00739	0.04511
	(A * !Y)	0.00214	0.00280	0.04054

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2b_1	(A * !Y)	0.00102	0.00224	0.02518
	(A * !Y)	0.00378	0.00501	0.02794
sky130_fd_sc_hs__nor2b_2	(A * !Y)	0.00230	0.00320	0.02545
	(A * !Y)	0.00537	0.00629	0.02852
sky130_fd_sc_hs__nor2b_4	(A * !Y)	0.00271	0.00462	0.04343
	(A * !Y)	0.00725	0.00920	0.04797

SKY130_FD_SC_HS__NOR2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00257	0.00265	0.58040
sky130_fd_sc_hs__nor2_2	0.00403	0.00383	1.04150
sky130_fd_sc_hs__nor2_4	0.00767	0.00763	1.94659
sky130_fd_sc_hs__nor2_8	0.01493	0.01504	3.53514

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__nor2_1	0.00000	0.01178	0.03242
sky130_fd_sc_hs__nor2_2	0.00000	0.02322	0.06484
sky130_fd_sc_hs__nor2_4	0.00000	0.04645	0.12968
sky130_fd_sc_hs__nor2_8	0.00000	0.09289	0.25936

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)	0.06242	0.96300	11.32950
	B->Y (FR)	0.05024	0.93249	11.12950
sky130_fd_sc_hs__nor2_2	A->Y (FR)	0.05096	0.83223	11.27130
	B->Y (FR)	0.03202	0.79571	11.06670
sky130_fd_sc_hs__nor2_4	A->Y (FR)	0.05011	0.72024	11.11260
	B->Y (FR)	0.03114	0.69118	11.00400
sky130_fd_sc_hs__nor2_8	A->Y (FR)	0.04997	0.63034	10.92510
	B->Y (FR)	0.03616	0.62467	11.00440

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor2_1	A->Y (RF)	0.01602	0.27728	3.16019
	B->Y (RF)	0.01445	0.27133	3.14738
sky130_fd_sc_hs__nor2_2	A->Y (RF)	0.01998	0.35896	4.81944
	B->Y (RF)	0.01589	0.34821	4.81087
sky130_fd_sc_hs__nor2_4	A->Y (RF)	0.01939	0.29966	4.67220
	B->Y (RF)	0.01517	0.28276	4.60186
sky130_fd_sc_hs__nor2_8	A->Y (RF)	0.01847	0.24416	4.43360
	B->Y (RF)	0.02126	0.23643	4.41930

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	-0.00047	-0.00053	0.00046
	A	0.00356	0.00351	0.00449
	B	-0.00058	-0.00025	0.00333
	B	0.00281	0.00315	0.00674
sky130_fd_sc_hs__nor2_2	A	-0.00082	-0.00084	0.00021
	A	0.00578	0.00574	0.00664
	B	-0.00067	-0.00003	0.00412
	B	0.00415	0.00480	0.00900
sky130_fd_sc_hs__nor2_4	A	-0.00023	-0.00032	0.00190
	A	0.01252	0.01241	0.01470
	B	-0.00068	0.00080	0.00903
	B	0.00908	0.01035	0.01891
sky130_fd_sc_hs__nor2_8	A	-0.00098	-0.00111	0.00359
	A	0.02408	0.02398	0.02889
	B	-0.00208	0.00042	0.01839
	B	0.01725	0.01974	0.03791

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	A	0.00454	0.00452	0.00557
	A	0.00055	0.00050	0.00158
	B	0.00332	0.00337	0.00446
	B	-0.00007	-0.00002	0.00105
sky130_fd_sc_hs__nor2_2	A	0.00752	0.00736	0.00890
	A	0.00103	0.00082	0.00219
	B	0.00383	0.00400	0.00562
	B	-0.00100	-0.00087	0.00053
sky130_fd_sc_hs__nor2_4	A	0.01426	0.01389	0.01799
	A	0.00172	0.00129	0.00414
	B	0.00761	0.00784	0.01160
	B	-0.00215	-0.00197	0.00101
sky130_fd_sc_hs__nor2_8	A	0.02706	0.02666	0.03365
	A	0.00245	0.00195	0.00778
	B	0.01501	0.01553	0.02373
	B	-0.00431	-0.00388	0.00264

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	0.00143	0.00131	0.00129
	(B * !Y)	-0.00120	-0.00135	-0.00134
sky130_fd_sc_hs__nor2_2	(B * !Y)	0.00189	0.00165	0.00163
	(B * !Y)	-0.00236	-0.00270	-0.00268
sky130_fd_sc_hs__nor2_4	(B * !Y)	0.00325	0.00268	0.00262
	(B * !Y)	-0.00469	-0.00542	-0.00541
sky130_fd_sc_hs__nor2_8	(B * !Y)	0.00623	0.00512	0.00506
	(B * !Y)	-0.00945	-0.01074	-0.01077

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(B * !Y)	-0.00129	-0.00129	-0.00129
	(B * !Y)	0.00134	0.00135	0.00134
sky130_fd_sc_hs__nor2_2	(B * !Y)	-0.00163	-0.00163	-0.00162
	(B * !Y)	0.00268	0.00270	0.00268
sky130_fd_sc_hs__nor2_4	(B * !Y)	-0.00262	-0.00262	-0.00260
	(B * !Y)	0.00541	0.00544	0.00541
sky130_fd_sc_hs__nor2_8	(B * !Y)	-0.00504	-0.00504	-0.00503
	(B * !Y)	0.01074	0.01074	0.01077

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	0.00147	0.00147	0.00146
	(A * !Y)	-0.00069	-0.00069	-0.00068
sky130_fd_sc_hs__nor2_2	(A * !Y)	0.00161	0.00162	0.00161
	(A * !Y)	-0.00138	-0.00139	-0.00138
sky130_fd_sc_hs__nor2_4	(A * !Y)	0.00324	0.00328	0.00325
	(A * !Y)	-0.00273	-0.00275	-0.00273
sky130_fd_sc_hs__nor2_8	(A * !Y)	0.00638	0.00645	0.00640
	(A * !Y)	-0.00539	-0.00544	-0.00540

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor2_1	(A * !Y)	-0.00142	-0.00143	-0.00145
	(A * !Y)	0.00072	0.00072	0.00069
sky130_fd_sc_hs__nor2_2	(A * !Y)	-0.00148	-0.00149	-0.00160
	(A * !Y)	0.00151	0.00151	0.00141
sky130_fd_sc_hs__nor2_4	(A * !Y)	-0.00299	-0.00303	-0.00322
	(A * !Y)	0.00294	0.00296	0.00278
sky130_fd_sc_hs__nor2_8	(A * !Y)	-0.00592	-0.00600	-0.00635
	(A * !Y)	0.00577	0.00583	0.00551

SKY130_FD_SC_HS__NOR3Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00252	0.00264	0.00205	0.38693
sky130_fd_sc_hs__nor3b_2	0.00493	0.00491	0.00243	0.69052
sky130_fd_sc_hs__nor3b_4	0.00989	0.00982	0.00338	1.19705

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3b_1	0.00000	0.12217	0.24135
sky130_fd_sc_hs__nor3b_2	0.00000	0.04468	0.08326
sky130_fd_sc_hs__nor3b_4	0.00000	0.25920	0.50814

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)	0.12080	1.11481	11.13120
	B->Y (FR)	0.11032	1.12557	11.56080
	C_N->Y (RR)	0.09988	0.81375	6.37444
sky130_fd_sc_hs__nor3b_2	A->Y (FR)	0.11570	0.95742	10.92390
	B->Y (FR)	0.10323	0.97413	11.51710
	C_N->Y (RR)	0.08239	0.65892	6.25703
sky130_fd_sc_hs__nor3b_4	A->Y (FR)	0.11906	0.83534	10.69830
	B->Y (FR)	0.10701	0.85611	11.35340
	C_N->Y (RR)	0.09964	0.61297	6.61660

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3b_1	A->Y (RF)	0.01676	0.24196	2.27930
	B->Y (RF)	0.01791	0.24720	2.36743
	C_N->Y (FF)	0.06227	0.37468	2.83839
sky130_fd_sc_hs__nor3b_2	A->Y (RF)	0.01422	0.19006	2.05705
	B->Y (RF)	0.01458	0.18297	2.02558
	C_N->Y (FF)	0.06710	0.38458	2.79936
sky130_fd_sc_hs__nor3b_4	A->Y (RF)	0.01413	0.15848	1.96360
	B->Y (RF)	0.01443	0.15088	1.93632
	C_N->Y (FF)	0.07444	0.37518	2.64134

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00120	0.00112	0.00192
	A	0.00494	0.00485	0.00568
	B	0.00106	0.00095	0.00209
	B	0.00431	0.00422	0.00536
	C_N	0.00576	0.00634	0.02726
	C_N	0.00362	0.00421	0.02517
sky130_fd_sc_hs__nor3b_2	A	0.00180	0.00165	0.00323
	A	0.00969	0.00957	0.01119
	B	0.00178	0.00165	0.00395
	B	0.00820	0.00810	0.01041
	C_N	0.00827	0.00875	0.03132
	C_N	0.00632	0.00679	0.02947
sky130_fd_sc_hs__nor3b_4	A	0.00331	0.00302	0.00640
	A	0.01915	0.01873	0.02239
	B	0.00344	0.00311	0.00791
	B	0.01645	0.01615	0.02092
	C_N	0.01483	0.01557	0.05210
	C_N	0.01260	0.01336	0.04992

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	A	0.00497	0.00491	0.00617
	A	0.00129	0.00121	0.00250
	B	0.00393	0.00389	0.00516
	B	0.00069	0.00064	0.00192
	C_N	0.00306	0.00456	0.02656
	C_N	0.00520	0.00668	0.02868
sky130_fd_sc_hs__nor3b_2	A	0.01006	0.00993	0.01256
	A	0.00235	0.00218	0.00486
	B	0.00747	0.00742	0.01005
	B	0.00108	0.00100	0.00365
	C_N	0.00554	0.00694	0.02625
	C_N	0.00750	0.00889	0.02819
sky130_fd_sc_hs__nor3b_4	A	0.01980	0.01952	0.02495
	A	0.00428	0.00392	0.00939
	B	0.01478	0.01468	0.02007
	B	0.00185	0.00167	0.00708
	C_N	0.01198	0.01419	0.05206
	C_N	0.01421	0.01642	0.05427

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)	0.00123	0.00122	0.00121
	(B * C_N * !Y)	-0.00126	-0.00131	-0.00131
	(B * !C_N * !Y)	0.00116	0.00117	0.00116
	(B * !C_N * !Y)	-0.00133	-0.00136	-0.00136
	(!B * !C_N * !Y)	0.00116	0.00116	0.00116
	(!B * !C_N * !Y)	-0.00124	-0.00133	-0.00132
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	0.00248	0.00246	0.00243
	(B * C_N * !Y)	-0.00261	-0.00274	-0.00272
	(B * !C_N * !Y)	0.00245	0.00246	0.00243
	(B * !C_N * !Y)	-0.00265	-0.00274	-0.00272
	(!B * !C_N * !Y)	0.00246	0.00246	0.00244
	(!B * !C_N * !Y)	-0.00250	-0.00267	-0.00265
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	0.00527	0.00527	0.00520
	(B * C_N * !Y)	-0.00494	-0.00522	-0.00519
	(B * !C_N * !Y)	0.00484	0.00490	0.00484
	(B * !C_N * !Y)	-0.00537	-0.00560	-0.00556
	(!B * !C_N * !Y)	0.00485	0.00488	0.00483
	(!B * !C_N * !Y)	-0.00510	-0.00545	-0.00542

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)	-0.00120	-0.00120	-0.00120
	(B * C_N * !Y)	0.00131	0.00131	0.00131
	(B * !C_N * !Y)	-0.00115	-0.00115	-0.00115
	(B * !C_N * !Y)	0.00135	0.00136	0.00136
	(!B * !C_N * !Y)	-0.00115	-0.00116	-0.00115
	(!B * !C_N * !Y)	0.00131	0.00133	0.00132
sky130_fd_sc_hs__nor3b_2	(B * C_N * !Y)	-0.00242	-0.00244	-0.00243
	(B * C_N * !Y)	0.00270	0.00274	0.00272
	(B * !C_N * !Y)	-0.00242	-0.00244	-0.00243
	(B * !C_N * !Y)	0.00271	0.00274	0.00272
	(!B * !C_N * !Y)	-0.00242	-0.00244	-0.00243
	(!B * !C_N * !Y)	0.00263	0.00267	0.00265
sky130_fd_sc_hs__nor3b_4	(B * C_N * !Y)	-0.00518	-0.00522	-0.00520
	(B * C_N * !Y)	0.00516	0.00523	0.00519
	(B * !C_N * !Y)	-0.00481	-0.00486	-0.00483
	(B * !C_N * !Y)	0.00552	0.00560	0.00556
	(!B * !C_N * !Y)	-0.00482	-0.00484	-0.00482
	(!B * !C_N * !Y)	0.00540	0.00545	0.00542

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)	0.00141	0.00143	0.00141
	(A * C_N * !Y)	-0.00075	-0.00076	-0.00075
	(A * !C_N * !Y)	0.00123	0.00124	0.00121
	(A * !C_N * !Y)	-0.00107	-0.00108	-0.00107
	(!A * !C_N * !Y)	0.00138	0.00122	0.00121
	(!A * !C_N * !Y)	-0.00131	-0.00149	-0.00149
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	0.00252	0.00253	0.00250
	(A * C_N * !Y)	-0.00161	-0.00161	-0.00160
	(A * !C_N * !Y)	0.00244	0.00250	0.00245
	(A * !C_N * !Y)	-0.00190	-0.00193	-0.00191
	(!A * !C_N * !Y)	0.00274	0.00244	0.00241
	(!A * !C_N * !Y)	-0.00243	-0.00279	-0.00279
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	0.00507	0.00514	0.00507
	(A * C_N * !Y)	-0.00314	-0.00318	-0.00317
	(A * !C_N * !Y)	0.00493	0.00500	0.00490
	(A * !C_N * !Y)	-0.00381	-0.00386	-0.00382
	(!A * !C_N * !Y)	0.00566	0.00489	0.00485
	(!A * !C_N * !Y)	-0.00474	-0.00558	-0.00558

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)	-0.00140	-0.00140	-0.00139
	(A * C_N * !Y)	0.00077	0.00077	0.00078
	(A * !C_N * !Y)	-0.00120	-0.00121	-0.00120
	(A * !C_N * !Y)	0.00107	0.00108	0.00107
	(!A * !C_N * !Y)	-0.00120	-0.00121	-0.00120
	(!A * !C_N * !Y)	0.00149	0.00150	0.00149
sky130_fd_sc_hs__nor3b_2	(A * C_N * !Y)	-0.00248	-0.00249	-0.00248
	(A * C_N * !Y)	0.00163	0.00163	0.00163
	(A * !C_N * !Y)	-0.00242	-0.00244	-0.00242
	(A * !C_N * !Y)	0.00190	0.00193	0.00191
	(!A * !C_N * !Y)	-0.00241	-0.00242	-0.00241
	(!A * !C_N * !Y)	0.00278	0.00281	0.00279
sky130_fd_sc_hs__nor3b_4	(A * C_N * !Y)	-0.00502	-0.00506	-0.00501
	(A * C_N * !Y)	0.00320	0.00323	0.00326
	(A * !C_N * !Y)	-0.00486	-0.00490	-0.00487
	(A * !C_N * !Y)	0.00381	0.00386	0.00382
	(!A * !C_N * !Y)	-0.00484	-0.00486	-0.00483
	(!A * !C_N * !Y)	0.00558	0.00562	0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00333	0.00385	0.02650
	(B * !Y)	0.00069	0.00119	0.02386
	(A * !B * !Y)	0.00339	0.00391	0.02653
	(A * !B * !Y)	0.00071	0.00121	0.02386
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00435	0.00474	0.02707
	(B * !Y)	0.00130	0.00169	0.02403
	(A * !B * !Y)	0.00448	0.00488	0.02717
	(A * !B * !Y)	0.00135	0.00174	0.02406
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00699	0.00727	0.04417
	(B * !Y)	0.00244	0.00268	0.03964
	(A * !B * !Y)	0.00724	0.00750	0.04437
	(A * !B * !Y)	0.00254	0.00279	0.03968

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3b_1	(B * !Y)	0.00107	0.00228	0.02514
	(B * !Y)	0.00371	0.00493	0.02779
	(A * !B * !Y)	0.00107	0.00228	0.02513
	(A * !B * !Y)	0.00371	0.00494	0.02778
sky130_fd_sc_hs__nor3b_2	(B * !Y)	0.00226	0.00318	0.02545
	(B * !Y)	0.00530	0.00622	0.02847
	(A * !B * !Y)	0.00226	0.00318	0.02545
	(A * !B * !Y)	0.00530	0.00623	0.02847
sky130_fd_sc_hs__nor3b_4	(B * !Y)	0.00543	0.00721	0.04561
	(B * !Y)	0.00997	0.01176	0.05015
	(A * !B * !Y)	0.00543	0.00721	0.04560
	(A * !B * !Y)	0.00999	0.01178	0.05016

SKY130_FD_SC_HS__NOR3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00261	0.00284	0.00269	0.38141
sky130_fd_sc_hs__nor3_2	0.00398	0.00420	0.00388	0.73179
sky130_fd_sc_hs__nor3_4	0.00878	0.00866	0.00833	1.17248

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor3_1	0.00000	0.00756	0.03242
sky130_fd_sc_hs__nor3_2	0.00000	0.01488	0.06484
sky130_fd_sc_hs__nor3_4	0.00000	0.02976	0.12968

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)	0.12297	1.10222	10.93950
	B->Y (FR)	0.11401	1.11495	11.38360
	C->Y (FR)	0.08388	1.05525	11.00180
sky130_fd_sc_hs__nor3_2	A->Y (FR)	0.09722	0.93658	11.04510
	B->Y (FR)	0.08419	0.94210	11.45310
	C->Y (FR)	0.04422	0.87514	11.05970
sky130_fd_sc_hs__nor3_4	A->Y (FR)	0.10894	0.82274	10.52500
	B->Y (FR)	0.09066	0.82524	10.98890
	C->Y (FR)	0.05128	0.76760	10.70900

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor3_1	A->Y (RF)	0.01738	0.24111	2.24627
	B->Y (RF)	0.01873	0.24472	2.31678
	C->Y (RF)	0.01659	0.23824	2.31967
sky130_fd_sc_hs__nor3_2	A->Y (RF)	0.02303	0.32787	3.79127
	B->Y (RF)	0.02253	0.31641	3.74793
	C->Y (RF)	0.01737	0.30297	3.73642
sky130_fd_sc_hs__nor3_4	A->Y (RF)	0.01806	0.26220	3.27958
	B->Y (RF)	0.02042	0.25692	3.33687
	C->Y (RF)	0.02301	0.24651	3.32285

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	-0.00003	-0.00014	0.00068
	A	0.00514	0.00504	0.00589
	B	0.00001	-0.00012	0.00104
	B	0.00453	0.00441	0.00557
	C	-0.00007	0.00017	0.00416
	C	0.00378	0.00403	0.00803
sky130_fd_sc_hs__nor3_2	A	-0.00015	-0.00023	0.00057
	A	0.00804	0.00799	0.00881
	B	0.00008	0.00000	0.00121
	B	0.00693	0.00687	0.00807
	C	-0.00000	0.00049	0.00540
	C	0.00513	0.00562	0.01057
sky130_fd_sc_hs__nor3_4	A	-0.00051	-0.00071	0.00115
	A	0.01715	0.01680	0.01880
	B	-0.00050	-0.00074	0.00237
	B	0.01379	0.01355	0.01672
	C	-0.00108	0.00018	0.01113
	C	0.01057	0.01185	0.02291

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	A	0.00641	0.00634	0.00762
	A	0.00131	0.00122	0.00253
	B	0.00521	0.00518	0.00647
	B	0.00075	0.00069	0.00198
	C	0.00381	0.00388	0.00516
	C	-0.00003	0.00003	0.00131
sky130_fd_sc_hs__nor3_2	A	0.01046	0.01026	0.01198
	A	0.00247	0.00225	0.00381
	B	0.00792	0.00778	0.00939
	B	0.00117	0.00102	0.00261
	C	0.00421	0.00439	0.00615
	C	-0.00091	-0.00077	0.00087
sky130_fd_sc_hs__nor3_4	A	0.02232	0.02166	0.02492
	A	0.00513	0.00441	0.00770
	B	0.01633	0.01594	0.01981
	B	0.00220	0.00178	0.00551
	C	0.00967	0.00999	0.01416
	C	-0.00198	-0.00171	0.00237

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	0.00133	0.00134	0.00133
	(B * C * !Y)	-0.00130	-0.00133	-0.00133
	(B * !C * !Y)	0.00133	0.00134	0.00133
	(B * !C * !Y)	-0.00129	-0.00133	-0.00133
	(!B * C * !Y)	0.00134	0.00133	0.00133
	(!B * C * !Y)	-0.00121	-0.00129	-0.00129
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	0.00155	0.00156	0.00155
	(B * C * !Y)	-0.00252	-0.00262	-0.00261
	(B * !C * !Y)	0.00156	0.00156	0.00155
	(B * !C * !Y)	-0.00249	-0.00262	-0.00261
	(!B * C * !Y)	0.00158	0.00158	0.00155
	(!B * C * !Y)	-0.00233	-0.00255	-0.00252
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	0.00297	0.00299	0.00297
	(B * C * !Y)	-0.00539	-0.00564	-0.00561
	(B * !C * !Y)	0.00300	0.00299	0.00297
	(B * !C * !Y)	-0.00530	-0.00564	-0.00561
	(!B * C * !Y)	0.00302	0.00299	0.00297
	(!B * C * !Y)	-0.00495	-0.00543	-0.00541

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * C * !Y)	-0.00133	-0.00133	-0.00133
	(B * C * !Y)	0.00133	0.00133	0.00133
	(B * !C * !Y)	-0.00132	-0.00133	-0.00133
	(B * !C * !Y)	0.00132	0.00133	0.00133
	(!B * C * !Y)	-0.00132	-0.00133	-0.00132
	(!B * C * !Y)	0.00128	0.00129	0.00129
sky130_fd_sc_hs__nor3_2	(B * C * !Y)	-0.00155	-0.00156	-0.00155
	(B * C * !Y)	0.00261	0.00263	0.00261
	(B * !C * !Y)	-0.00155	-0.00156	-0.00155
	(B * !C * !Y)	0.00261	0.00263	0.00261
	(!B * C * !Y)	-0.00156	-0.00156	-0.00155
	(!B * C * !Y)	0.00252	0.00255	0.00252
sky130_fd_sc_hs__nor3_4	(B * C * !Y)	-0.00297	-0.00297	-0.00297
	(B * C * !Y)	0.00561	0.00564	0.00561
	(B * !C * !Y)	-0.00297	-0.00298	-0.00297
	(B * !C * !Y)	0.00560	0.00566	0.00561
	(!B * C * !Y)	-0.00296	-0.00297	-0.00296
	(!B * C * !Y)	0.00541	0.00543	0.00541

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	0.00140	0.00141	0.00138
	(A * C * !Y)	-0.00084	-0.00085	-0.00084
	(A * !C * !Y)	0.00138	0.00139	0.00137
	(A * !C * !Y)	-0.00074	-0.00074	-0.00074
	(!A * C * !Y)	0.00155	0.00138	0.00137
	(!A * C * !Y)	-0.00107	-0.00127	-0.00128
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	0.00141	0.00143	0.00139
	(A * C * !Y)	-0.00185	-0.00187	-0.00186
	(A * !C * !Y)	0.00140	0.00141	0.00137
	(A * !C * !Y)	-0.00164	-0.00165	-0.00166
	(!A * C * !Y)	0.00176	0.00137	0.00135
	(!A * C * !Y)	-0.00232	-0.00278	-0.00278
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	0.00324	0.00322	0.00321
	(A * C * !Y)	-0.00349	-0.00349	-0.00349
	(A * !C * !Y)	0.00321	0.00325	0.00320
	(A * !C * !Y)	-0.00300	-0.00303	-0.00301
	(!A * C * !Y)	0.00386	0.00323	0.00320
	(!A * C * !Y)	-0.00446	-0.00521	-0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(A * C * !Y)	-0.00137	-0.00137	-0.00137
	(A * C * !Y)	0.00084	0.00085	0.00084
	(A * !C * !Y)	-0.00136	-0.00137	-0.00135
	(A * !C * !Y)	0.00075	0.00075	0.00076
	(!A * C * !Y)	-0.00137	-0.00137	-0.00136
	(!A * C * !Y)	0.00127	0.00129	0.00128
sky130_fd_sc_hs__nor3_2	(A * C * !Y)	-0.00137	-0.00138	-0.00137
	(A * C * !Y)	0.00185	0.00187	0.00186
	(A * !C * !Y)	-0.00136	-0.00136	-0.00134
	(A * !C * !Y)	0.00170	0.00170	0.00170
	(!A * C * !Y)	-0.00135	-0.00136	-0.00135
	(!A * C * !Y)	0.00276	0.00279	0.00278
sky130_fd_sc_hs__nor3_4	(A * C * !Y)	-0.00319	-0.00320	-0.00320
	(A * C * !Y)	0.00349	0.00349	0.00349
	(A * !C * !Y)	-0.00315	-0.00317	-0.00311
	(A * !C * !Y)	0.00305	0.00308	0.00310
	(!A * C * !Y)	-0.00319	-0.00319	-0.00318
	(!A * C * !Y)	0.00519	0.00521	0.00520

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	0.00143	0.00145	0.00144
	(B * !Y)	-0.00068	-0.00069	-0.00068
	(A * !B * !Y)	0.00144	0.00145	0.00144
	(A * !B * !Y)	-0.00069	-0.00069	-0.00068
sky130_fd_sc_hs__nor3_2	(B * !Y)	0.00159	0.00161	0.00159
	(B * !Y)	-0.00137	-0.00138	-0.00137
	(A * !B * !Y)	0.00160	0.00161	0.00159
	(A * !B * !Y)	-0.00137	-0.00138	-0.00136
sky130_fd_sc_hs__nor3_4	(B * !Y)	0.00359	0.00362	0.00360
	(B * !Y)	-0.00280	-0.00283	-0.00282
	(A * !B * !Y)	0.00359	0.00362	0.00360
	(A * !B * !Y)	-0.00280	-0.00282	-0.00281

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor3_1	(B * !Y)	-0.00139	-0.00140	-0.00143
	(B * !Y)	0.00073	0.00073	0.00069
	(A * !B * !Y)	-0.00134	-0.00135	-0.00142
	(A * !B * !Y)	0.00075	0.00075	0.00069
sky130_fd_sc_hs__nor3_2	(B * !Y)	-0.00145	-0.00147	-0.00158
	(B * !Y)	0.00149	0.00149	0.00140
	(A * !B * !Y)	-0.00134	-0.00136	-0.00155
	(A * !B * !Y)	0.00155	0.00155	0.00141
sky130_fd_sc_hs__nor3_4	(B * !Y)	-0.00336	-0.00340	-0.00358
	(B * !Y)	0.00303	0.00305	0.00288
	(A * !B * !Y)	-0.00308	-0.00312	-0.00351
	(A * !B * !Y)	0.00317	0.00318	0.00289

SKY130_FD_SC_HS__NOR4BBx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00265	0.00272	0.00218	0.00215	0.28586
sky130_fd_sc_hs__nor4bb_2	0.00492	0.00517	0.00251	0.00238	0.47990
sky130_fd_sc_hs__nor4bb_4	0.00971	0.01039	0.00343	0.00334	0.92098

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4bb_1	0.00000	0.23390	0.46848
sky130_fd_sc_hs__nor4bb_2	0.00000	0.06847	0.13811
sky130_fd_sc_hs__nor4bb_4	0.00000	0.47663	0.95945

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)	0.19914	1.26640	10.83920
	B->Y (FR)	0.18938	1.26656	11.19570
	C_N->Y (RR)	0.18600	1.00454	6.54283
	D_N->Y (RR)	0.12491	0.92797	6.39336
sky130_fd_sc_hs__nor4bb_2	A->Y (FR)	0.20375	1.11821	10.59880
	B->Y (FR)	0.18926	1.10465	10.93140
	C_N->Y (RR)	0.18315	0.85268	6.40285
	D_N->Y (RR)	0.11096	0.76903	6.25516
sky130_fd_sc_hs__nor4bb_4	A->Y (FR)	0.20424	0.97475	10.64820
	B->Y (FR)	0.18982	0.96756	11.02200
	C_N->Y (RR)	0.18160	0.75169	6.81089
	D_N->Y (RR)	0.11338	0.67944	6.67855

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4bb_1	A->Y (RF)	0.01779	0.22262	1.74231
	B->Y (RF)	0.01812	0.21658	1.70445
	C_N->Y (FF)	0.07625	0.38233	2.62598
	D_N->Y (FF)	0.06448	0.35973	2.52476
sky130_fd_sc_hs__nor4bb_2	A->Y (RF)	0.01509	0.17273	1.45219
	B->Y (RF)	0.01565	0.16972	1.46568
	C_N->Y (FF)	0.07837	0.38869	2.71912
	D_N->Y (FF)	0.06806	0.37423	2.69483
sky130_fd_sc_hs__nor4bb_4	A->Y (RF)	0.01615	0.16167	1.63940
	B->Y (RF)	0.01638	0.14892	1.52740
	C_N->Y (FF)	0.08173	0.37056	2.40666
	D_N->Y (FF)	0.07612	0.36485	2.44978

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00236	0.00223	0.00292
	A	0.00642	0.00631	0.00701
	B	0.00232	0.00219	0.00307
	B	0.00579	0.00567	0.00655
	C_N	0.00765	0.00809	0.02919
	C_N	0.00545	0.00592	0.02700
	D_N	0.00629	0.00686	0.02974
	D_N	0.00433	0.00490	0.02782
sky130_fd_sc_hs__nor4bb_2	A	0.00435	0.00416	0.00543
	A	0.01232	0.01216	0.01346
	B	0.00431	0.00409	0.00582
	B	0.01097	0.01078	0.01254
	C_N	0.01114	0.01147	0.03388
	C_N	0.00923	0.00957	0.03201
	D_N	0.00932	0.00971	0.03274
	D_N	0.00765	0.00804	0.03115
sky130_fd_sc_hs__nor4bb_4	A	0.00899	0.00855	0.01142
	A	0.02440	0.02395	0.02691
	B	0.00875	0.00834	0.01206
	B	0.02205	0.02164	0.02540
	C_N	0.02015	0.02053	0.05707
	C_N	0.01807	0.01847	0.05573
	D_N	0.01636	0.01708	0.05500
	D_N	0.01445	0.01516	0.05311

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	A	0.00591	0.00581	0.00726
	A	0.00192	0.00180	0.00328
	B	0.00484	0.00477	0.00622
	B	0.00138	0.00130	0.00276
	C_N	0.00453	0.00590	0.02768
	C_N	0.00673	0.00810	0.02987
	D_N	0.00330	0.00481	0.02624
	D_N	0.00524	0.00676	0.02818
sky130_fd_sc_hs__nor4bb_2	A	0.01185	0.01154	0.01454
	A	0.00409	0.00375	0.00681
	B	0.00897	0.00889	0.01191
	B	0.00234	0.00221	0.00526
	C_N	0.00841	0.00949	0.03099
	C_N	0.01031	0.01140	0.03288
	D_N	0.00584	0.00720	0.02896
	D_N	0.00752	0.00888	0.03062
sky130_fd_sc_hs__nor4bb_4	A	0.02266	0.02222	0.02844
	A	0.00768	0.00716	0.01349
	B	0.01809	0.01770	0.02424
	B	0.00499	0.00455	0.01111
	C_N	0.01546	0.01720	0.05225
	C_N	0.01752	0.01928	0.05432
	D_N	0.01220	0.01446	0.05251
	D_N	0.01410	0.01637	0.05440

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)**	0.00139	0.00139	0.00137
	(B * C_N * D_N * !Y)	-0.00126	-0.00131	-0.00131
	(B * !D_N * !Y)	0.00139	0.00138	0.00137
	(B * !D_N * !Y)	-0.00127	-0.00131	-0.00131
	(B * !C_N * D_N * !Y)	0.00127	0.00128	0.00127
	(B * !C_N * D_N * !Y)	-0.00139	-0.00142	-0.00142
	(!B * C_N * !D_N * !Y)	0.00145	0.00141	0.00139
	(!B * C_N * !D_N * !Y)	-0.00118	-0.00127	-0.00126
	(!B * !C_N * D_N * !Y)	0.00127	0.00127	0.00127
	(!B * !C_N * D_N * !Y)	-0.00130	-0.00139	-0.00138
	(!B * !C_N * !D_N * !Y)	0.00126	0.00127	0.00126
	(!B * !C_N * !D_N * !Y)	-0.00130	-0.00139	-0.00138
sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	0.00245	0.00244	0.00241
	(B * C_N * D_N * !Y)	-0.00260	-0.00273	-0.00271
	(B * !D_N * !Y)	0.00245	0.00244	0.00241
	(B * !D_N * !Y)	-0.00260	-0.00273	-0.00271
	(B * !C_N * D_N * !Y)	0.00242	0.00244	0.00241
	(B * !C_N * D_N * !Y)	-0.00262	-0.00273	-0.00271
	(!B * C_N * !D_N * !Y)	0.00257	0.00250	0.00246
	(!B * C_N * !D_N * !Y)	-0.00240	-0.00262	-0.00259
	(!B * !C_N * D_N * !Y)	0.00240	0.00243	0.00241
	(!B * !C_N * D_N * !Y)	-0.00245	-0.00264	-0.00263
	(!B * !C_N * !D_N * !Y)	0.00242	0.00243	0.00241
	(!B * !C_N * !D_N * !Y)	-0.00247	-0.00264	-0.00263

sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	0.00477	0.00474	0.00470
	(B * C_N * D_N * !Y)	-0.00499	-0.00523	-0.00523
	(B * !D_N * !Y)	0.00479	0.00475	0.00471
	(B * !D_N * !Y)	-0.00501	-0.00523	-0.00522
	(B * !C_N * D_N * !Y)	0.00470	0.00472	0.00469
	(B * !C_N * D_N * !Y)	-0.00507	-0.00525	-0.00524
	(!B * C_N * !D_N * !Y)	0.00501	0.00488	0.00477
	(!B * C_N * !D_N * !Y)	-0.00460	-0.00502	-0.00496
	(!B * !C_N * D_N * !Y)	0.00468	0.00475	0.00469
	(!B * !C_N * D_N * !Y)	-0.00472	-0.00508	-0.00506
	(!B * !C_N * !D_N * !Y)	0.00467	0.00468	0.00468
	(!B * !C_N * !D_N * !Y)	-0.00473	-0.00509	-0.00506

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)**	-0.00136	-0.00136	-0.00136
	(B * C_N * D_N * !Y)	0.00131	0.00131	0.00131
	(B * !D_N * !Y)	-0.00136	-0.00136	-0.00136
	(B * !D_N * !Y)	0.00131	0.00131	0.00131
	(B * !C_N * D_N * !Y)	-0.00126	-0.00126	-0.00126
	(B * !C_N * D_N * !Y)	0.00141	0.00142	0.00142
	(!B * C_N * !D_N * !Y)	-0.00140	-0.00141	-0.00139
	(!B * C_N * !D_N * !Y)	0.00125	0.00127	0.00126
	(!B * !C_N * D_N * !Y)	-0.00126	-0.00126	-0.00126
	(!B * !C_N * D_N * !Y)	0.00138	0.00139	0.00138
	(!B * !C_N * !D_N * !Y)	-0.00126	-0.00127	-0.00126
	(!B * !C_N * !D_N * !Y)	0.00137	0.00139	0.00138

sky130_fd_sc_hs__nor4bb_2	**(B * C_N * D_N * !Y)**	-0.00241	-0.00242	-0.00241
	(B * C_N * D_N * !Y)	0.00271	0.00273	0.00271
	(B * !D_N * !Y)	-0.00241	-0.00242	-0.00241
	(B * !D_N * !Y)	0.00271	0.00273	0.00271
	(B * !C_N * D_N * !Y)	-0.00241	-0.00242	-0.00241
	(B * !C_N * D_N * !Y)	0.00271	0.00273	0.00271
	(!B * C_N * !D_N * !Y)	-0.00249	-0.00250	-0.00246
	(!B * C_N * !D_N * !Y)	0.00258	0.00262	0.00259
	(!B * !C_N * D_N * !Y)	-0.00240	-0.00241	-0.00241
	(!B * !C_N * D_N * !Y)	0.00262	0.00264	0.00263
	(!B * !C_N * !D_N * !Y)	-0.00240	-0.00241	-0.00241
	(!B * !C_N * !D_N * !Y)	0.00262	0.00264	0.00263
sky130_fd_sc_hs__nor4bb_4	**(B * C_N * D_N * !Y)**	-0.00468	-0.00470	-0.00468
	(B * C_N * D_N * !Y)	0.00522	0.00527	0.00523
	(B * !D_N * !Y)	-0.00470	-0.00472	-0.00470
	(B * !D_N * !Y)	0.00521	0.00526	0.00522
	(B * !C_N * D_N * !Y)	-0.00467	-0.00469	-0.00467
	(B * !C_N * D_N * !Y)	0.00523	0.00528	0.00524
	(!B * C_N * !D_N * !Y)	-0.00486	-0.00488	-0.00477
	(!B * C_N * !D_N * !Y)	0.00497	0.00502	0.00496
	(!B * !C_N * D_N * !Y)	-0.00468	-0.00469	-0.00467
	(!B * !C_N * D_N * !Y)	0.00506	0.00508	0.00506
	(!B * !C_N * !D_N * !Y)	-0.00467	-0.00468	-0.00467
	(!B * !C_N * !D_N * !Y)	0.00507	0.00509	0.00506

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)**	0.00147	0.00148	0.00147
	(A * C_N * D_N * !Y)	-0.00075	-0.00075	-0.00075
	(A * C_N * !D_N * !Y)	0.00159	0.00164	0.00163
	(A * C_N * !D_N * !Y)	-0.00088	-0.00087	-0.00087
	(A * !C_N * D_N * !Y)	0.00134	0.00134	0.00133
	(A * !C_N * D_N * !Y)	-0.00103	-0.00103	-0.00103
	(A * !C_N * !D_N * !Y)	0.00133	0.00134	0.00132
	(A * !C_N * !D_N * !Y)	-0.00108	-0.00108	-0.00108
	(!A * C_N * !D_N * !Y)	0.00159	0.00150	0.00148
	(!A * C_N * !D_N * !Y)	-0.00114	-0.00124	-0.00124
	(!A * !C_N * D_N * !Y)	0.00134	0.00133	0.00132
	(!A * !C_N * D_N * !Y)	-0.00139	-0.00143	-0.00143
	(!A * !C_N * !D_N * !Y)	0.00132	0.00133	0.00132
	(!A * !C_N * !D_N * !Y)	-0.00141	-0.00143	-0.00143
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	0.00262	0.00263	0.00260
	(A * C_N * D_N * !Y)	-0.00168	-0.00168	-0.00167
	(A * C_N * !D_N * !Y)	0.00282	0.00293	0.00292
	(A * C_N * !D_N * !Y)	-0.00192	-0.00194	-0.00192
	(A * !C_N * D_N * !Y)	0.00252	0.00256	0.00253
	(A * !C_N * D_N * !Y)	-0.00202	-0.00205	-0.00203
	(A * !C_N * !D_N * !Y)	0.00253	0.00256	0.00252
	(A * !C_N * !D_N * !Y)	-0.00213	-0.00212	-0.00212
	(!A * C_N * !D_N * !Y)	0.00284	0.00268	0.00262
	(!A * C_N * !D_N * !Y)	-0.00254	-0.00269	-0.00269
	(!A * !C_N * D_N * !Y)	0.00258	0.00253	0.00252
	(!A * !C_N * D_N * !Y)	-0.00277	-0.00287	-0.00286
	(!A * !C_N * !D_N * !Y)	0.00252	0.00253	0.00252
	(!A * !C_N * !D_N * !Y)	-0.00282	-0.00285	-0.00286

sky130_fd_sc_hs__nor4bb_4	**(A * C_N * D_N * !Y)**	0.00505	0.00514	0.00504
	(A * C_N * D_N * !Y)	-0.00331	-0.00335	-0.00330
	(A * C_N * !D_N * !Y)	0.00554	0.00574	0.00572
	(A * C_N * !D_N * !Y)	-0.00373	-0.00381	-0.00375
	(A * !C_N * D_N * !Y)	0.00488	0.00487	0.00486
	(A * !C_N * D_N * !Y)	-0.00398	-0.00400	-0.00399
	(A * !C_N * !D_N * !Y)	0.00485	0.00491	0.00483
	(A * !C_N * !D_N * !Y)	-0.00420	-0.00426	-0.00422
	(!A * C_N * !D_N * !Y)	0.00558	0.00521	0.00508
	(!A * C_N * !D_N * !Y)	-0.00487	-0.00534	-0.00528
	(!A * !C_N * D_N * !Y)	0.00493	0.00489	0.00484
	(!A * !C_N * D_N * !Y)	-0.00545	-0.00565	-0.00566
	(!A * !C_N * !D_N * !Y)	0.00482	0.00488	0.00483
	(!A * !C_N * !D_N * !Y)	-0.00554	-0.00566	-0.00566

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)**	-0.00146	-0.00146	-0.00146
	(A * C_N * D_N * !Y)	0.00076	0.00077	0.00076
	(A * C_N * !D_N * !Y)	-0.00156	-0.00156	-0.00156
	(A * C_N * !D_N * !Y)	0.00088	0.00087	0.00087
	(A * !C_N * D_N * !Y)	-0.00131	-0.00132	-0.00132
	(A * !C_N * D_N * !Y)	0.00103	0.00103	0.00103
	(A * !C_N * !D_N * !Y)	-0.00132	-0.00132	-0.00132
	(A * !C_N * !D_N * !Y)	0.00108	0.00108	0.00108
	(!A * C_N * !D_N * !Y)	-0.00151	-0.00150	-0.00148
	(!A * C_N * !D_N * !Y)	0.00124	0.00124	0.00124
	(!A * !C_N * D_N * !Y)	-0.00131	-0.00132	-0.00131
	(!A * !C_N * D_N * !Y)	0.00143	0.00144	0.00143
	(!A * !C_N * !D_N * !Y)	-0.00131	-0.00132	-0.00131
	(!A * !C_N * !D_N * !Y)	0.00143	0.00144	0.00143
sky130_fd_sc_hs__nor4bb_2	**(A * C_N * D_N * !Y)**	-0.00256	-0.00259	-0.00259
	(A * C_N * D_N * !Y)	0.00168	0.00171	0.00170
	(A * C_N * !D_N * !Y)	-0.00279	-0.00282	-0.00280
	(A * C_N * !D_N * !Y)	0.00192	0.00194	0.00192
	(A * !C_N * D_N * !Y)	-0.00251	-0.00253	-0.00252
	(A * !C_N * D_N * !Y)	0.00202	0.00205	0.00203
	(A * !C_N * !D_N * !Y)	-0.00252	-0.00251	-0.00251
	(A * !C_N * !D_N * !Y)	0.00213	0.00212	0.00212
	(!A * C_N * !D_N * !Y)	-0.00270	-0.00268	-0.00262
	(!A * C_N * !D_N * !Y)	0.00269	0.00269	0.00269
	(!A * !C_N * D_N * !Y)	-0.00251	-0.00252	-0.00251
	(!A * !C_N * D_N * !Y)	0.00285	0.00289	0.00286
	(!A * !C_N * !D_N * !Y)	-0.00250	-0.00251	-0.00251
	(!A * !C_N * !D_N * !Y)	0.00285	0.00285	0.00286

sky130_fd_sc_hs__nor4bb_4	(A * C_N * D_N * !Y)	-0.00500	-0.00498	-0.00500
	(A * C_N * D_N * !Y)	0.00337	0.00335	0.00336
	(A * C_N * !D_N * !Y)	-0.00544	-0.00551	-0.00546
	(A * C_N * !D_N * !Y)	0.00373	0.00381	0.00375
	(A * !C_N * D_N * !Y)	-0.00482	-0.00485	-0.00483
	(A * !C_N * D_N * !Y)	0.00398	0.00400	0.00399
	(A * !C_N * !D_N * !Y)	-0.00481	-0.00485	-0.00482
	(A * !C_N * !D_N * !Y)	0.00420	0.00426	0.00422
	(!A * C_N * !D_N * !Y)	-0.00525	-0.00521	-0.00508
	(!A * C_N * !D_N * !Y)	0.00529	0.00534	0.00528
	(!A * !C_N * D_N * !Y)	-0.00483	-0.00482	-0.00482
	(!A * !C_N * D_N * !Y)	0.00566	0.00565	0.00566
	(!A * !C_N * !D_N * !Y)	-0.00482	-0.00482	-0.00482
	(!A * !C_N * !D_N * !Y)	0.00566	0.00566	0.00566

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00384	0.00423	0.02648
	(B * !Y)	0.00097	0.00136	0.02360
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00390	0.00430	0.02650
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00096	0.00135	0.02357
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00434	0.00472	0.02689
	(B * !Y)	0.00126	0.00163	0.02382
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00448	0.00485	0.02699
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00129	0.00165	0.02381
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00691	0.00721	0.04405
	(B * !Y)	0.00259	0.00287	0.03975
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00708	0.00737	0.04416
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00257	0.00285	0.03969

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4bb_1	(B * !Y)	0.00142	0.00257	0.02512
	(B * !Y)	0.00429	0.00545	0.02799
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00143	0.00258	0.02511
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00430	0.00546	0.02798
sky130_fd_sc_hs__nor4bb_2	(B * !Y)	0.00274	0.00360	0.02578
	(B * !Y)	0.00581	0.00667	0.02885
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00274	0.00361	0.02578
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00582	0.00668	0.02886
sky130_fd_sc_hs__nor4bb_4	(B * !Y)	0.00498	0.00677	0.04491
	(B * !Y)	0.00925	0.01106	0.04919
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00501	0.00681	0.04493
	(A * !B * !Y) + (!A * !B * !D_N * !Y)	0.00929	0.01108	0.04922

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)	0.00339	0.00388	0.02650
	(B * C_N * !Y)	0.00078	0.00125	0.02389
	(A * !B * C_N * !Y)	0.00347	0.00395	0.02655
	(A * !B * C_N * !Y)	0.00083	0.00129	0.02392
	(!C_N * !Y)	0.00363	0.00412	0.02675
	(!C_N * !Y)	0.00103	0.00149	0.02414
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00420	0.00464	0.02688
	(B * C_N * !Y)	0.00137	0.00181	0.02405
	(A * !B * C_N * !Y)	0.00441	0.00484	0.02703
	(A * !B * C_N * !Y)	0.00149	0.00192	0.02414
	(!C_N * !Y)	0.00447	0.00490	0.02716
	(!C_N * !Y)	0.00166	0.00209	0.02435
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00642	0.00694	0.04354
	(B * C_N * !Y)	0.00232	0.00282	0.03947
	(A * !B * C_N * !Y)	0.00675	0.00726	0.04378
	(A * !B * C_N * !Y)	0.00252	0.00303	0.03961
	(!C_N * !Y)	0.00685	0.00737	0.04405
	(!C_N * !Y)	0.00280	0.00331	0.04002

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)	0.00128	0.00249	0.02536
	(B * C_N * !Y)	0.00390	0.00511	0.02797
	(A * !B * C_N * !Y)	0.00128	0.00249	0.02536
	(A * !B * C_N * !Y)	0.00390	0.00511	0.02797
	(!C_N * !Y)	0.00100	0.00220	0.02508
	(!C_N * !Y)	0.00362	0.00482	0.02769
sky130_fd_sc_hs__nor4bb_2	(B * C_N * !Y)	0.00246	0.00337	0.02566
	(B * C_N * !Y)	0.00526	0.00618	0.02846
	(A * !B * C_N * !Y)	0.00247	0.00337	0.02566
	(A * !B * C_N * !Y)	0.00526	0.00618	0.02846
	(!C_N * !Y)	0.00212	0.00303	0.02532
	(!C_N * !Y)	0.00492	0.00584	0.02813
sky130_fd_sc_hs__nor4bb_4	(B * C_N * !Y)	0.00590	0.00773	0.04606
	(B * C_N * !Y)	0.00993	0.01179	0.05010
	(A * !B * C_N * !Y)	0.00590	0.00773	0.04606
	(A * !B * C_N * !Y)	0.00993	0.01179	0.05010
	(!C_N * !Y)	0.00525	0.00708	0.04543
	(!C_N * !Y)	0.00928	0.01114	0.04947

SKY130_FD_SC_HS__NOR4Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00255	0.00266	0.00265	0.00208	0.28487
sky130_fd_sc_hs__nor4b_2	0.00502	0.00509	0.00513	0.00242	0.48621
sky130_fd_sc_hs__nor4b_4	0.00984	0.00990	0.01007	0.00362	0.88257

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4b_1	0.00000	0.11929	0.24135
sky130_fd_sc_hs__nor4b_2	0.00000	0.03892	0.08326
sky130_fd_sc_hs__nor4b_4	0.00000	0.24768	0.50814

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)	0.19193	1.25550	10.79380
	B->Y (FR)	0.18141	1.25516	11.15290
	C->Y (FR)	0.15341	1.24217	11.47450
	D_N->Y (RR)	0.12931	0.93036	6.37258
sky130_fd_sc_hs__nor4b_2	A->Y (FR)	0.20453	1.12294	10.67770
	B->Y (FR)	0.18991	1.11041	11.01350
	C->Y (FR)	0.15962	1.10495	11.53270
	D_N->Y (RR)	0.11087	0.77235	6.31517
sky130_fd_sc_hs__nor4b_4	A->Y (FR)	0.20292	0.97047	10.43730
	B->Y (FR)	0.18864	0.96112	10.82820
	C->Y (FR)	0.15552	0.95264	11.33480
	D_N->Y (RR)	0.11911	0.67987	6.58172

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4b_1	A->Y (RF)	0.01810	0.22858	1.80735
	B->Y (RF)	0.01890	0.22581	1.79878
	C->Y (RF)	0.01886	0.21969	1.78703
	D_N->Y (FF)	0.06512	0.36449	2.62258
sky130_fd_sc_hs__nor4b_2	A->Y (RF)	0.01503	0.17217	1.46435
	B->Y (RF)	0.01559	0.17008	1.47903
	C->Y (RF)	0.01723	0.16901	1.51935
	D_N->Y (FF)	0.07029	0.37672	2.61673
sky130_fd_sc_hs__nor4b_4	A->Y (RF)	0.01544	0.14776	1.45923
	B->Y (RF)	0.01543	0.14178	1.42486
	C->Y (RF)	0.01547	0.12709	1.32680
	D_N->Y (FF)	0.07422	0.35885	2.37356

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00136	0.00124	0.00190
	A	0.00604	0.00592	0.00661
	B	0.00135	0.00122	0.00207
	B	0.00540	0.00527	0.00613
	C	0.00118	0.00105	0.00231
	C	0.00473	0.00462	0.00588
	D_N	0.00604	0.00658	0.02782
	D_N	0.00409	0.00463	0.02590
sky130_fd_sc_hs__nor4b_2	A	0.00240	0.00221	0.00349
	A	0.01254	0.01237	0.01369
	B	0.00243	0.00221	0.00395
	B	0.01112	0.01090	0.01266
	C	0.00233	0.00211	0.00473
	C	0.00968	0.00948	0.01210
	D_N	0.00894	0.00930	0.03203
	D_N	0.00775	0.00811	0.03088
sky130_fd_sc_hs__nor4b_4	A	0.00479	0.00436	0.00708
	A	0.02473	0.02434	0.02713
	B	0.00479	0.00433	0.00796
	B	0.02190	0.02146	0.02516
	C	0.00452	0.00411	0.00942
	C	0.01903	0.01868	0.02326
	D_N	0.01568	0.01619	0.05384
	D_N	0.01490	0.01542	0.05310

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	A	0.00662	0.00652	0.00792
	A	0.00205	0.00195	0.00337
	B	0.00549	0.00543	0.00683
	B	0.00149	0.00142	0.00284
	C	0.00432	0.00435	0.00576
	C	0.00077	0.00080	0.00221
	D_N	0.00351	0.00479	0.02699
	D_N	0.00544	0.00673	0.02892
sky130_fd_sc_hs__nor4b_2	A	0.01385	0.01354	0.01645
	A	0.00403	0.00370	0.00669
	B	0.01096	0.01083	0.01379
	B	0.00242	0.00226	0.00526
	C	0.00843	0.00843	0.01142
	C	0.00111	0.00109	0.00409
	D_N	0.00647	0.00784	0.02734
	D_N	0.00767	0.00905	0.02853
sky130_fd_sc_hs__nor4b_4	A	0.02690	0.02638	0.03220
	A	0.00755	0.00699	0.01295
	B	0.02140	0.02106	0.02710
	B	0.00457	0.00418	0.01030
	C	0.01624	0.01622	0.02241
	C	0.00179	0.00169	0.00797
	D_N	0.01311	0.01525	0.05091
	D_N	0.01390	0.01604	0.05168

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)**	0.00122	0.00123	0.00122
	(B * C * D_N * !Y)	-0.00127	-0.00131	-0.00131
	(B * !D_N * !Y)	0.00117	0.00118	0.00117
	(B * !D_N * !Y)	-0.00132	-0.00136	-0.00136
	(B * !C * D_N * !Y)	0.00122	0.00123	0.00122
	(B * !C * D_N * !Y)	-0.00126	-0.00131	-0.00131
	(!B * C * D_N * !Y)	0.00122	0.00123	0.00122
	(!B * C * D_N * !Y)	-0.00118	-0.00127	-0.00126
	(!B * C * !D_N * !Y)	0.00117	0.00117	0.00117
	(!B * C * !D_N * !Y)	-0.00123	-0.00132	-0.00131
	(!B * !C * !D_N * !Y)	0.00117	0.00118	0.00117
	(!B * !C * !D_N * !Y)	-0.00123	-0.00132	-0.00130
sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	0.00246	0.00249	0.00246
	(B * C * D_N * !Y)	-0.00263	-0.00276	-0.00274
	(B * !D_N * !Y)	0.00246	0.00249	0.00246
	(B * !D_N * !Y)	-0.00264	-0.00276	-0.00274
	(B * !C * D_N * !Y)	0.00246	0.00249	0.00246
	(B * !C * D_N * !Y)	-0.00262	-0.00276	-0.00274
	(!B * C * D_N * !Y)	0.00247	0.00248	0.00246
	(!B * C * D_N * !Y)	-0.00247	-0.00266	-0.00265
	(!B * C * !D_N * !Y)	0.00247	0.00248	0.00246
	(!B * C * !D_N * !Y)	-0.00247	-0.00267	-0.00265
	(!B * !C * !D_N * !Y)	0.00248	0.00248	0.00246
	(!B * !C * !D_N * !Y)	-0.00245	-0.00264	-0.00262

sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	0.00482	0.00486	0.00480
	(B * C * D_N * !Y)	-0.00520	-0.00543	-0.00539
	(B * !D_N * !Y)	0.00481	0.00486	0.00480
	(B * !D_N * !Y)	-0.00521	-0.00544	-0.00539
	(B * !C * D_N * !Y)	0.00482	0.00486	0.00480
	(B * !C * D_N * !Y)	-0.00517	-0.00543	-0.00539
	(!B * C * D_N * !Y)	0.00480	0.00485	0.00480
	(!B * C * D_N * !Y)	-0.00484	-0.00524	-0.00521
	(!B * C * !D_N * !Y)	0.00479	0.00484	0.00480
	(!B * C * !D_N * !Y)	-0.00485	-0.00524	-0.00521
	(!B * !C * !D_N * !Y)	0.00480	0.00485	0.00480
	(!B * !C * !D_N * !Y)	-0.00480	-0.00520	-0.00515

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)**	-0.00121	-0.00121	-0.00121
	(B * C * D_N * !Y)	0.00131	0.00131	0.00131
	(B * !D_N * !Y)	-0.00116	-0.00117	-0.00117
	(B * !D_N * !Y)	0.00135	0.00136	0.00136
	(B * !C * D_N * !Y)	-0.00121	-0.00121	-0.00121
	(B * !C * D_N * !Y)	0.00131	0.00131	0.00131
	(!B * C * D_N * !Y)	-0.00121	-0.00122	-0.00121
	(!B * C * D_N * !Y)	0.00126	0.00127	0.00126
	(!B * C * !D_N * !Y)	-0.00116	-0.00117	-0.00117
	(!B * C * !D_N * !Y)	0.00131	0.00132	0.00131
	(!B * !C * !D_N * !Y)	-0.00116	-0.00117	-0.00117
	(!B * !C * !D_N * !Y)	0.00130	0.00132	0.00130

sky130_fd_sc_hs__nor4b_2	**(B * C * D_N * !Y)**	-0.00246	-0.00246	-0.00245
	(B * C * D_N * !Y)	0.00274	0.00276	0.00274
	(B * !D_N * !Y)	-0.00246	-0.00246	-0.00245
	(B * !D_N * !Y)	0.00274	0.00276	0.00274
	(B * !C * D_N * !Y)	-0.00246	-0.00246	-0.00245
	(B * !C * D_N * !Y)	0.00274	0.00276	0.00274
	(!B * C * D_N * !Y)	-0.00245	-0.00246	-0.00245
	(!B * C * D_N * !Y)	0.00264	0.00266	0.00265
	(!B * C * !D_N * !Y)	-0.00245	-0.00246	-0.00245
	(!B * C * !D_N * !Y)	0.00263	0.00267	0.00265
	(!B * !C * !D_N * !Y)	-0.00245	-0.00247	-0.00246
	(!B * !C * !D_N * !Y)	0.00261	0.00264	0.00262
sky130_fd_sc_hs__nor4b_4	**(B * C * D_N * !Y)**	-0.00479	-0.00481	-0.00478
	(B * C * D_N * !Y)	0.00540	0.00544	0.00539
	(B * !D_N * !Y)	-0.00479	-0.00481	-0.00479
	(B * !D_N * !Y)	0.00539	0.00544	0.00539
	(B * !C * D_N * !Y)	-0.00479	-0.00481	-0.00478
	(B * !C * D_N * !Y)	0.00539	0.00544	0.00539
	(!B * C * D_N * !Y)	-0.00477	-0.00480	-0.00478
	(!B * C * D_N * !Y)	0.00519	0.00524	0.00521
	(!B * C * !D_N * !Y)	-0.00478	-0.00480	-0.00479
	(!B * C * !D_N * !Y)	0.00519	0.00524	0.00521
	(!B * !C * !D_N * !Y)	-0.00478	-0.00482	-0.00479
	(!B * !C * !D_N * !Y)	0.00513	0.00520	0.00515

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)**	0.00127	0.00128	0.00126
	(A * C * D_N * !Y)	-0.00087	-0.00088	-0.00087
	(A * C * !D_N * !Y)	0.00120	0.00122	0.00120
	(A * C * !D_N * !Y)	-0.00097	-0.00097	-0.00097
	(A * !C * D_N * !Y)	0.00125	0.00127	0.00125
	(A * !C * D_N * !Y)	-0.00075	-0.00076	-0.00075
	(A * !C * !D_N * !Y)	0.00120	0.00121	0.00120
	(A * !C * !D_N * !Y)	-0.00093	-0.00092	-0.00092
	(!A * C * D_N * !Y)	0.00128	0.00126	0.00125
	(!A * C * D_N * !Y)	-0.00122	-0.00128	-0.00129
	(!A * C * !D_N * !Y)	0.00120	0.00121	0.00120
	(!A * C * !D_N * !Y)	-0.00130	-0.00134	-0.00134
	(!A * !C * !D_N * !Y)	0.00121	0.00121	0.00120
	(!A * !C * !D_N * !Y)	-0.00119	-0.00130	-0.00129
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	0.00251	0.00255	0.00251
	(A * C * D_N * !Y)	-0.00190	-0.00192	-0.00190
	(A * C * !D_N * !Y)	0.00253	0.00254	0.00251
	(A * C * !D_N * !Y)	-0.00200	-0.00200	-0.00199
	(A * !C * D_N * !Y)	0.00252	0.00253	0.00251
	(A * !C * D_N * !Y)	-0.00165	-0.00166	-0.00164
	(A * !C * !D_N * !Y)	0.00253	0.00255	0.00253
	(A * !C * !D_N * !Y)	-0.00189	-0.00191	-0.00189
	(!A * C * D_N * !Y)	0.00255	0.00252	0.00250
	(!A * C * D_N * !Y)	-0.00261	-0.00273	-0.00275
	(!A * C * !D_N * !Y)	0.00250	0.00251	0.00250
	(!A * C * !D_N * !Y)	-0.00266	-0.00273	-0.00275
	(!A * !C * !D_N * !Y)	0.00254	0.00253	0.00250
	(!A * !C * !D_N * !Y)	-0.00250	-0.00266	-0.00265

sky130_fd_sc_hs__nor4b_4	**(A * C * D_N * !Y)**	0.00490	0.00497	0.00490
	(A * C * D_N * !Y)	-0.00372	-0.00376	-0.00372
	(A * C * !D_N * !Y)	0.00488	0.00496	0.00490
	(A * C * !D_N * !Y)	-0.00391	-0.00390	-0.00389
	(A * !C * D_N * !Y)	0.00492	0.00494	0.00489
	(A * !C * D_N * !Y)	-0.00324	-0.00325	-0.00322
	(A * !C * !D_N * !Y)	0.00490	0.00496	0.00492
	(A * !C * !D_N * !Y)	-0.00370	-0.00374	-0.00370
	(!A * C * D_N * !Y)	0.00502	0.00491	0.00489
	(!A * C * D_N * !Y)	-0.00517	-0.00542	-0.00544
	(!A * C * !D_N * !Y)	0.00490	0.00490	0.00488
	(!A * C * !D_N * !Y)	-0.00528	-0.00547	-0.00544
	(!A * !C * !D_N * !Y)	0.00495	0.00492	0.00489
	(!A * !C * !D_N * !Y)	-0.00491	-0.00526	-0.00524

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)**	-0.00125	-0.00125	-0.00125
	(A * C * D_N * !Y)	0.00087	0.00088	0.00087
	(A * C * !D_N * !Y)	-0.00120	-0.00120	-0.00120
	(A * C * !D_N * !Y)	0.00097	0.00097	0.00097
	(A * !C * D_N * !Y)	-0.00125	-0.00125	-0.00124
	(A * !C * D_N * !Y)	0.00077	0.00077	0.00077
	(A * !C * !D_N * !Y)	-0.00120	-0.00119	-0.00120
	(A * !C * !D_N * !Y)	0.00093	0.00092	0.00092
	(!A * C * D_N * !Y)	-0.00124	-0.00124	-0.00124
	(!A * C * D_N * !Y)	0.00129	0.00128	0.00129
	(!A * C * !D_N * !Y)	-0.00120	-0.00120	-0.00120
	(!A * C * !D_N * !Y)	0.00133	0.00134	0.00134
	(!A * !C * !D_N * !Y)	-0.00119	-0.00120	-0.00120
	(!A * !C * !D_N * !Y)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__nor4b_2	**(A * C * D_N * !Y)**	-0.00250	-0.00252	-0.00250
	(A * C * D_N * !Y)	0.00190	0.00192	0.00190
	(A * C * !D_N * !Y)	-0.00250	-0.00250	-0.00250
	(A * C * !D_N * !Y)	0.00200	0.00200	0.00199
	(A * !C * D_N * !Y)	-0.00248	-0.00250	-0.00248
	(A * !C * D_N * !Y)	0.00166	0.00168	0.00167
	(A * !C * !D_N * !Y)	-0.00251	-0.00253	-0.00252
	(A * !C * !D_N * !Y)	0.00189	0.00191	0.00189
	(!A * C * D_N * !Y)	-0.00249	-0.00249	-0.00250
	(!A * C * D_N * !Y)	0.00274	0.00273	0.00275
	(!A * C * !D_N * !Y)	-0.00249	-0.00249	-0.00250
	(!A * C * !D_N * !Y)	0.00274	0.00273	0.00275
	(!A * !C * !D_N * !Y)	-0.00251	-0.00251	-0.00250
	(!A * !C * !D_N * !Y)	0.00265	0.00266	0.00265

sky130_fd_sc_hs__nor4b_4	(A * C * D_N * !Y)	-0.00487	-0.00490	-0.00488
	(A * C * D_N * !Y)	0.00372	0.00376	0.00372
	(A * C * !D_N * !Y)	-0.00488	-0.00489	-0.00488
	(A * C * !D_N * !Y)	0.00391	0.00390	0.00389
	(A * !C * D_N * !Y)	-0.00485	-0.00488	-0.00485
	(A * !C * D_N * !Y)	0.00325	0.00328	0.00327
	(A * !C * !D_N * !Y)	-0.00489	-0.00493	-0.00490
	(A * !C * !D_N * !Y)	0.00370	0.00374	0.00370
	(!A * C * D_N * !Y)	-0.00487	-0.00486	-0.00487
	(!A * C * D_N * !Y)	0.00544	0.00542	0.00544
	(!A * C * !D_N * !Y)	-0.00486	-0.00490	-0.00487
	(!A * C * !D_N * !Y)	0.00542	0.00548	0.00544
	(!A * !C * !D_N * !Y)	-0.00489	-0.00490	-0.00488
	(!A * !C * !D_N * !Y)	0.00524	0.00526	0.00524

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)	0.00142	0.00144	0.00142
	(B * D_N * !Y)	-0.00075	-0.00076	-0.00075
	(B * !D_N * !Y)	0.00121	0.00124	0.00121
	(B * !D_N * !Y)	-0.00108	-0.00109	-0.00109
	(A * !B * D_N * !Y)	0.00143	0.00144	0.00142
	(A * !B * D_N * !Y)	-0.00075	-0.00075	-0.00075
	(A * !B * !D_N * !Y)	0.00123	0.00121	0.00120
	(A * !B * !D_N * !Y)	-0.00111	-0.00111	-0.00111
	(!A * !B * !D_N * !Y)	0.00138	0.00122	0.00121
	(!A * !B * !D_N * !Y)	-0.00131	-0.00150	-0.00150

sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	0.00271	0.00272	0.00270
	(B * D_N * !Y)	-0.00155	-0.00155	-0.00154
	(B * !D_N * !Y)	0.00258	0.00258	0.00258
	(B * !D_N * !Y)	-0.00191	-0.00193	-0.00192
	(A * !B * D_N * !Y)	0.00269	0.00273	0.00270
	(A * !B * D_N * !Y)	-0.00153	-0.00155	-0.00154
	(A * !B * !D_N * !Y)	0.00258	0.00259	0.00256
	(A * !B * !D_N * !Y)	-0.00199	-0.00199	-0.00198
	(!A * !B * !D_N * !Y)	0.00290	0.00258	0.00254
	(!A * !B * !D_N * !Y)	-0.00239	-0.00278	-0.00277
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	0.00531	0.00536	0.00530
	(B * D_N * !Y)	-0.00307	-0.00309	-0.00306
	(B * !D_N * !Y)	0.00523	0.00525	0.00520
	(B * !D_N * !Y)	-0.00364	-0.00367	-0.00367
	(A * !B * D_N * !Y)	0.00532	0.00537	0.00530
	(A * !B * D_N * !Y)	-0.00305	-0.00307	-0.00305
	(A * !B * !D_N * !Y)	0.00526	0.00523	0.00517
	(A * !B * !D_N * !Y)	-0.00373	-0.00378	-0.00376
	(!A * !B * !D_N * !Y)	0.00592	0.00519	0.00514
	(!A * !B * !D_N * !Y)	-0.00450	-0.00533	-0.00535

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)**	-0.00141	-0.00142	-0.00141
	(B * D_N * !Y)	0.00077	0.00077	0.00077
	(B * !D_N * !Y)	-0.00120	-0.00121	-0.00120
	(B * !D_N * !Y)	0.00108	0.00109	0.00109
	(A * !B * D_N * !Y)	-0.00136	-0.00138	-0.00140
	(A * !B * D_N * !Y)	0.00077	0.00078	0.00076
	(A * !B * !D_N * !Y)	-0.00120	-0.00121	-0.00120
	(A * !B * !D_N * !Y)	0.00111	0.00111	0.00111
	(!A * !B * !D_N * !Y)	-0.00120	-0.00120	-0.00120
	(!A * !B * !D_N * !Y)	0.00150	0.00150	0.00150
sky130_fd_sc_hs__nor4b_2	**(B * D_N * !Y)**	-0.00265	-0.00268	-0.00267
	(B * D_N * !Y)	0.00156	0.00159	0.00158
	(B * !D_N * !Y)	-0.00255	-0.00256	-0.00256
	(B * !D_N * !Y)	0.00191	0.00193	0.00192
	(A * !B * D_N * !Y)	-0.00255	-0.00257	-0.00264
	(A * !B * D_N * !Y)	0.00160	0.00161	0.00158
	(A * !B * !D_N * !Y)	-0.00256	-0.00256	-0.00256
	(A * !B * !D_N * !Y)	0.00199	0.00199	0.00198
	(!A * !B * !D_N * !Y)	-0.00254	-0.00255	-0.00254
	(!A * !B * !D_N * !Y)	0.00276	0.00278	0.00277
sky130_fd_sc_hs__nor4b_4	**(B * D_N * !Y)**	-0.00522	-0.00526	-0.00524
	(B * D_N * !Y)	0.00312	0.00316	0.00315
	(B * !D_N * !Y)	-0.00515	-0.00518	-0.00517
	(B * !D_N * !Y)	0.00364	0.00367	0.00367
	(A * !B * D_N * !Y)	-0.00502	-0.00506	-0.00520
	(A * !B * D_N * !Y)	0.00318	0.00319	0.00312
	(A * !B * !D_N * !Y)	-0.00514	-0.00519	-0.00517
	(A * !B * !D_N * !Y)	0.00373	0.00378	0.00376
	(!A * !B * !D_N * !Y)	-0.00514	-0.00513	-0.00513
	(!A * !B * !D_N * !Y)	0.00535	0.00533	0.00535

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00345	0.00394	0.02645
	(C * !Y)	0.00071	0.00118	0.02371
	(B * !C * !Y)	0.00351	0.00400	0.02650
	(B * !C * !Y)	0.00073	0.00120	0.02372
	(A * !B * !C * !Y)	0.00358	0.00408	0.02653
	(A * !B * !C * !Y)	0.00077	0.00124	0.02372
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00439	0.00479	0.02709
	(C * !Y)	0.00128	0.00167	0.02399
	(B * !C * !Y)	0.00453	0.00493	0.02719
	(B * !C * !Y)	0.00135	0.00174	0.02403
	(A * !B * !C * !Y)	0.00473	0.00512	0.02734
	(A * !B * !C * !Y)	0.00147	0.00185	0.02411
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00669	0.00700	0.04424
	(C * !Y)	0.00215	0.00243	0.03970
	(B * !C * !Y)	0.00697	0.00726	0.04444
	(B * !C * !Y)	0.00230	0.00258	0.03979
	(A * !B * !C * !Y)	0.00734	0.00764	0.04472
	(A * !B * !C * !Y)	0.00252	0.00279	0.03994

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4b_1	(C * !Y)	0.00107	0.00228	0.02502
	(C * !Y)	0.00381	0.00503	0.02777
	(B * !C * !Y)	0.00107	0.00228	0.02502
	(B * !C * !Y)	0.00381	0.00503	0.02777
	(A * !B * !C * !Y)	0.00107	0.00228	0.02498
	(A * !B * !C * !Y)	0.00382	0.00504	0.02773
sky130_fd_sc_hs__nor4b_2	(C * !Y)	0.00226	0.00317	0.02543
	(C * !Y)	0.00536	0.00628	0.02852
	(B * !C * !Y)	0.00226	0.00317	0.02542
	(B * !C * !Y)	0.00536	0.00628	0.02853
	(A * !B * !C * !Y)	0.00226	0.00317	0.02542
	(A * !B * !C * !Y)	0.00536	0.00628	0.02853
sky130_fd_sc_hs__nor4b_4	(C * !Y)	0.00480	0.00659	0.04510
	(C * !Y)	0.00931	0.01112	0.04962
	(B * !C * !Y)	0.00480	0.00659	0.04509
	(B * !C * !Y)	0.00932	0.01113	0.04963
	(A * !B * !C * !Y)	0.00480	0.00659	0.04509
	(A * !B * !C * !Y)	0.00932	0.01112	0.04963

SKY130_FD_SC_HS__NOR4x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00249	0.00266	0.00265	0.00269	0.28876
sky130_fd_sc_hs__nor4_2	0.00380	0.00441	0.00438	0.00408	0.51339
sky130_fd_sc_hs__nor4_4	0.00751	0.00788	0.00768	0.00783	0.91020

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__nor4_1	0.00000	0.00468	0.03242
sky130_fd_sc_hs__nor4_2	0.00000	0.00920	0.06484
sky130_fd_sc_hs__nor4_4	0.00000	0.01840	0.12968

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)	0.18690	1.25043	10.81870
	B->Y (FR)	0.17796	1.25147	11.17580
	C->Y (FR)	0.15024	1.23942	11.50790
	D->Y (FR)	0.10461	1.15781	11.02720
sky130_fd_sc_hs__nor4_2	A->Y (FR)	0.16067	1.06361	10.67210
	B->Y (FR)	0.14658	1.05515	10.99090
	C->Y (FR)	0.10972	1.03045	11.30250
	D->Y (FR)	0.05627	0.94340	10.77750
sky130_fd_sc_hs__nor4_4	A->Y (FR)	0.17571	0.94060	10.43290
	B->Y (FR)	0.16254	0.93408	10.82560
	C->Y (FR)	0.12949	0.92185	11.27470
	D->Y (FR)	0.06732	0.83221	10.83690

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__nor4_1	A->Y (RF)	0.01734	0.22101	1.74429
	B->Y (RF)	0.01892	0.22696	1.82374
	C->Y (RF)	0.01914	0.22188	1.82278
	D->Y (RF)	0.01694	0.21176	1.78872
sky130_fd_sc_hs__nor4_2	A->Y (RF)	0.02208	0.29749	2.92449
	B->Y (RF)	0.02491	0.30202	3.03021
	C->Y (RF)	0.02470	0.29040	3.00800
	D->Y (RF)	0.02029	0.26717	2.86421
sky130_fd_sc_hs__nor4_4	A->Y (RF)	0.02259	0.24749	2.66537
	B->Y (RF)	0.02379	0.24224	2.68152
	C->Y (RF)	0.02470	0.23712	2.73941
	D->Y (RF)	0.01925	0.21948	2.70603

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00017	0.00007	0.00072
	A	0.00601	0.00591	0.00660
	B	0.00027	0.00015	0.00100
	B	0.00543	0.00531	0.00616
	C	0.00027	0.00014	0.00139
	C	0.00473	0.00461	0.00586
	D	0.00017	0.00038	0.00455
	D	0.00406	0.00423	0.00847
sky130_fd_sc_hs__nor4_2	A	0.00021	0.00012	0.00077
	A	0.00991	0.00983	0.01053
	B	-0.00006	-0.00017	0.00073
	B	0.00881	0.00870	0.00964
	C	0.00013	-0.00001	0.00147
	C	0.00734	0.00713	0.00820
	D	-0.00011	0.00022	0.00574
	D	0.00564	0.00599	0.01155
sky130_fd_sc_hs__nor4_4	A	0.00238	0.00217	0.00361
	A	0.02225	0.02206	0.02349
	B	0.00247	0.00218	0.00412
	B	0.01961	0.01936	0.02135
	C	0.00256	0.00227	0.00526
	C	0.01672	0.01645	0.01917
	D	0.00224	0.00308	0.01380
	D	0.01362	0.01422	0.02525

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	A	0.00766	0.00757	0.00899
	A	0.00196	0.00186	0.00332
	B	0.00648	0.00641	0.00779
	B	0.00141	0.00133	0.00273
	C	0.00512	0.00515	0.00654
	C	0.00070	0.00072	0.00212
	D	0.00376	0.00385	0.00532
	D	-0.00013	-0.00005	0.00142
sky130_fd_sc_hs__nor4_2	A	0.01320	0.01291	0.01462
	A	0.00386	0.00355	0.00532
	B	0.01112	0.01092	0.01261
	B	0.00248	0.00224	0.00401
	C	0.00789	0.00786	0.00964
	C	0.00077	0.00072	0.00251
	D	0.00481	0.00504	0.00693
	D	-0.00094	-0.00075	0.00117
sky130_fd_sc_hs__nor4_4	A	0.02662	0.02602	0.02968
	A	0.00753	0.00686	0.01065
	B	0.02124	0.02078	0.02450
	B	0.00450	0.00402	0.00784
	C	0.01577	0.01559	0.01937
	C	0.00181	0.00162	0.00540
	D	0.00951	0.00983	0.01378
	D	-0.00185	-0.00155	0.00238

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00125	0.00127	0.00126
	(B * D * !Y)	-0.00130	-0.00135	-0.00134
	(B * C * !D * !Y)	0.00125	0.00127	0.00126
	(B * C * !D * !Y)	-0.00130	-0.00135	-0.00134
	(B * !C * !D * !Y)	0.00126	0.00127	0.00126
	(B * !C * !D * !Y)	-0.00130	-0.00135	-0.00134
	(!B * C * D * !Y)	0.00126	0.00126	0.00126
	(!B * C * D * !Y)	-0.00122	-0.00130	-0.00130
	(!B * C * !D * !Y)	0.00126	0.00126	0.00126
	(!B * C * !D * !Y)	-0.00122	-0.00131	-0.00130
	(!B * !C * D * !Y)	0.00126	0.00126	0.00126
	(!B * !C * D * !Y)	-0.00121	-0.00130	-0.00128
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00125	0.00126	0.00125
	(B * D * !Y)	-0.00251	-0.00261	-0.00260
	(B * C * !D * !Y)	0.00125	0.00126	0.00125
	(B * C * !D * !Y)	-0.00251	-0.00261	-0.00260
	(B * !C * !D * !Y)	0.00126	0.00126	0.00125
	(B * !C * !D * !Y)	-0.00247	-0.00261	-0.00260
	(!B * C * D * !Y)	0.00126	0.00127	0.00125
	(!B * C * D * !Y)	-0.00232	-0.00251	-0.00250
	(!B * C * !D * !Y)	0.00125	0.00127	0.00125
	(!B * C * !D * !Y)	-0.00230	-0.00252	-0.00250
	(!B * !C * D * !Y)	0.00127	0.00127	0.00125
	(!B * !C * D * !Y)	-0.00228	-0.00249	-0.00246

sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00261	0.00263	0.00261
	(B * D * !Y)	-0.00513	-0.00536	-0.00534
	(B * C * !D * !Y)	0.00261	0.00263	0.00261
	(B * C * !D * !Y)	-0.00513	-0.00536	-0.00534
	(B * !C * !D * !Y)	0.00261	0.00263	0.00261
	(B * !C * !D * !Y)	-0.00510	-0.00536	-0.00534
	(!B * C * D * !Y)	0.00260	0.00264	0.00261
	(!B * C * D * !Y)	-0.00478	-0.00518	-0.00515
	(!B * C * !D * !Y)	0.00261	0.00264	0.00261
	(!B * C * !D * !Y)	-0.00478	-0.00518	-0.00515
	(!B * !C * D * !Y)	0.00262	0.00264	0.00262
	(!B * !C * D * !Y)	-0.00471	-0.00513	-0.00507

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00125	-0.00126	-0.00125
	(B * D * !Y)	0.00134	0.00135	0.00134
	(B * C * !D * !Y)	-0.00125	-0.00125	-0.00125
	(B * C * !D * !Y)	0.00134	0.00135	0.00134
	(B * !C * !D * !Y)	-0.00125	-0.00125	-0.00125
	(B * !C * !D * !Y)	0.00134	0.00135	0.00134
	(!B * C * D * !Y)	-0.00126	-0.00125	-0.00125
	(!B * C * D * !Y)	0.00130	0.00130	0.00130
	(!B * C * !D * !Y)	-0.00125	-0.00126	-0.00125
	(!B * C * !D * !Y)	0.00129	0.00131	0.00130
	(!B * !C * D * !Y)	-0.00125	-0.00126	-0.00125
	(!B * !C * D * !Y)	0.00128	0.00130	0.00128

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00125	-0.00126	-0.00125
	(B * D * !Y)	0.00260	0.00263	0.00260
	(B * C * !D * !Y)	-0.00125	-0.00126	-0.00125
	(B * C * !D * !Y)	0.00260	0.00263	0.00260
	(B * !C * !D * !Y)	-0.00125	-0.00126	-0.00125
	(B * !C * !D * !Y)	0.00260	0.00262	0.00260
	(!B * C * D * !Y)	-0.00125	-0.00126	-0.00125
	(!B * C * D * !Y)	0.00249	0.00251	0.00250
	(!B * C * !D * !Y)	-0.00125	-0.00126	-0.00125
	(!B * C * !D * !Y)	0.00249	0.00252	0.00250
	(!B * !C * D * !Y)	-0.00125	-0.00126	-0.00125
	(!B * !C * D * !Y)	0.00245	0.00249	0.00246
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00261	-0.00262	-0.00261
	(B * D * !Y)	0.00534	0.00539	0.00534
	(B * C * !D * !Y)	-0.00261	-0.00262	-0.00261
	(B * C * !D * !Y)	0.00534	0.00539	0.00534
	(B * !C * !D * !Y)	-0.00261	-0.00262	-0.00261
	(B * !C * !D * !Y)	0.00534	0.00538	0.00534
	(!B * C * D * !Y)	-0.00260	-0.00261	-0.00261
	(!B * C * D * !Y)	0.00513	0.00518	0.00515
	(!B * C * !D * !Y)	-0.00260	-0.00261	-0.00261
	(!B * C * !D * !Y)	0.00513	0.00518	0.00515
	(!B * !C * D * !Y)	-0.00261	-0.00263	-0.00261
	(!B * !C * D * !Y)	0.00505	0.00513	0.00507

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)**	0.00121	0.00122	0.00121
	(A * C * D * !Y)	-0.00097	-0.00097	-0.00097
	(A * C * !D * !Y)	0.00121	0.00122	0.00121
	(A * C * !D * !Y)	-0.00092	-0.00093	-0.00093
	(A * !C * D * !Y)	0.00121	0.00121	0.00121
	(A * !C * D * !Y)	-0.00092	-0.00091	-0.00092
	(A * !C * !D * !Y)	0.00121	0.00122	0.00121
	(A * !C * !D * !Y)	-0.00081	-0.00082	-0.00081
	(!A * C * D * !Y)	0.00120	0.00122	0.00121
	(!A * C * D * !Y)	-0.00130	-0.00135	-0.00135
	(!A * C * !D * !Y)	0.00121	0.00122	0.00121
	(!A * C * !D * !Y)	-0.00128	-0.00135	-0.00135
	(!A * !C * D * !Y)	0.00121	0.00121	0.00121
	(!A * !C * D * !Y)	-0.00118	-0.00129	-0.00129
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	0.00160	0.00161	0.00160
	(A * C * D * !Y)	-0.00199	-0.00199	-0.00198
	(A * C * !D * !Y)	0.00159	0.00161	0.00160
	(A * C * !D * !Y)	-0.00188	-0.00190	-0.00188
	(A * !C * D * !Y)	0.00159	0.00159	0.00158
	(A * !C * D * !Y)	-0.00187	-0.00187	-0.00185
	(A * !C * !D * !Y)	0.00159	0.00160	0.00158
	(A * !C * !D * !Y)	-0.00165	-0.00166	-0.00165
	(!A * C * D * !Y)	0.00159	0.00159	0.00158
	(!A * C * D * !Y)	-0.00260	-0.00275	-0.00274
	(!A * C * !D * !Y)	0.00160	0.00159	0.00158
	(!A * C * !D * !Y)	-0.00257	-0.00275	-0.00274
	(!A * !C * D * !Y)	0.00161	0.00159	0.00157
	(!A * !C * D * !Y)	-0.00241	-0.00263	-0.00262

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	0.00272	0.00275	0.00271
	(A * C * D * !Y)	-0.00393	-0.00397	-0.00393
	(A * C * !D * !Y)	0.00272	0.00274	0.00271
	(A * C * !D * !Y)	-0.00376	-0.00380	-0.00376
	(A * !C * D * !Y)	0.00272	0.00275	0.00273
	(A * !C * D * !Y)	-0.00369	-0.00373	-0.00370
	(A * !C * !D * !Y)	0.00270	0.00273	0.00270
	(A * !C * !D * !Y)	-0.00329	-0.00331	-0.00328
	(!A * C * D * !Y)	0.00271	0.00271	0.00270
	(!A * C * D * !Y)	-0.00531	-0.00551	-0.00551
	(!A * C * !D * !Y)	0.00275	0.00272	0.00270
	(!A * C * !D * !Y)	-0.00522	-0.00554	-0.00551
	(!A * !C * D * !Y)	0.00275	0.00273	0.00271
	(!A * !C * D * !Y)	-0.00488	-0.00529	-0.00528

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)**	-0.00121	-0.00121	-0.00120
	(A * C * D * !Y)	0.00097	0.00097	0.00097
	(A * C * !D * !Y)	-0.00120	-0.00121	-0.00120
	(A * C * !D * !Y)	0.00092	0.00093	0.00093
	(A * !C * D * !Y)	-0.00120	-0.00120	-0.00120
	(A * !C * D * !Y)	0.00092	0.00091	0.00092
	(A * !C * !D * !Y)	-0.00121	-0.00121	-0.00120
	(A * !C * !D * !Y)	0.00082	0.00082	0.00082
	(!A * C * D * !Y)	-0.00120	-0.00121	-0.00120
	(!A * C * D * !Y)	0.00134	0.00136	0.00135
	(!A * C * !D * !Y)	-0.00120	-0.00121	-0.00120
	(!A * C * !D * !Y)	0.00134	0.00136	0.00135
	(!A * !C * D * !Y)	-0.00120	-0.00121	-0.00120
	(!A * !C * D * !Y)	0.00129	0.00129	0.00129
sky130_fd_sc_hs__nor4_2	**(A * C * D * !Y)**	-0.00160	-0.00159	-0.00159
	(A * C * D * !Y)	0.00199	0.00199	0.00198
	(A * C * !D * !Y)	-0.00159	-0.00160	-0.00159
	(A * C * !D * !Y)	0.00188	0.00190	0.00188
	(A * !C * D * !Y)	-0.00158	-0.00159	-0.00158
	(A * !C * D * !Y)	0.00187	0.00187	0.00185
	(A * !C * !D * !Y)	-0.00157	-0.00159	-0.00158
	(A * !C * !D * !Y)	0.00166	0.00168	0.00166
	(!A * C * D * !Y)	-0.00158	-0.00159	-0.00158
	(!A * C * D * !Y)	0.00273	0.00275	0.00274
	(!A * C * !D * !Y)	-0.00158	-0.00159	-0.00158
	(!A * C * !D * !Y)	0.00274	0.00275	0.00274
	(!A * !C * D * !Y)	-0.00157	-0.00158	-0.00157
	(!A * !C * D * !Y)	0.00262	0.00263	0.00262

sky130_fd_sc_hs__nor4_4	**(A * C * D * !Y)**	-0.00269	-0.00272	-0.00270
	(A * C * D * !Y)	0.00393	0.00397	0.00393
	(A * C * !D * !Y)	-0.00269	-0.00271	-0.00270
	(A * C * !D * !Y)	0.00376	0.00380	0.00376
	(A * !C * D * !Y)	-0.00271	-0.00273	-0.00271
	(A * !C * D * !Y)	0.00369	0.00373	0.00370
	(A * !C * !D * !Y)	-0.00269	-0.00270	-0.00268
	(A * !C * !D * !Y)	0.00333	0.00334	0.00333
	(!A * C * D * !Y)	-0.00269	-0.00270	-0.00270
	(!A * C * D * !Y)	0.00549	0.00551	0.00551
	(!A * C * !D * !Y)	-0.00269	-0.00271	-0.00270
	(!A * C * !D * !Y)	0.00549	0.00556	0.00551
	(!A * !C * D * !Y)	-0.00270	-0.00271	-0.00270
	(!A * !C * D * !Y)	0.00525	0.00529	0.00528

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	0.00123	0.00125	0.00123
	(B * D * !Y)	-0.00087	-0.00088	-0.00087
	(B * !D * !Y)	0.00123	0.00124	0.00122
	(B * !D * !Y)	-0.00076	-0.00077	-0.00076
	(A * !B * D * !Y)	0.00125	0.00123	0.00122
	(A * !B * D * !Y)	-0.00090	-0.00090	-0.00090
	(A * !B * !D * !Y)	0.00123	0.00124	0.00123
	(A * !B * !D * !Y)	-0.00076	-0.00076	-0.00076
	(!A * !B * D * !Y)	0.00141	0.00124	0.00123
	(!A * !B * D * !Y)	-0.00109	-0.00129	-0.00130

sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	0.00159	0.00161	0.00158
	(B * D * !Y)	-0.00178	-0.00179	-0.00179
	(B * !D * !Y)	0.00157	0.00158	0.00156
	(B * !D * !Y)	-0.00155	-0.00156	-0.00155
	(A * !B * D * !Y)	0.00162	0.00158	0.00157
	(A * !B * D * !Y)	-0.00183	-0.00183	-0.00183
	(A * !B * !D * !Y)	0.00158	0.00159	0.00157
	(A * !B * !D * !Y)	-0.00155	-0.00155	-0.00154
	(!A * !B * D * !Y)	0.00192	0.00158	0.00155
	(!A * !B * D * !Y)	-0.00225	-0.00265	-0.00266
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	0.00264	0.00270	0.00263
	(B * D * !Y)	-0.00357	-0.00361	-0.00358
	(B * !D * !Y)	0.00262	0.00264	0.00260
	(B * !D * !Y)	-0.00316	-0.00319	-0.00317
	(A * !B * D * !Y)	0.00274	0.00264	0.00261
	(A * !B * D * !Y)	-0.00370	-0.00368	-0.00369
	(A * !B * !D * !Y)	0.00264	0.00266	0.00261
	(A * !B * !D * !Y)	-0.00313	-0.00316	-0.00316
	(!A * !B * D * !Y)	0.00347	0.00262	0.00259
	(!A * !B * D * !Y)	-0.00442	-0.00536	-0.00537

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

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

sky130_fd_sc_hs__nor4_1	**(B * D * !Y)**	-0.00122	-0.00123	-0.00122
	(B * D * !Y)	0.00087	0.00088	0.00087
	(B * !D * !Y)	-0.00122	-0.00122	-0.00121
	(B * !D * !Y)	0.00078	0.00078	0.00078
	(A * !B * D * !Y)	-0.00122	-0.00123	-0.00122
	(A * !B * D * !Y)	0.00090	0.00090	0.00090
	(A * !B * !D * !Y)	-0.00119	-0.00120	-0.00121
	(A * !B * !D * !Y)	0.00078	0.00078	0.00077
	(!A * !B * D * !Y)	-0.00122	-0.00122	-0.00122
	(!A * !B * D * !Y)	0.00129	0.00129	0.00130
sky130_fd_sc_hs__nor4_2	**(B * D * !Y)**	-0.00157	-0.00157	-0.00157
	(B * D * !Y)	0.00178	0.00179	0.00179
	(B * !D * !Y)	-0.00155	-0.00155	-0.00153
	(B * !D * !Y)	0.00158	0.00159	0.00159
	(A * !B * D * !Y)	-0.00156	-0.00156	-0.00156
	(A * !B * D * !Y)	0.00183	0.00183	0.00183
	(A * !B * !D * !Y)	-0.00146	-0.00148	-0.00152
	(A * !B * !D * !Y)	0.00160	0.00161	0.00157
	(!A * !B * D * !Y)	-0.00154	-0.00154	-0.00154
	(!A * !B * D * !Y)	0.00265	0.00265	0.00266
sky130_fd_sc_hs__nor4_4	**(B * D * !Y)**	-0.00260	-0.00262	-0.00261
	(B * D * !Y)	0.00357	0.00361	0.00358
	(B * !D * !Y)	-0.00257	-0.00258	-0.00255
	(B * !D * !Y)	0.00324	0.00325	0.00325
	(A * !B * D * !Y)	-0.00261	-0.00260	-0.00261
	(A * !B * D * !Y)	0.00370	0.00368	0.00369
	(A * !B * !D * !Y)	-0.00247	-0.00249	-0.00252
	(A * !B * !D * !Y)	0.00320	0.00324	0.00322
	(!A * !B * D * !Y)	-0.00257	-0.00259	-0.00257
	(!A * !B * D * !Y)	0.00532	0.00539	0.00537

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	0.00142	0.00143	0.00142
	(C * !Y)	-0.00069	-0.00070	-0.00069
	(B * !C * !Y)	0.00142	0.00143	0.00142
	(B * !C * !Y)	-0.00069	-0.00070	-0.00069
	(A * !B * !C * !Y)	0.00142	0.00143	0.00142
	(A * !B * !C * !Y)	-0.00070	-0.00070	-0.00069
sky130_fd_sc_hs__nor4_2	(C * !Y)	0.00172	0.00173	0.00173
	(C * !Y)	-0.00136	-0.00137	-0.00137
	(B * !C * !Y)	0.00172	0.00173	0.00173
	(B * !C * !Y)	-0.00136	-0.00137	-0.00136
	(A * !B * !C * !Y)	0.00173	0.00173	0.00173
	(A * !B * !C * !Y)	-0.00137	-0.00137	-0.00136
sky130_fd_sc_hs__nor4_4	(C * !Y)	0.00327	0.00328	0.00325
	(C * !Y)	-0.00276	-0.00275	-0.00273
	(B * !C * !Y)	0.00327	0.00328	0.00325
	(B * !C * !Y)	-0.00275	-0.00275	-0.00273
	(A * !B * !C * !Y)	0.00326	0.00328	0.00325
	(A * !B * !C * !Y)	-0.00275	-0.00275	-0.00273

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__nor4_1	(C * !Y)	-0.00137	-0.00138	-0.00141
	(C * !Y)	0.00074	0.00074	0.00071
	(B * !C * !Y)	-0.00131	-0.00132	-0.00140
	(B * !C * !Y)	0.00077	0.00077	0.00071
	(A * !B * !C * !Y)	-0.00123	-0.00125	-0.00137
	(A * !B * !C * !Y)	0.00081	0.00082	0.00072
sky130_fd_sc_hs__nor4_2	(C * !Y)	-0.00163	-0.00164	-0.00172
	(C * !Y)	0.00146	0.00146	0.00140
	(B * !C * !Y)	-0.00147	-0.00148	-0.00168
	(B * !C * !Y)	0.00154	0.00154	0.00141
	(A * !B * !C * !Y)	-0.00131	-0.00132	-0.00163
	(A * !B * !C * !Y)	0.00165	0.00164	0.00144
sky130_fd_sc_hs__nor4_4	(C * !Y)	-0.00303	-0.00305	-0.00323
	(C * !Y)	0.00295	0.00295	0.00279
	(B * !C * !Y)	-0.00276	-0.00280	-0.00317
	(B * !C * !Y)	0.00307	0.00309	0.00281
	(A * !B * !C * !Y)	-0.00239	-0.00244	-0.00305
	(A * !B * !C * !Y)	0.00330	0.00331	0.00288

SKY130_FD_SC_HS__O2111AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00252	0.00264	0.00255	0.00272	0.00265	0.57986
sky130_fd_sc_hs__o2111ai_2	0.00486	0.00492	0.00510	0.00497	0.00495	1.02260
sky130_fd_sc_hs__o2111ai_4	0.00970	0.00983	0.00755	0.00762	0.00755	1.74349

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2111ai_1	0.00000	0.01080	0.12968
sky130_fd_sc_hs__o2111ai_2	0.00000	0.02159	0.25936
sky130_fd_sc_hs__o2111ai_4	0.00000	0.02495	0.32421

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)	0.13074	1.03564	11.40560
	A2->Y (FR)	0.11951	1.00031	11.19720
	B1->Y (FR)	0.05039	0.66937	8.06742
	C1->Y (FR)	0.04411	0.66295	8.06967
	D1->Y (FR)	0.03657	0.65489	8.05430
sky130_fd_sc_hs__o2111ai_2	A1->Y (FR)	0.13562	0.91663	11.24550
	A2->Y (FR)	0.11795	0.87979	11.06390
	B1->Y (FR)	0.04762	0.59565	7.79461
	C1->Y (FR)	0.04056	0.58581	7.77597
	D1->Y (FR)	0.03075	0.57550	7.75261
sky130_fd_sc_hs__o2111ai_4	A1->Y (FR)	0.14406	0.82753	11.08020
	A2->Y (FR)	0.12299	0.79389	10.97810
	B1->Y (FR)	0.08591	0.73248	10.39150
	C1->Y (FR)	0.06398	0.68379	9.87771
	D1->Y (FR)	0.04758	0.69203	10.32180

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111ai_1	A1->Y (RF)	0.05385	0.40938	4.28071
	A2->Y (RF)	0.04586	0.39221	4.18975
	B1->Y (RF)	0.04926	0.44680	4.88907
	C1->Y (RF)	0.04437	0.47487	5.33196
	D1->Y (RF)	0.03728	0.47862	5.44094
sky130_fd_sc_hs__o2111ai_2	A1->Y (RF)	0.06186	0.37120	4.37650
	A2->Y (RF)	0.05040	0.35138	4.28138
	B1->Y (RF)	0.05650	0.40381	4.97672
	C1->Y (RF)	0.05040	0.46001	5.85493
	D1->Y (RF)	0.03827	0.45952	6.00817
sky130_fd_sc_hs__o2111ai_4	A1->Y (RF)	0.05813	0.29591	3.94022
	A2->Y (RF)	0.05153	0.29036	4.06938
	B1->Y (RF)	0.04412	0.33568	4.91077
	C1->Y (RF)	0.03778	0.38058	5.69772
	D1->Y (RF)	0.02511	0.38651	5.98985

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111ai_1	A1	0.00157	0.00143	0.00222
	A1	0.00827	0.00810	0.00891
	A2	0.00160	0.00167	0.00460
	A2	0.00759	0.00752	0.01060
	B1	0.00079	0.00099	0.00452
	B1	0.00648	0.00664	0.00996
	C1	0.00032	0.00050	0.00399
	C1	0.00533	0.00552	0.00883
	D1	-0.00006	0.00017	0.00362
	D1	0.00417	0.00442	0.00771
sky130_fd_sc_hs__o2111ai_2	A1	0.00256	0.00225	0.00374
	A1	0.01602	0.01574	0.01723
	A2	0.00260	0.00285	0.00804
	A2	0.01452	0.01478	0.01996
	B1	0.00098	0.00151	0.00809
	B1	0.01268	0.01313	0.01934
	C1	0.00024	0.00071	0.00717
	C1	0.01021	0.01066	0.01675
	D1	-0.00128	-0.00058	0.00589
	D1	0.00564	0.00636	0.01281

sky130_fd_sc_hs__o2111ai_4	**A1**	0.00447	0.00380	0.00699
	A1	0.03078	0.03010	0.03328
	A2	0.00432	0.00473	0.01500
	A2	0.02795	0.02839	0.03864
	B1	0.00171	0.00197	0.00949
	B1	0.02175	0.02192	0.02943
	C1	0.00022	0.00042	0.00781
	C1	0.01712	0.01730	0.02467
	D1	-0.00230	-0.00173	0.00559
	D1	0.01131	0.01158	0.01933

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**A1**	0.00847	0.00838	0.00902
	A1	0.00161	0.00151	0.00202
	A2	0.00720	0.00713	0.00797
	A2	0.00101	0.00095	0.00146
	B1	0.00741	0.00732	0.00822
	B1	0.00093	0.00085	0.00143
	C1	0.00670	0.00663	0.00747
	C1	0.00093	0.00085	0.00145
	D1	0.00585	0.00578	0.00709
	D1	0.00089	0.00084	0.00179

sky130_fd_sc_hs__o2111ai_2	**A1**	0.01744	0.01716	0.01848
	A1	0.00365	0.00338	0.00439
	A2	0.01415	0.01405	0.01544
	A2	0.00181	0.00168	0.00276
	B1	0.01205	0.01189	0.01311
	B1	0.00165	0.00144	0.00268
	C1	0.01364	0.01351	0.01489
	C1	0.00170	0.00152	0.00270
	D1	0.01185	0.01179	0.01392
	D1	0.00160	0.00153	0.00338
sky130_fd_sc_hs__o2111ai_4	**A1**	0.03330	0.03264	0.03492
	A1	0.00633	0.00564	0.00790
	A2	0.02685	0.02658	0.02971
	A2	0.00239	0.00206	0.00450
	B1	0.02822	0.02800	0.03009
	B1	0.00802	0.00781	0.00902
	C1	0.02498	0.02487	0.02648
	C1	0.00807	0.00788	0.00909
	D1	0.02142	0.02139	0.02321
	D1	0.00802	0.00787	0.00983

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)**	0.00139	0.00128	0.00126
	(A2 * B1 * C1 * D1 * !Y)	-0.00120	-0.00135	-0.00135
	(A2 * B1 * C1 * !D1 * Y)	0.00126	0.00127	0.00125
	(A2 * B1 * C1 * !D1 * Y)	-0.00132	-0.00135	-0.00135
	(A2 * B1 * !C1 * Y)	0.00126	0.00127	0.00125
	(A2 * B1 * !C1 * Y)	-0.00132	-0.00135	-0.00135
	(A2 * !B1 * Y)	0.00126	0.00127	0.00125
	(A2 * !B1 * Y)	-0.00132	-0.00135	-0.00135
	(!A2 * B1 * C1 * !D1 * Y)	0.00118	0.00118	0.00117
	(!A2 * B1 * C1 * !D1 * Y)	-0.00137	-0.00137	-0.00136
	(!A2 * B1 * !C1 * D1 * Y)	0.00117	0.00119	0.00118
	(!A2 * B1 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A2 * B1 * !C1 * !D1 * Y)	0.00117	0.00118	0.00118
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00136	-0.00136	-0.00137
	(!A2 * !B1 * C1 * D1 * Y)	0.00118	0.00120	0.00119
	(!A2 * !B1 * C1 * D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A2 * !B1 * !D1 * Y)	0.00118	0.00120	0.00119
	(!A2 * !B1 * !D1 * Y)	-0.00136	-0.00137	-0.00137
	(!A2 * !B1 * !C1 * D1 * Y)	0.00118	0.00120	0.00119
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00137

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	0.00271	0.00248	0.00244
	(A2 * B1 * C1 * D1 * !Y)	-0.00240	-0.00272	-0.00271
	(A2 * B1 * C1 * !D1 * Y)	0.00243	0.00246	0.00243
	(A2 * B1 * C1 * !D1 * Y)	-0.00265	-0.00274	-0.00272
	(A2 * B1 * !C1 * Y)	0.00243	0.00246	0.00243
	(A2 * B1 * !C1 * Y)	-0.00265	-0.00274	-0.00272
	(A2 * !B1 * Y)	0.00243	0.00246	0.00243
	(A2 * !B1 * Y)	-0.00265	-0.00274	-0.00272
	(!A2 * B1 * C1 * !D1 * Y)	0.00228	0.00230	0.00228
	(!A2 * B1 * C1 * !D1 * Y)	-0.00277	-0.00278	-0.00276
	(!A2 * B1 * !C1 * D1 * Y)	0.00228	0.00229	0.00229
	(!A2 * B1 * !C1 * D1 * Y)	-0.00275	-0.00277	-0.00276
	(!A2 * B1 * !C1 * !D1 * Y)	0.00228	0.00231	0.00229
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00275	-0.00277	-0.00276
	(!A2 * !B1 * C1 * D1 * Y)	0.00231	0.00235	0.00232
	(!A2 * !B1 * C1 * D1 * Y)	-0.00276	-0.00278	-0.00276
	(!A2 * !B1 * !D1 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * !D1 * Y)	-0.00276	-0.00277	-0.00276
	(!A2 * !B1 * !C1 * D1 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00276	-0.00277	-0.00276

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	0.00540	0.00503	0.00495
	(A2 * B1 * C1 * D1 * !Y)	-0.00465	-0.00526	-0.00523
	(A2 * B1 * C1 * !D1 * Y)	0.00473	0.00481	0.00475
	(A2 * B1 * C1 * !D1 * Y)	-0.00529	-0.00548	-0.00544
	(A2 * B1 * !C1 * Y)	0.00474	0.00481	0.00475
	(A2 * B1 * !C1 * Y)	-0.00529	-0.00548	-0.00544
	(A2 * !B1 * Y)	0.00472	0.00481	0.00475
	(A2 * !B1 * Y)	-0.00527	-0.00548	-0.00544
	(!A2 * B1 * C1 * !D1 * Y)	0.00431	0.00437	0.00432
	(!A2 * B1 * C1 * !D1 * Y)	-0.00549	-0.00554	-0.00551
	(!A2 * B1 * !C1 * D1 * Y)	0.00442	0.00447	0.00443
	(!A2 * B1 * !C1 * D1 * Y)	-0.00550	-0.00553	-0.00551
	(!A2 * B1 * !C1 * !D1 * Y)	0.00435	0.00438	0.00436
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00550	-0.00552	-0.00551
	(!A2 * !B1 * C1 * D1 * Y)	0.00447	0.00450	0.00448
	(!A2 * !B1 * C1 * D1 * Y)	-0.00550	-0.00551	-0.00551
	(!A2 * !B1 * !D1 * Y)	0.00447	0.00452	0.00448
	(!A2 * !B1 * !D1 * Y)	-0.00550	-0.00552	-0.00551
	(!A2 * !B1 * !C1 * D1 * Y)	0.00447	0.00452	0.00448
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00550	-0.00551	-0.00551

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)**	-0.00125	-0.00125	-0.00125
	(A2 * B1 * C1 * D1 * !Y)	0.00135	0.00135	0.00135
	(A2 * B1 * C1 * !D1 * Y)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * C1 * !D1 * Y)	0.00135	0.00135	0.00135
	(A2 * B1 * !C1 * Y)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * !C1 * Y)	0.00135	0.00135	0.00135
	(A2 * !B1 * Y)	-0.00125	-0.00125	-0.00125
	(A2 * !B1 * Y)	0.00134	0.00135	0.00135
	(!A2 * B1 * C1 * !D1 * Y)	-0.00107	-0.00118	-0.00117
	(!A2 * B1 * C1 * !D1 * Y)	0.00137	0.00138	0.00137
	(!A2 * B1 * !C1 * D1 * Y)	-0.00109	-0.00119	-0.00118
	(!A2 * B1 * !C1 * D1 * Y)	0.00136	0.00138	0.00137
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00109	-0.00118	-0.00118
	(!A2 * B1 * !C1 * !D1 * Y)	0.00136	0.00138	0.00137
	(!A2 * !B1 * C1 * D1 * Y)	-0.00114	-0.00120	-0.00119
	(!A2 * !B1 * C1 * D1 * Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !D1 * Y)	-0.00114	-0.00120	-0.00119
	(!A2 * !B1 * !D1 * Y)	0.00137	0.00138	0.00137
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00114	-0.00120	-0.00119
	(!A2 * !B1 * !C1 * D1 * Y)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * C1 * D1 * !Y)**	-0.00243	-0.00244	-0.00243
	(A2 * B1 * C1 * D1 * !Y)	0.00271	0.00273	0.00271
	(A2 * B1 * C1 * !D1 * Y)	-0.00242	-0.00243	-0.00242
	(A2 * B1 * C1 * !D1 * Y)	0.00272	0.00274	0.00272
	(A2 * B1 * !C1 * Y)	-0.00242	-0.00243	-0.00242
	(A2 * B1 * !C1 * Y)	0.00272	0.00274	0.00272
	(A2 * !B1 * Y)	-0.00242	-0.00243	-0.00242
	(A2 * !B1 * Y)	0.00272	0.00274	0.00272
	(!A2 * B1 * C1 * !D1 * Y)	-0.00205	-0.00227	-0.00228
	(!A2 * B1 * C1 * !D1 * Y)	0.00277	0.00280	0.00277
	(!A2 * B1 * !C1 * D1 * Y)	-0.00209	-0.00228	-0.00229
	(!A2 * B1 * !C1 * D1 * Y)	0.00277	0.00280	0.00277
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00209	-0.00228	-0.00229
	(!A2 * B1 * !C1 * !D1 * Y)	0.00277	0.00280	0.00277
	(!A2 * !B1 * C1 * D1 * Y)	-0.00216	-0.00229	-0.00232
	(!A2 * !B1 * C1 * D1 * Y)	0.00276	0.00278	0.00277
	(!A2 * !B1 * !D1 * Y)	-0.00217	-0.00229	-0.00232
	(!A2 * !B1 * !D1 * Y)	0.00276	0.00277	0.00277
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00217	-0.00229	-0.00232
	(!A2 * !B1 * !C1 * D1 * Y)	0.00276	0.00277	0.00277

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * C1 * D1 * !Y)**	-0.00496	-0.00497	-0.00495
	(A2 * B1 * C1 * D1 * !Y)	0.00523	0.00526	0.00523
	(A2 * B1 * C1 * !D1 * Y)	-0.00473	-0.00475	-0.00474
	(A2 * B1 * C1 * !D1 * Y)	0.00545	0.00548	0.00544
	(A2 * B1 * !C1 * Y)	-0.00474	-0.00475	-0.00474
	(A2 * B1 * !C1 * Y)	0.00544	0.00548	0.00544
	(A2 * !B1 * Y)	-0.00472	-0.00476	-0.00474
	(A2 * !B1 * Y)	0.00545	0.00548	0.00544
	(!A2 * B1 * C1 * !D1 * Y)	-0.00398	-0.00437	-0.00432
	(!A2 * B1 * C1 * !D1 * Y)	0.00553	0.00558	0.00552
	(!A2 * B1 * !C1 * D1 * Y)	-0.00406	-0.00446	-0.00443
	(!A2 * B1 * !C1 * D1 * Y)	0.00553	0.00558	0.00552
	(!A2 * B1 * !C1 * !D1 * Y)	-0.00406	-0.00438	-0.00436
	(!A2 * B1 * !C1 * !D1 * Y)	0.00553	0.00558	0.00552
	(!A2 * !B1 * C1 * D1 * Y)	-0.00423	-0.00448	-0.00448
	(!A2 * !B1 * C1 * D1 * Y)	0.00550	0.00553	0.00552
	(!A2 * !B1 * !D1 * Y)	-0.00423	-0.00448	-0.00448
	(!A2 * !B1 * !D1 * Y)	0.00550	0.00552	0.00552
	(!A2 * !B1 * !C1 * D1 * Y)	-0.00423	-0.00448	-0.00448
	(!A2 * !B1 * !C1 * D1 * Y)	0.00550	0.00551	0.00552

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)**	0.00136	0.00138	0.00136
	(A1 * B1 * C1 * D1 * !Y)	-0.00067	-0.00068	-0.00068
	(A1 * B1 * C1 * !D1 * Y)	0.00122	0.00123	0.00122
	(A1 * B1 * C1 * !D1 * Y)	-0.00130	-0.00133	-0.00133
	(A1 * B1 * !C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A1 * B1 * !C1 * D1 * Y)	-0.00130	-0.00133	-0.00133
	(A1 * B1 * !C1 * !D1 * Y)	0.00122	0.00123	0.00122
	(A1 * B1 * !C1 * !D1 * Y)	-0.00130	-0.00132	-0.00133
	(A1 * !B1 * C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A1 * !B1 * C1 * D1 * Y)	-0.00130	-0.00133	-0.00133
	(A1 * !B1 * !D1 * Y)	0.00122	0.00123	0.00122
	(A1 * !B1 * !D1 * Y)	-0.00130	-0.00133	-0.00133
	(A1 * !B1 * !C1 * D1 * Y)	0.00122	0.00123	0.00122
	(A1 * !B1 * !C1 * D1 * Y)	-0.00130	-0.00133	-0.00133
	(!A1 * B1 * C1 * !D1 * Y)	0.00114	0.00115	0.00114
	(!A1 * B1 * C1 * !D1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * B1 * !C1 * D1 * Y)	0.00115	0.00116	0.00114
	(!A1 * B1 * !C1 * D1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * B1 * !C1 * !D1 * Y)	0.00115	0.00115	0.00114
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00134	-0.00135	-0.00135
	(!A1 * !B1 * C1 * D1 * Y)	0.00116	0.00117	0.00115
	(!A1 * !B1 * C1 * D1 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !B1 * !D1 * Y)	0.00116	0.00117	0.00115
	(!A1 * !B1 * !D1 * Y)	-0.00135	-0.00135	-0.00135
	(!A1 * !B1 * !C1 * D1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	0.00265	0.00268	0.00265
	(A1 * B1 * C1 * D1 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * B1 * C1 * !D1 * Y)	0.00236	0.00238	0.00237
	(A1 * B1 * C1 * !D1 * Y)	-0.00259	-0.00268	-0.00268
	(A1 * B1 * !C1 * D1 * Y)	0.00237	0.00238	0.00237
	(A1 * B1 * !C1 * D1 * Y)	-0.00259	-0.00269	-0.00268
	(A1 * B1 * !C1 * !D1 * Y)	0.00237	0.00239	0.00237
	(A1 * B1 * !C1 * !D1 * Y)	-0.00259	-0.00269	-0.00268
	(A1 * !B1 * C1 * D1 * Y)	0.00237	0.00238	0.00237
	(A1 * !B1 * C1 * D1 * Y)	-0.00259	-0.00268	-0.00268
	(A1 * !B1 * !D1 * Y)	0.00237	0.00239	0.00237
	(A1 * !B1 * !D1 * Y)	-0.00259	-0.00269	-0.00268
	(A1 * !B1 * !C1 * D1 * Y)	0.00237	0.00239	0.00237
	(A1 * !B1 * !C1 * D1 * Y)	-0.00259	-0.00269	-0.00268
	(!A1 * B1 * C1 * !D1 * Y)	0.00222	0.00223	0.00222
	(!A1 * B1 * C1 * !D1 * Y)	-0.00273	-0.00273	-0.00272
	(!A1 * B1 * !C1 * D1 * Y)	0.00224	0.00225	0.00224
	(!A1 * B1 * !C1 * D1 * Y)	-0.00273	-0.00273	-0.00272
	(!A1 * B1 * !C1 * !D1 * Y)	0.00224	0.00225	0.00224
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00273	-0.00273	-0.00272
	(!A1 * !B1 * C1 * D1 * Y)	0.00226	0.00228	0.00226
	(!A1 * !B1 * C1 * D1 * Y)	-0.00272	-0.00272	-0.00272
	(!A1 * !B1 * !D1 * Y)	0.00226	0.00227	0.00226
	(!A1 * !B1 * !D1 * Y)	-0.00272	-0.00272	-0.00272
	(!A1 * !B1 * !C1 * D1 * Y)	0.00226	0.00228	0.00226
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00272	-0.00272	-0.00272

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	0.00549	0.00552	0.00547
	(A1 * B1 * C1 * D1 * !Y)	-0.00279	-0.00279	-0.00276
	(A1 * B1 * C1 * !D1 * Y)	0.00482	0.00486	0.00483
	(A1 * B1 * C1 * !D1 * Y)	-0.00526	-0.00544	-0.00542
	(A1 * B1 * !C1 * D1 * Y)	0.00483	0.00486	0.00483
	(A1 * B1 * !C1 * D1 * Y)	-0.00528	-0.00544	-0.00542
	(A1 * B1 * !C1 * !D1 * Y)	0.00483	0.00485	0.00483
	(A1 * B1 * !C1 * !D1 * Y)	-0.00528	-0.00546	-0.00543
	(A1 * !B1 * C1 * D1 * Y)	0.00484	0.00486	0.00483
	(A1 * !B1 * C1 * D1 * Y)	-0.00528	-0.00544	-0.00542
	(A1 * !B1 * !D1 * Y)	0.00483	0.00485	0.00483
	(A1 * !B1 * !D1 * Y)	-0.00528	-0.00546	-0.00543
	(A1 * !B1 * !C1 * D1 * Y)	0.00484	0.00485	0.00483
	(A1 * !B1 * !C1 * D1 * Y)	-0.00528	-0.00546	-0.00543
	(!A1 * B1 * C1 * !D1 * Y)	0.00442	0.00443	0.00441
	(!A1 * B1 * C1 * !D1 * Y)	-0.00552	-0.00552	-0.00551
	(!A1 * B1 * !C1 * D1 * Y)	0.00445	0.00449	0.00445
	(!A1 * B1 * !C1 * D1 * Y)	-0.00552	-0.00554	-0.00551
	(!A1 * B1 * !C1 * !D1 * Y)	0.00446	0.00451	0.00445
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00552	-0.00554	-0.00551
	(!A1 * !B1 * C1 * D1 * Y)	0.00454	0.00459	0.00453
	(!A1 * !B1 * C1 * D1 * Y)	-0.00549	-0.00551	-0.00551
	(!A1 * !B1 * !D1 * Y)	0.00453	0.00457	0.00453
	(!A1 * !B1 * !D1 * Y)	-0.00549	-0.00551	-0.00551
	(!A1 * !B1 * !C1 * D1 * Y)	0.00453	0.00457	0.00453
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00549	-0.00554	-0.00551

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)**	-0.00132	-0.00133	-0.00136
	(A1 * B1 * C1 * D1 * !Y)	0.00072	0.00072	0.00069
	(A1 * B1 * C1 * !D1 * Y)	-0.00122	-0.00122	-0.00122
	(A1 * B1 * C1 * !D1 * Y)	0.00133	0.00133	0.00133
	(A1 * B1 * !C1 * D1 * Y)	-0.00122	-0.00122	-0.00122
	(A1 * B1 * !C1 * D1 * Y)	0.00132	0.00133	0.00133
	(A1 * B1 * !C1 * !D1 * Y)	-0.00122	-0.00122	-0.00122
	(A1 * B1 * !C1 * !D1 * Y)	0.00133	0.00132	0.00133
	(A1 * !B1 * C1 * D1 * Y)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * C1 * D1 * Y)	0.00133	0.00133	0.00133
	(A1 * !B1 * !D1 * Y)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * !D1 * Y)	0.00133	0.00133	0.00133
	(A1 * !B1 * !C1 * D1 * Y)	-0.00122	-0.00123	-0.00122
	(A1 * !B1 * !C1 * D1 * Y)	0.00133	0.00133	0.00133
	(!A1 * B1 * C1 * !D1 * Y)	-0.00103	-0.00115	-0.00114
	(!A1 * B1 * C1 * !D1 * Y)	0.00134	0.00136	0.00135
	(!A1 * B1 * !C1 * D1 * Y)	-0.00106	-0.00116	-0.00114
	(!A1 * B1 * !C1 * D1 * Y)	0.00134	0.00136	0.00135
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00106	-0.00115	-0.00114
	(!A1 * B1 * !C1 * !D1 * Y)	0.00134	0.00136	0.00135
	(!A1 * !B1 * C1 * D1 * Y)	-0.00111	-0.00117	-0.00115
	(!A1 * !B1 * C1 * D1 * Y)	0.00135	0.00136	0.00135
	(!A1 * !B1 * !D1 * Y)	-0.00111	-0.00117	-0.00115
	(!A1 * !B1 * !D1 * Y)	0.00135	0.00136	0.00135
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00111	-0.00117	-0.00116
	(!A1 * !B1 * !C1 * D1 * Y)	0.00135	0.00136	0.00135

sky130_fd_sc_hs__o2111ai_2	**(A1 * B1 * C1 * D1 * !Y)**	-0.00250	-0.00253	-0.00263
	(A1 * B1 * C1 * D1 * !Y)	0.00149	0.00151	0.00142
	(A1 * B1 * C1 * !D1 * Y)	-0.00236	-0.00237	-0.00237
	(A1 * B1 * C1 * !D1 * Y)	0.00267	0.00268	0.00268
	(A1 * B1 * !C1 * D1 * Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !C1 * D1 * Y)	0.00268	0.00269	0.00268
	(A1 * B1 * !C1 * !D1 * Y)	-0.00237	-0.00238	-0.00237
	(A1 * B1 * !C1 * !D1 * Y)	0.00268	0.00269	0.00268
	(A1 * !B1 * C1 * D1 * Y)	-0.00236	-0.00237	-0.00237
	(A1 * !B1 * C1 * D1 * Y)	0.00267	0.00268	0.00268
	(A1 * !B1 * !D1 * Y)	-0.00237	-0.00238	-0.00237
	(A1 * !B1 * !D1 * Y)	0.00268	0.00269	0.00268
	(A1 * !B1 * !C1 * D1 * Y)	-0.00237	-0.00238	-0.00237
	(A1 * !B1 * !C1 * D1 * Y)	0.00268	0.00269	0.00268
	(!A1 * B1 * C1 * !D1 * Y)	-0.00199	-0.00222	-0.00222
	(!A1 * B1 * C1 * !D1 * Y)	0.00273	0.00276	0.00273
	(!A1 * B1 * !C1 * D1 * Y)	-0.00203	-0.00224	-0.00224
	(!A1 * B1 * !C1 * D1 * Y)	0.00273	0.00276	0.00273
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00204	-0.00224	-0.00224
	(!A1 * B1 * !C1 * !D1 * Y)	0.00273	0.00276	0.00273
	(!A1 * !B1 * C1 * D1 * Y)	-0.00211	-0.00224	-0.00226
	(!A1 * !B1 * C1 * D1 * Y)	0.00272	0.00272	0.00273
	(!A1 * !B1 * !D1 * Y)	-0.00211	-0.00224	-0.00226
	(!A1 * !B1 * !D1 * Y)	0.00272	0.00272	0.00273
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00211	-0.00224	-0.00226
	(!A1 * !B1 * !C1 * D1 * Y)	0.00272	0.00272	0.00273

sky130_fd_sc_hs__o2111ai_4	**(A1 * B1 * C1 * D1 * !Y)**	-0.00518	-0.00522	-0.00543
	(A1 * B1 * C1 * D1 * !Y)	0.00303	0.00303	0.00283
	(A1 * B1 * C1 * !D1 * Y)	-0.00482	-0.00483	-0.00482
	(A1 * B1 * C1 * !D1 * Y)	0.00544	0.00544	0.00542
	(A1 * B1 * !C1 * D1 * Y)	-0.00483	-0.00483	-0.00482
	(A1 * B1 * !C1 * D1 * Y)	0.00544	0.00544	0.00542
	(A1 * B1 * !C1 * !D1 * Y)	-0.00479	-0.00484	-0.00482
	(A1 * B1 * !C1 * !D1 * Y)	0.00539	0.00546	0.00543
	(A1 * !B1 * C1 * D1 * Y)	-0.00480	-0.00483	-0.00482
	(A1 * !B1 * C1 * D1 * Y)	0.00539	0.00544	0.00542
	(A1 * !B1 * !D1 * Y)	-0.00481	-0.00484	-0.00482
	(A1 * !B1 * !D1 * Y)	0.00541	0.00546	0.00543
	(A1 * !B1 * !C1 * D1 * Y)	-0.00481	-0.00484	-0.00482
	(A1 * !B1 * !C1 * D1 * Y)	0.00541	0.00546	0.00543
	(!A1 * B1 * C1 * !D1 * Y)	-0.00407	-0.00443	-0.00441
	(!A1 * B1 * C1 * !D1 * Y)	0.00553	0.00557	0.00552
	(!A1 * B1 * !C1 * D1 * Y)	-0.00414	-0.00449	-0.00445
	(!A1 * B1 * !C1 * D1 * Y)	0.00552	0.00557	0.00552
	(!A1 * B1 * !C1 * !D1 * Y)	-0.00414	-0.00451	-0.00445
	(!A1 * B1 * !C1 * !D1 * Y)	0.00552	0.00557	0.00552
	(!A1 * !B1 * C1 * D1 * Y)	-0.00429	-0.00455	-0.00453
	(!A1 * !B1 * C1 * D1 * Y)	0.00549	0.00551	0.00552
	(!A1 * !B1 * !D1 * Y)	-0.00430	-0.00455	-0.00453
	(!A1 * !B1 * !D1 * Y)	0.00549	0.00551	0.00552
	(!A1 * !B1 * !C1 * D1 * Y)	-0.00430	-0.00457	-0.00453
	(!A1 * !B1 * !C1 * D1 * Y)	0.00549	0.00556	0.00552

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)**	0.00110	0.00111	0.00110
	(A2 * C1 * !D1 * Y)	-0.00136	-0.00136	-0.00136
	(A2 * !C1 * D1 * Y)	0.00112	0.00113	0.00112
	(A2 * !C1 * D1 * Y)	-0.00135	-0.00137	-0.00136
	(A2 * !C1 * !D1 * Y)	0.00112	0.00113	0.00112
	(A2 * !C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A2 * C1 * !D1 * Y)	0.00108	0.00109	0.00109
	(A1 * !A2 * C1 * !D1 * Y)	-0.00135	-0.00136	-0.00136
	(A1 * !A2 * !C1 * D1 * Y)	0.00112	0.00113	0.00113
	(A1 * !A2 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A2 * !C1 * !D1 * Y)	0.00112	0.00114	0.00113
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A2 * C1 * D1 * Y)	0.00052	0.00053	0.00052
	(!A1 * !A2 * C1 * D1 * Y)	-0.00133	-0.00135	-0.00133
	(!A1 * !A2 * C1 * !D1 * Y)	0.00059	0.00060	0.00059
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A2 * !C1 * D1 * Y)	0.00062	0.00063	0.00062
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00065	0.00065	0.00065
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00136	-0.00137	-0.00136

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	0.00235	0.00237	0.00236
	(A2 * C1 * !D1 * Y)	-0.00283	-0.00284	-0.00284
	(A2 * !C1 * D1 * Y)	0.00240	0.00241	0.00240
	(A2 * !C1 * D1 * Y)	-0.00284	-0.00284	-0.00284
	(A2 * !C1 * !D1 * Y)	0.00240	0.00242	0.00240
	(A2 * !C1 * !D1 * Y)	-0.00284	-0.00285	-0.00284
	(A1 * !A2 * C1 * !D1 * Y)	0.00236	0.00238	0.00237
	(A1 * !A2 * C1 * !D1 * Y)	-0.00283	-0.00284	-0.00284
	(A1 * !A2 * !C1 * D1 * Y)	0.00240	0.00243	0.00241
	(A1 * !A2 * !C1 * D1 * Y)	-0.00283	-0.00285	-0.00284
	(A1 * !A2 * !C1 * !D1 * Y)	0.00240	0.00244	0.00241
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00283	-0.00285	-0.00284
	(!A1 * !A2 * C1 * D1 * Y)	0.00110	0.00111	0.00112
	(!A1 * !A2 * C1 * D1 * Y)	-0.00279	-0.00280	-0.00277
	(!A1 * !A2 * C1 * !D1 * Y)	0.00128	0.00127	0.00127
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00284	-0.00284	-0.00284
	(!A1 * !A2 * !C1 * D1 * Y)	0.00131	0.00131	0.00130
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00284	-0.00284	-0.00284
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00135	0.00136	0.00135
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00283	-0.00285	-0.00284

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	0.00454	0.00458	0.00455
	(A2 * C1 * !D1 * Y)	-0.00297	-0.00299	-0.00298
	(A2 * !C1 * D1 * Y)	0.00455	0.00460	0.00457
	(A2 * !C1 * D1 * Y)	-0.00297	-0.00299	-0.00298
	(A2 * !C1 * !D1 * Y)	0.00455	0.00459	0.00457
	(A2 * !C1 * !D1 * Y)	-0.00297	-0.00299	-0.00298
	(A1 * !A2 * C1 * !D1 * Y)	0.00453	0.00458	0.00454
	(A1 * !A2 * C1 * !D1 * Y)	-0.00297	-0.00300	-0.00298
	(A1 * !A2 * !C1 * D1 * Y)	0.00455	0.00461	0.00457
	(A1 * !A2 * !C1 * D1 * Y)	-0.00297	-0.00299	-0.00298
	(A1 * !A2 * !C1 * !D1 * Y)	0.00455	0.00458	0.00457
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00297	-0.00298	-0.00298
	(!A1 * !A2 * C1 * D1 * Y)	0.00204	0.00205	0.00205
	(!A1 * !A2 * C1 * D1 * Y)	-0.00288	-0.00290	-0.00285
	(!A1 * !A2 * C1 * !D1 * Y)	0.00233	0.00232	0.00232
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00299	-0.00300	-0.00300
	(!A1 * !A2 * !C1 * D1 * Y)	0.00238	0.00241	0.00239
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00297	-0.00300	-0.00298
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00247	0.00250	0.00248
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00297	-0.00300	-0.00298

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)**	-0.00102	-0.00111	-0.00110
	(A2 * C1 * !D1 * Y)	0.00136	0.00138	0.00137
	(A2 * !C1 * D1 * Y)	-0.00107	-0.00113	-0.00112
	(A2 * !C1 * D1 * Y)	0.00135	0.00138	0.00137
	(A2 * !C1 * !D1 * Y)	-0.00108	-0.00113	-0.00112
	(A2 * !C1 * !D1 * Y)	0.00136	0.00138	0.00137
	(A1 * !A2 * C1 * !D1 * Y)	-0.00099	-0.00109	-0.00109
	(A1 * !A2 * C1 * !D1 * Y)	0.00136	0.00136	0.00137
	(A1 * !A2 * !C1 * D1 * Y)	-0.00107	-0.00113	-0.00113
	(A1 * !A2 * !C1 * D1 * Y)	0.00137	0.00138	0.00137
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00108	-0.00114	-0.00113
	(A1 * !A2 * !C1 * !D1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !A2 * C1 * D1 * Y)	-0.00049	-0.00049	-0.00049
	(!A1 * !A2 * C1 * D1 * Y)	0.00139	0.00140	0.00138
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00059	-0.00060	-0.00059
	(!A1 * !A2 * C1 * !D1 * Y)	0.00137	0.00138	0.00136
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * !C1 * D1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00136	0.00138	0.00137

sky130_fd_sc_hs__o2111ai_2	**(A2 * C1 * !D1 * Y)**	-0.00218	-0.00234	-0.00236
	(A2 * C1 * !D1 * Y)	0.00285	0.00284	0.00284
	(A2 * !C1 * D1 * Y)	-0.00229	-0.00241	-0.00240
	(A2 * !C1 * D1 * Y)	0.00284	0.00287	0.00284
	(A2 * !C1 * !D1 * Y)	-0.00230	-0.00242	-0.00240
	(A2 * !C1 * !D1 * Y)	0.00284	0.00287	0.00284
	(A1 * !A2 * C1 * !D1 * Y)	-0.00214	-0.00234	-0.00237
	(A1 * !A2 * C1 * !D1 * Y)	0.00285	0.00286	0.00284
	(A1 * !A2 * !C1 * D1 * Y)	-0.00226	-0.00240	-0.00240
	(A1 * !A2 * !C1 * D1 * Y)	0.00283	0.00285	0.00284
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00227	-0.00240	-0.00240
	(A1 * !A2 * !C1 * !D1 * Y)	0.00283	0.00285	0.00284
	(!A1 * !A2 * C1 * D1 * Y)	-0.00104	-0.00106	-0.00106
	(!A1 * !A2 * C1 * D1 * Y)	0.00287	0.00291	0.00286
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00128	-0.00127	-0.00127
	(!A1 * !A2 * C1 * !D1 * Y)	0.00284	0.00287	0.00285
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * !C1 * D1 * Y)	0.00284	0.00287	0.00285
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00135	-0.00136	-0.00135
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00283	0.00287	0.00285

sky130_fd_sc_hs__o2111ai_4	**(A2 * C1 * !D1 * Y)**	-0.00411	-0.00449	-0.00455
	(A2 * C1 * !D1 * Y)	0.00299	0.00300	0.00299
	(A2 * !C1 * D1 * Y)	-0.00436	-0.00460	-0.00457
	(A2 * !C1 * D1 * Y)	0.00298	0.00300	0.00298
	(A2 * !C1 * !D1 * Y)	-0.00438	-0.00459	-0.00457
	(A2 * !C1 * !D1 * Y)	0.00298	0.00300	0.00298
	(A1 * !A2 * C1 * !D1 * Y)	-0.00406	-0.00450	-0.00454
	(A1 * !A2 * C1 * !D1 * Y)	0.00300	0.00301	0.00299
	(A1 * !A2 * !C1 * D1 * Y)	-0.00433	-0.00461	-0.00457
	(A1 * !A2 * !C1 * D1 * Y)	0.00298	0.00300	0.00298
	(A1 * !A2 * !C1 * !D1 * Y)	-0.00436	-0.00458	-0.00457
	(A1 * !A2 * !C1 * !D1 * Y)	0.00298	0.00300	0.00298
	(!A1 * !A2 * C1 * D1 * Y)	-0.00190	-0.00193	-0.00193
	(!A1 * !A2 * C1 * D1 * Y)	0.00307	0.00311	0.00303
	(!A1 * !A2 * C1 * !D1 * Y)	-0.00233	-0.00232	-0.00232
	(!A1 * !A2 * C1 * !D1 * Y)	0.00299	0.00305	0.00300
	(!A1 * !A2 * !C1 * D1 * Y)	-0.00238	-0.00241	-0.00239
	(!A1 * !A2 * !C1 * D1 * Y)	0.00300	0.00303	0.00299
	(!A1 * !A2 * !C1 * !D1 * Y)	-0.00247	-0.00250	-0.00248
	(!A1 * !A2 * !C1 * !D1 * Y)	0.00298	0.00302	0.00299

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)**	0.00115	0.00117	0.00115
	(A2 * B1 * !D1 * Y)	-0.00141	-0.00142	-0.00141
	(A2 * !B1 * D1 * Y)	0.00052	0.00053	0.00052
	(A2 * !B1 * D1 * Y)	-0.00141	-0.00142	-0.00141
	(A2 * !B1 * !D1 * Y)	0.00059	0.00059	0.00059
	(A2 * !B1 * !D1 * Y)	-0.00141	-0.00143	-0.00142
	(A1 * !A2 * B1 * !D1 * Y)	0.00115	0.00117	0.00115
	(A1 * !A2 * B1 * !D1 * Y)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * D1 * Y)	0.00052	0.00053	0.00052
	(!A2 * !B1 * D1 * Y)	-0.00141	-0.00142	-0.00141
	(!A2 * !B1 * !D1 * Y)	0.00059	0.00059	0.00059
	(!A2 * !B1 * !D1 * Y)	-0.00141	-0.00143	-0.00142
	(!A1 * !A2 * B1 * D1 * Y)	0.00050	0.00051	0.00050
	(!A1 * !A2 * B1 * D1 * Y)	-0.00141	-0.00143	-0.00141
	(!A1 * !A2 * B1 * !D1 * Y)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00141	-0.00142	-0.00142

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	0.00228	0.00231	0.00229
	(A2 * B1 * !D1 * Y)	-0.00274	-0.00277	-0.00276
	(A2 * !B1 * D1 * Y)	0.00105	0.00107	0.00106
	(A2 * !B1 * D1 * Y)	-0.00274	-0.00278	-0.00275
	(A2 * !B1 * !D1 * Y)	0.00122	0.00123	0.00122
	(A2 * !B1 * !D1 * Y)	-0.00276	-0.00279	-0.00277
	(A1 * !A2 * B1 * !D1 * Y)	0.00228	0.00231	0.00229
	(A1 * !A2 * B1 * !D1 * Y)	-0.00276	-0.00277	-0.00276
	(!A2 * !B1 * D1 * Y)	0.00105	0.00105	0.00106
	(!A2 * !B1 * D1 * Y)	-0.00275	-0.00275	-0.00275
	(!A2 * !B1 * !D1 * Y)	0.00122	0.00123	0.00122
	(!A2 * !B1 * !D1 * Y)	-0.00276	-0.00279	-0.00277
	(!A1 * !A2 * B1 * D1 * Y)	0.00099	0.00099	0.00101
	(!A1 * !A2 * B1 * D1 * Y)	-0.00275	-0.00275	-0.00274
	(!A1 * !A2 * B1 * !D1 * Y)	0.00124	0.00124	0.00124
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00276	-0.00277	-0.00276

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	0.00448	0.00452	0.00450
	(A2 * B1 * !D1 * Y)	-0.00292	-0.00294	-0.00293
	(A2 * !B1 * D1 * Y)	0.00195	0.00198	0.00197
	(A2 * !B1 * D1 * Y)	-0.00292	-0.00296	-0.00293
	(A2 * !B1 * !D1 * Y)	0.00223	0.00226	0.00224
	(A2 * !B1 * !D1 * Y)	-0.00296	-0.00300	-0.00297
	(A1 * !A2 * B1 * !D1 * Y)	0.00448	0.00453	0.00450
	(A1 * !A2 * B1 * !D1 * Y)	-0.00292	-0.00295	-0.00293
	(!A2 * !B1 * D1 * Y)	0.00196	0.00198	0.00197
	(!A2 * !B1 * D1 * Y)	-0.00293	-0.00296	-0.00293
	(!A2 * !B1 * !D1 * Y)	0.00223	0.00226	0.00224
	(!A2 * !B1 * !D1 * Y)	-0.00296	-0.00300	-0.00297
	(!A1 * !A2 * B1 * D1 * Y)	0.00187	0.00190	0.00189
	(!A1 * !A2 * B1 * D1 * Y)	-0.00292	-0.00295	-0.00292
	(!A1 * !A2 * B1 * !D1 * Y)	0.00233	0.00234	0.00233
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00295	-0.00297	-0.00295

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)**	-0.00107	-0.00115	-0.00115
	(A2 * B1 * !D1 * Y)	0.00147	0.00143	0.00142
	(A2 * !B1 * D1 * Y)	-0.00050	-0.00051	-0.00051
	(A2 * !B1 * D1 * Y)	0.00144	0.00145	0.00142
	(A2 * !B1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(A2 * !B1 * !D1 * Y)	0.00148	0.00149	0.00143
	(A1 * !A2 * B1 * !D1 * Y)	-0.00106	-0.00116	-0.00115
	(A1 * !A2 * B1 * !D1 * Y)	0.00149	0.00142	0.00142
	(!A2 * !B1 * D1 * Y)	-0.00050	-0.00051	-0.00051
	(!A2 * !B1 * D1 * Y)	0.00144	0.00145	0.00142
	(!A2 * !B1 * !D1 * Y)	-0.00059	-0.00059	-0.00059
	(!A2 * !B1 * !D1 * Y)	0.00148	0.00149	0.00143
	(!A1 * !A2 * B1 * D1 * Y)	-0.00048	-0.00049	-0.00049
	(!A1 * !A2 * B1 * D1 * Y)	0.00144	0.00145	0.00142
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !D1 * Y)	0.00146	0.00144	0.00142

sky130_fd_sc_hs__o2111ai_2	**(A2 * B1 * !D1 * Y)**	-0.00205	-0.00229	-0.00229
	(A2 * B1 * !D1 * Y)	0.00292	0.00277	0.00277
	(A2 * !B1 * D1 * Y)	-0.00101	-0.00101	-0.00103
	(A2 * !B1 * D1 * Y)	0.00284	0.00286	0.00278
	(A2 * !B1 * !D1 * Y)	-0.00122	-0.00123	-0.00122
	(A2 * !B1 * !D1 * Y)	0.00284	0.00285	0.00278
	(A1 * !A2 * B1 * !D1 * Y)	-0.00202	-0.00230	-0.00229
	(A1 * !A2 * B1 * !D1 * Y)	0.00294	0.00279	0.00277
	(!A2 * !B1 * D1 * Y)	-0.00101	-0.00101	-0.00103
	(!A2 * !B1 * D1 * Y)	0.00284	0.00286	0.00278
	(!A2 * !B1 * !D1 * Y)	-0.00122	-0.00123	-0.00122
	(!A2 * !B1 * !D1 * Y)	0.00284	0.00285	0.00278
	(!A1 * !A2 * B1 * D1 * Y)	-0.00097	-0.00098	-0.00099
	(!A1 * !A2 * B1 * D1 * Y)	0.00284	0.00286	0.00278
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * B1 * !D1 * Y)	0.00282	0.00279	0.00277

sky130_fd_sc_hs__o2111ai_4	**(A2 * B1 * !D1 * Y)**	-0.00396	-0.00452	-0.00450
	(A2 * B1 * !D1 * Y)	0.00331	0.00297	0.00294
	(A2 * !B1 * D1 * Y)	-0.00188	-0.00189	-0.00191
	(A2 * !B1 * D1 * Y)	0.00309	0.00310	0.00297
	(A2 * !B1 * !D1 * Y)	-0.00223	-0.00226	-0.00224
	(A2 * !B1 * !D1 * Y)	0.00319	0.00320	0.00301
	(A1 * !A2 * B1 * !D1 * Y)	-0.00397	-0.00453	-0.00450
	(A1 * !A2 * B1 * !D1 * Y)	0.00337	0.00296	0.00294
	(!A2 * !B1 * D1 * Y)	-0.00188	-0.00189	-0.00191
	(!A2 * !B1 * D1 * Y)	0.00309	0.00310	0.00297
	(!A2 * !B1 * !D1 * Y)	-0.00223	-0.00226	-0.00224
	(!A2 * !B1 * !D1 * Y)	0.00319	0.00320	0.00301
	(!A1 * !A2 * B1 * D1 * Y)	-0.00183	-0.00183	-0.00185
	(!A1 * !A2 * B1 * D1 * Y)	0.00309	0.00310	0.00297
	(!A1 * !A2 * B1 * !D1 * Y)	-0.00233	-0.00234	-0.00233
	(!A1 * !A2 * B1 * !D1 * Y)	0.00313	0.00302	0.00295

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	0.00038	0.00039	0.00037
	(A2 * !C1 * Y)	-0.00166	-0.00168	-0.00169
	(A2 * !B1 * C1 * Y)	0.00039	0.00039	0.00037
	(A2 * !B1 * C1 * Y)	-0.00163	-0.00163	-0.00168
	(!A2 * !C1 * Y)	0.00038	0.00038	0.00037
	(!A2 * !C1 * Y)	-0.00166	-0.00167	-0.00169
	(!A2 * !B1 * C1 * Y)	0.00039	0.00039	0.00037
	(!A2 * !B1 * C1 * Y)	-0.00162	-0.00163	-0.00168
	(!A1 * !A2 * B1 * C1 * Y)	0.00042	0.00043	0.00038
	(!A1 * !A2 * B1 * C1 * Y)	-0.00156	-0.00158	-0.00167

sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	0.00089	0.00089	0.00085
	(A2 * !C1 * Y)	-0.00317	-0.00318	-0.00324
	(A2 * !B1 * C1 * Y)	0.00088	0.00088	0.00082
	(A2 * !B1 * C1 * Y)	-0.00309	-0.00311	-0.00323
	(!A2 * !C1 * Y)	0.00089	0.00089	0.00085
	(!A2 * !C1 * Y)	-0.00317	-0.00318	-0.00324
	(!A2 * !B1 * C1 * Y)	0.00088	0.00088	0.00082
	(!A2 * !B1 * C1 * Y)	-0.00310	-0.00310	-0.00323
	(!A1 * !A2 * B1 * C1 * Y)	0.00091	0.00092	0.00081
	(!A1 * !A2 * B1 * C1 * Y)	-0.00297	-0.00300	-0.00320
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	0.00156	0.00156	0.00151
	(A2 * !C1 * Y)	-0.00385	-0.00387	-0.00398
	(A2 * !B1 * C1 * Y)	0.00156	0.00156	0.00145
	(A2 * !B1 * C1 * Y)	-0.00370	-0.00372	-0.00395
	(!A2 * !C1 * Y)	0.00157	0.00157	0.00151
	(!A2 * !C1 * Y)	-0.00386	-0.00387	-0.00398
	(!A2 * !B1 * C1 * Y)	0.00157	0.00156	0.00145
	(!A2 * !B1 * C1 * Y)	-0.00371	-0.00372	-0.00395
	(!A1 * !A2 * B1 * C1 * Y)	0.00165	0.00165	0.00146
	(!A1 * !A2 * B1 * C1 * Y)	-0.00348	-0.00350	-0.00390

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

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

sky130_fd_sc_hs__o2111ai_1	**(A2 * !C1 * Y)**	-0.00037	-0.00037	-0.00037
	(A2 * !C1 * Y)	0.00168	0.00172	0.00169
	(A2 * !B1 * C1 * Y)	-0.00036	-0.00037	-0.00036
	(A2 * !B1 * C1 * Y)	0.00168	0.00171	0.00169
	(!A2 * !C1 * Y)	-0.00037	-0.00037	-0.00037
	(!A2 * !C1 * Y)	0.00169	0.00172	0.00169
	(!A2 * !B1 * C1 * Y)	-0.00037	-0.00037	-0.00036
	(!A2 * !B1 * C1 * Y)	0.00169	0.00171	0.00169
	(!A1 * !A2 * B1 * C1 * Y)	-0.00036	-0.00037	-0.00036
	(!A1 * !A2 * B1 * C1 * Y)	0.00168	0.00171	0.00169
sky130_fd_sc_hs__o2111ai_2	**(A2 * !C1 * Y)**	-0.00083	-0.00085	-0.00083
	(A2 * !C1 * Y)	0.00323	0.00330	0.00325
	(A2 * !B1 * C1 * Y)	-0.00081	-0.00083	-0.00081
	(A2 * !B1 * C1 * Y)	0.00322	0.00329	0.00324
	(!A2 * !C1 * Y)	-0.00083	-0.00085	-0.00083
	(!A2 * !C1 * Y)	0.00323	0.00330	0.00325
	(!A2 * !B1 * C1 * Y)	-0.00081	-0.00083	-0.00081
	(!A2 * !B1 * C1 * Y)	0.00323	0.00330	0.00324
	(!A1 * !A2 * B1 * C1 * Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * B1 * C1 * Y)	0.00323	0.00323	0.00324
sky130_fd_sc_hs__o2111ai_4	**(A2 * !C1 * Y)**	-0.00149	-0.00147	-0.00147
	(A2 * !C1 * Y)	0.00399	0.00397	0.00398
	(A2 * !B1 * C1 * Y)	-0.00145	-0.00144	-0.00143
	(A2 * !B1 * C1 * Y)	0.00398	0.00397	0.00397
	(!A2 * !C1 * Y)	-0.00149	-0.00150	-0.00147
	(!A2 * !C1 * Y)	0.00399	0.00404	0.00398
	(!A2 * !B1 * C1 * Y)	-0.00145	-0.00145	-0.00143
	(!A2 * !B1 * C1 * Y)	0.00398	0.00401	0.00397
	(!A1 * !A2 * B1 * C1 * Y)	-0.00144	-0.00142	-0.00142
	(!A1 * !A2 * B1 * C1 * Y)	0.00398	0.00395	0.00397

SKY130_FD_SC_HS__O2111Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00244	0.00250	0.00233	0.00254	0.00255	1.12566
sky130_fd_sc_hs__o2111a_2	0.00247	0.00247	0.00243	0.00253	0.00263	2.30956
sky130_fd_sc_hs__o2111a_4	0.00469	0.00508	0.00431	0.00445	0.00449	4.24865

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2111a_1	0.00000	0.09649	0.74433
sky130_fd_sc_hs__o2111a_2	0.00000	0.07790	0.23257
sky130_fd_sc_hs__o2111a_4	0.00000	0.25187	1.48997

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)	0.09832	0.58485	5.84166
	A2->X (RR)	0.08780	0.56794	5.90383
	B1->X (RR)	0.09328	0.59152	6.08795
	C1->X (RR)	0.08895	0.59122	6.10608
	D1->X (RR)	0.08224	0.57289	5.99786
sky130_fd_sc_hs__o2111a_2	A1->X (RR)	0.10638	0.50510	5.90231
	A2->X (RR)	0.09577	0.48928	5.95009
	B1->X (RR)	0.10186	0.51589	6.10447
	C1->X (RR)	0.09725	0.52009	6.12881
	D1->X (RR)	0.09015	0.50501	6.05939
sky130_fd_sc_hs__o2111a_4	A1->X (RR)	0.12940	0.45280	5.90159
	A2->X (RR)	0.11978	0.44974	5.96349
	B1->X (RR)	0.12461	0.47641	6.21430
	C1->X (RR)	0.11969	0.50142	6.31661
	D1->X (RR)	0.10826	0.48036	6.27530

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o2111a_1	A1->X (FF)	0.16530	0.64062	4.85252
	A2->X (FF)	0.15394	0.61877	4.67914
	B1->X (FF)	0.09330	0.54099	4.49517
	C1->X (FF)	0.08366	0.52004	4.44490
	D1->X (FF)	0.06913	0.48961	4.40173
sky130_fd_sc_hs__o2111a_2	A1->X (FF)	0.18968	0.66545	5.14581
	A2->X (FF)	0.17832	0.64461	4.95900
	B1->X (FF)	0.09046	0.52662	4.65750
	C1->X (FF)	0.08309	0.50915	4.61073
	D1->X (FF)	0.07137	0.48327	4.55897
sky130_fd_sc_hs__o2111a_4	A1->X (FF)	0.22548	0.67390	5.18640
	A2->X (FF)	0.21570	0.67059	5.11098
	B1->X (FF)	0.11904	0.54650	4.75407
	C1->X (FF)	0.11007	0.52611	4.66526
	D1->X (FF)	0.09537	0.49880	4.61097

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	A1	0.01032	0.01043	0.01685
	A1	0.00369	0.00379	0.01022
	A2	0.00913	0.00921	0.02283
	A2	0.00314	0.00323	0.01713
	B1	0.00796	0.00823	0.02789
	B1	0.00321	0.00348	0.02342
	C1	0.00725	0.00752	0.02727
	C1	0.00320	0.00347	0.02350
	D1	0.00651	0.00692	0.02357
	D1	0.00318	0.00360	0.02053
sky130_fd_sc_hs__o2111a_2	A1	0.01248	0.01283	0.01900
	A1	0.00584	0.00622	0.01298
	A2	0.01123	0.01155	0.02430
	A2	0.00530	0.00565	0.01900
	B1	0.01012	0.01047	0.02622
	B1	0.00524	0.00561	0.02195
	C1	0.00936	0.00970	0.02548
	C1	0.00523	0.00558	0.02194
	D1	0.00862	0.00914	0.02473
	D1	0.00517	0.00572	0.02190

sky130_fd_sc_hs__o2111a_4	**A1**	0.02573	0.02599	0.03626
	A1	0.01220	0.01253	0.02391
	A2	0.02364	0.02400	0.04293
	A2	0.01113	0.01159	0.03159
	B1	0.02095	0.02156	0.05660
	B1	0.01118	0.01181	0.04792
	C1	0.01942	0.01989	0.05352
	C1	0.01118	0.01166	0.04628
	D1	0.01768	0.01845	0.05651
	D1	0.01110	0.01196	0.05096

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o2111a_1	**A1**	0.00381	0.00389	0.01112
	A1	0.01024	0.01032	0.01712
	A2	0.00386	0.00471	0.02002
	A2	0.00962	0.01046	0.02538
	B1	0.00310	0.00421	0.02578
	B1	0.00839	0.00952	0.03013
	C1	0.00274	0.00393	0.02516
	C1	0.00737	0.00841	0.02901
	D1	0.00231	0.00338	0.02478
	D1	0.00624	0.00722	0.02790

sky130_fd_sc_hs__o2111a_2	**A1**	0.00598	0.00601	0.01359
	A1	0.01241	0.01249	0.01906
	A2	0.00601	0.00679	0.02162
	A2	0.01171	0.01251	0.02721
	B1	0.00504	0.00654	0.02509
	B1	0.01046	0.01159	0.02892
	C1	0.00471	0.00602	0.02422
	C1	0.00940	0.01037	0.02776
	D1	0.00419	0.00517	0.02456
	D1	0.00824	0.00913	0.02702
sky130_fd_sc_hs__o2111a_4	**A1**	0.01188	0.01163	0.02590
	A1	0.02498	0.02472	0.03682
	A2	0.01193	0.01267	0.04045
	A2	0.02394	0.02475	0.05005
	B1	0.01004	0.01265	0.05222
	B1	0.02094	0.02298	0.06050
	C1	0.00940	0.01142	0.04924
	C1	0.01876	0.02064	0.05689
	D1	0.00796	0.01031	0.04942
	D1	0.01574	0.01806	0.05469

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)**	0.00141	0.00129	0.00127
	(A2 * B1 * C1 * D1 * X)	-0.00109	-0.00124	-0.00124
	(A2 * B1 * C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(A2 * B1 * C1 * !D1 * !X)	-0.00122	-0.00125	-0.00124
	(A2 * B1 * !C1 * !X)	0.00126	0.00127	0.00126
	(A2 * B1 * !C1 * !X)	-0.00122	-0.00125	-0.00124
	(A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !X)	-0.00122	-0.00125	-0.00124
	(!A2 * B1 * C1 * !D1 * !X)	0.00116	0.00116	0.00116
	(!A2 * B1 * C1 * !D1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !C1 * D1 * !X)	0.00117	0.00118	0.00117
	(!A2 * B1 * !C1 * D1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * B1 * !C1 * !D1 * !X)	0.00117	0.00118	0.00117
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * C1 * D1 * !X)	0.00120	0.00121	0.00120
	(!A2 * !B1 * C1 * D1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * !D1 * !X)	0.00120	0.00121	0.00120
	(!A2 * !B1 * !D1 * !X)	-0.00126	-0.00127	-0.00126
	(!A2 * !B1 * !C1 * D1 * !X)	0.00120	0.00121	0.00120
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	0.00145	0.00133	0.00131
	(A2 * B1 * C1 * D1 * X)	-0.00108	-0.00123	-0.00123
	(A2 * B1 * C1 * !D1 * !X)	0.00131	0.00132	0.00131
	(A2 * B1 * C1 * !D1 * !X)	-0.00121	-0.00124	-0.00123
	(A2 * B1 * !C1 * !X)	0.00131	0.00132	0.00131
	(A2 * B1 * !C1 * !X)	-0.00121	-0.00124	-0.00123
	(A2 * !B1 * !X)	0.00131	0.00132	0.00131
	(A2 * !B1 * !X)	-0.00121	-0.00124	-0.00123
	(!A2 * B1 * C1 * !D1 * !X)	0.00125	0.00124	0.00124
	(!A2 * B1 * C1 * !D1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * B1 * !C1 * D1 * !X)	0.00125	0.00125	0.00124
	(!A2 * B1 * !C1 * D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A2 * B1 * !C1 * !D1 * !X)	0.00126	0.00126	0.00125
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A2 * !B1 * C1 * D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * C1 * D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A2 * !B1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !D1 * !X)	-0.00124	-0.00125	-0.00125
	(!A2 * !B1 * !C1 * D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00124	-0.00125	-0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	0.00283	0.00258	0.00254
	(A2 * B1 * C1 * D1 * X)	-0.00210	-0.00241	-0.00242
	(A2 * B1 * C1 * !D1 * !X)	0.00234	0.00236	0.00233
	(A2 * B1 * C1 * !D1 * !X)	-0.00256	-0.00261	-0.00261
	(A2 * B1 * !C1 * !X)	0.00232	0.00236	0.00233
	(A2 * B1 * !C1 * !X)	-0.00253	-0.00261	-0.00261
	(A2 * !B1 * !X)	0.00232	0.00236	0.00233
	(A2 * !B1 * !X)	-0.00254	-0.00261	-0.00261
	(!A2 * B1 * C1 * !D1 * !X)	0.00219	0.00223	0.00220
	(!A2 * B1 * C1 * !D1 * !X)	-0.00264	-0.00266	-0.00265
	(!A2 * B1 * !C1 * D1 * !X)	0.00221	0.00223	0.00221
	(!A2 * B1 * !C1 * D1 * !X)	-0.00264	-0.00265	-0.00265
	(!A2 * B1 * !C1 * !D1 * !X)	0.00220	0.00222	0.00221
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00264	-0.00265	-0.00265
	(!A2 * !B1 * C1 * D1 * !X)	0.00224	0.00225	0.00224
	(!A2 * !B1 * C1 * D1 * !X)	-0.00265	-0.00265	-0.00265
	(!A2 * !B1 * !D1 * !X)	0.00224	0.00225	0.00224
	(!A2 * !B1 * !D1 * !X)	-0.00265	-0.00265	-0.00265
	(!A2 * !B1 * !C1 * D1 * !X)	0.00224	0.00225	0.00224
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00265	-0.00265	-0.00265

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)**	-0.00125	-0.00125	-0.00125
	(A2 * B1 * C1 * D1 * X)	0.00125	0.00125	0.00125
	(A2 * B1 * C1 * !D1 * !X)	-0.00126	-0.00126	-0.00126
	(A2 * B1 * C1 * !D1 * !X)	0.00125	0.00125	0.00124
	(A2 * B1 * !C1 * !X)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * !C1 * !X)	0.00123	0.00125	0.00124
	(A2 * !B1 * !X)	-0.00126	-0.00126	-0.00126
	(A2 * !B1 * !X)	0.00124	0.00125	0.00124
	(!A2 * B1 * C1 * !D1 * !X)	-0.00107	-0.00116	-0.00116
	(!A2 * B1 * C1 * !D1 * !X)	0.00126	0.00127	0.00126
	(!A2 * B1 * !C1 * D1 * !X)	-0.00109	-0.00118	-0.00117
	(!A2 * B1 * !C1 * D1 * !X)	0.00126	0.00128	0.00126
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00109	-0.00118	-0.00117
	(!A2 * B1 * !C1 * !D1 * !X)	0.00126	0.00128	0.00126
	(!A2 * !B1 * C1 * D1 * !X)	-0.00114	-0.00121	-0.00120
	(!A2 * !B1 * C1 * D1 * !X)	0.00126	0.00128	0.00126
	(!A2 * !B1 * !D1 * !X)	-0.00115	-0.00121	-0.00120
	(!A2 * !B1 * !D1 * !X)	0.00126	0.00128	0.00126
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00115	-0.00121	-0.00120
	(!A2 * !B1 * !C1 * D1 * !X)	0.00126	0.00128	0.00126

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * C1 * D1 * X)**	-0.00130	-0.00130	-0.00130
	(A2 * B1 * C1 * D1 * X)	0.00123	0.00124	0.00124
	(A2 * B1 * C1 * !D1 * !X)	-0.00130	-0.00131	-0.00131
	(A2 * B1 * C1 * !D1 * !X)	0.00123	0.00124	0.00123
	(A2 * B1 * !C1 * !X)	-0.00130	-0.00131	-0.00131
	(A2 * B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(A2 * !B1 * !X)	-0.00131	-0.00131	-0.00131
	(A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * B1 * C1 * !D1 * !X)	-0.00113	-0.00124	-0.00124
	(!A2 * B1 * C1 * !D1 * !X)	0.00125	0.00126	0.00125
	(!A2 * B1 * !C1 * D1 * !X)	-0.00114	-0.00125	-0.00124
	(!A2 * B1 * !C1 * D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00114	-0.00126	-0.00125
	(!A2 * B1 * !C1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * C1 * D1 * !X)	-0.00120	-0.00126	-0.00125
	(!A2 * !B1 * C1 * D1 * !X)	0.00125	0.00126	0.00125
	(!A2 * !B1 * !D1 * !X)	-0.00119	-0.00126	-0.00125
	(!A2 * !B1 * !D1 * !X)	0.00124	0.00126	0.00125
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00126	-0.00125
	(!A2 * !B1 * !C1 * D1 * !X)	0.00124	0.00126	0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * C1 * D1 * X)**	-0.00251	-0.00252	-0.00250
	(A2 * B1 * C1 * D1 * X)	0.00243	0.00245	0.00243
	(A2 * B1 * C1 * !D1 * !X)	-0.00232	-0.00233	-0.00233
	(A2 * B1 * C1 * !D1 * !X)	0.00260	0.00261	0.00261
	(A2 * B1 * !C1 * !X)	-0.00232	-0.00233	-0.00233
	(A2 * B1 * !C1 * !X)	0.00260	0.00261	0.00261
	(A2 * !B1 * !X)	-0.00232	-0.00233	-0.00233
	(A2 * !B1 * !X)	0.00260	0.00261	0.00261
	(!A2 * B1 * C1 * !D1 * !X)	-0.00202	-0.00219	-0.00220
	(!A2 * B1 * C1 * !D1 * !X)	0.00264	0.00268	0.00266
	(!A2 * B1 * !C1 * D1 * !X)	-0.00204	-0.00220	-0.00221
	(!A2 * B1 * !C1 * D1 * !X)	0.00264	0.00268	0.00266
	(!A2 * B1 * !C1 * !D1 * !X)	-0.00204	-0.00220	-0.00221
	(!A2 * B1 * !C1 * !D1 * !X)	0.00264	0.00268	0.00266
	(!A2 * !B1 * C1 * D1 * !X)	-0.00211	-0.00221	-0.00223
	(!A2 * !B1 * C1 * D1 * !X)	0.00265	0.00266	0.00266
	(!A2 * !B1 * !D1 * !X)	-0.00211	-0.00221	-0.00224
	(!A2 * !B1 * !D1 * !X)	0.00265	0.00266	0.00266
	(!A2 * !B1 * !C1 * D1 * !X)	-0.00212	-0.00221	-0.00224
	(!A2 * !B1 * !C1 * D1 * !X)	0.00265	0.00266	0.00266

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)**	0.00132	0.00133	0.00132
	(A1 * B1 * C1 * D1 * X)	-0.00064	-0.00065	-0.00064
	(A1 * B1 * C1 * !D1 * !X)	0.00120	0.00120	0.00120
	(A1 * B1 * C1 * !D1 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * B1 * !C1 * D1 * !X)	0.00120	0.00120	0.00120
	(A1 * B1 * !C1 * D1 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * B1 * !C1 * !D1 * !X)	0.00119	0.00120	0.00120
	(A1 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * !B1 * C1 * D1 * !X)	0.00120	0.00120	0.00120
	(A1 * !B1 * C1 * D1 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * !B1 * !D1 * !X)	0.00120	0.00120	0.00120
	(A1 * !B1 * !D1 * !X)	-0.00119	-0.00122	-0.00122
	(A1 * !B1 * !C1 * D1 * !X)	0.00120	0.00120	0.00120
	(A1 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00122	-0.00122
	(!A1 * B1 * C1 * !D1 * !X)	0.00112	0.00113	0.00112
	(!A1 * B1 * C1 * !D1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * B1 * !C1 * D1 * !X)	0.00111	0.00111	0.00111
	(!A1 * B1 * !C1 * D1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * B1 * !C1 * !D1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * C1 * D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * C1 * D1 * !X)	-0.00124	-0.00125	-0.00124
	(!A1 * !B1 * !D1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !D1 * !X)	-0.00123	-0.00124	-0.00124
	(!A1 * !B1 * !C1 * D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00123	-0.00124	-0.00124

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	0.00131	0.00132	0.00131
	(A1 * B1 * C1 * D1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * B1 * C1 * !D1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * C1 * !D1 * !X)	-0.00116	-0.00119	-0.00119
	(A1 * B1 * !C1 * D1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * D1 * !X)	-0.00116	-0.00119	-0.00119
	(A1 * B1 * !C1 * !D1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * !C1 * !D1 * !X)	-0.00116	-0.00119	-0.00119
	(A1 * !B1 * C1 * D1 * !X)	0.00121	0.00121	0.00120
	(A1 * !B1 * C1 * D1 * !X)	-0.00117	-0.00119	-0.00119
	(A1 * !B1 * !D1 * !X)	0.00121	0.00121	0.00120
	(A1 * !B1 * !D1 * !X)	-0.00117	-0.00119	-0.00119
	(A1 * !B1 * !C1 * D1 * !X)	0.00121	0.00121	0.00120
	(A1 * !B1 * !C1 * D1 * !X)	-0.00117	-0.00119	-0.00119
	(!A1 * B1 * C1 * !D1 * !X)	0.00113	0.00113	0.00113
	(!A1 * B1 * C1 * !D1 * !X)	-0.00120	-0.00121	-0.00121
	(!A1 * B1 * !C1 * D1 * !X)	0.00114	0.00114	0.00114
	(!A1 * B1 * !C1 * D1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * B1 * !C1 * !D1 * !X)	0.00114	0.00114	0.00114
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !B1 * C1 * D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * C1 * D1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !B1 * !D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !D1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !B1 * !C1 * D1 * !X)	0.00114	0.00115	0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00121	-0.00121	-0.00121

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	0.00289	0.00292	0.00289
	(A1 * B1 * C1 * D1 * X)	-0.00127	-0.00128	-0.00127
	(A1 * B1 * C1 * !D1 * !X)	0.00245	0.00247	0.00245
	(A1 * B1 * C1 * !D1 * !X)	-0.00256	-0.00264	-0.00263
	(A1 * B1 * !C1 * D1 * !X)	0.00245	0.00247	0.00245
	(A1 * B1 * !C1 * D1 * !X)	-0.00256	-0.00264	-0.00263
	(A1 * B1 * !C1 * !D1 * !X)	0.00245	0.00247	0.00245
	(A1 * B1 * !C1 * !D1 * !X)	-0.00256	-0.00264	-0.00263
	(A1 * !B1 * C1 * D1 * !X)	0.00245	0.00247	0.00245
	(A1 * !B1 * C1 * D1 * !X)	-0.00256	-0.00264	-0.00263
	(A1 * !B1 * !D1 * !X)	0.00245	0.00247	0.00245
	(A1 * !B1 * !D1 * !X)	-0.00256	-0.00264	-0.00263
	(A1 * !B1 * !C1 * D1 * !X)	0.00245	0.00247	0.00245
	(A1 * !B1 * !C1 * D1 * !X)	-0.00256	-0.00264	-0.00263
	(!A1 * B1 * C1 * !D1 * !X)	0.00223	0.00225	0.00223
	(!A1 * B1 * C1 * !D1 * !X)	-0.00267	-0.00268	-0.00267
	(!A1 * B1 * !C1 * D1 * !X)	0.00223	0.00225	0.00225
	(!A1 * B1 * !C1 * D1 * !X)	-0.00265	-0.00267	-0.00267
	(!A1 * B1 * !C1 * !D1 * !X)	0.00231	0.00232	0.00231
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00267	-0.00267	-0.00267
	(!A1 * !B1 * C1 * D1 * !X)	0.00231	0.00232	0.00231
	(!A1 * !B1 * C1 * D1 * !X)	-0.00266	-0.00267	-0.00267
	(!A1 * !B1 * !D1 * !X)	0.00231	0.00234	0.00231
	(!A1 * !B1 * !D1 * !X)	-0.00267	-0.00268	-0.00267
	(!A1 * !B1 * !C1 * D1 * !X)	0.00231	0.00234	0.00231
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00267	-0.00268	-0.00267

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)**	-0.00127	-0.00128	-0.00130
	(A1 * B1 * C1 * D1 * X)	0.00069	0.00069	0.00066
	(A1 * B1 * C1 * !D1 * !X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(A1 * B1 * !C1 * D1 * !X)	-0.00120	-0.00120	-0.00119
	(A1 * B1 * !C1 * D1 * !X)	0.00122	0.00122	0.00122
	(A1 * B1 * !C1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * B1 * !C1 * !D1 * !X)	0.00122	0.00122	0.00122
	(A1 * !B1 * C1 * D1 * !X)	-0.00120	-0.00120	-0.00119
	(A1 * !B1 * C1 * D1 * !X)	0.00122	0.00122	0.00122
	(A1 * !B1 * !D1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !B1 * !D1 * !X)	0.00121	0.00122	0.00122
	(A1 * !B1 * !C1 * D1 * !X)	-0.00119	-0.00120	-0.00119
	(A1 * !B1 * !C1 * D1 * !X)	0.00121	0.00122	0.00122
	(!A1 * B1 * C1 * !D1 * !X)	-0.00100	-0.00113	-0.00112
	(!A1 * B1 * C1 * !D1 * !X)	0.00124	0.00125	0.00124
	(!A1 * B1 * !C1 * D1 * !X)	-0.00104	-0.00111	-0.00111
	(!A1 * B1 * !C1 * D1 * !X)	0.00124	0.00125	0.00124
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00104	-0.00112	-0.00111
	(!A1 * B1 * !C1 * !D1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * C1 * D1 * !X)	-0.00109	-0.00115	-0.00114
	(!A1 * !B1 * C1 * D1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !B1 * !D1 * !X)	-0.00108	-0.00114	-0.00113
	(!A1 * !B1 * !D1 * !X)	0.00123	0.00125	0.00124
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00108	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	0.00123	0.00125	0.00124

sky130_fd_sc_hs__o2111a_2	**(A1 * B1 * C1 * D1 * X)**	-0.00127	-0.00128	-0.00130
	(A1 * B1 * C1 * D1 * X)	0.00066	0.00066	0.00064
	(A1 * B1 * C1 * !D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * C1 * !D1 * !X)	0.00119	0.00119	0.00119
	(A1 * B1 * !C1 * D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * !C1 * D1 * !X)	0.00119	0.00119	0.00119
	(A1 * B1 * !C1 * !D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * B1 * !C1 * !D1 * !X)	0.00119	0.00119	0.00119
	(A1 * !B1 * C1 * D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !B1 * C1 * D1 * !X)	0.00119	0.00119	0.00119
	(A1 * !B1 * !D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !B1 * !D1 * !X)	0.00119	0.00119	0.00119
	(A1 * !B1 * !C1 * D1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !B1 * !C1 * D1 * !X)	0.00119	0.00119	0.00119
	(!A1 * B1 * C1 * !D1 * !X)	-0.00102	-0.00113	-0.00113
	(!A1 * B1 * C1 * !D1 * !X)	0.00120	0.00122	0.00121
	(!A1 * B1 * !C1 * D1 * !X)	-0.00104	-0.00114	-0.00114
	(!A1 * B1 * !C1 * D1 * !X)	0.00121	0.00122	0.00121
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00104	-0.00114	-0.00114
	(!A1 * B1 * !C1 * !D1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * C1 * D1 * !X)	-0.00110	-0.00115	-0.00114
	(!A1 * !B1 * C1 * D1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !D1 * !X)	-0.00110	-0.00115	-0.00114
	(!A1 * !B1 * !D1 * !X)	0.00121	0.00122	0.00121
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00110	-0.00115	-0.00114
	(!A1 * !B1 * !C1 * D1 * !X)	0.00121	0.00122	0.00121

sky130_fd_sc_hs__o2111a_4	**(A1 * B1 * C1 * D1 * X)**	-0.00278	-0.00280	-0.00286
	(A1 * B1 * C1 * D1 * X)	0.00138	0.00138	0.00132
	(A1 * B1 * C1 * !D1 * !X)	-0.00245	-0.00246	-0.00245
	(A1 * B1 * C1 * !D1 * !X)	0.00263	0.00265	0.00263
	(A1 * B1 * !C1 * D1 * !X)	-0.00245	-0.00246	-0.00245
	(A1 * B1 * !C1 * D1 * !X)	0.00263	0.00265	0.00263
	(A1 * B1 * !C1 * !D1 * !X)	-0.00245	-0.00246	-0.00245
	(A1 * B1 * !C1 * !D1 * !X)	0.00263	0.00265	0.00263
	(A1 * !B1 * C1 * D1 * !X)	-0.00245	-0.00246	-0.00245
	(A1 * !B1 * C1 * D1 * !X)	0.00263	0.00265	0.00263
	(A1 * !B1 * !D1 * !X)	-0.00243	-0.00246	-0.00245
	(A1 * !B1 * !D1 * !X)	0.00261	0.00265	0.00263
	(A1 * !B1 * !C1 * D1 * !X)	-0.00243	-0.00246	-0.00245
	(A1 * !B1 * !C1 * D1 * !X)	0.00261	0.00265	0.00263
	(!A1 * B1 * C1 * !D1 * !X)	-0.00204	-0.00225	-0.00223
	(!A1 * B1 * C1 * !D1 * !X)	0.00268	0.00270	0.00267
	(!A1 * B1 * !C1 * D1 * !X)	-0.00208	-0.00225	-0.00225
	(!A1 * B1 * !C1 * D1 * !X)	0.00268	0.00270	0.00267
	(!A1 * B1 * !C1 * !D1 * !X)	-0.00208	-0.00231	-0.00231
	(!A1 * B1 * !C1 * !D1 * !X)	0.00268	0.00270	0.00267
	(!A1 * !B1 * C1 * D1 * !X)	-0.00218	-0.00231	-0.00231
	(!A1 * !B1 * C1 * D1 * !X)	0.00266	0.00267	0.00268
	(!A1 * !B1 * !D1 * !X)	-0.00218	-0.00232	-0.00231
	(!A1 * !B1 * !D1 * !X)	0.00267	0.00269	0.00268
	(!A1 * !B1 * !C1 * D1 * !X)	-0.00218	-0.00232	-0.00231
	(!A1 * !B1 * !C1 * D1 * !X)	0.00267	0.00269	0.00268

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)**	0.00110	0.00111	0.00110
	(A2 * C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A2 * !C1 * D1 * !X)	0.00109	0.00111	0.00110
	(A2 * !C1 * D1 * !X)	-0.00109	-0.00110	-0.00109
	(A2 * !C1 * !D1 * !X)	0.00109	0.00110	0.00110
	(A2 * !C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * C1 * !D1 * !X)	0.00107	0.00108	0.00108
	(A1 * !A2 * C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * !C1 * D1 * !X)	0.00110	0.00111	0.00111
	(A1 * !A2 * !C1 * D1 * !X)	-0.00109	-0.00109	-0.00109
	(A1 * !A2 * !C1 * !D1 * !X)	0.00110	0.00112	0.00111
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * C1 * D1 * !X)	0.00050	0.00051	0.00050
	(!A1 * !A2 * C1 * D1 * !X)	-0.00106	-0.00107	-0.00106
	(!A1 * !A2 * C1 * !D1 * !X)	0.00057	0.00058	0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00109	-0.00110	-0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	0.00060	0.00060	0.00060
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00109	-0.00109	-0.00109
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00109	-0.00110	-0.00109

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	0.00112	0.00113	0.00111
	(A2 * C1 * !D1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * !C1 * D1 * !X)	0.00112	0.00114	0.00113
	(A2 * !C1 * D1 * !X)	-0.00124	-0.00125	-0.00124
	(A2 * !C1 * !D1 * !X)	0.00112	0.00114	0.00112
	(A2 * !C1 * !D1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * C1 * !D1 * !X)	0.00110	0.00110	0.00110
	(A1 * !A2 * C1 * !D1 * !X)	-0.00124	-0.00124	-0.00124
	(A1 * !A2 * !C1 * D1 * !X)	0.00112	0.00114	0.00112
	(A1 * !A2 * !C1 * D1 * !X)	-0.00124	-0.00125	-0.00124
	(A1 * !A2 * !C1 * !D1 * !X)	0.00112	0.00113	0.00112
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * C1 * D1 * !X)	0.00053	0.00054	0.00053
	(!A1 * !A2 * C1 * D1 * !X)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * C1 * !D1 * !X)	0.00061	0.00062	0.00062
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00123	-0.00125	-0.00124
	(!A1 * !A2 * !C1 * D1 * !X)	0.00063	0.00064	0.00063
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00124	-0.00124	-0.00124
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00066	0.00066	0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	0.00219	0.00221	0.00220
	(A2 * C1 * !D1 * !X)	-0.00214	-0.00215	-0.00214
	(A2 * !C1 * D1 * !X)	0.00223	0.00224	0.00223
	(A2 * !C1 * D1 * !X)	-0.00214	-0.00215	-0.00214
	(A2 * !C1 * !D1 * !X)	0.00223	0.00224	0.00223
	(A2 * !C1 * !D1 * !X)	-0.00214	-0.00214	-0.00214
	(A1 * !A2 * C1 * !D1 * !X)	0.00221	0.00223	0.00221
	(A1 * !A2 * C1 * !D1 * !X)	-0.00215	-0.00215	-0.00214
	(A1 * !A2 * !C1 * D1 * !X)	0.00223	0.00224	0.00223
	(A1 * !A2 * !C1 * D1 * !X)	-0.00214	-0.00215	-0.00214
	(A1 * !A2 * !C1 * !D1 * !X)	0.00223	0.00226	0.00223
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00214	-0.00216	-0.00214
	(!A1 * !A2 * C1 * D1 * !X)	0.00099	0.00100	0.00099
	(!A1 * !A2 * C1 * D1 * !X)	-0.00210	-0.00211	-0.00208
	(!A1 * !A2 * C1 * !D1 * !X)	0.00116	0.00117	0.00116
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00215	-0.00216	-0.00216
	(!A1 * !A2 * !C1 * D1 * !X)	0.00115	0.00116	0.00116
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00215	-0.00215	-0.00215
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00121	0.00122	0.00120
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00215	-0.00216	-0.00215

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)**	-0.00099	-0.00109	-0.00109
	(A2 * C1 * !D1 * !X)	0.00109	0.00110	0.00109
	(A2 * !C1 * D1 * !X)	-0.00105	-0.00110	-0.00110
	(A2 * !C1 * D1 * !X)	0.00109	0.00110	0.00109
	(A2 * !C1 * !D1 * !X)	-0.00105	-0.00110	-0.00110
	(A2 * !C1 * !D1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * C1 * !D1 * !X)	-0.00097	-0.00108	-0.00108
	(A1 * !A2 * C1 * !D1 * !X)	0.00109	0.00109	0.00109
	(A1 * !A2 * !C1 * D1 * !X)	-0.00104	-0.00110	-0.00111
	(A1 * !A2 * !C1 * D1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00105	-0.00110	-0.00111
	(A1 * !A2 * !C1 * !D1 * !X)	0.00109	0.00110	0.00109
	(!A1 * !A2 * C1 * D1 * !X)	-0.00046	-0.00047	-0.00047
	(!A1 * !A2 * C1 * D1 * !X)	0.00112	0.00113	0.00110
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00057	-0.00058	-0.00057
	(!A1 * !A2 * C1 * !D1 * !X)	0.00110	0.00110	0.00109
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00060	-0.00060	-0.00060
	(!A1 * !A2 * !C1 * D1 * !X)	0.00111	0.00110	0.00109
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00110	0.00110	0.00109

sky130_fd_sc_hs__o2111a_2	**(A2 * C1 * !D1 * !X)**	-0.00102	-0.00112	-0.00111
	(A2 * C1 * !D1 * !X)	0.00124	0.00126	0.00124
	(A2 * !C1 * D1 * !X)	-0.00108	-0.00113	-0.00113
	(A2 * !C1 * D1 * !X)	0.00124	0.00126	0.00125
	(A2 * !C1 * !D1 * !X)	-0.00108	-0.00113	-0.00112
	(A2 * !C1 * !D1 * !X)	0.00124	0.00126	0.00125
	(A1 * !A2 * C1 * !D1 * !X)	-0.00100	-0.00110	-0.00110
	(A1 * !A2 * C1 * !D1 * !X)	0.00124	0.00125	0.00124
	(A1 * !A2 * !C1 * D1 * !X)	-0.00108	-0.00113	-0.00112
	(A1 * !A2 * !C1 * D1 * !X)	0.00125	0.00125	0.00125
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00108	-0.00113	-0.00112
	(A1 * !A2 * !C1 * !D1 * !X)	0.00125	0.00125	0.00125
	(!A1 * !A2 * C1 * D1 * !X)	-0.00049	-0.00050	-0.00050
	(!A1 * !A2 * C1 * D1 * !X)	0.00126	0.00128	0.00125
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00061	-0.00062	-0.00062
	(!A1 * !A2 * C1 * !D1 * !X)	0.00124	0.00125	0.00124
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !C1 * D1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00066	-0.00066	-0.00065
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00124	0.00126	0.00125

sky130_fd_sc_hs__o2111a_4	**(A2 * C1 * !D1 * !X)**	-0.00202	-0.00219	-0.00220
	(A2 * C1 * !D1 * !X)	0.00216	0.00215	0.00215
	(A2 * !C1 * D1 * !X)	-0.00212	-0.00224	-0.00223
	(A2 * !C1 * D1 * !X)	0.00215	0.00217	0.00215
	(A2 * !C1 * !D1 * !X)	-0.00212	-0.00224	-0.00223
	(A2 * !C1 * !D1 * !X)	0.00215	0.00217	0.00215
	(A1 * !A2 * C1 * !D1 * !X)	-0.00198	-0.00218	-0.00221
	(A1 * !A2 * C1 * !D1 * !X)	0.00216	0.00216	0.00215
	(A1 * !A2 * !C1 * D1 * !X)	-0.00209	-0.00223	-0.00223
	(A1 * !A2 * !C1 * D1 * !X)	0.00214	0.00216	0.00215
	(A1 * !A2 * !C1 * !D1 * !X)	-0.00210	-0.00223	-0.00223
	(A1 * !A2 * !C1 * !D1 * !X)	0.00214	0.00216	0.00215
	(!A1 * !A2 * C1 * D1 * !X)	-0.00092	-0.00092	-0.00091
	(!A1 * !A2 * C1 * D1 * !X)	0.00221	0.00222	0.00218
	(!A1 * !A2 * C1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * C1 * !D1 * !X)	0.00215	0.00218	0.00216
	(!A1 * !A2 * !C1 * D1 * !X)	-0.00115	-0.00116	-0.00116
	(!A1 * !A2 * !C1 * D1 * !X)	0.00217	0.00218	0.00216
	(!A1 * !A2 * !C1 * !D1 * !X)	-0.00121	-0.00122	-0.00120
	(!A1 * !A2 * !C1 * !D1 * !X)	0.00217	0.00218	0.00216

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)**	0.00110	0.00111	0.00110
	(A2 * B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(A2 * !B1 * D1 * !X)	0.00046	0.00047	0.00046
	(A2 * !B1 * D1 * !X)	-0.00116	-0.00117	-0.00116
	(A2 * !B1 * !D1 * !X)	0.00051	0.00052	0.00052
	(A2 * !B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(A1 * !A2 * B1 * !D1 * !X)	0.00110	0.00112	0.00111
	(A1 * !A2 * B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(!A2 * !B1 * D1 * !X)	0.00046	0.00047	0.00046
	(!A2 * !B1 * D1 * !X)	-0.00116	-0.00117	-0.00116
	(!A2 * !B1 * !D1 * !X)	0.00051	0.00052	0.00052
	(!A2 * !B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116
	(!A1 * !A2 * B1 * D1 * !X)	0.00048	0.00048	0.00047
	(!A1 * !A2 * B1 * D1 * !X)	-0.00117	-0.00117	-0.00116
	(!A1 * !A2 * B1 * !D1 * !X)	0.00058	0.00059	0.00059
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00116	-0.00117	-0.00116

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	0.00110	0.00112	0.00111
	(A2 * B1 * !D1 * !X)	-0.00129	-0.00129	-0.00129
	(A2 * !B1 * D1 * !X)	0.00049	0.00050	0.00049
	(A2 * !B1 * D1 * !X)	-0.00129	-0.00129	-0.00128
	(A2 * !B1 * !D1 * !X)	0.00056	0.00057	0.00056
	(A2 * !B1 * !D1 * !X)	-0.00128	-0.00130	-0.00129
	(A1 * !A2 * B1 * !D1 * !X)	0.00110	0.00112	0.00111
	(A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00129	-0.00129
	(!A2 * !B1 * D1 * !X)	0.00049	0.00050	0.00049
	(!A2 * !B1 * D1 * !X)	-0.00129	-0.00129	-0.00128
	(!A2 * !B1 * !D1 * !X)	0.00056	0.00057	0.00056
	(!A2 * !B1 * !D1 * !X)	-0.00128	-0.00130	-0.00129
	(!A1 * !A2 * B1 * D1 * !X)	0.00049	0.00050	0.00049
	(!A1 * !A2 * B1 * D1 * !X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * B1 * !D1 * !X)	0.00062	0.00062	0.00062
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__o2111a_4	**(A2 * B1 * !D1 * !X)**	0.00229	0.00231	0.00230
	(A2 * B1 * !D1 * !X)	-0.00220	-0.00221	-0.00220
	(A2 * !B1 * D1 * !X)	0.00102	0.00104	0.00103
	(A2 * !B1 * D1 * !X)	-0.00220	-0.00222	-0.00219
	(A2 * !B1 * !D1 * !X)	0.00119	0.00118	0.00118
	(A2 * !B1 * !D1 * !X)	-0.00222	-0.00222	-0.00222
	(A1 * !A2 * B1 * !D1 * !X)	0.00229	0.00232	0.00230
	(A1 * !A2 * B1 * !D1 * !X)	-0.00220	-0.00221	-0.00220
	(!A2 * !B1 * D1 * !X)	0.00102	0.00104	0.00103
	(!A2 * !B1 * D1 * !X)	-0.00219	-0.00222	-0.00219
	(!A2 * !B1 * !D1 * !X)	0.00118	0.00118	0.00118
	(!A2 * !B1 * !D1 * !X)	-0.00221	-0.00222	-0.00222
	(!A1 * !A2 * B1 * D1 * !X)	0.00097	0.00098	0.00100
	(!A1 * !A2 * B1 * D1 * !X)	-0.00220	-0.00221	-0.00219
	(!A1 * !A2 * B1 * !D1 * !X)	0.00122	0.00124	0.00123
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00221	-0.00223	-0.00222

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)**	-0.00102	-0.00110	-0.00110
	(A2 * B1 * !D1 * !X)	0.00123	0.00118	0.00117
	(A2 * !B1 * D1 * !X)	-0.00045	-0.00045	-0.00045
	(A2 * !B1 * D1 * !X)	0.00119	0.00120	0.00117
	(A2 * !B1 * !D1 * !X)	-0.00051	-0.00052	-0.00052
	(A2 * !B1 * !D1 * !X)	0.00123	0.00123	0.00118
	(A1 * !A2 * B1 * !D1 * !X)	-0.00101	-0.00110	-0.00111
	(A1 * !A2 * B1 * !D1 * !X)	0.00123	0.00117	0.00117
	(!A2 * !B1 * D1 * !X)	-0.00045	-0.00045	-0.00045
	(!A2 * !B1 * D1 * !X)	0.00119	0.00120	0.00117
	(!A2 * !B1 * !D1 * !X)	-0.00051	-0.00052	-0.00052
	(!A2 * !B1 * !D1 * !X)	0.00123	0.00123	0.00118
	(!A1 * !A2 * B1 * D1 * !X)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B1 * D1 * !X)	0.00119	0.00120	0.00117
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !D1 * !X)	0.00121	0.00119	0.00116

sky130_fd_sc_hs__o2111a_2	**(A2 * B1 * !D1 * !X)**	-0.00103	-0.00112	-0.00111
	(A2 * B1 * !D1 * !X)	0.00133	0.00131	0.00129
	(A2 * !B1 * D1 * !X)	-0.00047	-0.00048	-0.00048
	(A2 * !B1 * D1 * !X)	0.00131	0.00133	0.00130
	(A2 * !B1 * !D1 * !X)	-0.00056	-0.00057	-0.00056
	(A2 * !B1 * !D1 * !X)	0.00134	0.00135	0.00130
	(A1 * !A2 * B1 * !D1 * !X)	-0.00103	-0.00110	-0.00111
	(A1 * !A2 * B1 * !D1 * !X)	0.00135	0.00129	0.00129
	(!A2 * !B1 * D1 * !X)	-0.00047	-0.00048	-0.00048
	(!A2 * !B1 * D1 * !X)	0.00131	0.00133	0.00130
	(!A2 * !B1 * !D1 * !X)	-0.00056	-0.00057	-0.00056
	(!A2 * !B1 * !D1 * !X)	0.00134	0.00135	0.00130
	(!A1 * !A2 * B1 * D1 * !X)	-0.00046	-0.00047	-0.00047
	(!A1 * !A2 * B1 * D1 * !X)	0.00131	0.00133	0.00129
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00062	-0.00062	-0.00062
	(!A1 * !A2 * B1 * !D1 * !X)	0.00131	0.00130	0.00129

sky130_fd_sc_hs__o2111a_4	(A2 * B1 * !D1 * !X)	-0.00208	-0.00230	-0.00230
	(A2 * B1 * !D1 * !X)	0.00234	0.00221	0.00221
	(A2 * !B1 * D1 * !X)	-0.00098	-0.00098	-0.00100
	(A2 * !B1 * D1 * !X)	0.00229	0.00230	0.00223
	(A2 * !B1 * !D1 * !X)	-0.00119	-0.00118	-0.00118
	(A2 * !B1 * !D1 * !X)	0.00228	0.00230	0.00223
	(A1 * !A2 * B1 * !D1 * !X)	-0.00205	-0.00231	-0.00230
	(A1 * !A2 * B1 * !D1 * !X)	0.00236	0.00223	0.00221
	(!A2 * !B1 * D1 * !X)	-0.00098	-0.00098	-0.00100
	(!A2 * !B1 * D1 * !X)	0.00229	0.00230	0.00223
	(!A2 * !B1 * !D1 * !X)	-0.00118	-0.00118	-0.00118
	(!A2 * !B1 * !D1 * !X)	0.00228	0.00230	0.00223
	(!A1 * !A2 * B1 * D1 * !X)	-0.00095	-0.00095	-0.00096
	(!A1 * !A2 * B1 * D1 * !X)	0.00229	0.00230	0.00223
	(!A1 * !A2 * B1 * !D1 * !X)	-0.00122	-0.00124	-0.00123
	(!A1 * !A2 * B1 * !D1 * !X)	0.00225	0.00224	0.00222

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2111a_1	(A2 * !C1 * !X)	0.00040	0.00040	0.00039
	(A2 * !C1 * !X)	-0.00143	-0.00143	-0.00145
	(A2 * !B1 * C1 * !X)	0.00040	0.00039	0.00038
	(A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00145
	(!A2 * !C1 * !X)	0.00040	0.00040	0.00039
	(!A2 * !C1 * !X)	-0.00143	-0.00143	-0.00145
	(!A2 * !B1 * C1 * !X)	0.00040	0.00039	0.00038
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00145
	(!A1 * !A2 * B1 * C1 * !X)	0.00044	0.00044	0.00039
	(!A1 * !A2 * B1 * C1 * !X)	-0.00134	-0.00135	-0.00144

sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	0.00042	0.00042	0.00041
	(A2 * !C1 * !X)	-0.00159	-0.00160	-0.00162
	(A2 * !B1 * C1 * !X)	0.00041	0.00041	0.00039
	(A2 * !B1 * C1 * !X)	-0.00156	-0.00157	-0.00161
	(!A2 * !C1 * !X)	0.00042	0.00042	0.00041
	(!A2 * !C1 * !X)	-0.00160	-0.00160	-0.00162
	(!A2 * !B1 * C1 * !X)	0.00041	0.00041	0.00039
	(!A2 * !B1 * C1 * !X)	-0.00156	-0.00157	-0.00161
	(!A1 * !A2 * B1 * C1 * !X)	0.00045	0.00045	0.00040
	(!A1 * !A2 * B1 * C1 * !X)	-0.00150	-0.00150	-0.00160
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	0.00088	0.00088	0.00084
	(A2 * !C1 * !X)	-0.00264	-0.00265	-0.00271
	(A2 * !B1 * C1 * !X)	0.00084	0.00084	0.00078
	(A2 * !B1 * C1 * !X)	-0.00257	-0.00258	-0.00269
	(!A2 * !C1 * !X)	0.00087	0.00088	0.00084
	(!A2 * !C1 * !X)	-0.00263	-0.00265	-0.00271
	(!A2 * !B1 * C1 * !X)	0.00084	0.00084	0.00078
	(!A2 * !B1 * C1 * !X)	-0.00257	-0.00258	-0.00269
	(!A1 * !A2 * B1 * C1 * !X)	0.00088	0.00089	0.00078
	(!A1 * !A2 * B1 * C1 * !X)	-0.00245	-0.00247	-0.00267

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

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

sky130_fd_sc_hs__o2111a_1	**(A2 * !C1 * !X)**	-0.00038	-0.00039	-0.00038
	(A2 * !C1 * !X)	0.00145	0.00148	0.00145
	(A2 * !B1 * C1 * !X)	-0.00037	-0.00038	-0.00037
	(A2 * !B1 * C1 * !X)	0.00145	0.00147	0.00145
	(!A2 * !C1 * !X)	-0.00038	-0.00039	-0.00038
	(!A2 * !C1 * !X)	0.00145	0.00148	0.00145
	(!A2 * !B1 * C1 * !X)	-0.00038	-0.00038	-0.00037
	(!A2 * !B1 * C1 * !X)	0.00145	0.00147	0.00145
	(!A1 * !A2 * B1 * C1 * !X)	-0.00038	-0.00038	-0.00037
	(!A1 * !A2 * B1 * C1 * !X)	0.00145	0.00147	0.00145
sky130_fd_sc_hs__o2111a_2	**(A2 * !C1 * !X)**	-0.00040	-0.00040	-0.00039
	(A2 * !C1 * !X)	0.00161	0.00164	0.00162
	(A2 * !B1 * C1 * !X)	-0.00039	-0.00039	-0.00039
	(A2 * !B1 * C1 * !X)	0.00161	0.00163	0.00162
	(!A2 * !C1 * !X)	-0.00040	-0.00040	-0.00039
	(!A2 * !C1 * !X)	0.00161	0.00164	0.00162
	(!A2 * !B1 * C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A2 * !B1 * C1 * !X)	0.00161	0.00163	0.00162
	(!A1 * !A2 * B1 * C1 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B1 * C1 * !X)	0.00161	0.00163	0.00162
sky130_fd_sc_hs__o2111a_4	**(A2 * !C1 * !X)**	-0.00081	-0.00083	-0.00081
	(A2 * !C1 * !X)	0.00270	0.00276	0.00272
	(A2 * !B1 * C1 * !X)	-0.00078	-0.00080	-0.00078
	(A2 * !B1 * C1 * !X)	0.00270	0.00276	0.00271
	(!A2 * !C1 * !X)	-0.00081	-0.00083	-0.00081
	(!A2 * !C1 * !X)	0.00270	0.00276	0.00272
	(!A2 * !B1 * C1 * !X)	-0.00078	-0.00080	-0.00078
	(!A2 * !B1 * C1 * !X)	0.00270	0.00275	0.00271
	(!A1 * !A2 * B1 * C1 * !X)	-0.00078	-0.00080	-0.00078
	(!A1 * !A2 * B1 * C1 * !X)	0.00270	0.00275	0.00271

SKY130_FD_SC_HS__O211AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00252	0.00264	0.00268	0.00262	0.57768
sky130_fd_sc_hs__o211ai_2	0.00489	0.00504	0.00503	0.00491	1.02865
sky130_fd_sc_hs__o211ai_4	0.00964	0.00994	0.00725	0.00749	1.90632

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o211ai_1	0.00000	0.01534	0.09726
sky130_fd_sc_hs__o211ai_2	0.00000	0.03068	0.19452
sky130_fd_sc_hs__o211ai_4	0.00000	0.03705	0.25936

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)	0.11610	1.01863	11.37140
	A2->Y (FR)	0.10469	0.98623	11.16740
	B1->Y (FR)	0.04518	0.67208	8.16145
	C1->Y (FR)	0.03671	0.66341	8.14928
sky130_fd_sc_hs__o211ai_2	A1->Y (FR)	0.11153	0.89204	11.26150
	A2->Y (FR)	0.09408	0.85669	11.08500
	B1->Y (FR)	0.03775	0.58452	7.79487
	C1->Y (FR)	0.02711	0.57003	7.72478
sky130_fd_sc_hs__o211ai_4	A1->Y (FR)	0.10632	0.77950	11.12980
	A2->Y (FR)	0.08995	0.75454	11.07050
	B1->Y (FR)	0.05635	0.69493	10.42770
	C1->Y (FR)	0.03566	0.67020	10.24950

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211ai_1	A1->Y (RF)	0.04194	0.37361	4.02242
	A2->Y (RF)	0.03561	0.35942	3.95184
	B1->Y (RF)	0.03776	0.42025	4.70255
	C1->Y (RF)	0.03159	0.42652	4.85472
sky130_fd_sc_hs__o211ai_2	A1->Y (RF)	0.04041	0.30596	3.76576
	A2->Y (RF)	0.03419	0.29736	3.77802
	B1->Y (RF)	0.03692	0.37624	4.81017
	C1->Y (RF)	0.02815	0.38130	5.01113
sky130_fd_sc_hs__o211ai_4	A1->Y (RF)	0.04189	0.27317	3.95802
	A2->Y (RF)	0.03264	0.25475	3.83676
	B1->Y (RF)	0.03479	0.33065	4.95504
	C1->Y (RF)	0.02686	0.36235	5.56850

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00117	0.00104	0.00188
	A1	0.00696	0.00683	0.00766
	A2	0.00118	0.00132	0.00445
	A2	0.00629	0.00643	0.00955
	B1	0.00038	0.00061	0.00440
	B1	0.00525	0.00546	0.00903
	C1	-0.00011	0.00015	0.00389
	C1	0.00327	0.00355	0.00740
sky130_fd_sc_hs__o211ai_2	A1	0.00133	0.00113	0.00275
	A1	0.01307	0.01286	0.01425
	A2	0.00134	0.00168	0.00756
	A2	0.01157	0.01188	0.01778
	B1	0.00022	0.00084	0.00811
	B1	0.01001	0.01058	0.01747
	C1	-0.00131	-0.00055	0.00674
	C1	0.00525	0.00605	0.01362
sky130_fd_sc_hs__o211ai_4	A1	0.00262	0.00209	0.00519
	A1	0.02544	0.02491	0.02797
	A2	0.00259	0.00323	0.01424
	A2	0.02251	0.02316	0.03415
	B1	-0.00004	0.00055	0.00827
	B1	0.01613	0.01620	0.02411
	C1	-0.00262	-0.00212	0.00604
	C1	0.01035	0.01086	0.01884

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	A1	0.00752	0.00746	0.00812
	A1	0.00163	0.00154	0.00209
	A2	0.00625	0.00619	0.00700
	A2	0.00101	0.00096	0.00151
	B1	0.00655	0.00650	0.00746
	B1	0.00096	0.00088	0.00152
	C1	0.00570	0.00564	0.00659
	C1	0.00094	0.00089	0.00191
sky130_fd_sc_hs__o211ai_2	A1	0.01470	0.01448	0.01587
	A1	0.00280	0.00252	0.00371
	A2	0.01141	0.01136	0.01276
	A2	0.00094	0.00083	0.00208
	B1	0.01251	0.01244	0.01364
	B1	0.00076	0.00061	0.00196
	C1	0.01064	0.01062	0.01358
	C1	0.00068	0.00066	0.00272
sky130_fd_sc_hs__o211ai_4	A1	0.02692	0.02640	0.02877
	A1	0.00375	0.00316	0.00554
	A2	0.02056	0.02036	0.02338
	A2	0.00012	-0.00014	0.00243
	B1	0.02157	0.02144	0.02413
	B1	0.00181	0.00169	0.00314
	C1	0.01822	0.01816	0.02048
	C1	0.00172	0.00167	0.00381

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)**	0.00139	0.00128	0.00126
	(A2 * B1 * C1 * !Y)	-0.00119	-0.00134	-0.00134
	(A2 * B1 * !C1 * Y)	0.00126	0.00127	0.00126
	(A2 * B1 * !C1 * Y)	-0.00131	-0.00134	-0.00133
	(A2 * !B1 * Y)	0.00126	0.00127	0.00126
	(A2 * !B1 * Y)	-0.00131	-0.00134	-0.00133
	(!A2 * B1 * !C1 * Y)	0.00116	0.00118	0.00117
	(!A2 * B1 * !C1 * Y)	-0.00134	-0.00136	-0.00135
	(!A2 * !B1 * C1 * Y)	0.00121	0.00122	0.00121
	(!A2 * !B1 * C1 * Y)	-0.00135	-0.00136	-0.00135
	(!A2 * !B1 * !C1 * Y)	0.00120	0.00122	0.00120
	(!A2 * !B1 * !C1 * Y)	-0.00135	-0.00136	-0.00135
sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	0.00276	0.00251	0.00247
	(A2 * B1 * C1 * !Y)	-0.00238	-0.00274	-0.00273
	(A2 * B1 * !C1 * Y)	0.00246	0.00249	0.00246
	(A2 * B1 * !C1 * Y)	-0.00265	-0.00275	-0.00274
	(A2 * !B1 * Y)	0.00246	0.00249	0.00246
	(A2 * !B1 * Y)	-0.00265	-0.00275	-0.00274
	(!A2 * B1 * !C1 * Y)	0.00228	0.00229	0.00229
	(!A2 * B1 * !C1 * Y)	-0.00279	-0.00280	-0.00279
	(!A2 * !B1 * C1 * Y)	0.00232	0.00236	0.00233
	(!A2 * !B1 * C1 * Y)	-0.00278	-0.00281	-0.00279
	(!A2 * !B1 * !C1 * Y)	0.00232	0.00236	0.00233
	(!A2 * !B1 * !C1 * Y)	-0.00278	-0.00281	-0.00279

sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	0.00544	0.00491	0.00483
	(A2 * B1 * C1 * !Y)	-0.00474	-0.00543	-0.00542
	(A2 * B1 * !C1 * Y)	0.00483	0.00488	0.00482
	(A2 * B1 * !C1 * Y)	-0.00527	-0.00546	-0.00542
	(A2 * !B1 * Y)	0.00483	0.00488	0.00482
	(A2 * !B1 * Y)	-0.00528	-0.00546	-0.00542
	(!A2 * B1 * !C1 * Y)	0.00444	0.00449	0.00446
	(!A2 * B1 * !C1 * Y)	-0.00551	-0.00555	-0.00553
	(!A2 * !B1 * C1 * Y)	0.00454	0.00456	0.00454
	(!A2 * !B1 * C1 * Y)	-0.00552	-0.00553	-0.00552
	(!A2 * !B1 * !C1 * Y)	0.00453	0.00458	0.00453
	(!A2 * !B1 * !C1 * Y)	-0.00552	-0.00555	-0.00552

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)**	-0.00125	-0.00126	-0.00125
	(A2 * B1 * C1 * !Y)	0.00133	0.00134	0.00134
	(A2 * B1 * !C1 * Y)	-0.00125	-0.00126	-0.00126
	(A2 * B1 * !C1 * Y)	0.00133	0.00134	0.00133
	(A2 * !B1 * Y)	-0.00126	-0.00126	-0.00126
	(A2 * !B1 * Y)	0.00133	0.00134	0.00133
	(!A2 * B1 * !C1 * Y)	-0.00110	-0.00118	-0.00117
	(!A2 * B1 * !C1 * Y)	0.00135	0.00137	0.00136
	(!A2 * !B1 * C1 * Y)	-0.00114	-0.00122	-0.00121
	(!A2 * !B1 * C1 * Y)	0.00135	0.00137	0.00136
	(!A2 * !B1 * !C1 * Y)	-0.00114	-0.00122	-0.00120
	(!A2 * !B1 * !C1 * Y)	0.00135	0.00137	0.00136

sky130_fd_sc_hs__o211ai_2	**(A2 * B1 * C1 * !Y)**	-0.00247	-0.00247	-0.00246
	(A2 * B1 * C1 * !Y)	0.00273	0.00274	0.00273
	(A2 * B1 * !C1 * Y)	-0.00246	-0.00246	-0.00246
	(A2 * B1 * !C1 * Y)	0.00274	0.00275	0.00274
	(A2 * !B1 * Y)	-0.00246	-0.00247	-0.00246
	(A2 * !B1 * Y)	0.00274	0.00275	0.00274
	(!A2 * B1 * !C1 * Y)	-0.00216	-0.00229	-0.00229
	(!A2 * B1 * !C1 * Y)	0.00279	0.00282	0.00280
	(!A2 * !B1 * C1 * Y)	-0.00224	-0.00236	-0.00233
	(!A2 * !B1 * C1 * Y)	0.00281	0.00282	0.00280
	(!A2 * !B1 * !C1 * Y)	-0.00224	-0.00236	-0.00233
	(!A2 * !B1 * !C1 * Y)	0.00281	0.00282	0.00280
sky130_fd_sc_hs__o211ai_4	**(A2 * B1 * C1 * !Y)**	-0.00482	-0.00483	-0.00481
	(A2 * B1 * C1 * !Y)	0.00542	0.00545	0.00542
	(A2 * B1 * !C1 * Y)	-0.00481	-0.00483	-0.00481
	(A2 * B1 * !C1 * Y)	0.00542	0.00546	0.00542
	(A2 * !B1 * Y)	-0.00479	-0.00483	-0.00481
	(A2 * !B1 * Y)	0.00538	0.00546	0.00542
	(!A2 * B1 * !C1 * Y)	-0.00415	-0.00449	-0.00446
	(!A2 * B1 * !C1 * Y)	0.00555	0.00560	0.00554
	(!A2 * !B1 * C1 * Y)	-0.00429	-0.00453	-0.00454
	(!A2 * !B1 * C1 * Y)	0.00552	0.00553	0.00554
	(!A2 * !B1 * !C1 * Y)	-0.00429	-0.00454	-0.00453
	(!A2 * !B1 * !C1 * Y)	0.00552	0.00555	0.00554

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)**	0.00135	0.00136	0.00135
	(A1 * B1 * C1 * !Y)	-0.00071	-0.00071	-0.00071
	(A1 * B1 * !C1 * Y)	0.00123	0.00124	0.00123
	(A1 * B1 * !C1 * Y)	-0.00131	-0.00135	-0.00134
	(A1 * !B1 * C1 * Y)	0.00123	0.00124	0.00123
	(A1 * !B1 * C1 * Y)	-0.00131	-0.00134	-0.00134
	(A1 * !B1 * !C1 * Y)	0.00123	0.00123	0.00123
	(A1 * !B1 * !C1 * Y)	-0.00131	-0.00135	-0.00134
	(!A1 * B1 * !C1 * Y)	0.00114	0.00115	0.00114
	(!A1 * B1 * !C1 * Y)	-0.00136	-0.00137	-0.00136
	(!A1 * !B1 * C1 * Y)	0.00117	0.00117	0.00117
	(!A1 * !B1 * C1 * Y)	-0.00137	-0.00137	-0.00137
	(!A1 * !B1 * !C1 * Y)	0.00117	0.00119	0.00118
	(!A1 * !B1 * !C1 * Y)	-0.00136	-0.00137	-0.00136
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	0.00280	0.00282	0.00279
	(A1 * B1 * C1 * !Y)	-0.00138	-0.00138	-0.00137
	(A1 * B1 * !C1 * Y)	0.00246	0.00248	0.00247
	(A1 * B1 * !C1 * Y)	-0.00261	-0.00272	-0.00271
	(A1 * !B1 * C1 * Y)	0.00246	0.00248	0.00247
	(A1 * !B1 * C1 * Y)	-0.00261	-0.00272	-0.00271
	(A1 * !B1 * !C1 * Y)	0.00246	0.00248	0.00247
	(A1 * !B1 * !C1 * Y)	-0.00261	-0.00272	-0.00271
	(!A1 * B1 * !C1 * Y)	0.00229	0.00232	0.00229
	(!A1 * B1 * !C1 * Y)	-0.00276	-0.00277	-0.00276
	(!A1 * !B1 * C1 * Y)	0.00233	0.00235	0.00232
	(!A1 * !B1 * C1 * Y)	-0.00276	-0.00277	-0.00275
	(!A1 * !B1 * !C1 * Y)	0.00233	0.00234	0.00232
	(!A1 * !B1 * !C1 * Y)	-0.00276	-0.00277	-0.00275

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	0.00547	0.00554	0.00545
	(A1 * B1 * C1 * !Y)	-0.00279	-0.00282	-0.00277
	(A1 * B1 * !C1 * Y)	0.00480	0.00486	0.00482
	(A1 * B1 * !C1 * Y)	-0.00525	-0.00543	-0.00543
	(A1 * !B1 * C1 * Y)	0.00480	0.00486	0.00482
	(A1 * !B1 * C1 * Y)	-0.00525	-0.00545	-0.00543
	(A1 * !B1 * !C1 * Y)	0.00481	0.00484	0.00482
	(A1 * !B1 * !C1 * Y)	-0.00526	-0.00548	-0.00544
	(!A1 * B1 * !C1 * Y)	0.00444	0.00448	0.00443
	(!A1 * B1 * !C1 * Y)	-0.00556	-0.00558	-0.00555
	(!A1 * !B1 * C1 * Y)	0.00457	0.00464	0.00459
	(!A1 * !B1 * C1 * Y)	-0.00553	-0.00558	-0.00554
	(!A1 * !B1 * !C1 * Y)	0.00454	0.00459	0.00454
	(!A1 * !B1 * !C1 * Y)	-0.00553	-0.00558	-0.00554

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)**	-0.00131	-0.00132	-0.00135
	(A1 * B1 * C1 * !Y)	0.00075	0.00075	0.00072
	(A1 * B1 * !C1 * Y)	-0.00123	-0.00123	-0.00123
	(A1 * B1 * !C1 * Y)	0.00134	0.00135	0.00134
	(A1 * !B1 * C1 * Y)	-0.00123	-0.00123	-0.00123
	(A1 * !B1 * C1 * Y)	0.00134	0.00134	0.00134
	(A1 * !B1 * !C1 * Y)	-0.00123	-0.00123	-0.00123
	(A1 * !B1 * !C1 * Y)	0.00134	0.00135	0.00134
	(!A1 * B1 * !C1 * Y)	-0.00106	-0.00115	-0.00114
	(!A1 * B1 * !C1 * Y)	0.00136	0.00138	0.00137
	(!A1 * !B1 * C1 * Y)	-0.00112	-0.00117	-0.00117
	(!A1 * !B1 * C1 * Y)	0.00137	0.00138	0.00137
	(!A1 * !B1 * !C1 * Y)	-0.00112	-0.00117	-0.00118
	(!A1 * !B1 * !C1 * Y)	0.00137	0.00138	0.00137
sky130_fd_sc_hs__o211ai_2	**(A1 * B1 * C1 * !Y)**	-0.00265	-0.00267	-0.00277
	(A1 * B1 * C1 * !Y)	0.00149	0.00149	0.00140
	(A1 * B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246
	(A1 * B1 * !C1 * Y)	0.00272	0.00272	0.00271
	(A1 * !B1 * C1 * Y)	-0.00246	-0.00247	-0.00246
	(A1 * !B1 * C1 * Y)	0.00269	0.00272	0.00271
	(A1 * !B1 * !C1 * Y)	-0.00246	-0.00247	-0.00246
	(A1 * !B1 * !C1 * Y)	0.00269	0.00272	0.00271
	(!A1 * B1 * !C1 * Y)	-0.00214	-0.00232	-0.00229
	(!A1 * B1 * !C1 * Y)	0.00276	0.00278	0.00276
	(!A1 * !B1 * C1 * Y)	-0.00223	-0.00235	-0.00232
	(!A1 * !B1 * C1 * Y)	0.00277	0.00278	0.00276
	(!A1 * !B1 * !C1 * Y)	-0.00223	-0.00234	-0.00232
	(!A1 * !B1 * !C1 * Y)	0.00277	0.00278	0.00276

sky130_fd_sc_hs__o211ai_4	**(A1 * B1 * C1 * !Y)**	-0.00520	-0.00524	-0.00542
	(A1 * B1 * C1 * !Y)	0.00300	0.00300	0.00283
	(A1 * B1 * !C1 * Y)	-0.00478	-0.00481	-0.00481
	(A1 * B1 * !C1 * Y)	0.00539	0.00543	0.00543
	(A1 * !B1 * C1 * Y)	-0.00479	-0.00482	-0.00481
	(A1 * !B1 * C1 * Y)	0.00541	0.00545	0.00543
	(A1 * !B1 * !C1 * Y)	-0.00480	-0.00483	-0.00481
	(A1 * !B1 * !C1 * Y)	0.00542	0.00548	0.00544
	(!A1 * B1 * !C1 * Y)	-0.00412	-0.00448	-0.00443
	(!A1 * B1 * !C1 * Y)	0.00557	0.00561	0.00556
	(!A1 * !B1 * C1 * Y)	-0.00427	-0.00456	-0.00459
	(!A1 * !B1 * C1 * Y)	0.00553	0.00560	0.00556
	(!A1 * !B1 * !C1 * Y)	-0.00428	-0.00456	-0.00454
	(!A1 * !B1 * !C1 * Y)	0.00553	0.00559	0.00556

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	0.00113	0.00114	0.00114
	(A2 * !C1 * Y)	-0.00143	-0.00144	-0.00144
	(A1 * !A2 * !C1 * Y)	0.00113	0.00114	0.00114
	(A1 * !A2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
	(!A1 * !A2 * C1 * Y)	0.00053	0.00053	0.00053
	(!A1 * !A2 * C1 * Y)	-0.00144	-0.00145	-0.00143
	(!A1 * !A2 * !C1 * Y)	0.00063	0.00064	0.00064
	(!A1 * !A2 * !C1 * Y)	-0.00144	-0.00144	-0.00144
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	0.00229	0.00231	0.00229
	(A2 * !C1 * Y)	-0.00282	-0.00280	-0.00281
	(A1 * !A2 * !C1 * Y)	0.00228	0.00230	0.00229
	(A1 * !A2 * !C1 * Y)	-0.00280	-0.00282	-0.00281
	(!A1 * !A2 * C1 * Y)	0.00099	0.00101	0.00101
	(!A1 * !A2 * C1 * Y)	-0.00281	-0.00284	-0.00280
	(!A1 * !A2 * !C1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A2 * !C1 * Y)	-0.00284	-0.00286	-0.00283
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	0.00452	0.00454	0.00452
	(A2 * !C1 * Y)	-0.00283	-0.00283	-0.00282
	(A1 * !A2 * !C1 * Y)	0.00454	0.00457	0.00455
	(A1 * !A2 * !C1 * Y)	-0.00282	-0.00283	-0.00282
	(!A1 * !A2 * C1 * Y)	0.00192	0.00195	0.00196
	(!A1 * !A2 * C1 * Y)	-0.00281	-0.00284	-0.00280
	(!A1 * !A2 * !C1 * Y)	0.00232	0.00236	0.00233
	(!A1 * !A2 * !C1 * Y)	-0.00284	-0.00287	-0.00285

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !C1 * Y)	-0.00107	-0.00114	-0.00114
	(A2 * !C1 * Y)	0.00147	0.00146	0.00144
	(A1 * !A2 * !C1 * Y)	-0.00106	-0.00114	-0.00114
	(A1 * !A2 * !C1 * Y)	0.00148	0.00145	0.00144
	(!A1 * !A2 * C1 * Y)	-0.00050	-0.00051	-0.00051
	(!A1 * !A2 * C1 * Y)	0.00146	0.00148	0.00144
	(!A1 * !A2 * !C1 * Y)	-0.00063	-0.00064	-0.00064
	(!A1 * !A2 * !C1 * Y)	0.00150	0.00149	0.00144
sky130_fd_sc_hs__o211ai_2	(A2 * !C1 * Y)	-0.00212	-0.00228	-0.00229
	(A2 * !C1 * Y)	0.00288	0.00280	0.00282
	(A1 * !A2 * !C1 * Y)	-0.00208	-0.00229	-0.00229
	(A1 * !A2 * !C1 * Y)	0.00291	0.00283	0.00282
	(!A1 * !A2 * C1 * Y)	-0.00095	-0.00096	-0.00098
	(!A1 * !A2 * C1 * Y)	0.00291	0.00292	0.00284
	(!A1 * !A2 * !C1 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * !A2 * !C1 * Y)	0.00292	0.00292	0.00284
sky130_fd_sc_hs__o211ai_4	(A2 * !C1 * Y)	-0.00421	-0.00454	-0.00452
	(A2 * !C1 * Y)	0.00297	0.00284	0.00283
	(A1 * !A2 * !C1 * Y)	-0.00412	-0.00455	-0.00455
	(A1 * !A2 * !C1 * Y)	0.00308	0.00283	0.00283
	(!A1 * !A2 * C1 * Y)	-0.00185	-0.00185	-0.00189
	(!A1 * !A2 * C1 * Y)	0.00298	0.00299	0.00286
	(!A1 * !A2 * !C1 * Y)	-0.00232	-0.00236	-0.00233
	(!A1 * !A2 * !C1 * Y)	0.00304	0.00301	0.00286

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	0.00040	0.00040	0.00039
	(A2 * !B1 * Y)	-0.00163	-0.00164	-0.00167
	(!A2 * !B1 * Y)	0.00040	0.00041	0.00039
	(!A2 * !B1 * Y)	-0.00164	-0.00165	-0.00167
	(!A1 * !A2 * B1 * Y)	0.00042	0.00042	0.00039
	(!A1 * !A2 * B1 * Y)	-0.00158	-0.00160	-0.00166
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	0.00086	0.00086	0.00082
	(A2 * !B1 * Y)	-0.00317	-0.00319	-0.00325
	(!A2 * !B1 * Y)	0.00086	0.00086	0.00082
	(!A2 * !B1 * Y)	-0.00318	-0.00319	-0.00325
	(!A1 * !A2 * B1 * Y)	0.00084	0.00084	0.00077
	(!A1 * !A2 * B1 * Y)	-0.00307	-0.00309	-0.00323
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	0.00162	0.00163	0.00157
	(A2 * !B1 * Y)	-0.00375	-0.00378	-0.00389
	(!A2 * !B1 * Y)	0.00164	0.00164	0.00157
	(!A2 * !B1 * Y)	-0.00377	-0.00378	-0.00389
	(!A1 * !A2 * B1 * Y)	0.00160	0.00161	0.00147
	(!A1 * !A2 * B1 * Y)	-0.00354	-0.00356	-0.00385

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211ai_1	(A2 * !B1 * Y)	-0.00039	-0.00039	-0.00038
	(A2 * !B1 * Y)	0.00167	0.00170	0.00167
	(!A2 * !B1 * Y)	-0.00039	-0.00039	-0.00038
	(!A2 * !B1 * Y)	0.00167	0.00170	0.00167
	(!A1 * !A2 * B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * Y)	0.00166	0.00169	0.00167
sky130_fd_sc_hs__o211ai_2	(A2 * !B1 * Y)	-0.00080	-0.00081	-0.00080
	(A2 * !B1 * Y)	0.00324	0.00331	0.00326
	(!A2 * !B1 * Y)	-0.00080	-0.00081	-0.00080
	(!A2 * !B1 * Y)	0.00324	0.00331	0.00326
	(!A1 * !A2 * B1 * Y)	-0.00077	-0.00078	-0.00077
	(!A1 * !A2 * B1 * Y)	0.00324	0.00331	0.00326
sky130_fd_sc_hs__o211ai_4	(A2 * !B1 * Y)	-0.00152	-0.00153	-0.00153
	(A2 * !B1 * Y)	0.00388	0.00391	0.00390
	(!A2 * !B1 * Y)	-0.00153	-0.00156	-0.00153
	(!A2 * !B1 * Y)	0.00388	0.00396	0.00390
	(!A1 * !A2 * B1 * Y)	-0.00147	-0.00149	-0.00147
	(!A1 * !A2 * B1 * Y)	0.00387	0.00394	0.00389

SKY130_FD_SC_HS__O211Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00247	0.00266	0.00244	0.00240	1.21326
sky130_fd_sc_hs__o211a_2	0.00261	0.00261	0.00260	0.00254	2.34132
sky130_fd_sc_hs__o211a_4	0.00473	0.00450	0.00470	0.00413	4.21431

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o211a_1	0.00000	0.05373	0.17410
sky130_fd_sc_hs__o211a_2	0.00000	0.07994	0.17476
sky130_fd_sc_hs__o211a_4	0.00000	0.28848	1.03274

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)	0.09025	0.56433	5.79994
	A2->X (RR)	0.08067	0.54748	5.86976
	B1->X (RR)	0.08494	0.56921	6.05641
	C1->X (RR)	0.07902	0.55319	6.04072
sky130_fd_sc_hs__o211a_2	A1->X (RR)	0.09178	0.48694	5.90591
	A2->X (RR)	0.07944	0.46939	5.93703
	B1->X (RR)	0.08712	0.50343	6.14352
	C1->X (RR)	0.08112	0.49041	6.11664
sky130_fd_sc_hs__o211a_4	A1->X (RR)	0.09188	0.41552	5.81257
	A2->X (RR)	0.08629	0.39916	5.88987
	B1->X (RR)	0.08587	0.42137	6.03773
	C1->X (RR)	0.07803	0.40332	6.02752

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o211a_1	A1->X (FF)	0.15016	0.62432	4.98846
	A2->X (FF)	0.13889	0.60221	4.84040
	B1->X (FF)	0.07024	0.50226	4.60434
	C1->X (FF)	0.06266	0.48389	4.60066
sky130_fd_sc_hs__o211a_2	A1->X (FF)	0.17256	0.63916	5.09957
	A2->X (FF)	0.15991	0.61738	4.92343
	B1->X (FF)	0.08257	0.50886	4.65361
	C1->X (FF)	0.07429	0.49071	4.61968
sky130_fd_sc_hs__o211a_4	A1->X (FF)	0.16317	0.59323	4.97421
	A2->X (FF)	0.14761	0.56615	4.80824
	B1->X (FF)	0.08640	0.48017	4.61935
	C1->X (FF)	0.08554	0.47812	4.67058

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00954	0.00964	0.01644
	A1	0.00384	0.00393	0.01077
	A2	0.00866	0.00877	0.02204
	A2	0.00333	0.00343	0.01702
	B1	0.00731	0.00752	0.02591
	B1	0.00322	0.00343	0.02212
	C1	0.00659	0.00703	0.02836
	C1	0.00320	0.00364	0.02527
sky130_fd_sc_hs__o211a_2	A1	0.01157	0.01188	0.01760
	A1	0.00559	0.00591	0.01224
	A2	0.01032	0.01062	0.02179
	A2	0.00501	0.00532	0.01709
	B1	0.00928	0.00964	0.02625
	B1	0.00494	0.00531	0.02251
	C1	0.00849	0.00908	0.02807
	C1	0.00492	0.00553	0.02511
sky130_fd_sc_hs__o211a_4	A1	0.02143	0.02213	0.03709
	A1	0.01059	0.01134	0.02654
	A2	0.01867	0.01937	0.04826
	A2	0.00936	0.01009	0.03894
	B1	0.01706	0.01799	0.05438
	B1	0.00948	0.01041	0.04794
	C1	0.01511	0.01645	0.06111
	C1	0.00953	0.01092	0.05670

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	A1	0.00362	0.00361	0.01094
	A1	0.00920	0.00919	0.01642
	A2	0.00334	0.00404	0.01983
	A2	0.00853	0.00922	0.02462
	B1	0.00292	0.00423	0.02349
	B1	0.00761	0.00843	0.02721
	C1	0.00258	0.00352	0.02481
	C1	0.00599	0.00690	0.02777
sky130_fd_sc_hs__o211a_2	A1	0.00541	0.00545	0.01299
	A1	0.01126	0.01133	0.01795
	A2	0.00545	0.00629	0.02092
	A2	0.01061	0.01145	0.02604
	B1	0.00470	0.00625	0.02446
	B1	0.00964	0.01070	0.02840
	C1	0.00432	0.00554	0.02523
	C1	0.00852	0.00950	0.02798
sky130_fd_sc_hs__o211a_4	A1	0.01035	0.01099	0.02704
	A1	0.02096	0.02147	0.03585
	A2	0.01066	0.01214	0.04491
	A2	0.01971	0.02117	0.05226
	B1	0.00849	0.01144	0.05450
	B1	0.01727	0.01958	0.06216
	C1	0.00835	0.01106	0.05517
	C1	0.01517	0.01772	0.06084

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)**	0.00136	0.00125	0.00123
	(A2 * B1 * C1 * X)	-0.00109	-0.00124	-0.00124
	(A2 * B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(A2 * B1 * !C1 * !X)	-0.00135	-0.00139	-0.00138
	(A2 * !B1 * !X)	0.00109	0.00110	0.00109
	(A2 * !B1 * !X)	-0.00135	-0.00139	-0.00138
	(!A2 * B1 * !C1 * !X)	0.00103	0.00104	0.00103
	(!A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A2 * !B1 * C1 * !X)	0.00103	0.00104	0.00103
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00141	-0.00140
	(!A2 * !B1 * !C1 * !X)	0.00103	0.00103	0.00103
	(!A2 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140
sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	0.00150	0.00138	0.00136
	(A2 * B1 * C1 * X)	-0.00105	-0.00120	-0.00120
	(A2 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A2 * B1 * !C1 * !X)	-0.00136	-0.00139	-0.00139
	(A2 * !B1 * !X)	0.00117	0.00118	0.00117
	(A2 * !B1 * !X)	-0.00136	-0.00139	-0.00139
	(!A2 * B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A2 * B1 * !C1 * !X)	-0.00141	-0.00141	-0.00141
	(!A2 * !B1 * C1 * !X)	0.00111	0.00113	0.00112
	(!A2 * !B1 * C1 * !X)	-0.00140	-0.00141	-0.00141
	(!A2 * !B1 * !C1 * !X)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !C1 * !X)	-0.00141	-0.00142	-0.00141

sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	0.00268	0.00246	0.00244
	(A2 * B1 * C1 * X)	-0.00217	-0.00245	-0.00246
	(A2 * B1 * !C1 * !X)	0.00239	0.00241	0.00240
	(A2 * B1 * !C1 * !X)	-0.00242	-0.00250	-0.00249
	(A2 * !B1 * !X)	0.00239	0.00241	0.00240
	(A2 * !B1 * !X)	-0.00242	-0.00250	-0.00249
	(!A2 * B1 * !C1 * !X)	0.00224	0.00224	0.00224
	(!A2 * B1 * !C1 * !X)	-0.00253	-0.00253	-0.00253
	(!A2 * !B1 * C1 * !X)	0.00228	0.00230	0.00228
	(!A2 * !B1 * C1 * !X)	-0.00253	-0.00254	-0.00253
	(!A2 * !B1 * !C1 * !X)	0.00229	0.00230	0.00229
	(!A2 * !B1 * !C1 * !X)	-0.00253	-0.00254	-0.00253

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)**	-0.00122	-0.00122	-0.00122
	(A2 * B1 * C1 * X)	0.00123	0.00124	0.00124
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00138
	(A2 * !B1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * !X)	0.00138	0.00139	0.00138
	(!A2 * B1 * !C1 * !X)	-0.00095	-0.00104	-0.00103
	(!A2 * B1 * !C1 * !X)	0.00141	0.00141	0.00140
	(!A2 * !B1 * C1 * !X)	-0.00098	-0.00104	-0.00103
	(!A2 * !B1 * C1 * !X)	0.00141	0.00141	0.00140
	(!A2 * !B1 * !C1 * !X)	-0.00098	-0.00103	-0.00103
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00141	0.00140

sky130_fd_sc_hs__o211a_2	**(A2 * B1 * C1 * X)**	-0.00135	-0.00136	-0.00135
	(A2 * B1 * C1 * X)	0.00119	0.00120	0.00120
	(A2 * B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117
	(A2 * B1 * !C1 * !X)	0.00138	0.00139	0.00139
	(A2 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(A2 * !B1 * !X)	0.00139	0.00139	0.00139
	(!A2 * B1 * !C1 * !X)	-0.00102	-0.00110	-0.00109
	(!A2 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * C1 * !X)	-0.00106	-0.00113	-0.00112
	(!A2 * !B1 * C1 * !X)	0.00141	0.00142	0.00141
	(!A2 * !B1 * !C1 * !X)	-0.00106	-0.00113	-0.00112
	(!A2 * !B1 * !C1 * !X)	0.00141	0.00142	0.00141
sky130_fd_sc_hs__o211a_4	**(A2 * B1 * C1 * X)**	-0.00242	-0.00243	-0.00242
	(A2 * B1 * C1 * X)	0.00246	0.00249	0.00247
	(A2 * B1 * !C1 * !X)	-0.00239	-0.00241	-0.00240
	(A2 * B1 * !C1 * !X)	0.00249	0.00251	0.00249
	(A2 * !B1 * !X)	-0.00239	-0.00241	-0.00240
	(A2 * !B1 * !X)	0.00249	0.00251	0.00249
	(!A2 * B1 * !C1 * !X)	-0.00213	-0.00224	-0.00224
	(!A2 * B1 * !C1 * !X)	0.00254	0.00256	0.00254
	(!A2 * !B1 * C1 * !X)	-0.00221	-0.00230	-0.00228
	(!A2 * !B1 * C1 * !X)	0.00254	0.00256	0.00254
	(!A2 * !B1 * !C1 * !X)	-0.00221	-0.00230	-0.00229
	(!A2 * !B1 * !C1 * !X)	0.00254	0.00256	0.00254

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)**	0.00157	0.00160	0.00157
	(A1 * B1 * C1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * B1 * !C1 * !X)	0.00142	0.00142	0.00141
	(A1 * B1 * !C1 * !X)	-0.00122	-0.00125	-0.00125
	(A1 * !B1 * C1 * !X)	0.00143	0.00142	0.00141
	(A1 * !B1 * C1 * !X)	-0.00122	-0.00125	-0.00125
	(A1 * !B1 * !C1 * !X)	0.00142	0.00142	0.00141
	(A1 * !B1 * !C1 * !X)	-0.00122	-0.00125	-0.00125
	(!A1 * B1 * !C1 * !X)	0.00133	0.00133	0.00134
	(!A1 * B1 * !C1 * !X)	-0.00126	-0.00126	-0.00127
	(!A1 * !B1 * C1 * !X)	0.00136	0.00137	0.00135
	(!A1 * !B1 * C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !C1 * !X)	0.00136	0.00136	0.00135
	(!A1 * !B1 * !C1 * !X)	-0.00127	-0.00127	-0.00127
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	0.00137	0.00138	0.00137
	(A1 * B1 * C1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * B1 * !C1 * !X)	-0.00128	-0.00130	-0.00131
	(A1 * !B1 * C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !B1 * C1 * !X)	-0.00128	-0.00130	-0.00131
	(A1 * !B1 * !C1 * !X)	0.00115	0.00116	0.00115
	(A1 * !B1 * !C1 * !X)	-0.00128	-0.00130	-0.00131
	(!A1 * B1 * !C1 * !X)	0.00107	0.00108	0.00107
	(!A1 * B1 * !C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !B1 * C1 * !X)	0.00110	0.00110	0.00110
	(!A1 * !B1 * C1 * !X)	-0.00133	-0.00133	-0.00133
	(!A1 * !B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !B1 * !C1 * !X)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	0.00235	0.00237	0.00235
	(A1 * B1 * C1 * X)	-0.00128	-0.00129	-0.00128
	(A1 * B1 * !C1 * !X)	0.00205	0.00206	0.00205
	(A1 * B1 * !C1 * !X)	-0.00243	-0.00250	-0.00250
	(A1 * !B1 * C1 * !X)	0.00205	0.00206	0.00205
	(A1 * !B1 * C1 * !X)	-0.00243	-0.00251	-0.00250
	(A1 * !B1 * !C1 * !X)	0.00205	0.00206	0.00205
	(A1 * !B1 * !C1 * !X)	-0.00243	-0.00251	-0.00250
	(!A1 * B1 * !C1 * !X)	0.00190	0.00190	0.00189
	(!A1 * B1 * !C1 * !X)	-0.00255	-0.00255	-0.00254
	(!A1 * !B1 * C1 * !X)	0.00192	0.00194	0.00194
	(!A1 * !B1 * C1 * !X)	-0.00253	-0.00255	-0.00254
	(!A1 * !B1 * !C1 * !X)	0.00192	0.00195	0.00194
	(!A1 * !B1 * !C1 * !X)	-0.00253	-0.00255	-0.00254

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)**	-0.00153	-0.00154	-0.00156
	(A1 * B1 * C1 * X)	0.00066	0.00067	0.00064
	(A1 * B1 * !C1 * !X)	-0.00142	-0.00142	-0.00141
	(A1 * B1 * !C1 * !X)	0.00124	0.00125	0.00125
	(A1 * !B1 * C1 * !X)	-0.00142	-0.00142	-0.00141
	(A1 * !B1 * C1 * !X)	0.00124	0.00125	0.00125
	(A1 * !B1 * !C1 * !X)	-0.00142	-0.00142	-0.00141
	(A1 * !B1 * !C1 * !X)	0.00124	0.00125	0.00125
	(!A1 * B1 * !C1 * !X)	-0.00127	-0.00133	-0.00134
	(!A1 * B1 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * C1 * !X)	-0.00130	-0.00136	-0.00135
	(!A1 * !B1 * C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !C1 * !X)	-0.00130	-0.00136	-0.00135
	(!A1 * !B1 * !C1 * !X)	0.00127	0.00129	0.00127
sky130_fd_sc_hs__o211a_2	**(A1 * B1 * C1 * X)**	-0.00133	-0.00134	-0.00137
	(A1 * B1 * C1 * X)	0.00067	0.00067	0.00064
	(A1 * B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * B1 * !C1 * !X)	0.00131	0.00130	0.00131
	(A1 * !B1 * C1 * !X)	-0.00114	-0.00115	-0.00115
	(A1 * !B1 * C1 * !X)	0.00130	0.00130	0.00131
	(A1 * !B1 * !C1 * !X)	-0.00115	-0.00115	-0.00115
	(A1 * !B1 * !C1 * !X)	0.00130	0.00130	0.00131
	(!A1 * B1 * !C1 * !X)	-0.00100	-0.00108	-0.00107
	(!A1 * B1 * !C1 * !X)	0.00133	0.00134	0.00133
	(!A1 * !B1 * C1 * !X)	-0.00105	-0.00110	-0.00110
	(!A1 * !B1 * C1 * !X)	0.00134	0.00134	0.00133
	(!A1 * !B1 * !C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A1 * !B1 * !C1 * !X)	0.00133	0.00134	0.00133

sky130_fd_sc_hs__o211a_4	**(A1 * B1 * C1 * X)**	-0.00224	-0.00225	-0.00232
	(A1 * B1 * C1 * X)	0.00138	0.00138	0.00132
	(A1 * B1 * !C1 * !X)	-0.00204	-0.00205	-0.00204
	(A1 * B1 * !C1 * !X)	0.00249	0.00250	0.00250
	(A1 * !B1 * C1 * !X)	-0.00205	-0.00206	-0.00204
	(A1 * !B1 * C1 * !X)	0.00250	0.00252	0.00250
	(A1 * !B1 * !C1 * !X)	-0.00205	-0.00206	-0.00204
	(A1 * !B1 * !C1 * !X)	0.00250	0.00252	0.00250
	(!A1 * B1 * !C1 * !X)	-0.00177	-0.00190	-0.00189
	(!A1 * B1 * !C1 * !X)	0.00255	0.00257	0.00255
	(!A1 * !B1 * C1 * !X)	-0.00186	-0.00194	-0.00194
	(!A1 * !B1 * C1 * !X)	0.00256	0.00257	0.00255
	(!A1 * !B1 * !C1 * !X)	-0.00186	-0.00195	-0.00194
	(!A1 * !B1 * !C1 * !X)	0.00256	0.00257	0.00255

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	0.00094	0.00095	0.00095
	(A2 * !C1 * !X)	-0.00143	-0.00143	-0.00143
	(A1 * !A2 * !C1 * !X)	0.00094	0.00095	0.00094
	(A1 * !A2 * !C1 * !X)	-0.00143	-0.00144	-0.00143
	(!A1 * !A2 * C1 * !X)	0.00043	0.00043	0.00042
	(!A1 * !A2 * C1 * !X)	-0.00145	-0.00146	-0.00144
	(!A1 * !A2 * !C1 * !X)	0.00053	0.00054	0.00053
	(!A1 * !A2 * !C1 * !X)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	0.00108	0.00110	0.00108
	(A2 * !C1 * !X)	-0.00134	-0.00135	-0.00134
	(A1 * !A2 * !C1 * !X)	0.00108	0.00109	0.00108
	(A1 * !A2 * !C1 * !X)	-0.00134	-0.00134	-0.00134
	(!A1 * !A2 * C1 * !X)	0.00048	0.00049	0.00048
	(!A1 * !A2 * C1 * !X)	-0.00136	-0.00137	-0.00135
	(!A1 * !A2 * !C1 * !X)	0.00058	0.00058	0.00058
	(!A1 * !A2 * !C1 * !X)	-0.00136	-0.00137	-0.00137
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	0.00240	0.00242	0.00240
	(A2 * !C1 * !X)	-0.00228	-0.00230	-0.00229
	(A1 * !A2 * !C1 * !X)	0.00239	0.00242	0.00240
	(A1 * !A2 * !C1 * !X)	-0.00228	-0.00230	-0.00229
	(!A1 * !A2 * C1 * !X)	0.00129	0.00131	0.00129
	(!A1 * !A2 * C1 * !X)	-0.00229	-0.00231	-0.00230
	(!A1 * !A2 * !C1 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A2 * !C1 * !X)	-0.00231	-0.00232	-0.00232

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !C1 * !X)	-0.00088	-0.00094	-0.00095
	(A2 * !C1 * !X)	0.00148	0.00146	0.00143
	(A1 * !A2 * !C1 * !X)	-0.00087	-0.00095	-0.00094
	(A1 * !A2 * !C1 * !X)	0.00149	0.00146	0.00143
	(!A1 * !A2 * C1 * !X)	-0.00040	-0.00040	-0.00040
	(!A1 * !A2 * C1 * !X)	0.00146	0.00148	0.00145
	(!A1 * !A2 * !C1 * !X)	-0.00053	-0.00054	-0.00053
	(!A1 * !A2 * !C1 * !X)	0.00149	0.00149	0.00146
sky130_fd_sc_hs__o211a_2	(A2 * !C1 * !X)	-0.00101	-0.00109	-0.00108
	(A2 * !C1 * !X)	0.00138	0.00136	0.00135
	(A1 * !A2 * !C1 * !X)	-0.00100	-0.00109	-0.00108
	(A1 * !A2 * !C1 * !X)	0.00140	0.00135	0.00135
	(!A1 * !A2 * C1 * !X)	-0.00045	-0.00045	-0.00046
	(!A1 * !A2 * C1 * !X)	0.00138	0.00139	0.00136
	(!A1 * !A2 * !C1 * !X)	-0.00058	-0.00058	-0.00058
	(!A1 * !A2 * !C1 * !X)	0.00144	0.00143	0.00138
sky130_fd_sc_hs__o211a_4	(A2 * !C1 * !X)	-0.00227	-0.00242	-0.00239
	(A2 * !C1 * !X)	0.00236	0.00231	0.00230
	(A1 * !A2 * !C1 * !X)	-0.00226	-0.00242	-0.00239
	(A1 * !A2 * !C1 * !X)	0.00237	0.00231	0.00230
	(!A1 * !A2 * C1 * !X)	-0.00124	-0.00125	-0.00125
	(!A1 * !A2 * C1 * !X)	0.00236	0.00237	0.00232
	(!A1 * !A2 * !C1 * !X)	-0.00147	-0.00148	-0.00148
	(!A1 * !A2 * !C1 * !X)	0.00242	0.00241	0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	0.00034	0.00034	0.00033
	(A2 * !B1 * !X)	-0.00158	-0.00160	-0.00160
	(!A2 * !B1 * !X)	0.00034	0.00033	0.00033
	(!A2 * !B1 * !X)	-0.00158	-0.00158	-0.00160
	(!A1 * !A2 * B1 * !X)	0.00037	0.00037	0.00033
	(!A1 * !A2 * B1 * !X)	-0.00153	-0.00154	-0.00160
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	0.00042	0.00042	0.00041
	(A2 * !B1 * !X)	-0.00152	-0.00153	-0.00154
	(!A2 * !B1 * !X)	0.00042	0.00042	0.00041
	(!A2 * !B1 * !X)	-0.00152	-0.00153	-0.00154
	(!A1 * !A2 * B1 * !X)	0.00045	0.00045	0.00041
	(!A1 * !A2 * B1 * !X)	-0.00148	-0.00148	-0.00154
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	0.00061	0.00062	0.00060
	(A2 * !B1 * !X)	-0.00257	-0.00257	-0.00261
	(!A2 * !B1 * !X)	0.00061	0.00062	0.00060
	(!A2 * !B1 * !X)	-0.00257	-0.00257	-0.00261
	(!A1 * !A2 * B1 * !X)	0.00066	0.00066	0.00060
	(!A1 * !A2 * B1 * !X)	-0.00245	-0.00247	-0.00259

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o211a_1	(A2 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(A2 * !B1 * !X)	0.00160	0.00163	0.00160
	(!A2 * !B1 * !X)	-0.00032	-0.00032	-0.00032
	(!A2 * !B1 * !X)	0.00160	0.00163	0.00160
	(!A1 * !A2 * B1 * !X)	-0.00031	-0.00032	-0.00031
	(!A1 * !A2 * B1 * !X)	0.00160	0.00162	0.00160
sky130_fd_sc_hs__o211a_2	(A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(A2 * !B1 * !X)	0.00154	0.00157	0.00154
	(!A2 * !B1 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !X)	0.00154	0.00157	0.00154
	(!A1 * !A2 * B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * B1 * !X)	0.00154	0.00156	0.00154
sky130_fd_sc_hs__o211a_4	(A2 * !B1 * !X)	-0.00059	-0.00059	-0.00058
	(A2 * !B1 * !X)	0.00262	0.00266	0.00262
	(!A2 * !B1 * !X)	-0.00059	-0.00059	-0.00058
	(!A2 * !B1 * !X)	0.00262	0.00266	0.00262
	(!A1 * !A2 * B1 * !X)	-0.00056	-0.00057	-0.00055
	(!A1 * !A2 * B1 * !X)	0.00262	0.00264	0.00262

SKY130_FD_SC_HS__O21AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00265	0.00274	0.00266	0.58082
sky130_fd_sc_hs__o21ai_2	0.00538	0.00496	0.00489	1.08121
sky130_fd_sc_hs__o21ai_4	0.00945	0.00980	0.00741	1.88323

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ai_1	0.00000	0.01827	0.06484
sky130_fd_sc_hs__o21ai_2	0.00000	0.03654	0.12968
sky130_fd_sc_hs__o21ai_4	0.00000	0.04876	0.19452

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)	0.09240	0.99470	11.38030
	A2->Y (FR)	0.08032	0.96263	11.17440
	B1->Y (FR)	0.03131	0.64999	8.04914
sky130_fd_sc_hs__o21ai_2	A1->Y (FR)	0.08182	0.85069	11.23070
	A2->Y (FR)	0.06535	0.81374	11.02270
	B1->Y (FR)	0.02389	0.58076	7.99123
sky130_fd_sc_hs__o21ai_4	A1->Y (FR)	0.08236	0.75412	11.12740
	A2->Y (FR)	0.06625	0.73862	11.17390
	B1->Y (FR)	0.03311	0.70376	10.91920

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ai_1	A1->Y (RF)	0.02901	0.33895	3.77409
	A2->Y (RF)	0.02475	0.32815	3.72207
	B1->Y (RF)	0.02417	0.37192	4.24877
sky130_fd_sc_hs__o21ai_2	A1->Y (RF)	0.02407	0.27768	3.62015
	A2->Y (RF)	0.02157	0.27173	3.64634
	B1->Y (RF)	0.01611	0.30279	4.21529
sky130_fd_sc_hs__o21ai_4	A1->Y (RF)	0.02378	0.23367	3.49851
	A2->Y (RF)	0.02078	0.22403	3.49477
	B1->Y (RF)	0.01364	0.24795	4.07799

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00040	0.00027	0.00115
	A1	0.00555	0.00543	0.00630
	A2	0.00043	0.00063	0.00390
	A2	0.00484	0.00505	0.00831
	B1	-0.00036	0.00002	0.00399
	B1	0.00312	0.00352	0.00771
sky130_fd_sc_hs__o21ai_2	A1	0.00037	0.00013	0.00191
	A1	0.01019	0.00994	0.01153
	A2	0.00037	0.00094	0.00708
	A2	0.00852	0.00882	0.01525
	B1	-0.00157	-0.00076	0.00709
	B1	0.00604	0.00686	0.01457
sky130_fd_sc_hs__o21ai_4	A1	0.00050	0.00005	0.00368
	A1	0.01952	0.01912	0.02275
	A2	0.00021	0.00131	0.01349
	A2	0.01651	0.01762	0.02978
	B1	-0.00291	-0.00175	0.00707
	B1	0.00954	0.01057	0.01896

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	A1	0.00613	0.00605	0.00668
	A1	0.00094	0.00084	0.00146
	A2	0.00480	0.00476	0.00541
	A2	0.00032	0.00028	0.00091
	B1	0.00363	0.00363	0.00486
	B1	0.00015	0.00013	0.00123
sky130_fd_sc_hs__o21ai_2	A1	0.01136	0.01115	0.01268
	A1	0.00148	0.00122	0.00249
	A2	0.00819	0.00815	0.00988
	A2	-0.00010	-0.00014	0.00118
	B1	0.00893	0.00896	0.01137
	B1	-0.00030	-0.00021	0.00199
sky130_fd_sc_hs__o21ai_4	A1	0.02141	0.02099	0.02365
	A1	0.00232	0.00182	0.00456
	A2	0.01546	0.01545	0.01867
	A2	-0.00110	-0.00120	0.00172
	B1	0.01627	0.01629	0.01895
	B1	0.00046	0.00055	0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	0.00153	0.00141	0.00140
	(A2 * B1 * !Y)	-0.00117	-0.00132	-0.00132
	(A2 * !B1 * Y)	0.00129	0.00130	0.00128
	(A2 * !B1 * Y)	-0.00140	-0.00143	-0.00142
	(!A2 * !B1 * Y)	0.00121	0.00123	0.00121
	(!A2 * !B1 * Y)	-0.00145	-0.00146	-0.00145
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	0.00288	0.00264	0.00260
	(A2 * B1 * !Y)	-0.00235	-0.00268	-0.00267
	(A2 * !B1 * Y)	0.00246	0.00247	0.00245
	(A2 * !B1 * Y)	-0.00276	-0.00285	-0.00282
	(!A2 * !B1 * Y)	0.00233	0.00234	0.00234
	(!A2 * !B1 * Y)	-0.00286	-0.00287	-0.00287
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	0.00526	0.00483	0.00475
	(A2 * B1 * !Y)	-0.00466	-0.00535	-0.00533
	(A2 * !B1 * Y)	0.00471	0.00479	0.00473
	(A2 * !B1 * Y)	-0.00517	-0.00539	-0.00535
	(!A2 * !B1 * Y)	0.00448	0.00454	0.00448
	(!A2 * !B1 * Y)	-0.00546	-0.00546	-0.00545

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A2 * B1 * !Y)	-0.00139	-0.00139	-0.00139
	(A2 * B1 * !Y)	0.00132	0.00132	0.00132
	(A2 * !B1 * Y)	-0.00128	-0.00128	-0.00128
	(A2 * !B1 * Y)	0.00143	0.00143	0.00142
	(!A2 * !B1 * Y)	-0.00117	-0.00123	-0.00121
	(!A2 * !B1 * Y)	0.00146	0.00146	0.00145
sky130_fd_sc_hs__o21ai_2	(A2 * B1 * !Y)	-0.00258	-0.00260	-0.00259
	(A2 * B1 * !Y)	0.00265	0.00269	0.00267
	(A2 * !B1 * Y)	-0.00243	-0.00245	-0.00244
	(A2 * !B1 * Y)	0.00281	0.00285	0.00282
	(!A2 * !B1 * Y)	-0.00222	-0.00232	-0.00234
	(!A2 * !B1 * Y)	0.00289	0.00288	0.00288
sky130_fd_sc_hs__o21ai_4	(A2 * B1 * !Y)	-0.00472	-0.00476	-0.00474
	(A2 * B1 * !Y)	0.00528	0.00536	0.00533
	(A2 * !B1 * Y)	-0.00470	-0.00474	-0.00472
	(A2 * !B1 * Y)	0.00531	0.00539	0.00535
	(!A2 * !B1 * Y)	-0.00424	-0.00447	-0.00448
	(!A2 * !B1 * Y)	0.00547	0.00546	0.00547

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	0.00143	0.00144	0.00143
	(A1 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(A1 * !B1 * Y)	0.00116	0.00117	0.00116
	(A1 * !B1 * Y)	-0.00143	-0.00146	-0.00145
	(!A1 * !B1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !B1 * Y)	-0.00148	-0.00149	-0.00148
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	0.00259	0.00261	0.00258
	(A1 * B1 * !Y)	-0.00138	-0.00138	-0.00136
	(A1 * !B1 * Y)	0.00238	0.00238	0.00237
	(A1 * !B1 * Y)	-0.00253	-0.00259	-0.00260
	(!A1 * !B1 * Y)	0.00224	0.00228	0.00226
	(!A1 * !B1 * Y)	-0.00263	-0.00266	-0.00264
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	0.00543	0.00551	0.00546
	(A1 * B1 * !Y)	-0.00274	-0.00279	-0.00276
	(A1 * !B1 * Y)	0.00477	0.00485	0.00480
	(A1 * !B1 * Y)	-0.00525	-0.00544	-0.00544
	(!A1 * !B1 * Y)	0.00451	0.00460	0.00455
	(!A1 * !B1 * Y)	-0.00554	-0.00558	-0.00556

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(A1 * B1 * !Y)	-0.00138	-0.00140	-0.00142
	(A1 * B1 * !Y)	0.00071	0.00072	0.00069
	(A1 * !B1 * Y)	-0.00116	-0.00116	-0.00116
	(A1 * !B1 * Y)	0.00145	0.00146	0.00145
	(!A1 * !B1 * Y)	-0.00106	-0.00112	-0.00111
	(!A1 * !B1 * Y)	0.00149	0.00149	0.00148
sky130_fd_sc_hs__o21ai_2	(A1 * B1 * !Y)	-0.00247	-0.00249	-0.00257
	(A1 * B1 * !Y)	0.00145	0.00146	0.00139
	(A1 * !B1 * Y)	-0.00236	-0.00237	-0.00237
	(A1 * !B1 * Y)	0.00258	0.00259	0.00260
	(!A1 * !B1 * Y)	-0.00214	-0.00228	-0.00226
	(!A1 * !B1 * Y)	0.00264	0.00267	0.00265
sky130_fd_sc_hs__o21ai_4	(A1 * B1 * !Y)	-0.00520	-0.00525	-0.00543
	(A1 * B1 * !Y)	0.00297	0.00299	0.00282
	(A1 * !B1 * Y)	-0.00477	-0.00480	-0.00479
	(A1 * !B1 * Y)	0.00542	0.00544	0.00544
	(!A1 * !B1 * Y)	-0.00429	-0.00454	-0.00455
	(!A1 * !B1 * Y)	0.00557	0.00558	0.00558

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	0.00043	0.00043	0.00041
	(!A1 * !A2 * Y)	-0.00169	-0.00169	-0.00174
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	0.00089	0.00089	0.00084
	(!A1 * !A2 * Y)	-0.00309	-0.00310	-0.00319
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	0.00155	0.00154	0.00146
	(!A1 * !A2 * Y)	-0.00367	-0.00368	-0.00384

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ai_1	(!A1 * !A2 * Y)	-0.00041	-0.00041	-0.00040
	(!A1 * !A2 * Y)	0.00175	0.00177	0.00174
sky130_fd_sc_hs__o21ai_2	(!A1 * !A2 * Y)	-0.00082	-0.00082	-0.00082
	(!A1 * !A2 * Y)	0.00319	0.00319	0.00320
sky130_fd_sc_hs__o21ai_4	(!A1 * !A2 * Y)	-0.00142	-0.00145	-0.00142
	(!A1 * !A2 * Y)	0.00384	0.00392	0.00385

SKY130_FD_SC_HS__O21Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00229	0.00232	0.00231	1.16150
sky130_fd_sc_hs__o21a_2	0.00249	0.00246	0.00256	2.26090
sky130_fd_sc_hs__o21a_4	0.00478	0.00441	0.00427	4.30043

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21a_1	0.00000	0.11699	0.28709
sky130_fd_sc_hs__o21a_2	0.00000	0.07310	0.11694
sky130_fd_sc_hs__o21a_4	0.00000	0.27499	0.57550

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)	0.06427	0.52290	5.61905
	A2->X (RR)	0.05734	0.50436	5.71095
	B1->X (RR)	0.05941	0.51074	5.82994
sky130_fd_sc_hs__o21a_2	A1->X (RR)	0.06638	0.45337	5.75435
	A2->X (RR)	0.05987	0.43867	5.80448
	B1->X (RR)	0.06168	0.44621	5.85893
sky130_fd_sc_hs__o21a_4	A1->X (RR)	0.07006	0.38213	5.72386
	A2->X (RR)	0.06480	0.36539	5.80297
	B1->X (RR)	0.06169	0.36869	5.87457

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21a_1	A1->X (FF)	0.11951	0.56293	4.72180
	A2->X (FF)	0.10627	0.53400	4.60153
	B1->X (FF)	0.05961	0.46799	4.52216
sky130_fd_sc_hs__o21a_2	A1->X (FF)	0.14928	0.59503	4.86168
	A2->X (FF)	0.13735	0.57260	4.70230
	B1->X (FF)	0.06680	0.46727	4.47169
sky130_fd_sc_hs__o21a_4	A1->X (FF)	0.14628	0.56467	4.92386
	A2->X (FF)	0.12907	0.53517	4.77925
	B1->X (FF)	0.07420	0.45708	4.66641

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00749	0.00765	0.01605
	A1	0.00306	0.00323	0.01176
	A2	0.00620	0.00646	0.02267
	A2	0.00243	0.00270	0.01900
	B1	0.00530	0.00595	0.02721
	B1	0.00251	0.00317	0.02449
sky130_fd_sc_hs__o21a_2	A1	0.00979	0.01018	0.01750
	A1	0.00499	0.00538	0.01283
	A2	0.00854	0.00892	0.02348
	A2	0.00447	0.00485	0.01954
	B1	0.00750	0.00816	0.02452
	B1	0.00438	0.00509	0.02153
sky130_fd_sc_hs__o21a_4	A1	0.01893	0.01968	0.03588
	A1	0.00986	0.01063	0.02714
	A2	0.01607	0.01688	0.04762
	A2	0.00857	0.00941	0.04046
	B1	0.01405	0.01542	0.05536
	B1	0.00867	0.01008	0.05021

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	A1	0.00298	0.00310	0.01148
	A1	0.00735	0.00747	0.01548
	A2	0.00300	0.00407	0.02093
	A2	0.00668	0.00772	0.02403
	B1	0.00228	0.00366	0.02821
	B1	0.00506	0.00632	0.03078
sky130_fd_sc_hs__o21a_2	A1	0.00511	0.00538	0.01262
	A1	0.00985	0.01010	0.01729
	A2	0.00517	0.00634	0.02279
	A2	0.00915	0.01028	0.02575
	B1	0.00427	0.00570	0.02556
	B1	0.00804	0.00915	0.02799
sky130_fd_sc_hs__o21a_4	A1	0.00944	0.01002	0.02580
	A1	0.01841	0.01895	0.03414
	A2	0.00979	0.01152	0.04480
	A2	0.01715	0.01883	0.05074
	B1	0.00819	0.01082	0.05763
	B1	0.01480	0.01761	0.06180

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	0.00125	0.00114	0.00112
	(A2 * B1 * X)	-0.00111	-0.00125	-0.00126
	(A2 * !B1 * !X)	0.00112	0.00113	0.00112
	(A2 * !B1 * !X)	-0.00123	-0.00125	-0.00125
	(!A2 * !B1 * !X)	0.00106	0.00108	0.00107
	(!A2 * !B1 * !X)	-0.00126	-0.00127	-0.00127
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	0.00147	0.00135	0.00133
	(A2 * B1 * X)	-0.00108	-0.00123	-0.00124
	(A2 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !B1 * !X)	-0.00120	-0.00124	-0.00123
	(!A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(!A2 * !B1 * !X)	-0.00125	-0.00125	-0.00125
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	0.00272	0.00251	0.00249
	(A2 * B1 * X)	-0.00211	-0.00239	-0.00240
	(A2 * !B1 * !X)	0.00242	0.00243	0.00242
	(A2 * !B1 * !X)	-0.00240	-0.00247	-0.00246
	(!A2 * !B1 * !X)	0.00232	0.00234	0.00232
	(!A2 * !B1 * !X)	-0.00250	-0.00251	-0.00250

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A2 * B1 * X)	-0.00111	-0.00111	-0.00111
	(A2 * B1 * X)	0.00125	0.00125	0.00126
	(A2 * !B1 * !X)	-0.00111	-0.00112	-0.00112
	(A2 * !B1 * !X)	0.00125	0.00125	0.00125
	(!A2 * !B1 * !X)	-0.00101	-0.00108	-0.00107
	(!A2 * !B1 * !X)	0.00128	0.00128	0.00127
sky130_fd_sc_hs__o21a_2	(A2 * B1 * X)	-0.00132	-0.00132	-0.00132
	(A2 * B1 * X)	0.00123	0.00124	0.00124
	(A2 * !B1 * !X)	-0.00133	-0.00133	-0.00132
	(A2 * !B1 * !X)	0.00123	0.00124	0.00123
	(!A2 * !B1 * !X)	-0.00120	-0.00127	-0.00126
	(!A2 * !B1 * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o21a_4	(A2 * B1 * X)	-0.00248	-0.00249	-0.00247
	(A2 * B1 * X)	0.00239	0.00241	0.00240
	(A2 * !B1 * !X)	-0.00242	-0.00243	-0.00242
	(A2 * !B1 * !X)	0.00246	0.00248	0.00246
	(!A2 * !B1 * !X)	-0.00222	-0.00234	-0.00232
	(!A2 * !B1 * !X)	0.00252	0.00252	0.00251

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	0.00115	0.00116	0.00115
	(A1 * B1 * X)	-0.00067	-0.00067	-0.00067
	(A1 * !B1 * !X)	0.00106	0.00107	0.00106
	(A1 * !B1 * !X)	-0.00118	-0.00120	-0.00121
	(!A1 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !B1 * !X)	-0.00123	-0.00123	-0.00123
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	0.00130	0.00132	0.00130
	(A1 * B1 * X)	-0.00062	-0.00063	-0.00062
	(A1 * !B1 * !X)	0.00119	0.00120	0.00119
	(A1 * !B1 * !X)	-0.00117	-0.00120	-0.00120
	(!A1 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !X)	-0.00121	-0.00122	-0.00121
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	0.00229	0.00231	0.00229
	(A1 * B1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !B1 * !X)	0.00203	0.00204	0.00203
	(A1 * !B1 * !X)	-0.00238	-0.00245	-0.00244
	(!A1 * !B1 * !X)	0.00192	0.00193	0.00191
	(!A1 * !B1 * !X)	-0.00249	-0.00250	-0.00248

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(A1 * B1 * X)	-0.00110	-0.00111	-0.00114
	(A1 * B1 * X)	0.00071	0.00071	0.00068
	(A1 * !B1 * !X)	-0.00106	-0.00106	-0.00106
	(A1 * !B1 * !X)	0.00121	0.00120	0.00121
	(!A1 * !B1 * !X)	-0.00096	-0.00101	-0.00100
	(!A1 * !B1 * !X)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__o21a_2	(A1 * B1 * X)	-0.00126	-0.00127	-0.00130
	(A1 * B1 * X)	0.00066	0.00066	0.00063
	(A1 * !B1 * !X)	-0.00119	-0.00119	-0.00119
	(A1 * !B1 * !X)	0.00119	0.00120	0.00120
	(!A1 * !B1 * !X)	-0.00108	-0.00114	-0.00113
	(!A1 * !B1 * !X)	0.00122	0.00123	0.00122
sky130_fd_sc_hs__o21a_4	(A1 * B1 * X)	-0.00219	-0.00220	-0.00227
	(A1 * B1 * X)	0.00136	0.00136	0.00129
	(A1 * !B1 * !X)	-0.00203	-0.00204	-0.00202
	(A1 * !B1 * !X)	0.00244	0.00246	0.00244
	(!A1 * !B1 * !X)	-0.00183	-0.00193	-0.00191
	(!A1 * !B1 * !X)	0.00251	0.00251	0.00249

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	0.00041	0.00041	0.00039
	(!A1 * !A2 * !X)	-0.00136	-0.00136	-0.00140
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	0.00044	0.00044	0.00042
	(!A1 * !A2 * !X)	-0.00153	-0.00153	-0.00158
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	0.00068	0.00068	0.00064
	(!A1 * !A2 * !X)	-0.00263	-0.00263	-0.00271

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21a_1	(!A1 * !A2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !A2 * !X)	0.00140	0.00143	0.00141
sky130_fd_sc_hs__o21a_2	(!A1 * !A2 * !X)	-0.00040	-0.00041	-0.00040
	(!A1 * !A2 * !X)	0.00158	0.00161	0.00159
sky130_fd_sc_hs__o21a_4	(!A1 * !A2 * !X)	-0.00061	-0.00063	-0.00062
	(!A1 * !A2 * !X)	0.00271	0.00277	0.00272

SKY130_FD_SC_HS__O21BAIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00252	0.00281	0.00223	0.58536
sky130_fd_sc_hs__o21bai_2	0.00534	0.00490	0.00244	1.08885
sky130_fd_sc_hs__o21bai_4	0.00957	0.00974	0.00327	1.95296

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21bai_1	0.00000	0.13288	0.22928
sky130_fd_sc_hs__o21bai_2	0.00000	0.06609	0.13097
sky130_fd_sc_hs__o21bai_4	0.00000	0.27771	0.45987

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)	0.08658	0.99415	11.44490
	A2->Y (FR)	0.07559	0.96343	11.23820
	B1_N->Y (RR)	0.05035	0.34045	2.53473
sky130_fd_sc_hs__o21bai_2	A1->Y (FR)	0.07933	0.84798	11.22310
	A2->Y (FR)	0.06374	0.81505	11.01780
	B1_N->Y (RR)	0.04986	0.29151	2.42956
sky130_fd_sc_hs__o21bai_4	A1->Y (FR)	0.08202	0.75630	11.21150
	A2->Y (FR)	0.06528	0.73393	11.15340
	B1_N->Y (RR)	0.06779	0.45647	5.98629

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21bai_1	A1->Y (RF)	0.02902	0.34155	3.83174
	A2->Y (RF)	0.02493	0.33202	3.78859
	B1_N->Y (FF)	0.06951	0.45172	3.86625
sky130_fd_sc_hs__o21bai_2	A1->Y (RF)	0.02640	0.27946	3.64417
	A2->Y (RF)	0.02360	0.27403	3.67034
	B1_N->Y (FF)	0.07163	0.45567	4.07220
sky130_fd_sc_hs__o21bai_4	A1->Y (RF)	0.03211	0.24538	3.68014
	A2->Y (RF)	0.02441	0.23137	3.60995
	B1_N->Y (FF)	0.07151	0.40996	3.99422

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00037	0.00026	0.00114
	A1	0.00430	0.00421	0.00509
	A2	0.00032	0.00053	0.00385
	A2	0.00375	0.00396	0.00698
	B1_N	0.00528	0.00586	0.02541
	B1_N	0.00347	0.00409	0.02387
sky130_fd_sc_hs__o21bai_2	A1	0.00033	0.00012	0.00189
	A1	0.00825	0.00803	0.00962
	A2	0.00037	0.00091	0.00718
	A2	0.00648	0.00703	0.01334
	B1_N	0.00718	0.00778	0.02611
	B1_N	0.00587	0.00651	0.02487
sky130_fd_sc_hs__o21bai_4	A1	0.00060	0.00021	0.00360
	A1	0.01604	0.01564	0.01904
	A2	0.00047	0.00154	0.01379
	A2	0.01299	0.01405	0.02632
	B1_N	0.00949	0.01078	0.04918
	B1_N	0.00922	0.01066	0.04921

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21bai_1	A1	0.00568	0.00562	0.00622
	A1	0.00174	0.00165	0.00226
	A2	0.00444	0.00443	0.00523
	A2	0.00097	0.00094	0.00156
	B1_N	0.00421	0.00544	0.02790
	B1_N	0.00609	0.00728	0.02973
sky130_fd_sc_hs__o21bai_2	A1	0.01131	0.01109	0.01261
	A1	0.00338	0.00314	0.00441
	A2	0.00818	0.00817	0.00964
	A2	0.00199	0.00194	0.00326
	B1_N	0.00831	0.00948	0.03062
	B1_N	0.00972	0.01088	0.03187
sky130_fd_sc_hs__o21bai_4	A1	0.02253	0.02206	0.02529
	A1	0.00712	0.00662	0.00927
	A2	0.01635	0.01627	0.01946
	A2	0.00368	0.00356	0.00639
	B1_N	0.01677	0.01880	0.05792
	B1_N	0.01745	0.01941	0.05812

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)	0.00126	0.00127	0.00126
	(A2 * B1_N * Y)	-0.00130	-0.00133	-0.00134
	(A2 * !B1_N * !Y)	0.00138	0.00127	0.00125
	(A2 * !B1_N * !Y)	-0.00120	-0.00133	-0.00134
	(!A2 * B1_N * Y)	0.00121	0.00122	0.00121
	(!A2 * B1_N * Y)	-0.00136	-0.00136	-0.00136
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	0.00255	0.00259	0.00257
	(A2 * B1_N * Y)	-0.00271	-0.00282	-0.00279
	(A2 * !B1_N * !Y)	0.00287	0.00264	0.00261
	(A2 * !B1_N * !Y)	-0.00242	-0.00277	-0.00276
	(!A2 * B1_N * Y)	0.00248	0.00250	0.00249
	(!A2 * B1_N * Y)	-0.00283	-0.00284	-0.00284
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	0.00479	0.00483	0.00480
	(A2 * B1_N * Y)	-0.00524	-0.00543	-0.00542
	(A2 * !B1_N * !Y)	0.00539	0.00487	0.00481
	(A2 * !B1_N * !Y)	-0.00470	-0.00539	-0.00540
	(!A2 * B1_N * Y)	0.00465	0.00467	0.00464
	(!A2 * B1_N * Y)	-0.00552	-0.00553	-0.00551

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)	-0.00125	-0.00125	-0.00125
	(A2 * B1_N * Y)	0.00134	0.00133	0.00134
	(A2 * !B1_N * !Y)	-0.00125	-0.00125	-0.00125
	(A2 * !B1_N * !Y)	0.00133	0.00133	0.00134
	(!A2 * B1_N * Y)	-0.00116	-0.00122	-0.00121
	(!A2 * B1_N * Y)	0.00136	0.00138	0.00136
sky130_fd_sc_hs__o21bai_2	(A2 * B1_N * Y)	-0.00255	-0.00257	-0.00256
	(A2 * B1_N * Y)	0.00278	0.00282	0.00279
	(A2 * !B1_N * !Y)	-0.00259	-0.00261	-0.00260
	(A2 * !B1_N * !Y)	0.00274	0.00278	0.00276
	(!A2 * B1_N * Y)	-0.00239	-0.00248	-0.00249
	(!A2 * B1_N * Y)	0.00283	0.00284	0.00285
sky130_fd_sc_hs__o21bai_4	(A2 * B1_N * Y)	-0.00476	-0.00480	-0.00478
	(A2 * B1_N * Y)	0.00538	0.00546	0.00542
	(A2 * !B1_N * !Y)	-0.00479	-0.00482	-0.00480
	(A2 * !B1_N * !Y)	0.00536	0.00543	0.00540
	(!A2 * B1_N * Y)	-0.00443	-0.00465	-0.00464
	(!A2 * B1_N * Y)	0.00554	0.00560	0.00554

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)	0.00128	0.00129	0.00128
	(A1 * B1_N * Y)	-0.00143	-0.00147	-0.00147
	(A1 * !B1_N * !Y)	0.00145	0.00147	0.00146
	(A1 * !B1_N * !Y)	-0.00078	-0.00078	-0.00078
	(!A1 * B1_N * Y)	0.00124	0.00125	0.00124
	(!A1 * B1_N * Y)	-0.00149	-0.00150	-0.00149
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	0.00234	0.00235	0.00234
	(A1 * B1_N * Y)	-0.00252	-0.00261	-0.00260
	(A1 * !B1_N * !Y)	0.00254	0.00258	0.00255
	(A1 * !B1_N * !Y)	-0.00135	-0.00137	-0.00136
	(!A1 * B1_N * Y)	0.00227	0.00229	0.00228
	(!A1 * B1_N * Y)	-0.00265	-0.00265	-0.00264
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	0.00477	0.00478	0.00476
	(A1 * B1_N * Y)	-0.00527	-0.00545	-0.00542
	(A1 * !B1_N * !Y)	0.00534	0.00546	0.00537
	(A1 * !B1_N * !Y)	-0.00277	-0.00283	-0.00278
	(!A1 * B1_N * Y)	0.00462	0.00467	0.00462
	(!A1 * B1_N * Y)	-0.00554	-0.00556	-0.00553

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)	-0.00128	-0.00129	-0.00128
	(A1 * B1_N * Y)	0.00147	0.00148	0.00147
	(A1 * !B1_N * !Y)	-0.00141	-0.00142	-0.00145
	(A1 * !B1_N * !Y)	0.00082	0.00082	0.00079
	(!A1 * B1_N * Y)	-0.00120	-0.00125	-0.00124
	(!A1 * B1_N * Y)	0.00151	0.00151	0.00150
sky130_fd_sc_hs__o21bai_2	(A1 * B1_N * Y)	-0.00233	-0.00234	-0.00233
	(A1 * B1_N * Y)	0.00259	0.00261	0.00260
	(A1 * !B1_N * !Y)	-0.00244	-0.00247	-0.00254
	(A1 * !B1_N * !Y)	0.00145	0.00146	0.00139
	(!A1 * B1_N * Y)	-0.00219	-0.00226	-0.00227
	(!A1 * B1_N * Y)	0.00266	0.00265	0.00265
sky130_fd_sc_hs__o21bai_4	(A1 * B1_N * Y)	-0.00474	-0.00476	-0.00474
	(A1 * B1_N * Y)	0.00542	0.00545	0.00542
	(A1 * !B1_N * !Y)	-0.00511	-0.00516	-0.00534
	(A1 * !B1_N * !Y)	0.00299	0.00301	0.00284
	(!A1 * B1_N * Y)	-0.00440	-0.00458	-0.00461
	(!A1 * B1_N * Y)	0.00555	0.00556	0.00555

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)	0.00438	0.00499	0.02775
	(!A1 * !A2 * Y)	0.00153	0.00212	0.02489
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00629	0.00668	0.02895
	(!A1 * !A2 * Y)	0.00307	0.00345	0.02572
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00763	0.00834	0.04686
	(!A1 * !A2 * Y)	0.00326	0.00398	0.04249

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)	0.00005	0.00120	0.02413
	(!A1 * !A2 * Y)	0.00292	0.00407	0.02699
sky130_fd_sc_hs__o21bai_2	(!A1 * !A2 * Y)	0.00048	0.00131	0.02313
	(!A1 * !A2 * Y)	0.00374	0.00458	0.02637
sky130_fd_sc_hs__o21bai_4	(!A1 * !A2 * Y)	0.00100	0.00286	0.04176
	(!A1 * !A2 * Y)	0.00543	0.00731	0.04617

SKY130_FD_SC_HS__O21BAx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00232	0.00248	0.00203	1.03375
sky130_fd_sc_hs__o21ba_2	0.00241	0.00254	0.00217	2.01485
sky130_fd_sc_hs__o21ba_4	0.00485	0.00460	0.00259	3.78408

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o21ba_1	0.00000	0.16754	0.26233
sky130_fd_sc_hs__o21ba_2	0.00000	0.18771	0.29412
sky130_fd_sc_hs__o21ba_4	0.00000	0.29153	0.57616

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)	0.07260	0.55357	5.65876
	A2->X (RR)	0.06552	0.53631	5.74519
	B1_N->X (FR)	0.11728	0.77891	8.40986
sky130_fd_sc_hs__o21ba_2	A1->X (RR)	0.07151	0.46047	5.59046
	A2->X (RR)	0.06343	0.44462	5.63578
	B1_N->X (FR)	0.12026	0.68029	8.23113
sky130_fd_sc_hs__o21ba_4	A1->X (RR)	0.07622	0.39666	5.70059
	A2->X (RR)	0.07171	0.38027	5.77826
	B1_N->X (FR)	0.12681	0.65185	8.58794

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o21ba_1	A1->X (FF)	0.12387	0.56287	4.51168
	A2->X (FF)	0.11267	0.53942	4.38811
	B1_N->X (RF)	0.08072	0.24785	1.21993
sky130_fd_sc_hs__o21ba_2	A1->X (FF)	0.14681	0.58836	4.70459
	A2->X (FF)	0.13515	0.56659	4.54605
	B1_N->X (RF)	0.08967	0.24346	1.39786
sky130_fd_sc_hs__o21ba_4	A1->X (FF)	0.14488	0.55725	4.62944
	A2->X (FF)	0.12791	0.52771	4.49155
	B1_N->X (RF)	0.09566	0.23110	1.17651

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00796	0.00811	0.01644
	A1	0.00431	0.00446	0.01290
	A2	0.00684	0.00704	0.02306
	A2	0.00368	0.00389	0.01997
	B1_N	0.00691	0.00845	0.03218
	B1_N	0.00862	0.01017	0.03527
sky130_fd_sc_hs__o21ba_2	A1	0.00974	0.01015	0.01747
	A1	0.00600	0.00641	0.01408
	A2	0.00857	0.00896	0.02363
	A2	0.00535	0.00574	0.02071
	B1_N	0.00853	0.01007	0.03191
	B1_N	0.01043	0.01199	0.03389
sky130_fd_sc_hs__o21ba_4	A1	0.01890	0.01959	0.03579
	A1	0.01144	0.01216	0.02869
	A2	0.01606	0.01683	0.04748
	A2	0.01016	0.01095	0.04179
	B1_N	0.01622	0.01793	0.03840
	B1_N	0.01784	0.01961	0.04002

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o21ba_1	A1	0.00298	0.00315	0.01127
	A1	0.00660	0.00677	0.01470
	A2	0.00297	0.00383	0.02054
	A2	0.00607	0.00687	0.02336
	B1_N	0.00782	0.00835	0.02923
	B1_N	0.00616	0.00665	0.02734
sky130_fd_sc_hs__o21ba_2	A1	0.00478	0.00523	0.01249
	A1	0.00849	0.00883	0.01596
	A2	0.00478	0.00590	0.02213
	A2	0.00795	0.00907	0.02455
	B1_N	0.00999	0.01043	0.03015
	B1_N	0.00815	0.00856	0.02780
sky130_fd_sc_hs__o21ba_4	A1	0.00920	0.00970	0.02655
	A1	0.01662	0.01711	0.03222
	A2	0.00944	0.01117	0.04401
	A2	0.01524	0.01695	0.04886
	B1_N	0.01669	0.01750	0.03543
	B1_N	0.01512	0.01592	0.03375

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)	0.00111	0.00112	0.00111
	(A2 * B1_N * !X)	-0.00124	-0.00127	-0.00126
	(A2 * !B1_N * X)	0.00125	0.00113	0.00111
	(A2 * !B1_N * X)	-0.00111	-0.00127	-0.00127
	(!A2 * B1_N * !X)	0.00108	0.00108	0.00107
	(!A2 * B1_N * !X)	-0.00128	-0.00128	-0.00128
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	0.00126	0.00127	0.00125
	(A2 * B1_N * !X)	-0.00120	-0.00124	-0.00123
	(A2 * !B1_N * X)	0.00140	0.00127	0.00126
	(A2 * !B1_N * X)	-0.00109	-0.00123	-0.00123
	(!A2 * B1_N * !X)	0.00121	0.00122	0.00121
	(!A2 * B1_N * !X)	-0.00125	-0.00125	-0.00124
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	0.00247	0.00248	0.00247
	(A2 * B1_N * !X)	-0.00244	-0.00251	-0.00251
	(A2 * !B1_N * X)	0.00273	0.00251	0.00249
	(A2 * !B1_N * X)	-0.00220	-0.00248	-0.00250
	(!A2 * B1_N * !X)	0.00241	0.00244	0.00241
	(!A2 * B1_N * !X)	-0.00255	-0.00257	-0.00255

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)	-0.00111	-0.00111	-0.00111
	(A2 * B1_N * !X)	0.00127	0.00127	0.00126
	(A2 * !B1_N * X)	-0.00110	-0.00111	-0.00110
	(A2 * !B1_N * X)	0.00126	0.00127	0.00127
	(!A2 * B1_N * !X)	-0.00102	-0.00108	-0.00107
	(!A2 * B1_N * !X)	0.00129	0.00130	0.00128
sky130_fd_sc_hs__o21ba_2	(A2 * B1_N * !X)	-0.00124	-0.00125	-0.00125
	(A2 * B1_N * !X)	0.00123	0.00124	0.00123
	(A2 * !B1_N * X)	-0.00125	-0.00125	-0.00125
	(A2 * !B1_N * X)	0.00123	0.00123	0.00123
	(!A2 * B1_N * !X)	-0.00116	-0.00122	-0.00121
	(!A2 * B1_N * !X)	0.00125	0.00126	0.00125
sky130_fd_sc_hs__o21ba_4	(A2 * B1_N * !X)	-0.00247	-0.00248	-0.00247
	(A2 * B1_N * !X)	0.00250	0.00253	0.00251
	(A2 * !B1_N * X)	-0.00248	-0.00249	-0.00247
	(A2 * !B1_N * X)	0.00249	0.00251	0.00250
	(!A2 * B1_N * !X)	-0.00232	-0.00242	-0.00240
	(!A2 * B1_N * !X)	0.00258	0.00258	0.00256

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)	0.00117	0.00118	0.00117
	(A1 * B1_N * !X)	-0.00124	-0.00127	-0.00127
	(A1 * !B1_N * X)	0.00123	0.00124	0.00123
	(A1 * !B1_N * X)	-0.00075	-0.00076	-0.00075
	(!A1 * B1_N * !X)	0.00114	0.00114	0.00113
	(!A1 * B1_N * !X)	-0.00129	-0.00129	-0.00129
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	0.00128	0.00129	0.00128
	(A1 * B1_N * !X)	-0.00122	-0.00124	-0.00125
	(A1 * !B1_N * X)	0.00137	0.00138	0.00137
	(A1 * !B1_N * X)	-0.00070	-0.00070	-0.00070
	(!A1 * B1_N * !X)	0.00124	0.00125	0.00124
	(!A1 * B1_N * !X)	-0.00126	-0.00127	-0.00126
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	0.00209	0.00211	0.00210
	(A1 * B1_N * !X)	-0.00245	-0.00253	-0.00252
	(A1 * !B1_N * X)	0.00236	0.00237	0.00235
	(A1 * !B1_N * X)	-0.00135	-0.00135	-0.00134
	(!A1 * B1_N * !X)	0.00200	0.00202	0.00201
	(!A1 * B1_N * !X)	-0.00257	-0.00259	-0.00257

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)	-0.00117	-0.00117	-0.00117
	(A1 * B1_N * !X)	0.00127	0.00128	0.00127
	(A1 * !B1_N * X)	-0.00119	-0.00120	-0.00122
	(A1 * !B1_N * X)	0.00079	0.00079	0.00076
	(!A1 * B1_N * !X)	-0.00109	-0.00114	-0.00113
	(!A1 * B1_N * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__o21ba_2	(A1 * B1_N * !X)	-0.00128	-0.00127	-0.00128
	(A1 * B1_N * !X)	0.00125	0.00124	0.00125
	(A1 * !B1_N * X)	-0.00133	-0.00134	-0.00137
	(A1 * !B1_N * X)	0.00074	0.00074	0.00071
	(!A1 * B1_N * !X)	-0.00120	-0.00125	-0.00124
	(!A1 * B1_N * !X)	0.00128	0.00128	0.00127
sky130_fd_sc_hs__o21ba_4	(A1 * B1_N * !X)	-0.00208	-0.00210	-0.00209
	(A1 * B1_N * !X)	0.00250	0.00253	0.00252
	(A1 * !B1_N * X)	-0.00225	-0.00226	-0.00233
	(A1 * !B1_N * X)	0.00143	0.00144	0.00137
	(!A1 * B1_N * !X)	-0.00193	-0.00201	-0.00201
	(!A1 * B1_N * !X)	0.00261	0.00260	0.00258

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)	0.00405	0.00469	0.02701
	(!A1 * !A2 * !X)	0.00140	0.00204	0.02437
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00445	0.00501	0.02720
	(!A1 * !A2 * !X)	0.00167	0.00222	0.02441
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00617	0.00650	0.02383
	(!A1 * !A2 * !X)	0.00279	0.00310	0.02045

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)	0.00012	0.00126	0.02369
	(!A1 * !A2 * !X)	0.00278	0.00392	0.02634
sky130_fd_sc_hs__o21ba_2	(!A1 * !A2 * !X)	0.00008	0.00120	0.02352
	(!A1 * !A2 * !X)	0.00288	0.00401	0.02632
sky130_fd_sc_hs__o21ba_4	(!A1 * !A2 * !X)	0.00026	0.00088	0.01831
	(!A1 * !A2 * !X)	0.00367	0.00431	0.02172

SKY130_FD_SC_HS__O221AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00261	0.00277	0.00272	0.00265	0.00269	0.57357
sky130_fd_sc_hs__o221ai_2	0.00535	0.00487	0.00562	0.00487	0.00493	1.06007
sky130_fd_sc_hs__o221ai_4	0.01014	0.00965	0.01027	0.00962	0.00982	1.97785

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221ai_1	0.00000	0.01811	0.09726
sky130_fd_sc_hs__o221ai_2	0.00000	0.03622	0.19452
sky130_fd_sc_hs__o221ai_4	0.00000	0.07244	0.38905

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)	0.13521	1.03827	11.35620
	A2->Y (FR)	0.12343	1.00569	11.15830
	B1->Y (FR)	0.09992	0.99138	11.22820
	B2->Y (FR)	0.08526	0.95639	11.03120
	C1->Y (FR)	0.03410	0.64659	7.96311
sky130_fd_sc_hs__o221ai_2	A1->Y (FR)	0.12367	0.89390	11.17530
	A2->Y (FR)	0.10813	0.85850	10.96840
	B1->Y (FR)	0.09027	0.85189	11.09540
	B2->Y (FR)	0.07421	0.81650	10.88720
	C1->Y (FR)	0.02709	0.57275	7.80303
sky130_fd_sc_hs__o221ai_4	A1->Y (FR)	0.11512	0.77825	10.95450
	A2->Y (FR)	0.10037	0.75177	10.84190
	B1->Y (FR)	0.09157	0.76269	11.23370
	B2->Y (FR)	0.07304	0.73382	11.10740
	C1->Y (FR)	0.02675	0.52653	7.91430

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221ai_1	A1->Y (RF)	0.05328	0.38805	3.99080
	A2->Y (RF)	0.04746	0.37847	3.96457
	B1->Y (RF)	0.04758	0.43746	4.76003
	B2->Y (RF)	0.04041	0.41904	4.63517
	C1->Y (RF)	0.03968	0.46277	5.18198
sky130_fd_sc_hs__o221ai_2	A1->Y (RF)	0.04343	0.31853	3.91857
	A2->Y (RF)	0.03850	0.31303	3.95653
	B1->Y (RF)	0.03731	0.36647	4.71924
	B2->Y (RF)	0.03276	0.37565	4.97472
	C1->Y (RF)	0.02206	0.39007	5.35821
sky130_fd_sc_hs__o221ai_4	A1->Y (RF)	0.04861	0.28505	4.08070
	A2->Y (RF)	0.04121	0.27496	4.10625
	B1->Y (RF)	0.04320	0.34521	5.11674
	B2->Y (RF)	0.03541	0.33661	5.18615
	C1->Y (RF)	0.02453	0.36651	5.88188

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221ai_1	A1	0.00165	0.00150	0.00231
	A1	0.00872	0.00858	0.00935
	A2	0.00172	0.00181	0.00491
	A2	0.00809	0.00820	0.01112
	B1	0.00050	0.00032	0.00116
	B1	0.00652	0.00633	0.00703
	B2	0.00050	0.00064	0.00377
	B2	0.00573	0.00584	0.00881
	C1	-0.00046	-0.00015	0.00362
	C1	0.00465	0.00493	0.00837
sky130_fd_sc_hs__o221ai_2	A1	0.00265	0.00230	0.00397
	A1	0.01627	0.01595	0.01756
	A2	0.00268	0.00307	0.00887
	A2	0.01459	0.01475	0.02063
	B1	0.00050	0.00013	0.00184
	B1	0.01225	0.01186	0.01355
	B2	0.00065	0.00105	0.00676
	B2	0.01060	0.01096	0.01655
	C1	-0.00145	-0.00073	0.00667
	C1	0.00804	0.00873	0.01575

sky130_fd_sc_hs__o221ai_4	**A1**	0.00438	0.00373	0.00679
	A1	0.03130	0.03074	0.03373
	A2	0.00454	0.00524	0.01519
	A2	0.02818	0.02895	0.03869
	B1	0.00072	-0.00008	0.00417
	B1	0.02374	0.02296	0.02703
	B2	0.00071	0.00164	0.01377
	B2	0.02060	0.02136	0.03322
	C1	-0.00273	-0.00027	0.01892
	C1	0.01618	0.01833	0.03658

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221ai_1	**A1**	0.00952	0.00945	0.01004
	A1	0.00219	0.00209	0.00260
	A2	0.00814	0.00812	0.00858
	A2	0.00146	0.00138	0.00191
	B1	0.00821	0.00814	0.00867
	B1	0.00222	0.00212	0.00264
	B2	0.00685	0.00680	0.00736
	B2	0.00080	0.00075	0.00134
	C1	0.00725	0.00717	0.00833
	C1	0.00067	0.00062	0.00165

sky130_fd_sc_hs__o221ai_2	**A1**	0.01797	0.01771	0.01874
	A1	0.00384	0.00358	0.00465
	A2	0.01491	0.01480	0.01622
	A2	0.00244	0.00232	0.00343
	B1	0.01562	0.01539	0.01711
	B1	0.00392	0.00364	0.00475
	B2	0.01241	0.01235	0.01382
	B2	0.00080	0.00071	0.00189
	C1	0.01317	0.01314	0.01497
	C1	0.00057	0.00057	0.00263
sky130_fd_sc_hs__o221ai_4	**A1**	0.03553	0.03504	0.03815
	A1	0.00766	0.00712	0.00945
	A2	0.02957	0.02928	0.03197
	A2	0.00482	0.00444	0.00693
	B1	0.03068	0.03028	0.03401
	B1	0.00775	0.00720	0.01016
	B2	0.02488	0.02464	0.02821
	B2	0.00165	0.00139	0.00465
	C1	0.02606	0.02606	0.03234
	C1	0.00105	0.00113	0.00752

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)**	0.00145	0.00135	0.00134
	(A2 * B2 * C1 * !Y)	-0.00123	-0.00137	-0.00137
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00134	0.00135	0.00133
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00133	-0.00137	-0.00136
	(A2 * B1 * !B2 * C1 * !Y)	0.00145	0.00135	0.00134
	(A2 * B1 * !B2 * C1 * !Y)	-0.00123	-0.00137	-0.00137
	(A2 * !B1 * !B2 * Y)	0.00134	0.00135	0.00133
	(A2 * !B1 * !B2 * Y)	-0.00133	-0.00137	-0.00136
	(!A2 * B2 * !C1 * Y)	0.00124	0.00125	0.00124
	(!A2 * B2 * !C1 * Y)	-0.00139	-0.00139	-0.00138
	(!A2 * B1 * !B2 * !C1 * Y)	0.00125	0.00126	0.00125
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00138	-0.00139	-0.00138
	(!A2 * !B1 * !B2 * C1 * Y)	0.00126	0.00126	0.00125
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00139	-0.00139	-0.00138
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00126	0.00126	0.00125
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00139	-0.00139	-0.00138

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00284	0.00259	0.00255
	(A2 * B2 * C1 * !Y)	-0.00239	-0.00272	-0.00271
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00244	0.00248	0.00246
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00272	-0.00283	-0.00281
	(A2 * B1 * !B2 * C1 * !Y)	0.00284	0.00259	0.00256
	(A2 * B1 * !B2 * C1 * !Y)	-0.00239	-0.00272	-0.00271
	(A2 * !B1 * !B2 * Y)	0.00246	0.00248	0.00246
	(A2 * !B1 * !B2 * Y)	-0.00274	-0.00283	-0.00281
	(!A2 * B2 * !C1 * Y)	0.00229	0.00230	0.00228
	(!A2 * B2 * !C1 * Y)	-0.00286	-0.00287	-0.00285
	(!A2 * B1 * !B2 * !C1 * Y)	0.00231	0.00232	0.00230
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00286	-0.00287	-0.00285
	(!A2 * !B1 * !B2 * C1 * Y)	0.00232	0.00235	0.00233
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00284	-0.00286	-0.00285
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00232	0.00235	0.00233
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00284	-0.00286	-0.00285

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	0.00560	0.00510	0.00502
	(A2 * B2 * C1 * !Y)	-0.00465	-0.00534	-0.00533
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00496	0.00503	0.00497
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00523	-0.00542	-0.00538
	(A2 * B1 * !B2 * C1 * !Y)	0.00560	0.00510	0.00502
	(A2 * B1 * !B2 * C1 * !Y)	-0.00465	-0.00534	-0.00534
	(A2 * !B1 * !B2 * Y)	0.00497	0.00503	0.00497
	(A2 * !B1 * !B2 * Y)	-0.00523	-0.00542	-0.00538
	(!A2 * B2 * !C1 * Y)	0.00460	0.00467	0.00462
	(!A2 * B2 * !C1 * Y)	-0.00546	-0.00551	-0.00547
	(!A2 * B1 * !B2 * !C1 * Y)	0.00464	0.00467	0.00465
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00546	-0.00548	-0.00547
	(!A2 * !B1 * !B2 * C1 * Y)	0.00472	0.00477	0.00472
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00546	-0.00548	-0.00547
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00472	0.00476	0.00472
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00546	-0.00550	-0.00547

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)**	-0.00133	-0.00134	-0.00133
	(A2 * B2 * C1 * !Y)	0.00137	0.00138	0.00137
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00133	-0.00134	-0.00133
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00137	0.00138	0.00136
	(A2 * B1 * !B2 * C1 * !Y)	-0.00133	-0.00134	-0.00133
	(A2 * B1 * !B2 * C1 * !Y)	0.00137	0.00138	0.00137
	(A2 * !B1 * !B2 * Y)	-0.00133	-0.00134	-0.00133
	(A2 * !B1 * !B2 * Y)	0.00136	0.00138	0.00136
	(!A2 * B2 * !C1 * Y)	-0.00114	-0.00125	-0.00124
	(!A2 * B2 * !C1 * Y)	0.00139	0.00140	0.00139
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00116	-0.00126	-0.00125
	(!A2 * B1 * !B2 * !C1 * Y)	0.00138	0.00140	0.00139
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00120	-0.00126	-0.00125
	(!A2 * !B1 * !B2 * C1 * Y)	0.00139	0.00140	0.00139
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00120	-0.00126	-0.00125
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00139	0.00140	0.00139

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00254	-0.00256	-0.00254
	(A2 * B2 * C1 * !Y)	0.00269	0.00273	0.00271
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00244	-0.00246	-0.00245
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00279	0.00283	0.00281
	(A2 * B1 * !B2 * C1 * !Y)	-0.00254	-0.00256	-0.00254
	(A2 * B1 * !B2 * C1 * !Y)	0.00269	0.00273	0.00271
	(A2 * !B1 * !B2 * Y)	-0.00244	-0.00246	-0.00245
	(A2 * !B1 * !B2 * Y)	0.00279	0.00283	0.00281
	(!A2 * B2 * !C1 * Y)	-0.00207	-0.00230	-0.00228
	(!A2 * B2 * !C1 * Y)	0.00286	0.00289	0.00286
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00212	-0.00232	-0.00230
	(!A2 * B1 * !B2 * !C1 * Y)	0.00286	0.00289	0.00286
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00221	-0.00233	-0.00233
	(!A2 * !B1 * !B2 * C1 * Y)	0.00286	0.00288	0.00286
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00221	-0.00235	-0.00233
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00286	0.00289	0.00286

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00500	-0.00503	-0.00500
	(A2 * B2 * C1 * !Y)	0.00530	0.00538	0.00533
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	-0.00495	-0.00499	-0.00496
	(A2 * B1 * !C1 * Y) + (A2 * !B1 * B2 * !C1 * Y)	0.00536	0.00543	0.00538
	(A2 * B1 * !B2 * C1 * !Y)	-0.00500	-0.00503	-0.00500
	(A2 * B1 * !B2 * C1 * !Y)	0.00530	0.00538	0.00534
	(A2 * !B1 * !B2 * Y)	-0.00495	-0.00499	-0.00496
	(A2 * !B1 * !B2 * Y)	0.00536	0.00543	0.00538
	(!A2 * B2 * !C1 * Y)	-0.00419	-0.00464	-0.00462
	(!A2 * B2 * !C1 * Y)	0.00550	0.00555	0.00549
	(!A2 * B1 * !B2 * !C1 * Y)	-0.00427	-0.00467	-0.00465
	(!A2 * B1 * !B2 * !C1 * Y)	0.00550	0.00555	0.00549
	(!A2 * !B1 * !B2 * C1 * Y)	-0.00442	-0.00468	-0.00472
	(!A2 * !B1 * !B2 * C1 * Y)	0.00546	0.00548	0.00549
	(!A2 * !B1 * !B2 * !C1 * Y)	-0.00443	-0.00471	-0.00472
	(!A2 * !B1 * !B2 * !C1 * Y)	0.00546	0.00553	0.00549

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)**	0.00140	0.00141	0.00140
	(A1 * B2 * C1 * !Y)	-0.00076	-0.00077	-0.00076
	(A1 * B2 * !C1 * Y)	0.00120	0.00122	0.00121
	(A1 * B2 * !C1 * Y)	-0.00143	-0.00147	-0.00147
	(A1 * B1 * !B2 * C1 * !Y)	0.00140	0.00141	0.00140
	(A1 * B1 * !B2 * C1 * !Y)	-0.00076	-0.00077	-0.00076
	(A1 * B1 * !B2 * !C1 * Y)	0.00121	0.00122	0.00121
	(A1 * B1 * !B2 * !C1 * Y)	-0.00143	-0.00147	-0.00146
	(A1 * !B1 * !B2 * C1 * Y)	0.00120	0.00122	0.00121
	(A1 * !B1 * !B2 * C1 * Y)	-0.00143	-0.00147	-0.00146
	(A1 * !B1 * !B2 * !C1 * Y)	0.00120	0.00121	0.00121
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00143	-0.00147	-0.00147
	(!A1 * B2 * !C1 * Y)	0.00111	0.00111	0.00111
	(!A1 * B2 * !C1 * Y)	-0.00148	-0.00149	-0.00149
	(!A1 * B1 * !B2 * !C1 * Y)	0.00112	0.00113	0.00112
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00149
	(!A1 * !B1 * !B2 * C1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00148	-0.00149	-0.00149
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00149	-0.00149	-0.00149

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	0.00255	0.00257	0.00254
	(A1 * B2 * C1 * !Y)	-0.00136	-0.00137	-0.00135
	(A1 * B2 * !C1 * Y)	0.00233	0.00234	0.00233
	(A1 * B2 * !C1 * Y)	-0.00252	-0.00261	-0.00259
	(A1 * B1 * !B2 * C1 * !Y)	0.00255	0.00257	0.00254
	(A1 * B1 * !B2 * C1 * !Y)	-0.00136	-0.00137	-0.00135
	(A1 * B1 * !B2 * !C1 * Y)	0.00233	0.00235	0.00233
	(A1 * B1 * !B2 * !C1 * Y)	-0.00252	-0.00259	-0.00259
	(A1 * !B1 * !B2 * C1 * Y)	0.00233	0.00234	0.00233
	(A1 * !B1 * !B2 * C1 * Y)	-0.00252	-0.00260	-0.00259
	(A1 * !B1 * !B2 * !C1 * Y)	0.00233	0.00234	0.00233
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00252	-0.00261	-0.00259
	(!A1 * B2 * !C1 * Y)	0.00218	0.00221	0.00219
	(!A1 * B2 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(!A1 * B1 * !B2 * !C1 * Y)	0.00220	0.00221	0.00220
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(!A1 * !B1 * !B2 * C1 * Y)	0.00223	0.00224	0.00223
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00264	-0.00265	-0.00264
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00223	0.00226	0.00223
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00264	-0.00265	-0.00264

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	0.00511	0.00519	0.00514
	(A1 * B2 * C1 * !Y)	-0.00269	-0.00273	-0.00270
	(A1 * B2 * !C1 * Y)	0.00454	0.00456	0.00454
	(A1 * B2 * !C1 * Y)	-0.00520	-0.00537	-0.00535
	(A1 * B1 * !B2 * C1 * !Y)	0.00512	0.00519	0.00514
	(A1 * B1 * !B2 * C1 * !Y)	-0.00269	-0.00273	-0.00270
	(A1 * B1 * !B2 * !C1 * Y)	0.00454	0.00458	0.00454
	(A1 * B1 * !B2 * !C1 * Y)	-0.00521	-0.00537	-0.00534
	(A1 * !B1 * !B2 * C1 * Y)	0.00454	0.00455	0.00454
	(A1 * !B1 * !B2 * C1 * Y)	-0.00520	-0.00535	-0.00534
	(A1 * !B1 * !B2 * !C1 * Y)	0.00454	0.00456	0.00454
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00521	-0.00538	-0.00535
	(!A1 * B2 * !C1 * Y)	0.00424	0.00426	0.00424
	(!A1 * B2 * !C1 * Y)	-0.00545	-0.00545	-0.00544
	(!A1 * B1 * !B2 * !C1 * Y)	0.00427	0.00431	0.00427
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00545	-0.00547	-0.00544
	(!A1 * !B1 * !B2 * C1 * Y)	0.00431	0.00433	0.00433
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00542	-0.00544	-0.00544
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00431	0.00438	0.00433
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00543	-0.00548	-0.00544

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)**	-0.00135	-0.00136	-0.00139
	(A1 * B2 * C1 * !Y)	0.00081	0.00081	0.00077
	(A1 * B2 * !C1 * Y)	-0.00120	-0.00121	-0.00121
	(A1 * B2 * !C1 * Y)	0.00147	0.00148	0.00147
	(A1 * B1 * !B2 * C1 * !Y)	-0.00135	-0.00136	-0.00139
	(A1 * B1 * !B2 * C1 * !Y)	0.00081	0.00081	0.00077
	(A1 * B1 * !B2 * !C1 * Y)	-0.00121	-0.00121	-0.00121
	(A1 * B1 * !B2 * !C1 * Y)	0.00147	0.00148	0.00146
	(A1 * !B1 * !B2 * C1 * Y)	-0.00120	-0.00121	-0.00121
	(A1 * !B1 * !B2 * C1 * Y)	0.00146	0.00147	0.00146
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00120	-0.00121	-0.00121
	(A1 * !B1 * !B2 * !C1 * Y)	0.00147	0.00148	0.00147
	(!A1 * B2 * !C1 * Y)	-0.00102	-0.00111	-0.00111
	(!A1 * B2 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00105	-0.00113	-0.00112
	(!A1 * B1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00109	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * C1 * Y)	0.00149	0.00150	0.00149
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00109	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00149	0.00150	0.00149

sky130_fd_sc_hs__o221ai_2	**(A1 * B2 * C1 * !Y)**	-0.00244	-0.00246	-0.00253
	(A1 * B2 * C1 * !Y)	0.00145	0.00145	0.00138
	(A1 * B2 * !C1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * B2 * !C1 * Y)	0.00258	0.00261	0.00259
	(A1 * B1 * !B2 * C1 * !Y)	-0.00244	-0.00246	-0.00253
	(A1 * B1 * !B2 * C1 * !Y)	0.00145	0.00145	0.00138
	(A1 * B1 * !B2 * !C1 * Y)	-0.00231	-0.00232	-0.00232
	(A1 * B1 * !B2 * !C1 * Y)	0.00258	0.00259	0.00259
	(A1 * !B1 * !B2 * C1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * !B1 * !B2 * C1 * Y)	0.00258	0.00260	0.00259
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00232	-0.00233	-0.00232
	(A1 * !B1 * !B2 * !C1 * Y)	0.00258	0.00261	0.00259
	(!A1 * B2 * !C1 * Y)	-0.00198	-0.00219	-0.00219
	(!A1 * B2 * !C1 * Y)	0.00265	0.00267	0.00265
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00202	-0.00220	-0.00220
	(!A1 * B1 * !B2 * !C1 * Y)	0.00265	0.00267	0.00265
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00209	-0.00221	-0.00223
	(!A1 * !B1 * !B2 * C1 * Y)	0.00265	0.00266	0.00265
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00210	-0.00221	-0.00223
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00265	0.00267	0.00265

sky130_fd_sc_hs__o221ai_4	**(A1 * B2 * C1 * !Y)**	-0.00493	-0.00496	-0.00511
	(A1 * B2 * C1 * !Y)	0.00290	0.00291	0.00276
	(A1 * B2 * !C1 * Y)	-0.00452	-0.00454	-0.00453
	(A1 * B2 * !C1 * Y)	0.00532	0.00537	0.00535
	(A1 * B1 * !B2 * C1 * !Y)	-0.00494	-0.00496	-0.00511
	(A1 * B1 * !B2 * C1 * !Y)	0.00291	0.00291	0.00276
	(A1 * B1 * !B2 * !C1 * Y)	-0.00452	-0.00454	-0.00453
	(A1 * B1 * !B2 * !C1 * Y)	0.00532	0.00537	0.00534
	(A1 * !B1 * !B2 * C1 * Y)	-0.00451	-0.00454	-0.00453
	(A1 * !B1 * !B2 * C1 * Y)	0.00531	0.00535	0.00534
	(A1 * !B1 * !B2 * !C1 * Y)	-0.00452	-0.00455	-0.00453
	(A1 * !B1 * !B2 * !C1 * Y)	0.00533	0.00539	0.00535
	(!A1 * B2 * !C1 * Y)	-0.00386	-0.00426	-0.00424
	(!A1 * B2 * !C1 * Y)	0.00546	0.00551	0.00546
	(!A1 * B1 * !B2 * !C1 * Y)	-0.00393	-0.00431	-0.00427
	(!A1 * B1 * !B2 * !C1 * Y)	0.00546	0.00551	0.00546
	(!A1 * !B1 * !B2 * C1 * Y)	-0.00408	-0.00432	-0.00433
	(!A1 * !B1 * !B2 * C1 * Y)	0.00546	0.00549	0.00546
	(!A1 * !B1 * !B2 * !C1 * Y)	-0.00409	-0.00432	-0.00433
	(!A1 * !B1 * !B2 * !C1 * Y)	0.00546	0.00549	0.00546

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)**	0.00153	0.00141	0.00140
	(A2 * B2 * C1 * !Y)	-0.00118	-0.00133	-0.00133
	(A2 * !B2 * !C1 * Y)	0.00121	0.00122	0.00121
	(A2 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00147
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00126	0.00128	0.00127
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00143	-0.00146	-0.00146
	(A1 * !A2 * B2 * C1 * !Y)	0.00153	0.00141	0.00140
	(A1 * !A2 * B2 * C1 * !Y)	-0.00118	-0.00133	-0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00147	-0.00148	-0.00147
	(!A1 * !A2 * B2 * C1 * Y)	0.00057	0.00057	0.00057
	(!A1 * !A2 * B2 * C1 * Y)	-0.00143	-0.00147	-0.00147
	(!A1 * !A2 * B2 * !C1 * Y)	0.00069	0.00069	0.00069
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00144	-0.00146	-0.00146
	(!A1 * !A2 * !B2 * C1 * Y)	0.00058	0.00059	0.00059
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00147	-0.00149	-0.00147
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00149	-0.00150	-0.00148

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	0.00300	0.00277	0.00274
	(A2 * B2 * C1 * !Y)	-0.00232	-0.00262	-0.00262
	(A2 * !B2 * !C1 * Y)	0.00234	0.00237	0.00235
	(A2 * !B2 * !C1 * Y)	-0.00291	-0.00292	-0.00292
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00247	0.00250	0.00247
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00282	-0.00290	-0.00288
	(A1 * !A2 * B2 * C1 * !Y)	0.00300	0.00277	0.00274
	(A1 * !A2 * B2 * C1 * !Y)	-0.00232	-0.00262	-0.00262
	(A1 * !A2 * !B2 * !C1 * Y)	0.00233	0.00237	0.00234
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00291	-0.00294	-0.00292
	(!A1 * !A2 * B2 * C1 * Y)	0.00103	0.00103	0.00103
	(!A1 * !A2 * B2 * C1 * Y)	-0.00282	-0.00291	-0.00290
	(!A1 * !A2 * B2 * !C1 * Y)	0.00126	0.00127	0.00126
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00283	-0.00291	-0.00289
	(!A1 * !A2 * !B2 * C1 * Y)	0.00107	0.00107	0.00107
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00291	-0.00292	-0.00290
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00294	-0.00293	-0.00293

	(A2 * B2 * C1 * !Y)	0.00568	0.00517	0.00513
	(A2 * B2 * C1 * !Y)	-0.00456	-0.00521	-0.00521
	(A2 * !B2 * !C1 * Y)	0.00450	0.00454	0.00451
	(A2 * !B2 * !C1 * Y)	-0.00562	-0.00565	-0.00562
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00478	0.00482	0.00479
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00540	-0.00557	-0.00554
	(A1 * !A2 * B2 * C1 * !Y)	0.00568	0.00517	0.00513
	(A1 * !A2 * B2 * C1 * !Y)	-0.00456	-0.00521	-0.00521
sky130_fd_sc_hs__o221ai_4	**(A1 * !A2 * !B2 * !C1 * Y)**	0.00451	0.00453	0.00452
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00562	-0.00564	-0.00562
	(!A1 * !A2 * B2 * C1 * Y)	0.00191	0.00192	0.00191
	(!A1 * !A2 * B2 * C1 * Y)	-0.00541	-0.00558	-0.00558
	(!A1 * !A2 * B2 * !C1 * Y)	0.00234	0.00235	0.00234
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00541	-0.00557	-0.00555
	(!A1 * !A2 * !B2 * C1 * Y)	0.00200	0.00201	0.00200
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00562	-0.00563	-0.00559
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00247	0.00250	0.00248
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00563	-0.00568	-0.00564

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)**	-0.00139	-0.00140	-0.00139
	(A2 * B2 * C1 * !Y)	0.00133	0.00133	0.00133
	(A2 * !B2 * !C1 * Y)	-0.00116	-0.00121	-0.00121
	(A2 * !B2 * !C1 * Y)	0.00149	0.00148	0.00148
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00126	-0.00126	-0.00126
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00145	0.00146	0.00146
	(A1 * !A2 * B2 * C1 * !Y)	-0.00139	-0.00139	-0.00139
	(A1 * !A2 * B2 * C1 * !Y)	0.00132	0.00133	0.00133
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00114	-0.00122	-0.00121
	(A1 * !A2 * !B2 * !C1 * Y)	0.00149	0.00149	0.00148
	(!A1 * !A2 * B2 * C1 * Y)	-0.00054	-0.00054	-0.00056
	(!A1 * !A2 * B2 * C1 * Y)	0.00151	0.00151	0.00147
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * B2 * !C1 * Y)	0.00146	0.00146	0.00146
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00055	-0.00056	-0.00057
	(!A1 * !A2 * !B2 * C1 * Y)	0.00153	0.00153	0.00149
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00073	-0.00074	-0.00073
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00149	0.00150	0.00148

sky130_fd_sc_hs__o221ai_2	**(A2 * B2 * C1 * !Y)**	-0.00272	-0.00273	-0.00273
	(A2 * B2 * C1 * !Y)	0.00260	0.00262	0.00262
	(A2 * !B2 * !C1 * Y)	-0.00220	-0.00234	-0.00235
	(A2 * !B2 * !C1 * Y)	0.00296	0.00292	0.00293
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00246	-0.00247	-0.00247
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00286	0.00290	0.00288
	(A1 * !A2 * B2 * C1 * !Y)	-0.00272	-0.00273	-0.00273
	(A1 * !A2 * B2 * C1 * !Y)	0.00260	0.00262	0.00262
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00218	-0.00236	-0.00234
	(A1 * !A2 * !B2 * !C1 * Y)	0.00297	0.00298	0.00293
	(!A1 * !A2 * B2 * C1 * Y)	-0.00097	-0.00099	-0.00101
	(!A1 * !A2 * B2 * C1 * Y)	0.00300	0.00304	0.00291
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * B2 * !C1 * Y)	0.00287	0.00293	0.00289
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00100	-0.00101	-0.00103
	(!A1 * !A2 * !B2 * C1 * Y)	0.00304	0.00307	0.00295
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00134	-0.00134	-0.00133
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00294	0.00296	0.00293

sky130_fd_sc_hs__o221ai_4	**(A2 * B2 * C1 * !Y)**	-0.00510	-0.00513	-0.00511
	(A2 * B2 * C1 * !Y)	0.00518	0.00525	0.00521
	(A2 * !B2 * !C1 * Y)	-0.00415	-0.00454	-0.00451
	(A2 * !B2 * !C1 * Y)	0.00573	0.00570	0.00564
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	-0.00476	-0.00479	-0.00478
	(A1 * B2 * !C1 * Y) + (!A1 * A2 * B2 * !C1 * Y)	0.00551	0.00557	0.00554
	(A1 * !A2 * B2 * C1 * !Y)	-0.00510	-0.00513	-0.00511
	(A1 * !A2 * B2 * C1 * !Y)	0.00518	0.00524	0.00521
	(A1 * !A2 * !B2 * !C1 * Y)	-0.00410	-0.00453	-0.00452
	(A1 * !A2 * !B2 * !C1 * Y)	0.00577	0.00568	0.00564
	(!A1 * !A2 * B2 * C1 * Y)	-0.00179	-0.00182	-0.00189
	(!A1 * !A2 * B2 * C1 * Y)	0.00573	0.00581	0.00560
	(!A1 * !A2 * B2 * !C1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * B2 * !C1 * Y)	0.00552	0.00557	0.00555
	(!A1 * !A2 * !B2 * C1 * Y)	-0.00187	-0.00190	-0.00192
	(!A1 * !A2 * !B2 * C1 * Y)	0.00582	0.00591	0.00568
	(!A1 * !A2 * !B2 * !C1 * Y)	-0.00247	-0.00250	-0.00248
	(!A1 * !A2 * !B2 * !C1 * Y)	0.00571	0.00578	0.00565

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)**	0.00137	0.00138	0.00137
	(A2 * B1 * C1 * !Y)	-0.00068	-0.00069	-0.00068
	(A2 * B1 * !C1 * Y)	0.00120	0.00121	0.00121
	(A2 * B1 * !C1 * Y)	-0.00133	-0.00136	-0.00136
	(A2 * !B1 * !C1 * Y)	0.00115	0.00117	0.00116
	(A2 * !B1 * !C1 * Y)	-0.00138	-0.00139	-0.00138
	(A1 * !A2 * B1 * C1 * !Y)	0.00137	0.00138	0.00137
	(A1 * !A2 * B1 * C1 * !Y)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !C1 * Y)	0.00120	0.00121	0.00121
	(A1 * !A2 * B1 * !C1 * Y)	-0.00133	-0.00136	-0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	0.00115	0.00116	0.00116
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00138	-0.00138
	(!A1 * !A2 * B1 * C1 * Y)	0.00052	0.00052	0.00052
	(!A1 * !A2 * B1 * C1 * Y)	-0.00133	-0.00137	-0.00137
	(!A1 * !A2 * B1 * !C1 * Y)	0.00064	0.00064	0.00064
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00134	-0.00137	-0.00137
	(!A1 * !A2 * !B1 * C1 * Y)	0.00053	0.00054	0.00054
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00138	-0.00138	-0.00137
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00068	0.00068	0.00068
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00138	-0.00139	-0.00139

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	0.00253	0.00255	0.00253
	(A2 * B1 * C1 * !Y)	-0.00135	-0.00136	-0.00135
	(A2 * B1 * !C1 * Y)	0.00230	0.00231	0.00230
	(A2 * B1 * !C1 * Y)	-0.00253	-0.00261	-0.00260
	(A2 * !B1 * !C1 * Y)	0.00220	0.00221	0.00221
	(A2 * !B1 * !C1 * Y)	-0.00264	-0.00263	-0.00264
	(A1 * !A2 * B1 * C1 * !Y)	0.00252	0.00257	0.00253
	(A1 * !A2 * B1 * C1 * !Y)	-0.00135	-0.00137	-0.00135
	(A1 * !A2 * B1 * !C1 * Y)	0.00230	0.00232	0.00230
	(A1 * !A2 * B1 * !C1 * Y)	-0.00253	-0.00261	-0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	0.00222	0.00223	0.00222
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00264	-0.00265	-0.00264
	(!A1 * !A2 * B1 * C1 * Y)	0.00092	0.00092	0.00092
	(!A1 * !A2 * B1 * C1 * Y)	-0.00253	-0.00261	-0.00261
	(!A1 * !A2 * B1 * !C1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00254	-0.00261	-0.00260
	(!A1 * !A2 * !B1 * C1 * Y)	0.00096	0.00097	0.00097
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00263	-0.00264	-0.00261
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00122	0.00123	0.00122
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00264	-0.00266	-0.00264

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	0.00515	0.00524	0.00516
	(A2 * B1 * C1 * !Y)	-0.00270	-0.00274	-0.00269
	(A2 * B1 * !C1 * Y)	0.00467	0.00469	0.00467
	(A2 * B1 * !C1 * Y)	-0.00510	-0.00525	-0.00523
	(A2 * !B1 * !C1 * Y)	0.00443	0.00449	0.00444
	(A2 * !B1 * !C1 * Y)	-0.00533	-0.00536	-0.00532
	(A1 * !A2 * B1 * C1 * !Y)	0.00515	0.00524	0.00516
	(A1 * !A2 * B1 * C1 * !Y)	-0.00270	-0.00274	-0.00269
	(A1 * !A2 * B1 * !C1 * Y)	0.00468	0.00471	0.00467
	(A1 * !A2 * B1 * !C1 * Y)	-0.00510	-0.00523	-0.00523
	(A1 * !A2 * !B1 * !C1 * Y)	0.00443	0.00448	0.00445
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00531	-0.00535	-0.00532
	(!A1 * !A2 * B1 * C1 * Y)	0.00185	0.00184	0.00184
	(!A1 * !A2 * B1 * C1 * Y)	-0.00511	-0.00524	-0.00526
	(!A1 * !A2 * B1 * !C1 * Y)	0.00229	0.00229	0.00227
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00512	-0.00527	-0.00524
	(!A1 * !A2 * !B1 * C1 * Y)	0.00193	0.00194	0.00193
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00531	-0.00533	-0.00528
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00241	0.00243	0.00241
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00534	-0.00537	-0.00534

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)**	-0.00133	-0.00134	-0.00136
	(A2 * B1 * C1 * !Y)	0.00072	0.00072	0.00069
	(A2 * B1 * !C1 * Y)	-0.00120	-0.00120	-0.00120
	(A2 * B1 * !C1 * Y)	0.00136	0.00136	0.00136
	(A2 * !B1 * !C1 * Y)	-0.00111	-0.00116	-0.00116
	(A2 * !B1 * !C1 * Y)	0.00139	0.00139	0.00138
	(A1 * !A2 * B1 * C1 * !Y)	-0.00133	-0.00134	-0.00136
	(A1 * !A2 * B1 * C1 * !Y)	0.00072	0.00073	0.00069
	(A1 * !A2 * B1 * !C1 * Y)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * B1 * !C1 * Y)	0.00136	0.00136	0.00136
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00109	-0.00116	-0.00116
	(A1 * !A2 * !B1 * !C1 * Y)	0.00139	0.00138	0.00138
	(!A1 * !A2 * B1 * C1 * Y)	-0.00050	-0.00050	-0.00051
	(!A1 * !A2 * B1 * C1 * Y)	0.00141	0.00141	0.00137
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B1 * !C1 * Y)	0.00136	0.00137	0.00137
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00051	-0.00051	-0.00052
	(!A1 * !A2 * !B1 * C1 * Y)	0.00142	0.00143	0.00139
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00139	0.00140	0.00139

sky130_fd_sc_hs__o221ai_2	**(A2 * B1 * C1 * !Y)**	-0.00241	-0.00242	-0.00252
	(A2 * B1 * C1 * !Y)	0.00143	0.00144	0.00138
	(A2 * B1 * !C1 * Y)	-0.00229	-0.00231	-0.00230
	(A2 * B1 * !C1 * Y)	0.00258	0.00261	0.00260
	(A2 * !B1 * !C1 * Y)	-0.00203	-0.00221	-0.00221
	(A2 * !B1 * !C1 * Y)	0.00267	0.00267	0.00264
	(A1 * !A2 * B1 * C1 * !Y)	-0.00243	-0.00243	-0.00252
	(A1 * !A2 * B1 * C1 * !Y)	0.00145	0.00144	0.00138
	(A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00231	-0.00230
	(A1 * !A2 * B1 * !C1 * Y)	0.00258	0.00261	0.00260
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00202	-0.00221	-0.00221
	(A1 * !A2 * !B1 * !C1 * Y)	0.00267	0.00267	0.00264
	(!A1 * !A2 * B1 * C1 * Y)	-0.00087	-0.00088	-0.00091
	(!A1 * !A2 * B1 * C1 * Y)	0.00267	0.00270	0.00261
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00115	-0.00116	-0.00115
	(!A1 * !A2 * B1 * !C1 * Y)	0.00259	0.00261	0.00260
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00089	-0.00090	-0.00092
	(!A1 * !A2 * !B1 * C1 * Y)	0.00272	0.00275	0.00266
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00122	-0.00123	-0.00122
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00264	0.00269	0.00265

sky130_fd_sc_hs__o221ai_4	**(A2 * B1 * C1 * !Y)**	-0.00496	-0.00494	-0.00513
	(A2 * B1 * C1 * !Y)	0.00288	0.00285	0.00275
	(A2 * B1 * !C1 * Y)	-0.00466	-0.00468	-0.00466
	(A2 * B1 * !C1 * Y)	0.00520	0.00525	0.00523
	(A2 * !B1 * !C1 * Y)	-0.00407	-0.00447	-0.00444
	(A2 * !B1 * !C1 * Y)	0.00542	0.00539	0.00533
	(A1 * !A2 * B1 * C1 * !Y)	-0.00495	-0.00497	-0.00513
	(A1 * !A2 * B1 * C1 * !Y)	0.00288	0.00288	0.00275
	(A1 * !A2 * B1 * !C1 * Y)	-0.00465	-0.00467	-0.00466
	(A1 * !A2 * B1 * !C1 * Y)	0.00520	0.00523	0.00523
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00401	-0.00448	-0.00445
	(A1 * !A2 * !B1 * !C1 * Y)	0.00546	0.00538	0.00533
	(!A1 * !A2 * B1 * C1 * Y)	-0.00176	-0.00174	-0.00182
	(!A1 * !A2 * B1 * C1 * Y)	0.00544	0.00540	0.00526
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00229	-0.00229	-0.00227
	(!A1 * !A2 * B1 * !C1 * Y)	0.00523	0.00531	0.00524
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00179	-0.00181	-0.00185
	(!A1 * !A2 * !B1 * C1 * Y)	0.00548	0.00554	0.00537
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00241	-0.00243	-0.00241
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00536	0.00540	0.00534

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)	0.00049	0.00049	0.00047
	(A2 * !B1 * !B2 * Y)	-0.00170	-0.00171	-0.00175
	(!A2 * !B1 * !B2 * Y)	0.00049	0.00050	0.00047
	(!A2 * !B1 * !B2 * Y)	-0.00170	-0.00171	-0.00175
	(!A1 * !A2 * B2 * Y)	0.00051	0.00051	0.00045
	(!A1 * !A2 * B2 * Y)	-0.00161	-0.00162	-0.00174
	(!A1 * !A2 * B1 * !B2 * Y)	0.00051	0.00051	0.00046
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00162	-0.00164	-0.00174
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	0.00089	0.00090	0.00085
	(A2 * !B1 * !B2 * Y)	-0.00314	-0.00316	-0.00325
	(!A2 * !B1 * !B2 * Y)	0.00089	0.00090	0.00085
	(!A2 * !B1 * !B2 * Y)	-0.00314	-0.00316	-0.00325
	(!A1 * !A2 * B2 * Y)	0.00092	0.00093	0.00082
	(!A1 * !A2 * B2 * Y)	-0.00298	-0.00300	-0.00322
	(!A1 * !A2 * B1 * !B2 * Y)	0.00093	0.00093	0.00083
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00301	-0.00303	-0.00322
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	0.00153	0.00153	0.00145
	(A2 * !B1 * !B2 * Y)	-0.00641	-0.00643	-0.00659
	(!A2 * !B1 * !B2 * Y)	0.00153	0.00154	0.00145
	(!A2 * !B1 * !B2 * Y)	-0.00640	-0.00644	-0.00659
	(!A1 * !A2 * B2 * Y)	0.00159	0.00160	0.00141
	(!A1 * !A2 * B2 * Y)	-0.00608	-0.00614	-0.00654
	(!A1 * !A2 * B1 * !B2 * Y)	0.00160	0.00161	0.00143
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00613	-0.00620	-0.00654

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)	-0.00046	-0.00046	-0.00046
	(A2 * !B1 * !B2 * Y)	0.00176	0.00176	0.00176
	(!A2 * !B1 * !B2 * Y)	-0.00046	-0.00047	-0.00046
	(!A2 * !B1 * !B2 * Y)	0.00176	0.00179	0.00176
	(!A1 * !A2 * B2 * Y)	-0.00044	-0.00044	-0.00044
	(!A1 * !A2 * B2 * Y)	0.00176	0.00177	0.00176
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00045	-0.00045	-0.00044
	(!A1 * !A2 * B1 * !B2 * Y)	0.00176	0.00179	0.00176
sky130_fd_sc_hs__o221ai_2	(A2 * !B1 * !B2 * Y)	-0.00082	-0.00083	-0.00083
	(A2 * !B1 * !B2 * Y)	0.00324	0.00326	0.00326
	(!A2 * !B1 * !B2 * Y)	-0.00082	-0.00084	-0.00083
	(!A2 * !B1 * !B2 * Y)	0.00324	0.00331	0.00326
	(!A1 * !A2 * B2 * Y)	-0.00079	-0.00080	-0.00079
	(!A1 * !A2 * B2 * Y)	0.00324	0.00326	0.00326
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00080	-0.00082	-0.00080
	(!A1 * !A2 * B1 * !B2 * Y)	0.00324	0.00331	0.00326
sky130_fd_sc_hs__o221ai_4	(A2 * !B1 * !B2 * Y)	-0.00141	-0.00142	-0.00141
	(A2 * !B1 * !B2 * Y)	0.00658	0.00661	0.00661
	(!A2 * !B1 * !B2 * Y)	-0.00142	-0.00144	-0.00142
	(!A2 * !B1 * !B2 * Y)	0.00661	0.00672	0.00661
	(!A1 * !A2 * B2 * Y)	-0.00136	-0.00137	-0.00135
	(!A1 * !A2 * B2 * Y)	0.00658	0.00661	0.00660
	(!A1 * !A2 * B1 * !B2 * Y)	-0.00139	-0.00140	-0.00137
	(!A1 * !A2 * B1 * !B2 * Y)	0.00660	0.00671	0.00660

SKY130_FD_SC_HS__O221Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00242	0.00240	0.00235	0.00252	0.00248	1.14096
sky130_fd_sc_hs__o221a_2	0.00257	0.00252	0.00252	0.00264	0.00258	2.25359
sky130_fd_sc_hs__o221a_4	0.00482	0.00435	0.00514	0.00437	0.00444	4.26363

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o221a_1	0.00000	0.05551	0.17410
sky130_fd_sc_hs__o221a_2	0.00000	0.07866	0.17476
sky130_fd_sc_hs__o221a_4	0.00000	0.15799	0.34952

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)	0.10204	0.59786	5.89045
	A2->X (RR)	0.09736	0.59002	5.94958
	B1->X (RR)	0.09581	0.60922	5.96077
	B2->X (RR)	0.09166	0.59280	6.04249
	C1->X (RR)	0.08687	0.58476	6.10931
sky130_fd_sc_hs__o221a_2	A1->X (RR)	0.10001	0.50435	5.87376
	A2->X (RR)	0.09583	0.49787	5.91119
	B1->X (RR)	0.09411	0.52079	5.95322
	B2->X (RR)	0.09234	0.50858	6.00835
	C1->X (RR)	0.08592	0.50276	6.05120
sky130_fd_sc_hs__o221a_4	A1->X (RR)	0.10857	0.44096	5.88012
	A2->X (RR)	0.10400	0.43633	5.96108
	B1->X (RR)	0.10323	0.45678	5.95024
	B2->X (RR)	0.09810	0.44023	6.02517
	C1->X (RR)	0.09127	0.43640	6.09522

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o221a_1	A1->X (FF)	0.16365	0.65633	4.93666
	A2->X (FF)	0.15063	0.63432	4.80576
	B1->X (FF)	0.13858	0.61425	4.80278
	B2->X (FF)	0.12675	0.59126	4.65627
	C1->X (FF)	0.06240	0.47794	4.44590
sky130_fd_sc_hs__o221a_2	A1->X (FF)	0.18985	0.67269	5.09134
	A2->X (FF)	0.17555	0.65013	4.93055
	B1->X (FF)	0.15993	0.62703	4.95044
	B2->X (FF)	0.14808	0.60677	4.77324
	C1->X (FF)	0.07260	0.49466	4.49345
sky130_fd_sc_hs__o221a_4	A1->X (FF)	0.17105	0.61898	5.07551
	A2->X (FF)	0.15488	0.59280	4.92451
	B1->X (FF)	0.15345	0.58800	4.96997
	B2->X (FF)	0.13584	0.56043	4.81247
	C1->X (FF)	0.06850	0.45874	4.57433

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o221a_1	A1	0.01121	0.01097	0.01592
	A1	0.00461	0.00437	0.00960
	A2	0.01004	0.01008	0.01989
	A2	0.00333	0.00339	0.01399
	B1	0.00996	0.00983	0.01684
	B1	0.00458	0.00445	0.01174
	B2	0.00766	0.00770	0.02260
	B2	0.00330	0.00333	0.01850
	C1	0.00919	0.00925	0.02821
	C1	0.00318	0.00357	0.02492
sky130_fd_sc_hs__o221a_2	A1	0.01352	0.01347	0.01773
	A1	0.00646	0.00642	0.01069
	A2	0.01142	0.01170	0.02089
	A2	0.00516	0.00547	0.01463
	B1	0.01215	0.01220	0.01832
	B1	0.00644	0.00649	0.01321
	B2	0.01109	0.01113	0.02360
	B2	0.00514	0.00536	0.01947
	C1	0.00871	0.00922	0.02821
	C1	0.00502	0.00554	0.02513

sky130_fd_sc_hs__o221a_4	**A1**	0.02519	0.02547	0.03745
	A1	0.01229	0.01259	0.02456
	A2	0.02033	0.02091	0.04472
	A2	0.00946	0.01009	0.03500
	B1	0.02320	0.02357	0.03774
	B1	0.01224	0.01268	0.02794
	B2	0.01743	0.01799	0.04706
	B2	0.00947	0.01003	0.04024
	C1	0.01547	0.01671	0.05755
	C1	0.00921	0.01048	0.05242

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o221a_1	**A1**	0.00407	0.00391	0.01028
	A1	0.01038	0.01023	0.01641
	A2	0.00404	0.00446	0.01940
	A2	0.00971	0.01015	0.02476
	B1	0.00340	0.00341	0.01130
	B1	0.00874	0.00874	0.01550
	B2	0.00321	0.00403	0.01938
	B2	0.00814	0.00882	0.02333
	C1	0.00248	0.00346	0.02311
	C1	0.00714	0.00797	0.02571

sky130_fd_sc_hs__o221a_2	**A1**	0.00583	0.00565	0.01175
	A1	0.01271	0.01259	0.01850
	A2	0.00595	0.00663	0.02126
	A2	0.01199	0.01267	0.02654
	B1	0.00513	0.00524	0.01272
	B1	0.01080	0.01091	0.01740
	B2	0.00496	0.00593	0.02147
	B2	0.01017	0.01093	0.02520
	C1	0.00414	0.00539	0.02428
	C1	0.00904	0.01006	0.02711
sky130_fd_sc_hs__o221a_4	**A1**	0.01090	0.01112	0.02733
	A1	0.02353	0.02375	0.03692
	A2	0.01129	0.01294	0.04283
	A2	0.02224	0.02388	0.05302
	B1	0.00961	0.00989	0.02594
	B1	0.02052	0.02078	0.03461
	B2	0.00997	0.01163	0.04329
	B2	0.01916	0.02067	0.05012
	C1	0.00831	0.01077	0.05074
	C1	0.01705	0.01913	0.05506

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)**	0.00133	0.00121	0.00119
	(A2 * B2 * C1 * X)	-0.00105	-0.00121	-0.00121
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00103	0.00104	0.00103
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00134	-0.00137	-0.00136
	(A2 * B1 * !B2 * C1 * X)	0.00133	0.00121	0.00119
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00121	-0.00121
	(A2 * !B1 * !B2 * !X)	0.00103	0.00104	0.00103
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00137	-0.00136
	(!A2 * B2 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A2 * B2 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * B1 * !B2 * !C1 * !X)	0.00096	0.00096	0.00095
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00138	-0.00138	-0.00138
	(!A2 * !B1 * !B2 * C1 * !X)	0.00096	0.00098	0.00097
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00137	-0.00139	-0.00138
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00096	0.00097	0.00097
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00137	-0.00139	-0.00138

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00149	0.00137	0.00136
	(A2 * B2 * C1 * X)	-0.00105	-0.00120	-0.00120
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00118	0.00119	0.00118
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00135	-0.00137	-0.00137
	(A2 * B1 * !B2 * C1 * X)	0.00149	0.00137	0.00136
	(A2 * B1 * !B2 * C1 * X)	-0.00105	-0.00120	-0.00120
	(A2 * !B1 * !B2 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !B2 * !X)	-0.00135	-0.00137	-0.00137
	(!A2 * B2 * !C1 * !X)	0.00109	0.00110	0.00109
	(!A2 * B2 * !C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00112
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * !B2 * C1 * !X)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00139	-0.00139	-0.00139
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00112	0.00113	0.00112
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00274	0.00253	0.00251
	(A2 * B2 * C1 * X)	-0.00210	-0.00237	-0.00238
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00229	0.00231	0.00230
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00252	-0.00259	-0.00259
	(A2 * B1 * !B2 * C1 * X)	0.00274	0.00253	0.00251
	(A2 * B1 * !B2 * C1 * X)	-0.00210	-0.00237	-0.00238
	(A2 * !B1 * !B2 * !X)	0.00230	0.00231	0.00230
	(A2 * !B1 * !B2 * !X)	-0.00252	-0.00259	-0.00259
	(!A2 * B2 * !C1 * !X)	0.00213	0.00216	0.00214
	(!A2 * B2 * !C1 * !X)	-0.00261	-0.00264	-0.00262
	(!A2 * B1 * !B2 * !C1 * !X)	0.00214	0.00217	0.00215
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00261	-0.00263	-0.00262
	(!A2 * !B1 * !B2 * C1 * !X)	0.00221	0.00223	0.00221
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00262	-0.00263	-0.00262
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00218	0.00221	0.00218
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00262	-0.00264	-0.00262

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)**	-0.00118	-0.00118	-0.00118
	(A2 * B2 * C1 * X)	0.00120	0.00121	0.00121
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00102	-0.00103	-0.00103
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00136	0.00137	0.00136
	(A2 * B1 * !B2 * C1 * X)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * !B2 * C1 * X)	0.00120	0.00121	0.00121
	(A2 * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00103
	(A2 * !B1 * !B2 * !X)	0.00136	0.00137	0.00136
	(!A2 * B2 * !C1 * !X)	-0.00088	-0.00098	-0.00097
	(!A2 * B2 * !C1 * !X)	0.00138	0.00140	0.00138
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00089	-0.00096	-0.00095
	(!A2 * B1 * !B2 * !C1 * !X)	0.00138	0.00140	0.00138
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00092	-0.00098	-0.00097
	(!A2 * !B1 * !B2 * C1 * !X)	0.00139	0.00140	0.00138
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00092	-0.00097	-0.00097
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00139	0.00140	0.00138

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00135	-0.00135	-0.00135
	(A2 * B2 * C1 * X)	0.00119	0.00120	0.00120
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00118	-0.00118	-0.00118
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00137	0.00137	0.00137
	(A2 * B1 * !B2 * C1 * X)	-0.00135	-0.00135	-0.00135
	(A2 * B1 * !B2 * C1 * X)	0.00120	0.00120	0.00120
	(A2 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
	(A2 * !B1 * !B2 * !X)	0.00137	0.00137	0.00137
	(!A2 * B2 * !C1 * !X)	-0.00101	-0.00110	-0.00109
	(!A2 * B2 * !C1 * !X)	0.00139	0.00141	0.00139
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00103	-0.00113	-0.00112
	(!A2 * B1 * !B2 * !C1 * !X)	0.00139	0.00140	0.00139
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00106	-0.00113	-0.00112
	(!A2 * !B1 * !B2 * C1 * !X)	0.00140	0.00140	0.00139
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00106	-0.00113	-0.00112
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00140	0.00140	0.00139

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00250	-0.00251	-0.00250
	(A2 * B2 * C1 * X)	0.00237	0.00239	0.00238
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	-0.00229	-0.00231	-0.00230
	(A2 * B1 * !C1 * !X) + (A2 * !B1 * B2 * !C1 * !X)	0.00258	0.00260	0.00259
	(A2 * B1 * !B2 * C1 * X)	-0.00250	-0.00251	-0.00250
	(A2 * B1 * !B2 * C1 * X)	0.00237	0.00239	0.00238
	(A2 * !B1 * !B2 * !X)	-0.00230	-0.00231	-0.00230
	(A2 * !B1 * !B2 * !X)	0.00258	0.00260	0.00259
	(!A2 * B2 * !C1 * !X)	-0.00201	-0.00216	-0.00214
	(!A2 * B2 * !C1 * !X)	0.00263	0.00265	0.00263
	(!A2 * B1 * !B2 * !C1 * !X)	-0.00204	-0.00217	-0.00215
	(!A2 * B1 * !B2 * !C1 * !X)	0.00263	0.00265	0.00263
	(!A2 * !B1 * !B2 * C1 * !X)	-0.00209	-0.00223	-0.00221
	(!A2 * !B1 * !B2 * C1 * !X)	0.00263	0.00264	0.00263
	(!A2 * !B1 * !B2 * !C1 * !X)	-0.00209	-0.00221	-0.00218
	(!A2 * !B1 * !B2 * !C1 * !X)	0.00263	0.00264	0.00263

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)**	0.00121	0.00122	0.00121
	(A1 * B2 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B2 * !C1 * !X)	0.00105	0.00106	0.00106
	(A1 * B2 * !C1 * !X)	-0.00123	-0.00125	-0.00125
	(A1 * B1 * !B2 * C1 * X)	0.00121	0.00122	0.00121
	(A1 * B1 * !B2 * C1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * B1 * !B2 * !C1 * !X)	0.00105	0.00106	0.00106
	(A1 * B1 * !B2 * !C1 * !X)	-0.00123	-0.00126	-0.00125
	(A1 * !B1 * !B2 * C1 * !X)	0.00105	0.00107	0.00106
	(A1 * !B1 * !B2 * C1 * !X)	-0.00123	-0.00125	-0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	0.00105	0.00106	0.00106
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00123	-0.00125	-0.00125
	(!A1 * B2 * !C1 * !X)	0.00097	0.00098	0.00097
	(!A1 * B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127
	(!A1 * !B1 * !B2 * C1 * !X)	0.00098	0.00099	0.00099
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00127	-0.00127	-0.00127
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00098	0.00100	0.00099
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00127	-0.00128	-0.00127

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	0.00136	0.00137	0.00136
	(A1 * B2 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(A1 * B2 * !C1 * !X)	-0.00122	-0.00125	-0.00125
	(A1 * B1 * !B2 * C1 * X)	0.00136	0.00137	0.00136
	(A1 * B1 * !B2 * C1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * B1 * !B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(A1 * B1 * !B2 * !C1 * !X)	-0.00122	-0.00125	-0.00125
	(A1 * !B1 * !B2 * C1 * !X)	0.00120	0.00121	0.00120
	(A1 * !B1 * !B2 * C1 * !X)	-0.00122	-0.00125	-0.00124
	(A1 * !B1 * !B2 * !C1 * !X)	0.00120	0.00121	0.00120
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00122	-0.00125	-0.00125
	(!A1 * B2 * !C1 * !X)	0.00110	0.00110	0.00110
	(!A1 * B2 * !C1 * !X)	-0.00126	-0.00126	-0.00126
	(!A1 * B1 * !B2 * !C1 * !X)	0.00111	0.00112	0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * !B2 * C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00126	-0.00127	-0.00126
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00126	-0.00127	-0.00126

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	0.00223	0.00225	0.00223
	(A1 * B2 * C1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * B2 * !C1 * !X)	0.00197	0.00198	0.00198
	(A1 * B2 * !C1 * !X)	-0.00237	-0.00245	-0.00244
	(A1 * B1 * !B2 * C1 * X)	0.00223	0.00225	0.00224
	(A1 * B1 * !B2 * C1 * X)	-0.00126	-0.00127	-0.00126
	(A1 * B1 * !B2 * !C1 * !X)	0.00197	0.00198	0.00198
	(A1 * B1 * !B2 * !C1 * !X)	-0.00237	-0.00244	-0.00244
	(A1 * !B1 * !B2 * C1 * !X)	0.00197	0.00199	0.00198
	(A1 * !B1 * !B2 * C1 * !X)	-0.00237	-0.00244	-0.00243
	(A1 * !B1 * !B2 * !C1 * !X)	0.00197	0.00199	0.00198
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00237	-0.00245	-0.00244
	(!A1 * B2 * !C1 * !X)	0.00182	0.00183	0.00182
	(!A1 * B2 * !C1 * !X)	-0.00248	-0.00248	-0.00248
	(!A1 * B1 * !B2 * !C1 * !X)	0.00184	0.00185	0.00184
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00248	-0.00249	-0.00248
	(!A1 * !B1 * !B2 * C1 * !X)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00247	-0.00249	-0.00247
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00185	0.00187	0.00186
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00247	-0.00248	-0.00247

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

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

sky130_fd_sc_hs__o221a_1	**(A1 * B2 * C1 * X)**	-0.00117	-0.00118	-0.00121
	(A1 * B2 * C1 * X)	0.00067	0.00067	0.00065
	(A1 * B2 * !C1 * !X)	-0.00105	-0.00105	-0.00105
	(A1 * B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(A1 * B1 * !B2 * C1 * X)	-0.00117	-0.00118	-0.00121
	(A1 * B1 * !B2 * C1 * X)	0.00067	0.00067	0.00065
	(A1 * B1 * !B2 * !C1 * !X)	-0.00105	-0.00106	-0.00105
	(A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00126	0.00125
	(A1 * !B1 * !B2 * C1 * !X)	-0.00105	-0.00105	-0.00105
	(A1 * !B1 * !B2 * C1 * !X)	0.00125	0.00125	0.00125
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00105	-0.00105	-0.00105
	(A1 * !B1 * !B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(!A1 * B2 * !C1 * !X)	-0.00089	-0.00098	-0.00097
	(!A1 * B2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00091	-0.00099	-0.00098
	(!A1 * B1 * !B2 * !C1 * !X)	0.00127	0.00128	0.00127
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00094	-0.00099	-0.00099
	(!A1 * !B1 * !B2 * C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00094	-0.00100	-0.00099
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00128	0.00128	0.00128

sky130_fd_sc_hs__o221a_2	**(A1 * B2 * C1 * X)**	-0.00132	-0.00132	-0.00135
	(A1 * B2 * C1 * X)	0.00067	0.00067	0.00064
	(A1 * B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * B2 * !C1 * !X)	0.00125	0.00126	0.00125
	(A1 * B1 * !B2 * C1 * X)	-0.00132	-0.00132	-0.00135
	(A1 * B1 * !B2 * C1 * X)	0.00067	0.00067	0.00064
	(A1 * B1 * !B2 * !C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * B1 * !B2 * !C1 * !X)	0.00125	0.00125	0.00125
	(A1 * !B1 * !B2 * C1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !B1 * !B2 * C1 * !X)	0.00125	0.00125	0.00124
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00119	-0.00121	-0.00120
	(A1 * !B1 * !B2 * !C1 * !X)	0.00124	0.00126	0.00125
	(!A1 * B2 * !C1 * !X)	-0.00101	-0.00110	-0.00110
	(!A1 * B2 * !C1 * !X)	0.00126	0.00128	0.00127
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00103	-0.00112	-0.00111
	(!A1 * B1 * !B2 * !C1 * !X)	0.00126	0.00128	0.00127
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00107	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * C1 * !X)	0.00127	0.00127	0.00127
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00108	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00127	0.00127	0.00127

sky130_fd_sc_hs__o221a_4	**(A1 * B2 * C1 * X)**	-0.00214	-0.00215	-0.00222
	(A1 * B2 * C1 * X)	0.00135	0.00135	0.00128
	(A1 * B2 * !C1 * !X)	-0.00197	-0.00198	-0.00197
	(A1 * B2 * !C1 * !X)	0.00243	0.00245	0.00244
	(A1 * B1 * !B2 * C1 * X)	-0.00214	-0.00215	-0.00222
	(A1 * B1 * !B2 * C1 * X)	0.00135	0.00135	0.00128
	(A1 * B1 * !B2 * !C1 * !X)	-0.00197	-0.00198	-0.00197
	(A1 * B1 * !B2 * !C1 * !X)	0.00243	0.00245	0.00244
	(A1 * !B1 * !B2 * C1 * !X)	-0.00197	-0.00199	-0.00197
	(A1 * !B1 * !B2 * C1 * !X)	0.00243	0.00244	0.00243
	(A1 * !B1 * !B2 * !C1 * !X)	-0.00197	-0.00198	-0.00197
	(A1 * !B1 * !B2 * !C1 * !X)	0.00244	0.00245	0.00244
	(!A1 * B2 * !C1 * !X)	-0.00164	-0.00183	-0.00182
	(!A1 * B2 * !C1 * !X)	0.00248	0.00251	0.00248
	(!A1 * B1 * !B2 * !C1 * !X)	-0.00167	-0.00185	-0.00184
	(!A1 * B1 * !B2 * !C1 * !X)	0.00248	0.00250	0.00248
	(!A1 * !B1 * !B2 * C1 * !X)	-0.00174	-0.00187	-0.00186
	(!A1 * !B1 * !B2 * C1 * !X)	0.00249	0.00250	0.00248
	(!A1 * !B1 * !B2 * !C1 * !X)	-0.00174	-0.00187	-0.00186
	(!A1 * !B1 * !B2 * !C1 * !X)	0.00249	0.00250	0.00248

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)**	0.00124	0.00112	0.00111
	(A2 * B2 * C1 * X)	-0.00109	-0.00123	-0.00123
	(A2 * !B2 * !C1 * !X)	0.00100	0.00102	0.00101
	(A2 * !B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00105	0.00106	0.00105
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00126	-0.00128	-0.00129
	(A1 * !A2 * B2 * C1 * X)	0.00124	0.00112	0.00111
	(A1 * !A2 * B2 * C1 * X)	-0.00109	-0.00123	-0.00123
	(A1 * !A2 * !B2 * !C1 * !X)	0.00100	0.00101	0.00101
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00130	-0.00131	-0.00130
	(!A1 * !A2 * B2 * C1 * !X)	0.00045	0.00045	0.00045
	(!A1 * !A2 * B2 * C1 * !X)	-0.00126	-0.00130	-0.00129
	(!A1 * !A2 * B2 * !C1 * !X)	0.00055	0.00055	0.00055
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00126	-0.00129	-0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	0.00046	0.00046	0.00047
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00130	-0.00131	-0.00129
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00131	-0.00132	-0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	0.00142	0.00130	0.00129
	(A2 * B2 * C1 * X)	-0.00106	-0.00121	-0.00121
	(A2 * !B2 * !C1 * !X)	0.00113	0.00115	0.00114
	(A2 * !B2 * !C1 * !X)	-0.00131	-0.00132	-0.00132
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00119	0.00120	0.00119
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00127	-0.00131	-0.00130
	(A1 * !A2 * B2 * C1 * X)	0.00142	0.00130	0.00129
	(A1 * !A2 * B2 * C1 * X)	-0.00106	-0.00121	-0.00121
	(A1 * !A2 * !B2 * !C1 * !X)	0.00113	0.00115	0.00114
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00131	-0.00132	-0.00132
	(!A1 * !A2 * B2 * C1 * !X)	0.00050	0.00050	0.00049
	(!A1 * !A2 * B2 * C1 * !X)	-0.00128	-0.00131	-0.00131
	(!A1 * !A2 * B2 * !C1 * !X)	0.00060	0.00061	0.00060
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00128	-0.00132	-0.00131
	(!A1 * !A2 * !B2 * C1 * !X)	0.00051	0.00052	0.00052
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00132	-0.00133	-0.00131
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00064	0.00065	0.00064
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	0.00300	0.00279	0.00278
	(A2 * B2 * C1 * X)	-0.00211	-0.00239	-0.00239
	(A2 * !B2 * !C1 * !X)	0.00249	0.00251	0.00249
	(A2 * !B2 * !C1 * !X)	-0.00261	-0.00262	-0.00261
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00258	0.00260	0.00259
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00251	-0.00258	-0.00258
	(A1 * !A2 * B2 * C1 * X)	0.00300	0.00279	0.00278
	(A1 * !A2 * B2 * C1 * X)	-0.00211	-0.00239	-0.00239
	(A1 * !A2 * !B2 * !C1 * !X)	0.00249	0.00251	0.00249
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00261	-0.00262	-0.00261
	(!A1 * !A2 * B2 * C1 * !X)	0.00129	0.00129	0.00129
	(!A1 * !A2 * B2 * C1 * !X)	-0.00253	-0.00260	-0.00260
	(!A1 * !A2 * B2 * !C1 * !X)	0.00147	0.00148	0.00148
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00253	-0.00261	-0.00260
	(!A1 * !A2 * !B2 * C1 * !X)	0.00130	0.00132	0.00133
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00261	-0.00263	-0.00260
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00153	0.00155	0.00154
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00263	-0.00265	-0.00263

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)**	-0.00110	-0.00111	-0.00110
	(A2 * B2 * C1 * X)	0.00123	0.00124	0.00123
	(A2 * !B2 * !C1 * !X)	-0.00095	-0.00101	-0.00101
	(A2 * !B2 * !C1 * !X)	0.00131	0.00131	0.00131
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00105	-0.00105	-0.00105
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00128	0.00128	0.00129
	(A1 * !A2 * B2 * C1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A2 * B2 * C1 * X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00095	-0.00101	-0.00101
	(A1 * !A2 * !B2 * !C1 * !X)	0.00132	0.00131	0.00131
	(!A1 * !A2 * B2 * C1 * !X)	-0.00042	-0.00042	-0.00044
	(!A1 * !A2 * B2 * C1 * !X)	0.00134	0.00134	0.00130
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00055	-0.00055	-0.00055
	(!A1 * !A2 * B2 * !C1 * !X)	0.00129	0.00129	0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00044	-0.00044	-0.00045
	(!A1 * !A2 * !B2 * C1 * !X)	0.00135	0.00135	0.00132
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00131	0.00132	0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B2 * C1 * X)**	-0.00128	-0.00128	-0.00128
	(A2 * B2 * C1 * X)	0.00120	0.00121	0.00121
	(A2 * !B2 * !C1 * !X)	-0.00107	-0.00114	-0.00114
	(A2 * !B2 * !C1 * !X)	0.00132	0.00132	0.00132
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00119	-0.00119	-0.00119
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00129	0.00131	0.00130
	(A1 * !A2 * B2 * C1 * X)	-0.00127	-0.00128	-0.00128
	(A1 * !A2 * B2 * C1 * X)	0.00120	0.00121	0.00121
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00107	-0.00114	-0.00114
	(A1 * !A2 * !B2 * !C1 * !X)	0.00134	0.00133	0.00132
	(!A1 * !A2 * B2 * C1 * !X)	-0.00047	-0.00047	-0.00049
	(!A1 * !A2 * B2 * C1 * !X)	0.00135	0.00136	0.00132
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00060	-0.00061	-0.00060
	(!A1 * !A2 * B2 * !C1 * !X)	0.00131	0.00132	0.00131
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00048	-0.00048	-0.00050
	(!A1 * !A2 * !B2 * C1 * !X)	0.00137	0.00137	0.00133
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00134	0.00134	0.00133

sky130_fd_sc_hs__o221a_4	**(A2 * B2 * C1 * X)**	-0.00277	-0.00278	-0.00276
	(A2 * B2 * C1 * X)	0.00238	0.00241	0.00239
	(A2 * !B2 * !C1 * !X)	-0.00238	-0.00251	-0.00249
	(A2 * !B2 * !C1 * !X)	0.00264	0.00264	0.00262
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	-0.00258	-0.00260	-0.00258
	(A1 * B2 * !C1 * !X) + (!A1 * A2 * B2 * !C1 * !X)	0.00257	0.00260	0.00258
	(A1 * !A2 * B2 * C1 * X)	-0.00277	-0.00278	-0.00276
	(A1 * !A2 * B2 * C1 * X)	0.00238	0.00241	0.00239
	(A1 * !A2 * !B2 * !C1 * !X)	-0.00236	-0.00251	-0.00249
	(A1 * !A2 * !B2 * !C1 * !X)	0.00265	0.00264	0.00262
	(!A1 * !A2 * B2 * C1 * !X)	-0.00121	-0.00122	-0.00126
	(!A1 * !A2 * B2 * C1 * !X)	0.00273	0.00275	0.00263
	(!A1 * !A2 * B2 * !C1 * !X)	-0.00147	-0.00148	-0.00148
	(!A1 * !A2 * B2 * !C1 * !X)	0.00260	0.00262	0.00260
	(!A1 * !A2 * !B2 * C1 * !X)	-0.00125	-0.00127	-0.00129
	(!A1 * !A2 * !B2 * C1 * !X)	0.00270	0.00272	0.00265
	(!A1 * !A2 * !B2 * !C1 * !X)	-0.00153	-0.00155	-0.00154
	(!A1 * !A2 * !B2 * !C1 * !X)	0.00266	0.00268	0.00264

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)**	0.00136	0.00137	0.00136
	(A2 * B1 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A2 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A2 * B1 * !C1 * !X)	-0.00126	-0.00129	-0.00129
	(A2 * !B1 * !C1 * !X)	0.00113	0.00115	0.00114
	(A2 * !B1 * !C1 * !X)	-0.00130	-0.00132	-0.00131
	(A1 * !A2 * B1 * C1 * X)	0.00136	0.00137	0.00136
	(A1 * !A2 * B1 * C1 * X)	-0.00065	-0.00066	-0.00065
	(A1 * !A2 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A2 * B1 * !C1 * !X)	-0.00126	-0.00130	-0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	0.00113	0.00113	0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00131
	(!A1 * !A2 * B1 * C1 * !X)	0.00052	0.00053	0.00052
	(!A1 * !A2 * B1 * C1 * !X)	-0.00126	-0.00130	-0.00130
	(!A1 * !A2 * B1 * !C1 * !X)	0.00062	0.00063	0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00127	-0.00130	-0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	0.00053	0.00053	0.00054
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00131	-0.00131	-0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00065	0.00066	0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00131	-0.00132	-0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	0.00145	0.00147	0.00146
	(A2 * B1 * C1 * X)	-0.00063	-0.00064	-0.00063
	(A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00127	-0.00127
	(A2 * !B1 * !C1 * !X)	0.00122	0.00123	0.00123
	(A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00129
	(A1 * !A2 * B1 * C1 * X)	0.00145	0.00147	0.00146
	(A1 * !A2 * B1 * C1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * B1 * !C1 * !X)	-0.00124	-0.00127	-0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	0.00122	0.00124	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00128	-0.00129	-0.00129
	(!A1 * !A2 * B1 * C1 * !X)	0.00054	0.00054	0.00054
	(!A1 * !A2 * B1 * C1 * !X)	-0.00125	-0.00128	-0.00128
	(!A1 * !A2 * B1 * !C1 * !X)	0.00065	0.00065	0.00065
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00125	-0.00128	-0.00128
	(!A1 * !A2 * !B1 * C1 * !X)	0.00056	0.00056	0.00057
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00069	0.00069	0.00069
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00130	-0.00130	-0.00130

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	0.00231	0.00233	0.00231
	(A2 * B1 * C1 * X)	-0.00127	-0.00128	-0.00126
	(A2 * B1 * !C1 * !X)	0.00202	0.00203	0.00202
	(A2 * B1 * !C1 * !X)	-0.00242	-0.00249	-0.00248
	(A2 * !B1 * !C1 * !X)	0.00193	0.00196	0.00194
	(A2 * !B1 * !C1 * !X)	-0.00252	-0.00254	-0.00252
	(A1 * !A2 * B1 * C1 * X)	0.00231	0.00233	0.00231
	(A1 * !A2 * B1 * C1 * X)	-0.00127	-0.00128	-0.00126
	(A1 * !A2 * B1 * !C1 * !X)	0.00202	0.00203	0.00202
	(A1 * !A2 * B1 * !C1 * !X)	-0.00242	-0.00248	-0.00248
	(A1 * !A2 * !B1 * !C1 * !X)	0.00194	0.00196	0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00252	-0.00254	-0.00252
	(!A1 * !A2 * B1 * C1 * !X)	0.00079	0.00079	0.00079
	(!A1 * !A2 * B1 * C1 * !X)	-0.00243	-0.00251	-0.00251
	(!A1 * !A2 * B1 * !C1 * !X)	0.00098	0.00099	0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00244	-0.00251	-0.00250
	(!A1 * !A2 * !B1 * C1 * !X)	0.00080	0.00081	0.00083
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00252	-0.00253	-0.00251
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00104	0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00255	-0.00255	-0.00254

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)**	-0.00132	-0.00133	-0.00135
	(A2 * B1 * C1 * X)	0.00069	0.00069	0.00066
	(A2 * B1 * !C1 * !X)	-0.00117	-0.00117	-0.00117
	(A2 * B1 * !C1 * !X)	0.00129	0.00129	0.00129
	(A2 * !B1 * !C1 * !X)	-0.00108	-0.00113	-0.00114
	(A2 * !B1 * !C1 * !X)	0.00132	0.00132	0.00131
	(A1 * !A2 * B1 * C1 * X)	-0.00132	-0.00133	-0.00135
	(A1 * !A2 * B1 * C1 * X)	0.00069	0.00069	0.00066
	(A1 * !A2 * B1 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00130	0.00129
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00107	-0.00113	-0.00114
	(A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00132	0.00131
	(!A1 * !A2 * B1 * C1 * !X)	-0.00049	-0.00049	-0.00051
	(!A1 * !A2 * B1 * C1 * !X)	0.00138	0.00138	0.00131
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00062	-0.00063	-0.00062
	(!A1 * !A2 * B1 * !C1 * !X)	0.00130	0.00131	0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00051	-0.00052	-0.00052
	(!A1 * !A2 * !B1 * C1 * !X)	0.00135	0.00136	0.00132
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00133	0.00133	0.00131

sky130_fd_sc_hs__o221a_2	**(A2 * B1 * C1 * X)**	-0.00142	-0.00143	-0.00145
	(A2 * B1 * C1 * X)	0.00067	0.00067	0.00064
	(A2 * B1 * !C1 * !X)	-0.00128	-0.00128	-0.00128
	(A2 * B1 * !C1 * !X)	0.00127	0.00127	0.00127
	(A2 * !B1 * !C1 * !X)	-0.00117	-0.00123	-0.00123
	(A2 * !B1 * !C1 * !X)	0.00130	0.00131	0.00129
	(A1 * !A2 * B1 * C1 * X)	-0.00142	-0.00143	-0.00145
	(A1 * !A2 * B1 * C1 * X)	0.00067	0.00067	0.00064
	(A1 * !A2 * B1 * !C1 * !X)	-0.00128	-0.00128	-0.00128
	(A1 * !A2 * B1 * !C1 * !X)	0.00127	0.00127	0.00127
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00123	-0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00131	0.00130	0.00129
	(!A1 * !A2 * B1 * C1 * !X)	-0.00050	-0.00051	-0.00053
	(!A1 * !A2 * B1 * C1 * !X)	0.00136	0.00135	0.00129
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00065	-0.00065	-0.00065
	(!A1 * !A2 * B1 * !C1 * !X)	0.00128	0.00128	0.00128
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00053	-0.00053	-0.00054
	(!A1 * !A2 * !B1 * C1 * !X)	0.00134	0.00134	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00069	-0.00069	-0.00069
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00130	0.00132	0.00130

sky130_fd_sc_hs__o221a_4	**(A2 * B1 * C1 * X)**	-0.00221	-0.00224	-0.00230
	(A2 * B1 * C1 * X)	0.00134	0.00136	0.00129
	(A2 * B1 * !C1 * !X)	-0.00201	-0.00203	-0.00201
	(A2 * B1 * !C1 * !X)	0.00247	0.00249	0.00248
	(A2 * !B1 * !C1 * !X)	-0.00183	-0.00194	-0.00194
	(A2 * !B1 * !C1 * !X)	0.00255	0.00255	0.00253
	(A1 * !A2 * B1 * C1 * X)	-0.00221	-0.00224	-0.00230
	(A1 * !A2 * B1 * C1 * X)	0.00134	0.00136	0.00129
	(A1 * !A2 * B1 * !C1 * !X)	-0.00202	-0.00202	-0.00201
	(A1 * !A2 * B1 * !C1 * !X)	0.00248	0.00248	0.00248
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00181	-0.00195	-0.00194
	(A1 * !A2 * !B1 * !C1 * !X)	0.00256	0.00255	0.00253
	(!A1 * !A2 * B1 * C1 * !X)	-0.00074	-0.00074	-0.00077
	(!A1 * !A2 * B1 * C1 * !X)	0.00261	0.00261	0.00252
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00098	-0.00099	-0.00098
	(!A1 * !A2 * B1 * !C1 * !X)	0.00250	0.00253	0.00250
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00076	-0.00077	-0.00079
	(!A1 * !A2 * !B1 * C1 * !X)	0.00259	0.00262	0.00256
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00104	-0.00104	-0.00103
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00255	0.00258	0.00255

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)	0.00044	0.00044	0.00042
	(A2 * !B1 * !B2 * !X)	-0.00156	-0.00156	-0.00160
	(!A2 * !B1 * !B2 * !X)	0.00044	0.00044	0.00042
	(!A2 * !B1 * !B2 * !X)	-0.00156	-0.00156	-0.00160
	(!A1 * !A2 * B2 * !X)	0.00043	0.00043	0.00038
	(!A1 * !A2 * B2 * !X)	-0.00149	-0.00149	-0.00159
	(!A1 * !A2 * B1 * !B2 * !X)	0.00043	0.00043	0.00039
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00150	-0.00150	-0.00159
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	0.00051	0.00051	0.00048
	(A2 * !B1 * !B2 * !X)	-0.00157	-0.00158	-0.00161
	(!A2 * !B1 * !B2 * !X)	0.00051	0.00051	0.00048
	(!A2 * !B1 * !B2 * !X)	-0.00157	-0.00158	-0.00161
	(!A1 * !A2 * B2 * !X)	0.00051	0.00052	0.00046
	(!A1 * !A2 * B2 * !X)	-0.00148	-0.00150	-0.00160
	(!A1 * !A2 * B1 * !B2 * !X)	0.00051	0.00052	0.00047
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00150	-0.00151	-0.00160
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	0.00074	0.00074	0.00069
	(A2 * !B1 * !B2 * !X)	-0.00292	-0.00293	-0.00301
	(!A2 * !B1 * !B2 * !X)	0.00074	0.00074	0.00069
	(!A2 * !B1 * !B2 * !X)	-0.00292	-0.00293	-0.00301
	(!A1 * !A2 * B2 * !X)	0.00072	0.00072	0.00064
	(!A1 * !A2 * B2 * !X)	-0.00279	-0.00280	-0.00299
	(!A1 * !A2 * B1 * !B2 * !X)	0.00073	0.00073	0.00065
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00281	-0.00282	-0.00299

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)	-0.00040	-0.00041	-0.00040
	(A2 * !B1 * !B2 * !X)	0.00160	0.00163	0.00161
	(!A2 * !B1 * !B2 * !X)	-0.00040	-0.00041	-0.00040
	(!A2 * !B1 * !B2 * !X)	0.00160	0.00163	0.00161
	(!A1 * !A2 * B2 * !X)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B2 * !X)	0.00160	0.00160	0.00161
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00039	-0.00039	-0.00039
	(!A1 * !A2 * B1 * !B2 * !X)	0.00160	0.00163	0.00161
sky130_fd_sc_hs__o221a_2	(A2 * !B1 * !B2 * !X)	-0.00047	-0.00048	-0.00047
	(A2 * !B1 * !B2 * !X)	0.00161	0.00164	0.00162
	(!A2 * !B1 * !B2 * !X)	-0.00047	-0.00048	-0.00047
	(!A2 * !B1 * !B2 * !X)	0.00161	0.00164	0.00162
	(!A1 * !A2 * B2 * !X)	-0.00045	-0.00046	-0.00045
	(!A1 * !A2 * B2 * !X)	0.00161	0.00164	0.00161
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * B1 * !B2 * !X)	0.00161	0.00164	0.00162
sky130_fd_sc_hs__o221a_4	(A2 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00067
	(A2 * !B1 * !B2 * !X)	0.00303	0.00307	0.00303
	(!A2 * !B1 * !B2 * !X)	-0.00068	-0.00068	-0.00067
	(!A2 * !B1 * !B2 * !X)	0.00303	0.00305	0.00303
	(!A1 * !A2 * B2 * !X)	-0.00064	-0.00065	-0.00064
	(!A1 * !A2 * B2 * !X)	0.00303	0.00307	0.00302
	(!A1 * !A2 * B1 * !B2 * !X)	-0.00065	-0.00066	-0.00065
	(!A1 * !A2 * B1 * !B2 * !X)	0.00303	0.00307	0.00303

SKY130_FD_SC_HS__O22AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00261	0.00258	0.00266	0.00273	0.58086
sky130_fd_sc_hs__o22ai_2	0.00490	0.00506	0.00505	0.00497	1.02436
sky130_fd_sc_hs__o22ai_4	0.01011	0.00962	0.01053	0.00983	1.83497

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o22ai_1	0.00000	0.01763	0.06484
sky130_fd_sc_hs__o22ai_2	0.00000	0.03526	0.12968
sky130_fd_sc_hs__o22ai_4	0.00000	0.07051	0.25936

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)	0.11128	1.01377	11.39970
	A2->Y (FR)	0.09784	0.98025	11.19880
	B1->Y (FR)	0.07119	0.97339	11.36690
	B2->Y (FR)	0.05726	0.94043	11.15980
sky130_fd_sc_hs__o22ai_2	A1->Y (FR)	0.11247	0.88996	11.24140
	A2->Y (FR)	0.09467	0.85330	11.06610
	B1->Y (FR)	0.06841	0.84201	11.15660
	B2->Y (FR)	0.04741	0.80641	10.97910
sky130_fd_sc_hs__o22ai_4	A1->Y (FR)	0.10849	0.76589	10.80470
	A2->Y (FR)	0.09254	0.74564	10.78600
	B1->Y (FR)	0.06534	0.72758	10.84690
	B2->Y (FR)	0.04835	0.70079	10.74490

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22ai_1	A1->Y (RF)	0.03591	0.35592	3.85836
	A2->Y (RF)	0.03145	0.34789	3.83850
	B1->Y (RF)	0.02861	0.38380	4.31214
	B2->Y (RF)	0.02453	0.37208	4.24377
sky130_fd_sc_hs__o22ai_2	A1->Y (RF)	0.03665	0.30797	3.74936
	A2->Y (RF)	0.03074	0.29705	3.71612
	B1->Y (RF)	0.02875	0.34014	4.31789
	B2->Y (RF)	0.02258	0.32126	4.20438
sky130_fd_sc_hs__o22ai_4	A1->Y (RF)	0.02851	0.23649	3.41517
	A2->Y (RF)	0.02467	0.22479	3.39103
	B1->Y (RF)	0.02112	0.27027	4.09395
	B2->Y (RF)	0.01877	0.27456	4.32419

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00114	0.00098	0.00186
	A1	0.00712	0.00698	0.00782
	A2	0.00120	0.00137	0.00468
	A2	0.00634	0.00652	0.00966
	B1	-0.00025	-0.00037	0.00054
	B1	0.00469	0.00457	0.00544
	B2	-0.00024	0.00002	0.00333
	B2	0.00393	0.00416	0.00728
sky130_fd_sc_hs__o22ai_2	A1	0.00206	0.00173	0.00353
	A1	0.01396	0.01368	0.01538
	A2	0.00199	0.00233	0.00890
	A2	0.01246	0.01239	0.01895
	B1	-0.00065	-0.00083	0.00098
	B1	0.00924	0.00902	0.01078
	B2	-0.00080	-0.00008	0.00647
	B2	0.00751	0.00818	0.01431
sky130_fd_sc_hs__o22ai_4	A1	0.00304	0.00244	0.00679
	A1	0.02652	0.02602	0.03028
	A2	0.00300	0.00398	0.01809
	A2	0.02328	0.02425	0.03788
	B1	-0.00152	-0.00193	0.00261
	B1	0.01809	0.01766	0.02206
	B2	-0.00147	-0.00012	0.01413
	B2	0.01497	0.01587	0.03000

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	A1	0.00777	0.00767	0.00848
	A1	0.00158	0.00150	0.00207
	A2	0.00630	0.00629	0.00684
	A2	0.00093	0.00088	0.00147
	B1	0.00645	0.00643	0.00735
	B1	0.00162	0.00155	0.00246
	B2	0.00513	0.00512	0.00630
	B2	0.00018	0.00020	0.00119
sky130_fd_sc_hs__o22ai_2	A1	0.01591	0.01565	0.01724
	A1	0.00368	0.00344	0.00461
	A2	0.01282	0.01272	0.01393
	A2	0.00193	0.00184	0.00308
	B1	0.01332	0.01314	0.01494
	B1	0.00368	0.00347	0.00531
	B2	0.00996	0.01000	0.01190
	B2	-0.00019	-0.00011	0.00196
sky130_fd_sc_hs__o22ai_4	A1	0.03002	0.02954	0.03273
	A1	0.00591	0.00533	0.00814
	A2	0.02411	0.02382	0.02717
	A2	0.00305	0.00274	0.00569
	B1	0.02519	0.02478	0.02940
	B1	0.00601	0.00553	0.00972
	B2	0.01932	0.01929	0.02408
	B2	-0.00013	-0.00014	0.00458

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00144	0.00134	0.00132
	(A2 * B2 * !Y)	-0.00124	-0.00136	-0.00138
	(A2 * B1 * !B2 * !Y)	0.00144	0.00134	0.00132
	(A2 * B1 * !B2 * !Y)	-0.00124	-0.00136	-0.00138
	(A2 * !B1 * !B2 * Y)	0.00132	0.00133	0.00132
	(A2 * !B1 * !B2 * Y)	-0.00134	-0.00138	-0.00137
	(!A2 * !B1 * !B2 * Y)	0.00125	0.00126	0.00125
	(!A2 * !B1 * !B2 * Y)	-0.00138	-0.00139	-0.00139
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00271	0.00249	0.00245
	(A2 * B2 * !Y)	-0.00239	-0.00272	-0.00271
	(A2 * B1 * !B2 * !Y)	0.00271	0.00249	0.00245
	(A2 * B1 * !B2 * !Y)	-0.00239	-0.00272	-0.00271
	(A2 * !B1 * !B2 * Y)	0.00244	0.00247	0.00244
	(A2 * !B1 * !B2 * Y)	-0.00263	-0.00274	-0.00272
	(!A2 * !B1 * !B2 * Y)	0.00231	0.00233	0.00232
	(!A2 * !B1 * !B2 * Y)	-0.00276	-0.00278	-0.00277
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00552	0.00499	0.00493
	(A2 * B2 * !Y)	-0.00463	-0.00533	-0.00534
	(A2 * B1 * !B2 * !Y)	0.00552	0.00499	0.00493
	(A2 * B1 * !B2 * !Y)	-0.00463	-0.00533	-0.00535
	(A2 * !B1 * !B2 * Y)	0.00476	0.00481	0.00478
	(A2 * !B1 * !B2 * Y)	-0.00533	-0.00551	-0.00548
	(!A2 * !B1 * !B2 * Y)	0.00453	0.00454	0.00453
	(!A2 * !B1 * !B2 * Y)	-0.00560	-0.00560	-0.00559

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00131	-0.00131	-0.00131
	(A2 * B2 * !Y)	0.00137	0.00136	0.00138
	(A2 * B1 * !B2 * !Y)	-0.00131	-0.00131	-0.00131
	(A2 * B1 * !B2 * !Y)	0.00137	0.00136	0.00138
	(A2 * !B1 * !B2 * Y)	-0.00132	-0.00133	-0.00132
	(A2 * !B1 * !B2 * Y)	0.00137	0.00139	0.00137
	(!A2 * !B1 * !B2 * Y)	-0.00119	-0.00126	-0.00125
	(!A2 * !B1 * !B2 * Y)	0.00140	0.00140	0.00139
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00244	-0.00246	-0.00245
	(A2 * B2 * !Y)	0.00269	0.00272	0.00271
	(A2 * B1 * !B2 * !Y)	-0.00244	-0.00246	-0.00245
	(A2 * B1 * !B2 * !Y)	0.00269	0.00272	0.00271
	(A2 * !B1 * !B2 * Y)	-0.00243	-0.00245	-0.00244
	(A2 * !B1 * !B2 * Y)	0.00271	0.00274	0.00272
	(!A2 * !B1 * !B2 * Y)	-0.00219	-0.00233	-0.00232
	(!A2 * !B1 * !B2 * Y)	0.00279	0.00280	0.00278
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00490	-0.00491	-0.00491
	(A2 * B2 * !Y)	0.00532	0.00533	0.00534
	(A2 * B1 * !B2 * !Y)	-0.00490	-0.00491	-0.00490
	(A2 * B1 * !B2 * !Y)	0.00532	0.00533	0.00535
	(A2 * !B1 * !B2 * Y)	-0.00475	-0.00478	-0.00477
	(A2 * !B1 * !B2 * Y)	0.00546	0.00551	0.00548
	(!A2 * !B1 * !B2 * Y)	-0.00425	-0.00454	-0.00453
	(!A2 * !B1 * !B2 * Y)	0.00560	0.00567	0.00561

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	0.00130	0.00131	0.00130
	(A1 * B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * B1 * !B2 * !Y)	0.00130	0.00131	0.00130
	(A1 * B1 * !B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !B1 * !B2 * Y)	0.00119	0.00120	0.00120
	(A1 * !B1 * !B2 * Y)	-0.00128	-0.00130	-0.00131
	(!A1 * !B1 * !B2 * Y)	0.00112	0.00114	0.00113
	(!A1 * !B1 * !B2 * Y)	-0.00132	-0.00134	-0.00133
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	0.00278	0.00281	0.00279
	(A1 * B2 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * B1 * !B2 * !Y)	0.00278	0.00281	0.00279
	(A1 * B1 * !B2 * !Y)	-0.00138	-0.00139	-0.00138
	(A1 * !B1 * !B2 * Y)	0.00243	0.00246	0.00244
	(A1 * !B1 * !B2 * Y)	-0.00266	-0.00276	-0.00275
	(!A1 * !B1 * !B2 * Y)	0.00233	0.00236	0.00233
	(!A1 * !B1 * !B2 * Y)	-0.00281	-0.00282	-0.00280
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	0.00515	0.00517	0.00512
	(A1 * B2 * !Y)	-0.00271	-0.00271	-0.00268
	(A1 * B1 * !B2 * !Y)	0.00515	0.00517	0.00512
	(A1 * B1 * !B2 * !Y)	-0.00271	-0.00271	-0.00268
	(A1 * !B1 * !B2 * Y)	0.00471	0.00473	0.00470
	(A1 * !B1 * !B2 * Y)	-0.00501	-0.00513	-0.00514
	(!A1 * !B1 * !B2 * Y)	0.00440	0.00444	0.00442
	(!A1 * !B1 * !B2 * Y)	-0.00525	-0.00528	-0.00527

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A1 * B2 * !Y)	-0.00125	-0.00126	-0.00129
	(A1 * B2 * !Y)	0.00074	0.00074	0.00071
	(A1 * B1 * !B2 * !Y)	-0.00125	-0.00126	-0.00129
	(A1 * B1 * !B2 * !Y)	0.00074	0.00074	0.00071
	(A1 * !B1 * !B2 * Y)	-0.00119	-0.00119	-0.00120
	(A1 * !B1 * !B2 * Y)	0.00131	0.00130	0.00131
	(!A1 * !B1 * !B2 * Y)	-0.00108	-0.00114	-0.00113
	(!A1 * !B1 * !B2 * Y)	0.00134	0.00134	0.00133
sky130_fd_sc_hs__o22ai_2	(A1 * B2 * !Y)	-0.00265	-0.00267	-0.00277
	(A1 * B2 * !Y)	0.00150	0.00150	0.00141
	(A1 * B1 * !B2 * !Y)	-0.00265	-0.00267	-0.00277
	(A1 * B1 * !B2 * !Y)	0.00150	0.00151	0.00141
	(A1 * !B1 * !B2 * Y)	-0.00242	-0.00244	-0.00243
	(A1 * !B1 * !B2 * Y)	0.00273	0.00276	0.00275
	(!A1 * !B1 * !B2 * Y)	-0.00218	-0.00232	-0.00233
	(!A1 * !B1 * !B2 * Y)	0.00282	0.00283	0.00281
sky130_fd_sc_hs__o22ai_4	(A1 * B2 * !Y)	-0.00491	-0.00495	-0.00510
	(A1 * B2 * !Y)	0.00286	0.00287	0.00273
	(A1 * B1 * !B2 * !Y)	-0.00491	-0.00495	-0.00510
	(A1 * B1 * !B2 * !Y)	0.00287	0.00287	0.00273
	(A1 * !B1 * !B2 * Y)	-0.00467	-0.00468	-0.00469
	(A1 * !B1 * !B2 * Y)	0.00512	0.00513	0.00514
	(!A1 * !B1 * !B2 * Y)	-0.00421	-0.00444	-0.00442
	(!A1 * !B1 * !B2 * Y)	0.00530	0.00533	0.00528

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	0.00150	0.00139	0.00137
	(A2 * B2 * !Y)	-0.00119	-0.00134	-0.00134
	(A1 * !A2 * B2 * !Y)	0.00150	0.00138	0.00137
	(A1 * !A2 * B2 * !Y)	-0.00119	-0.00134	-0.00134
	(!A1 * !A2 * B2 * Y)	0.00047	0.00047	0.00047
	(!A1 * !A2 * B2 * Y)	-0.00164	-0.00168	-0.00167
	(!A1 * !A2 * !B2 * Y)	0.00052	0.00053	0.00049
	(!A1 * !A2 * !B2 * Y)	-0.00161	-0.00162	-0.00168
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	0.00273	0.00247	0.00243
	(A2 * B2 * !Y)	-0.00242	-0.00276	-0.00275
	(A1 * !A2 * B2 * !Y)	0.00273	0.00247	0.00244
	(A1 * !A2 * B2 * !Y)	-0.00242	-0.00276	-0.00275
	(!A1 * !A2 * B2 * Y)	0.00078	0.00079	0.00078
	(!A1 * !A2 * B2 * Y)	-0.00320	-0.00331	-0.00329
	(!A1 * !A2 * !B2 * Y)	0.00088	0.00088	0.00082
	(!A1 * !A2 * !B2 * Y)	-0.00320	-0.00322	-0.00334
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	0.00577	0.00527	0.00521
	(A2 * B2 * !Y)	-0.00453	-0.00518	-0.00519
	(A1 * !A2 * B2 * !Y)	0.00577	0.00527	0.00521
	(A1 * !A2 * B2 * !Y)	-0.00453	-0.00519	-0.00520
	(!A1 * !A2 * B2 * Y)	0.00148	0.00148	0.00147
	(!A1 * !A2 * B2 * Y)	-0.00656	-0.00672	-0.00670
	(!A1 * !A2 * !B2 * Y)	0.00164	0.00165	0.00153
	(!A1 * !A2 * !B2 * Y)	-0.00652	-0.00658	-0.00677

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B2 * !Y)	-0.00137	-0.00136	-0.00136
	(A2 * B2 * !Y)	0.00134	0.00134	0.00134
	(A1 * !A2 * B2 * !Y)	-0.00136	-0.00137	-0.00136
	(A1 * !A2 * B2 * !Y)	0.00134	0.00135	0.00134
	(!A1 * !A2 * B2 * Y)	-0.00046	-0.00047	-0.00047
	(!A1 * !A2 * B2 * Y)	0.00167	0.00169	0.00167
	(!A1 * !A2 * !B2 * Y)	-0.00048	-0.00048	-0.00048
	(!A1 * !A2 * !B2 * Y)	0.00169	0.00172	0.00169
sky130_fd_sc_hs__o22ai_2	(A2 * B2 * !Y)	-0.00243	-0.00244	-0.00242
	(A2 * B2 * !Y)	0.00275	0.00277	0.00275
	(A1 * !A2 * B2 * !Y)	-0.00243	-0.00244	-0.00242
	(A1 * !A2 * B2 * !Y)	0.00275	0.00277	0.00275
	(!A1 * !A2 * B2 * Y)	-0.00078	-0.00078	-0.00078
	(!A1 * !A2 * B2 * Y)	0.00331	0.00335	0.00329
	(!A1 * !A2 * !B2 * Y)	-0.00080	-0.00080	-0.00079
	(!A1 * !A2 * !B2 * Y)	0.00336	0.00341	0.00336
sky130_fd_sc_hs__o22ai_4	(A2 * B2 * !Y)	-0.00519	-0.00520	-0.00520
	(A2 * B2 * !Y)	0.00515	0.00518	0.00519
	(A1 * !A2 * B2 * !Y)	-0.00518	-0.00522	-0.00520
	(A1 * !A2 * B2 * !Y)	0.00515	0.00522	0.00520
	(!A1 * !A2 * B2 * Y)	-0.00143	-0.00145	-0.00147
	(!A1 * !A2 * B2 * Y)	0.00670	0.00678	0.00670
	(!A1 * !A2 * !B2 * Y)	-0.00150	-0.00149	-0.00149
	(!A1 * !A2 * !B2 * Y)	0.00680	0.00681	0.00680

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	0.00140	0.00141	0.00140
	(A2 * B1 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * B1 * !Y)	0.00140	0.00142	0.00140
	(A1 * !A2 * B1 * !Y)	-0.00067	-0.00068	-0.00067
	(!A1 * !A2 * B1 * Y)	0.00038	0.00039	0.00038
	(!A1 * !A2 * B1 * Y)	-0.00161	-0.00166	-0.00165
	(!A1 * !A2 * !B1 * Y)	0.00043	0.00044	0.00040
	(!A1 * !A2 * !B1 * Y)	-0.00159	-0.00161	-0.00167
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	0.00266	0.00271	0.00267
	(A2 * B1 * !Y)	-0.00138	-0.00141	-0.00138
	(A1 * !A2 * B1 * !Y)	0.00265	0.00271	0.00267
	(A1 * !A2 * B1 * !Y)	-0.00138	-0.00141	-0.00138
	(!A1 * !A2 * B1 * Y)	0.00074	0.00074	0.00074
	(!A1 * !A2 * B1 * Y)	-0.00313	-0.00324	-0.00323
	(!A1 * !A2 * !B1 * Y)	0.00084	0.00085	0.00077
	(!A1 * !A2 * !B1 * Y)	-0.00314	-0.00317	-0.00328
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	0.00517	0.00528	0.00519
	(A2 * B1 * !Y)	-0.00270	-0.00276	-0.00271
	(A1 * !A2 * B1 * !Y)	0.00517	0.00528	0.00519
	(A1 * !A2 * B1 * !Y)	-0.00270	-0.00276	-0.00271
	(!A1 * !A2 * B1 * Y)	0.00138	0.00139	0.00138
	(!A1 * !A2 * B1 * Y)	-0.00618	-0.00634	-0.00632
	(!A1 * !A2 * !B1 * Y)	0.00156	0.00156	0.00145
	(!A1 * !A2 * !B1 * Y)	-0.00619	-0.00624	-0.00642

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22ai_1	(A2 * B1 * !Y)	-0.00136	-0.00137	-0.00140
	(A2 * B1 * !Y)	0.00071	0.00071	0.00068
	(A1 * !A2 * B1 * !Y)	-0.00136	-0.00137	-0.00140
	(A1 * !A2 * B1 * !Y)	0.00071	0.00071	0.00068
	(!A1 * !A2 * B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * B1 * Y)	0.00165	0.00166	0.00165
	(!A1 * !A2 * !B1 * Y)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !B1 * Y)	0.00168	0.00170	0.00167
sky130_fd_sc_hs__o22ai_2	(A2 * B1 * !Y)	-0.00252	-0.00255	-0.00265
	(A2 * B1 * !Y)	0.00150	0.00151	0.00141
	(A1 * !A2 * B1 * !Y)	-0.00252	-0.00254	-0.00265
	(A1 * !A2 * B1 * !Y)	0.00150	0.00150	0.00141
	(!A1 * !A2 * B1 * Y)	-0.00074	-0.00074	-0.00074
	(!A1 * !A2 * B1 * Y)	0.00324	0.00324	0.00323
	(!A1 * !A2 * !B1 * Y)	-0.00074	-0.00074	-0.00075
	(!A1 * !A2 * !B1 * Y)	0.00328	0.00328	0.00330
sky130_fd_sc_hs__o22ai_4	(A2 * B1 * !Y)	-0.00497	-0.00500	-0.00517
	(A2 * B1 * !Y)	0.00288	0.00288	0.00276
	(A1 * !A2 * B1 * !Y)	-0.00497	-0.00500	-0.00517
	(A1 * !A2 * B1 * !Y)	0.00287	0.00289	0.00276
	(!A1 * !A2 * B1 * Y)	-0.00138	-0.00137	-0.00138
	(!A1 * !A2 * B1 * Y)	0.00637	0.00637	0.00632
	(!A1 * !A2 * !B1 * Y)	-0.00141	-0.00141	-0.00140
	(!A1 * !A2 * !B1 * Y)	0.00643	0.00645	0.00644

SKY130_FD_SC_HS__O22Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00226	0.00237	0.00246	0.00263	1.21856
sky130_fd_sc_hs__o22a_2	0.00242	0.00248	0.00259	0.00257	2.29721
sky130_fd_sc_hs__o22a_4	0.00474	0.00439	0.00489	0.00461	4.23582

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o22a_1	0.00000	0.04545	0.11629
sky130_fd_sc_hs__o22a_2	0.00000	0.05961	0.11694
sky130_fd_sc_hs__o22a_4	0.00000	0.12001	0.23389

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)	0.07385	0.54576	5.75725
	A2->X (RR)	0.06894	0.53032	5.84011
	B1->X (RR)	0.06743	0.53236	5.68342
	B2->X (RR)	0.06202	0.51378	5.79687
sky130_fd_sc_hs__o22a_2	A1->X (RR)	0.07560	0.47292	5.81912
	A2->X (RR)	0.07009	0.45993	5.86803
	B1->X (RR)	0.06937	0.46762	5.76380
	B2->X (RR)	0.06269	0.44762	5.80259
sky130_fd_sc_hs__o22a_4	A1->X (RR)	0.07952	0.40745	5.77520
	A2->X (RR)	0.07682	0.39323	5.84581
	B1->X (RR)	0.07183	0.39540	5.70332
	B2->X (RR)	0.07037	0.39214	5.83285

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o22a_1	A1->X (FF)	0.13002	0.60370	4.95841
	A2->X (FF)	0.11816	0.58107	4.84753
	B1->X (FF)	0.10141	0.55162	4.85108
	B2->X (FF)	0.08961	0.52874	4.78131
sky130_fd_sc_hs__o22a_2	A1->X (FF)	0.15772	0.62650	5.04111
	A2->X (FF)	0.14512	0.60557	4.89087
	B1->X (FF)	0.12793	0.57498	4.90278
	B2->X (FF)	0.11441	0.55349	4.78376
sky130_fd_sc_hs__o22a_4	A1->X (FF)	0.15297	0.59091	5.00908
	A2->X (FF)	0.13611	0.56401	4.87653
	B1->X (FF)	0.12806	0.54818	4.91181
	B2->X (FF)	0.11280	0.52054	4.79755

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00919	0.00932	0.01717
	A1	0.00365	0.00379	0.01169
	A2	0.00715	0.00732	0.02324
	A2	0.00240	0.00257	0.01852
	B1	0.00804	0.00827	0.01806
	B1	0.00360	0.00385	0.01373
	B2	0.00590	0.00638	0.02377
	B2	0.00241	0.00289	0.02036
sky130_fd_sc_hs__o22a_2	A1	0.01139	0.01178	0.01862
	A1	0.00561	0.00601	0.01292
	A2	0.00932	0.00971	0.02400
	A2	0.00431	0.00470	0.01903
	B1	0.01018	0.01062	0.01872
	B1	0.00488	0.00541	0.01413
	B2	0.00762	0.00818	0.02294
	B2	0.00432	0.00493	0.01984
sky130_fd_sc_hs__o22a_4	A1	0.02265	0.02336	0.03871
	A1	0.01004	0.01080	0.02737
	A2	0.01777	0.01858	0.04923
	A2	0.00864	0.00947	0.04042
	B1	0.02046	0.02141	0.04078
	B1	0.01158	0.01257	0.03228
	B2	0.01757	0.01863	0.04912
	B2	0.00864	0.00989	0.04208

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	A1	0.00336	0.00343	0.01122
	A1	0.00869	0.00878	0.01657
	A2	0.00321	0.00392	0.02021
	A2	0.00805	0.00876	0.02503
	B1	0.00242	0.00249	0.01240
	B1	0.00691	0.00691	0.01608
	B2	0.00199	0.00290	0.02131
	B2	0.00612	0.00693	0.02426
sky130_fd_sc_hs__o22a_2	A1	0.00529	0.00557	0.01278
	A1	0.01100	0.01127	0.01831
	A2	0.00533	0.00639	0.02240
	A2	0.01035	0.01143	0.02670
	B1	0.00419	0.00435	0.01319
	B1	0.00880	0.00891	0.01658
	B2	0.00416	0.00536	0.02225
	B2	0.00810	0.00904	0.02473
sky130_fd_sc_hs__o22a_4	A1	0.01003	0.01048	0.02573
	A1	0.02098	0.02143	0.03638
	A2	0.01034	0.01236	0.04505
	A2	0.01970	0.02131	0.05312
	B1	0.00852	0.00898	0.02722
	B1	0.01749	0.01784	0.03460
	B2	0.00891	0.01080	0.04538
	B2	0.01638	0.01804	0.05051

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00122	0.00109	0.00108
	(A2 * B2 * X)	-0.00113	-0.00127	-0.00127
	(A2 * B1 * !B2 * X)	0.00122	0.00110	0.00108
	(A2 * B1 * !B2 * X)	-0.00113	-0.00127	-0.00127
	(A2 * !B1 * !B2 * !X)	0.00108	0.00109	0.00108
	(A2 * !B1 * !B2 * !X)	-0.00124	-0.00127	-0.00127
	(!A2 * !B1 * !B2 * !X)	0.00100	0.00102	0.00101
	(!A2 * !B1 * !B2 * !X)	-0.00128	-0.00129	-0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00139	0.00127	0.00126
	(A2 * B2 * X)	-0.00111	-0.00125	-0.00125
	(A2 * B1 * !B2 * X)	0.00139	0.00127	0.00126
	(A2 * B1 * !B2 * X)	-0.00111	-0.00125	-0.00125
	(A2 * !B1 * !B2 * !X)	0.00126	0.00127	0.00126
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00125	-0.00125
	(!A2 * !B1 * !B2 * !X)	0.00118	0.00119	0.00119
	(!A2 * !B1 * !B2 * !X)	-0.00126	-0.00127	-0.00126
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00266	0.00244	0.00243
	(A2 * B2 * X)	-0.00213	-0.00240	-0.00241
	(A2 * B1 * !B2 * X)	0.00266	0.00244	0.00243
	(A2 * B1 * !B2 * X)	-0.00213	-0.00240	-0.00241
	(A2 * !B1 * !B2 * !X)	0.00235	0.00237	0.00236
	(A2 * !B1 * !B2 * !X)	-0.00240	-0.00248	-0.00247
	(!A2 * !B1 * !B2 * !X)	0.00226	0.00228	0.00227
	(!A2 * !B1 * !B2 * !X)	-0.00252	-0.00252	-0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00108	-0.00108	-0.00107
	(A2 * B2 * X)	0.00127	0.00127	0.00127
	(A2 * B1 * !B2 * X)	-0.00108	-0.00107	-0.00107
	(A2 * B1 * !B2 * X)	0.00127	0.00127	0.00127
	(A2 * !B1 * !B2 * !X)	-0.00107	-0.00108	-0.00107
	(A2 * !B1 * !B2 * !X)	0.00127	0.00127	0.00127
	(!A2 * !B1 * !B2 * !X)	-0.00095	-0.00102	-0.00101
	(!A2 * !B1 * !B2 * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00125	-0.00125	-0.00125
	(A2 * B2 * X)	0.00125	0.00125	0.00125
	(A2 * B1 * !B2 * X)	-0.00125	-0.00125	-0.00125
	(A2 * B1 * !B2 * X)	0.00125	0.00125	0.00125
	(A2 * !B1 * !B2 * !X)	-0.00125	-0.00126	-0.00125
	(A2 * !B1 * !B2 * !X)	0.00125	0.00125	0.00125
	(!A2 * !B1 * !B2 * !X)	-0.00114	-0.00119	-0.00119
	(!A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00127
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00242	-0.00243	-0.00241
	(A2 * B2 * X)	0.00240	0.00242	0.00241
	(A2 * B1 * !B2 * X)	-0.00242	-0.00243	-0.00241
	(A2 * B1 * !B2 * X)	0.00240	0.00242	0.00241
	(A2 * !B1 * !B2 * !X)	-0.00235	-0.00236	-0.00235
	(A2 * !B1 * !B2 * !X)	0.00247	0.00249	0.00247
	(!A2 * !B1 * !B2 * !X)	-0.00213	-0.00228	-0.00226
	(!A2 * !B1 * !B2 * !X)	0.00254	0.00254	0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	0.00119	0.00121	0.00120
	(A1 * B2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * B1 * !B2 * X)	0.00120	0.00121	0.00120
	(A1 * B1 * !B2 * X)	-0.00065	-0.00066	-0.00065
	(A1 * !B1 * !B2 * !X)	0.00104	0.00105	0.00104
	(A1 * !B1 * !B2 * !X)	-0.00124	-0.00126	-0.00126
	(!A1 * !B1 * !B2 * !X)	0.00097	0.00099	0.00098
	(!A1 * !B1 * !B2 * !X)	-0.00128	-0.00129	-0.00128
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	0.00129	0.00130	0.00129
	(A1 * B2 * X)	-0.00066	-0.00066	-0.00066
	(A1 * B1 * !B2 * X)	0.00129	0.00130	0.00129
	(A1 * B1 * !B2 * X)	-0.00066	-0.00066	-0.00066
	(A1 * !B1 * !B2 * !X)	0.00120	0.00121	0.00121
	(A1 * !B1 * !B2 * !X)	-0.00118	-0.00121	-0.00120
	(!A1 * !B1 * !B2 * !X)	0.00114	0.00114	0.00114
	(!A1 * !B1 * !B2 * !X)	-0.00122	-0.00122	-0.00122
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	0.00226	0.00228	0.00226
	(A1 * B2 * X)	-0.00130	-0.00131	-0.00130
	(A1 * B1 * !B2 * X)	0.00227	0.00228	0.00226
	(A1 * B1 * !B2 * X)	-0.00131	-0.00131	-0.00130
	(A1 * !B1 * !B2 * !X)	0.00201	0.00203	0.00201
	(A1 * !B1 * !B2 * !X)	-0.00240	-0.00248	-0.00246
	(!A1 * !B1 * !B2 * !X)	0.00189	0.00190	0.00188
	(!A1 * !B1 * !B2 * !X)	-0.00252	-0.00253	-0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A1 * B2 * X)	-0.00116	-0.00116	-0.00119
	(A1 * B2 * X)	0.00069	0.00069	0.00066
	(A1 * B1 * !B2 * X)	-0.00116	-0.00116	-0.00119
	(A1 * B1 * !B2 * X)	0.00069	0.00069	0.00066
	(A1 * !B1 * !B2 * !X)	-0.00104	-0.00104	-0.00104
	(A1 * !B1 * !B2 * !X)	0.00126	0.00126	0.00126
	(!A1 * !B1 * !B2 * !X)	-0.00092	-0.00099	-0.00098
	(!A1 * !B1 * !B2 * !X)	0.00130	0.00130	0.00129
sky130_fd_sc_hs__o22a_2	(A1 * B2 * X)	-0.00125	-0.00126	-0.00129
	(A1 * B2 * X)	0.00070	0.00070	0.00067
	(A1 * B1 * !B2 * X)	-0.00125	-0.00126	-0.00129
	(A1 * B1 * !B2 * X)	0.00070	0.00070	0.00067
	(A1 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !B1 * !B2 * !X)	0.00120	0.00121	0.00120
	(!A1 * !B1 * !B2 * !X)	-0.00109	-0.00114	-0.00114
	(!A1 * !B1 * !B2 * !X)	0.00123	0.00123	0.00123
sky130_fd_sc_hs__o22a_4	(A1 * B2 * X)	-0.00216	-0.00218	-0.00225
	(A1 * B2 * X)	0.00138	0.00139	0.00132
	(A1 * B1 * !B2 * X)	-0.00216	-0.00218	-0.00225
	(A1 * B1 * !B2 * X)	0.00139	0.00139	0.00132
	(A1 * !B1 * !B2 * !X)	-0.00201	-0.00202	-0.00201
	(A1 * !B1 * !B2 * !X)	0.00246	0.00248	0.00246
	(!A1 * !B1 * !B2 * !X)	-0.00177	-0.00190	-0.00188
	(!A1 * !B1 * !B2 * !X)	0.00254	0.00254	0.00252

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	0.00128	0.00116	0.00115
	(A2 * B2 * X)	-0.00115	-0.00130	-0.00130
	(A1 * !A2 * B2 * X)	0.00128	0.00116	0.00115
	(A1 * !A2 * B2 * X)	-0.00115	-0.00130	-0.00130
	(!A1 * !A2 * B2 * !X)	0.00032	0.00033	0.00032
	(!A1 * !A2 * B2 * !X)	-0.00161	-0.00165	-0.00164
	(!A1 * !A2 * !B2 * !X)	0.00036	0.00036	0.00034
	(!A1 * !A2 * !B2 * !X)	-0.00160	-0.00160	-0.00165
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	0.00146	0.00134	0.00132
	(A2 * B2 * X)	-0.00106	-0.00121	-0.00121
	(A1 * !A2 * B2 * X)	0.00146	0.00134	0.00132
	(A1 * !A2 * B2 * X)	-0.00106	-0.00121	-0.00121
	(!A1 * !A2 * B2 * !X)	0.00039	0.00039	0.00039
	(!A1 * !A2 * B2 * !X)	-0.00156	-0.00160	-0.00159
	(!A1 * !A2 * !B2 * !X)	0.00044	0.00044	0.00041
	(!A1 * !A2 * !B2 * !X)	-0.00154	-0.00154	-0.00160
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	0.00280	0.00257	0.00255
	(A2 * B2 * X)	-0.00210	-0.00239	-0.00240
	(A1 * !A2 * B2 * X)	0.00280	0.00257	0.00255
	(A1 * !A2 * B2 * X)	-0.00210	-0.00239	-0.00240
	(!A1 * !A2 * B2 * !X)	0.00102	0.00103	0.00102
	(!A1 * !A2 * B2 * !X)	-0.00286	-0.00293	-0.00294
	(!A1 * !A2 * !B2 * !X)	0.00109	0.00110	0.00105
	(!A1 * !A2 * !B2 * !X)	-0.00286	-0.00289	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B2 * X)	-0.00114	-0.00115	-0.00114
	(A2 * B2 * X)	0.00129	0.00130	0.00130
	(A1 * !A2 * B2 * X)	-0.00114	-0.00114	-0.00114
	(A1 * !A2 * B2 * X)	0.00129	0.00130	0.00130
	(!A1 * !A2 * B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1 * !A2 * B2 * !X)	0.00164	0.00165	0.00164
	(!A1 * !A2 * !B2 * !X)	-0.00033	-0.00033	-0.00033
	(!A1 * !A2 * !B2 * !X)	0.00166	0.00168	0.00166
sky130_fd_sc_hs__o22a_2	(A2 * B2 * X)	-0.00132	-0.00132	-0.00132
	(A2 * B2 * X)	0.00120	0.00121	0.00121
	(A1 * !A2 * B2 * X)	-0.00131	-0.00132	-0.00132
	(A1 * !A2 * B2 * X)	0.00120	0.00121	0.00121
	(!A1 * !A2 * B2 * !X)	-0.00038	-0.00039	-0.00039
	(!A1 * !A2 * B2 * !X)	0.00159	0.00160	0.00159
	(!A1 * !A2 * !B2 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * !B2 * !X)	0.00161	0.00163	0.00161
sky130_fd_sc_hs__o22a_4	(A2 * B2 * X)	-0.00254	-0.00255	-0.00254
	(A2 * B2 * X)	0.00239	0.00242	0.00240
	(A1 * !A2 * B2 * X)	-0.00254	-0.00255	-0.00254
	(A1 * !A2 * B2 * X)	0.00239	0.00242	0.00240
	(!A1 * !A2 * B2 * !X)	-0.00101	-0.00102	-0.00102
	(!A1 * !A2 * B2 * !X)	0.00296	0.00299	0.00294
	(!A1 * !A2 * !B2 * !X)	-0.00102	-0.00104	-0.00103
	(!A1 * !A2 * !B2 * !X)	0.00296	0.00299	0.00298

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	0.00156	0.00158	0.00155
	(A2 * B1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * !A2 * B1 * X)	0.00156	0.00158	0.00155
	(A1 * !A2 * B1 * X)	-0.00064	-0.00064	-0.00063
	(!A1 * !A2 * B1 * !X)	0.00067	0.00067	0.00067
	(!A1 * !A2 * B1 * !X)	-0.00142	-0.00145	-0.00145
	(!A1 * !A2 * !B1 * !X)	0.00071	0.00071	0.00068
	(!A1 * !A2 * !B1 * !X)	-0.00141	-0.00142	-0.00146
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	0.00133	0.00134	0.00133
	(A2 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * B1 * X)	0.00133	0.00134	0.00133
	(A1 * !A2 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * B1 * !X)	0.00038	0.00038	0.00038
	(!A1 * !A2 * B1 * !X)	-0.00147	-0.00150	-0.00150
	(!A1 * !A2 * !B1 * !X)	0.00043	0.00043	0.00039
	(!A1 * !A2 * !B1 * !X)	-0.00144	-0.00146	-0.00151
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	0.00238	0.00241	0.00239
	(A2 * B1 * X)	-0.00129	-0.00130	-0.00128
	(A1 * !A2 * B1 * X)	0.00238	0.00241	0.00239
	(A1 * !A2 * B1 * X)	-0.00129	-0.00130	-0.00128
	(!A1 * !A2 * B1 * !X)	0.00059	0.00060	0.00060
	(!A1 * !A2 * B1 * !X)	-0.00292	-0.00301	-0.00299
	(!A1 * !A2 * !B1 * !X)	0.00067	0.00067	0.00062
	(!A1 * !A2 * !B1 * !X)	-0.00293	-0.00295	-0.00303

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o22a_1	(A2 * B1 * X)	-0.00152	-0.00153	-0.00155
	(A2 * B1 * X)	0.00066	0.00067	0.00064
	(A1 * !A2 * B1 * X)	-0.00151	-0.00152	-0.00155
	(A1 * !A2 * B1 * X)	0.00066	0.00066	0.00064
	(!A1 * !A2 * B1 * !X)	-0.00065	-0.00066	-0.00066
	(!A1 * !A2 * B1 * !X)	0.00148	0.00148	0.00145
	(!A1 * !A2 * !B1 * !X)	-0.00068	-0.00068	-0.00067
	(!A1 * !A2 * !B1 * !X)	0.00147	0.00147	0.00147
sky130_fd_sc_hs__o22a_2	(A2 * B1 * X)	-0.00129	-0.00130	-0.00132
	(A2 * B1 * X)	0.00067	0.00067	0.00065
	(A1 * !A2 * B1 * X)	-0.00129	-0.00130	-0.00132
	(A1 * !A2 * B1 * X)	0.00067	0.00068	0.00065
	(!A1 * !A2 * B1 * !X)	-0.00037	-0.00038	-0.00038
	(!A1 * !A2 * B1 * !X)	0.00151	0.00152	0.00150
	(!A1 * !A2 * !B1 * !X)	-0.00038	-0.00039	-0.00038
	(!A1 * !A2 * !B1 * !X)	0.00152	0.00154	0.00152
sky130_fd_sc_hs__o22a_4	(A2 * B1 * X)	-0.00230	-0.00231	-0.00238
	(A2 * B1 * X)	0.00137	0.00138	0.00131
	(A1 * !A2 * B1 * X)	-0.00230	-0.00231	-0.00238
	(A1 * !A2 * B1 * X)	0.00137	0.00138	0.00131
	(!A1 * !A2 * B1 * !X)	-0.00058	-0.00059	-0.00059
	(!A1 * !A2 * B1 * !X)	0.00303	0.00304	0.00299
	(!A1 * !A2 * !B1 * !X)	-0.00061	-0.00062	-0.00060
	(!A1 * !A2 * !B1 * !X)	0.00305	0.00309	0.00304

SKY130_FD_SC_HS__O2BB2AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00213	0.00233	0.00255	0.00271	0.58058
sky130_fd_sc_hs__o2bb2ai_2	0.00487	0.00426	0.00519	0.00481	1.14061
sky130_fd_sc_hs__o2bb2ai_4	0.00983	0.00994	0.00963	0.00994	1.94962

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o2bb2ai_1	0.00000	0.14204	0.45790
sky130_fd_sc_hs__o2bb2ai_2	0.00000	0.28408	0.91579
sky130_fd_sc_hs__o2bb2ai_4	0.00000	0.17469	0.26200

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)	0.05710	0.35181	2.53248
	A2_N->Y (RR)	0.05453	0.33914	2.48743
	B1->Y (FR)	0.08601	0.98922	11.36730
	B2->Y (FR)	0.07430	0.95761	11.16570
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (RR)	0.05137	0.28074	2.51373
	A2_N->Y (RR)	0.04740	0.26581	2.52517
	B1->Y (FR)	0.07631	0.84488	11.33310
	B2->Y (FR)	0.06137	0.80864	11.12480
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (RR)	0.05742	0.23833	2.20617
	A2_N->Y (RR)	0.05358	0.23214	2.21638
	B1->Y (FR)	0.08384	0.75676	11.20450
	B2->Y (FR)	0.06743	0.73414	11.14530

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)	0.08278	0.48884	4.02992
	A2_N->Y (FF)	0.07286	0.46375	4.03929
	B1->Y (RF)	0.02959	0.34412	3.84815
	B2->Y (RF)	0.02475	0.33338	3.79778
sky130_fd_sc_hs__o2bb2ai_2	A1_N->Y (FF)	0.07205	0.44106	4.04280
	A2_N->Y (FF)	0.06734	0.42561	4.09927
	B1->Y (RF)	0.02565	0.28332	3.76148
	B2->Y (RF)	0.02256	0.27720	3.78038
sky130_fd_sc_hs__o2bb2ai_4	A1_N->Y (FF)	0.07739	0.44276	4.23828
	A2_N->Y (FF)	0.06607	0.41085	4.18752
	B1->Y (RF)	0.02999	0.24530	3.68156
	B2->Y (RF)	0.02326	0.23051	3.59821

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	0.00617	0.00673	0.02949
	A1_N	0.00350	0.00407	0.02683
	A2_N	0.00548	0.00610	0.02731
	A2_N	0.00350	0.00416	0.02537
	B1	0.00031	0.00020	0.00108
	B1	0.00421	0.00411	0.00498
	B2	0.00029	0.00050	0.00378
	B2	0.00359	0.00382	0.00709
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.01134	0.01225	0.05315
	A1_N	0.00554	0.00646	0.04782
	A2_N	0.00961	0.01123	0.05898
	A2_N	0.00580	0.00747	0.05573
	B1	0.00039	0.00018	0.00193
	B1	0.00819	0.00797	0.00971
	B2	0.00039	0.00104	0.00705
	B2	0.00642	0.00680	0.01310
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.02467	0.02546	0.08490
	A1_N	0.01232	0.01325	0.07266
	A2_N	0.02107	0.02244	0.08501
	A2_N	0.01228	0.01373	0.07629
	B1	0.00047	0.00004	0.00345
	B1	0.01604	0.01560	0.01902
	B2	0.00031	0.00143	0.01354
	B2	0.01301	0.01416	0.02629

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2ai_1	A1_N	0.00451	0.00596	0.02918
	A1_N	0.00717	0.00860	0.03174
	A2_N	0.00420	0.00562	0.02977
	A2_N	0.00625	0.00766	0.03176
	B1	0.00570	0.00564	0.00622
	B1	0.00180	0.00171	0.00233
	B2	0.00442	0.00442	0.00518
	B2	0.00108	0.00105	0.00167
sky130_fd_sc_hs__o2bb2ai_2	A1_N	0.00817	0.01052	0.05591
	A1_N	0.01402	0.01629	0.06171
	A2_N	0.00769	0.01026	0.05719
	A2_N	0.01159	0.01415	0.06108
	B1	0.01109	0.01089	0.01216
	B1	0.00331	0.00308	0.00434
	B2	0.00800	0.00796	0.00956
	B2	0.00189	0.00186	0.00315
sky130_fd_sc_hs__o2bb2ai_4	A1_N	0.01793	0.02164	0.08430
	A1_N	0.03045	0.03410	0.09634
	A2_N	0.01600	0.01881	0.08473
	A2_N	0.02519	0.02797	0.09391
	B1	0.02302	0.02253	0.02547
	B1	0.00746	0.00697	0.00963
	B2	0.01685	0.01675	0.02000
	B2	0.00394	0.00379	0.00666

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)	0.00530	0.00572	0.02863
	(A2_N * !B1 * !B2 * Y)	0.00176	0.00217	0.02510
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00105	0.00106	0.00105
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00108	-0.00109	-0.00108
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.01033	0.01111	0.05647
	(A2_N * !B1 * !B2 * Y)	0.00273	0.00348	0.04887
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00206	0.00208	0.00207
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00265	-0.00267	-0.00266
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.02253	0.02261	0.08272
	(A2_N * !B1 * !B2 * Y)	0.00635	0.00636	0.06651
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00457	0.00461	0.00459
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00550	-0.00553	-0.00551

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)	0.00030	0.00145	0.02478
	(A2_N * !B1 * !B2 * Y)	0.00385	0.00501	0.02831
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00100	-0.00106	-0.00105
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00113	0.00110	0.00109
sky130_fd_sc_hs__o2bb2ai_2	(A2_N * !B1 * !B2 * Y)	0.00044	0.00254	0.04870
	(A2_N * !B1 * !B2 * Y)	0.00810	0.01020	0.05629
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00195	-0.00207	-0.00207
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00271	0.00269	0.00267
sky130_fd_sc_hs__o2bb2ai_4	(A2_N * !B1 * !B2 * Y)	0.00127	0.00344	0.06664
	(A2_N * !B1 * !B2 * Y)	0.01754	0.01977	0.08283
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	-0.00432	-0.00459	-0.00459
	(!A2_N * B1 * !Y) + (!A2_N * !B1 * B2 * !Y) + (!A2_N * !B1 * !B2 * Y)	0.00564	0.00559	0.00553

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)	0.00470	0.00537	0.03047
	(A1_N * !B1 * !B2 * Y)	0.00177	0.00242	0.02753
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00036	0.00036	0.00035
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00138	-0.00139	-0.00139
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	0.00870	0.01014	0.05758
	(A1_N * !B1 * !B2 * Y)	0.00301	0.00442	0.05189
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00068	0.00068	0.00066
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00258	-0.00257	-0.00262
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	0.01920	0.02005	0.08576
	(A1_N * !B1 * !B2 * Y)	0.00631	0.00709	0.07281
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00153	0.00154	0.00147
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00648	-0.00651	-0.00662

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)	0.00001	0.00115	0.02611
	(A1_N * !B1 * !B2 * Y)	0.00295	0.00411	0.02906
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00035	-0.00035	-0.00035
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00139	0.00142	0.00140
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * !B1 * !B2 * Y)	-0.00017	0.00199	0.04923
	(A1_N * !B1 * !B2 * Y)	0.00556	0.00774	0.05495
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00065	-0.00066	-0.00064
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00263	0.00266	0.00262
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * !B1 * !B2 * Y)	-0.00072	0.00149	0.06820
	(A1_N * !B1 * !B2 * Y)	0.01229	0.01455	0.08119
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	-0.00143	-0.00146	-0.00143
	(!A1_N * B1 * !Y) + (!A1_N * !B1 * B2 * !Y) + (!A1_N * !B1 * !B2 * Y)	0.00661	0.00675	0.00664

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)	0.00126	0.00127	0.00126
	(A1_N * A2_N * B2 * Y)	-0.00133	-0.00137	-0.00137
	(A1_N * A2_N * !B2 * Y)	0.00122	0.00123	0.00122
	(A1_N * A2_N * !B2 * Y)	-0.00137	-0.00138	-0.00138
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00139	0.00128	0.00126
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00122	-0.00136	-0.00136
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	0.00250	0.00253	0.00250
	(A1_N * A2_N * B2 * Y)	-0.00271	-0.00280	-0.00280
	(A1_N * A2_N * !B2 * Y)	0.00242	0.00246	0.00243
	(A1_N * A2_N * !B2 * Y)	-0.00282	-0.00284	-0.00282
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00280	0.00257	0.00253
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00245	-0.00276	-0.00276
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	0.00484	0.00489	0.00483
	(A1_N * A2_N * B2 * Y)	-0.00528	-0.00546	-0.00542
	(A1_N * A2_N * !B2 * Y)	0.00465	0.00470	0.00465
	(A1_N * A2_N * !B2 * Y)	-0.00552	-0.00555	-0.00552
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00546	0.00492	0.00483
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00473	-0.00543	-0.00542

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)	-0.00125	-0.00125	-0.00125
	(A1_N * A2_N * B2 * Y)	0.00137	0.00137	0.00137
	(A1_N * A2_N * !B2 * Y)	-0.00116	-0.00122	-0.00121
	(A1_N * A2_N * !B2 * Y)	0.00138	0.00140	0.00139
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00125	-0.00126	-0.00125
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00135	0.00136	0.00136
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B2 * Y)	-0.00247	-0.00249	-0.00248
	(A1_N * A2_N * B2 * Y)	0.00278	0.00282	0.00280
	(A1_N * A2_N * !B2 * Y)	-0.00235	-0.00242	-0.00242
	(A1_N * A2_N * !B2 * Y)	0.00286	0.00287	0.00285
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00252	-0.00254	-0.00252
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00274	0.00278	0.00276
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B2 * Y)	-0.00479	-0.00484	-0.00481
	(A1_N * A2_N * B2 * Y)	0.00538	0.00546	0.00542
	(A1_N * A2_N * !B2 * Y)	-0.00445	-0.00464	-0.00465
	(A1_N * A2_N * !B2 * Y)	0.00555	0.00555	0.00554
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	-0.00479	-0.00484	-0.00481
	(A1_N * !A2_N * B2 * !Y) + (!A1_N * B2 * !Y)	0.00537	0.00546	0.00542

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)	0.00131	0.00132	0.00131
	(A1_N * A2_N * B1 * Y)	-0.00134	-0.00138	-0.00138
	(A1_N * A2_N * !B1 * Y)	0.00127	0.00128	0.00127
	(A1_N * A2_N * !B1 * Y)	-0.00139	-0.00139	-0.00139
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00140	0.00141	0.00140
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00077	-0.00078	-0.00077
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	0.00233	0.00234	0.00233
	(A1_N * A2_N * B1 * Y)	-0.00250	-0.00259	-0.00259
	(A1_N * A2_N * !B1 * Y)	0.00226	0.00227	0.00226
	(A1_N * A2_N * !B1 * Y)	-0.00262	-0.00263	-0.00262
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00254	0.00255	0.00253
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00136	-0.00136	-0.00135
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	0.00482	0.00485	0.00483
	(A1_N * A2_N * B1 * Y)	-0.00529	-0.00550	-0.00547
	(A1_N * A2_N * !B1 * Y)	0.00465	0.00467	0.00465
	(A1_N * A2_N * !B1 * Y)	-0.00557	-0.00558	-0.00556
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00549	0.00553	0.00548
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00281	-0.00281	-0.00278

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)	-0.00130	-0.00130	-0.00130
	(A1_N * A2_N * B1 * Y)	0.00138	0.00138	0.00138
	(A1_N * A2_N * !B1 * Y)	-0.00122	-0.00127	-0.00126
	(A1_N * A2_N * !B1 * Y)	0.00141	0.00141	0.00140
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00135	-0.00136	-0.00139
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00081	0.00081	0.00078
sky130_fd_sc_hs__o2bb2ai_2	(A1_N * A2_N * B1 * Y)	-0.00230	-0.00232	-0.00231
	(A1_N * A2_N * B1 * Y)	0.00257	0.00261	0.00259
	(A1_N * A2_N * !B1 * Y)	-0.00218	-0.00225	-0.00225
	(A1_N * A2_N * !B1 * Y)	0.00265	0.00266	0.00264
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00241	-0.00244	-0.00251
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00143	0.00145	0.00138
sky130_fd_sc_hs__o2bb2ai_4	(A1_N * A2_N * B1 * Y)	-0.00482	-0.00484	-0.00481
	(A1_N * A2_N * B1 * Y)	0.00547	0.00551	0.00547
	(A1_N * A2_N * !B1 * Y)	-0.00445	-0.00466	-0.00465
	(A1_N * A2_N * !B1 * Y)	0.00559	0.00562	0.00559
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	-0.00522	-0.00528	-0.00544
	(A1_N * !A2_N * B1 * !Y) + (!A1_N * B1 * !Y)	0.00298	0.00301	0.00284

SKY130_FD_SC_HS__O2BB2Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage 1.56, 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	0.00212	0.00227	0.00227	0.00248	1.16445
sky130_fd_sc_hs__o2bb2a_2	0.00213	0.00236	0.00243	0.00252	2.12173
sky130_fd_sc_hs__o2bb2a_4	0.00212	0.00229	0.00454	0.00449	4.26025

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o2bb2a_1	0.00000	0.27367	0.49095
sky130_fd_sc_hs__o2bb2a_2	0.00000	0.19187	0.52274
sky130_fd_sc_hs__o2bb2a_4	0.00000	0.46155	0.58950

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)	0.11810	0.77184	8.49669
	A2_N->X (FR)	0.10839	0.74486	8.40971
	B1->X (RR)	0.06909	0.53270	5.69702
	B2->X (RR)	0.06228	0.51596	5.78581
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (FR)	0.12976	0.70223	8.48125
	A2_N->X (FR)	0.11825	0.67411	8.38819
	B1->X (RR)	0.07191	0.46089	5.70785
	B2->X (RR)	0.06406	0.44630	5.75355
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (FR)	0.15189	0.66453	8.56538
	A2_N->X (FR)	0.14129	0.64047	8.47299
	B1->X (RR)	0.08250	0.39734	5.72655
	B2->X (RR)	0.07248	0.37661	5.78518

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)	0.09008	0.27056	1.42375
	A2_N->X (RF)	0.08771	0.25897	1.44239
	B1->X (FF)	0.12397	0.57418	4.78495
	B2->X (FF)	0.11321	0.55019	4.66035
sky130_fd_sc_hs__o2bb2a_2	A1_N->X (RF)	0.10244	0.25516	1.28104
	A2_N->X (RF)	0.10018	0.24294	1.27490
	B1->X (FF)	0.15222	0.60019	4.77042
	B2->X (FF)	0.14063	0.57966	4.61222
sky130_fd_sc_hs__o2bb2a_4	A1_N->X (RF)	0.11504	0.27692	1.57560
	A2_N->X (RF)	0.11264	0.26730	1.56526
	B1->X (FF)	0.15712	0.58225	4.94049
	B2->X (FF)	0.13843	0.55233	4.80004

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	0.00664	0.00821	0.03303
	A1_N	0.00918	0.01075	0.03556
	A2_N	0.00629	0.00796	0.03367
	A2_N	0.00746	0.00914	0.03700
	B1	0.00765	0.00781	0.01615
	B1	0.00398	0.00414	0.01257
	B2	0.00657	0.00678	0.02277
	B2	0.00336	0.00358	0.01961
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.00902	0.01059	0.03501
	A1_N	0.01162	0.01320	0.03760
	A2_N	0.00853	0.01044	0.03489
	A2_N	0.00982	0.01150	0.03956
	B1	0.01010	0.01048	0.01774
	B1	0.00619	0.00658	0.01402
	B2	0.00896	0.00932	0.02381
	B2	0.00555	0.00593	0.02055
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01748	0.01977	0.04661
	A1_N	0.01915	0.02147	0.04828
	A2_N	0.01711	0.01911	0.04462
	A2_N	0.01811	0.02014	0.04583
	B1	0.01979	0.02045	0.03612
	B1	0.01238	0.01305	0.02908
	B2	0.01656	0.01736	0.04682
	B2	0.01053	0.01136	0.04102

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o2bb2a_1	A1_N	0.00874	0.00911	0.03135
	A1_N	0.00624	0.00657	0.02862
	A2_N	0.00802	0.00867	0.03414
	A2_N	0.00623	0.00681	0.03204
	B1	0.00318	0.00334	0.01190
	B1	0.00681	0.00696	0.01489
	B2	0.00315	0.00392	0.02077
	B2	0.00631	0.00707	0.02357
sky130_fd_sc_hs__o2bb2a_2	A1_N	0.01098	0.01153	0.03220
	A1_N	0.00843	0.00893	0.02955
	A2_N	0.01039	0.01102	0.03453
	A2_N	0.00842	0.00904	0.03254
	B1	0.00516	0.00547	0.01337
	B1	0.00904	0.00932	0.01648
	B2	0.00516	0.00632	0.02179
	B2	0.00850	0.00962	0.02507
sky130_fd_sc_hs__o2bb2a_4	A1_N	0.01685	0.01777	0.03855
	A1_N	0.01521	0.01611	0.03681
	A2_N	0.01603	0.01716	0.04262
	A2_N	0.01523	0.01627	0.04064
	B1	0.00991	0.01038	0.02514
	B1	0.01729	0.01767	0.03217
	B2	0.00999	0.01182	0.04370
	B2	0.01591	0.01737	0.04816

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)	0.00478	0.00527	0.02841
	(A2_N * !B1 * !B2 * !X)	0.00130	0.00175	0.02491
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00110	0.00111	0.00111
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00105	-0.00105	-0.00105
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00504	0.00548	0.02801
	(A2_N * !B1 * !B2 * !X)	0.00146	0.00187	0.02441
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00116	0.00117	0.00117
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00102	-0.00103	-0.00102
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00597	0.00627	0.02822
	(A2_N * !B1 * !B2 * !X)	0.00236	0.00265	0.02460
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00116	0.00117	0.00116
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00100	-0.00101	-0.00100

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)	0.00031	0.00145	0.02500
	(A2_N * !B1 * !B2 * !X)	0.00383	0.00497	0.02849
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00105	-0.00111	-0.00111
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00110	0.00107	0.00106
sky130_fd_sc_hs__o2bb2a_2	(A2_N * !B1 * !B2 * !X)	0.00032	0.00140	0.02437
	(A2_N * !B1 * !B2 * !X)	0.00394	0.00503	0.02796
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00111	-0.00117	-0.00117
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00107	0.00104	0.00103
sky130_fd_sc_hs__o2bb2a_4	(A2_N * !B1 * !B2 * !X)	0.00076	0.00178	0.02430
	(A2_N * !B1 * !B2 * !X)	0.00440	0.00544	0.02791
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	-0.00110	-0.00115	-0.00116
	(!A2_N * B1 * X) + (!A2_N * !B1 * B2 * X) + (!A2_N * !B1 * !B2 * !X)	0.00106	0.00102	0.00101

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)	0.00424	0.00497	0.03015
	(A1_N * !B1 * !B2 * !X)	0.00141	0.00213	0.02732
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00034	0.00033	0.00033
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00135	-0.00135	-0.00137
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	0.00457	0.00529	0.02977
	(A1_N * !B1 * !B2 * !X)	0.00158	0.00229	0.02678
	(!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)	-0.00138	-0.00138	-0.00140
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00545	0.00593	0.03002
	(A1_N * !B1 * !B2 * !X)	0.00251	0.00297	0.02706
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00036	0.00036	0.00035
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00134	-0.00134	-0.00136

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)	-0.00003	0.00115	0.02627
	(A1_N * !B1 * !B2 * !X)	0.00282	0.00401	0.02911
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00032	-0.00032	-0.00032
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00137	0.00140	0.00138
sky130_fd_sc_hs__o2bb2a_2	(A1_N * !B1 * !B2 * !X)	-0.00006	0.00105	0.02551
	(A1_N * !B1 * !B2 * !X)	0.00294	0.00407	0.02852
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00038	-0.00039	-0.00038
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00140	0.00142	0.00140
sky130_fd_sc_hs__o2bb2a_4	(A1_N * !B1 * !B2 * !X)	0.00044	0.00140	0.02534
	(A1_N * !B1 * !B2 * !X)	0.00342	0.00439	0.02831
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	-0.00034	-0.00035	-0.00034
	(!A1_N * B1 * X) + (!A1_N * !B1 * B2 * X) + (!A1_N * !B1 * !B2 * !X)	0.00136	0.00139	0.00137

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)	0.00111	0.00112	0.00111
	(A1_N * A2_N * B2 * !X)	-0.00120	-0.00123	-0.00123
	(A1_N * A2_N * !B2 * !X)	0.00107	0.00108	0.00107
	(A1_N * A2_N * !B2 * !X)	-0.00124	-0.00124	-0.00124
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00125	0.00113	0.00111
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00108	-0.00123	-0.00123
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	0.00124	0.00126	0.00124
	(A1_N * A2_N * B2 * !X)	-0.00124	-0.00127	-0.00127
	(A1_N * A2_N * !B2 * !X)	0.00120	0.00121	0.00120
	(A1_N * A2_N * !B2 * !X)	-0.00127	-0.00128	-0.00128
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00138	0.00126	0.00124
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00112	-0.00127	-0.00127
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	0.00223	0.00226	0.00224
	(A1_N * A2_N * B2 * !X)	-0.00244	-0.00254	-0.00253
	(A1_N * A2_N * !B2 * !X)	0.00214	0.00217	0.00215
	(A1_N * A2_N * !B2 * !X)	-0.00256	-0.00258	-0.00257
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00255	0.00228	0.00224
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00215	-0.00252	-0.00252

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)	-0.00110	-0.00110	-0.00110
	(A1_N * A2_N * B2 * !X)	0.00123	0.00124	0.00123
	(A1_N * A2_N * !B2 * !X)	-0.00102	-0.00108	-0.00107
	(A1_N * A2_N * !B2 * !X)	0.00125	0.00126	0.00125
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00110	-0.00110	-0.00110
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00122	0.00123	0.00123
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B2 * !X)	-0.00123	-0.00123	-0.00123
	(A1_N * A2_N * B2 * !X)	0.00127	0.00127	0.00127
	(A1_N * A2_N * !B2 * !X)	-0.00115	-0.00121	-0.00120
	(A1_N * A2_N * !B2 * !X)	0.00128	0.00130	0.00129
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00123	-0.00123	-0.00123
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00126	0.00127	0.00127
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B2 * !X)	-0.00222	-0.00223	-0.00222
	(A1_N * A2_N * B2 * !X)	0.00253	0.00254	0.00253
	(A1_N * A2_N * !B2 * !X)	-0.00204	-0.00215	-0.00215
	(A1_N * A2_N * !B2 * !X)	0.00260	0.00260	0.00259
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	-0.00223	-0.00223	-0.00222
	(A1_N * !A2_N * B2 * X) + (!A1_N * B2 * X)	0.00252	0.00253	0.00252

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)	0.00119	0.00119	0.00119
	(A1_N * A2_N * B1 * !X)	-0.00123	-0.00126	-0.00126
	(A1_N * A2_N * !B1 * !X)	0.00114	0.00115	0.00114
	(A1_N * A2_N * !B1 * !X)	-0.00127	-0.00127	-0.00127
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00126	0.00128	0.00127
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00071	-0.00072	-0.00071
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	0.00133	0.00134	0.00133
	(A1_N * A2_N * B1 * !X)	-0.00119	-0.00122	-0.00123
	(A1_N * A2_N * !B1 * !X)	0.00130	0.00130	0.00130
	(A1_N * A2_N * !B1 * !X)	-0.00124	-0.00124	-0.00124
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00132	0.00134	0.00133
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00077	-0.00077	-0.00077
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	0.00216	0.00217	0.00216
	(A1_N * A2_N * B1 * !X)	-0.00242	-0.00251	-0.00251
	(A1_N * A2_N * !B1 * !X)	0.00211	0.00212	0.00211
	(A1_N * A2_N * !B1 * !X)	-0.00255	-0.00256	-0.00255
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00237	0.00239	0.00237
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00138	-0.00139	-0.00138

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)	-0.00118	-0.00118	-0.00118
	(A1_N * A2_N * B1 * !X)	0.00126	0.00126	0.00126
	(A1_N * A2_N * !B1 * !X)	-0.00110	-0.00115	-0.00114
	(A1_N * A2_N * !B1 * !X)	0.00130	0.00129	0.00128
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00122	-0.00123	-0.00126
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00075	0.00075	0.00073
sky130_fd_sc_hs__o2bb2a_2	(A1_N * A2_N * B1 * !X)	-0.00132	-0.00133	-0.00132
	(A1_N * A2_N * B1 * !X)	0.00123	0.00123	0.00123
	(A1_N * A2_N * !B1 * !X)	-0.00125	-0.00130	-0.00129
	(A1_N * A2_N * !B1 * !X)	0.00125	0.00126	0.00125
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00129	-0.00129	-0.00132
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00080	0.00081	0.00078
sky130_fd_sc_hs__o2bb2a_4	(A1_N * A2_N * B1 * !X)	-0.00214	-0.00216	-0.00215
	(A1_N * A2_N * B1 * !X)	0.00250	0.00252	0.00251
	(A1_N * A2_N * !B1 * !X)	-0.00199	-0.00209	-0.00209
	(A1_N * A2_N * !B1 * !X)	0.00257	0.00258	0.00256
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	-0.00223	-0.00225	-0.00235
	(A1_N * !A2_N * B1 * X) + (!A1_N * B1 * X)	0.00151	0.00151	0.00142

SKY130_FD_SC_HS__O311AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00247	0.00262	0.00255	0.00264	0.00271	0.38278
sky130_fd_sc_hs__o311ai_2	0.00482	0.00496	0.00504	0.00504	0.00513	0.66266
sky130_fd_sc_hs__o311ai_4	0.00948	0.00953	0.01003	0.00776	0.00733	1.26002

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311ai_1	0.00000	0.01635	0.09726
sky130_fd_sc_hs__o311ai_2	0.00000	0.03270	0.19452
sky130_fd_sc_hs__o311ai_4	0.00000	0.03703	0.25936

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)	0.18834	1.17129	11.02260
	A2->Y (FR)	0.17937	1.18418	11.46440
	A3->Y (FR)	0.14981	1.11815	11.07340
	B1->Y (FR)	0.04139	0.59890	6.80548
	C1->Y (FR)	0.03416	0.59118	6.79214
sky130_fd_sc_hs__o311ai_2	A1->Y (FR)	0.20944	1.05633	10.93670
	A2->Y (FR)	0.19310	1.05646	11.36810
	A3->Y (FR)	0.16179	1.00684	11.14750
	B1->Y (FR)	0.04236	0.54790	6.68226
	C1->Y (FR)	0.03287	0.53819	6.69183
sky130_fd_sc_hs__o311ai_4	A1->Y (FR)	0.18731	0.90460	10.80510
	A2->Y (FR)	0.17594	0.92246	11.39880
	A3->Y (FR)	0.13910	0.85588	11.08360
	B1->Y (FR)	0.05639	0.62559	8.44484
	C1->Y (FR)	0.03990	0.61598	8.53032

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311ai_1	A1->Y (RF)	0.04164	0.31828	2.86946
	A2->Y (RF)	0.04240	0.32128	2.94634
	A3->Y (RF)	0.03495	0.30816	2.90622
	B1->Y (RF)	0.03626	0.36055	3.50422
	C1->Y (RF)	0.03102	0.36536	3.58627
sky130_fd_sc_hs__o311ai_2	A1->Y (RF)	0.04959	0.29307	2.87616
	A2->Y (RF)	0.04675	0.28179	2.84700
	A3->Y (RF)	0.03945	0.26911	2.81255
	B1->Y (RF)	0.04313	0.33374	3.52517
	C1->Y (RF)	0.03642	0.37086	4.03008
sky130_fd_sc_hs__o311ai_4	A1->Y (RF)	0.05082	0.24404	2.77191
	A2->Y (RF)	0.04658	0.23486	2.77164
	A3->Y (RF)	0.03673	0.21907	2.72949
	B1->Y (RF)	0.04509	0.33715	4.17323
	C1->Y (RF)	0.03459	0.34837	4.47355

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	A1	0.00090	0.00077	0.00148
	A1	0.00759	0.00746	0.00817
	A2	0.00099	0.00082	0.00181
	A2	0.00698	0.00683	0.00780
	A3	0.00096	0.00105	0.00462
	A3	0.00624	0.00624	0.00991
	B1	0.00001	0.00033	0.00534
	B1	0.00564	0.00588	0.01076
	C1	-0.00046	-0.00012	0.00481
	C1	0.00448	0.00478	0.00978
sky130_fd_sc_hs__o311ai_2	A1	0.00218	0.00184	0.00319
	A1	0.01575	0.01537	0.01679
	A2	0.00220	0.00185	0.00380
	A2	0.01434	0.01395	0.01578
	A3	0.00219	0.00238	0.00891
	A3	0.01291	0.01313	0.01962
	B1	0.00012	0.00079	0.01030
	B1	0.01150	0.01211	0.02147
	C1	-0.00088	-0.00014	0.00905
	C1	0.00890	0.00965	0.01811

sky130_fd_sc_hs__o311ai_4	**A1**	0.00299	0.00255	0.00512
	A1	0.02953	0.02913	0.03174
	A2	0.00318	0.00261	0.00595
	A2	0.02678	0.02624	0.02950
	A3	0.00315	0.00350	0.01510
	A3	0.02420	0.02408	0.03612
	B1	0.00009	0.00054	0.01009
	B1	0.01990	0.01994	0.02896
	C1	-0.00211	-0.00140	0.00807
	C1	0.01410	0.01472	0.02382

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311ai_1	**A1**	0.00894	0.00883	0.00953
	A1	0.00219	0.00207	0.00275
	A2	0.00775	0.00765	0.00835
	A2	0.00164	0.00154	0.00220
	A3	0.00629	0.00629	0.00696
	A3	0.00087	0.00085	0.00154
	B1	0.00782	0.00774	0.00854
	B1	0.00078	0.00069	0.00158
	C1	0.00709	0.00701	0.00834
	C1	0.00075	0.00068	0.00206

sky130_fd_sc_hs__o311ai_2	**A1**	0.01834	0.01801	0.01937
	A1	0.00466	0.00433	0.00566
	A2	0.01529	0.01513	0.01655
	A2	0.00292	0.00271	0.00411
	A3	0.01255	0.01249	0.01399
	A3	0.00151	0.00141	0.00286
	B1	0.01584	0.01560	0.01713
	B1	0.00133	0.00110	0.00300
	C1	0.01420	0.01399	0.01664
	C1	0.00128	0.00113	0.00381
sky130_fd_sc_hs__o311ai_4	**A1**	0.03350	0.03292	0.03608
	A1	0.00675	0.00618	0.00909
	A2	0.02829	0.02778	0.03067
	A2	0.00425	0.00366	0.00665
	A3	0.02202	0.02190	0.02525
	A3	0.00041	0.00023	0.00340
	B1	0.02798	0.02779	0.02955
	B1	0.00192	0.00173	0.00357
	C1	0.02440	0.02426	0.02691
	C1	0.00192	0.00183	0.00456

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)**	0.00124	0.00125	0.00124
	(A2 * B1 * !C1 * Y)	-0.00133	-0.00136	-0.00136
	(A2 * A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * A3 * B1 * C1 * !Y)	-0.00133	-0.00136	-0.00136
	(A2 * !B1 * Y)	0.00124	0.00125	0.00124
	(A2 * !B1 * Y)	-0.00133	-0.00136	-0.00136
	(A2 * !A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(A2 * !A3 * B1 * C1 * !Y)	-0.00131	-0.00136	-0.00136
	(!A2 * A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00124
	(!A2 * A3 * B1 * C1 * !Y)	-0.00123	-0.00133	-0.00132
	(!A2 * A3 * B1 * !C1 * Y)	0.00124	0.00124	0.00124
	(!A2 * A3 * B1 * !C1 * Y)	-0.00123	-0.00133	-0.00132
	(!A2 * A3 * !B1 * Y)	0.00124	0.00125	0.00124
	(!A2 * A3 * !B1 * Y)	-0.00124	-0.00132	-0.00132
	(!A2 * !A3 * B1 * !C1 * Y)	0.00116	0.00116	0.00115
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00138	-0.00138	-0.00138
	(!A2 * !A3 * !B1 * C1 * Y)	0.00117	0.00118	0.00118
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00138	-0.00138	-0.00138
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00117	0.00119	0.00118
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00138	-0.00138	-0.00138

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	0.00242	0.00244	0.00241
	(A2 * B1 * !C1 * Y)	-0.00261	-0.00272	-0.00270
	(A2 * A3 * B1 * C1 * !Y)	0.00244	0.00245	0.00242
	(A2 * A3 * B1 * C1 * !Y)	-0.00259	-0.00271	-0.00269
	(A2 * !B1 * Y)	0.00242	0.00244	0.00241
	(A2 * !B1 * Y)	-0.00261	-0.00272	-0.00270
	(A2 * !A3 * B1 * C1 * !Y)	0.00244	0.00245	0.00242
	(A2 * !A3 * B1 * C1 * !Y)	-0.00257	-0.00271	-0.00269
	(!A2 * A3 * B1 * C1 * !Y)	0.00244	0.00244	0.00242
	(!A2 * A3 * B1 * C1 * !Y)	-0.00240	-0.00261	-0.00260
	(!A2 * A3 * B1 * !C1 * Y)	0.00241	0.00243	0.00241
	(!A2 * A3 * B1 * !C1 * Y)	-0.00243	-0.00262	-0.00261
	(!A2 * A3 * !B1 * Y)	0.00242	0.00244	0.00241
	(!A2 * A3 * !B1 * Y)	-0.00244	-0.00262	-0.00261
	(!A2 * !A3 * B1 * !C1 * Y)	0.00226	0.00229	0.00228
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00274	-0.00276	-0.00276
	(!A2 * !A3 * !B1 * C1 * Y)	0.00229	0.00233	0.00230
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00275	-0.00275	-0.00276
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00229	0.00233	0.00230
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00275	-0.00277	-0.00276

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	0.00482	0.00489	0.00483
	(A2 * B1 * !C1 * Y)	-0.00519	-0.00538	-0.00538
	(A2 * A3 * B1 * C1 * !Y)	0.00483	0.00489	0.00483
	(A2 * A3 * B1 * C1 * !Y)	-0.00518	-0.00538	-0.00538
	(A2 * !B1 * Y)	0.00482	0.00489	0.00483
	(A2 * !B1 * Y)	-0.00519	-0.00538	-0.00538
	(A2 * !A3 * B1 * C1 * !Y)	0.00485	0.00489	0.00483
	(A2 * !A3 * B1 * C1 * !Y)	-0.00514	-0.00541	-0.00538
	(!A2 * A3 * B1 * C1 * !Y)	0.00488	0.00488	0.00484
	(!A2 * A3 * B1 * C1 * !Y)	-0.00487	-0.00523	-0.00521
	(!A2 * A3 * B1 * !C1 * Y)	0.00484	0.00487	0.00483
	(!A2 * A3 * B1 * !C1 * Y)	-0.00491	-0.00523	-0.00521
	(!A2 * A3 * !B1 * Y)	0.00484	0.00487	0.00483
	(!A2 * A3 * !B1 * Y)	-0.00491	-0.00523	-0.00521
	(!A2 * !A3 * B1 * !C1 * Y)	0.00455	0.00457	0.00454
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00551	-0.00553	-0.00551
	(!A2 * !A3 * !B1 * C1 * Y)	0.00460	0.00461	0.00460
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00551	-0.00552	-0.00551
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00460	0.00459	0.00460
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00551	-0.00550	-0.00551

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)**	-0.00124	-0.00124	-0.00124
	(A2 * B1 * !C1 * Y)	0.00136	0.00136	0.00136
	(A2 * A3 * B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * A3 * B1 * C1 * !Y)	0.00136	0.00136	0.00136
	(A2 * !B1 * Y)	-0.00124	-0.00124	-0.00124
	(A2 * !B1 * Y)	0.00136	0.00136	0.00136
	(A2 * !A3 * B1 * C1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * !A3 * B1 * C1 * !Y)	0.00136	0.00136	0.00136
	(!A2 * A3 * B1 * C1 * !Y)	-0.00123	-0.00124	-0.00123
	(!A2 * A3 * B1 * C1 * !Y)	0.00131	0.00133	0.00132
	(!A2 * A3 * B1 * !C1 * Y)	-0.00123	-0.00124	-0.00124
	(!A2 * A3 * B1 * !C1 * Y)	0.00131	0.00133	0.00132
	(!A2 * A3 * !B1 * Y)	-0.00123	-0.00124	-0.00124
	(!A2 * A3 * !B1 * Y)	0.00131	0.00132	0.00132
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00108	-0.00116	-0.00115
	(!A2 * !A3 * B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00113	-0.00118	-0.00118
	(!A2 * !A3 * !B1 * C1 * Y)	0.00139	0.00139	0.00138
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00113	-0.00119	-0.00118
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00139	0.00139	0.00138

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * !C1 * Y)**	-0.00241	-0.00242	-0.00241
	(A2 * B1 * !C1 * Y)	0.00269	0.00272	0.00270
	(A2 * A3 * B1 * C1 * !Y)	-0.00242	-0.00242	-0.00241
	(A2 * A3 * B1 * C1 * !Y)	0.00269	0.00271	0.00269
	(A2 * !B1 * Y)	-0.00241	-0.00242	-0.00241
	(A2 * !B1 * Y)	0.00269	0.00272	0.00270
	(A2 * !A3 * B1 * C1 * !Y)	-0.00241	-0.00242	-0.00241
	(A2 * !A3 * B1 * C1 * !Y)	0.00269	0.00271	0.00269
	(!A2 * A3 * B1 * C1 * !Y)	-0.00242	-0.00242	-0.00241
	(!A2 * A3 * B1 * C1 * !Y)	0.00260	0.00261	0.00260
	(!A2 * A3 * B1 * !C1 * Y)	-0.00241	-0.00241	-0.00241
	(!A2 * A3 * B1 * !C1 * Y)	0.00261	0.00262	0.00261
	(!A2 * A3 * !B1 * Y)	-0.00241	-0.00241	-0.00241
	(!A2 * A3 * !B1 * Y)	0.00260	0.00262	0.00261
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00206	-0.00226	-0.00228
	(!A2 * !A3 * B1 * !C1 * Y)	0.00277	0.00280	0.00276
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00214	-0.00227	-0.00230
	(!A2 * !A3 * !B1 * C1 * Y)	0.00277	0.00275	0.00277
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00214	-0.00228	-0.00230
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00277	0.00279	0.00277

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * !C1 * Y)**	-0.00482	-0.00482	-0.00482
	(A2 * B1 * !C1 * Y)	0.00538	0.00538	0.00538
	(A2 * A3 * B1 * C1 * !Y)	-0.00483	-0.00482	-0.00482
	(A2 * A3 * B1 * C1 * !Y)	0.00538	0.00538	0.00538
	(A2 * !B1 * Y)	-0.00482	-0.00482	-0.00482
	(A2 * !B1 * Y)	0.00538	0.00538	0.00538
	(A2 * !A3 * B1 * C1 * !Y)	-0.00483	-0.00484	-0.00482
	(A2 * !A3 * B1 * C1 * !Y)	0.00538	0.00541	0.00538
	(!A2 * A3 * B1 * C1 * !Y)	-0.00481	-0.00484	-0.00482
	(!A2 * A3 * B1 * C1 * !Y)	0.00518	0.00523	0.00521
	(!A2 * A3 * B1 * !C1 * Y)	-0.00481	-0.00483	-0.00482
	(!A2 * A3 * B1 * !C1 * Y)	0.00518	0.00523	0.00521
	(!A2 * A3 * !B1 * Y)	-0.00481	-0.00483	-0.00482
	(!A2 * A3 * !B1 * Y)	0.00518	0.00523	0.00521
	(!A2 * !A3 * B1 * !C1 * Y)	-0.00421	-0.00453	-0.00454
	(!A2 * !A3 * B1 * !C1 * Y)	0.00551	0.00559	0.00552
	(!A2 * !A3 * !B1 * C1 * Y)	-0.00431	-0.00455	-0.00460
	(!A2 * !A3 * !B1 * C1 * Y)	0.00551	0.00552	0.00553
	(!A2 * !A3 * !B1 * !C1 * Y)	-0.00432	-0.00454	-0.00460
	(!A2 * !A3 * !B1 * !C1 * Y)	0.00551	0.00551	0.00553

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)**	0.00126	0.00127	0.00124
	(A1 * A3 * B1 * C1 * !Y)	-0.00089	-0.00090	-0.00089
	(A1 * A3 * B1 * !C1 * Y)	0.00118	0.00119	0.00118
	(A1 * A3 * B1 * !C1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * A3 * !B1 * Y)	0.00118	0.00119	0.00118
	(A1 * A3 * !B1 * Y)	-0.00103	-0.00103	-0.00103
	(A1 * !A3 * B1 * C1 * !Y)	0.00124	0.00125	0.00123
	(A1 * !A3 * B1 * C1 * !Y)	-0.00078	-0.00079	-0.00079
	(A1 * !A3 * B1 * !C1 * Y)	0.00117	0.00119	0.00118
	(A1 * !A3 * B1 * !C1 * Y)	-0.00135	-0.00139	-0.00138
	(A1 * !A3 * !B1 * C1 * Y)	0.00117	0.00119	0.00118
	(A1 * !A3 * !B1 * C1 * Y)	-0.00135	-0.00138	-0.00138
	(A1 * !A3 * !B1 * !C1 * Y)	0.00117	0.00118	0.00118
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00135	-0.00138	-0.00138
	(!A1 * A3 * B1 * C1 * !Y)	0.00142	0.00125	0.00123
	(!A1 * A3 * B1 * C1 * !Y)	-0.00113	-0.00133	-0.00133
	(!A1 * A3 * B1 * !C1 * Y)	0.00118	0.00119	0.00118
	(!A1 * A3 * B1 * !C1 * Y)	-0.00135	-0.00139	-0.00138
	(!A1 * A3 * !B1 * Y)	0.00117	0.00119	0.00118
	(!A1 * A3 * !B1 * Y)	-0.00135	-0.00139	-0.00138
	(!A1 * !A3 * B1 * !C1 * Y)	0.00108	0.00109	0.00109
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00140	-0.00141	-0.00140
	(!A1 * !A3 * !B1 * C1 * Y)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00141	-0.00141	-0.00140
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00111	0.00113	0.00111
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00141	-0.00141	-0.00140

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	0.00250	0.00253	0.00249
	(A1 * A3 * B1 * C1 * !Y)	-0.00186	-0.00188	-0.00186
	(A1 * A3 * B1 * !C1 * Y)	0.00244	0.00247	0.00244
	(A1 * A3 * B1 * !C1 * Y)	-0.00207	-0.00206	-0.00206
	(A1 * A3 * !B1 * Y)	0.00244	0.00247	0.00244
	(A1 * A3 * !B1 * Y)	-0.00207	-0.00206	-0.00206
	(A1 * !A3 * B1 * C1 * !Y)	0.00247	0.00249	0.00246
	(A1 * !A3 * B1 * C1 * !Y)	-0.00163	-0.00164	-0.00163
	(A1 * !A3 * B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(A1 * !A3 * B1 * !C1 * Y)	-0.00264	-0.00275	-0.00273
	(A1 * !A3 * !B1 * C1 * Y)	0.00243	0.00246	0.00244
	(A1 * !A3 * !B1 * C1 * Y)	-0.00264	-0.00275	-0.00273
	(A1 * !A3 * !B1 * !C1 * Y)	0.00243	0.00246	0.00244
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00264	-0.00275	-0.00274
	(!A1 * A3 * B1 * C1 * !Y)	0.00279	0.00247	0.00244
	(!A1 * A3 * B1 * C1 * !Y)	-0.00236	-0.00276	-0.00276
	(!A1 * A3 * B1 * !C1 * Y)	0.00243	0.00245	0.00244
	(!A1 * A3 * B1 * !C1 * Y)	-0.00269	-0.00278	-0.00277
	(!A1 * A3 * !B1 * Y)	0.00243	0.00245	0.00243
	(!A1 * A3 * !B1 * Y)	-0.00269	-0.00278	-0.00277
	(!A1 * !A3 * B1 * !C1 * Y)	0.00228	0.00230	0.00227
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00282	-0.00283	-0.00281
	(!A1 * !A3 * !B1 * C1 * Y)	0.00231	0.00232	0.00230
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00282	-0.00282	-0.00281
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00231	0.00234	0.00231
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00282	-0.00283	-0.00281

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	0.00490	0.00502	0.00490
	(A1 * A3 * B1 * C1 * !Y)	-0.00356	-0.00361	-0.00357
	(A1 * A3 * B1 * !C1 * Y)	0.00475	0.00484	0.00478
	(A1 * A3 * B1 * !C1 * Y)	-0.00402	-0.00402	-0.00401
	(A1 * A3 * !B1 * Y)	0.00479	0.00484	0.00478
	(A1 * A3 * !B1 * Y)	-0.00402	-0.00402	-0.00401
	(A1 * !A3 * B1 * C1 * !Y)	0.00489	0.00492	0.00486
	(A1 * !A3 * B1 * C1 * !Y)	-0.00316	-0.00316	-0.00314
	(A1 * !A3 * B1 * !C1 * Y)	0.00476	0.00480	0.00477
	(A1 * !A3 * B1 * !C1 * Y)	-0.00521	-0.00537	-0.00536
	(A1 * !A3 * !B1 * C1 * Y)	0.00476	0.00481	0.00477
	(A1 * !A3 * !B1 * C1 * Y)	-0.00521	-0.00537	-0.00536
	(A1 * !A3 * !B1 * !C1 * Y)	0.00476	0.00480	0.00477
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00521	-0.00540	-0.00537
	(!A1 * A3 * B1 * C1 * !Y)	0.00560	0.00488	0.00484
	(!A1 * A3 * B1 * C1 * !Y)	-0.00451	-0.00537	-0.00536
	(!A1 * A3 * B1 * !C1 * Y)	0.00477	0.00479	0.00477
	(!A1 * A3 * B1 * !C1 * Y)	-0.00528	-0.00546	-0.00543
	(!A1 * A3 * !B1 * Y)	0.00477	0.00479	0.00477
	(!A1 * A3 * !B1 * Y)	-0.00528	-0.00546	-0.00543
	(!A1 * !A3 * B1 * !C1 * Y)	0.00447	0.00452	0.00447
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00553	-0.00556	-0.00552
	(!A1 * !A3 * !B1 * C1 * Y)	0.00446	0.00451	0.00446
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00553	-0.00556	-0.00553
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00449	0.00454	0.00449
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00552	-0.00556	-0.00552

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)**	-0.00123	-0.00123	-0.00123
	(A1 * A3 * B1 * C1 * !Y)	0.00089	0.00090	0.00089
	(A1 * A3 * B1 * !C1 * Y)	-0.00118	-0.00118	-0.00117
	(A1 * A3 * B1 * !C1 * Y)	0.00103	0.00103	0.00103
	(A1 * A3 * !B1 * Y)	-0.00118	-0.00118	-0.00117
	(A1 * A3 * !B1 * Y)	0.00103	0.00103	0.00103
	(A1 * !A3 * B1 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * B1 * C1 * !Y)	0.00080	0.00080	0.00081
	(A1 * !A3 * B1 * !C1 * Y)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * B1 * !C1 * Y)	0.00138	0.00139	0.00138
	(A1 * !A3 * !B1 * C1 * Y)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * !B1 * C1 * Y)	0.00137	0.00138	0.00138
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * !B1 * !C1 * Y)	0.00138	0.00138	0.00138
	(!A1 * A3 * B1 * C1 * !Y)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * B1 * C1 * !Y)	0.00132	0.00134	0.00133
	(!A1 * A3 * B1 * !C1 * Y)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * B1 * !C1 * Y)	0.00137	0.00139	0.00138
	(!A1 * A3 * !B1 * Y)	-0.00117	-0.00118	-0.00117
	(!A1 * A3 * !B1 * Y)	0.00138	0.00139	0.00138
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00101	-0.00109	-0.00109
	(!A1 * !A3 * B1 * !C1 * Y)	0.00140	0.00142	0.00141
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00106	-0.00113	-0.00112
	(!A1 * !A3 * !B1 * C1 * Y)	0.00141	0.00142	0.00141
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00106	-0.00113	-0.00111
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00141	0.00142	0.00141

sky130_fd_sc_hs__o311ai_2	**(A1 * A3 * B1 * C1 * !Y)**	-0.00246	-0.00248	-0.00247
	(A1 * A3 * B1 * C1 * !Y)	0.00186	0.00188	0.00186
	(A1 * A3 * B1 * !C1 * Y)	-0.00243	-0.00243	-0.00243
	(A1 * A3 * B1 * !C1 * Y)	0.00207	0.00206	0.00206
	(A1 * A3 * !B1 * Y)	-0.00243	-0.00243	-0.00243
	(A1 * A3 * !B1 * Y)	0.00207	0.00206	0.00206
	(A1 * !A3 * B1 * C1 * !Y)	-0.00243	-0.00244	-0.00242
	(A1 * !A3 * B1 * C1 * !Y)	0.00167	0.00168	0.00168
	(A1 * !A3 * B1 * !C1 * Y)	-0.00242	-0.00244	-0.00243
	(A1 * !A3 * B1 * !C1 * Y)	0.00271	0.00275	0.00273
	(A1 * !A3 * !B1 * C1 * Y)	-0.00242	-0.00244	-0.00243
	(A1 * !A3 * !B1 * C1 * Y)	0.00272	0.00275	0.00273
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00242	-0.00244	-0.00243
	(A1 * !A3 * !B1 * !C1 * Y)	0.00273	0.00275	0.00274
	(!A1 * A3 * B1 * C1 * !Y)	-0.00243	-0.00245	-0.00243
	(!A1 * A3 * B1 * C1 * !Y)	0.00275	0.00278	0.00276
	(!A1 * A3 * B1 * !C1 * Y)	-0.00242	-0.00244	-0.00243
	(!A1 * A3 * B1 * !C1 * Y)	0.00276	0.00279	0.00277
	(!A1 * A3 * !B1 * Y)	-0.00242	-0.00244	-0.00243
	(!A1 * A3 * !B1 * Y)	0.00276	0.00279	0.00277
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00206	-0.00230	-0.00227
	(!A1 * !A3 * B1 * !C1 * Y)	0.00283	0.00284	0.00282
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00215	-0.00230	-0.00230
	(!A1 * !A3 * !B1 * C1 * Y)	0.00283	0.00284	0.00282
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00215	-0.00230	-0.00231
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00283	0.00284	0.00282

sky130_fd_sc_hs__o311ai_4	**(A1 * A3 * B1 * C1 * !Y)**	-0.00485	-0.00488	-0.00486
	(A1 * A3 * B1 * C1 * !Y)	0.00356	0.00361	0.00357
	(A1 * A3 * B1 * !C1 * Y)	-0.00475	-0.00478	-0.00477
	(A1 * A3 * B1 * !C1 * Y)	0.00402	0.00402	0.00401
	(A1 * A3 * !B1 * Y)	-0.00477	-0.00478	-0.00477
	(A1 * A3 * !B1 * Y)	0.00402	0.00402	0.00401
	(A1 * !A3 * B1 * C1 * !Y)	-0.00482	-0.00483	-0.00478
	(A1 * !A3 * B1 * C1 * !Y)	0.00320	0.00321	0.00323
	(A1 * !A3 * B1 * !C1 * Y)	-0.00474	-0.00478	-0.00476
	(A1 * !A3 * B1 * !C1 * Y)	0.00533	0.00537	0.00536
	(A1 * !A3 * !B1 * C1 * Y)	-0.00476	-0.00478	-0.00476
	(A1 * !A3 * !B1 * C1 * Y)	0.00534	0.00537	0.00536
	(A1 * !A3 * !B1 * !C1 * Y)	-0.00475	-0.00479	-0.00476
	(A1 * !A3 * !B1 * !C1 * Y)	0.00534	0.00540	0.00537
	(!A1 * A3 * B1 * C1 * !Y)	-0.00482	-0.00485	-0.00482
	(!A1 * A3 * B1 * C1 * !Y)	0.00533	0.00539	0.00536
	(!A1 * A3 * B1 * !C1 * Y)	-0.00475	-0.00478	-0.00476
	(!A1 * A3 * B1 * !C1 * Y)	0.00541	0.00547	0.00543
	(!A1 * A3 * !B1 * Y)	-0.00475	-0.00478	-0.00476
	(!A1 * A3 * !B1 * Y)	0.00541	0.00547	0.00543
	(!A1 * !A3 * B1 * !C1 * Y)	-0.00411	-0.00451	-0.00447
	(!A1 * !A3 * B1 * !C1 * Y)	0.00556	0.00559	0.00554
	(!A1 * !A3 * !B1 * C1 * Y)	-0.00425	-0.00451	-0.00446
	(!A1 * !A3 * !B1 * C1 * Y)	0.00556	0.00558	0.00554
	(!A1 * !A3 * !B1 * !C1 * Y)	-0.00425	-0.00451	-0.00449
	(!A1 * !A3 * !B1 * !C1 * Y)	0.00556	0.00557	0.00554

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)**	0.00132	0.00133	0.00132
	(A2 * B1 * C1 * !Y)	-0.00067	-0.00068	-0.00068
	(A2 * B1 * !C1 * Y)	0.00120	0.00121	0.00120
	(A2 * B1 * !C1 * Y)	-0.00127	-0.00130	-0.00131
	(A2 * !B1 * C1 * Y)	0.00120	0.00121	0.00120
	(A2 * !B1 * C1 * Y)	-0.00127	-0.00131	-0.00131
	(A2 * !B1 * !C1 * Y)	0.00120	0.00121	0.00120
	(A2 * !B1 * !C1 * Y)	-0.00127	-0.00132	-0.00131
	(A1 * !A2 * B1 * C1 * !Y)	0.00132	0.00133	0.00132
	(A1 * !A2 * B1 * C1 * !Y)	-0.00067	-0.00068	-0.00067
	(A1 * !A2 * B1 * !C1 * Y)	0.00120	0.00120	0.00120
	(A1 * !A2 * B1 * !C1 * Y)	-0.00116	-0.00126	-0.00125
	(A1 * !A2 * !B1 * C1 * Y)	0.00120	0.00120	0.00120
	(A1 * !A2 * !B1 * C1 * Y)	-0.00116	-0.00126	-0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	0.00120	0.00121	0.00120
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00117	-0.00126	-0.00126
	(!A1 * !A2 * B1 * !C1 * Y)	0.00113	0.00113	0.00113
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * !A2 * !B1 * C1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00133	-0.00133	-0.00133
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00133	-0.00134	-0.00133

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	0.00272	0.00275	0.00272
	(A2 * B1 * C1 * !Y)	-0.00140	-0.00141	-0.00140
	(A2 * B1 * !C1 * Y)	0.00240	0.00241	0.00240
	(A2 * B1 * !C1 * Y)	-0.00266	-0.00275	-0.00274
	(A2 * !B1 * C1 * Y)	0.00240	0.00241	0.00240
	(A2 * !B1 * C1 * Y)	-0.00266	-0.00275	-0.00274
	(A2 * !B1 * !C1 * Y)	0.00240	0.00242	0.00240
	(A2 * !B1 * !C1 * Y)	-0.00266	-0.00275	-0.00274
	(A1 * !A2 * B1 * C1 * !Y)	0.00272	0.00275	0.00272
	(A1 * !A2 * B1 * C1 * !Y)	-0.00140	-0.00141	-0.00139
	(A1 * !A2 * B1 * !C1 * Y)	0.00240	0.00242	0.00240
	(A1 * !A2 * B1 * !C1 * Y)	-0.00248	-0.00264	-0.00262
	(A1 * !A2 * !B1 * C1 * Y)	0.00240	0.00242	0.00240
	(A1 * !A2 * !B1 * C1 * Y)	-0.00248	-0.00264	-0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	0.00240	0.00241	0.00240
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00249	-0.00265	-0.00264
	(!A1 * !A2 * B1 * !C1 * Y)	0.00225	0.00229	0.00227
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00277	-0.00280	-0.00278
	(!A1 * !A2 * !B1 * C1 * Y)	0.00228	0.00229	0.00229
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00277	-0.00278	-0.00278
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00228	0.00230	0.00229
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00277	-0.00279	-0.00278

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	0.00555	0.00563	0.00553
	(A2 * B1 * C1 * !Y)	-0.00280	-0.00283	-0.00278
	(A2 * B1 * !C1 * Y)	0.00460	0.00465	0.00461
	(A2 * B1 * !C1 * Y)	-0.00554	-0.00573	-0.00574
	(A2 * !B1 * C1 * Y)	0.00459	0.00465	0.00461
	(A2 * !B1 * C1 * Y)	-0.00554	-0.00574	-0.00574
	(A2 * !B1 * !C1 * Y)	0.00460	0.00463	0.00460
	(A2 * !B1 * !C1 * Y)	-0.00556	-0.00578	-0.00575
	(A1 * !A2 * B1 * C1 * !Y)	0.00555	0.00563	0.00553
	(A1 * !A2 * B1 * C1 * !Y)	-0.00280	-0.00282	-0.00277
	(A1 * !A2 * B1 * !C1 * Y)	0.00461	0.00463	0.00461
	(A1 * !A2 * B1 * !C1 * Y)	-0.00511	-0.00549	-0.00543
	(A1 * !A2 * !B1 * C1 * Y)	0.00461	0.00463	0.00461
	(A1 * !A2 * !B1 * C1 * Y)	-0.00511	-0.00546	-0.00544
	(A1 * !A2 * !B1 * !C1 * Y)	0.00461	0.00463	0.00460
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00513	-0.00555	-0.00549
	(!A1 * !A2 * B1 * !C1 * Y)	0.00425	0.00426	0.00425
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00585	-0.00586	-0.00585
	(!A1 * !A2 * !B1 * C1 * Y)	0.00435	0.00438	0.00434
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00586	-0.00583	-0.00584
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00436	0.00439	0.00435
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00586	-0.00587	-0.00584

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)**	-0.00127	-0.00128	-0.00131
	(A2 * B1 * C1 * !Y)	0.00072	0.00072	0.00069
	(A2 * B1 * !C1 * Y)	-0.00120	-0.00119	-0.00120
	(A2 * B1 * !C1 * Y)	0.00131	0.00130	0.00131
	(A2 * !B1 * C1 * Y)	-0.00120	-0.00120	-0.00120
	(A2 * !B1 * C1 * Y)	0.00131	0.00132	0.00131
	(A2 * !B1 * !C1 * Y)	-0.00120	-0.00120	-0.00120
	(A2 * !B1 * !C1 * Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * B1 * C1 * !Y)	-0.00122	-0.00123	-0.00130
	(A1 * !A2 * B1 * C1 * !Y)	0.00075	0.00075	0.00069
	(A1 * !A2 * B1 * !C1 * Y)	-0.00120	-0.00120	-0.00120
	(A1 * !A2 * B1 * !C1 * Y)	0.00126	0.00126	0.00125
	(A1 * !A2 * !B1 * C1 * Y)	-0.00119	-0.00120	-0.00120
	(A1 * !A2 * !B1 * C1 * Y)	0.00124	0.00126	0.00126
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00119	-0.00120	-0.00120
	(A1 * !A2 * !B1 * !C1 * Y)	0.00125	0.00126	0.00126
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00103	-0.00113	-0.00113
	(!A1 * !A2 * B1 * !C1 * Y)	0.00133	0.00134	0.00133
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00108	-0.00114	-0.00113
	(!A1 * !A2 * !B1 * C1 * Y)	0.00134	0.00134	0.00133
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00108	-0.00114	-0.00113
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00134	0.00134	0.00133

sky130_fd_sc_hs__o311ai_2	**(A2 * B1 * C1 * !Y)**	-0.00261	-0.00263	-0.00271
	(A2 * B1 * C1 * !Y)	0.00150	0.00150	0.00142
	(A2 * B1 * !C1 * Y)	-0.00240	-0.00240	-0.00240
	(A2 * B1 * !C1 * Y)	0.00273	0.00275	0.00274
	(A2 * !B1 * C1 * Y)	-0.00240	-0.00240	-0.00240
	(A2 * !B1 * C1 * Y)	0.00273	0.00275	0.00274
	(A2 * !B1 * !C1 * Y)	-0.00240	-0.00241	-0.00240
	(A2 * !B1 * !C1 * Y)	0.00273	0.00276	0.00274
	(A1 * !A2 * B1 * C1 * !Y)	-0.00245	-0.00247	-0.00267
	(A1 * !A2 * B1 * C1 * !Y)	0.00158	0.00160	0.00144
	(A1 * !A2 * B1 * !C1 * Y)	-0.00240	-0.00241	-0.00239
	(A1 * !A2 * B1 * !C1 * Y)	0.00262	0.00264	0.00262
	(A1 * !A2 * !B1 * C1 * Y)	-0.00240	-0.00240	-0.00239
	(A1 * !A2 * !B1 * C1 * Y)	0.00262	0.00264	0.00263
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00240	-0.00241	-0.00239
	(A1 * !A2 * !B1 * !C1 * Y)	0.00264	0.00265	0.00264
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00204	-0.00226	-0.00227
	(!A1 * !A2 * B1 * !C1 * Y)	0.00279	0.00281	0.00279
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00212	-0.00227	-0.00229
	(!A1 * !A2 * !B1 * C1 * Y)	0.00279	0.00281	0.00279
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00213	-0.00227	-0.00229
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00279	0.00281	0.00279

sky130_fd_sc_hs__o311ai_4	**(A2 * B1 * C1 * !Y)**	-0.00528	-0.00532	-0.00550
	(A2 * B1 * C1 * !Y)	0.00301	0.00302	0.00284
	(A2 * B1 * !C1 * Y)	-0.00460	-0.00459	-0.00459
	(A2 * B1 * !C1 * Y)	0.00575	0.00573	0.00574
	(A2 * !B1 * C1 * Y)	-0.00459	-0.00460	-0.00459
	(A2 * !B1 * C1 * Y)	0.00572	0.00574	0.00574
	(A2 * !B1 * !C1 * Y)	-0.00458	-0.00461	-0.00459
	(A2 * !B1 * !C1 * Y)	0.00572	0.00579	0.00575
	(A1 * !A2 * B1 * C1 * !Y)	-0.00504	-0.00507	-0.00544
	(A1 * !A2 * B1 * C1 * !Y)	0.00315	0.00314	0.00284
	(A1 * !A2 * B1 * !C1 * Y)	-0.00459	-0.00463	-0.00460
	(A1 * !A2 * B1 * !C1 * Y)	0.00541	0.00549	0.00543
	(A1 * !A2 * !B1 * C1 * Y)	-0.00459	-0.00461	-0.00459
	(A1 * !A2 * !B1 * C1 * Y)	0.00542	0.00546	0.00544
	(A1 * !A2 * !B1 * !C1 * Y)	-0.00459	-0.00463	-0.00460
	(A1 * !A2 * !B1 * !C1 * Y)	0.00547	0.00555	0.00549
	(!A1 * !A2 * B1 * !C1 * Y)	-0.00398	-0.00426	-0.00425
	(!A1 * !A2 * B1 * !C1 * Y)	0.00587	0.00592	0.00586
	(!A1 * !A2 * !B1 * C1 * Y)	-0.00412	-0.00433	-0.00434
	(!A1 * !A2 * !B1 * C1 * Y)	0.00587	0.00583	0.00586
	(!A1 * !A2 * !B1 * !C1 * Y)	-0.00412	-0.00439	-0.00435
	(!A1 * !A2 * !B1 * !C1 * Y)	0.00587	0.00591	0.00586

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

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

sky130_fd_sc_hs__o311ai_1	**(A3 * !C1 * Y)**	0.00112	0.00113	0.00112
	(A3 * !C1 * Y)	-0.00143	-0.00144	-0.00143
	(A2 * !A3 * !C1 * Y)	0.00112	0.00113	0.00112
	(A2 * !A3 * !C1 * Y)	-0.00142	-0.00144	-0.00143
	(A1 * !A2 * !A3 * !C1 * Y)	0.00112	0.00114	0.00112
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00142	-0.00144	-0.00143
	(!A1 * !A2 * !A3 * C1 * Y)	0.00050	0.00051	0.00050
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00143	-0.00145	-0.00143
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00061	0.00062	0.00061
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00144	-0.00145	-0.00144
sky130_fd_sc_hs__o311ai_2	**(A3 * !C1 * Y)**	0.00234	0.00236	0.00235
	(A3 * !C1 * Y)	-0.00280	-0.00281	-0.00280
	(A2 * !A3 * !C1 * Y)	0.00235	0.00237	0.00235
	(A2 * !A3 * !C1 * Y)	-0.00281	-0.00281	-0.00280
	(A1 * !A2 * !A3 * !C1 * Y)	0.00233	0.00235	0.00234
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00280	-0.00281	-0.00280
	(!A1 * !A2 * !A3 * C1 * Y)	0.00104	0.00105	0.00105
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00281	-0.00282	-0.00280
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00129	0.00129	0.00128
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00284	-0.00284	-0.00283
sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	0.00434	0.00436	0.00436
	(A3 * !C1 * Y)	-0.00324	-0.00326	-0.00325
	(A2 * !A3 * !C1 * Y)	0.00439	0.00445	0.00442
	(A2 * !A3 * !C1 * Y)	-0.00323	-0.00327	-0.00325
	(A1 * !A2 * !A3 * !C1 * Y)	0.00437	0.00441	0.00438
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00326	-0.00327	-0.00325
	(!A1 * !A2 * !A3 * C1 * Y)	0.00188	0.00190	0.00189
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00329	-0.00332	-0.00328
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00234	0.00235	0.00233
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00336	-0.00337	-0.00335

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !C1 * Y)	-0.00106	-0.00113	-0.00112
	(A3 * !C1 * Y)	0.00146	0.00145	0.00143
	(A2 * !A3 * !C1 * Y)	-0.00106	-0.00113	-0.00112
	(A2 * !A3 * !C1 * Y)	0.00147	0.00145	0.00143
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00105	-0.00114	-0.00112
	(A1 * !A2 * !A3 * !C1 * Y)	0.00147	0.00145	0.00143
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00047	-0.00048	-0.00048
	(!A1 * !A2 * !A3 * C1 * Y)	0.00146	0.00148	0.00144
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00061	-0.00062	-0.00061
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00151	0.00149	0.00145
sky130_fd_sc_hs__o311ai_2	(A3 * !C1 * Y)	-0.00222	-0.00236	-0.00235
	(A3 * !C1 * Y)	0.00286	0.00284	0.00281
	(A2 * !A3 * !C1 * Y)	-0.00220	-0.00235	-0.00235
	(A2 * !A3 * !C1 * Y)	0.00287	0.00281	0.00281
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00216	-0.00235	-0.00234
	(A1 * !A2 * !A3 * !C1 * Y)	0.00290	0.00282	0.00281
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00099	-0.00100	-0.00102
	(!A1 * !A2 * !A3 * C1 * Y)	0.00287	0.00291	0.00284
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00129	-0.00129	-0.00128
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00291	0.00291	0.00284

sky130_fd_sc_hs__o311ai_4	**(A3 * !C1 * Y)**	-0.00401	-0.00436	-0.00436
	(A3 * !C1 * Y)	0.00348	0.00327	0.00326
	(A2 * !A3 * !C1 * Y)	-0.00394	-0.00441	-0.00441
	(A2 * !A3 * !C1 * Y)	0.00352	0.00327	0.00326
	(A1 * !A2 * !A3 * !C1 * Y)	-0.00388	-0.00441	-0.00438
	(A1 * !A2 * !A3 * !C1 * Y)	0.00362	0.00328	0.00326
	(!A1 * !A2 * !A3 * C1 * Y)	-0.00179	-0.00180	-0.00182
	(!A1 * !A2 * !A3 * C1 * Y)	0.00345	0.00346	0.00333
	(!A1 * !A2 * !A3 * !C1 * Y)	-0.00234	-0.00235	-0.00233
	(!A1 * !A2 * !A3 * !C1 * Y)	0.00356	0.00350	0.00336

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	0.00044	0.00044	0.00043
	(A3 * !B1 * Y)	-0.00169	-0.00170	-0.00172
	(A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00043
	(A2 * !A3 * !B1 * Y)	-0.00170	-0.00171	-0.00172
	(!A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00043
	(!A2 * !A3 * !B1 * Y)	-0.00170	-0.00170	-0.00172
	(!A1 * !A2 * !A3 * B1 * Y)	0.00046	0.00047	0.00043
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00163	-0.00165	-0.00172
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	0.00086	0.00086	0.00083
	(A3 * !B1 * Y)	-0.00334	-0.00334	-0.00339
	(A2 * !A3 * !B1 * Y)	0.00085	0.00086	0.00083
	(A2 * !A3 * !B1 * Y)	-0.00332	-0.00334	-0.00339
	(!A2 * !A3 * !B1 * Y)	0.00085	0.00086	0.00083
	(!A2 * !A3 * !B1 * Y)	-0.00332	-0.00334	-0.00339
	(!A1 * !A2 * !A3 * B1 * Y)	0.00088	0.00088	0.00080
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00319	-0.00321	-0.00337
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	0.00157	0.00158	0.00153
	(A3 * !B1 * Y)	-0.00372	-0.00375	-0.00385
	(A2 * !A3 * !B1 * Y)	0.00158	0.00158	0.00153
	(A2 * !A3 * !B1 * Y)	-0.00373	-0.00375	-0.00385
	(!A2 * !A3 * !B1 * Y)	0.00158	0.00159	0.00153
	(!A2 * !A3 * !B1 * Y)	-0.00373	-0.00378	-0.00385
	(!A1 * !A2 * !A3 * B1 * Y)	0.00163	0.00164	0.00148
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00345	-0.00349	-0.00380

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311ai_1	(A3 * !B1 * Y)	-0.00042	-0.00043	-0.00042
	(A3 * !B1 * Y)	0.00173	0.00175	0.00173
	(A2 * !A3 * !B1 * Y)	-0.00043	-0.00043	-0.00042
	(A2 * !A3 * !B1 * Y)	0.00173	0.00175	0.00173
	(!A2 * !A3 * !B1 * Y)	-0.00043	-0.00043	-0.00042
	(!A2 * !A3 * !B1 * Y)	0.00173	0.00175	0.00173
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * B1 * Y)	0.00173	0.00175	0.00173
sky130_fd_sc_hs__o311ai_2	(A3 * !B1 * Y)	-0.00082	-0.00082	-0.00081
	(A3 * !B1 * Y)	0.00340	0.00345	0.00339
	(A2 * !A3 * !B1 * Y)	-0.00082	-0.00082	-0.00081
	(A2 * !A3 * !B1 * Y)	0.00340	0.00345	0.00339
	(!A2 * !A3 * !B1 * Y)	-0.00082	-0.00082	-0.00081
	(!A2 * !A3 * !B1 * Y)	0.00340	0.00345	0.00339
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00079	-0.00078	-0.00078
	(!A1 * !A2 * !A3 * B1 * Y)	0.00340	0.00339	0.00339
sky130_fd_sc_hs__o311ai_4	(A3 * !B1 * Y)	-0.00151	-0.00149	-0.00149
	(A3 * !B1 * Y)	0.00387	0.00386	0.00386
	(A2 * !A3 * !B1 * Y)	-0.00148	-0.00152	-0.00149
	(A2 * !A3 * !B1 * Y)	0.00384	0.00392	0.00386
	(!A2 * !A3 * !B1 * Y)	-0.00148	-0.00152	-0.00149
	(!A2 * !A3 * !B1 * Y)	0.00384	0.00391	0.00386
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00146	-0.00146	-0.00144
	(!A1 * !A2 * !A3 * B1 * Y)	0.00385	0.00389	0.00385

SKY130_FD_SC_HS__O311Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00240	0.00288	0.00247	0.00242	0.00248	1.18074
sky130_fd_sc_hs__o311a_2	0.00265	0.00265	0.00264	0.00263	0.00261	2.31610
sky130_fd_sc_hs__o311a_4	0.00439	0.00484	0.00445	0.00545	0.00469	4.39762

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o311a_1	0.00000	0.05452	0.17410
sky130_fd_sc_hs__o311a_2	0.00000	0.07840	0.14936
sky130_fd_sc_hs__o311a_4	0.00000	0.15998	0.34952

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)	0.09583	0.58722	5.85353
	A2->X (RR)	0.09418	0.58600	5.83664
	A3->X (RR)	0.08702	0.56605	5.86648
	B1->X (RR)	0.08845	0.59047	6.11096
	C1->X (RR)	0.08377	0.57539	6.08545
sky130_fd_sc_hs__o311a_2	A1->X (RR)	0.09857	0.50246	5.92587
	A2->X (RR)	0.09462	0.49410	5.88549
	A3->X (RR)	0.08154	0.47531	5.88203
	B1->X (RR)	0.09361	0.52208	6.19214
	C1->X (RR)	0.08784	0.51045	6.15904
sky130_fd_sc_hs__o311a_4	A1->X (RR)	0.10750	0.44006	5.83633
	A2->X (RR)	0.10031	0.42615	5.78806
	A3->X (RR)	0.09159	0.41365	5.84362
	B1->X (RR)	0.10286	0.46144	6.11524
	C1->X (RR)	0.09416	0.44186	6.09658

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o311a_1	A1->X (FF)	0.25328	0.74024	5.10857
	A2->X (FF)	0.24432	0.74660	5.19527
	A3->X (FF)	0.20222	0.69309	4.99573
	B1->X (FF)	0.07062	0.51463	4.55837
	C1->X (FF)	0.06394	0.48858	4.54394
sky130_fd_sc_hs__o311a_2	A1->X (FF)	0.25908	0.74171	5.38396
	A2->X (FF)	0.24439	0.74766	5.48404
	A3->X (FF)	0.21916	0.70647	5.25698
	B1->X (FF)	0.08451	0.51625	4.72005
	C1->X (FF)	0.07623	0.49777	4.69251
sky130_fd_sc_hs__o311a_4	A1->X (FF)	0.30692	0.76588	5.37626
	A2->X (FF)	0.29261	0.76394	5.45090
	A3->X (FF)	0.24820	0.70375	5.24903
	B1->X (FF)	0.07755	0.47481	4.70579
	C1->X (FF)	0.06865	0.45576	4.69617

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	A1	0.01146	0.01123	0.01594
	A1	0.00494	0.00471	0.00971
	A2	0.01039	0.01033	0.01549
	A2	0.00433	0.00426	0.00943
	A3	0.00856	0.00862	0.01855
	A3	0.00330	0.00335	0.01357
	B1	0.00912	0.00918	0.02656
	B1	0.00327	0.00343	0.02202
	C1	0.00849	0.00874	0.02914
	C1	0.00426	0.00452	0.02519
sky130_fd_sc_hs__o311a_2	A1	0.01331	0.01308	0.01648
	A1	0.00633	0.00613	0.01010
	A2	0.01193	0.01221	0.01641
	A2	0.00564	0.00592	0.01073
	A3	0.01061	0.01092	0.01845
	A3	0.00500	0.00532	0.01345
	B1	0.00941	0.00970	0.02623
	B1	0.00499	0.00528	0.02239
	C1	0.00866	0.00915	0.02806
	C1	0.00497	0.00547	0.02496

sky130_fd_sc_hs__o311a_4	**A1**	0.02545	0.02595	0.03750
	A1	0.01324	0.01380	0.02542
	A2	0.02325	0.02380	0.03601
	A2	0.01188	0.01245	0.02485
	A3	0.01959	0.02028	0.04332
	A3	0.00962	0.01035	0.03347
	B1	0.02131	0.02187	0.05090
	B1	0.00953	0.01016	0.04281
	C1	0.01934	0.02045	0.05895
	C1	0.00953	0.01093	0.05262

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o311a_1	**A1**	0.00380	0.00359	0.00856
	A1	0.01024	0.01003	0.01476
	A2	0.00385	0.00362	0.00934
	A2	0.00980	0.00956	0.01526
	A3	0.00384	0.00445	0.01718
	A3	0.00896	0.00957	0.02200
	B1	0.00263	0.00384	0.02264
	B1	0.00807	0.00898	0.02633
	C1	0.00230	0.00332	0.02271
	C1	0.00657	0.00750	0.02655

sky130_fd_sc_hs__o311a_2	**A1**	0.00570	0.00542	0.01044
	A1	0.01258	0.01235	0.01623
	A2	0.00571	0.00536	0.01142
	A2	0.01186	0.01172	0.01655
	A3	0.00571	0.00600	0.01693
	A3	0.01116	0.01157	0.02216
	B1	0.00476	0.00634	0.02427
	B1	0.01052	0.01153	0.02769
	C1	0.00438	0.00557	0.02435
	C1	0.00943	0.01038	0.02649
sky130_fd_sc_hs__o311a_4	**A1**	0.01265	0.01200	0.02371
	A1	0.02469	0.02401	0.03376
	A2	0.01231	0.01182	0.02310
	A2	0.02341	0.02292	0.03413
	A3	0.01251	0.01289	0.03873
	A3	0.02217	0.02268	0.04706
	B1	0.00929	0.01128	0.04828
	B1	0.02015	0.02187	0.05732
	C1	0.00855	0.01077	0.05152
	C1	0.01743	0.01949	0.05740

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)**	0.00110	0.00111	0.00110
	(A2 * B1 * !C1 * !X)	-0.00134	-0.00136	-0.00137
	(A2 * A3 * B1 * C1 * X)	0.00128	0.00129	0.00128
	(A2 * A3 * B1 * C1 * X)	-0.00115	-0.00118	-0.00119
	(A2 * !B1 * !X)	0.00110	0.00111	0.00110
	(A2 * !B1 * !X)	-0.00134	-0.00136	-0.00137
	(A2 * !A3 * B1 * C1 * X)	0.00129	0.00129	0.00128
	(A2 * !A3 * B1 * C1 * X)	-0.00114	-0.00118	-0.00118
	(!A2 * A3 * B1 * C1 * X)	0.00129	0.00128	0.00128
	(!A2 * A3 * B1 * C1 * X)	-0.00108	-0.00116	-0.00115
	(!A2 * A3 * B1 * !C1 * !X)	0.00110	0.00110	0.00110
	(!A2 * A3 * B1 * !C1 * !X)	-0.00127	-0.00134	-0.00133
	(!A2 * A3 * !B1 * !X)	0.00110	0.00110	0.00110
	(!A2 * A3 * !B1 * !X)	-0.00127	-0.00134	-0.00133
	(!A2 * !A3 * B1 * !C1 * !X)	0.00105	0.00105	0.00104
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	0.00105	0.00107	0.00106
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00138	-0.00139	-0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00106	0.00107	0.00106
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	0.00116	0.00117	0.00116
	(A2 * B1 * !C1 * !X)	-0.00145	-0.00150	-0.00149
	(A2 * A3 * B1 * C1 * X)	0.00131	0.00132	0.00131
	(A2 * A3 * B1 * C1 * X)	-0.00130	-0.00134	-0.00134
	(A2 * !B1 * !X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !X)	-0.00145	-0.00150	-0.00149
	(A2 * !A3 * B1 * C1 * X)	0.00131	0.00132	0.00131
	(A2 * !A3 * B1 * C1 * X)	-0.00129	-0.00134	-0.00134
	(!A2 * A3 * B1 * C1 * X)	0.00132	0.00132	0.00131
	(!A2 * A3 * B1 * C1 * X)	-0.00120	-0.00130	-0.00129
	(!A2 * A3 * B1 * !C1 * !X)	0.00115	0.00116	0.00116
	(!A2 * A3 * B1 * !C1 * !X)	-0.00136	-0.00146	-0.00145
	(!A2 * A3 * !B1 * !X)	0.00116	0.00116	0.00116
	(!A2 * A3 * !B1 * !X)	-0.00137	-0.00145	-0.00145
	(!A2 * !A3 * B1 * !C1 * !X)	0.00108	0.00108	0.00107
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A2 * !A3 * !B1 * C1 * !X)	0.00109	0.00111	0.00110
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00151	-0.00152	-0.00151
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00109	0.00111	0.00110
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00151	-0.00152	-0.00151

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	0.00200	0.00200	0.00200
	(A2 * B1 * !C1 * !X)	-0.00242	-0.00250	-0.00249
	(A2 * A3 * B1 * C1 * X)	0.00200	0.00201	0.00200
	(A2 * A3 * B1 * C1 * X)	-0.00242	-0.00249	-0.00249
	(A2 * !B1 * !X)	0.00200	0.00200	0.00200
	(A2 * !B1 * !X)	-0.00242	-0.00250	-0.00249
	(A2 * !A3 * B1 * C1 * X)	0.00201	0.00201	0.00200
	(A2 * !A3 * B1 * C1 * X)	-0.00239	-0.00249	-0.00249
	(!A2 * A3 * B1 * C1 * X)	0.00203	0.00202	0.00200
	(!A2 * A3 * B1 * C1 * X)	-0.00223	-0.00242	-0.00241
	(!A2 * A3 * B1 * !C1 * !X)	0.00200	0.00202	0.00200
	(!A2 * A3 * B1 * !C1 * !X)	-0.00226	-0.00242	-0.00241
	(!A2 * A3 * !B1 * !X)	0.00200	0.00202	0.00200
	(!A2 * A3 * !B1 * !X)	-0.00226	-0.00242	-0.00241
	(!A2 * !A3 * B1 * !C1 * !X)	0.00186	0.00189	0.00187
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00252	-0.00255	-0.00253
	(!A2 * !A3 * !B1 * C1 * !X)	0.00189	0.00189	0.00190
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00253	-0.00252	-0.00253
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00188	0.00191	0.00189
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00253	-0.00254	-0.00253

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)**	-0.00110	-0.00109	-0.00110
	(A2 * B1 * !C1 * !X)	0.00136	0.00136	0.00137
	(A2 * A3 * B1 * C1 * X)	-0.00128	-0.00127	-0.00128
	(A2 * A3 * B1 * C1 * X)	0.00119	0.00118	0.00119
	(A2 * !B1 * !X)	-0.00110	-0.00109	-0.00110
	(A2 * !B1 * !X)	0.00136	0.00136	0.00137
	(A2 * !A3 * B1 * C1 * X)	-0.00128	-0.00127	-0.00128
	(A2 * !A3 * B1 * C1 * X)	0.00119	0.00118	0.00118
	(!A2 * A3 * B1 * C1 * X)	-0.00128	-0.00128	-0.00127
	(!A2 * A3 * B1 * C1 * X)	0.00116	0.00116	0.00115
	(!A2 * A3 * B1 * !C1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * B1 * !C1 * !X)	0.00134	0.00134	0.00133
	(!A2 * A3 * !B1 * !X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00099	-0.00105	-0.00104
	(!A2 * !A3 * B1 * !C1 * !X)	0.00139	0.00140	0.00138
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00102	-0.00107	-0.00106
	(!A2 * !A3 * !B1 * C1 * !X)	0.00138	0.00140	0.00138
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00102	-0.00107	-0.00106
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * !C1 * !X)**	-0.00115	-0.00116	-0.00115
	(A2 * B1 * !C1 * !X)	0.00148	0.00150	0.00149
	(A2 * A3 * B1 * C1 * X)	-0.00130	-0.00131	-0.00131
	(A2 * A3 * B1 * C1 * X)	0.00133	0.00135	0.00134
	(A2 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(A2 * !B1 * !X)	0.00148	0.00150	0.00149
	(A2 * !A3 * B1 * C1 * X)	-0.00130	-0.00131	-0.00131
	(A2 * !A3 * B1 * C1 * X)	0.00133	0.00135	0.00134
	(!A2 * A3 * B1 * C1 * X)	-0.00130	-0.00131	-0.00130
	(!A2 * A3 * B1 * C1 * X)	0.00129	0.00130	0.00129
	(!A2 * A3 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(!A2 * A3 * B1 * !C1 * !X)	0.00144	0.00146	0.00145
	(!A2 * A3 * !B1 * !X)	-0.00115	-0.00115	-0.00115
	(!A2 * A3 * !B1 * !X)	0.00144	0.00145	0.00145
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00100	-0.00108	-0.00107
	(!A2 * !A3 * B1 * !C1 * !X)	0.00151	0.00153	0.00152
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A2 * !A3 * !B1 * C1 * !X)	0.00153	0.00153	0.00152
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00153	0.00153	0.00152

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * !C1 * !X)**	-0.00199	-0.00200	-0.00199
	(A2 * B1 * !C1 * !X)	0.00249	0.00251	0.00249
	(A2 * A3 * B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(A2 * A3 * B1 * C1 * X)	0.00249	0.00251	0.00249
	(A2 * !B1 * !X)	-0.00199	-0.00200	-0.00199
	(A2 * !B1 * !X)	0.00249	0.00251	0.00249
	(A2 * !A3 * B1 * C1 * X)	-0.00199	-0.00200	-0.00199
	(A2 * !A3 * B1 * C1 * X)	0.00249	0.00251	0.00249
	(!A2 * A3 * B1 * C1 * X)	-0.00198	-0.00199	-0.00199
	(!A2 * A3 * B1 * C1 * X)	0.00240	0.00242	0.00241
	(!A2 * A3 * B1 * !C1 * !X)	-0.00198	-0.00199	-0.00199
	(!A2 * A3 * B1 * !C1 * !X)	0.00240	0.00242	0.00241
	(!A2 * A3 * !B1 * !X)	-0.00198	-0.00199	-0.00199
	(!A2 * A3 * !B1 * !X)	0.00240	0.00242	0.00241
	(!A2 * !A3 * B1 * !C1 * !X)	-0.00174	-0.00189	-0.00187
	(!A2 * !A3 * B1 * !C1 * !X)	0.00254	0.00256	0.00254
	(!A2 * !A3 * !B1 * C1 * !X)	-0.00181	-0.00189	-0.00190
	(!A2 * !A3 * !B1 * C1 * !X)	0.00255	0.00256	0.00254
	(!A2 * !A3 * !B1 * !C1 * !X)	-0.00181	-0.00191	-0.00189
	(!A2 * !A3 * !B1 * !C1 * !X)	0.00255	0.00256	0.00254

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)**	0.00133	0.00135	0.00133
	(A1 * A3 * B1 * C1 * X)	-0.00086	-0.00087	-0.00086
	(A1 * A3 * B1 * !C1 * !X)	0.00111	0.00111	0.00110
	(A1 * A3 * B1 * !C1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * A3 * !B1 * !X)	0.00111	0.00111	0.00110
	(A1 * A3 * !B1 * !X)	-0.00117	-0.00118	-0.00117
	(A1 * !A3 * B1 * C1 * X)	0.00132	0.00134	0.00132
	(A1 * !A3 * B1 * C1 * X)	-0.00074	-0.00075	-0.00075
	(A1 * !A3 * B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(A1 * !A3 * B1 * !C1 * !X)	-0.00143	-0.00147	-0.00146
	(A1 * !A3 * !B1 * C1 * !X)	0.00110	0.00111	0.00110
	(A1 * !A3 * !B1 * C1 * !X)	-0.00143	-0.00145	-0.00146
	(A1 * !A3 * !B1 * !C1 * !X)	0.00110	0.00110	0.00110
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00143	-0.00146	-0.00146
	(!A1 * A3 * B1 * C1 * X)	0.00149	0.00133	0.00132
	(!A1 * A3 * B1 * C1 * X)	-0.00105	-0.00123	-0.00124
	(!A1 * A3 * B1 * !C1 * !X)	0.00111	0.00110	0.00110
	(!A1 * A3 * B1 * !C1 * !X)	-0.00143	-0.00146	-0.00146
	(!A1 * A3 * !B1 * !X)	0.00111	0.00110	0.00110
	(!A1 * A3 * !B1 * !X)	-0.00143	-0.00146	-0.00146
	(!A1 * !A3 * B1 * !C1 * !X)	0.00104	0.00106	0.00105
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00147	-0.00149	-0.00147
	(!A1 * !A3 * !B1 * C1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00147	-0.00148	-0.00147
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00147	-0.00148	-0.00147

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	0.00124	0.00125	0.00122
	(A1 * A3 * B1 * C1 * X)	-0.00094	-0.00094	-0.00094
	(A1 * A3 * B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A1 * A3 * B1 * !C1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(A1 * A3 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * B1 * C1 * X)	0.00121	0.00123	0.00121
	(A1 * !A3 * B1 * C1 * X)	-0.00082	-0.00083	-0.00083
	(A1 * !A3 * B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(A1 * !A3 * B1 * !C1 * !X)	-0.00137	-0.00141	-0.00141
	(A1 * !A3 * !B1 * C1 * !X)	0.00115	0.00117	0.00116
	(A1 * !A3 * !B1 * C1 * !X)	-0.00137	-0.00141	-0.00141
	(A1 * !A3 * !B1 * !C1 * !X)	0.00115	0.00116	0.00116
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00137	-0.00141	-0.00141
	(!A1 * A3 * B1 * C1 * X)	0.00139	0.00122	0.00121
	(!A1 * A3 * B1 * C1 * X)	-0.00116	-0.00136	-0.00137
	(!A1 * A3 * B1 * !C1 * !X)	0.00115	0.00117	0.00116
	(!A1 * A3 * B1 * !C1 * !X)	-0.00138	-0.00142	-0.00141
	(!A1 * A3 * !B1 * !X)	0.00116	0.00117	0.00116
	(!A1 * A3 * !B1 * !X)	-0.00138	-0.00142	-0.00141
	(!A1 * !A3 * B1 * !C1 * !X)	0.00107	0.00107	0.00107
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00144	-0.00144	-0.00144
	(!A1 * !A3 * !B1 * C1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00144	-0.00145	-0.00144
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00144	-0.00145	-0.00144

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	0.00231	0.00236	0.00230
	(A1 * A3 * B1 * C1 * X)	-0.00173	-0.00176	-0.00174
	(A1 * A3 * B1 * !C1 * !X)	0.00231	0.00233	0.00230
	(A1 * A3 * B1 * !C1 * !X)	-0.00193	-0.00194	-0.00192
	(A1 * A3 * !B1 * !X)	0.00231	0.00233	0.00230
	(A1 * A3 * !B1 * !X)	-0.00193	-0.00194	-0.00192
	(A1 * !A3 * B1 * C1 * X)	0.00231	0.00233	0.00230
	(A1 * !A3 * B1 * C1 * X)	-0.00151	-0.00152	-0.00151
	(A1 * !A3 * B1 * !C1 * !X)	0.00230	0.00232	0.00230
	(A1 * !A3 * B1 * !C1 * !X)	-0.00242	-0.00249	-0.00247
	(A1 * !A3 * !B1 * C1 * !X)	0.00230	0.00232	0.00230
	(A1 * !A3 * !B1 * C1 * !X)	-0.00242	-0.00249	-0.00247
	(A1 * !A3 * !B1 * !C1 * !X)	0.00230	0.00232	0.00230
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00242	-0.00249	-0.00247
	(!A1 * A3 * B1 * C1 * X)	0.00261	0.00231	0.00230
	(!A1 * A3 * B1 * C1 * X)	-0.00211	-0.00247	-0.00248
	(!A1 * A3 * B1 * !C1 * !X)	0.00229	0.00230	0.00230
	(!A1 * A3 * B1 * !C1 * !X)	-0.00240	-0.00248	-0.00248
	(!A1 * A3 * !B1 * !X)	0.00229	0.00230	0.00230
	(!A1 * A3 * !B1 * !X)	-0.00240	-0.00248	-0.00248
	(!A1 * !A3 * B1 * !C1 * !X)	0.00214	0.00216	0.00214
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00252	-0.00253	-0.00251
	(!A1 * !A3 * !B1 * C1 * !X)	0.00219	0.00222	0.00220
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00251	-0.00252	-0.00251
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00218	0.00220	0.00218
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00251	-0.00252	-0.00251

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)**	-0.00131	-0.00132	-0.00132
	(A1 * A3 * B1 * C1 * X)	0.00086	0.00087	0.00086
	(A1 * A3 * B1 * !C1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * A3 * B1 * !C1 * !X)	0.00117	0.00118	0.00117
	(A1 * A3 * !B1 * !X)	-0.00109	-0.00110	-0.00109
	(A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * B1 * C1 * X)	-0.00131	-0.00132	-0.00130
	(A1 * !A3 * B1 * C1 * X)	0.00076	0.00077	0.00077
	(A1 * !A3 * B1 * !C1 * !X)	-0.00110	-0.00110	-0.00109
	(A1 * !A3 * B1 * !C1 * !X)	0.00146	0.00147	0.00146
	(A1 * !A3 * !B1 * C1 * !X)	-0.00110	-0.00109	-0.00109
	(A1 * !A3 * !B1 * C1 * !X)	0.00146	0.00145	0.00146
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00110	-0.00109	-0.00109
	(A1 * !A3 * !B1 * !C1 * !X)	0.00146	0.00146	0.00146
	(!A1 * A3 * B1 * C1 * X)	-0.00131	-0.00131	-0.00131
	(!A1 * A3 * B1 * C1 * X)	0.00124	0.00125	0.00124
	(!A1 * A3 * B1 * !C1 * !X)	-0.00110	-0.00110	-0.00109
	(!A1 * A3 * B1 * !C1 * !X)	0.00146	0.00146	0.00146
	(!A1 * A3 * !B1 * !X)	-0.00110	-0.00110	-0.00109
	(!A1 * A3 * !B1 * !X)	0.00146	0.00146	0.00146
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00097	-0.00106	-0.00105
	(!A1 * !A3 * B1 * !C1 * !X)	0.00148	0.00149	0.00148
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00101	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * C1 * !X)	0.00147	0.00149	0.00148
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00101	-0.00107	-0.00106
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00147	0.00149	0.00148

sky130_fd_sc_hs__o311a_2	**(A1 * A3 * B1 * C1 * X)**	-0.00120	-0.00121	-0.00120
	(A1 * A3 * B1 * C1 * X)	0.00094	0.00094	0.00094
	(A1 * A3 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00115
	(A1 * A3 * B1 * !C1 * !X)	0.00106	0.00107	0.00106
	(A1 * A3 * !B1 * !X)	-0.00116	-0.00116	-0.00115
	(A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00106
	(A1 * !A3 * B1 * C1 * X)	-0.00120	-0.00120	-0.00119
	(A1 * !A3 * B1 * C1 * X)	0.00084	0.00085	0.00085
	(A1 * !A3 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A3 * B1 * !C1 * !X)	0.00141	0.00141	0.00141
	(A1 * !A3 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A3 * !B1 * C1 * !X)	0.00140	0.00141	0.00141
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(A1 * !A3 * !B1 * !C1 * !X)	0.00141	0.00141	0.00141
	(!A1 * A3 * B1 * C1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * B1 * C1 * X)	0.00136	0.00136	0.00137
	(!A1 * A3 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * A3 * B1 * !C1 * !X)	0.00141	0.00142	0.00141
	(!A1 * A3 * !B1 * !X)	-0.00115	-0.00116	-0.00115
	(!A1 * A3 * !B1 * !X)	0.00141	0.00142	0.00141
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00099	-0.00107	-0.00107
	(!A1 * !A3 * B1 * !C1 * !X)	0.00144	0.00145	0.00144
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A1 * !A3 * !B1 * C1 * !X)	0.00145	0.00145	0.00144
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00145	0.00145	0.00144

sky130_fd_sc_hs__o311a_4	**(A1 * A3 * B1 * C1 * X)**	-0.00229	-0.00230	-0.00229
	(A1 * A3 * B1 * C1 * X)	0.00173	0.00176	0.00174
	(A1 * A3 * B1 * !C1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * A3 * B1 * !C1 * !X)	0.00193	0.00194	0.00192
	(A1 * A3 * !B1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * A3 * !B1 * !X)	0.00193	0.00194	0.00192
	(A1 * !A3 * B1 * C1 * X)	-0.00228	-0.00229	-0.00226
	(A1 * !A3 * B1 * C1 * X)	0.00154	0.00155	0.00156
	(A1 * !A3 * B1 * !C1 * !X)	-0.00228	-0.00230	-0.00229
	(A1 * !A3 * B1 * !C1 * !X)	0.00246	0.00249	0.00247
	(A1 * !A3 * !B1 * C1 * !X)	-0.00229	-0.00230	-0.00229
	(A1 * !A3 * !B1 * C1 * !X)	0.00247	0.00249	0.00247
	(A1 * !A3 * !B1 * !C1 * !X)	-0.00228	-0.00230	-0.00229
	(A1 * !A3 * !B1 * !C1 * !X)	0.00246	0.00249	0.00247
	(!A1 * A3 * B1 * C1 * X)	-0.00228	-0.00229	-0.00228
	(!A1 * A3 * B1 * C1 * X)	0.00247	0.00249	0.00248
	(!A1 * A3 * B1 * !C1 * !X)	-0.00228	-0.00230	-0.00229
	(!A1 * A3 * B1 * !C1 * !X)	0.00246	0.00249	0.00248
	(!A1 * A3 * !B1 * !X)	-0.00228	-0.00230	-0.00229
	(!A1 * A3 * !B1 * !X)	0.00246	0.00249	0.00248
	(!A1 * !A3 * B1 * !C1 * !X)	-0.00198	-0.00216	-0.00214
	(!A1 * !A3 * B1 * !C1 * !X)	0.00252	0.00254	0.00252
	(!A1 * !A3 * !B1 * C1 * !X)	-0.00207	-0.00221	-0.00219
	(!A1 * !A3 * !B1 * C1 * !X)	0.00253	0.00254	0.00252
	(!A1 * !A3 * !B1 * !C1 * !X)	-0.00207	-0.00220	-0.00218
	(!A1 * !A3 * !B1 * !C1 * !X)	0.00253	0.00254	0.00252

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)**	0.00122	0.00123	0.00122
	(A2 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A2 * B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(A2 * B1 * !C1 * !X)	-0.00124	-0.00128	-0.00128
	(A2 * !B1 * C1 * !X)	0.00109	0.00109	0.00109
	(A2 * !B1 * C1 * !X)	-0.00124	-0.00128	-0.00128
	(A2 * !B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(A2 * !B1 * !C1 * !X)	-0.00124	-0.00128	-0.00128
	(A1 * !A2 * B1 * C1 * X)	0.00122	0.00123	0.00122
	(A1 * !A2 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !C1 * !X)	0.00109	0.00109	0.00109
	(A1 * !A2 * B1 * !C1 * !X)	-0.00116	-0.00123	-0.00123
	(A1 * !A2 * !B1 * C1 * !X)	0.00109	0.00109	0.00109
	(A1 * !A2 * !B1 * C1 * !X)	-0.00117	-0.00123	-0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	0.00109	0.00110	0.00109
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00117	-0.00124	-0.00123
	(!A1 * !A2 * B1 * !C1 * !X)	0.00103	0.00104	0.00102
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * C1 * !X)	0.00105	0.00105	0.00104
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00129	-0.00130	-0.00129
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00104	0.00105	0.00105
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00129	-0.00130	-0.00129

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	0.00133	0.00135	0.00133
	(A2 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A2 * B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A2 * B1 * !C1 * !X)	-0.00133	-0.00138	-0.00137
	(A2 * !B1 * C1 * !X)	0.00116	0.00117	0.00116
	(A2 * !B1 * C1 * !X)	-0.00133	-0.00137	-0.00137
	(A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A2 * !B1 * !C1 * !X)	-0.00133	-0.00137	-0.00137
	(A1 * !A2 * B1 * C1 * X)	0.00133	0.00135	0.00133
	(A1 * !A2 * B1 * C1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * B1 * !C1 * !X)	-0.00123	-0.00132	-0.00132
	(A1 * !A2 * !B1 * C1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !B1 * C1 * !X)	-0.00123	-0.00132	-0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	0.00116	0.00117	0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00124	-0.00132	-0.00132
	(!A1 * !A2 * B1 * !C1 * !X)	0.00107	0.00109	0.00107
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00140	-0.00140	-0.00139
	(!A1 * !A2 * !B1 * C1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00140	-0.00140	-0.00140
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00110	0.00111	0.00110
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	0.00232	0.00234	0.00232
	(A2 * B1 * C1 * X)	-0.00135	-0.00136	-0.00135
	(A2 * B1 * !C1 * !X)	0.00203	0.00204	0.00203
	(A2 * B1 * !C1 * !X)	-0.00248	-0.00256	-0.00255
	(A2 * !B1 * C1 * !X)	0.00203	0.00204	0.00203
	(A2 * !B1 * C1 * !X)	-0.00248	-0.00256	-0.00255
	(A2 * !B1 * !C1 * !X)	0.00203	0.00204	0.00203
	(A2 * !B1 * !C1 * !X)	-0.00248	-0.00257	-0.00256
	(A1 * !A2 * B1 * C1 * X)	0.00232	0.00234	0.00232
	(A1 * !A2 * B1 * C1 * X)	-0.00135	-0.00136	-0.00135
	(A1 * !A2 * B1 * !C1 * !X)	0.00203	0.00204	0.00203
	(A1 * !A2 * B1 * !C1 * !X)	-0.00231	-0.00246	-0.00245
	(A1 * !A2 * !B1 * C1 * !X)	0.00203	0.00204	0.00203
	(A1 * !A2 * !B1 * C1 * !X)	-0.00231	-0.00246	-0.00245
	(A1 * !A2 * !B1 * !C1 * !X)	0.00203	0.00204	0.00203
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00231	-0.00247	-0.00246
	(!A1 * !A2 * B1 * !C1 * !X)	0.00193	0.00193	0.00193
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00260	-0.00259	-0.00259
	(!A1 * !A2 * !B1 * C1 * !X)	0.00193	0.00196	0.00195
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00258	-0.00260	-0.00259
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00195	0.00197	0.00195
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00260	-0.00261	-0.00259

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)**	-0.00115	-0.00116	-0.00121
	(A2 * B1 * C1 * X)	0.00075	0.00075	0.00070
	(A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * B1 * !C1 * !X)	0.00127	0.00128	0.00128
	(A2 * !B1 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * C1 * !X)	0.00127	0.00128	0.00128
	(A2 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A2 * !B1 * !C1 * !X)	0.00127	0.00128	0.00128
	(A1 * !A2 * B1 * C1 * X)	-0.00110	-0.00111	-0.00120
	(A1 * !A2 * B1 * C1 * X)	0.00078	0.00078	0.00071
	(A1 * !A2 * B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * B1 * !C1 * !X)	0.00122	0.00123	0.00123
	(A1 * !A2 * !B1 * C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * C1 * !X)	0.00122	0.00123	0.00123
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00108	-0.00109	-0.00108
	(A1 * !A2 * !B1 * !C1 * !X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00096	-0.00104	-0.00102
	(!A1 * !A2 * B1 * !C1 * !X)	0.00129	0.00130	0.00130
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00101	-0.00105	-0.00104
	(!A1 * !A2 * !B1 * C1 * !X)	0.00129	0.00130	0.00130
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00101	-0.00105	-0.00105
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00129	0.00131	0.00130

sky130_fd_sc_hs__o311a_2	**(A2 * B1 * C1 * X)**	-0.00129	-0.00130	-0.00133
	(A2 * B1 * C1 * X)	0.00073	0.00073	0.00070
	(A2 * B1 * !C1 * !X)	-0.00116	-0.00116	-0.00116
	(A2 * B1 * !C1 * !X)	0.00137	0.00138	0.00137
	(A2 * !B1 * C1 * !X)	-0.00116	-0.00116	-0.00116
	(A2 * !B1 * C1 * !X)	0.00137	0.00137	0.00137
	(A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(A2 * !B1 * !C1 * !X)	0.00136	0.00137	0.00137
	(A1 * !A2 * B1 * C1 * X)	-0.00123	-0.00124	-0.00132
	(A1 * !A2 * B1 * C1 * X)	0.00076	0.00076	0.00070
	(A1 * !A2 * B1 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * B1 * !C1 * !X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B1 * C1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * !B1 * C1 * !X)	0.00131	0.00132	0.00132
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00115	-0.00116	-0.00116
	(A1 * !A2 * !B1 * !C1 * !X)	0.00132	0.00132	0.00132
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00099	-0.00109	-0.00107
	(!A1 * !A2 * B1 * !C1 * !X)	0.00140	0.00141	0.00140
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A1 * !A2 * !B1 * C1 * !X)	0.00141	0.00141	0.00140
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00104	-0.00111	-0.00110
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00141	0.00141	0.00140

sky130_fd_sc_hs__o311a_4	**(A2 * B1 * C1 * X)**	-0.00218	-0.00220	-0.00230
	(A2 * B1 * C1 * X)	0.00149	0.00149	0.00139
	(A2 * B1 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(A2 * B1 * !C1 * !X)	0.00254	0.00256	0.00255
	(A2 * !B1 * C1 * !X)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * C1 * !X)	0.00254	0.00256	0.00255
	(A2 * !B1 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(A2 * !B1 * !C1 * !X)	0.00255	0.00257	0.00256
	(A1 * !A2 * B1 * C1 * X)	-0.00207	-0.00209	-0.00228
	(A1 * !A2 * B1 * C1 * X)	0.00155	0.00155	0.00139
	(A1 * !A2 * B1 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * B1 * !C1 * !X)	0.00245	0.00246	0.00245
	(A1 * !A2 * !B1 * C1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * !B1 * C1 * !X)	0.00244	0.00246	0.00245
	(A1 * !A2 * !B1 * !C1 * !X)	-0.00202	-0.00203	-0.00202
	(A1 * !A2 * !B1 * !C1 * !X)	0.00245	0.00247	0.00246
	(!A1 * !A2 * B1 * !C1 * !X)	-0.00175	-0.00193	-0.00193
	(!A1 * !A2 * B1 * !C1 * !X)	0.00260	0.00262	0.00260
	(!A1 * !A2 * !B1 * C1 * !X)	-0.00182	-0.00195	-0.00195
	(!A1 * !A2 * !B1 * C1 * !X)	0.00260	0.00262	0.00260
	(!A1 * !A2 * !B1 * !C1 * !X)	-0.00182	-0.00195	-0.00195
	(!A1 * !A2 * !B1 * !C1 * !X)	0.00260	0.00262	0.00260

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

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

sky130_fd_sc_hs__o311a_1	**(A3 * !C1 * !X)**	0.00098	0.00100	0.00099
	(A3 * !C1 * !X)	-0.00131	-0.00133	-0.00132
	(A2 * !A3 * !C1 * !X)	0.00098	0.00100	0.00099
	(A2 * !A3 * !C1 * !X)	-0.00131	-0.00133	-0.00132
	(A1 * !A2 * !A3 * !C1 * !X)	0.00098	0.00099	0.00099
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00131	-0.00132	-0.00132
	(!A1 * !A2 * !A3 * C1 * !X)	0.00051	0.00051	0.00049
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00132	-0.00132	-0.00131
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00063	0.00063	0.00062
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00132	-0.00132	-0.00132
sky130_fd_sc_hs__o311a_2	**(A3 * !C1 * !X)**	0.00109	0.00110	0.00109
	(A3 * !C1 * !X)	-0.00137	-0.00138	-0.00137
	(A2 * !A3 * !C1 * !X)	0.00108	0.00110	0.00109
	(A2 * !A3 * !C1 * !X)	-0.00136	-0.00137	-0.00137
	(A1 * !A2 * !A3 * !C1 * !X)	0.00108	0.00110	0.00109
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00136	-0.00138	-0.00137
	(!A1 * !A2 * !A3 * C1 * !X)	0.00047	0.00048	0.00047
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00139	-0.00140	-0.00139
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00058	0.00059	0.00058
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00140	-0.00141	-0.00140
sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	0.00218	0.00219	0.00218
	(A3 * !C1 * !X)	-0.00296	-0.00297	-0.00296
	(A2 * !A3 * !C1 * !X)	0.00218	0.00221	0.00218
	(A2 * !A3 * !C1 * !X)	-0.00296	-0.00298	-0.00296
	(A1 * !A2 * !A3 * !C1 * !X)	0.00217	0.00220	0.00218
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00296	-0.00298	-0.00296
	(!A1 * !A2 * !A3 * C1 * !X)	0.00108	0.00108	0.00108
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00297	-0.00297	-0.00297
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00130	0.00132	0.00131
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00297	-0.00300	-0.00299

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !C1 * !X)	-0.00092	-0.00099	-0.00099
	(A3 * !C1 * !X)	0.00136	0.00134	0.00132
	(A2 * !A3 * !C1 * !X)	-0.00092	-0.00099	-0.00099
	(A2 * !A3 * !C1 * !X)	0.00136	0.00134	0.00132
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00091	-0.00099	-0.00099
	(A1 * !A2 * !A3 * !C1 * !X)	0.00137	0.00134	0.00132
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00046	-0.00046	-0.00046
	(!A1 * !A2 * !A3 * C1 * !X)	0.00135	0.00135	0.00133
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00063	-0.00063	-0.00062
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00139	0.00136	0.00133
sky130_fd_sc_hs__o311a_2	(A3 * !C1 * !X)	-0.00102	-0.00109	-0.00109
	(A3 * !C1 * !X)	0.00141	0.00139	0.00138
	(A2 * !A3 * !C1 * !X)	-0.00101	-0.00110	-0.00109
	(A2 * !A3 * !C1 * !X)	0.00142	0.00139	0.00138
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00101	-0.00109	-0.00109
	(A1 * !A2 * !A3 * !C1 * !X)	0.00143	0.00138	0.00138
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00044	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * C1 * !X)	0.00141	0.00143	0.00140
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00058	-0.00059	-0.00058
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00148	0.00146	0.00141

sky130_fd_sc_hs__o311a_4	**(A3 * !C1 * !X)**	-0.00203	-0.00218	-0.00218
	(A3 * !C1 * !X)	0.00304	0.00300	0.00297
	(A2 * !A3 * !C1 * !X)	-0.00201	-0.00219	-0.00218
	(A2 * !A3 * !C1 * !X)	0.00306	0.00302	0.00297
	(A1 * !A2 * !A3 * !C1 * !X)	-0.00199	-0.00219	-0.00218
	(A1 * !A2 * !A3 * !C1 * !X)	0.00308	0.00302	0.00297
	(!A1 * !A2 * !A3 * C1 * !X)	-0.00103	-0.00103	-0.00104
	(!A1 * !A2 * !A3 * C1 * !X)	0.00305	0.00306	0.00300
	(!A1 * !A2 * !A3 * !C1 * !X)	-0.00130	-0.00132	-0.00131
	(!A1 * !A2 * !A3 * !C1 * !X)	0.00308	0.00308	0.00300

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	0.00039	0.00039	0.00038
	(A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00038
	(A2 * !A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(!A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00038
	(!A2 * !A3 * !B1 * !X)	-0.00155	-0.00156	-0.00158
	(!A1 * !A2 * !A3 * B1 * !X)	0.00046	0.00046	0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00148	-0.00150	-0.00157
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	0.00043	0.00044	0.00043
	(A3 * !B1 * !X)	-0.00157	-0.00158	-0.00160
	(A2 * !A3 * !B1 * !X)	0.00043	0.00044	0.00043
	(A2 * !A3 * !B1 * !X)	-0.00157	-0.00158	-0.00160
	(!A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00043
	(!A2 * !A3 * !B1 * !X)	-0.00158	-0.00158	-0.00160
	(!A1 * !A2 * !A3 * B1 * !X)	0.00046	0.00046	0.00043
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00151	-0.00153	-0.00160
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	0.00079	0.00080	0.00077
	(A3 * !B1 * !X)	-0.00294	-0.00295	-0.00300
	(A2 * !A3 * !B1 * !X)	0.00079	0.00080	0.00077
	(A2 * !A3 * !B1 * !X)	-0.00294	-0.00295	-0.00300
	(!A2 * !A3 * !B1 * !X)	0.00079	0.00080	0.00077
	(!A2 * !A3 * !B1 * !X)	-0.00294	-0.00295	-0.00300
	(!A1 * !A2 * !A3 * B1 * !X)	0.00083	0.00084	0.00075
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00280	-0.00282	-0.00297

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o311a_1	(A3 * !B1 * !X)	-0.00038	-0.00038	-0.00037
	(A3 * !B1 * !X)	0.00159	0.00161	0.00158
	(A2 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00037
	(A2 * !A3 * !B1 * !X)	0.00159	0.00161	0.00158
	(!A2 * !A3 * !B1 * !X)	-0.00038	-0.00038	-0.00037
	(!A2 * !A3 * !B1 * !X)	0.00159	0.00161	0.00158
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00038	-0.00038	-0.00037
	(!A1 * !A2 * !A3 * B1 * !X)	0.00158	0.00160	0.00158
sky130_fd_sc_hs__o311a_2	(A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A3 * !B1 * !X)	0.00161	0.00163	0.00161
	(A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(A2 * !A3 * !B1 * !X)	0.00161	0.00163	0.00161
	(!A2 * !A3 * !B1 * !X)	-0.00042	-0.00042	-0.00042
	(!A2 * !A3 * !B1 * !X)	0.00161	0.00163	0.00161
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * B1 * !X)	0.00161	0.00162	0.00160
sky130_fd_sc_hs__o311a_4	(A3 * !B1 * !X)	-0.00076	-0.00077	-0.00075
	(A3 * !B1 * !X)	0.00301	0.00305	0.00301
	(A2 * !A3 * !B1 * !X)	-0.00076	-0.00077	-0.00075
	(A2 * !A3 * !B1 * !X)	0.00302	0.00305	0.00301
	(!A2 * !A3 * !B1 * !X)	-0.00076	-0.00077	-0.00075
	(!A2 * !A3 * !B1 * !X)	0.00302	0.00305	0.00301
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00072	-0.00073	-0.00071
	(!A1 * !A2 * !A3 * B1 * !X)	0.00301	0.00305	0.00301

SKY130_FD_SC_HS__O31AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00244	0.00290	0.00284	0.00256	0.38383
sky130_fd_sc_hs__o31ai_2	0.00500	0.00489	0.00517	0.00510	0.66830
sky130_fd_sc_hs__o31ai_4	0.00958	0.00959	0.01005	0.00759	1.22827

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__o31ai_1	0.00000	0.01823	0.06484
sky130_fd_sc_hs__o31ai_2	0.00000	0.03646	0.12968
sky130_fd_sc_hs__o31ai_4	0.00000	0.04456	0.19452

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)	0.15691	1.13910	11.00900
	A2->Y (FR)	0.15114	1.15379	11.45270
	A3->Y (FR)	0.12189	1.09282	11.06430
	B1->Y (FR)	0.03121	0.58700	6.77876
sky130_fd_sc_hs__o31ai_2	A1->Y (FR)	0.17016	1.01830	10.95420
	A2->Y (FR)	0.15305	1.01944	11.38210
	A3->Y (FR)	0.12235	0.96950	11.16570
	B1->Y (FR)	0.02800	0.53659	6.74258
sky130_fd_sc_hs__o31ai_4	A1->Y (FR)	0.15884	0.87852	10.78640
	A2->Y (FR)	0.14368	0.88428	11.29930
	A3->Y (FR)	0.10970	0.83558	11.12290
	B1->Y (FR)	0.03517	0.61221	8.48513

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31ai_1	A1->Y (RF)	0.02956	0.29320	2.72780
	A2->Y (RF)	0.03069	0.28841	2.71485
	A3->Y (RF)	0.02562	0.27732	2.67582
	B1->Y (RF)	0.02475	0.32189	3.09220
sky130_fd_sc_hs__o31ai_2	A1->Y (RF)	0.03116	0.26214	2.71494
	A2->Y (RF)	0.03059	0.25272	2.68868
	A3->Y (RF)	0.02636	0.24235	2.66551
	B1->Y (RF)	0.02365	0.29093	3.16742
sky130_fd_sc_hs__o31ai_4	A1->Y (RF)	0.03236	0.22055	2.61888
	A2->Y (RF)	0.03047	0.20871	2.57390
	A3->Y (RF)	0.02365	0.18928	2.45452
	B1->Y (RF)	0.02472	0.28708	3.66516

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00047	0.00035	0.00109
	A1	0.00638	0.00627	0.00702
	A2	0.00049	0.00032	0.00136
	A2	0.00598	0.00582	0.00685
	A3	0.00046	0.00059	0.00438
	A3	0.00521	0.00535	0.00914
	B1	-0.00039	0.00004	0.00533
	B1	0.00449	0.00485	0.00994
sky130_fd_sc_hs__o31ai_2	A1	0.00096	0.00063	0.00210
	A1	0.01291	0.01260	0.01409
	A2	0.00101	0.00068	0.00282
	A2	0.01135	0.01104	0.01314
	A3	0.00092	0.00106	0.00830
	A3	0.00998	0.01014	0.01736
	B1	-0.00145	-0.00043	0.00980
	B1	0.00809	0.00899	0.01846
sky130_fd_sc_hs__o31ai_4	A1	0.00130	0.00077	0.00365
	A1	0.02447	0.02396	0.02690
	A2	0.00137	0.00077	0.00485
	A2	0.02157	0.02101	0.02502
	A3	0.00118	0.00154	0.01532
	A3	0.01873	0.01882	0.03286
	B1	-0.00266	-0.00153	0.00963
	B1	0.01332	0.01394	0.02433

Internal switching power(pJ) to Y falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31ai_1	A1	0.00766	0.00755	0.00830
	A1	0.00174	0.00163	0.00239
	A2	0.00663	0.00653	0.00729
	A2	0.00109	0.00098	0.00174
	A3	0.00519	0.00519	0.00597
	A3	0.00035	0.00033	0.00111
	B1	0.00647	0.00642	0.00774
	B1	0.00022	0.00019	0.00169
sky130_fd_sc_hs__o31ai_2	A1	0.01575	0.01544	0.01696
	A1	0.00381	0.00349	0.00502
	A2	0.01263	0.01247	0.01406
	A2	0.00214	0.00197	0.00357
	A3	0.00991	0.00989	0.01158
	A3	0.00065	0.00060	0.00226
	B1	0.01305	0.01291	0.01564
	B1	0.00045	0.00037	0.00354
sky130_fd_sc_hs__o31ai_4	A1	0.02914	0.02855	0.03186
	A1	0.00608	0.00542	0.00863
	A2	0.02332	0.02292	0.02638
	A2	0.00287	0.00244	0.00578
	A3	0.01763	0.01761	0.02116
	A3	-0.00025	-0.00036	0.00327
	B1	0.02319	0.02310	0.02575
	B1	0.00120	0.00124	0.00447

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)**	0.00125	0.00125	0.00124
	(A2 * A3 * B1 * !Y)	-0.00129	-0.00132	-0.00132
	(A2 * !B1 * Y)	0.00125	0.00125	0.00124
	(A2 * !B1 * Y)	-0.00129	-0.00132	-0.00132
	(A2 * !A3 * B1 * !Y)	0.00125	0.00125	0.00124
	(A2 * !A3 * B1 * !Y)	-0.00127	-0.00132	-0.00132
	(!A2 * A3 * B1 * !Y)	0.00125	0.00125	0.00124
	(!A2 * A3 * B1 * !Y)	-0.00119	-0.00128	-0.00128
	(!A2 * A3 * !B1 * Y)	0.00125	0.00124	0.00124
	(!A2 * A3 * !B1 * Y)	-0.00120	-0.00128	-0.00128
	(!A2 * !A3 * !B1 * Y)	0.00117	0.00118	0.00118
	(!A2 * !A3 * !B1 * Y)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	0.00252	0.00253	0.00250
	(A2 * A3 * B1 * !Y)	-0.00263	-0.00275	-0.00273
	(A2 * !B1 * Y)	0.00250	0.00253	0.00250
	(A2 * !B1 * Y)	-0.00265	-0.00276	-0.00274
	(A2 * !A3 * B1 * !Y)	0.00252	0.00253	0.00250
	(A2 * !A3 * B1 * !Y)	-0.00261	-0.00275	-0.00273
	(!A2 * A3 * B1 * !Y)	0.00253	0.00253	0.00250
	(!A2 * A3 * B1 * !Y)	-0.00243	-0.00265	-0.00264
	(!A2 * A3 * !B1 * Y)	0.00250	0.00252	0.00250
	(!A2 * A3 * !B1 * Y)	-0.00247	-0.00266	-0.00264
	(!A2 * !A3 * !B1 * Y)	0.00236	0.00239	0.00237
	(!A2 * !A3 * !B1 * Y)	-0.00280	-0.00282	-0.00280

sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	0.00482	0.00485	0.00482
	(A2 * A3 * B1 * !Y)	-0.00519	-0.00543	-0.00540
	(A2 * !B1 * Y)	0.00480	0.00484	0.00481
	(A2 * !B1 * Y)	-0.00521	-0.00544	-0.00541
	(A2 * !A3 * B1 * !Y)	0.00483	0.00485	0.00482
	(A2 * !A3 * B1 * !Y)	-0.00514	-0.00542	-0.00540
	(!A2 * A3 * B1 * !Y)	0.00487	0.00488	0.00482
	(!A2 * A3 * B1 * !Y)	-0.00484	-0.00525	-0.00522
	(!A2 * A3 * !B1 * Y)	0.00481	0.00487	0.00481
	(!A2 * A3 * !B1 * Y)	-0.00489	-0.00525	-0.00522
	(!A2 * !A3 * !B1 * Y)	0.00454	0.00456	0.00454
	(!A2 * !A3 * !B1 * Y)	-0.00555	-0.00555	-0.00554

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)**	-0.00124	-0.00124	-0.00124
	(A2 * A3 * B1 * !Y)	0.00132	0.00132	0.00132
	(A2 * !B1 * Y)	-0.00124	-0.00124	-0.00124
	(A2 * !B1 * Y)	0.00132	0.00132	0.00132
	(A2 * !A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(A2 * !A3 * B1 * !Y)	0.00132	0.00132	0.00132
	(!A2 * A3 * B1 * !Y)	-0.00124	-0.00124	-0.00124
	(!A2 * A3 * B1 * !Y)	0.00128	0.00128	0.00128
	(!A2 * A3 * !B1 * Y)	-0.00124	-0.00124	-0.00124
	(!A2 * A3 * !B1 * Y)	0.00128	0.00128	0.00128
	(!A2 * !A3 * !B1 * Y)	-0.00113	-0.00118	-0.00118
	(!A2 * !A3 * !B1 * Y)	0.00135	0.00135	0.00134

sky130_fd_sc_hs__o31ai_2	**(A2 * A3 * B1 * !Y)**	-0.00249	-0.00251	-0.00250
	(A2 * A3 * B1 * !Y)	0.00272	0.00275	0.00273
	(A2 * !B1 * Y)	-0.00249	-0.00250	-0.00249
	(A2 * !B1 * Y)	0.00272	0.00276	0.00274
	(A2 * !A3 * B1 * !Y)	-0.00249	-0.00251	-0.00250
	(A2 * !A3 * B1 * !Y)	0.00272	0.00275	0.00273
	(!A2 * A3 * B1 * !Y)	-0.00249	-0.00250	-0.00249
	(!A2 * A3 * B1 * !Y)	0.00262	0.00265	0.00264
	(!A2 * A3 * !B1 * Y)	-0.00249	-0.00250	-0.00249
	(!A2 * A3 * !B1 * Y)	0.00263	0.00266	0.00264
	(!A2 * !A3 * !B1 * Y)	-0.00221	-0.00236	-0.00237
	(!A2 * !A3 * !B1 * Y)	0.00282	0.00284	0.00281
sky130_fd_sc_hs__o31ai_4	**(A2 * A3 * B1 * !Y)**	-0.00479	-0.00483	-0.00481
	(A2 * A3 * B1 * !Y)	0.00537	0.00545	0.00540
	(A2 * !B1 * Y)	-0.00478	-0.00482	-0.00480
	(A2 * !B1 * Y)	0.00538	0.00546	0.00541
	(A2 * !A3 * B1 * !Y)	-0.00479	-0.00483	-0.00481
	(A2 * !A3 * B1 * !Y)	0.00537	0.00545	0.00540
	(!A2 * A3 * B1 * !Y)	-0.00480	-0.00482	-0.00481
	(!A2 * A3 * B1 * !Y)	0.00519	0.00525	0.00522
	(!A2 * A3 * !B1 * Y)	-0.00479	-0.00482	-0.00480
	(!A2 * A3 * !B1 * Y)	0.00520	0.00525	0.00522
	(!A2 * !A3 * !B1 * Y)	-0.00424	-0.00455	-0.00454
	(!A2 * !A3 * !B1 * Y)	0.00555	0.00561	0.00555

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)**	0.00144	0.00146	0.00142
	(A1 * A3 * B1 * !Y)	-0.00093	-0.00094	-0.00094
	(A1 * A3 * !B1 * Y)	0.00124	0.00124	0.00123
	(A1 * A3 * !B1 * Y)	-0.00121	-0.00121	-0.00120
	(A1 * !A3 * B1 * !Y)	0.00142	0.00143	0.00141
	(A1 * !A3 * B1 * !Y)	-0.00083	-0.00083	-0.00083
	(A1 * !A3 * !B1 * Y)	0.00122	0.00124	0.00123
	(A1 * !A3 * !B1 * Y)	-0.00152	-0.00155	-0.00155
	(!A1 * A3 * B1 * !Y)	0.00159	0.00143	0.00141
	(!A1 * A3 * B1 * !Y)	-0.00116	-0.00137	-0.00137
	(!A1 * A3 * !B1 * Y)	0.00123	0.00124	0.00123
	(!A1 * A3 * !B1 * Y)	-0.00152	-0.00156	-0.00156
	(!A1 * !A3 * !B1 * Y)	0.00115	0.00116	0.00115
	(!A1 * !A3 * !B1 * Y)	-0.00158	-0.00159	-0.00158
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	0.00250	0.00255	0.00249
	(A1 * A3 * B1 * !Y)	-0.00182	-0.00183	-0.00183
	(A1 * A3 * !B1 * Y)	0.00242	0.00245	0.00242
	(A1 * A3 * !B1 * Y)	-0.00204	-0.00205	-0.00204
	(A1 * !A3 * B1 * !Y)	0.00247	0.00250	0.00247
	(A1 * !A3 * B1 * !Y)	-0.00159	-0.00160	-0.00159
	(A1 * !A3 * !B1 * Y)	0.00242	0.00241	0.00242
	(A1 * !A3 * !B1 * Y)	-0.00262	-0.00271	-0.00271
	(!A1 * A3 * B1 * !Y)	0.00279	0.00247	0.00245
	(!A1 * A3 * B1 * !Y)	-0.00232	-0.00271	-0.00271
	(!A1 * A3 * !B1 * Y)	0.00241	0.00243	0.00242
	(!A1 * A3 * !B1 * Y)	-0.00266	-0.00275	-0.00274
	(!A1 * !A3 * !B1 * Y)	0.00231	0.00233	0.00231
	(!A1 * !A3 * !B1 * Y)	-0.00279	-0.00281	-0.00279

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	0.00499	0.00506	0.00493
	(A1 * A3 * B1 * !Y)	-0.00365	-0.00365	-0.00363
	(A1 * A3 * !B1 * Y)	0.00477	0.00485	0.00479
	(A1 * A3 * !B1 * Y)	-0.00405	-0.00410	-0.00407
	(A1 * !A3 * B1 * !Y)	0.00488	0.00499	0.00489
	(A1 * !A3 * B1 * !Y)	-0.00314	-0.00322	-0.00318
	(A1 * !A3 * !B1 * Y)	0.00479	0.00480	0.00478
	(A1 * !A3 * !B1 * Y)	-0.00527	-0.00543	-0.00542
	(!A1 * A3 * B1 * !Y)	0.00563	0.00491	0.00486
	(!A1 * A3 * B1 * !Y)	-0.00457	-0.00541	-0.00540
	(!A1 * A3 * !B1 * Y)	0.00479	0.00481	0.00478
	(!A1 * A3 * !B1 * Y)	-0.00534	-0.00550	-0.00548
	(!A1 * !A3 * !B1 * Y)	0.00452	0.00458	0.00453
	(!A1 * !A3 * !B1 * Y)	-0.00558	-0.00561	-0.00558

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)**	-0.00141	-0.00142	-0.00141
	(A1 * A3 * B1 * !Y)	0.00093	0.00094	0.00094
	(A1 * A3 * !B1 * Y)	-0.00123	-0.00123	-0.00122
	(A1 * A3 * !B1 * Y)	0.00121	0.00121	0.00120
	(A1 * !A3 * B1 * !Y)	-0.00141	-0.00141	-0.00140
	(A1 * !A3 * B1 * !Y)	0.00085	0.00085	0.00085
	(A1 * !A3 * !B1 * Y)	-0.00122	-0.00123	-0.00122
	(A1 * !A3 * !B1 * Y)	0.00155	0.00155	0.00155
	(!A1 * A3 * B1 * !Y)	-0.00140	-0.00142	-0.00141
	(!A1 * A3 * B1 * !Y)	0.00136	0.00138	0.00137
	(!A1 * A3 * !B1 * Y)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * !B1 * Y)	0.00155	0.00157	0.00156
	(!A1 * !A3 * !B1 * Y)	-0.00110	-0.00116	-0.00115
	(!A1 * !A3 * !B1 * Y)	0.00159	0.00160	0.00158
sky130_fd_sc_hs__o31ai_2	**(A1 * A3 * B1 * !Y)**	-0.00247	-0.00247	-0.00247
	(A1 * A3 * B1 * !Y)	0.00182	0.00183	0.00183
	(A1 * A3 * !B1 * Y)	-0.00242	-0.00242	-0.00241
	(A1 * A3 * !B1 * Y)	0.00204	0.00205	0.00204
	(A1 * !A3 * B1 * !Y)	-0.00243	-0.00245	-0.00242
	(A1 * !A3 * B1 * !Y)	0.00162	0.00164	0.00164
	(A1 * !A3 * !B1 * Y)	-0.00241	-0.00241	-0.00241
	(A1 * !A3 * !B1 * Y)	0.00270	0.00271	0.00271
	(!A1 * A3 * B1 * !Y)	-0.00245	-0.00246	-0.00244
	(!A1 * A3 * B1 * !Y)	0.00271	0.00273	0.00271
	(!A1 * A3 * !B1 * Y)	-0.00241	-0.00242	-0.00241
	(!A1 * A3 * !B1 * Y)	0.00273	0.00276	0.00274
	(!A1 * !A3 * !B1 * Y)	-0.00214	-0.00229	-0.00231
	(!A1 * !A3 * !B1 * Y)	0.00280	0.00282	0.00279

sky130_fd_sc_hs__o31ai_4	**(A1 * A3 * B1 * !Y)**	-0.00490	-0.00491	-0.00489
	(A1 * A3 * B1 * !Y)	0.00365	0.00365	0.00363
	(A1 * A3 * !B1 * Y)	-0.00476	-0.00480	-0.00477
	(A1 * A3 * !B1 * Y)	0.00405	0.00410	0.00407
	(A1 * !A3 * B1 * !Y)	-0.00483	-0.00486	-0.00480
	(A1 * !A3 * B1 * !Y)	0.00323	0.00327	0.00327
	(A1 * !A3 * !B1 * Y)	-0.00478	-0.00478	-0.00477
	(A1 * !A3 * !B1 * Y)	0.00542	0.00543	0.00542
	(!A1 * A3 * B1 * !Y)	-0.00485	-0.00486	-0.00484
	(!A1 * A3 * B1 * !Y)	0.00540	0.00541	0.00540
	(!A1 * A3 * !B1 * Y)	-0.00477	-0.00478	-0.00477
	(!A1 * A3 * !B1 * Y)	0.00548	0.00550	0.00548
	(!A1 * !A3 * !B1 * Y)	-0.00421	-0.00453	-0.00453
	(!A1 * !A3 * !B1 * Y)	0.00559	0.00564	0.00559

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	0.00151	0.00152	0.00151
	(A2 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A2 * !B1 * Y)	0.00117	0.00118	0.00118
	(A2 * !B1 * Y)	-0.00149	-0.00153	-0.00154
	(A1 * !A2 * B1 * !Y)	0.00151	0.00153	0.00151
	(A1 * !A2 * B1 * !Y)	-0.00069	-0.00070	-0.00069
	(A1 * !A2 * !B1 * Y)	0.00117	0.00118	0.00118
	(A1 * !A2 * !B1 * Y)	-0.00138	-0.00149	-0.00148
	(!A1 * !A2 * !B1 * Y)	0.00111	0.00112	0.00111
	(!A1 * !A2 * !B1 * Y)	-0.00156	-0.00157	-0.00156

sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	0.00281	0.00287	0.00282
	(A2 * B1 * !Y)	-0.00137	-0.00140	-0.00138
	(A2 * !B1 * Y)	0.00235	0.00237	0.00236
	(A2 * !B1 * Y)	-0.00277	-0.00287	-0.00286
	(A1 * !A2 * B1 * !Y)	0.00281	0.00287	0.00282
	(A1 * !A2 * B1 * !Y)	-0.00137	-0.00140	-0.00137
	(A1 * !A2 * !B1 * Y)	0.00236	0.00237	0.00236
	(A1 * !A2 * !B1 * Y)	-0.00259	-0.00276	-0.00275
	(!A1 * !A2 * !B1 * Y)	0.00223	0.00227	0.00224
	(!A1 * !A2 * !B1 * Y)	-0.00290	-0.00293	-0.00291
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	0.00551	0.00562	0.00552
	(A2 * B1 * !Y)	-0.00273	-0.00278	-0.00273
	(A2 * !B1 * Y)	0.00461	0.00465	0.00463
	(A2 * !B1 * Y)	-0.00547	-0.00567	-0.00566
	(A1 * !A2 * B1 * !Y)	0.00553	0.00562	0.00552
	(A1 * !A2 * B1 * !Y)	-0.00274	-0.00278	-0.00273
	(A1 * !A2 * !B1 * Y)	0.00461	0.00466	0.00463
	(A1 * !A2 * !B1 * Y)	-0.00506	-0.00540	-0.00540
	(!A1 * !A2 * !B1 * Y)	0.00436	0.00441	0.00436
	(!A1 * !A2 * !B1 * Y)	-0.00578	-0.00581	-0.00578

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

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

sky130_fd_sc_hs__o31ai_1	**(A2 * B1 * !Y)**	-0.00146	-0.00147	-0.00150
	(A2 * B1 * !Y)	0.00073	0.00074	0.00070
	(A2 * !B1 * Y)	-0.00117	-0.00117	-0.00117
	(A2 * !B1 * Y)	0.00154	0.00153	0.00154
	(A1 * !A2 * B1 * !Y)	-0.00141	-0.00142	-0.00149
	(A1 * !A2 * B1 * !Y)	0.00076	0.00077	0.00071
	(A1 * !A2 * !B1 * Y)	-0.00117	-0.00118	-0.00117
	(A1 * !A2 * !B1 * Y)	0.00147	0.00149	0.00148
	(!A1 * !A2 * !B1 * Y)	-0.00106	-0.00112	-0.00111
	(!A1 * !A2 * !B1 * Y)	0.00157	0.00157	0.00156
sky130_fd_sc_hs__o31ai_2	**(A2 * B1 * !Y)**	-0.00271	-0.00274	-0.00281
	(A2 * B1 * !Y)	0.00147	0.00148	0.00140
	(A2 * !B1 * Y)	-0.00235	-0.00236	-0.00235
	(A2 * !B1 * Y)	0.00286	0.00287	0.00286
	(A1 * !A2 * B1 * !Y)	-0.00256	-0.00258	-0.00277
	(A1 * !A2 * B1 * !Y)	0.00156	0.00157	0.00142
	(A1 * !A2 * !B1 * Y)	-0.00236	-0.00236	-0.00235
	(A1 * !A2 * !B1 * Y)	0.00275	0.00276	0.00275
	(!A1 * !A2 * !B1 * Y)	-0.00210	-0.00224	-0.00224
	(!A1 * !A2 * !B1 * Y)	0.00293	0.00294	0.00292
sky130_fd_sc_hs__o31ai_4	**(A2 * B1 * !Y)**	-0.00530	-0.00535	-0.00550
	(A2 * B1 * !Y)	0.00293	0.00295	0.00279
	(A2 * !B1 * Y)	-0.00461	-0.00463	-0.00462
	(A2 * !B1 * Y)	0.00567	0.00567	0.00566
	(A1 * !A2 * B1 * !Y)	-0.00502	-0.00506	-0.00542
	(A1 * !A2 * B1 * !Y)	0.00311	0.00311	0.00282
	(A1 * !A2 * !B1 * Y)	-0.00461	-0.00463	-0.00462
	(A1 * !A2 * !B1 * Y)	0.00540	0.00540	0.00540
	(!A1 * !A2 * !B1 * Y)	-0.00412	-0.00441	-0.00436
	(!A1 * !A2 * !B1 * Y)	0.00578	0.00584	0.00579

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)	0.00045	0.00045	0.00042
	(!A1 * !A2 * !A3 * Y)	-0.00160	-0.00160	-0.00165
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	0.00088	0.00088	0.00082
	(!A1 * !A2 * !A3 * Y)	-0.00317	-0.00319	-0.00330
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	0.00156	0.00156	0.00146
	(!A1 * !A2 * !A3 * Y)	-0.00374	-0.00377	-0.00398

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)	-0.00042	-0.00042	-0.00041
	(!A1 * !A2 * !A3 * Y)	0.00166	0.00169	0.00166
sky130_fd_sc_hs__o31ai_2	(!A1 * !A2 * !A3 * Y)	-0.00080	-0.00080	-0.00080
	(!A1 * !A2 * !A3 * Y)	0.00333	0.00331	0.00332
sky130_fd_sc_hs__o31ai_4	(!A1 * !A2 * !A3 * Y)	-0.00141	-0.00141	-0.00141
	(!A1 * !A2 * !A3 * Y)	0.00397	0.00397	0.00399

SKY130_FD_SC_HS__O31Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00244	0.00238	0.00239	0.00222	1.11975
sky130_fd_sc_hs__o31a_2	0.00258	0.00250	0.00252	0.00265	1.95284
sky130_fd_sc_hs__o31a_4	0.00439	0.00471	0.00468	0.00464	4.25481

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o31a_1	0.00000	0.12558	0.28709
sky130_fd_sc_hs__o31a_2	0.00000	0.06902	0.11694
sky130_fd_sc_hs__o31a_4	0.00000	0.13876	0.23389

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)	0.07050	0.54810	5.62637
	A2->X (RR)	0.06955	0.54122	5.59124
	A3->X (RR)	0.06202	0.52285	5.62930
	B1->X (RR)	0.06392	0.53553	5.91366
sky130_fd_sc_hs__o31a_2	A1->X (RR)	0.07376	0.48202	5.63792
	A2->X (RR)	0.07310	0.47697	5.60562
	A3->X (RR)	0.06478	0.46079	5.60383
	B1->X (RR)	0.06795	0.47815	5.83247
sky130_fd_sc_hs__o31a_4	A1->X (RR)	0.07777	0.40266	5.73738
	A2->X (RR)	0.07529	0.39183	5.69090
	A3->X (RR)	0.06714	0.37776	5.74774
	B1->X (RR)	0.07105	0.40093	5.94333

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o31a_1	A1->X (FF)	0.19932	0.65590	4.82519
	A2->X (FF)	0.18583	0.65842	4.90031
	A3->X (FF)	0.15815	0.61643	4.74979
	B1->X (FF)	0.06628	0.48091	4.49650
sky130_fd_sc_hs__o31a_2	A1->X (FF)	0.25013	0.70084	4.78272
	A2->X (FF)	0.23614	0.70683	4.87695
	A3->X (FF)	0.20808	0.66278	4.67571
	B1->X (FF)	0.06940	0.46420	4.19647
sky130_fd_sc_hs__o31a_4	A1->X (FF)	0.25538	0.69137	5.13032
	A2->X (FF)	0.24136	0.69030	5.20929
	A3->X (FF)	0.20234	0.63787	5.01807
	B1->X (FF)	0.06528	0.44306	4.60984

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00921	0.00905	0.01412
	A1	0.00381	0.00366	0.00886
	A2	0.00805	0.00813	0.01368
	A2	0.00331	0.00339	0.00910
	A3	0.00681	0.00693	0.01709
	A3	0.00263	0.00276	0.01303
	B1	0.00561	0.00634	0.03142
	B1	0.00267	0.00341	0.02855
sky130_fd_sc_hs__o31a_2	A1	0.01155	0.01159	0.01544
	A1	0.00584	0.00589	0.01003
	A2	0.01032	0.01060	0.01485
	A2	0.00531	0.00560	0.01017
	A3	0.00911	0.00942	0.01657
	A3	0.00461	0.00493	0.01240
	B1	0.00789	0.00851	0.02886
	B1	0.00443	0.00507	0.02563
sky130_fd_sc_hs__o31a_4	A1	0.02203	0.02264	0.03571
	A1	0.01159	0.01226	0.02558
	A2	0.01996	0.02063	0.03440
	A2	0.01029	0.01097	0.02514
	A3	0.01658	0.01740	0.04260
	A3	0.00840	0.00924	0.03470
	B1	0.01733	0.01853	0.05537
	B1	0.00836	0.00986	0.04908

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o31a_1	A1	0.00308	0.00292	0.00878
	A1	0.00843	0.00827	0.01347
	A2	0.00311	0.00304	0.00946
	A2	0.00777	0.00769	0.01408
	A3	0.00310	0.00361	0.01762
	A3	0.00719	0.00771	0.02105
	B1	0.00232	0.00365	0.02748
	B1	0.00588	0.00744	0.02990
sky130_fd_sc_hs__o31a_2	A1	0.00527	0.00478	0.01003
	A1	0.01092	0.01053	0.01514
	A2	0.00530	0.00501	0.01060
	A2	0.01022	0.00999	0.01543
	A3	0.00524	0.00567	0.01802
	A3	0.00964	0.01010	0.02196
	B1	0.00402	0.00554	0.02490
	B1	0.00871	0.00986	0.02750
sky130_fd_sc_hs__o31a_4	A1	0.01078	0.01067	0.02500
	A1	0.02118	0.02107	0.03197
	A2	0.01043	0.01029	0.02451
	A2	0.01999	0.01999	0.03214
	A3	0.01075	0.01174	0.03755
	A3	0.01872	0.01978	0.04548
	B1	0.00817	0.01078	0.05282
	B1	0.01553	0.01780	0.05780

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)**	0.00120	0.00121	0.00120
	(A2 * A3 * B1 * X)	-0.00115	-0.00119	-0.00118
	(A2 * !B1 * !X)	0.00103	0.00104	0.00103
	(A2 * !B1 * !X)	-0.00133	-0.00136	-0.00136
	(A2 * !A3 * B1 * X)	0.00121	0.00121	0.00120
	(A2 * !A3 * B1 * X)	-0.00113	-0.00119	-0.00118
	(!A2 * A3 * B1 * X)	0.00121	0.00121	0.00120
	(!A2 * A3 * B1 * X)	-0.00106	-0.00115	-0.00115
	(!A2 * A3 * !B1 * !X)	0.00103	0.00103	0.00103
	(!A2 * A3 * !B1 * !X)	-0.00124	-0.00132	-0.00132
	(!A2 * !A3 * !B1 * !X)	0.00097	0.00098	0.00097
	(!A2 * !A3 * !B1 * !X)	-0.00138	-0.00138	-0.00137
sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	0.00131	0.00133	0.00131
	(A2 * A3 * B1 * X)	-0.00121	-0.00124	-0.00124
	(A2 * !B1 * !X)	0.00122	0.00123	0.00122
	(A2 * !B1 * !X)	-0.00130	-0.00134	-0.00133
	(A2 * !A3 * B1 * X)	0.00132	0.00133	0.00131
	(A2 * !A3 * B1 * X)	-0.00119	-0.00124	-0.00124
	(!A2 * A3 * B1 * X)	0.00132	0.00132	0.00131
	(!A2 * A3 * B1 * X)	-0.00111	-0.00121	-0.00120
	(!A2 * A3 * !B1 * !X)	0.00122	0.00122	0.00122
	(!A2 * A3 * !B1 * !X)	-0.00122	-0.00130	-0.00130
	(!A2 * !A3 * !B1 * !X)	0.00117	0.00117	0.00116
	(!A2 * !A3 * !B1 * !X)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	0.00202	0.00203	0.00202
	(A2 * A3 * B1 * X)	-0.00238	-0.00248	-0.00248
	(A2 * !B1 * !X)	0.00201	0.00203	0.00202
	(A2 * !B1 * !X)	-0.00240	-0.00249	-0.00248
	(A2 * !A3 * B1 * X)	0.00204	0.00203	0.00202
	(A2 * !A3 * B1 * X)	-0.00232	-0.00247	-0.00247
	(!A2 * A3 * B1 * X)	0.00204	0.00204	0.00202
	(!A2 * A3 * B1 * X)	-0.00217	-0.00240	-0.00239
	(!A2 * A3 * !B1 * !X)	0.00201	0.00204	0.00201
	(!A2 * A3 * !B1 * !X)	-0.00220	-0.00241	-0.00239
	(!A2 * !A3 * !B1 * !X)	0.00191	0.00194	0.00192
	(!A2 * !A3 * !B1 * !X)	-0.00254	-0.00256	-0.00254

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)**	-0.00120	-0.00120	-0.00120
	(A2 * A3 * B1 * X)	0.00119	0.00119	0.00118
	(A2 * !B1 * !X)	-0.00103	-0.00103	-0.00102
	(A2 * !B1 * !X)	0.00136	0.00136	0.00136
	(A2 * !A3 * B1 * X)	-0.00119	-0.00120	-0.00120
	(A2 * !A3 * B1 * X)	0.00117	0.00119	0.00118
	(!A2 * A3 * B1 * X)	-0.00120	-0.00120	-0.00119
	(!A2 * A3 * B1 * X)	0.00115	0.00115	0.00115
	(!A2 * A3 * !B1 * !X)	-0.00102	-0.00103	-0.00102
	(!A2 * A3 * !B1 * !X)	0.00131	0.00132	0.00132
	(!A2 * !A3 * !B1 * !X)	-0.00092	-0.00098	-0.00097
	(!A2 * !A3 * !B1 * !X)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__o31a_2	**(A2 * A3 * B1 * X)**	-0.00131	-0.00131	-0.00131
	(A2 * A3 * B1 * X)	0.00123	0.00124	0.00124
	(A2 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A2 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !A3 * B1 * X)	-0.00131	-0.00131	-0.00131
	(A2 * !A3 * B1 * X)	0.00123	0.00124	0.00124
	(!A2 * A3 * B1 * X)	-0.00131	-0.00131	-0.00131
	(!A2 * A3 * B1 * X)	0.00120	0.00121	0.00120
	(!A2 * A3 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(!A2 * A3 * !B1 * !X)	0.00129	0.00130	0.00130
	(!A2 * !A3 * !B1 * !X)	-0.00111	-0.00117	-0.00116
	(!A2 * !A3 * !B1 * !X)	0.00136	0.00137	0.00135
sky130_fd_sc_hs__o31a_4	**(A2 * A3 * B1 * X)**	-0.00201	-0.00202	-0.00201
	(A2 * A3 * B1 * X)	0.00248	0.00250	0.00248
	(A2 * !B1 * !X)	-0.00201	-0.00202	-0.00201
	(A2 * !B1 * !X)	0.00248	0.00250	0.00248
	(A2 * !A3 * B1 * X)	-0.00200	-0.00202	-0.00201
	(A2 * !A3 * B1 * X)	0.00245	0.00249	0.00247
	(!A2 * A3 * B1 * X)	-0.00201	-0.00202	-0.00201
	(!A2 * A3 * B1 * X)	0.00238	0.00240	0.00239
	(!A2 * A3 * !B1 * !X)	-0.00200	-0.00202	-0.00201
	(!A2 * A3 * !B1 * !X)	0.00238	0.00241	0.00239
	(!A2 * !A3 * !B1 * !X)	-0.00180	-0.00191	-0.00192
	(!A2 * !A3 * !B1 * !X)	0.00256	0.00257	0.00255

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)**	0.00116	0.00117	0.00113
	(A1 * A3 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00106
	(A1 * A3 * !B1 * !X)	-0.00091	-0.00091	-0.00090
	(A1 * !A3 * B1 * X)	0.00112	0.00113	0.00112
	(A1 * !A3 * B1 * X)	-0.00067	-0.00068	-0.00068
	(A1 * !A3 * !B1 * !X)	0.00105	0.00107	0.00106
	(A1 * !A3 * !B1 * !X)	-0.00118	-0.00121	-0.00121
	(!A1 * A3 * B1 * X)	0.00130	0.00113	0.00111
	(!A1 * A3 * B1 * X)	-0.00097	-0.00116	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * A3 * !B1 * !X)	-0.00118	-0.00121	-0.00122
	(!A1 * !A3 * !B1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A3 * !B1 * !X)	-0.00123	-0.00123	-0.00123
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	0.00126	0.00127	0.00124
	(A1 * A3 * B1 * X)	-0.00080	-0.00080	-0.00080
	(A1 * A3 * !B1 * !X)	0.00118	0.00119	0.00117
	(A1 * A3 * !B1 * !X)	-0.00093	-0.00093	-0.00092
	(A1 * !A3 * B1 * X)	0.00123	0.00124	0.00122
	(A1 * !A3 * B1 * X)	-0.00070	-0.00071	-0.00070
	(A1 * !A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(A1 * !A3 * !B1 * !X)	-0.00120	-0.00123	-0.00123
	(!A1 * A3 * B1 * X)	0.00140	0.00123	0.00122
	(!A1 * A3 * B1 * X)	-0.00098	-0.00118	-0.00119
	(!A1 * A3 * !B1 * !X)	0.00117	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00123	-0.00123
	(!A1 * !A3 * !B1 * !X)	0.00112	0.00112	0.00112
	(!A1 * !A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	0.00243	0.00247	0.00242
	(A1 * A3 * B1 * X)	-0.00165	-0.00165	-0.00165
	(A1 * A3 * !B1 * !X)	0.00239	0.00242	0.00240
	(A1 * A3 * !B1 * !X)	-0.00182	-0.00182	-0.00182
	(A1 * !A3 * B1 * X)	0.00241	0.00243	0.00241
	(A1 * !A3 * B1 * X)	-0.00145	-0.00146	-0.00146
	(A1 * !A3 * !B1 * !X)	0.00238	0.00241	0.00239
	(A1 * !A3 * !B1 * !X)	-0.00241	-0.00247	-0.00247
	(!A1 * A3 * B1 * X)	0.00272	0.00243	0.00240
	(!A1 * A3 * B1 * X)	-0.00205	-0.00245	-0.00245
	(!A1 * A3 * !B1 * !X)	0.00239	0.00242	0.00239
	(!A1 * A3 * !B1 * !X)	-0.00234	-0.00246	-0.00244
	(!A1 * !A3 * !B1 * !X)	0.00229	0.00232	0.00229
	(!A1 * !A3 * !B1 * !X)	-0.00251	-0.00253	-0.00252

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)**	-0.00111	-0.00111	-0.00111
	(A1 * A3 * B1 * X)	0.00078	0.00078	0.00078
	(A1 * A3 * !B1 * !X)	-0.00106	-0.00106	-0.00106
	(A1 * A3 * !B1 * !X)	0.00091	0.00091	0.00090
	(A1 * !A3 * B1 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A3 * B1 * X)	0.00069	0.00070	0.00070
	(A1 * !A3 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(A1 * !A3 * !B1 * !X)	0.00120	0.00121	0.00121
	(!A1 * A3 * B1 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A3 * B1 * X)	0.00116	0.00118	0.00117
	(!A1 * A3 * !B1 * !X)	-0.00106	-0.00105	-0.00106
	(!A1 * A3 * !B1 * !X)	0.00121	0.00121	0.00122
	(!A1 * !A3 * !B1 * !X)	-0.00095	-0.00100	-0.00100
	(!A1 * !A3 * !B1 * !X)	0.00124	0.00124	0.00123
sky130_fd_sc_hs__o31a_2	**(A1 * A3 * B1 * X)**	-0.00122	-0.00122	-0.00122
	(A1 * A3 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(A1 * A3 * !B1 * !X)	0.00093	0.00093	0.00092
	(A1 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00120
	(A1 * !A3 * B1 * X)	0.00072	0.00072	0.00072
	(A1 * !A3 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(A1 * !A3 * !B1 * !X)	0.00123	0.00123	0.00123
	(!A1 * A3 * B1 * X)	-0.00121	-0.00122	-0.00121
	(!A1 * A3 * B1 * X)	0.00118	0.00120	0.00119
	(!A1 * A3 * !B1 * !X)	-0.00117	-0.00117	-0.00117
	(!A1 * A3 * !B1 * !X)	0.00123	0.00123	0.00123
	(!A1 * !A3 * !B1 * !X)	-0.00106	-0.00112	-0.00112
	(!A1 * !A3 * !B1 * !X)	0.00126	0.00126	0.00125

sky130_fd_sc_hs__o31a_4	**(A1 * A3 * B1 * X)**	-0.00240	-0.00241	-0.00240
	(A1 * A3 * B1 * X)	0.00165	0.00165	0.00165
	(A1 * A3 * !B1 * !X)	-0.00239	-0.00240	-0.00239
	(A1 * A3 * !B1 * !X)	0.00182	0.00182	0.00182
	(A1 * !A3 * B1 * X)	-0.00238	-0.00239	-0.00237
	(A1 * !A3 * B1 * X)	0.00149	0.00151	0.00150
	(A1 * !A3 * !B1 * !X)	-0.00238	-0.00238	-0.00239
	(A1 * !A3 * !B1 * !X)	0.00247	0.00247	0.00247
	(!A1 * A3 * B1 * X)	-0.00239	-0.00240	-0.00238
	(!A1 * A3 * B1 * X)	0.00244	0.00245	0.00245
	(!A1 * A3 * !B1 * !X)	-0.00239	-0.00240	-0.00239
	(!A1 * A3 * !B1 * !X)	0.00244	0.00246	0.00244
	(!A1 * !A3 * !B1 * !X)	-0.00218	-0.00232	-0.00229
	(!A1 * !A3 * !B1 * !X)	0.00253	0.00254	0.00252

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	0.00119	0.00121	0.00120
	(A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !X)	0.00104	0.00105	0.00105
	(A2 * !B1 * !X)	-0.00120	-0.00123	-0.00124
	(A1 * !A2 * B1 * X)	0.00119	0.00121	0.00120
	(A1 * !A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B1 * !X)	0.00104	0.00105	0.00105
	(A1 * !A2 * !B1 * !X)	-0.00111	-0.00119	-0.00119
	(!A1 * !A2 * !B1 * !X)	0.00098	0.00099	0.00099
	(!A1 * !A2 * !B1 * !X)	-0.00125	-0.00126	-0.00126

sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	0.00137	0.00139	0.00138
	(A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !X)	0.00121	0.00122	0.00121
	(A2 * !B1 * !X)	-0.00123	-0.00126	-0.00126
	(A1 * !A2 * B1 * X)	0.00137	0.00139	0.00138
	(A1 * !A2 * B1 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B1 * !X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !B1 * !X)	-0.00114	-0.00121	-0.00121
	(!A1 * !A2 * !B1 * !X)	0.00113	0.00116	0.00114
	(!A1 * !A2 * !B1 * !X)	-0.00127	-0.00128	-0.00127
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	0.00238	0.00240	0.00238
	(A2 * B1 * X)	-0.00140	-0.00142	-0.00140
	(A2 * !B1 * !X)	0.00216	0.00217	0.00216
	(A2 * !B1 * !X)	-0.00246	-0.00258	-0.00257
	(A1 * !A2 * B1 * X)	0.00238	0.00240	0.00238
	(A1 * !A2 * B1 * X)	-0.00140	-0.00141	-0.00140
	(A1 * !A2 * !B1 * !X)	0.00215	0.00216	0.00216
	(A1 * !A2 * !B1 * !X)	-0.00229	-0.00247	-0.00246
	(!A1 * !A2 * !B1 * !X)	0.00203	0.00204	0.00202
	(!A1 * !A2 * !B1 * !X)	-0.00267	-0.00267	-0.00266

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

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

sky130_fd_sc_hs__o31a_1	**(A2 * B1 * X)**	-0.00115	-0.00116	-0.00119
	(A2 * B1 * X)	0.00067	0.00067	0.00064
	(A2 * !B1 * !X)	-0.00104	-0.00104	-0.00105
	(A2 * !B1 * !X)	0.00124	0.00123	0.00124
	(A1 * !A2 * B1 * X)	-0.00111	-0.00111	-0.00118
	(A1 * !A2 * B1 * X)	0.00070	0.00070	0.00065
	(A1 * !A2 * !B1 * !X)	-0.00104	-0.00105	-0.00105
	(A1 * !A2 * !B1 * !X)	0.00118	0.00119	0.00119
	(!A1 * !A2 * !B1 * !X)	-0.00094	-0.00099	-0.00099
	(!A1 * !A2 * !B1 * !X)	0.00126	0.00127	0.00126
sky130_fd_sc_hs__o31a_2	**(A2 * B1 * X)**	-0.00133	-0.00134	-0.00137
	(A2 * B1 * X)	0.00067	0.00067	0.00064
	(A2 * !B1 * !X)	-0.00121	-0.00121	-0.00120
	(A2 * !B1 * !X)	0.00126	0.00127	0.00126
	(A1 * !A2 * B1 * X)	-0.00129	-0.00130	-0.00136
	(A1 * !A2 * B1 * X)	0.00069	0.00070	0.00064
	(A1 * !A2 * !B1 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !B1 * !X)	0.00120	0.00121	0.00121
	(!A1 * !A2 * !B1 * !X)	-0.00109	-0.00116	-0.00114
	(!A1 * !A2 * !B1 * !X)	0.00128	0.00129	0.00128
sky130_fd_sc_hs__o31a_4	**(A2 * B1 * X)**	-0.00225	-0.00227	-0.00237
	(A2 * B1 * X)	0.00151	0.00151	0.00144
	(A2 * !B1 * !X)	-0.00215	-0.00217	-0.00215
	(A2 * !B1 * !X)	0.00256	0.00258	0.00257
	(A1 * !A2 * B1 * X)	-0.00216	-0.00217	-0.00234
	(A1 * !A2 * B1 * X)	0.00157	0.00157	0.00144
	(A1 * !A2 * !B1 * !X)	-0.00215	-0.00216	-0.00215
	(A1 * !A2 * !B1 * !X)	0.00245	0.00247	0.00246
	(!A1 * !A2 * !B1 * !X)	-0.00190	-0.00204	-0.00202
	(!A1 * !A2 * !B1 * !X)	0.00269	0.00268	0.00267

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)	0.00038	0.00038	0.00035
	(!A1 * !A2 * !A3 * !X)	-0.00129	-0.00129	-0.00134
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	0.00048	0.00049	0.00046
	(!A1 * !A2 * !A3 * !X)	-0.00160	-0.00161	-0.00166
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	0.00072	0.00072	0.00066
	(!A1 * !A2 * !A3 * !X)	-0.00302	-0.00303	-0.00313

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)	-0.00034	-0.00035	-0.00034
	(!A1 * !A2 * !A3 * !X)	0.00134	0.00137	0.00135
sky130_fd_sc_hs__o31a_2	(!A1 * !A2 * !A3 * !X)	-0.00045	-0.00045	-0.00044
	(!A1 * !A2 * !A3 * !X)	0.00167	0.00170	0.00167
sky130_fd_sc_hs__o31a_4	(!A1 * !A2 * !A3 * !X)	-0.00065	-0.00066	-0.00064
	(!A1 * !A2 * !A3 * !X)	0.00315	0.00320	0.00315

SKY130_FD_SC_HS__O32AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00245	0.00271	0.00264	0.00261	0.00271	0.38104
sky130_fd_sc_hs__o32ai_2	0.00519	0.00484	0.00528	0.00499	0.00507	0.66489
sky130_fd_sc_hs__o32ai_4	0.00975	0.00981	0.00995	0.01020	0.00988	1.21155

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32ai_1	0.00000	0.01594	0.06484
sky130_fd_sc_hs__o32ai_2	0.00000	0.03188	0.12968
sky130_fd_sc_hs__o32ai_4	0.00000	0.06377	0.25936

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)	0.18648	1.16714	11.00240
	A2->Y (FR)	0.17607	1.17815	11.44450
	A3->Y (FR)	0.14653	1.11354	11.05750
	B1->Y (FR)	0.07016	0.83728	8.97026
	B2->Y (FR)	0.05665	0.80384	8.82897
sky130_fd_sc_hs__o32ai_2	A1->Y (FR)	0.19890	1.02816	10.75220
	A2->Y (FR)	0.18670	1.04230	11.34130
	A3->Y (FR)	0.14946	0.97815	10.96400
	B1->Y (FR)	0.07518	0.77042	9.14668
	B2->Y (FR)	0.05248	0.73172	8.98706
sky130_fd_sc_hs__o32ai_4	A1->Y (FR)	0.19948	0.90778	10.60700
	A2->Y (FR)	0.18682	0.92479	11.20760
	A3->Y (FR)	0.14867	0.86452	10.92500
	B1->Y (FR)	0.07125	0.67071	8.90613
	B2->Y (FR)	0.05041	0.64397	8.84997

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32ai_1	A1->Y (RF)	0.03589	0.30358	2.72923
	A2->Y (RF)	0.03712	0.30835	2.82053
	A3->Y (RF)	0.03207	0.29911	2.79751
	B1->Y (RF)	0.02844	0.32896	3.15456
	B2->Y (RF)	0.02450	0.31753	3.10034
sky130_fd_sc_hs__o32ai_2	A1->Y (RF)	0.03719	0.25850	2.53560
	A2->Y (RF)	0.03876	0.26865	2.70993
	A3->Y (RF)	0.02929	0.24792	2.68168
	B1->Y (RF)	0.02926	0.28948	3.10240
	B2->Y (RF)	0.02426	0.28258	3.14694
sky130_fd_sc_hs__o32ai_4	A1->Y (RF)	0.04236	0.23745	2.67520
	A2->Y (RF)	0.03877	0.22415	2.62279
	A3->Y (RF)	0.03057	0.20762	2.55211
	B1->Y (RF)	0.04001	0.30884	3.64728
	B2->Y (RF)	0.03411	0.31471	3.88730

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	A1	0.00118	0.00104	0.00179
	A1	0.00791	0.00778	0.00852
	A2	0.00128	0.00111	0.00217
	A2	0.00737	0.00721	0.00823
	A3	0.00126	0.00138	0.00520
	A3	0.00657	0.00663	0.01035
	B1	-0.00025	-0.00037	0.00091
	B1	0.00532	0.00518	0.00643
	B2	-0.00026	0.00004	0.00447
	B2	0.00460	0.00470	0.00902
sky130_fd_sc_hs__o32ai_2	A1	0.00211	0.00177	0.00322
	A1	0.01630	0.01599	0.01747
	A2	0.00232	0.00194	0.00397
	A2	0.01468	0.01427	0.01626
	A3	0.00221	0.00229	0.00966
	A3	0.01340	0.01351	0.02073
	B1	-0.00066	-0.00085	0.00163
	B1	0.01069	0.01046	0.01287
	B2	-0.00082	-0.00015	0.00814
	B2	0.00924	0.00982	0.01769

sky130_fd_sc_hs__o32ai_4	**A1**	0.00421	0.00357	0.00745
	A1	0.03208	0.03147	0.03537
	A2	0.00432	0.00360	0.00855
	A2	0.02917	0.02852	0.03331
	A3	0.00432	0.00500	0.02050
	A3	0.02629	0.02664	0.04221
	B1	-0.00141	-0.00188	0.00294
	B1	0.02166	0.02108	0.02564
	B2	-0.00146	-0.00024	0.01353
	B2	0.01858	0.01934	0.03220

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**A1**	0.00924	0.00915	0.00984
	A1	0.00236	0.00224	0.00296
	A2	0.00793	0.00784	0.00855
	A2	0.00163	0.00154	0.00225
	A3	0.00648	0.00648	0.00718
	A3	0.00093	0.00090	0.00163
	B1	0.00781	0.00776	0.00895
	B1	0.00238	0.00232	0.00353
	B2	0.00651	0.00650	0.00768
	B2	0.00017	0.00017	0.00152

sky130_fd_sc_hs__o32ai_2	**A1**	0.01940	0.01914	0.02055
	A1	0.00496	0.00470	0.00618
	A2	0.01659	0.01638	0.01783
	A2	0.00385	0.00362	0.00506
	A3	0.01354	0.01351	0.01505
	A3	0.00189	0.00185	0.00338
	B1	0.01617	0.01595	0.01840
	B1	0.00522	0.00499	0.00740
	B2	0.01322	0.01326	0.01562
	B2	0.00200	0.00202	0.00454
sky130_fd_sc_hs__o32ai_4	**A1**	0.03777	0.03722	0.04127
	A1	0.00946	0.00891	0.01301
	A2	0.03243	0.03195	0.03609
	A2	0.00681	0.00632	0.01047
	A3	0.02619	0.02607	0.03045
	A3	0.00333	0.00317	0.00755
	B1	0.03199	0.03151	0.03636
	B1	0.00977	0.00921	0.01382
	B2	0.02605	0.02599	0.03044
	B2	-0.00023	-0.00018	0.00499

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)**	0.00126	0.00127	0.00126
	(A2 * A3 * B2 * !Y)	-0.00131	-0.00135	-0.00134
	(A2 * A3 * B1 * !B2 * !Y)	0.00126	0.00127	0.00126
	(A2 * A3 * B1 * !B2 * !Y)	-0.00131	-0.00135	-0.00134
	(A2 * !B1 * !B2 * Y)	0.00126	0.00127	0.00126
	(A2 * !B1 * !B2 * Y)	-0.00131	-0.00135	-0.00134
	(A2 * !A3 * B2 * !Y)	0.00126	0.00127	0.00126
	(A2 * !A3 * B2 * !Y)	-0.00130	-0.00135	-0.00134
	(A2 * !A3 * B1 * !B2 * !Y)	0.00126	0.00127	0.00126
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00130	-0.00135	-0.00134
	(!A2 * A3 * B2 * !Y)	0.00127	0.00127	0.00126
	(!A2 * A3 * B2 * !Y)	-0.00121	-0.00130	-0.00130
	(!A2 * A3 * B1 * !B2 * !Y)	0.00127	0.00127	0.00126
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00121	-0.00130	-0.00130
	(!A2 * A3 * !B1 * !B2 * Y)	0.00127	0.00127	0.00126
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00122	-0.00131	-0.00130
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00120	0.00121	0.00120
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00135	-0.00136	-0.00136

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	0.00261	0.00263	0.00260
	(A2 * A3 * B2 * !Y)	-0.00272	-0.00283	-0.00281
	(A2 * A3 * B1 * !B2 * !Y)	0.00261	0.00263	0.00261
	(A2 * A3 * B1 * !B2 * !Y)	-0.00271	-0.00283	-0.00281
	(A2 * !B1 * !B2 * Y)	0.00261	0.00263	0.00260
	(A2 * !B1 * !B2 * Y)	-0.00272	-0.00283	-0.00281
	(A2 * !A3 * B2 * !Y)	0.00262	0.00263	0.00261
	(A2 * !A3 * B2 * !Y)	-0.00270	-0.00283	-0.00281
	(A2 * !A3 * B1 * !B2 * !Y)	0.00262	0.00264	0.00261
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00270	-0.00283	-0.00281
	(!A2 * A3 * B2 * !Y)	0.00263	0.00263	0.00261
	(!A2 * A3 * B2 * !Y)	-0.00255	-0.00272	-0.00272
	(!A2 * A3 * B1 * !B2 * !Y)	0.00263	0.00263	0.00261
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00255	-0.00272	-0.00272
	(!A2 * A3 * !B1 * !B2 * Y)	0.00261	0.00262	0.00260
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00257	-0.00273	-0.00273
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00243	0.00245	0.00244
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00288	-0.00289	-0.00288

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	0.00488	0.00496	0.00490
	(A2 * A3 * B2 * !Y)	-0.00523	-0.00549	-0.00544
	(A2 * A3 * B1 * !B2 * !Y)	0.00488	0.00496	0.00490
	(A2 * A3 * B1 * !B2 * !Y)	-0.00523	-0.00549	-0.00544
	(A2 * !B1 * !B2 * Y)	0.00488	0.00496	0.00490
	(A2 * !B1 * !B2 * Y)	-0.00524	-0.00549	-0.00544
	(A2 * !A3 * B2 * !Y)	0.00490	0.00496	0.00490
	(A2 * !A3 * B2 * !Y)	-0.00520	-0.00549	-0.00544
	(A2 * !A3 * B1 * !B2 * !Y)	0.00490	0.00496	0.00490
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00520	-0.00549	-0.00544
	(!A2 * A3 * B2 * !Y)	0.00493	0.00495	0.00490
	(!A2 * A3 * B2 * !Y)	-0.00491	-0.00531	-0.00527
	(!A2 * A3 * B1 * !B2 * !Y)	0.00493	0.00495	0.00490
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00491	-0.00531	-0.00527
	(!A2 * A3 * !B1 * !B2 * Y)	0.00488	0.00494	0.00490
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00495	-0.00532	-0.00528
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00462	0.00465	0.00462
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00560	-0.00561	-0.00559

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)**	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B2 * !Y)	0.00134	0.00135	0.00134
	(A2 * A3 * B1 * !B2 * !Y)	-0.00126	-0.00126	-0.00126
	(A2 * A3 * B1 * !B2 * !Y)	0.00134	0.00135	0.00134
	(A2 * !B1 * !B2 * Y)	-0.00126	-0.00126	-0.00126
	(A2 * !B1 * !B2 * Y)	0.00134	0.00135	0.00134
	(A2 * !A3 * B2 * !Y)	-0.00126	-0.00126	-0.00126
	(A2 * !A3 * B2 * !Y)	0.00134	0.00135	0.00134
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00126	-0.00126	-0.00126
	(A2 * !A3 * B1 * !B2 * !Y)	0.00134	0.00135	0.00134
	(!A2 * A3 * B2 * !Y)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * B2 * !Y)	0.00131	0.00130	0.00130
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * B1 * !B2 * !Y)	0.00131	0.00130	0.00130
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00126	-0.00126	-0.00126
	(!A2 * A3 * !B1 * !B2 * Y)	0.00130	0.00131	0.00130
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00114	-0.00121	-0.00120
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00136	0.00137	0.00136

sky130_fd_sc_hs__o32ai_2	**(A2 * A3 * B2 * !Y)**	-0.00260	-0.00261	-0.00260
	(A2 * A3 * B2 * !Y)	0.00281	0.00283	0.00281
	(A2 * A3 * B1 * !B2 * !Y)	-0.00260	-0.00261	-0.00260
	(A2 * A3 * B1 * !B2 * !Y)	0.00281	0.00283	0.00281
	(A2 * !B1 * !B2 * Y)	-0.00260	-0.00261	-0.00260
	(A2 * !B1 * !B2 * Y)	0.00281	0.00283	0.00281
	(A2 * !A3 * B2 * !Y)	-0.00260	-0.00261	-0.00260
	(A2 * !A3 * B2 * !Y)	0.00281	0.00283	0.00281
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00260	-0.00261	-0.00260
	(A2 * !A3 * B1 * !B2 * !Y)	0.00281	0.00283	0.00281
	(!A2 * A3 * B2 * !Y)	-0.00261	-0.00260	-0.00260
	(!A2 * A3 * B2 * !Y)	0.00273	0.00272	0.00272
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00261	-0.00261	-0.00260
	(!A2 * A3 * B1 * !B2 * !Y)	0.00273	0.00272	0.00272
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00258	-0.00260	-0.00260
	(!A2 * A3 * !B1 * !B2 * Y)	0.00270	0.00273	0.00273
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00230	-0.00245	-0.00244
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00291	0.00292	0.00289

sky130_fd_sc_hs__o32ai_4	**(A2 * A3 * B2 * !Y)**	-0.00487	-0.00493	-0.00489
	(A2 * A3 * B2 * !Y)	0.00540	0.00554	0.00544
	(A2 * A3 * B1 * !B2 * !Y)	-0.00487	-0.00491	-0.00489
	(A2 * A3 * B1 * !B2 * !Y)	0.00540	0.00549	0.00544
	(A2 * !B1 * !B2 * Y)	-0.00486	-0.00491	-0.00489
	(A2 * !B1 * !B2 * Y)	0.00540	0.00549	0.00544
	(A2 * !A3 * B2 * !Y)	-0.00487	-0.00491	-0.00489
	(A2 * !A3 * B2 * !Y)	0.00540	0.00549	0.00544
	(A2 * !A3 * B1 * !B2 * !Y)	-0.00487	-0.00491	-0.00489
	(A2 * !A3 * B1 * !B2 * !Y)	0.00540	0.00549	0.00544
	(!A2 * A3 * B2 * !Y)	-0.00489	-0.00491	-0.00489
	(!A2 * A3 * B2 * !Y)	0.00526	0.00531	0.00527
	(!A2 * A3 * B1 * !B2 * !Y)	-0.00489	-0.00491	-0.00489
	(!A2 * A3 * B1 * !B2 * !Y)	0.00526	0.00531	0.00527
	(!A2 * A3 * !B1 * !B2 * Y)	-0.00487	-0.00490	-0.00489
	(!A2 * A3 * !B1 * !B2 * Y)	0.00525	0.00532	0.00528
	(!A2 * !A3 * !B1 * !B2 * Y)	-0.00434	-0.00465	-0.00462
	(!A2 * !A3 * !B1 * !B2 * Y)	0.00563	0.00566	0.00561

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)**	0.00125	0.00126	0.00123
	(A1 * A3 * B2 * !Y)	-0.00097	-0.00098	-0.00097
	(A1 * A3 * B1 * !B2 * !Y)	0.00125	0.00126	0.00123
	(A1 * A3 * B1 * !B2 * !Y)	-0.00096	-0.00098	-0.00097
	(A1 * A3 * !B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(A1 * A3 * !B1 * !B2 * Y)	-0.00107	-0.00107	-0.00106
	(A1 * !A3 * B2 * !Y)	0.00123	0.00125	0.00123
	(A1 * !A3 * B2 * !Y)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * B1 * !B2 * !Y)	0.00123	0.00125	0.00123
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00085	-0.00086	-0.00086
	(A1 * !A3 * !B1 * !B2 * Y)	0.00122	0.00123	0.00122
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00138	-0.00140	-0.00141
	(!A1 * A3 * B2 * !Y)	0.00142	0.00124	0.00123
	(!A1 * A3 * B2 * !Y)	-0.00120	-0.00140	-0.00140
	(!A1 * A3 * B1 * !B2 * !Y)	0.00142	0.00124	0.00123
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00120	-0.00140	-0.00140
	(!A1 * A3 * !B1 * !B2 * Y)	0.00121	0.00122	0.00122
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00137	-0.00142	-0.00141
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00113	0.00115	0.00114
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00143	-0.00144	-0.00143

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	0.00244	0.00250	0.00244
	(A1 * A3 * B2 * !Y)	-0.00178	-0.00179	-0.00179
	(A1 * A3 * B1 * !B2 * !Y)	0.00244	0.00250	0.00244
	(A1 * A3 * B1 * !B2 * !Y)	-0.00178	-0.00179	-0.00179
	(A1 * A3 * !B1 * !B2 * Y)	0.00238	0.00241	0.00238
	(A1 * A3 * !B1 * !B2 * Y)	-0.00203	-0.00204	-0.00202
	(A1 * !A3 * B2 * !Y)	0.00240	0.00244	0.00242
	(A1 * !A3 * B2 * !Y)	-0.00155	-0.00158	-0.00157
	(A1 * !A3 * B1 * !B2 * !Y)	0.00242	0.00244	0.00242
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00157	-0.00158	-0.00157
	(A1 * !A3 * !B1 * !B2 * Y)	0.00237	0.00238	0.00238
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00259	-0.00267	-0.00267
	(!A1 * A3 * B2 * !Y)	0.00275	0.00242	0.00241
	(!A1 * A3 * B2 * !Y)	-0.00228	-0.00268	-0.00268
	(!A1 * A3 * B1 * !B2 * !Y)	0.00275	0.00243	0.00241
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00228	-0.00268	-0.00268
	(!A1 * A3 * !B1 * !B2 * Y)	0.00237	0.00239	0.00238
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00263	-0.00272	-0.00271
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00226	0.00227	0.00226
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00276	-0.00276	-0.00275

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	0.00500	0.00508	0.00499
	(A1 * A3 * B2 * !Y)	-0.00363	-0.00367	-0.00364
	(A1 * A3 * B1 * !B2 * !Y)	0.00500	0.00508	0.00499
	(A1 * A3 * B1 * !B2 * !Y)	-0.00363	-0.00367	-0.00364
	(A1 * A3 * !B1 * !B2 * Y)	0.00491	0.00496	0.00490
	(A1 * A3 * !B1 * !B2 * Y)	-0.00406	-0.00406	-0.00404
	(A1 * !A3 * B2 * !Y)	0.00499	0.00501	0.00495
	(A1 * !A3 * B2 * !Y)	-0.00324	-0.00324	-0.00322
	(A1 * !A3 * B1 * !B2 * !Y)	0.00499	0.00501	0.00495
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00324	-0.00324	-0.00322
	(A1 * !A3 * !B1 * !B2 * Y)	0.00488	0.00492	0.00490
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00526	-0.00544	-0.00541
	(!A1 * A3 * B2 * !Y)	0.00570	0.00498	0.00494
	(!A1 * A3 * B2 * !Y)	-0.00461	-0.00548	-0.00547
	(!A1 * A3 * B1 * !B2 * !Y)	0.00570	0.00498	0.00494
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00461	-0.00548	-0.00547
	(!A1 * A3 * !B1 * !B2 * Y)	0.00489	0.00492	0.00490
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00535	-0.00553	-0.00551
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00458	0.00461	0.00458
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00561	-0.00562	-0.00560

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)**	-0.00122	-0.00123	-0.00123
	(A1 * A3 * B2 * !Y)	0.00097	0.00098	0.00097
	(A1 * A3 * B1 * !B2 * !Y)	-0.00122	-0.00123	-0.00123
	(A1 * A3 * B1 * !B2 * !Y)	0.00096	0.00098	0.00097
	(A1 * A3 * !B1 * !B2 * Y)	-0.00121	-0.00122	-0.00121
	(A1 * A3 * !B1 * !B2 * Y)	0.00107	0.00107	0.00106
	(A1 * !A3 * B2 * !Y)	-0.00122	-0.00123	-0.00121
	(A1 * !A3 * B2 * !Y)	0.00087	0.00088	0.00088
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00122	-0.00123	-0.00121
	(A1 * !A3 * B1 * !B2 * !Y)	0.00087	0.00088	0.00088
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00121	-0.00121	-0.00121
	(A1 * !A3 * !B1 * !B2 * Y)	0.00140	0.00140	0.00141
	(!A1 * A3 * B2 * !Y)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * B2 * !Y)	0.00139	0.00141	0.00140
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00122	-0.00123	-0.00122
	(!A1 * A3 * B1 * !B2 * !Y)	0.00139	0.00141	0.00140
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00121	-0.00122	-0.00121
	(!A1 * A3 * !B1 * !B2 * Y)	0.00140	0.00142	0.00141
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00108	-0.00115	-0.00114
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00144	0.00144	0.00143

sky130_fd_sc_hs__o32ai_2	**(A1 * A3 * B2 * !Y)**	-0.00241	-0.00242	-0.00242
	(A1 * A3 * B2 * !Y)	0.00178	0.00179	0.00179
	(A1 * A3 * B1 * !B2 * !Y)	-0.00241	-0.00242	-0.00242
	(A1 * A3 * B1 * !B2 * !Y)	0.00178	0.00179	0.00179
	(A1 * A3 * !B1 * !B2 * Y)	-0.00237	-0.00238	-0.00237
	(A1 * A3 * !B1 * !B2 * Y)	0.00203	0.00204	0.00202
	(A1 * !A3 * B2 * !Y)	-0.00238	-0.00240	-0.00238
	(A1 * !A3 * B2 * !Y)	0.00158	0.00161	0.00161
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00238	-0.00240	-0.00238
	(A1 * !A3 * B1 * !B2 * !Y)	0.00158	0.00161	0.00161
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00236	-0.00237	-0.00237
	(A1 * !A3 * !B1 * !B2 * Y)	0.00266	0.00267	0.00267
	(!A1 * A3 * B2 * !Y)	-0.00240	-0.00241	-0.00240
	(!A1 * A3 * B2 * !Y)	0.00267	0.00269	0.00268
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00240	-0.00241	-0.00240
	(!A1 * A3 * B1 * !B2 * !Y)	0.00267	0.00269	0.00268
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00237	-0.00237	-0.00237
	(!A1 * A3 * !B1 * !B2 * Y)	0.00271	0.00272	0.00271
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00209	-0.00225	-0.00226
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00277	0.00278	0.00276

sky130_fd_sc_hs__o32ai_4	**(A1 * A3 * B2 * !Y)**	-0.00494	-0.00498	-0.00495
	(A1 * A3 * B2 * !Y)	0.00363	0.00367	0.00364
	(A1 * A3 * B1 * !B2 * !Y)	-0.00494	-0.00498	-0.00495
	(A1 * A3 * B1 * !B2 * !Y)	0.00363	0.00367	0.00364
	(A1 * A3 * !B1 * !B2 * Y)	-0.00490	-0.00490	-0.00489
	(A1 * A3 * !B1 * !B2 * Y)	0.00406	0.00406	0.00404
	(A1 * !A3 * B2 * !Y)	-0.00491	-0.00493	-0.00488
	(A1 * !A3 * B2 * !Y)	0.00327	0.00328	0.00330
	(A1 * !A3 * B1 * !B2 * !Y)	-0.00491	-0.00493	-0.00488
	(A1 * !A3 * B1 * !B2 * !Y)	0.00327	0.00328	0.00330
	(A1 * !A3 * !B1 * !B2 * Y)	-0.00488	-0.00491	-0.00489
	(A1 * !A3 * !B1 * !B2 * Y)	0.00539	0.00544	0.00541
	(!A1 * A3 * B2 * !Y)	-0.00492	-0.00495	-0.00492
	(!A1 * A3 * B2 * !Y)	0.00544	0.00550	0.00547
	(!A1 * A3 * B1 * !B2 * !Y)	-0.00492	-0.00495	-0.00492
	(!A1 * A3 * B1 * !B2 * !Y)	0.00544	0.00550	0.00547
	(!A1 * A3 * !B1 * !B2 * Y)	-0.00488	-0.00491	-0.00489
	(!A1 * A3 * !B1 * !B2 * Y)	0.00549	0.00555	0.00551
	(!A1 * !A3 * !B1 * !B2 * Y)	-0.00431	-0.00461	-0.00458
	(!A1 * !A3 * !B1 * !B2 * Y)	0.00564	0.00565	0.00561

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	0.00131	0.00132	0.00131
	(A2 * B2 * !Y)	-0.00070	-0.00071	-0.00070
	(A2 * B1 * !B2 * !Y)	0.00131	0.00133	0.00131
	(A2 * B1 * !B2 * !Y)	-0.00070	-0.00071	-0.00070
	(A2 * !B1 * !B2 * Y)	0.00120	0.00121	0.00121
	(A2 * !B1 * !B2 * Y)	-0.00128	-0.00131	-0.00132
	(A1 * !A2 * B2 * !Y)	0.00131	0.00133	0.00131
	(A1 * !A2 * B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * B1 * !B2 * !Y)	0.00131	0.00133	0.00131
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00070	-0.00070	-0.00070
	(A1 * !A2 * !B1 * !B2 * Y)	0.00120	0.00121	0.00121
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00117	-0.00126	-0.00126
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00134	-0.00135	-0.00134
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	0.00287	0.00294	0.00289
	(A2 * B2 * !Y)	-0.00138	-0.00141	-0.00139
	(A2 * B1 * !B2 * !Y)	0.00287	0.00294	0.00289
	(A2 * B1 * !B2 * !Y)	-0.00138	-0.00141	-0.00139
	(A2 * !B1 * !B2 * Y)	0.00235	0.00237	0.00236
	(A2 * !B1 * !B2 * Y)	-0.00283	-0.00292	-0.00292
	(A1 * !A2 * B2 * !Y)	0.00287	0.00294	0.00289
	(A1 * !A2 * B2 * !Y)	-0.00137	-0.00141	-0.00138
	(A1 * !A2 * B1 * !B2 * !Y)	0.00287	0.00294	0.00289
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00138	-0.00141	-0.00138
	(A1 * !A2 * !B1 * !B2 * Y)	0.00236	0.00238	0.00236
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00262	-0.00278	-0.00277
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00225	0.00227	0.00225
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00298	-0.00299	-0.00297

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	0.00543	0.00552	0.00547
	(A2 * B2 * !Y)	-0.00272	-0.00276	-0.00274
	(A2 * B1 * !B2 * !Y)	0.00548	0.00556	0.00547
	(A2 * B1 * !B2 * !Y)	-0.00276	-0.00278	-0.00274
	(A2 * !B1 * !B2 * Y)	0.00461	0.00461	0.00461
	(A2 * !B1 * !B2 * Y)	-0.00545	-0.00564	-0.00562
	(A1 * !A2 * B2 * !Y)	0.00544	0.00556	0.00547
	(A1 * !A2 * B2 * !Y)	-0.00272	-0.00278	-0.00273
	(A1 * !A2 * B1 * !B2 * !Y)	0.00544	0.00556	0.00547
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00272	-0.00278	-0.00273
	(A1 * !A2 * !B1 * !B2 * Y)	0.00461	0.00463	0.00460
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00502	-0.00532	-0.00530
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00441	0.00442	0.00441
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00573	-0.00573	-0.00573

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

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

sky130_fd_sc_hs__o32ai_1	**(A2 * B2 * !Y)**	-0.00126	-0.00127	-0.00131
	(A2 * B2 * !Y)	0.00075	0.00075	0.00071
	(A2 * B1 * !B2 * !Y)	-0.00126	-0.00127	-0.00131
	(A2 * B1 * !B2 * !Y)	0.00075	0.00075	0.00071
	(A2 * !B1 * !B2 * Y)	-0.00120	-0.00120	-0.00121
	(A2 * !B1 * !B2 * Y)	0.00132	0.00131	0.00132
	(A1 * !A2 * B2 * !Y)	-0.00121	-0.00121	-0.00129
	(A1 * !A2 * B2 * !Y)	0.00078	0.00078	0.00072
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00120	-0.00121	-0.00129
	(A1 * !A2 * B1 * !B2 * !Y)	0.00078	0.00078	0.00072
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !B1 * !B2 * Y)	0.00125	0.00126	0.00126
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00107	-0.00114	-0.00113
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00135	0.00135	0.00134
sky130_fd_sc_hs__o32ai_2	**(A2 * B2 * !Y)**	-0.00274	-0.00277	-0.00287
	(A2 * B2 * !Y)	0.00151	0.00152	0.00142
	(A2 * B1 * !B2 * !Y)	-0.00275	-0.00277	-0.00287
	(A2 * B1 * !B2 * !Y)	0.00151	0.00152	0.00142
	(A2 * !B1 * !B2 * Y)	-0.00235	-0.00236	-0.00236
	(A2 * !B1 * !B2 * Y)	0.00291	0.00292	0.00292
	(A1 * !A2 * B2 * !Y)	-0.00262	-0.00265	-0.00284
	(A1 * !A2 * B2 * !Y)	0.00157	0.00158	0.00142
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00262	-0.00265	-0.00284
	(A1 * !A2 * B1 * !B2 * !Y)	0.00157	0.00158	0.00142
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00235	-0.00237	-0.00236
	(A1 * !A2 * !B1 * !B2 * Y)	0.00276	0.00278	0.00277
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00209	-0.00225	-0.00225
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00299	0.00300	0.00298

sky130_fd_sc_hs__o32ai_4	**(A2 * B2 * !Y)**	-0.00520	-0.00526	-0.00544
	(A2 * B2 * !Y)	0.00295	0.00298	0.00280
	(A2 * B1 * !B2 * !Y)	-0.00520	-0.00526	-0.00544
	(A2 * B1 * !B2 * !Y)	0.00295	0.00298	0.00280
	(A2 * !B1 * !B2 * Y)	-0.00460	-0.00461	-0.00459
	(A2 * !B1 * !B2 * Y)	0.00562	0.00564	0.00562
	(A1 * !A2 * B2 * !Y)	-0.00494	-0.00500	-0.00537
	(A1 * !A2 * B2 * !Y)	0.00308	0.00310	0.00281
	(A1 * !A2 * B1 * !B2 * !Y)	-0.00494	-0.00500	-0.00537
	(A1 * !A2 * B1 * !B2 * !Y)	0.00308	0.00310	0.00281
	(A1 * !A2 * !B1 * !B2 * Y)	-0.00460	-0.00461	-0.00459
	(A1 * !A2 * !B1 * !B2 * Y)	0.00531	0.00532	0.00530
	(!A1 * !A2 * !B1 * !B2 * Y)	-0.00409	-0.00438	-0.00441
	(!A1 * !A2 * !B1 * !B2 * Y)	0.00575	0.00578	0.00574

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	0.00148	0.00136	0.00134
	(A3 * B2 * !Y)	-0.00117	-0.00132	-0.00132
	(A2 * !A3 * B2 * !Y)	0.00148	0.00136	0.00134
	(A2 * !A3 * B2 * !Y)	-0.00117	-0.00132	-0.00132
	(A1 * !A2 * !A3 * B2 * !Y)	0.00148	0.00136	0.00135
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00117	-0.00132	-0.00132
	(!A1 * !A2 * !A3 * B2 * Y)	0.00046	0.00046	0.00045
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00160	-0.00164	-0.00163
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00051	0.00051	0.00047
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00156	-0.00157	-0.00164

sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	0.00268	0.00247	0.00243
	(A3 * B2 * !Y)	-0.00229	-0.00262	-0.00261
	(A2 * !A3 * B2 * !Y)	0.00268	0.00247	0.00243
	(A2 * !A3 * B2 * !Y)	-0.00229	-0.00262	-0.00261
	(A1 * !A2 * !A3 * B2 * !Y)	0.00268	0.00247	0.00243
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00229	-0.00262	-0.00261
	(!A1 * !A2 * !A3 * B2 * Y)	0.00071	0.00072	0.00071
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00314	-0.00323	-0.00323
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00082	0.00083	0.00075
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00309	-0.00312	-0.00325
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	0.00568	0.00517	0.00511
	(A3 * B2 * !Y)	-0.00457	-0.00524	-0.00524
	(A2 * !A3 * B2 * !Y)	0.00568	0.00516	0.00511
	(A2 * !A3 * B2 * !Y)	-0.00457	-0.00523	-0.00524
	(A1 * !A2 * !A3 * B2 * !Y)	0.00568	0.00516	0.00511
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00457	-0.00525	-0.00524
	(!A1 * !A2 * !A3 * B2 * Y)	0.00143	0.00144	0.00143
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00655	-0.00672	-0.00671
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00164	0.00165	0.00150
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00646	-0.00653	-0.00678

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

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

sky130_fd_sc_hs__o32ai_1	**(A3 * B2 * !Y)**	-0.00134	-0.00134	-0.00134
	(A3 * B2 * !Y)	0.00131	0.00132	0.00132
	(A2 * !A3 * B2 * !Y)	-0.00134	-0.00134	-0.00134
	(A2 * !A3 * B2 * !Y)	0.00132	0.00132	0.00132
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00134	-0.00134	-0.00134
	(A1 * !A2 * !A3 * B2 * !Y)	0.00132	0.00133	0.00132
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * B2 * Y)	0.00163	0.00164	0.00163
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00046	-0.00047	-0.00046
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00165	0.00168	0.00165
sky130_fd_sc_hs__o32ai_2	**(A3 * B2 * !Y)**	-0.00243	-0.00244	-0.00243
	(A3 * B2 * !Y)	0.00260	0.00262	0.00261
	(A2 * !A3 * B2 * !Y)	-0.00243	-0.00244	-0.00243
	(A2 * !A3 * B2 * !Y)	0.00260	0.00262	0.00261
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00243	-0.00244	-0.00243
	(A1 * !A2 * !A3 * B2 * !Y)	0.00260	0.00262	0.00261
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00071	-0.00072	-0.00071
	(!A1 * !A2 * !A3 * B2 * Y)	0.00323	0.00327	0.00323
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00072	-0.00073	-0.00072
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00328	0.00332	0.00327
sky130_fd_sc_hs__o32ai_4	**(A3 * B2 * !Y)**	-0.00511	-0.00511	-0.00510
	(A3 * B2 * !Y)	0.00524	0.00524	0.00524
	(A2 * !A3 * B2 * !Y)	-0.00511	-0.00510	-0.00510
	(A2 * !A3 * B2 * !Y)	0.00524	0.00523	0.00524
	(A1 * !A2 * !A3 * B2 * !Y)	-0.00511	-0.00512	-0.00510
	(A1 * !A2 * !A3 * B2 * !Y)	0.00524	0.00528	0.00524
	(!A1 * !A2 * !A3 * B2 * Y)	-0.00143	-0.00143	-0.00143
	(!A1 * !A2 * !A3 * B2 * Y)	0.00672	0.00677	0.00671
	(!A1 * !A2 * !A3 * !B2 * Y)	-0.00144	-0.00147	-0.00144
	(!A1 * !A2 * !A3 * !B2 * Y)	0.00679	0.00692	0.00681

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32ai_1	(A3 * B1 * !Y)	0.00140	0.00141	0.00140
	(A3 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(A2 * !A3 * B1 * !Y)	0.00140	0.00141	0.00140
	(A2 * !A3 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(A1 * !A2 * !A3 * B1 * !Y)	0.00140	0.00141	0.00140
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00068	-0.00068	-0.00068
	(!A1 * !A2 * !A3 * B1 * Y)	0.00038	0.00038	0.00038
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00161	-0.00165	-0.00164
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00160	-0.00160	-0.00167
sky130_fd_sc_hs__o32ai_2	(A3 * B1 * !Y)	0.00273	0.00277	0.00274
	(A3 * B1 * !Y)	-0.00139	-0.00141	-0.00140
	(A2 * !A3 * B1 * !Y)	0.00275	0.00279	0.00274
	(A2 * !A3 * B1 * !Y)	-0.00141	-0.00142	-0.00140
	(A1 * !A2 * !A3 * B1 * !Y)	0.00274	0.00279	0.00274
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00140	-0.00142	-0.00140
	(!A1 * !A2 * !A3 * B1 * Y)	0.00075	0.00076	0.00075
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00319	-0.00329	-0.00328
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00086	0.00087	0.00079
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00316	-0.00320	-0.00332

sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	0.00535	0.00546	0.00538
	(A3 * B1 * !Y)	-0.00275	-0.00281	-0.00276
	(A2 * !A3 * B1 * !Y)	0.00535	0.00546	0.00538
	(A2 * !A3 * B1 * !Y)	-0.00275	-0.00282	-0.00276
	(A1 * !A2 * !A3 * B1 * !Y)	0.00534	0.00546	0.00538
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00274	-0.00282	-0.00276
	(!A1 * !A2 * !A3 * B1 * Y)	0.00144	0.00145	0.00144
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00634	-0.00651	-0.00648
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00166	0.00167	0.00151
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00629	-0.00635	-0.00659

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32ai_1	**(A3 * B1 * !Y)**	-0.00136	-0.00137	-0.00140
	(A3 * B1 * !Y)	0.00071	0.00072	0.00069
	(A2 * !A3 * B1 * !Y)	-0.00136	-0.00137	-0.00140
	(A2 * !A3 * B1 * !Y)	0.00071	0.00072	0.00069
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00135	-0.00137	-0.00140
	(A1 * !A2 * !A3 * B1 * !Y)	0.00071	0.00072	0.00069
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00038	-0.00038	-0.00038
	(!A1 * !A2 * !A3 * B1 * Y)	0.00165	0.00165	0.00164
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00039	-0.00039	-0.00038
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00167	0.00170	0.00167

sky130_fd_sc_hs__o32ai_2	**(A3 * B1 * !Y)**	-0.00261	-0.00263	-0.00273
	(A3 * B1 * !Y)	0.00151	0.00152	0.00143
	(A2 * !A3 * B1 * !Y)	-0.00261	-0.00263	-0.00273
	(A2 * !A3 * B1 * !Y)	0.00151	0.00152	0.00143
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00260	-0.00261	-0.00273
	(A1 * !A2 * !A3 * B1 * !Y)	0.00151	0.00151	0.00143
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00075	-0.00075	-0.00075
	(!A1 * !A2 * !A3 * B1 * Y)	0.00329	0.00329	0.00328
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00076	-0.00077	-0.00076
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00332	0.00339	0.00334
sky130_fd_sc_hs__o32ai_4	**(A3 * B1 * !Y)**	-0.00513	-0.00516	-0.00535
	(A3 * B1 * !Y)	0.00296	0.00297	0.00282
	(A2 * !A3 * B1 * !Y)	-0.00513	-0.00516	-0.00535
	(A2 * !A3 * B1 * !Y)	0.00296	0.00297	0.00282
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00514	-0.00517	-0.00535
	(A1 * !A2 * !A3 * B1 * !Y)	0.00298	0.00298	0.00282
	(!A1 * !A2 * !A3 * B1 * Y)	-0.00144	-0.00144	-0.00144
	(!A1 * !A2 * !A3 * B1 * Y)	0.00652	0.00651	0.00648
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00145	-0.00146	-0.00146
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00660	0.00661	0.00662

SKY130_FD_SC_HS__O32Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00246	0.00240	0.00238	0.00241	0.00245	1.13665
sky130_fd_sc_hs__o32a_2	0.00258	0.00253	0.00258	0.00279	0.00259	2.20243
sky130_fd_sc_hs__o32a_4	0.00439	0.00472	0.00441	0.00600	0.00468	4.29258

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o32a_1	0.00000	0.03937	0.11629
sky130_fd_sc_hs__o32a_2	0.00000	0.05056	0.11694
sky130_fd_sc_hs__o32a_4	0.00000	0.10190	0.23389

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)	0.08051	0.57247	5.73324
	A2->X (RR)	0.07922	0.56741	5.70230
	A3->X (RR)	0.07271	0.55129	5.73351
	B1->X (RR)	0.07231	0.55564	5.70263
	B2->X (RR)	0.06647	0.53869	5.81130
sky130_fd_sc_hs__o32a_2	A1->X (RR)	0.08235	0.49257	5.78474
	A2->X (RR)	0.08177	0.48964	5.76038
	A3->X (RR)	0.07573	0.47651	5.76781
	B1->X (RR)	0.07472	0.48756	5.76929
	B2->X (RR)	0.06855	0.47009	5.81708
sky130_fd_sc_hs__o32a_4	A1->X (RR)	0.09465	0.43957	5.86737
	A2->X (RR)	0.08920	0.42652	5.81896
	A3->X (RR)	0.07989	0.40723	5.84549
	B1->X (RR)	0.08792	0.43842	5.85770
	B2->X (RR)	0.07726	0.41406	5.90676

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o32a_1	A1->X (FF)	0.21597	0.70268	4.96124
	A2->X (FF)	0.20239	0.70584	5.06941
	A3->X (FF)	0.17424	0.66581	4.92120
	B1->X (FF)	0.10933	0.55951	4.73064
	B2->X (FF)	0.09564	0.53561	4.65619
sky130_fd_sc_hs__o32a_2	A1->X (FF)	0.26725	0.75089	5.15766
	A2->X (FF)	0.25414	0.75870	5.28056
	A3->X (FF)	0.22691	0.71516	5.07530
	B1->X (FF)	0.14191	0.60222	4.87548
	B2->X (FF)	0.12699	0.57937	4.73926
sky130_fd_sc_hs__o32a_4	A1->X (FF)	0.27447	0.73486	5.28585
	A2->X (FF)	0.25904	0.73233	5.37371
	A3->X (FF)	0.21628	0.67848	5.20044
	B1->X (FF)	0.13386	0.55954	4.98680
	B2->X (FF)	0.11523	0.52879	4.89531

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	A1	0.01103	0.01083	0.01552
	A1	0.00454	0.00434	0.00909
	A2	0.00986	0.00995	0.01516
	A2	0.00405	0.00414	0.00943
	A3	0.00861	0.00872	0.01822
	A3	0.00261	0.00272	0.01286
	B1	0.00972	0.00984	0.01962
	B1	0.00390	0.00406	0.01480
	B2	0.00843	0.00865	0.02547
	B2	0.00257	0.00306	0.02177
sky130_fd_sc_hs__o32a_2	A1	0.01339	0.01337	0.01741
	A1	0.00643	0.00642	0.01058
	A2	0.01220	0.01249	0.01701
	A2	0.00591	0.00621	0.01087
	A3	0.01011	0.01040	0.01915
	A3	0.00447	0.00478	0.01368
	B1	0.01201	0.01219	0.02050
	B1	0.00627	0.00646	0.01489
	B2	0.01062	0.01087	0.02592
	B2	0.00444	0.00499	0.02205

sky130_fd_sc_hs__o32a_4	**A1**	0.02609	0.02659	0.03866
	A1	0.01337	0.01394	0.02597
	A2	0.02369	0.02424	0.03690
	A2	0.01195	0.01255	0.02537
	A3	0.01816	0.01894	0.04378
	A3	0.00850	0.00932	0.03427
	B1	0.02410	0.02484	0.04300
	B1	0.01156	0.01243	0.03167
	B2	0.01822	0.01930	0.05034
	B2	0.00846	0.00972	0.04277

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**A1**	0.00355	0.00332	0.00845
	A1	0.00988	0.00967	0.01473
	A2	0.00359	0.00349	0.01009
	A2	0.00920	0.00912	0.01527
	A3	0.00357	0.00401	0.01777
	A3	0.00859	0.00905	0.02217
	B1	0.00238	0.00244	0.01240
	B1	0.00766	0.00770	0.01524
	B2	0.00234	0.00345	0.02052
	B2	0.00698	0.00788	0.02333

sky130_fd_sc_hs__o32a_2	**A1**	0.00631	0.00577	0.01201
	A1	0.01306	0.01270	0.01746
	A2	0.00636	0.00590	0.01223
	A2	0.01239	0.01209	0.01772
	A3	0.00634	0.00668	0.01944
	A3	0.01180	0.01223	0.02447
	B1	0.00457	0.00479	0.01302
	B1	0.01045	0.01059	0.01738
	B2	0.00464	0.00582	0.02236
	B2	0.00960	0.01053	0.02528
sky130_fd_sc_hs__o32a_4	**A1**	0.01172	0.01130	0.02218
	A1	0.02444	0.02412	0.03460
	A2	0.01201	0.01124	0.02528
	A2	0.02337	0.02305	0.03488
	A3	0.01205	0.01287	0.03983
	A3	0.02146	0.02227	0.04749
	B1	0.00870	0.00886	0.02650
	B1	0.02012	0.02020	0.03629
	B2	0.00861	0.01073	0.04563
	B2	0.01789	0.01956	0.05150

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)**	0.00122	0.00123	0.00122
	(A2 * A3 * B2 * X)	-0.00116	-0.00120	-0.00119
	(A2 * A3 * B1 * !B2 * X)	0.00122	0.00123	0.00122
	(A2 * A3 * B1 * !B2 * X)	-0.00116	-0.00120	-0.00119
	(A2 * !B1 * !B2 * !X)	0.00104	0.00105	0.00104
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00138	-0.00137
	(A2 * !A3 * B2 * X)	0.00123	0.00123	0.00122
	(A2 * !A3 * B2 * X)	-0.00115	-0.00120	-0.00119
	(A2 * !A3 * B1 * !B2 * X)	0.00123	0.00123	0.00122
	(A2 * !A3 * B1 * !B2 * X)	-0.00115	-0.00120	-0.00119
	(!A2 * A3 * B2 * X)	0.00123	0.00122	0.00122
	(!A2 * A3 * B2 * X)	-0.00107	-0.00116	-0.00116
	(!A2 * A3 * B1 * !B2 * X)	0.00123	0.00122	0.00122
	(!A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00116	-0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	0.00104	0.00105	0.00104
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00126	-0.00134	-0.00133
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00098	0.00098	0.00098
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00139	-0.00139	-0.00139

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	0.00135	0.00136	0.00135
	(A2 * A3 * B2 * X)	-0.00116	-0.00120	-0.00119
	(A2 * A3 * B1 * !B2 * X)	0.00135	0.00136	0.00135
	(A2 * A3 * B1 * !B2 * X)	-0.00116	-0.00120	-0.00119
	(A2 * !B1 * !B2 * !X)	0.00118	0.00119	0.00118
	(A2 * !B1 * !B2 * !X)	-0.00134	-0.00137	-0.00137
	(A2 * !A3 * B2 * X)	0.00136	0.00136	0.00135
	(A2 * !A3 * B2 * X)	-0.00115	-0.00120	-0.00119
	(A2 * !A3 * B1 * !B2 * X)	0.00136	0.00136	0.00135
	(A2 * !A3 * B1 * !B2 * X)	-0.00115	-0.00120	-0.00119
	(!A2 * A3 * B2 * X)	0.00136	0.00136	0.00135
	(!A2 * A3 * B2 * X)	-0.00107	-0.00116	-0.00116
	(!A2 * A3 * B1 * !B2 * X)	0.00136	0.00136	0.00135
	(!A2 * A3 * B1 * !B2 * X)	-0.00107	-0.00116	-0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	0.00118	0.00119	0.00118
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00125	-0.00133	-0.00133
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00112	0.00112	0.00111
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00139	-0.00138	-0.00138

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	0.00209	0.00211	0.00209
	(A2 * A3 * B2 * X)	-0.00232	-0.00243	-0.00242
	(A2 * A3 * B1 * !B2 * X)	0.00209	0.00211	0.00209
	(A2 * A3 * B1 * !B2 * X)	-0.00232	-0.00243	-0.00242
	(A2 * !B1 * !B2 * !X)	0.00209	0.00211	0.00210
	(A2 * !B1 * !B2 * !X)	-0.00232	-0.00243	-0.00242
	(A2 * !A3 * B2 * X)	0.00209	0.00211	0.00209
	(A2 * !A3 * B2 * X)	-0.00228	-0.00242	-0.00242
	(A2 * !A3 * B1 * !B2 * X)	0.00210	0.00211	0.00210
	(A2 * !A3 * B1 * !B2 * X)	-0.00228	-0.00242	-0.00242
	(!A2 * A3 * B2 * X)	0.00212	0.00212	0.00210
	(!A2 * A3 * B2 * X)	-0.00215	-0.00235	-0.00234
	(!A2 * A3 * B1 * !B2 * X)	0.00212	0.00212	0.00210
	(!A2 * A3 * B1 * !B2 * X)	-0.00215	-0.00235	-0.00234
	(!A2 * A3 * !B1 * !B2 * !X)	0.00210	0.00212	0.00210
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00217	-0.00235	-0.00234
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00199	0.00201	0.00200
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00247	-0.00248	-0.00247

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)**	-0.00121	-0.00122	-0.00122
	(A2 * A3 * B2 * X)	0.00119	0.00120	0.00119
	(A2 * A3 * B1 * !B2 * X)	-0.00121	-0.00122	-0.00122
	(A2 * A3 * B1 * !B2 * X)	0.00119	0.00120	0.00119
	(A2 * !B1 * !B2 * !X)	-0.00103	-0.00104	-0.00104
	(A2 * !B1 * !B2 * !X)	0.00137	0.00138	0.00137
	(A2 * !A3 * B2 * X)	-0.00121	-0.00122	-0.00122
	(A2 * !A3 * B2 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * !B2 * X)	-0.00121	-0.00122	-0.00122
	(A2 * !A3 * B1 * !B2 * X)	0.00119	0.00120	0.00119
	(!A2 * A3 * B2 * X)	-0.00121	-0.00122	-0.00121
	(!A2 * A3 * B2 * X)	0.00115	0.00116	0.00116
	(!A2 * A3 * B1 * !B2 * X)	-0.00121	-0.00122	-0.00121
	(!A2 * A3 * B1 * !B2 * X)	0.00115	0.00116	0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00104	-0.00104	-0.00104
	(!A2 * A3 * !B1 * !B2 * !X)	0.00133	0.00134	0.00133
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00093	-0.00098	-0.00098
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00140	0.00140	0.00139

sky130_fd_sc_hs__o32a_2	**(A2 * A3 * B2 * X)**	-0.00134	-0.00135	-0.00135
	(A2 * A3 * B2 * X)	0.00119	0.00120	0.00119
	(A2 * A3 * B1 * !B2 * X)	-0.00134	-0.00135	-0.00135
	(A2 * A3 * B1 * !B2 * X)	0.00119	0.00120	0.00119
	(A2 * !B1 * !B2 * !X)	-0.00117	-0.00118	-0.00118
	(A2 * !B1 * !B2 * !X)	0.00136	0.00137	0.00137
	(A2 * !A3 * B2 * X)	-0.00134	-0.00135	-0.00135
	(A2 * !A3 * B2 * X)	0.00119	0.00120	0.00119
	(A2 * !A3 * B1 * !B2 * X)	-0.00134	-0.00135	-0.00135
	(A2 * !A3 * B1 * !B2 * X)	0.00119	0.00120	0.00119
	(!A2 * A3 * B2 * X)	-0.00134	-0.00135	-0.00135
	(!A2 * A3 * B2 * X)	0.00116	0.00116	0.00116
	(!A2 * A3 * B1 * !B2 * X)	-0.00134	-0.00135	-0.00135
	(!A2 * A3 * B1 * !B2 * X)	0.00116	0.00116	0.00116
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00118	-0.00118	-0.00118
	(!A2 * A3 * !B1 * !B2 * !X)	0.00133	0.00133	0.00133
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00106	-0.00112	-0.00111
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00139	0.00140	0.00139

sky130_fd_sc_hs__o32a_4	**(A2 * A3 * B2 * X)**	-0.00209	-0.00210	-0.00209
	(A2 * A3 * B2 * X)	0.00241	0.00244	0.00242
	(A2 * A3 * B1 * !B2 * X)	-0.00209	-0.00210	-0.00209
	(A2 * A3 * B1 * !B2 * X)	0.00241	0.00244	0.00242
	(A2 * !B1 * !B2 * !X)	-0.00209	-0.00210	-0.00209
	(A2 * !B1 * !B2 * !X)	0.00242	0.00244	0.00242
	(A2 * !A3 * B2 * X)	-0.00209	-0.00210	-0.00209
	(A2 * !A3 * B2 * X)	0.00241	0.00244	0.00242
	(A2 * !A3 * B1 * !B2 * X)	-0.00209	-0.00210	-0.00209
	(A2 * !A3 * B1 * !B2 * X)	0.00241	0.00244	0.00242
	(!A2 * A3 * B2 * X)	-0.00208	-0.00209	-0.00209
	(!A2 * A3 * B2 * X)	0.00233	0.00235	0.00234
	(!A2 * A3 * B1 * !B2 * X)	-0.00208	-0.00209	-0.00209
	(!A2 * A3 * B1 * !B2 * X)	0.00233	0.00235	0.00234
	(!A2 * A3 * !B1 * !B2 * !X)	-0.00208	-0.00209	-0.00209
	(!A2 * A3 * !B1 * !B2 * !X)	0.00233	0.00235	0.00234
	(!A2 * !A3 * !B1 * !B2 * !X)	-0.00186	-0.00200	-0.00200
	(!A2 * !A3 * !B1 * !B2 * !X)	0.00249	0.00251	0.00248

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)**	0.00115	0.00117	0.00113
	(A1 * A3 * B2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * B1 * !B2 * X)	0.00115	0.00117	0.00113
	(A1 * A3 * B1 * !B2 * X)	-0.00078	-0.00079	-0.00078
	(A1 * A3 * !B1 * !B2 * !X)	0.00107	0.00108	0.00106
	(A1 * A3 * !B1 * !B2 * !X)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * B2 * X)	0.00112	0.00113	0.00112
	(A1 * !A3 * B2 * X)	-0.00068	-0.00069	-0.00069
	(A1 * !A3 * B1 * !B2 * X)	0.00112	0.00113	0.00112
	(A1 * !A3 * B1 * !B2 * X)	-0.00068	-0.00069	-0.00069
	(A1 * !A3 * !B1 * !B2 * !X)	0.00106	0.00107	0.00106
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00121
	(!A1 * A3 * B2 * X)	0.00130	0.00112	0.00111
	(!A1 * A3 * B2 * X)	-0.00098	-0.00117	-0.00117
	(!A1 * A3 * B1 * !B2 * X)	0.00130	0.00112	0.00111
	(!A1 * A3 * B1 * !B2 * X)	-0.00098	-0.00117	-0.00117
	(!A1 * A3 * !B1 * !B2 * !X)	0.00107	0.00107	0.00106
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00120	-0.00122	-0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00123	-0.00124	-0.00123

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	0.00129	0.00131	0.00127
	(A1 * A3 * B2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A3 * B1 * !B2 * X)	0.00129	0.00131	0.00127
	(A1 * A3 * B1 * !B2 * X)	-0.00079	-0.00079	-0.00079
	(A1 * A3 * !B1 * !B2 * !X)	0.00121	0.00122	0.00120
	(A1 * A3 * !B1 * !B2 * !X)	-0.00092	-0.00092	-0.00092
	(A1 * !A3 * B2 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B2 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * B1 * !B2 * X)	0.00126	0.00127	0.00126
	(A1 * !A3 * B1 * !B2 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A3 * !B1 * !B2 * !X)	0.00120	0.00121	0.00120
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00119	-0.00122	-0.00122
	(!A1 * A3 * B2 * X)	0.00144	0.00127	0.00125
	(!A1 * A3 * B2 * X)	-0.00098	-0.00117	-0.00118
	(!A1 * A3 * B1 * !B2 * X)	0.00144	0.00127	0.00125
	(!A1 * A3 * B1 * !B2 * X)	-0.00098	-0.00117	-0.00118
	(!A1 * A3 * !B1 * !B2 * !X)	0.00119	0.00121	0.00120
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00119	-0.00123	-0.00123
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00112	0.00113	0.00113
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00124	-0.00125	-0.00124

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	0.00216	0.00221	0.00215
	(A1 * A3 * B2 * X)	-0.00175	-0.00177	-0.00176
	(A1 * A3 * B1 * !B2 * X)	0.00216	0.00221	0.00215
	(A1 * A3 * B1 * !B2 * X)	-0.00175	-0.00177	-0.00176
	(A1 * A3 * !B1 * !B2 * !X)	0.00215	0.00217	0.00214
	(A1 * A3 * !B1 * !B2 * !X)	-0.00191	-0.00191	-0.00191
	(A1 * !A3 * B2 * X)	0.00215	0.00218	0.00215
	(A1 * !A3 * B2 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A3 * B1 * !B2 * X)	0.00215	0.00218	0.00215
	(A1 * !A3 * B1 * !B2 * X)	-0.00156	-0.00158	-0.00157
	(A1 * !A3 * !B1 * !B2 * !X)	0.00216	0.00216	0.00215
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00253	-0.00258	-0.00257
	(!A1 * A3 * B2 * X)	0.00251	0.00216	0.00214
	(!A1 * A3 * B2 * X)	-0.00220	-0.00259	-0.00259
	(!A1 * A3 * B1 * !B2 * X)	0.00251	0.00216	0.00214
	(!A1 * A3 * B1 * !B2 * X)	-0.00220	-0.00259	-0.00259
	(!A1 * A3 * !B1 * !B2 * !X)	0.00216	0.00215	0.00214
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00251	-0.00260	-0.00259
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00202	0.00204	0.00203
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00264	-0.00265	-0.00264

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)**	-0.00111	-0.00112	-0.00111
	(A1 * A3 * B2 * X)	0.00078	0.00079	0.00078
	(A1 * A3 * B1 * !B2 * X)	-0.00111	-0.00112	-0.00111
	(A1 * A3 * B1 * !B2 * X)	0.00078	0.00079	0.00078
	(A1 * A3 * !B1 * !B2 * !X)	-0.00106	-0.00106	-0.00106
	(A1 * A3 * !B1 * !B2 * !X)	0.00091	0.00091	0.00091
	(A1 * !A3 * B2 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A3 * B2 * X)	0.00070	0.00070	0.00071
	(A1 * !A3 * B1 * !B2 * X)	-0.00110	-0.00111	-0.00110
	(A1 * !A3 * B1 * !B2 * X)	0.00070	0.00070	0.00071
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00106	-0.00106	-0.00106
	(A1 * !A3 * !B1 * !B2 * !X)	0.00121	0.00121	0.00121
	(!A1 * A3 * B2 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A3 * B2 * X)	0.00116	0.00118	0.00117
	(!A1 * A3 * B1 * !B2 * X)	-0.00110	-0.00111	-0.00110
	(!A1 * A3 * B1 * !B2 * X)	0.00116	0.00118	0.00117
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00106	-0.00107	-0.00106
	(!A1 * A3 * !B1 * !B2 * !X)	0.00121	0.00123	0.00122
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00095	-0.00100	-0.00100
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00124	0.00125	0.00124

sky130_fd_sc_hs__o32a_2	**(A1 * A3 * B2 * X)**	-0.00125	-0.00126	-0.00126
	(A1 * A3 * B2 * X)	0.00079	0.00079	0.00079
	(A1 * A3 * B1 * !B2 * X)	-0.00125	-0.00126	-0.00126
	(A1 * A3 * B1 * !B2 * X)	0.00079	0.00079	0.00079
	(A1 * A3 * !B1 * !B2 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * A3 * !B1 * !B2 * !X)	0.00092	0.00092	0.00092
	(A1 * !A3 * B2 * X)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * B2 * X)	0.00070	0.00071	0.00071
	(A1 * !A3 * B1 * !B2 * X)	-0.00125	-0.00125	-0.00124
	(A1 * !A3 * B1 * !B2 * X)	0.00070	0.00071	0.00071
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00119	-0.00120	-0.00120
	(A1 * !A3 * !B1 * !B2 * !X)	0.00122	0.00122	0.00122
	(!A1 * A3 * B2 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * B2 * X)	0.00117	0.00118	0.00118
	(!A1 * A3 * B1 * !B2 * X)	-0.00125	-0.00125	-0.00125
	(!A1 * A3 * B1 * !B2 * X)	0.00117	0.00118	0.00118
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00119	-0.00120	-0.00120
	(!A1 * A3 * !B1 * !B2 * !X)	0.00122	0.00124	0.00123
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00107	-0.00113	-0.00113
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00125	0.00126	0.00125

sky130_fd_sc_hs__o32a_4	**(A1 * A3 * B2 * X)**	-0.00213	-0.00215	-0.00214
	(A1 * A3 * B2 * X)	0.00175	0.00177	0.00176
	(A1 * A3 * B1 * !B2 * X)	-0.00213	-0.00215	-0.00214
	(A1 * A3 * B1 * !B2 * X)	0.00175	0.00177	0.00176
	(A1 * A3 * !B1 * !B2 * !X)	-0.00213	-0.00214	-0.00214
	(A1 * A3 * !B1 * !B2 * !X)	0.00191	0.00191	0.00191
	(A1 * !A3 * B2 * X)	-0.00213	-0.00214	-0.00211
	(A1 * !A3 * B2 * X)	0.00159	0.00160	0.00161
	(A1 * !A3 * B1 * !B2 * X)	-0.00213	-0.00214	-0.00211
	(A1 * !A3 * B1 * !B2 * X)	0.00160	0.00160	0.00161
	(A1 * !A3 * !B1 * !B2 * !X)	-0.00213	-0.00215	-0.00214
	(A1 * !A3 * !B1 * !B2 * !X)	0.00255	0.00258	0.00257
	(!A1 * A3 * B2 * X)	-0.00214	-0.00214	-0.00213
	(!A1 * A3 * B2 * X)	0.00260	0.00260	0.00259
	(!A1 * A3 * B1 * !B2 * X)	-0.00214	-0.00214	-0.00213
	(!A1 * A3 * B1 * !B2 * X)	0.00260	0.00260	0.00259
	(!A1 * A3 * !B1 * !B2 * !X)	-0.00212	-0.00215	-0.00214
	(!A1 * A3 * !B1 * !B2 * !X)	0.00257	0.00260	0.00259
	(!A1 * !A3 * !B1 * !B2 * !X)	-0.00189	-0.00204	-0.00203
	(!A1 * !A3 * !B1 * !B2 * !X)	0.00266	0.00267	0.00265

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	0.00120	0.00121	0.00120
	(A2 * B2 * X)	-0.00063	-0.00063	-0.00063
	(A2 * B1 * !B2 * X)	0.00120	0.00121	0.00120
	(A2 * B1 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !B2 * !X)	0.00107	0.00107	0.00107
	(A2 * !B1 * !B2 * !X)	-0.00119	-0.00121	-0.00122
	(A1 * !A2 * B2 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * B1 * !B2 * X)	0.00120	0.00121	0.00120
	(A1 * !A2 * B1 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B1 * !B2 * !X)	0.00106	0.00108	0.00107
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00109	-0.00118	-0.00116
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00124	-0.00124	-0.00124
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	0.00137	0.00138	0.00137
	(A2 * B2 * X)	-0.00063	-0.00063	-0.00063
	(A2 * B1 * !B2 * X)	0.00137	0.00138	0.00137
	(A2 * B1 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A2 * !B1 * !B2 * !X)	0.00120	0.00121	0.00121
	(A2 * !B1 * !B2 * !X)	-0.00122	-0.00126	-0.00125
	(A1 * !A2 * B2 * X)	0.00137	0.00138	0.00137
	(A1 * !A2 * B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * B1 * !B2 * X)	0.00137	0.00138	0.00137
	(A1 * !A2 * B1 * !B2 * X)	-0.00063	-0.00063	-0.00063
	(A1 * !A2 * !B1 * !B2 * !X)	0.00120	0.00122	0.00121
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00113	-0.00121	-0.00120
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00113	0.00113	0.00113
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00127	-0.00127	-0.00127

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	0.00224	0.00227	0.00225
	(A2 * B2 * X)	-0.00126	-0.00127	-0.00126
	(A2 * B1 * !B2 * X)	0.00224	0.00227	0.00225
	(A2 * B1 * !B2 * X)	-0.00126	-0.00127	-0.00126
	(A2 * !B1 * !B2 * !X)	0.00208	0.00208	0.00207
	(A2 * !B1 * !B2 * !X)	-0.00225	-0.00235	-0.00234
	(A1 * !A2 * B2 * X)	0.00224	0.00227	0.00225
	(A1 * !A2 * B2 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * B1 * !B2 * X)	0.00225	0.00227	0.00225
	(A1 * !A2 * B1 * !B2 * X)	-0.00126	-0.00127	-0.00126
	(A1 * !A2 * !B1 * !B2 * !X)	0.00207	0.00210	0.00207
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00209	-0.00224	-0.00223
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00195	0.00196	0.00194
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00241	-0.00241	-0.00240

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

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

sky130_fd_sc_hs__o32a_1	**(A2 * B2 * X)**	-0.00116	-0.00117	-0.00120
	(A2 * B2 * X)	0.00067	0.00067	0.00064
	(A2 * B1 * !B2 * X)	-0.00116	-0.00117	-0.00120
	(A2 * B1 * !B2 * X)	0.00067	0.00067	0.00064
	(A2 * !B1 * !B2 * !X)	-0.00107	-0.00106	-0.00106
	(A2 * !B1 * !B2 * !X)	0.00122	0.00121	0.00122
	(A1 * !A2 * B2 * X)	-0.00111	-0.00112	-0.00118
	(A1 * !A2 * B2 * X)	0.00069	0.00069	0.00064
	(A1 * !A2 * B1 * !B2 * X)	-0.00111	-0.00112	-0.00118
	(A1 * !A2 * B1 * !B2 * X)	0.00069	0.00069	0.00064
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A2 * !B1 * !B2 * !X)	0.00116	0.00118	0.00116
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00095	-0.00101	-0.00100
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00124	0.00125	0.00124
sky130_fd_sc_hs__o32a_2	**(A2 * B2 * X)**	-0.00133	-0.00134	-0.00137
	(A2 * B2 * X)	0.00067	0.00067	0.00064
	(A2 * B1 * !B2 * X)	-0.00133	-0.00134	-0.00137
	(A2 * B1 * !B2 * X)	0.00067	0.00067	0.00064
	(A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00120
	(A2 * !B1 * !B2 * !X)	0.00125	0.00126	0.00125
	(A1 * !A2 * B2 * X)	-0.00128	-0.00129	-0.00136
	(A1 * !A2 * B2 * X)	0.00069	0.00069	0.00064
	(A1 * !A2 * B1 * !B2 * X)	-0.00128	-0.00129	-0.00136
	(A1 * !A2 * B1 * !B2 * X)	0.00069	0.00069	0.00064
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !B1 * !B2 * !X)	0.00119	0.00121	0.00120
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00107	-0.00113	-0.00113
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00128	0.00128	0.00127

sky130_fd_sc_hs__o32a_4	**(A2 * B2 * X)**	-0.00212	-0.00214	-0.00223
	(A2 * B2 * X)	0.00137	0.00137	0.00129
	(A2 * B1 * !B2 * X)	-0.00212	-0.00213	-0.00223
	(A2 * B1 * !B2 * X)	0.00137	0.00137	0.00129
	(A2 * !B1 * !B2 * !X)	-0.00207	-0.00208	-0.00207
	(A2 * !B1 * !B2 * !X)	0.00234	0.00235	0.00234
	(A1 * !A2 * B2 * X)	-0.00201	-0.00203	-0.00221
	(A1 * !A2 * B2 * X)	0.00143	0.00143	0.00130
	(A1 * !A2 * B1 * !B2 * X)	-0.00201	-0.00203	-0.00221
	(A1 * !A2 * B1 * !B2 * X)	0.00143	0.00143	0.00130
	(A1 * !A2 * !B1 * !B2 * !X)	-0.00206	-0.00208	-0.00207
	(A1 * !A2 * !B1 * !B2 * !X)	0.00222	0.00224	0.00223
	(!A1 * !A2 * !B1 * !B2 * !X)	-0.00184	-0.00196	-0.00194
	(!A1 * !A2 * !B1 * !B2 * !X)	0.00242	0.00243	0.00241

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	0.00136	0.00124	0.00122
	(A3 * B2 * X)	-0.00109	-0.00123	-0.00123
	(A2 * !A3 * B2 * X)	0.00135	0.00124	0.00122
	(A2 * !A3 * B2 * X)	-0.00109	-0.00123	-0.00123
	(A1 * !A2 * !A3 * B2 * X)	0.00135	0.00124	0.00122
	(A1 * !A2 * !A3 * B2 * X)	-0.00109	-0.00123	-0.00123
	(!A1 * !A2 * !A3 * B2 * !X)	0.00042	0.00042	0.00042
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00152	-0.00155	-0.00154
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00047	0.00047	0.00043
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00149	-0.00150	-0.00155

sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	0.00161	0.00149	0.00148
	(A3 * B2 * X)	-0.00122	-0.00135	-0.00136
	(A2 * !A3 * B2 * X)	0.00161	0.00149	0.00148
	(A2 * !A3 * B2 * X)	-0.00122	-0.00136	-0.00136
	(A1 * !A2 * !A3 * B2 * X)	0.00161	0.00149	0.00148
	(A1 * !A2 * !A3 * B2 * X)	-0.00122	-0.00136	-0.00136
	(!A1 * !A2 * !A3 * B2 * !X)	0.00051	0.00051	0.00050
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00174	-0.00177	-0.00176
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00055	0.00056	0.00052
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00169	-0.00170	-0.00177
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	0.00293	0.00263	0.00261
	(A3 * B2 * X)	-0.00252	-0.00288	-0.00290
	(A2 * !A3 * B2 * X)	0.00293	0.00263	0.00261
	(A2 * !A3 * B2 * X)	-0.00252	-0.00288	-0.00290
	(A1 * !A2 * !A3 * B2 * X)	0.00293	0.00263	0.00261
	(A1 * !A2 * !A3 * B2 * X)	-0.00252	-0.00287	-0.00290
	(!A1 * !A2 * !A3 * B2 * !X)	0.00073	0.00074	0.00073
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00375	-0.00383	-0.00383
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00082	0.00084	0.00076
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00373	-0.00377	-0.00387

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

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

sky130_fd_sc_hs__o32a_1	**(A3 * B2 * X)**	-0.00122	-0.00123	-0.00122
	(A3 * B2 * X)	0.00123	0.00124	0.00123
	(A2 * !A3 * B2 * X)	-0.00122	-0.00123	-0.00122
	(A2 * !A3 * B2 * X)	0.00123	0.00124	0.00123
	(A1 * !A2 * !A3 * B2 * X)	-0.00122	-0.00123	-0.00122
	(A1 * !A2 * !A3 * B2 * X)	0.00123	0.00124	0.00123
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00041	-0.00041	-0.00042
	(!A1 * !A2 * !A3 * B2 * !X)	0.00155	0.00155	0.00154
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00043	-0.00043	-0.00042
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00157	0.00159	0.00156
sky130_fd_sc_hs__o32a_2	**(A3 * B2 * X)**	-0.00147	-0.00147	-0.00147
	(A3 * B2 * X)	0.00135	0.00135	0.00136
	(A2 * !A3 * B2 * X)	-0.00147	-0.00148	-0.00147
	(A2 * !A3 * B2 * X)	0.00135	0.00137	0.00136
	(A1 * !A2 * !A3 * B2 * X)	-0.00147	-0.00148	-0.00147
	(A1 * !A2 * !A3 * B2 * X)	0.00135	0.00137	0.00136
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00049	-0.00050	-0.00050
	(!A1 * !A2 * !A3 * B2 * !X)	0.00176	0.00177	0.00176
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00050	-0.00051	-0.00050
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00177	0.00180	0.00178
sky130_fd_sc_hs__o32a_4	**(A3 * B2 * X)**	-0.00259	-0.00260	-0.00259
	(A3 * B2 * X)	0.00290	0.00291	0.00290
	(A2 * !A3 * B2 * X)	-0.00259	-0.00260	-0.00259
	(A2 * !A3 * B2 * X)	0.00289	0.00291	0.00290
	(A1 * !A2 * !A3 * B2 * X)	-0.00259	-0.00261	-0.00259
	(A1 * !A2 * !A3 * B2 * X)	0.00289	0.00292	0.00290
	(!A1 * !A2 * !A3 * B2 * !X)	-0.00072	-0.00073	-0.00073
	(!A1 * !A2 * !A3 * B2 * !X)	0.00384	0.00386	0.00383
	(!A1 * !A2 * !A3 * !B2 * !X)	-0.00073	-0.00074	-0.00074
	(!A1 * !A2 * !A3 * !B2 * !X)	0.00388	0.00391	0.00389

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o32a_1	(A3 * B1 * X)	0.00125	0.00126	0.00125
	(A3 * B1 * X)	-0.00063	-0.00064	-0.00063
	(A2 * !A3 * B1 * X)	0.00125	0.00126	0.00125
	(A2 * !A3 * B1 * X)	-0.00063	-0.00064	-0.00063
	(A1 * !A2 * !A3 * B1 * X)	0.00125	0.00126	0.00125
	(A1 * !A2 * !A3 * B1 * X)	-0.00063	-0.00064	-0.00063
	(!A1 * !A2 * !A3 * B1 * !X)	0.00034	0.00035	0.00034
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00148	-0.00152	-0.00151
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00039	0.00039	0.00036
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00147	-0.00147	-0.00153
sky130_fd_sc_hs__o32a_2	(A3 * B1 * X)	0.00139	0.00141	0.00140
	(A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A2 * !A3 * B1 * X)	0.00139	0.00141	0.00140
	(A2 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(A1 * !A2 * !A3 * B1 * X)	0.00139	0.00141	0.00140
	(A1 * !A2 * !A3 * B1 * X)	-0.00064	-0.00064	-0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	0.00038	0.00039	0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00151	-0.00155	-0.00154
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00044	0.00044	0.00040
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00148	-0.00149	-0.00156

sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	0.00241	0.00246	0.00242
	(A3 * B1 * X)	-0.00128	-0.00131	-0.00128
	(A2 * !A3 * B1 * X)	0.00241	0.00245	0.00242
	(A2 * !A3 * B1 * X)	-0.00128	-0.00131	-0.00128
	(A1 * !A2 * !A3 * B1 * X)	0.00241	0.00245	0.00242
	(A1 * !A2 * !A3 * B1 * X)	-0.00128	-0.00131	-0.00128
	(!A1 * !A2 * !A3 * B1 * !X)	0.00071	0.00071	0.00070
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00288	-0.00296	-0.00295
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00080	0.00081	0.00073
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00286	-0.00289	-0.00300

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o32a_1	**(A3 * B1 * X)**	-0.00121	-0.00122	-0.00125
	(A3 * B1 * X)	0.00068	0.00068	0.00064
	(A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00125
	(A2 * !A3 * B1 * X)	0.00068	0.00068	0.00064
	(A1 * !A2 * !A3 * B1 * X)	-0.00121	-0.00122	-0.00125
	(A1 * !A2 * !A3 * B1 * X)	0.00067	0.00068	0.00064
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00034	-0.00035	-0.00034
	(!A1 * !A2 * !A3 * B1 * !X)	0.00152	0.00153	0.00151
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00035	-0.00035	-0.00035
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00154	0.00156	0.00154

sky130_fd_sc_hs__o32a_2	**(A3 * B1 * X)**	-0.00135	-0.00136	-0.00139
	(A3 * B1 * X)	0.00068	0.00068	0.00065
	(A2 * !A3 * B1 * X)	-0.00135	-0.00136	-0.00139
	(A2 * !A3 * B1 * X)	0.00068	0.00068	0.00065
	(A1 * !A2 * !A3 * B1 * X)	-0.00135	-0.00136	-0.00139
	(A1 * !A2 * !A3 * B1 * X)	0.00068	0.00068	0.00065
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00038	-0.00039	-0.00039
	(!A1 * !A2 * !A3 * B1 * !X)	0.00155	0.00156	0.00154
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00039	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00157	0.00159	0.00157
sky130_fd_sc_hs__o32a_4	**(A3 * B1 * X)**	-0.00231	-0.00234	-0.00240
	(A3 * B1 * X)	0.00136	0.00138	0.00131
	(A2 * !A3 * B1 * X)	-0.00231	-0.00234	-0.00240
	(A2 * !A3 * B1 * X)	0.00136	0.00138	0.00131
	(A1 * !A2 * !A3 * B1 * X)	-0.00231	-0.00233	-0.00240
	(A1 * !A2 * !A3 * B1 * X)	0.00136	0.00137	0.00131
	(!A1 * !A2 * !A3 * B1 * !X)	-0.00069	-0.00070	-0.00070
	(!A1 * !A2 * !A3 * B1 * !X)	0.00294	0.00296	0.00295
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00071	-0.00071	-0.00071
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00301	0.00300	0.00302

SKY130_FD_SC_HS__O41AIx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00250	0.00257	0.00267	0.00265	0.00270	0.28328
sky130_fd_sc_hs__o41ai_2	0.00492	0.00502	0.00481	0.00493	0.00523	0.49664
sky130_fd_sc_hs__o41ai_4	0.00954	0.00949	0.00965	0.00988	0.00733	0.91689

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41ai_1	0.00000	0.01783	0.06484
sky130_fd_sc_hs__o41ai_2	0.00000	0.03566	0.12968
sky130_fd_sc_hs__o41ai_4	0.00000	0.04093	0.19452

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)	0.24250	1.29931	10.75300
	A2->Y (FR)	0.23063	1.29738	11.11010
	A3->Y (FR)	0.20363	1.28526	11.43910
	A4->Y (FR)	0.15907	1.20465	10.95480
	B1->Y (FR)	0.02930	0.54641	6.00880
sky130_fd_sc_hs__o41ai_2	A1->Y (FR)	0.26161	1.17289	10.74280
	A2->Y (FR)	0.24664	1.16130	11.08220
	A3->Y (FR)	0.21459	1.15171	11.53830
	A4->Y (FR)	0.14878	1.05501	11.04660
	B1->Y (FR)	0.02299	0.47737	5.73458
sky130_fd_sc_hs__o41ai_4	A1->Y (FR)	0.24793	1.01388	10.56890
	A2->Y (FR)	0.23318	1.00711	10.96980
	A3->Y (FR)	0.20171	0.99545	11.42780
	A4->Y (FR)	0.13743	0.90803	10.99550
	B1->Y (FR)	0.03005	0.56164	7.41556

Delay(ns) to Y falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41ai_1	A1->Y (RF)	0.03036	0.27772	2.21263
	A2->Y (RF)	0.03101	0.27241	2.19856
	A3->Y (RF)	0.03081	0.26623	2.18882
	A4->Y (RF)	0.02618	0.25534	2.15909
	B1->Y (RF)	0.02304	0.29750	2.47894
sky130_fd_sc_hs__o41ai_2	A1->Y (RF)	0.02946	0.24115	2.12046
	A2->Y (RF)	0.03004	0.23544	2.10874
	A3->Y (RF)	0.03002	0.22670	2.08247
	A4->Y (RF)	0.02519	0.21352	2.05700
	B1->Y (RF)	0.02093	0.26690	2.50516
sky130_fd_sc_hs__o41ai_4	A1->Y (RF)	0.03268	0.20755	2.05843
	A2->Y (RF)	0.03169	0.19795	2.01619
	A3->Y (RF)	0.03003	0.18658	1.97680
	A4->Y (RF)	0.02303	0.16681	1.88521
	B1->Y (RF)	0.02370	0.28100	3.09126

Power Information

Internal switching power(pJ) to Y rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41ai_1	A1	0.00092	0.00075	0.00137
	A1	0.00762	0.00748	0.00809
	A2	0.00096	0.00080	0.00161
	A2	0.00694	0.00678	0.00759
	A3	0.00095	0.00077	0.00196
	A3	0.00631	0.00614	0.00732
	A4	0.00091	0.00103	0.00505
	A4	0.00561	0.00572	0.00975
	B1	-0.00052	-0.00002	0.00625
	B1	0.00491	0.00535	0.01140
sky130_fd_sc_hs__o41ai_2	A1	0.00132	0.00097	0.00208
	A1	0.01485	0.01451	0.01564
	A2	0.00138	0.00100	0.00247
	A2	0.01345	0.01308	0.01454
	A3	0.00144	0.00109	0.00329
	A3	0.01196	0.01162	0.01377
	A4	0.00134	0.00144	0.00909
	A4	0.01047	0.01058	0.01822
	B1	-0.00190	-0.00067	0.01199
	B1	0.00910	0.01017	0.02156

sky130_fd_sc_hs__o41ai_4	**A1**	0.00218	0.00162	0.00396
	A1	0.02873	0.02810	0.03043
	A2	0.00230	0.00166	0.00465
	A2	0.02580	0.02521	0.02820
	A3	0.00228	0.00161	0.00592
	A3	0.02303	0.02241	0.02664
	A4	0.00206	0.00265	0.01708
	A4	0.02002	0.02056	0.03501
	B1	-0.00297	-0.00176	0.01267
	B1	0.01550	0.01633	0.02895

Internal switching power(pJ) to Y falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41ai_1	**A1**	0.00877	0.00863	0.00941
	A1	0.00209	0.00195	0.00275
	A2	0.00752	0.00741	0.00819
	A2	0.00149	0.00137	0.00219
	A3	0.00620	0.00616	0.00697
	A3	0.00075	0.00069	0.00153
	A4	0.00481	0.00482	0.00571
	A4	-0.00001	0.00001	0.00089
	B1	0.00736	0.00731	0.00884
	B1	-0.00016	-0.00018	0.00167

sky130_fd_sc_hs__o41ai_2	**A1**	0.01843	0.01807	0.01957
	A1	0.00504	0.00468	0.00626
	A2	0.01551	0.01528	0.01690
	A2	0.00339	0.00316	0.00481
	A3	0.01282	0.01268	0.01434
	A3	0.00214	0.00197	0.00368
	A4	0.00932	0.00942	0.01126
	A4	-0.00005	0.00002	0.00188
	B1	0.01545	0.01537	0.01854
	B1	-0.00028	-0.00028	0.00367
sky130_fd_sc_hs__o41ai_4	**A1**	0.03468	0.03396	0.03721
	A1	0.00845	0.00776	0.01109
	A2	0.02909	0.02853	0.03194
	A2	0.00548	0.00493	0.00846
	A3	0.02382	0.02348	0.02709
	A3	0.00270	0.00232	0.00599
	A4	0.01735	0.01750	0.02157
	A4	-0.00106	-0.00094	0.00312
	B1	0.02762	0.02758	0.03075
	B1	0.00045	0.00048	0.00467

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)**	0.00125	0.00126	0.00125
	(A2 * A4 * B1 * !Y)	-0.00133	-0.00137	-0.00136
	(A2 * A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(A2 * A3 * !A4 * B1 * !Y)	-0.00133	-0.00137	-0.00136
	(A2 * !B1 * Y)	0.00125	0.00127	0.00125
	(A2 * !B1 * Y)	-0.00133	-0.00137	-0.00136
	(A2 * !A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00132	-0.00137	-0.00136
	(!A2 * A3 * A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A2 * A3 * A4 * B1 * !Y)	-0.00124	-0.00133	-0.00132
	(!A2 * A3 * !B1 * Y)	0.00125	0.00126	0.00125
	(!A2 * A3 * !B1 * Y)	-0.00124	-0.00133	-0.00132
	(!A2 * A3 * !A4 * B1 * !Y)	0.00125	0.00126	0.00125
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00124	-0.00133	-0.00132
	(!A2 * !A3 * A4 * B1 * !Y)	0.00126	0.00126	0.00125
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00123	-0.00132	-0.00131
	(!A2 * !A3 * A4 * !B1 * Y)	0.00126	0.00126	0.00125
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00123	-0.00132	-0.00130
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00118	0.00118	0.00117
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00139	-0.00139	-0.00138

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00249	0.00251	0.00249
	(A2 * A4 * B1 * !Y)	-0.00261	-0.00273	-0.00271
	(A2 * A3 * !A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(A2 * A3 * !A4 * B1 * !Y)	-0.00261	-0.00273	-0.00271
	(A2 * !B1 * Y)	0.00249	0.00251	0.00248
	(A2 * !B1 * Y)	-0.00261	-0.00273	-0.00271
	(A2 * !A3 * !A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00259	-0.00273	-0.00271
	(!A2 * A3 * A4 * B1 * !Y)	0.00248	0.00251	0.00248
	(!A2 * A3 * A4 * B1 * !Y)	-0.00243	-0.00263	-0.00262
	(!A2 * A3 * !B1 * Y)	0.00248	0.00250	0.00248
	(!A2 * A3 * !B1 * Y)	-0.00243	-0.00263	-0.00262
	(!A2 * A3 * !A4 * B1 * !Y)	0.00248	0.00251	0.00249
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00243	-0.00263	-0.00262
	(!A2 * !A3 * A4 * B1 * !Y)	0.00250	0.00251	0.00249
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00241	-0.00261	-0.00258
	(!A2 * !A3 * A4 * !B1 * Y)	0.00249	0.00251	0.00248
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00242	-0.00261	-0.00258
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00233	0.00235	0.00234
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00276	-0.00278	-0.00277

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00480	0.00484	0.00478
	(A2 * A4 * B1 * !Y)	-0.00522	-0.00544	-0.00540
	(A2 * A3 * !A4 * B1 * !Y)	0.00480	0.00484	0.00478
	(A2 * A3 * !A4 * B1 * !Y)	-0.00521	-0.00544	-0.00540
	(A2 * !B1 * Y)	0.00480	0.00484	0.00478
	(A2 * !B1 * Y)	-0.00522	-0.00544	-0.00540
	(A2 * !A3 * !A4 * B1 * !Y)	0.00481	0.00484	0.00478
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00515	-0.00544	-0.00540
	(!A2 * A3 * A4 * B1 * !Y)	0.00477	0.00483	0.00478
	(!A2 * A3 * A4 * B1 * !Y)	-0.00481	-0.00522	-0.00519
	(!A2 * A3 * !B1 * Y)	0.00477	0.00483	0.00478
	(!A2 * A3 * !B1 * Y)	-0.00481	-0.00522	-0.00519
	(!A2 * A3 * !A4 * B1 * !Y)	0.00477	0.00483	0.00478
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00481	-0.00522	-0.00519
	(!A2 * !A3 * A4 * B1 * !Y)	0.00478	0.00483	0.00479
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00476	-0.00518	-0.00512
	(!A2 * !A3 * A4 * !B1 * Y)	0.00477	0.00483	0.00478
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00477	-0.00518	-0.00512
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00452	0.00456	0.00452
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00553	-0.00555	-0.00553

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)**	-0.00125	-0.00126	-0.00125
	(A2 * A4 * B1 * !Y)	0.00136	0.00138	0.00136
	(A2 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * A3 * !A4 * B1 * !Y)	0.00136	0.00138	0.00136
	(A2 * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(A2 * !B1 * Y)	0.00136	0.00138	0.00136
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(A2 * !A3 * !A4 * B1 * !Y)	0.00136	0.00138	0.00136
	(!A2 * A3 * A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * A4 * B1 * !Y)	0.00132	0.00133	0.00132
	(!A2 * A3 * !B1 * Y)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * !A4 * B1 * !Y)	0.00132	0.00133	0.00132
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00125	-0.00126	-0.00125
	(!A2 * !A3 * A4 * B1 * !Y)	0.00130	0.00132	0.00131
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00125	-0.00126	-0.00125
	(!A2 * !A3 * A4 * !B1 * Y)	0.00130	0.00132	0.00130
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00111	-0.00118	-0.00117
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00139	0.00140	0.00139

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00248	-0.00249	-0.00248
	(A2 * A4 * B1 * !Y)	0.00271	0.00273	0.00271
	(A2 * A3 * !A4 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(A2 * A3 * !A4 * B1 * !Y)	0.00271	0.00273	0.00271
	(A2 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(A2 * !B1 * Y)	0.00271	0.00273	0.00271
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(A2 * !A3 * !A4 * B1 * !Y)	0.00271	0.00273	0.00271
	(!A2 * A3 * A4 * B1 * !Y)	-0.00247	-0.00249	-0.00248
	(!A2 * A3 * A4 * B1 * !Y)	0.00261	0.00263	0.00262
	(!A2 * A3 * !B1 * Y)	-0.00247	-0.00249	-0.00248
	(!A2 * A3 * !B1 * Y)	0.00261	0.00263	0.00262
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00247	-0.00248	-0.00248
	(!A2 * A3 * !A4 * B1 * !Y)	0.00261	0.00263	0.00262
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00248	-0.00250	-0.00248
	(!A2 * !A3 * A4 * B1 * !Y)	0.00257	0.00261	0.00258
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(!A2 * !A3 * A4 * !B1 * Y)	0.00257	0.00261	0.00258
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00219	-0.00235	-0.00234
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00279	0.00281	0.00278

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00478	-0.00479	-0.00477
	(A2 * A4 * B1 * !Y)	0.00540	0.00544	0.00540
	(A2 * A3 * !A4 * B1 * !Y)	-0.00478	-0.00479	-0.00477
	(A2 * A3 * !A4 * B1 * !Y)	0.00540	0.00544	0.00540
	(A2 * !B1 * Y)	-0.00478	-0.00479	-0.00477
	(A2 * !B1 * Y)	0.00540	0.00544	0.00540
	(A2 * !A3 * !A4 * B1 * !Y)	-0.00478	-0.00479	-0.00477
	(A2 * !A3 * !A4 * B1 * !Y)	0.00540	0.00544	0.00540
	(!A2 * A3 * A4 * B1 * !Y)	-0.00477	-0.00478	-0.00477
	(!A2 * A3 * A4 * B1 * !Y)	0.00517	0.00522	0.00519
	(!A2 * A3 * !B1 * Y)	-0.00477	-0.00479	-0.00477
	(!A2 * A3 * !B1 * Y)	0.00517	0.00522	0.00519
	(!A2 * A3 * !A4 * B1 * !Y)	-0.00477	-0.00478	-0.00477
	(!A2 * A3 * !A4 * B1 * !Y)	0.00517	0.00522	0.00519
	(!A2 * !A3 * A4 * B1 * !Y)	-0.00477	-0.00480	-0.00477
	(!A2 * !A3 * A4 * B1 * !Y)	0.00510	0.00518	0.00512
	(!A2 * !A3 * A4 * !B1 * Y)	-0.00477	-0.00480	-0.00477
	(!A2 * !A3 * A4 * !B1 * Y)	0.00511	0.00518	0.00512
	(!A2 * !A3 * !A4 * !B1 * Y)	-0.00422	-0.00453	-0.00452
	(!A2 * !A3 * !A4 * !B1 * Y)	0.00555	0.00558	0.00554

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)**	0.00121	0.00122	0.00121
	(A1 * A3 * A4 * B1 * !Y)	-0.00096	-0.00096	-0.00096
	(A1 * A3 * !B1 * Y)	0.00122	0.00123	0.00121
	(A1 * A3 * !B1 * Y)	-0.00099	-0.00099	-0.00098
	(A1 * A3 * !A4 * B1 * !Y)	0.00121	0.00122	0.00121
	(A1 * A3 * !A4 * B1 * !Y)	-0.00091	-0.00092	-0.00092
	(A1 * !A3 * A4 * B1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * A4 * B1 * !Y)	-0.00090	-0.00091	-0.00090
	(A1 * !A3 * A4 * !B1 * Y)	0.00121	0.00123	0.00121
	(A1 * !A3 * A4 * !B1 * Y)	-0.00097	-0.00097	-0.00096
	(A1 * !A3 * !A4 * B1 * !Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00079	-0.00080	-0.00079
	(A1 * !A3 * !A4 * !B1 * Y)	0.00121	0.00122	0.00121
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00129	-0.00133	-0.00132
	(!A1 * A3 * A4 * B1 * !Y)	0.00121	0.00122	0.00121
	(!A1 * A3 * A4 * B1 * !Y)	-0.00128	-0.00132	-0.00132
	(!A1 * A3 * !B1 * Y)	0.00121	0.00122	0.00121
	(!A1 * A3 * !B1 * Y)	-0.00128	-0.00132	-0.00132
	(!A1 * A3 * !A4 * B1 * !Y)	0.00122	0.00122	0.00121
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00125	-0.00132	-0.00132
	(!A1 * !A3 * A4 * B1 * !Y)	0.00122	0.00122	0.00121
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00116	-0.00128	-0.00127
	(!A1 * !A3 * A4 * !B1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00117	-0.00127	-0.00127
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00116	0.00117	0.00116
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00135	-0.00135	-0.00134

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	0.00250	0.00254	0.00249
	(A1 * A3 * A4 * B1 * !Y)	-0.00201	-0.00202	-0.00200
	(A1 * A3 * !B1 * Y)	0.00249	0.00252	0.00249
	(A1 * A3 * !B1 * Y)	-0.00205	-0.00205	-0.00205
	(A1 * A3 * !A4 * B1 * !Y)	0.00248	0.00252	0.00249
	(A1 * A3 * !A4 * B1 * !Y)	-0.00191	-0.00194	-0.00192
	(A1 * !A3 * A4 * B1 * !Y)	0.00250	0.00252	0.00250
	(A1 * !A3 * A4 * B1 * !Y)	-0.00188	-0.00191	-0.00189
	(A1 * !A3 * A4 * !B1 * Y)	0.00248	0.00250	0.00249
	(A1 * !A3 * A4 * !B1 * Y)	-0.00204	-0.00204	-0.00203
	(A1 * !A3 * !A4 * B1 * !Y)	0.00249	0.00251	0.00249
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00166	-0.00167	-0.00165
	(A1 * !A3 * !A4 * !B1 * Y)	0.00248	0.00250	0.00249
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00264	-0.00274	-0.00273
	(!A1 * A3 * A4 * B1 * !Y)	0.00249	0.00250	0.00249
	(!A1 * A3 * A4 * B1 * !Y)	-0.00267	-0.00278	-0.00277
	(!A1 * A3 * !B1 * Y)	0.00248	0.00250	0.00249
	(!A1 * A3 * !B1 * Y)	-0.00268	-0.00278	-0.00277
	(!A1 * A3 * !A4 * B1 * !Y)	0.00249	0.00250	0.00249
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00264	-0.00278	-0.00277
	(!A1 * !A3 * A4 * B1 * !Y)	0.00251	0.00251	0.00249
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00249	-0.00267	-0.00266
	(!A1 * !A3 * A4 * !B1 * Y)	0.00249	0.00250	0.00249
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00251	-0.00267	-0.00266
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00233	0.00235	0.00232
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00282	-0.00283	-0.00281

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	0.00476	0.00480	0.00474
	(A1 * A3 * A4 * B1 * !Y)	-0.00377	-0.00378	-0.00378
	(A1 * A3 * !B1 * Y)	0.00475	0.00480	0.00474
	(A1 * A3 * !B1 * Y)	-0.00386	-0.00386	-0.00387
	(A1 * A3 * !A4 * B1 * !Y)	0.00471	0.00479	0.00474
	(A1 * A3 * !A4 * B1 * !Y)	-0.00362	-0.00365	-0.00362
	(A1 * !A3 * A4 * B1 * !Y)	0.00474	0.00478	0.00475
	(A1 * !A3 * A4 * B1 * !Y)	-0.00358	-0.00363	-0.00360
	(A1 * !A3 * A4 * !B1 * Y)	0.00472	0.00475	0.00474
	(A1 * !A3 * A4 * !B1 * Y)	-0.00385	-0.00388	-0.00386
	(A1 * !A3 * !A4 * B1 * !Y)	0.00474	0.00478	0.00474
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00315	-0.00318	-0.00314
	(A1 * !A3 * !A4 * !B1 * Y)	0.00472	0.00473	0.00473
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00519	-0.00534	-0.00535
	(!A1 * A3 * A4 * B1 * !Y)	0.00475	0.00476	0.00473
	(!A1 * A3 * A4 * B1 * !Y)	-0.00515	-0.00534	-0.00536
	(!A1 * A3 * !B1 * Y)	0.00474	0.00476	0.00473
	(!A1 * A3 * !B1 * Y)	-0.00517	-0.00534	-0.00536
	(!A1 * A3 * !A4 * B1 * !Y)	0.00477	0.00476	0.00473
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00506	-0.00539	-0.00536
	(!A1 * !A3 * A4 * B1 * !Y)	0.00479	0.00477	0.00474
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00474	-0.00520	-0.00514
	(!A1 * !A3 * A4 * !B1 * Y)	0.00473	0.00476	0.00473
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00478	-0.00517	-0.00514
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00444	0.00444	0.00443
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00551	-0.00550	-0.00550

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)**	-0.00121	-0.00121	-0.00121
	(A1 * A3 * A4 * B1 * !Y)	0.00096	0.00096	0.00096
	(A1 * A3 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(A1 * A3 * !B1 * Y)	0.00099	0.00099	0.00098
	(A1 * A3 * !A4 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(A1 * A3 * !A4 * B1 * !Y)	0.00091	0.00092	0.00092
	(A1 * !A3 * A4 * B1 * !Y)	-0.00120	-0.00122	-0.00121
	(A1 * !A3 * A4 * B1 * !Y)	0.00090	0.00091	0.00090
	(A1 * !A3 * A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(A1 * !A3 * A4 * !B1 * Y)	0.00097	0.00097	0.00096
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00120	-0.00121	-0.00120
	(A1 * !A3 * !A4 * B1 * !Y)	0.00080	0.00081	0.00080
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(A1 * !A3 * !A4 * !B1 * Y)	0.00132	0.00133	0.00132
	(!A1 * A3 * A4 * B1 * !Y)	-0.00121	-0.00121	-0.00121
	(!A1 * A3 * A4 * B1 * !Y)	0.00132	0.00132	0.00132
	(!A1 * A3 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(!A1 * A3 * !B1 * Y)	0.00132	0.00132	0.00132
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00121	-0.00121	-0.00121
	(!A1 * A3 * !A4 * B1 * !Y)	0.00132	0.00132	0.00132
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00120	-0.00121	-0.00121
	(!A1 * !A3 * A4 * B1 * !Y)	0.00126	0.00128	0.00127
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(!A1 * !A3 * A4 * !B1 * Y)	0.00126	0.00127	0.00127
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00107	-0.00116	-0.00115
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00135	0.00136	0.00135

sky130_fd_sc_hs__o41ai_2	**(A1 * A3 * A4 * B1 * !Y)**	-0.00249	-0.00249	-0.00248
	(A1 * A3 * A4 * B1 * !Y)	0.00201	0.00202	0.00200
	(A1 * A3 * !B1 * Y)	-0.00249	-0.00249	-0.00248
	(A1 * A3 * !B1 * Y)	0.00205	0.00205	0.00205
	(A1 * A3 * !A4 * B1 * !Y)	-0.00248	-0.00250	-0.00248
	(A1 * A3 * !A4 * B1 * !Y)	0.00191	0.00194	0.00192
	(A1 * !A3 * A4 * B1 * !Y)	-0.00249	-0.00251	-0.00249
	(A1 * !A3 * A4 * B1 * !Y)	0.00188	0.00191	0.00189
	(A1 * !A3 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(A1 * !A3 * A4 * !B1 * Y)	0.00204	0.00204	0.00203
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00248	-0.00249	-0.00247
	(A1 * !A3 * !A4 * B1 * !Y)	0.00168	0.00169	0.00168
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(A1 * !A3 * !A4 * !B1 * Y)	0.00272	0.00274	0.00273
	(!A1 * A3 * A4 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A3 * A4 * B1 * !Y)	0.00276	0.00279	0.00277
	(!A1 * A3 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A3 * !B1 * Y)	0.00276	0.00278	0.00277
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00248	-0.00249	-0.00248
	(!A1 * A3 * !A4 * B1 * !Y)	0.00276	0.00279	0.00277
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00248	-0.00249	-0.00249
	(!A1 * !A3 * A4 * B1 * !Y)	0.00265	0.00267	0.00266
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00248	-0.00249	-0.00248
	(!A1 * !A3 * A4 * !B1 * Y)	0.00265	0.00267	0.00266
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00218	-0.00235	-0.00232
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00283	0.00284	0.00282

sky130_fd_sc_hs__o41ai_4	**(A1 * A3 * A4 * B1 * !Y)**	-0.00472	-0.00472	-0.00473
	(A1 * A3 * A4 * B1 * !Y)	0.00377	0.00378	0.00378
	(A1 * A3 * !B1 * Y)	-0.00472	-0.00472	-0.00473
	(A1 * A3 * !B1 * Y)	0.00386	0.00386	0.00387
	(A1 * A3 * !A4 * B1 * !Y)	-0.00471	-0.00475	-0.00473
	(A1 * A3 * !A4 * B1 * !Y)	0.00362	0.00365	0.00362
	(A1 * !A3 * A4 * B1 * !Y)	-0.00472	-0.00476	-0.00473
	(A1 * !A3 * A4 * B1 * !Y)	0.00358	0.00363	0.00360
	(A1 * !A3 * A4 * !B1 * Y)	-0.00472	-0.00474	-0.00473
	(A1 * !A3 * A4 * !B1 * Y)	0.00385	0.00388	0.00386
	(A1 * !A3 * !A4 * B1 * !Y)	-0.00470	-0.00472	-0.00469
	(A1 * !A3 * !A4 * B1 * !Y)	0.00322	0.00323	0.00321
	(A1 * !A3 * !A4 * !B1 * Y)	-0.00472	-0.00472	-0.00472
	(A1 * !A3 * !A4 * !B1 * Y)	0.00537	0.00534	0.00535
	(!A1 * A3 * A4 * B1 * !Y)	-0.00471	-0.00471	-0.00472
	(!A1 * A3 * A4 * B1 * !Y)	0.00533	0.00534	0.00536
	(!A1 * A3 * !B1 * Y)	-0.00471	-0.00472	-0.00472
	(!A1 * A3 * !B1 * Y)	0.00533	0.00534	0.00536
	(!A1 * A3 * !A4 * B1 * !Y)	-0.00471	-0.00475	-0.00472
	(!A1 * A3 * !A4 * B1 * !Y)	0.00534	0.00540	0.00536
	(!A1 * !A3 * A4 * B1 * !Y)	-0.00472	-0.00476	-0.00472
	(!A1 * !A3 * A4 * B1 * !Y)	0.00512	0.00520	0.00514
	(!A1 * !A3 * A4 * !B1 * Y)	-0.00471	-0.00474	-0.00472
	(!A1 * !A3 * A4 * !B1 * Y)	0.00512	0.00517	0.00514
	(!A1 * !A3 * !A4 * !B1 * Y)	-0.00416	-0.00444	-0.00443
	(!A1 * !A3 * !A4 * !B1 * Y)	0.00553	0.00555	0.00552

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)**	0.00127	0.00129	0.00126
	(A2 * A4 * B1 * !Y)	-0.00088	-0.00089	-0.00088
	(A2 * A4 * !B1 * Y)	0.00122	0.00123	0.00121
	(A2 * A4 * !B1 * Y)	-0.00102	-0.00102	-0.00101
	(A2 * !A4 * B1 * !Y)	0.00126	0.00128	0.00126
	(A2 * !A4 * B1 * !Y)	-0.00077	-0.00078	-0.00078
	(A2 * !A4 * !B1 * Y)	0.00121	0.00122	0.00121
	(A2 * !A4 * !B1 * Y)	-0.00132	-0.00136	-0.00136
	(A1 * !A2 * A4 * B1 * !Y)	0.00130	0.00127	0.00126
	(A1 * !A2 * A4 * B1 * !Y)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * A4 * !B1 * Y)	0.00121	0.00124	0.00121
	(A1 * !A2 * A4 * !B1 * Y)	-0.00101	-0.00101	-0.00100
	(A1 * !A2 * !A4 * B1 * !Y)	0.00127	0.00128	0.00126
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00077	-0.00077	-0.00077
	(A1 * !A2 * !A4 * !B1 * Y)	0.00121	0.00122	0.00121
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00121	-0.00131	-0.00130
	(!A1 * !A2 * A4 * B1 * !Y)	0.00146	0.00127	0.00126
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00110	-0.00131	-0.00132
	(!A1 * !A2 * A4 * !B1 * Y)	0.00121	0.00122	0.00121
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00133	-0.00136	-0.00136
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00138	-0.00139	-0.00138

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	0.00237	0.00238	0.00237
	(A2 * A4 * B1 * !Y)	-0.00182	-0.00181	-0.00181
	(A2 * A4 * !B1 * Y)	0.00236	0.00238	0.00235
	(A2 * A4 * !B1 * Y)	-0.00203	-0.00204	-0.00202
	(A2 * !A4 * B1 * !Y)	0.00236	0.00239	0.00236
	(A2 * !A4 * B1 * !Y)	-0.00159	-0.00161	-0.00159
	(A2 * !A4 * !B1 * Y)	0.00234	0.00237	0.00235
	(A2 * !A4 * !B1 * Y)	-0.00260	-0.00270	-0.00269
	(A1 * !A2 * A4 * B1 * !Y)	0.00240	0.00239	0.00236
	(A1 * !A2 * A4 * B1 * !Y)	-0.00187	-0.00188	-0.00187
	(A1 * !A2 * A4 * !B1 * Y)	0.00234	0.00236	0.00235
	(A1 * !A2 * A4 * !B1 * Y)	-0.00199	-0.00200	-0.00198
	(A1 * !A2 * !A4 * B1 * !Y)	0.00237	0.00239	0.00236
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00158	-0.00159	-0.00159
	(A1 * !A2 * !A4 * !B1 * Y)	0.00235	0.00236	0.00235
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00242	-0.00256	-0.00255
	(!A1 * !A2 * A4 * B1 * !Y)	0.00273	0.00239	0.00235
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00225	-0.00268	-0.00268
	(!A1 * !A2 * A4 * !B1 * Y)	0.00235	0.00237	0.00235
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00260	-0.00270	-0.00268
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00224	0.00225	0.00224
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00274	-0.00275	-0.00274

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	0.00488	0.00497	0.00485
	(A2 * A4 * B1 * !Y)	-0.00358	-0.00364	-0.00361
	(A2 * A4 * !B1 * Y)	0.00480	0.00489	0.00483
	(A2 * A4 * !B1 * Y)	-0.00399	-0.00398	-0.00397
	(A2 * !A4 * B1 * !Y)	0.00487	0.00489	0.00483
	(A2 * !A4 * B1 * !Y)	-0.00325	-0.00325	-0.00323
	(A2 * !A4 * !B1 * Y)	0.00483	0.00484	0.00482
	(A2 * !A4 * !B1 * Y)	-0.00525	-0.00543	-0.00542
	(A1 * !A2 * A4 * B1 * !Y)	0.00492	0.00488	0.00483
	(A1 * !A2 * A4 * B1 * !Y)	-0.00376	-0.00374	-0.00375
	(A1 * !A2 * A4 * !B1 * Y)	0.00484	0.00485	0.00482
	(A1 * !A2 * A4 * !B1 * Y)	-0.00395	-0.00400	-0.00394
	(A1 * !A2 * !A4 * B1 * !Y)	0.00483	0.00490	0.00483
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00318	-0.00323	-0.00321
	(A1 * !A2 * !A4 * !B1 * Y)	0.00478	0.00484	0.00482
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00479	-0.00515	-0.00509
	(!A1 * !A2 * A4 * B1 * !Y)	0.00568	0.00488	0.00482
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00458	-0.00550	-0.00550
	(!A1 * !A2 * A4 * !B1 * Y)	0.00483	0.00485	0.00482
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00535	-0.00551	-0.00549
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00452	0.00454	0.00453
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00559	-0.00560	-0.00560

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)**	-0.00125	-0.00126	-0.00126
	(A2 * A4 * B1 * !Y)	0.00088	0.00089	0.00088
	(A2 * A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(A2 * A4 * !B1 * Y)	0.00102	0.00102	0.00101
	(A2 * !A4 * B1 * !Y)	-0.00125	-0.00126	-0.00124
	(A2 * !A4 * B1 * !Y)	0.00079	0.00079	0.00080
	(A2 * !A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(A2 * !A4 * !B1 * Y)	0.00136	0.00136	0.00136
	(A1 * !A2 * A4 * B1 * !Y)	-0.00126	-0.00126	-0.00126
	(A1 * !A2 * A4 * B1 * !Y)	0.00092	0.00092	0.00092
	(A1 * !A2 * A4 * !B1 * Y)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * A4 * !B1 * Y)	0.00101	0.00101	0.00100
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00123	-0.00123	-0.00124
	(A1 * !A2 * !A4 * B1 * !Y)	0.00080	0.00080	0.00079
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !A4 * !B1 * Y)	0.00129	0.00131	0.00130
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00125	-0.00125	-0.00125
	(!A1 * !A2 * A4 * B1 * !Y)	0.00131	0.00131	0.00132
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00121	-0.00121	-0.00121
	(!A1 * !A2 * A4 * !B1 * Y)	0.00135	0.00136	0.00136
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00107	-0.00114	-0.00113
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00139	0.00140	0.00139

sky130_fd_sc_hs__o41ai_2	**(A2 * A4 * B1 * !Y)**	-0.00236	-0.00236	-0.00236
	(A2 * A4 * B1 * !Y)	0.00182	0.00181	0.00181
	(A2 * A4 * !B1 * Y)	-0.00235	-0.00235	-0.00234
	(A2 * A4 * !B1 * Y)	0.00203	0.00204	0.00202
	(A2 * !A4 * B1 * !Y)	-0.00234	-0.00235	-0.00233
	(A2 * !A4 * B1 * !Y)	0.00161	0.00164	0.00163
	(A2 * !A4 * !B1 * Y)	-0.00234	-0.00235	-0.00234
	(A2 * !A4 * !B1 * Y)	0.00268	0.00270	0.00269
	(A1 * !A2 * A4 * B1 * !Y)	-0.00236	-0.00237	-0.00236
	(A1 * !A2 * A4 * B1 * !Y)	0.00187	0.00188	0.00187
	(A1 * !A2 * A4 * !B1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !A2 * A4 * !B1 * Y)	0.00199	0.00200	0.00198
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00228	-0.00230	-0.00230
	(A1 * !A2 * !A4 * B1 * !Y)	0.00161	0.00163	0.00162
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00234	-0.00235	-0.00234
	(A1 * !A2 * !A4 * !B1 * Y)	0.00254	0.00256	0.00255
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * A4 * B1 * !Y)	0.00266	0.00268	0.00268
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00234	-0.00235	-0.00234
	(!A1 * !A2 * A4 * !B1 * Y)	0.00267	0.00270	0.00268
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00207	-0.00223	-0.00224
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00275	0.00277	0.00275

sky130_fd_sc_hs__o41ai_4	**(A2 * A4 * B1 * !Y)**	-0.00480	-0.00485	-0.00483
	(A2 * A4 * B1 * !Y)	0.00358	0.00364	0.00361
	(A2 * A4 * !B1 * Y)	-0.00480	-0.00482	-0.00481
	(A2 * A4 * !B1 * Y)	0.00399	0.00398	0.00397
	(A2 * !A4 * B1 * !Y)	-0.00481	-0.00483	-0.00479
	(A2 * !A4 * B1 * !Y)	0.00327	0.00328	0.00329
	(A2 * !A4 * !B1 * Y)	-0.00479	-0.00482	-0.00481
	(A2 * !A4 * !B1 * Y)	0.00539	0.00543	0.00542
	(A1 * !A2 * A4 * B1 * !Y)	-0.00483	-0.00482	-0.00482
	(A1 * !A2 * A4 * B1 * !Y)	0.00376	0.00374	0.00375
	(A1 * !A2 * A4 * !B1 * Y)	-0.00482	-0.00485	-0.00481
	(A1 * !A2 * A4 * !B1 * Y)	0.00395	0.00400	0.00394
	(A1 * !A2 * !A4 * B1 * !Y)	-0.00468	-0.00471	-0.00474
	(A1 * !A2 * !A4 * B1 * !Y)	0.00328	0.00330	0.00328
	(A1 * !A2 * !A4 * !B1 * Y)	-0.00478	-0.00484	-0.00481
	(A1 * !A2 * !A4 * !B1 * Y)	0.00510	0.00515	0.00509
	(!A1 * !A2 * A4 * B1 * !Y)	-0.00481	-0.00482	-0.00479
	(!A1 * !A2 * A4 * B1 * !Y)	0.00548	0.00550	0.00550
	(!A1 * !A2 * A4 * !B1 * Y)	-0.00480	-0.00482	-0.00481
	(!A1 * !A2 * A4 * !B1 * Y)	0.00547	0.00551	0.00549
	(!A1 * !A2 * !A4 * !B1 * Y)	-0.00423	-0.00454	-0.00453
	(!A1 * !A2 * !A4 * !B1 * Y)	0.00562	0.00565	0.00561

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

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	0.00137	0.00139	0.00138
	(A3 * B1 * !Y)	-0.00068	-0.00069	-0.00068
	(A3 * !B1 * Y)	0.00120	0.00121	0.00121
	(A3 * !B1 * Y)	-0.00132	-0.00136	-0.00136
	(A2 * !A3 * B1 * !Y)	0.00137	0.00139	0.00138
	(A2 * !A3 * B1 * !Y)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * Y)	0.00120	0.00121	0.00121
	(A2 * !A3 * !B1 * Y)	-0.00122	-0.00132	-0.00131
	(A1 * !A2 * !A3 * B1 * !Y)	0.00137	0.00139	0.00138
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * !A3 * !B1 * Y)	0.00120	0.00122	0.00121
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00120	-0.00130	-0.00129
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00139	-0.00139	-0.00139
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	0.00266	0.00269	0.00267
	(A3 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(A3 * !B1 * Y)	0.00237	0.00239	0.00238
	(A3 * !B1 * Y)	-0.00261	-0.00274	-0.00272
	(A2 * !A3 * B1 * !Y)	0.00265	0.00269	0.00267
	(A2 * !A3 * B1 * !Y)	-0.00140	-0.00142	-0.00141
	(A2 * !A3 * !B1 * Y)	0.00238	0.00239	0.00238
	(A2 * !A3 * !B1 * Y)	-0.00242	-0.00262	-0.00260
	(A1 * !A2 * !A3 * B1 * !Y)	0.00266	0.00269	0.00267
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00141	-0.00142	-0.00141
	(A1 * !A2 * !A3 * !B1 * Y)	0.00238	0.00239	0.00238
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00238	-0.00257	-0.00254
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00227	0.00228	0.00227
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00278	-0.00279	-0.00278

sky130_fd_sc_hs__o41ai_4	**(A3 * B1 * !Y)**	0.00550	0.00553	0.00548
	(A3 * B1 * !Y)	-0.00275	-0.00275	-0.00273
	(A3 * !B1 * Y)	0.00482	0.00487	0.00483
	(A3 * !B1 * Y)	-0.00520	-0.00542	-0.00541
	(A2 * !A3 * B1 * !Y)	0.00545	0.00558	0.00548
	(A2 * !A3 * B1 * !Y)	-0.00270	-0.00277	-0.00272
	(A2 * !A3 * !B1 * Y)	0.00483	0.00485	0.00483
	(A2 * !A3 * !B1 * Y)	-0.00476	-0.00515	-0.00512
	(A1 * !A2 * !A3 * B1 * !Y)	0.00547	0.00558	0.00548
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00271	-0.00277	-0.00272
	(A1 * !A2 * !A3 * !B1 * Y)	0.00483	0.00484	0.00482
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00469	-0.00499	-0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00459	0.00461	0.00458
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00552	-0.00553	-0.00552

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

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

sky130_fd_sc_hs__o41ai_1	**(A3 * B1 * !Y)**	-0.00132	-0.00134	-0.00137
	(A3 * B1 * !Y)	0.00072	0.00073	0.00070
	(A3 * !B1 * Y)	-0.00120	-0.00120	-0.00120
	(A3 * !B1 * Y)	0.00136	0.00136	0.00136
	(A2 * !A3 * B1 * !Y)	-0.00126	-0.00128	-0.00136
	(A2 * !A3 * B1 * !Y)	0.00075	0.00076	0.00070
	(A2 * !A3 * !B1 * Y)	-0.00120	-0.00121	-0.00120
	(A2 * !A3 * !B1 * Y)	0.00131	0.00132	0.00131
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00118	-0.00120	-0.00133
	(A1 * !A2 * !A3 * B1 * !Y)	0.00081	0.00081	0.00072
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00120	-0.00121	-0.00120
	(A1 * !A2 * !A3 * !B1 * Y)	0.00128	0.00130	0.00129
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00107	-0.00114	-0.00113
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00139	0.00140	0.00139
sky130_fd_sc_hs__o41ai_2	**(A3 * B1 * !Y)**	-0.00252	-0.00254	-0.00265
	(A3 * B1 * !Y)	0.00153	0.00154	0.00144
	(A3 * !B1 * Y)	-0.00237	-0.00238	-0.00238
	(A3 * !B1 * Y)	0.00272	0.00274	0.00272
	(A2 * !A3 * B1 * !Y)	-0.00239	-0.00242	-0.00262
	(A2 * !A3 * B1 * !Y)	0.00160	0.00161	0.00145
	(A2 * !A3 * !B1 * Y)	-0.00237	-0.00238	-0.00238
	(A2 * !A3 * !B1 * Y)	0.00260	0.00262	0.00260
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00220	-0.00223	-0.00255
	(A1 * !A2 * !A3 * B1 * !Y)	0.00172	0.00173	0.00149
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00238	-0.00239	-0.00238
	(A1 * !A2 * !A3 * !B1 * Y)	0.00254	0.00257	0.00254
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00210	-0.00226	-0.00227
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00279	0.00280	0.00278

sky130_fd_sc_hs__o41ai_4	(A3 * B1 * !Y)	-0.00523	-0.00528	-0.00545
	(A3 * B1 * !Y)	0.00294	0.00296	0.00279
	(A3 * !B1 * Y)	-0.00481	-0.00483	-0.00482
	(A3 * !B1 * Y)	0.00539	0.00542	0.00541
	(A2 * !A3 * B1 * !Y)	-0.00498	-0.00504	-0.00540
	(A2 * !A3 * B1 * !Y)	0.00305	0.00307	0.00279
	(A2 * !A3 * !B1 * Y)	-0.00481	-0.00484	-0.00482
	(A2 * !A3 * !B1 * Y)	0.00510	0.00515	0.00512
	(A1 * !A2 * !A3 * B1 * !Y)	-0.00460	-0.00466	-0.00527
	(A1 * !A2 * !A3 * B1 * !Y)	0.00329	0.00331	0.00287
	(A1 * !A2 * !A3 * !B1 * Y)	-0.00482	-0.00483	-0.00482
	(A1 * !A2 * !A3 * !B1 * Y)	0.00498	0.00499	0.00497
	(!A1 * !A2 * !A3 * !B1 * Y)	-0.00425	-0.00456	-0.00458
	(!A1 * !A2 * !A3 * !B1 * Y)	0.00554	0.00556	0.00553

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)	0.00050	0.00050	0.00046
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00165	-0.00166	-0.00173
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	0.00116	0.00116	0.00109
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00314	-0.00315	-0.00330
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	0.00166	0.00166	0.00154
	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00351	-0.00353	-0.00381

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)	-0.00045	-0.00045	-0.00045
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00174	0.00174	0.00174
sky130_fd_sc_hs__o41ai_2	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00106	-0.00108	-0.00106
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00330	0.00337	0.00332
sky130_fd_sc_hs__o41ai_4	(!A1 * !A2 * !A3 * !A4 * Y)	-0.00150	-0.00151	-0.00149
	(!A1 * !A2 * !A3 * !A4 * Y)	0.00384	0.00389	0.00383

SKY130_FD_SC_HS__O41Ax

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00239	0.00249	0.00249	0.00252	0.00234	1.15053
sky130_fd_sc_hs__o41a_2	0.00253	0.00266	0.00273	0.00260	0.00266	2.33923
sky130_fd_sc_hs__o41a_4	0.00457	0.00495	0.00499	0.00465	0.00435	4.14022

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__o41a_1	0.00000	0.12768	0.26170
sky130_fd_sc_hs__o41a_2	0.00000	0.06480	0.09155
sky130_fd_sc_hs__o41a_4	0.00000	0.29042	0.52472

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)	0.07565	0.57589	5.79937
	A2->X (RR)	0.07396	0.56335	5.73965
	A3->X (RR)	0.07024	0.54812	5.68408
	A4->X (RR)	0.06273	0.52910	5.71459
	B1->X (RR)	0.06776	0.55961	5.97997
sky130_fd_sc_hs__o41a_2	A1->X (RR)	0.07547	0.48345	5.80222
	A2->X (RR)	0.07421	0.47426	5.75623
	A3->X (RR)	0.07146	0.46261	5.70941
	A4->X (RR)	0.06293	0.44456	5.70968
	B1->X (RR)	0.06809	0.47600	5.95056
sky130_fd_sc_hs__o41a_4	A1->X (RR)	0.08365	0.42326	5.76575
	A2->X (RR)	0.08253	0.41380	5.71691
	A3->X (RR)	0.07459	0.39714	5.65629
	A4->X (RR)	0.06900	0.37833	5.67384
	B1->X (RR)	0.07582	0.42526	6.01790

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__o41a_1	A1->X (FF)	0.27611	0.76052	5.08217
	A2->X (FF)	0.26299	0.75358	5.17146
	A3->X (FF)	0.23449	0.73694	5.18458
	A4->X (FF)	0.19288	0.67864	4.99741
	B1->X (FF)	0.06205	0.49382	4.64956
sky130_fd_sc_hs__o41a_2	A1->X (FF)	0.33138	0.81650	5.37652
	A2->X (FF)	0.32045	0.81582	5.50533
	A3->X (FF)	0.29408	0.80134	5.55676
	A4->X (FF)	0.24672	0.73877	5.31282
	B1->X (FF)	0.06615	0.48413	4.71632
sky130_fd_sc_hs__o41a_4	A1->X (FF)	0.34616	0.80266	5.32078
	A2->X (FF)	0.33115	0.79172	5.41153
	A3->X (FF)	0.29233	0.76513	5.46490
	A4->X (FF)	0.23794	0.69585	5.22734
	B1->X (FF)	0.07475	0.46098	4.74385

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__o41a_1	A1	0.01090	0.01098	0.01632
	A1	0.00463	0.00471	0.01009
	A2	0.00959	0.00964	0.01500
	A2	0.00399	0.00405	0.00946
	A3	0.00819	0.00827	0.01397
	A3	0.00327	0.00334	0.00912
	A4	0.00692	0.00701	0.01757
	A4	0.00257	0.00267	0.01328
	B1	0.00962	0.00993	0.02738
	B1	0.00267	0.00326	0.02309
sky130_fd_sc_hs__o41a_2	A1	0.01324	0.01358	0.01816
	A1	0.00649	0.00685	0.01159
	A2	0.01203	0.01233	0.01695
	A2	0.00593	0.00626	0.01099
	A3	0.01069	0.01099	0.01591
	A3	0.00517	0.00550	0.01058
	A4	0.00921	0.00955	0.01888
	A4	0.00440	0.00474	0.01425
	B1	0.01054	0.01104	0.02782
	B1	0.00438	0.00510	0.02365

sky130_fd_sc_hs__o41a_4	**A1**	0.02578	0.02626	0.03646
	A1	0.01333	0.01388	0.02427
	A2	0.02370	0.02426	0.03452
	A2	0.01201	0.01277	0.02320
	A3	0.02050	0.02110	0.03197
	A3	0.01024	0.01086	0.02212
	A4	0.01710	0.01783	0.03745
	A4	0.00855	0.00931	0.02930
	B1	0.01431	0.01593	0.05876
	B1	0.00882	0.01049	0.05359

Internal switching power(pJ) to X falling :

Cell Name	**Input**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__o41a_1	**A1**	0.00352	0.00355	0.00764
	A1	0.00979	0.00982	0.01389
	A2	0.00355	0.00353	0.00803
	A2	0.00909	0.00912	0.01353
	A3	0.00355	0.00359	0.00872
	A3	0.00839	0.00842	0.01354
	A4	0.00352	0.00404	0.01508
	A4	0.00774	0.00830	0.01893
	B1	0.00228	0.00352	0.02825
	B1	0.00718	0.00841	0.03090

sky130_fd_sc_hs__o41a_2	**A1**	0.00587	0.00560	0.01022
	A1	0.01258	0.01231	0.01591
	A2	0.00590	0.00564	0.01161
	A2	0.01193	0.01165	0.01562
	A3	0.00588	0.00547	0.01178
	A3	0.01126	0.01098	0.01569
	A4	0.00587	0.00614	0.01784
	A4	0.01053	0.01080	0.02093
	B1	0.00413	0.00567	0.02649
	B1	0.00950	0.01057	0.02958
sky130_fd_sc_hs__o41a_4	**A1**	0.01185	0.01104	0.01838
	A1	0.02434	0.02373	0.03076
	A2	0.01138	0.00969	0.01868
	A2	0.02299	0.02232	0.03026
	A3	0.01150	0.01067	0.02019
	A3	0.02157	0.02073	0.03019
	A4	0.01174	0.01197	0.03353
	A4	0.02007	0.02041	0.04039
	B1	0.00841	0.01176	0.05965
	B1	0.01687	0.01955	0.06441

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)**	0.00111	0.00112	0.00111
	(A2 * A4 * B1 * X)	-0.00135	-0.00139	-0.00139
	(A2 * A3 * !A4 * B1 * X)	0.00111	0.00112	0.00111
	(A2 * A3 * !A4 * B1 * X)	-0.00135	-0.00139	-0.00138
	(A2 * !B1 * !X)	0.00111	0.00112	0.00111
	(A2 * !B1 * !X)	-0.00135	-0.00139	-0.00138
	(A2 * !A3 * !A4 * B1 * X)	0.00111	0.00112	0.00111
	(A2 * !A3 * !A4 * B1 * X)	-0.00134	-0.00139	-0.00138
	(!A2 * A3 * A4 * B1 * X)	0.00111	0.00111	0.00111
	(!A2 * A3 * A4 * B1 * X)	-0.00126	-0.00135	-0.00134
	(!A2 * A3 * !B1 * !X)	0.00110	0.00111	0.00111
	(!A2 * A3 * !B1 * !X)	-0.00126	-0.00135	-0.00134
	(!A2 * A3 * !A4 * B1 * X)	0.00111	0.00111	0.00111
	(!A2 * A3 * !A4 * B1 * X)	-0.00126	-0.00135	-0.00134
	(!A2 * !A3 * A4 * B1 * X)	0.00111	0.00112	0.00111
	(!A2 * !A3 * A4 * B1 * X)	-0.00124	-0.00134	-0.00133
	(!A2 * !A3 * A4 * !B1 * !X)	0.00111	0.00111	0.00111
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00124	-0.00134	-0.00132
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00104	0.00104	0.00104
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00141	-0.00140	-0.00140

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00126	0.00127	0.00125
	(A2 * A4 * B1 * X)	-0.00132	-0.00136	-0.00135
	(A2 * A3 * !A4 * B1 * X)	0.00126	0.00127	0.00125
	(A2 * A3 * !A4 * B1 * X)	-0.00132	-0.00135	-0.00135
	(A2 * !B1 * !X)	0.00126	0.00127	0.00125
	(A2 * !B1 * !X)	-0.00132	-0.00135	-0.00135
	(A2 * !A3 * !A4 * B1 * X)	0.00125	0.00127	0.00125
	(A2 * !A3 * !A4 * B1 * X)	-0.00131	-0.00136	-0.00135
	(!A2 * A3 * A4 * B1 * X)	0.00125	0.00126	0.00125
	(!A2 * A3 * A4 * B1 * X)	-0.00123	-0.00132	-0.00131
	(!A2 * A3 * !B1 * !X)	0.00125	0.00126	0.00125
	(!A2 * A3 * !B1 * !X)	-0.00123	-0.00132	-0.00131
	(!A2 * A3 * !A4 * B1 * X)	0.00125	0.00126	0.00125
	(!A2 * A3 * !A4 * B1 * X)	-0.00123	-0.00132	-0.00131
	(!A2 * !A3 * A4 * B1 * X)	0.00126	0.00126	0.00125
	(!A2 * !A3 * A4 * B1 * X)	-0.00122	-0.00131	-0.00130
	(!A2 * !A3 * A4 * !B1 * !X)	0.00126	0.00126	0.00125
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00122	-0.00131	-0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00116	0.00116	0.00117
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00136	-0.00137	-0.00137

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00204	0.00205	0.00204
	(A2 * A4 * B1 * X)	-0.00260	-0.00270	-0.00270
	(A2 * A3 * !A4 * B1 * X)	0.00204	0.00205	0.00204
	(A2 * A3 * !A4 * B1 * X)	-0.00259	-0.00270	-0.00269
	(A2 * !B1 * !X)	0.00203	0.00205	0.00203
	(A2 * !B1 * !X)	-0.00261	-0.00271	-0.00270
	(A2 * !A3 * !A4 * B1 * X)	0.00205	0.00205	0.00204
	(A2 * !A3 * !A4 * B1 * X)	-0.00256	-0.00269	-0.00269
	(!A2 * A3 * A4 * B1 * X)	0.00204	0.00207	0.00204
	(!A2 * A3 * A4 * B1 * X)	-0.00238	-0.00260	-0.00260
	(!A2 * A3 * !B1 * !X)	0.00202	0.00206	0.00203
	(!A2 * A3 * !B1 * !X)	-0.00240	-0.00261	-0.00260
	(!A2 * A3 * !A4 * B1 * X)	0.00204	0.00207	0.00204
	(!A2 * A3 * !A4 * B1 * X)	-0.00238	-0.00260	-0.00260
	(!A2 * !A3 * A4 * B1 * X)	0.00204	0.00206	0.00204
	(!A2 * !A3 * A4 * B1 * X)	-0.00234	-0.00258	-0.00255
	(!A2 * !A3 * A4 * !B1 * !X)	0.00202	0.00206	0.00203
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00235	-0.00258	-0.00255
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00189	0.00192	0.00190
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00275	-0.00277	-0.00276

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)**	-0.00110	-0.00111	-0.00110
	(A2 * A4 * B1 * X)	0.00138	0.00140	0.00139
	(A2 * A3 * !A4 * B1 * X)	-0.00110	-0.00111	-0.00110
	(A2 * A3 * !A4 * B1 * X)	0.00138	0.00140	0.00138
	(A2 * !B1 * !X)	-0.00110	-0.00111	-0.00110
	(A2 * !B1 * !X)	0.00138	0.00140	0.00138
	(A2 * !A3 * !A4 * B1 * X)	-0.00110	-0.00111	-0.00110
	(A2 * !A3 * !A4 * B1 * X)	0.00138	0.00140	0.00138
	(!A2 * A3 * A4 * B1 * X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * A4 * B1 * X)	0.00134	0.00135	0.00134
	(!A2 * A3 * !B1 * !X)	-0.00110	-0.00111	-0.00110
	(!A2 * A3 * !B1 * !X)	0.00134	0.00135	0.00134
	(!A2 * A3 * !A4 * B1 * X)	-0.00110	-0.00110	-0.00110
	(!A2 * A3 * !A4 * B1 * X)	0.00134	0.00135	0.00134
	(!A2 * !A3 * A4 * B1 * X)	-0.00110	-0.00111	-0.00110
	(!A2 * !A3 * A4 * B1 * X)	0.00132	0.00134	0.00133
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00110	-0.00111	-0.00110
	(!A2 * !A3 * A4 * !B1 * !X)	0.00131	0.00134	0.00132
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00099	-0.00104	-0.00104
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00141	0.00142	0.00141

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00125	-0.00125	-0.00125
	(A2 * A4 * B1 * X)	0.00135	0.00136	0.00135
	(A2 * A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(A2 * A3 * !A4 * B1 * X)	0.00135	0.00135	0.00135
	(A2 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(A2 * !B1 * !X)	0.00135	0.00135	0.00135
	(A2 * !A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(A2 * !A3 * !A4 * B1 * X)	0.00135	0.00136	0.00135
	(!A2 * A3 * A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * A4 * B1 * X)	0.00131	0.00132	0.00131
	(!A2 * A3 * !B1 * !X)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * !B1 * !X)	0.00131	0.00132	0.00131
	(!A2 * A3 * !A4 * B1 * X)	-0.00125	-0.00125	-0.00125
	(!A2 * A3 * !A4 * B1 * X)	0.00131	0.00132	0.00131
	(!A2 * !A3 * A4 * B1 * X)	-0.00125	-0.00126	-0.00125
	(!A2 * !A3 * A4 * B1 * X)	0.00129	0.00131	0.00130
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00125	-0.00126	-0.00125
	(!A2 * !A3 * A4 * !B1 * !X)	0.00129	0.00131	0.00130
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00111	-0.00116	-0.00117
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00138	0.00139	0.00138

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00203	-0.00204	-0.00203
	(A2 * A4 * B1 * X)	0.00269	0.00272	0.00270
	(A2 * A3 * !A4 * B1 * X)	-0.00203	-0.00204	-0.00203
	(A2 * A3 * !A4 * B1 * X)	0.00269	0.00272	0.00269
	(A2 * !B1 * !X)	-0.00203	-0.00204	-0.00203
	(A2 * !B1 * !X)	0.00270	0.00272	0.00270
	(A2 * !A3 * !A4 * B1 * X)	-0.00203	-0.00204	-0.00203
	(A2 * !A3 * !A4 * B1 * X)	0.00269	0.00271	0.00269
	(!A2 * A3 * A4 * B1 * X)	-0.00202	-0.00203	-0.00203
	(!A2 * A3 * A4 * B1 * X)	0.00258	0.00260	0.00260
	(!A2 * A3 * !B1 * !X)	-0.00202	-0.00203	-0.00203
	(!A2 * A3 * !B1 * !X)	0.00259	0.00261	0.00260
	(!A2 * A3 * !A4 * B1 * X)	-0.00202	-0.00203	-0.00203
	(!A2 * A3 * !A4 * B1 * X)	0.00258	0.00260	0.00260
	(!A2 * !A3 * A4 * B1 * X)	-0.00202	-0.00204	-0.00203
	(!A2 * !A3 * A4 * B1 * X)	0.00254	0.00258	0.00255
	(!A2 * !A3 * A4 * !B1 * !X)	-0.00202	-0.00204	-0.00203
	(!A2 * !A3 * A4 * !B1 * !X)	0.00254	0.00258	0.00255
	(!A2 * !A3 * !A4 * !B1 * !X)	-0.00179	-0.00192	-0.00190
	(!A2 * !A3 * !A4 * !B1 * !X)	0.00277	0.00279	0.00277

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)**	0.00107	0.00108	0.00107
	(A1 * A3 * A4 * B1 * X)	-0.00098	-0.00098	-0.00099
	(A1 * A3 * !B1 * !X)	0.00107	0.00108	0.00107
	(A1 * A3 * !B1 * !X)	-0.00100	-0.00101	-0.00101
	(A1 * A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(A1 * A3 * !A4 * B1 * X)	-0.00094	-0.00095	-0.00094
	(A1 * !A3 * A4 * B1 * X)	0.00107	0.00107	0.00107
	(A1 * !A3 * A4 * B1 * X)	-0.00092	-0.00093	-0.00092
	(A1 * !A3 * A4 * !B1 * !X)	0.00106	0.00109	0.00107
	(A1 * !A3 * A4 * !B1 * !X)	-0.00098	-0.00099	-0.00098
	(A1 * !A3 * !A4 * B1 * X)	0.00107	0.00108	0.00107
	(A1 * !A3 * !A4 * B1 * X)	-0.00081	-0.00082	-0.00081
	(A1 * !A3 * !A4 * !B1 * !X)	0.00106	0.00108	0.00107
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00131	-0.00135	-0.00134
	(!A1 * A3 * A4 * B1 * X)	0.00107	0.00108	0.00107
	(!A1 * A3 * A4 * B1 * X)	-0.00131	-0.00134	-0.00135
	(!A1 * A3 * !B1 * !X)	0.00107	0.00107	0.00107
	(!A1 * A3 * !B1 * !X)	-0.00131	-0.00135	-0.00135
	(!A1 * A3 * !A4 * B1 * X)	0.00108	0.00108	0.00107
	(!A1 * A3 * !A4 * B1 * X)	-0.00128	-0.00134	-0.00135
	(!A1 * !A3 * A4 * B1 * X)	0.00108	0.00107	0.00107
	(!A1 * !A3 * A4 * B1 * X)	-0.00118	-0.00130	-0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	0.00106	0.00107	0.00107
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00119	-0.00130	-0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00100	0.00101	0.00100
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00136	-0.00137	-0.00137

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	0.00120	0.00122	0.00120
	(A1 * A3 * A4 * B1 * X)	-0.00097	-0.00097	-0.00096
	(A1 * A3 * !B1 * !X)	0.00121	0.00122	0.00120
	(A1 * A3 * !B1 * !X)	-0.00099	-0.00099	-0.00099
	(A1 * A3 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(A1 * A3 * !A4 * B1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !A3 * A4 * B1 * X)	0.00120	0.00121	0.00120
	(A1 * !A3 * A4 * B1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A3 * A4 * !B1 * !X)	0.00120	0.00123	0.00120
	(A1 * !A3 * A4 * !B1 * !X)	-0.00098	-0.00098	-0.00098
	(A1 * !A3 * !A4 * B1 * X)	0.00120	0.00121	0.00120
	(A1 * !A3 * !A4 * B1 * X)	-0.00081	-0.00081	-0.00080
	(A1 * !A3 * !A4 * !B1 * !X)	0.00120	0.00120	0.00120
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00131	-0.00134	-0.00135
	(!A1 * A3 * A4 * B1 * X)	0.00120	0.00121	0.00120
	(!A1 * A3 * A4 * B1 * X)	-0.00130	-0.00134	-0.00135
	(!A1 * A3 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * A3 * !B1 * !X)	-0.00130	-0.00134	-0.00135
	(!A1 * A3 * !A4 * B1 * X)	0.00121	0.00121	0.00120
	(!A1 * A3 * !A4 * B1 * X)	-0.00127	-0.00135	-0.00135
	(!A1 * !A3 * A4 * B1 * X)	0.00121	0.00121	0.00120
	(!A1 * !A3 * A4 * B1 * X)	-0.00118	-0.00129	-0.00129
	(!A1 * !A3 * A4 * !B1 * !X)	0.00120	0.00121	0.00120
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00119	-0.00130	-0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00112	0.00113	0.00112
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00137	-0.00137	-0.00137

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	0.00256	0.00259	0.00257
	(A1 * A3 * A4 * B1 * X)	-0.00191	-0.00191	-0.00191
	(A1 * A3 * !B1 * !X)	0.00253	0.00256	0.00254
	(A1 * A3 * !B1 * !X)	-0.00197	-0.00200	-0.00197
	(A1 * A3 * !A4 * B1 * X)	0.00256	0.00259	0.00257
	(A1 * A3 * !A4 * B1 * X)	-0.00181	-0.00182	-0.00181
	(A1 * !A3 * A4 * B1 * X)	0.00255	0.00260	0.00256
	(A1 * !A3 * A4 * B1 * X)	-0.00178	-0.00179	-0.00178
	(A1 * !A3 * A4 * !B1 * !X)	0.00253	0.00256	0.00254
	(A1 * !A3 * A4 * !B1 * !X)	-0.00192	-0.00194	-0.00192
	(A1 * !A3 * !A4 * B1 * X)	0.00254	0.00256	0.00255
	(A1 * !A3 * !A4 * B1 * X)	-0.00155	-0.00156	-0.00155
	(A1 * !A3 * !A4 * !B1 * !X)	0.00253	0.00255	0.00254
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00258	-0.00265	-0.00265
	(!A1 * A3 * A4 * B1 * X)	0.00257	0.00257	0.00255
	(!A1 * A3 * A4 * B1 * X)	-0.00251	-0.00265	-0.00263
	(!A1 * A3 * !B1 * !X)	0.00254	0.00257	0.00254
	(!A1 * A3 * !B1 * !X)	-0.00253	-0.00266	-0.00264
	(!A1 * A3 * !A4 * B1 * X)	0.00257	0.00257	0.00255
	(!A1 * A3 * !A4 * B1 * X)	-0.00249	-0.00265	-0.00263
	(!A1 * !A3 * A4 * B1 * X)	0.00257	0.00257	0.00254
	(!A1 * !A3 * A4 * B1 * X)	-0.00232	-0.00254	-0.00253
	(!A1 * !A3 * A4 * !B1 * !X)	0.00253	0.00256	0.00254
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00234	-0.00254	-0.00253
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00242	0.00243	0.00242
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00270	-0.00271	-0.00270

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)**	-0.00106	-0.00106	-0.00106
	(A1 * A3 * A4 * B1 * X)	0.00098	0.00098	0.00099
	(A1 * A3 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * A3 * !B1 * !X)	0.00100	0.00101	0.00101
	(A1 * A3 * !A4 * B1 * X)	-0.00106	-0.00106	-0.00106
	(A1 * A3 * !A4 * B1 * X)	0.00094	0.00095	0.00094
	(A1 * !A3 * A4 * B1 * X)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * A4 * B1 * X)	0.00092	0.00093	0.00092
	(A1 * !A3 * A4 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * A4 * !B1 * !X)	0.00098	0.00099	0.00098
	(A1 * !A3 * !A4 * B1 * X)	-0.00106	-0.00106	-0.00105
	(A1 * !A3 * !A4 * B1 * X)	0.00083	0.00083	0.00083
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(A1 * !A3 * !A4 * !B1 * !X)	0.00134	0.00135	0.00134
	(!A1 * A3 * A4 * B1 * X)	-0.00106	-0.00106	-0.00106
	(!A1 * A3 * A4 * B1 * X)	0.00134	0.00134	0.00135
	(!A1 * A3 * !B1 * !X)	-0.00106	-0.00106	-0.00106
	(!A1 * A3 * !B1 * !X)	0.00134	0.00135	0.00135
	(!A1 * A3 * !A4 * B1 * X)	-0.00106	-0.00106	-0.00106
	(!A1 * A3 * !A4 * B1 * X)	0.00134	0.00134	0.00135
	(!A1 * !A3 * A4 * B1 * X)	-0.00106	-0.00106	-0.00106
	(!A1 * !A3 * A4 * B1 * X)	0.00129	0.00130	0.00130
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00106	-0.00107	-0.00106
	(!A1 * !A3 * A4 * !B1 * !X)	0.00129	0.00130	0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00095	-0.00101	-0.00100
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00137	0.00138	0.00137

sky130_fd_sc_hs__o41a_2	**(A1 * A3 * A4 * B1 * X)**	-0.00120	-0.00120	-0.00120
	(A1 * A3 * A4 * B1 * X)	0.00097	0.00097	0.00096
	(A1 * A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * A3 * !B1 * !X)	0.00099	0.00099	0.00099
	(A1 * A3 * !A4 * B1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * A3 * !A4 * B1 * X)	0.00092	0.00092	0.00092
	(A1 * !A3 * A4 * B1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A3 * A4 * B1 * X)	0.00091	0.00091	0.00091
	(A1 * !A3 * A4 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(A1 * !A3 * A4 * !B1 * !X)	0.00098	0.00098	0.00098
	(A1 * !A3 * !A4 * B1 * X)	-0.00120	-0.00120	-0.00120
	(A1 * !A3 * !A4 * B1 * X)	0.00082	0.00082	0.00082
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00119	-0.00120	-0.00120
	(A1 * !A3 * !A4 * !B1 * !X)	0.00134	0.00134	0.00135
	(!A1 * A3 * A4 * B1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * A4 * B1 * X)	0.00134	0.00134	0.00135
	(!A1 * A3 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * !B1 * !X)	0.00134	0.00134	0.00135
	(!A1 * A3 * !A4 * B1 * X)	-0.00120	-0.00120	-0.00120
	(!A1 * A3 * !A4 * B1 * X)	0.00134	0.00136	0.00135
	(!A1 * !A3 * A4 * B1 * X)	-0.00119	-0.00120	-0.00120
	(!A1 * !A3 * A4 * B1 * X)	0.00128	0.00129	0.00129
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00120	-0.00120	-0.00120
	(!A1 * !A3 * A4 * !B1 * !X)	0.00128	0.00130	0.00129
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00106	-0.00113	-0.00112
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00138	0.00138	0.00137

sky130_fd_sc_hs__o41a_4	**(A1 * A3 * A4 * B1 * X)**	-0.00256	-0.00256	-0.00255
	(A1 * A3 * A4 * B1 * X)	0.00191	0.00191	0.00191
	(A1 * A3 * !B1 * !X)	-0.00253	-0.00255	-0.00254
	(A1 * A3 * !B1 * !X)	0.00197	0.00200	0.00197
	(A1 * A3 * !A4 * B1 * X)	-0.00255	-0.00256	-0.00255
	(A1 * A3 * !A4 * B1 * X)	0.00181	0.00182	0.00181
	(A1 * !A3 * A4 * B1 * X)	-0.00254	-0.00256	-0.00254
	(A1 * !A3 * A4 * B1 * X)	0.00178	0.00179	0.00178
	(A1 * !A3 * A4 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(A1 * !A3 * A4 * !B1 * !X)	0.00192	0.00194	0.00192
	(A1 * !A3 * !A4 * B1 * X)	-0.00253	-0.00254	-0.00254
	(A1 * !A3 * !A4 * B1 * X)	0.00157	0.00159	0.00158
	(A1 * !A3 * !A4 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(A1 * !A3 * !A4 * !B1 * !X)	0.00263	0.00265	0.00265
	(!A1 * A3 * A4 * B1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * A3 * A4 * B1 * X)	0.00262	0.00265	0.00263
	(!A1 * A3 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(!A1 * A3 * !B1 * !X)	0.00263	0.00266	0.00264
	(!A1 * A3 * !A4 * B1 * X)	-0.00253	-0.00255	-0.00254
	(!A1 * A3 * !A4 * B1 * X)	0.00262	0.00265	0.00263
	(!A1 * !A3 * A4 * B1 * X)	-0.00254	-0.00254	-0.00253
	(!A1 * !A3 * A4 * B1 * X)	0.00253	0.00254	0.00253
	(!A1 * !A3 * A4 * !B1 * !X)	-0.00253	-0.00254	-0.00253
	(!A1 * !A3 * A4 * !B1 * !X)	0.00253	0.00254	0.00253
	(!A1 * !A3 * !A4 * !B1 * !X)	-0.00230	-0.00243	-0.00242
	(!A1 * !A3 * !A4 * !B1 * !X)	0.00271	0.00272	0.00271

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)**	0.00108	0.00109	0.00106
	(A2 * A4 * B1 * X)	-0.00088	-0.00088	-0.00088
	(A2 * A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(A2 * A4 * !B1 * !X)	-0.00096	-0.00096	-0.00096
	(A2 * !A4 * B1 * X)	0.00106	0.00107	0.00106
	(A2 * !A4 * B1 * X)	-0.00076	-0.00077	-0.00077
	(A2 * !A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(A2 * !A4 * !B1 * !X)	-0.00126	-0.00130	-0.00131
	(A1 * !A2 * A4 * B1 * X)	0.00111	0.00107	0.00106
	(A1 * !A2 * A4 * B1 * X)	-0.00091	-0.00091	-0.00091
	(A1 * !A2 * A4 * !B1 * !X)	0.00106	0.00108	0.00106
	(A1 * !A2 * A4 * !B1 * !X)	-0.00094	-0.00095	-0.00095
	(A1 * !A2 * !A4 * B1 * X)	0.00107	0.00108	0.00106
	(A1 * !A2 * !A4 * B1 * X)	-0.00076	-0.00077	-0.00077
	(A1 * !A2 * !A4 * !B1 * !X)	0.00106	0.00106	0.00106
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00116	-0.00126	-0.00124
	(!A1 * !A2 * A4 * B1 * X)	0.00125	0.00107	0.00106
	(!A1 * !A2 * A4 * B1 * X)	-0.00109	-0.00131	-0.00131
	(!A1 * !A2 * A4 * !B1 * !X)	0.00106	0.00107	0.00106
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00128	-0.00131	-0.00131
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00100	0.00100	0.00100
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00133	-0.00133	-0.00133

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	0.00128	0.00130	0.00127
	(A2 * A4 * B1 * X)	-0.00089	-0.00090	-0.00090
	(A2 * A4 * !B1 * !X)	0.00122	0.00123	0.00122
	(A2 * A4 * !B1 * !X)	-0.00104	-0.00103	-0.00103
	(A2 * !A4 * B1 * X)	0.00127	0.00129	0.00127
	(A2 * !A4 * B1 * X)	-0.00078	-0.00079	-0.00078
	(A2 * !A4 * !B1 * !X)	0.00121	0.00123	0.00122
	(A2 * !A4 * !B1 * !X)	-0.00132	-0.00137	-0.00137
	(A1 * !A2 * A4 * B1 * X)	0.00130	0.00128	0.00127
	(A1 * !A2 * A4 * B1 * X)	-0.00092	-0.00092	-0.00092
	(A1 * !A2 * A4 * !B1 * !X)	0.00121	0.00124	0.00122
	(A1 * !A2 * A4 * !B1 * !X)	-0.00102	-0.00102	-0.00101
	(A1 * !A2 * !A4 * B1 * X)	0.00128	0.00129	0.00127
	(A1 * !A2 * !A4 * B1 * X)	-0.00078	-0.00078	-0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	0.00121	0.00122	0.00122
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00122	-0.00133	-0.00131
	(!A1 * !A2 * A4 * B1 * X)	0.00146	0.00128	0.00127
	(!A1 * !A2 * A4 * B1 * X)	-0.00111	-0.00132	-0.00133
	(!A1 * !A2 * A4 * !B1 * !X)	0.00121	0.00122	0.00122
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00134	-0.00137	-0.00137
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00140	-0.00140	-0.00140

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	0.00256	0.00259	0.00255
	(A2 * A4 * B1 * X)	-0.00178	-0.00180	-0.00178
	(A2 * A4 * !B1 * !X)	0.00249	0.00251	0.00250
	(A2 * A4 * !B1 * !X)	-0.00197	-0.00196	-0.00197
	(A2 * !A4 * B1 * X)	0.00253	0.00254	0.00253
	(A2 * !A4 * B1 * X)	-0.00152	-0.00153	-0.00153
	(A2 * !A4 * !B1 * !X)	0.00249	0.00251	0.00250
	(A2 * !A4 * !B1 * !X)	-0.00252	-0.00263	-0.00262
	(A1 * !A2 * A4 * B1 * X)	0.00258	0.00258	0.00253
	(A1 * !A2 * A4 * B1 * X)	-0.00182	-0.00183	-0.00182
	(A1 * !A2 * A4 * !B1 * !X)	0.00249	0.00251	0.00250
	(A1 * !A2 * A4 * !B1 * !X)	-0.00192	-0.00194	-0.00192
	(A1 * !A2 * !A4 * B1 * X)	0.00253	0.00255	0.00253
	(A1 * !A2 * !A4 * B1 * X)	-0.00151	-0.00152	-0.00152
	(A1 * !A2 * !A4 * !B1 * !X)	0.00249	0.00251	0.00250
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00233	-0.00248	-0.00249
	(!A1 * !A2 * A4 * B1 * X)	0.00287	0.00255	0.00252
	(!A1 * !A2 * A4 * B1 * X)	-0.00222	-0.00262	-0.00263
	(!A1 * !A2 * A4 * !B1 * !X)	0.00249	0.00252	0.00250
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00257	-0.00265	-0.00264
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00236	0.00237	0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00268	-0.00269	-0.00269

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)**	-0.00105	-0.00106	-0.00105
	(A2 * A4 * B1 * X)	0.00088	0.00088	0.00088
	(A2 * A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(A2 * A4 * !B1 * !X)	0.00096	0.00096	0.00096
	(A2 * !A4 * B1 * X)	-0.00105	-0.00105	-0.00104
	(A2 * !A4 * B1 * X)	0.00079	0.00079	0.00079
	(A2 * !A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(A2 * !A4 * !B1 * !X)	0.00130	0.00130	0.00131
	(A1 * !A2 * A4 * B1 * X)	-0.00105	-0.00105	-0.00105
	(A1 * !A2 * A4 * B1 * X)	0.00091	0.00091	0.00091
	(A1 * !A2 * A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * A4 * !B1 * !X)	0.00094	0.00095	0.00095
	(A1 * !A2 * !A4 * B1 * X)	-0.00101	-0.00102	-0.00104
	(A1 * !A2 * !A4 * B1 * X)	0.00080	0.00080	0.00078
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(A1 * !A2 * !A4 * !B1 * !X)	0.00124	0.00126	0.00124
	(!A1 * !A2 * A4 * B1 * X)	-0.00105	-0.00105	-0.00105
	(!A1 * !A2 * A4 * B1 * X)	0.00131	0.00131	0.00131
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00105	-0.00106	-0.00106
	(!A1 * !A2 * A4 * !B1 * !X)	0.00130	0.00131	0.00131
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00094	-0.00100	-0.00100
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00133	0.00134	0.00133

sky130_fd_sc_hs__o41a_2	**(A2 * A4 * B1 * X)**	-0.00126	-0.00127	-0.00127
	(A2 * A4 * B1 * X)	0.00089	0.00090	0.00090
	(A2 * A4 * !B1 * !X)	-0.00122	-0.00121	-0.00121
	(A2 * A4 * !B1 * !X)	0.00104	0.00103	0.00103
	(A2 * !A4 * B1 * X)	-0.00126	-0.00127	-0.00125
	(A2 * !A4 * B1 * X)	0.00080	0.00080	0.00081
	(A2 * !A4 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(A2 * !A4 * !B1 * !X)	0.00137	0.00137	0.00137
	(A1 * !A2 * A4 * B1 * X)	-0.00127	-0.00127	-0.00127
	(A1 * !A2 * A4 * B1 * X)	0.00092	0.00092	0.00092
	(A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * A4 * !B1 * !X)	0.00102	0.00102	0.00101
	(A1 * !A2 * !A4 * B1 * X)	-0.00124	-0.00125	-0.00125
	(A1 * !A2 * !A4 * B1 * X)	0.00080	0.00080	0.00080
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !A4 * !B1 * !X)	0.00131	0.00133	0.00131
	(!A1 * !A2 * A4 * B1 * X)	-0.00126	-0.00127	-0.00126
	(!A1 * !A2 * A4 * B1 * X)	0.00132	0.00133	0.00133
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(!A1 * !A2 * A4 * !B1 * !X)	0.00137	0.00137	0.00137
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00107	-0.00114	-0.00113
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00141	0.00141	0.00140

sky130_fd_sc_hs__o41a_4	**(A2 * A4 * B1 * X)**	-0.00253	-0.00254	-0.00253
	(A2 * A4 * B1 * X)	0.00178	0.00180	0.00178
	(A2 * A4 * !B1 * !X)	-0.00249	-0.00248	-0.00249
	(A2 * A4 * !B1 * !X)	0.00197	0.00196	0.00197
	(A2 * !A4 * B1 * X)	-0.00250	-0.00251	-0.00249
	(A2 * !A4 * B1 * X)	0.00156	0.00157	0.00158
	(A2 * !A4 * !B1 * !X)	-0.00249	-0.00250	-0.00249
	(A2 * !A4 * !B1 * !X)	0.00261	0.00263	0.00262
	(A1 * !A2 * A4 * B1 * X)	-0.00252	-0.00253	-0.00252
	(A1 * !A2 * A4 * B1 * X)	0.00182	0.00183	0.00182
	(A1 * !A2 * A4 * !B1 * !X)	-0.00249	-0.00250	-0.00249
	(A1 * !A2 * A4 * !B1 * !X)	0.00192	0.00194	0.00192
	(A1 * !A2 * !A4 * B1 * X)	-0.00242	-0.00244	-0.00248
	(A1 * !A2 * !A4 * B1 * X)	0.00159	0.00160	0.00156
	(A1 * !A2 * !A4 * !B1 * !X)	-0.00249	-0.00249	-0.00249
	(A1 * !A2 * !A4 * !B1 * !X)	0.00248	0.00248	0.00249
	(!A1 * !A2 * A4 * B1 * X)	-0.00250	-0.00250	-0.00250
	(!A1 * !A2 * A4 * B1 * X)	0.00261	0.00263	0.00263
	(!A1 * !A2 * A4 * !B1 * !X)	-0.00248	-0.00250	-0.00249
	(!A1 * !A2 * A4 * !B1 * !X)	0.00263	0.00265	0.00264
	(!A1 * !A2 * !A4 * !B1 * !X)	-0.00225	-0.00237	-0.00236
	(!A1 * !A2 * !A4 * !B1 * !X)	0.00269	0.00270	0.00269

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

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	0.00121	0.00123	0.00122
	(A3 * B1 * X)	-0.00068	-0.00069	-0.00068
	(A3 * !B1 * !X)	0.00108	0.00108	0.00108
	(A3 * !B1 * !X)	-0.00130	-0.00134	-0.00133
	(A2 * !A3 * B1 * X)	0.00121	0.00123	0.00122
	(A2 * !A3 * B1 * X)	-0.00068	-0.00069	-0.00068
	(A2 * !A3 * !B1 * !X)	0.00107	0.00108	0.00108
	(A2 * !A3 * !B1 * !X)	-0.00119	-0.00129	-0.00128
	(A1 * !A2 * !A3 * B1 * X)	0.00121	0.00123	0.00122
	(A1 * !A2 * !A3 * B1 * X)	-0.00068	-0.00069	-0.00068
	(A1 * !A2 * !A3 * !B1 * !X)	0.00107	0.00109	0.00108
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00118	-0.00124	-0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00101	0.00102	0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00136	-0.00136	-0.00135
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	0.00134	0.00135	0.00134
	(A3 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A3 * !B1 * !X)	0.00121	0.00122	0.00121
	(A3 * !B1 * !X)	-0.00129	-0.00133	-0.00133
	(A2 * !A3 * B1 * X)	0.00134	0.00135	0.00134
	(A2 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A2 * !A3 * !B1 * !X)	0.00121	0.00123	0.00121
	(A2 * !A3 * !B1 * !X)	-0.00119	-0.00128	-0.00128
	(A1 * !A2 * !A3 * B1 * X)	0.00134	0.00135	0.00134
	(A1 * !A2 * !A3 * B1 * X)	-0.00069	-0.00069	-0.00069
	(A1 * !A2 * !A3 * !B1 * !X)	0.00121	0.00122	0.00121
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00117	-0.00126	-0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00113	0.00114	0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00135	-0.00135	-0.00135

sky130_fd_sc_hs__o41a_4	**(A3 * B1 * X)**	0.00229	0.00232	0.00229
	(A3 * B1 * X)	-0.00139	-0.00140	-0.00139
	(A3 * !B1 * !X)	0.00205	0.00206	0.00204
	(A3 * !B1 * !X)	-0.00259	-0.00266	-0.00266
	(A2 * !A3 * B1 * X)	0.00230	0.00232	0.00230
	(A2 * !A3 * B1 * X)	-0.00138	-0.00139	-0.00138
	(A2 * !A3 * !B1 * !X)	0.00204	0.00205	0.00204
	(A2 * !A3 * !B1 * !X)	-0.00237	-0.00255	-0.00254
	(A1 * !A2 * !A3 * B1 * X)	0.00231	0.00232	0.00230
	(A1 * !A2 * !A3 * B1 * X)	-0.00139	-0.00139	-0.00138
	(A1 * !A2 * !A3 * !B1 * !X)	0.00204	0.00207	0.00204
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00233	-0.00246	-0.00247
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00192	0.00192	0.00191
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00272	-0.00273	-0.00272

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

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

sky130_fd_sc_hs__o41a_1	**(A3 * B1 * X)**	-0.00117	-0.00118	-0.00121
	(A3 * B1 * X)	0.00072	0.00073	0.00070
	(A3 * !B1 * !X)	-0.00107	-0.00108	-0.00107
	(A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !A3 * B1 * X)	-0.00111	-0.00112	-0.00119
	(A2 * !A3 * B1 * X)	0.00076	0.00076	0.00070
	(A2 * !A3 * !B1 * !X)	-0.00107	-0.00108	-0.00107
	(A2 * !A3 * !B1 * !X)	0.00128	0.00129	0.00128
	(A1 * !A2 * !A3 * B1 * X)	-0.00103	-0.00103	-0.00117
	(A1 * !A2 * !A3 * B1 * X)	0.00081	0.00081	0.00072
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00107	-0.00107
	(A1 * !A2 * !A3 * !B1 * !X)	0.00124	0.00124	0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00096	-0.00102	-0.00101
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00136	0.00137	0.00136
sky130_fd_sc_hs__o41a_2	**(A3 * B1 * X)**	-0.00129	-0.00130	-0.00133
	(A3 * B1 * X)	0.00073	0.00074	0.00070
	(A3 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A3 * !B1 * !X)	0.00133	0.00134	0.00133
	(A2 * !A3 * B1 * X)	-0.00123	-0.00124	-0.00132
	(A2 * !A3 * B1 * X)	0.00077	0.00077	0.00071
	(A2 * !A3 * !B1 * !X)	-0.00121	-0.00121	-0.00121
	(A2 * !A3 * !B1 * !X)	0.00127	0.00128	0.00128
	(A1 * !A2 * !A3 * B1 * X)	-0.00115	-0.00117	-0.00130
	(A1 * !A2 * !A3 * B1 * X)	0.00082	0.00082	0.00072
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00121	-0.00122	-0.00121
	(A1 * !A2 * !A3 * !B1 * !X)	0.00124	0.00126	0.00125
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00107	-0.00114	-0.00113
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00135	0.00136	0.00135

sky130_fd_sc_hs__o41a_4	(A3 * B1 * X)	-0.00218	-0.00220	-0.00228
	(A3 * B1 * X)	0.00148	0.00149	0.00142
	(A3 * !B1 * !X)	-0.00202	-0.00204	-0.00204
	(A3 * !B1 * !X)	0.00265	0.00266	0.00266
	(A2 * !A3 * B1 * X)	-0.00203	-0.00204	-0.00224
	(A2 * !A3 * B1 * X)	0.00158	0.00158	0.00143
	(A2 * !A3 * !B1 * !X)	-0.00202	-0.00205	-0.00204
	(A2 * !A3 * !B1 * !X)	0.00252	0.00255	0.00254
	(A1 * !A2 * !A3 * B1 * X)	-0.00187	-0.00189	-0.00219
	(A1 * !A2 * !A3 * B1 * X)	0.00167	0.00167	0.00146
	(A1 * !A2 * !A3 * !B1 * !X)	-0.00203	-0.00203	-0.00204
	(A1 * !A2 * !A3 * !B1 * !X)	0.00246	0.00246	0.00247
	(!A1 * !A2 * !A3 * !B1 * !X)	-0.00179	-0.00192	-0.00191
	(!A1 * !A2 * !A3 * !B1 * !X)	0.00273	0.00274	0.00273

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)	0.00040	0.00040	0.00037
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00137	-0.00137	-0.00144
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	0.00044	0.00044	0.00041
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00156	-0.00156	-0.00164
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	0.00074	0.00074	0.00068
	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00259	-0.00260	-0.00272

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)	-0.00036	-0.00036	-0.00036
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00144	0.00147	0.00145
sky130_fd_sc_hs__o41a_2	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00040	-0.00040	-0.00039
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00166	0.00167	0.00165
sky130_fd_sc_hs__o41a_4	(!A1 * !A2 * !A3 * !A4 * !X)	-0.00067	-0.00066	-0.00065
	(!A1 * !A2 * !A3 * !A4 * !X)	0.00274	0.00276	0.00274

SKY130_FD_SC_HS__OR2Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00238	0.00224	1.16476
sky130_fd_sc_hs__or2b_2	0.00246	0.00216	1.95281
sky130_fd_sc_hs__or2b_4	0.00465	0.00267	4.29578

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2b_1	0.00000	0.14354	0.26224
sky130_fd_sc_hs__or2b_2	0.00000	0.15248	0.29604
sky130_fd_sc_hs__or2b_4	0.00000	0.10530	0.19266

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)	0.05154	0.50338	5.58701
	B_N->X (FR)	0.09686	0.72781	8.26381
sky130_fd_sc_hs__or2b_2	A->X (RR)	0.05115	0.42660	5.43173
	B_N->X (FR)	0.10627	0.66723	8.26111
sky130_fd_sc_hs__or2b_4	A->X (RR)	0.04710	0.33451	5.59701
	B_N->X (FR)	0.10917	0.60836	8.51343

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2b_1	A->X (FF)	0.10021	0.53324	4.66754
	B_N->X (RF)	0.10242	0.28698	1.60131
sky130_fd_sc_hs__or2b_2	A->X (FF)	0.13196	0.55727	4.50248
	B_N->X (RF)	0.14012	0.29609	1.29862
sky130_fd_sc_hs__or2b_4	A->X (FF)	0.13002	0.53015	4.83205
	B_N->X (RF)	0.13220	0.28019	1.50834

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00574	0.00575	0.01263
	A	0.00288	0.00288	0.00992
	B_N	0.00511	0.00646	0.03018
	B_N	0.00756	0.00891	0.03268
sky130_fd_sc_hs__or2b_2	A	0.00796	0.00829	0.01608
	A	0.00492	0.00525	0.01339
	B_N	0.00731	0.00884	0.03069
	B_N	0.00973	0.01127	0.03322
sky130_fd_sc_hs__or2b_4	A	0.01512	0.01599	0.03633
	A	0.00949	0.01043	0.03127
	B_N	0.01379	0.01581	0.03971
	B_N	0.01648	0.01852	0.04240

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	A	0.00325	0.00333	0.00945
	A	0.00612	0.00617	0.01229
	B_N	0.00765	0.00836	0.03204
	B_N	0.00521	0.00590	0.02956
sky130_fd_sc_hs__or2b_2	A	0.00518	0.00528	0.01254
	A	0.00821	0.00828	0.01510
	B_N	0.01024	0.01062	0.02971
	B_N	0.00781	0.00819	0.02728
sky130_fd_sc_hs__or2b_4	A	0.01040	0.01132	0.02917
	A	0.01607	0.01661	0.03282
	B_N	0.01680	0.01797	0.04269
	B_N	0.01411	0.01526	0.03983

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	0.00123	0.00111	0.00109
	(!B_N * X)	-0.00119	-0.00134	-0.00134
sky130_fd_sc_hs__or2b_2	(!B_N * X)	0.00131	0.00119	0.00117
	(!B_N * X)	-0.00126	-0.00141	-0.00141
sky130_fd_sc_hs__or2b_4	(!B_N * X)	0.00250	0.00229	0.00225
	(!B_N * X)	-0.00230	-0.00257	-0.00257

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(!B_N * X)	-0.00108	-0.00109	-0.00109
	(!B_N * X)	0.00133	0.00134	0.00134
sky130_fd_sc_hs__or2b_2	(!B_N * X)	-0.00116	-0.00116	-0.00116
	(!B_N * X)	0.00141	0.00142	0.00142
sky130_fd_sc_hs__or2b_4	(!B_N * X)	-0.00224	-0.00225	-0.00224
	(!B_N * X)	0.00255	0.00259	0.00257

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00337	0.00397	0.02666
	(A * X)	0.00052	0.00111	0.02382
sky130_fd_sc_hs__or2b_2	(A * X)	0.00358	0.00414	0.02625
	(A * X)	0.00073	0.00128	0.02341
sky130_fd_sc_hs__or2b_4	(A * X)	0.00453	0.00485	0.02713
	(A * X)	0.00119	0.00151	0.02381

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2b_1	(A * X)	0.00088	0.00210	0.02503
	(A * X)	0.00372	0.00495	0.02788
sky130_fd_sc_hs__or2b_2	(A * X)	0.00090	0.00209	0.02450
	(A * X)	0.00375	0.00494	0.02735
sky130_fd_sc_hs__or2b_4	(A * X)	0.00245	0.00331	0.02547
	(A * X)	0.00577	0.00664	0.02879

SKY130_FD_SC_HS__OR2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00217	0.00207	1.17356
sky130_fd_sc_hs__or2_2	0.00267	0.00232	1.97791
sky130_fd_sc_hs__or2_4	0.00420	0.00360	4.18239

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or2_1	0.00000	0.08436	0.22928
sky130_fd_sc_hs__or2_2	0.00000	0.03787	0.06742
sky130_fd_sc_hs__or2_4	0.00000	0.07478	0.13100

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)	0.04950	0.49973	5.62219
	B->X (RR)	0.04682	0.48870	5.75655
sky130_fd_sc_hs__or2_2	A->X (RR)	0.05226	0.42831	5.47801
	B->X (RR)	0.04862	0.41731	5.53343
sky130_fd_sc_hs__or2_4	A->X (RR)	0.06705	0.41040	5.96863
	B->X (RR)	0.05749	0.38288	5.99557

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or2_1	A->X (FF)	0.10937	0.55025	4.72485
	B->X (FF)	0.09474	0.51693	4.68313
sky130_fd_sc_hs__or2_2	A->X (FF)	0.13085	0.55524	4.50468
	B->X (FF)	0.11368	0.52798	4.47267
sky130_fd_sc_hs__or2_4	A->X (FF)	0.12059	0.51970	4.59803
	B->X (FF)	0.10303	0.48559	4.47772

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00610	0.00616	0.01339
	A	0.00285	0.00290	0.01024
	B	0.00524	0.00568	0.02132
	B	0.00247	0.00292	0.01861
sky130_fd_sc_hs__or2_2	A	0.00874	0.00901	0.01633
	A	0.00484	0.00511	0.01278
	B	0.00749	0.00813	0.01987
	B	0.00432	0.00498	0.01706
sky130_fd_sc_hs__or2_4	A	0.01559	0.01592	0.02832
	A	0.00930	0.00972	0.02319
	B	0.01265	0.01365	0.03692
	B	0.00797	0.00899	0.03339

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	A	0.00243	0.00256	0.00972
	A	0.00570	0.00581	0.01255
	B	0.00228	0.00333	0.02133
	B	0.00504	0.00605	0.02405
sky130_fd_sc_hs__or2_2	A	0.00412	0.00414	0.01097
	A	0.00804	0.00806	0.01438
	B	0.00405	0.00486	0.02138
	B	0.00721	0.00800	0.02415
sky130_fd_sc_hs__or2_4	A	0.00913	0.00998	0.01992
	A	0.01546	0.01600	0.02604
	B	0.00910	0.01096	0.03819
	B	0.01377	0.01558	0.04194

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	0.00123	0.00111	0.00108
	(B * X)	-0.00084	-0.00099	-0.00100
sky130_fd_sc_hs__or2_2	(B * X)	0.00147	0.00133	0.00131
	(B * X)	-0.00103	-0.00118	-0.00119
sky130_fd_sc_hs__or2_4	(B * X)	0.00187	0.00160	0.00157
	(B * X)	-0.00211	-0.00244	-0.00244

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(B * X)	-0.00108	-0.00108	-0.00107
	(B * X)	0.00101	0.00101	0.00101
sky130_fd_sc_hs__or2_2	(B * X)	-0.00130	-0.00131	-0.00131
	(B * X)	0.00117	0.00119	0.00119
sky130_fd_sc_hs__or2_4	(B * X)	-0.00156	-0.00157	-0.00156
	(B * X)	0.00242	0.00246	0.00244

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	0.00116	0.00117	0.00116
	(A * X)	-0.00051	-0.00052	-0.00051
sky130_fd_sc_hs__or2_2	(A * X)	0.00123	0.00124	0.00123
	(A * X)	-0.00062	-0.00063	-0.00062
sky130_fd_sc_hs__or2_4	(A * X)	0.00143	0.00144	0.00143
	(A * X)	-0.00126	-0.00127	-0.00126

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or2_1	(A * X)	-0.00113	-0.00114	-0.00116
	(A * X)	0.00054	0.00055	0.00052
sky130_fd_sc_hs__or2_2	(A * X)	-0.00119	-0.00120	-0.00123
	(A * X)	0.00066	0.00066	0.00063
sky130_fd_sc_hs__or2_4	(A * X)	-0.00133	-0.00134	-0.00142
	(A * X)	0.00135	0.00135	0.00128

SKY130_FD_SC_HS__OR3Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00233	0.00255	0.00216	1.16407
sky130_fd_sc_hs__or3b_2	0.00247	0.00239	0.00215	1.97775
sky130_fd_sc_hs__or3b_4	0.00432	0.00392	0.00249	4.21178

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3b_1	0.00000	0.13205	0.26283
sky130_fd_sc_hs__or3b_2	0.00000	0.13694	0.29733
sky130_fd_sc_hs__or3b_4	0.00000	0.07349	0.18947

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)	0.05626	0.52751	5.64445
	B->X (RR)	0.05532	0.51864	5.60220
	C_N->X (FR)	0.09997	0.73454	8.29819
sky130_fd_sc_hs__or3b_2	A->X (RR)	0.05541	0.44562	5.51950
	B->X (RR)	0.05413	0.43878	5.48233
	C_N->X (FR)	0.10717	0.66986	8.30899
sky130_fd_sc_hs__or3b_4	A->X (RR)	0.07124	0.42866	5.99229
	B->X (RR)	0.06795	0.41373	5.93647
	C_N->X (FR)	0.12137	0.61876	8.48344

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3b_1	A->X (FF)	0.16511	0.61983	4.85122
	B->X (FF)	0.15506	0.61975	4.94808
	C_N->X (RF)	0.14702	0.34648	1.67124
sky130_fd_sc_hs__or3b_2	A->X (FF)	0.21100	0.65500	4.78082
	B->X (FF)	0.19619	0.65603	4.89679
	C_N->X (RF)	0.19026	0.37354	1.48337
sky130_fd_sc_hs__or3b_4	A->X (FF)	0.18402	0.59320	4.76183
	B->X (FF)	0.16951	0.59262	4.85120
	C_N->X (RF)	0.16234	0.31628	1.55237

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00697	0.00689	0.01278
	A	0.00339	0.00332	0.00931
	B	0.00612	0.00627	0.01299
	B	0.00289	0.00306	0.00992
	C_N	0.00532	0.00670	0.03036
	C_N	0.00738	0.00877	0.03243
sky130_fd_sc_hs__or3b_2	A	0.00921	0.00933	0.01596
	A	0.00552	0.00567	0.01264
	B	0.00812	0.00860	0.01579
	B	0.00501	0.00549	0.01303
	C_N	0.00730	0.00892	0.03044
	C_N	0.00952	0.01118	0.03267
sky130_fd_sc_hs__or3b_4	A	0.01688	0.01702	0.02794
	A	0.01054	0.01076	0.02276
	B	0.01441	0.01516	0.02734
	B	0.00944	0.01035	0.02354
	C_N	0.01255	0.01472	0.03753
	C_N	0.01507	0.01723	0.04004

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	A	0.00386	0.00380	0.00905
	A	0.00747	0.00740	0.01230
	B	0.00371	0.00373	0.01035
	B	0.00694	0.00695	0.01351
	C_N	0.00826	0.00890	0.03209
	C_N	0.00619	0.00682	0.02999
sky130_fd_sc_hs__or3b_2	A	0.00570	0.00547	0.01099
	A	0.00940	0.00917	0.01410
	B	0.00556	0.00556	0.01215
	B	0.00869	0.00867	0.01522
	C_N	0.01060	0.01091	0.02960
	C_N	0.00837	0.00869	0.02736
sky130_fd_sc_hs__or3b_4	A	0.01080	0.01104	0.01995
	A	0.01722	0.01745	0.02525
	B	0.01089	0.01110	0.02301
	B	0.01588	0.01609	0.02686
	C_N	0.01682	0.01783	0.04164
	C_N	0.01432	0.01529	0.03881

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	0.00107	0.00106	0.00105
	(B * C_N * X)	-0.00116	-0.00122	-0.00121
	(B * !C_N * X)	0.00105	0.00105	0.00104
	(B * !C_N * X)	-0.00119	-0.00122	-0.00121
	(!B * !C_N * X)	0.00106	0.00105	0.00104
	(!B * !C_N * X)	-0.00110	-0.00118	-0.00118
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	0.00123	0.00122	0.00121
	(B * C_N * X)	-0.00117	-0.00123	-0.00122
	(B * !C_N * X)	0.00116	0.00117	0.00116
	(B * !C_N * X)	-0.00124	-0.00127	-0.00127
	(!B * !C_N * X)	0.00117	0.00116	0.00116
	(!B * !C_N * X)	-0.00115	-0.00124	-0.00124
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	0.00180	0.00177	0.00175
	(B * C_N * X)	-0.00229	-0.00242	-0.00240
	(B * !C_N * X)	0.00158	0.00158	0.00156
	(B * !C_N * X)	-0.00251	-0.00261	-0.00259
	(!B * !C_N * X)	0.00159	0.00157	0.00156
	(!B * !C_N * X)	-0.00237	-0.00254	-0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * C_N * X)	-0.00103	-0.00104	-0.00104
	(B * C_N * X)	0.00120	0.00122	0.00121
	(B * !C_N * X)	-0.00104	-0.00105	-0.00104
	(B * !C_N * X)	0.00121	0.00122	0.00121
	(!B * !C_N * X)	-0.00104	-0.00104	-0.00104
	(!B * !C_N * X)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__or3b_2	(B * C_N * X)	-0.00119	-0.00120	-0.00120
	(B * C_N * X)	0.00121	0.00123	0.00122
	(B * !C_N * X)	-0.00116	-0.00116	-0.00115
	(B * !C_N * X)	0.00127	0.00127	0.00127
	(!B * !C_N * X)	-0.00116	-0.00116	-0.00115
	(!B * !C_N * X)	0.00124	0.00124	0.00124
sky130_fd_sc_hs__or3b_4	(B * C_N * X)	-0.00175	-0.00176	-0.00175
	(B * C_N * X)	0.00240	0.00242	0.00240
	(B * !C_N * X)	-0.00157	-0.00157	-0.00156
	(B * !C_N * X)	0.00259	0.00261	0.00259
	(!B * !C_N * X)	-0.00156	-0.00156	-0.00155
	(!B * !C_N * X)	0.00253	0.00254	0.00253

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)	0.00125	0.00127	0.00125
	(A * C_N * X)	-0.00073	-0.00074	-0.00074
	(A * !C_N * X)	0.00116	0.00117	0.00112
	(A * !C_N * X)	-0.00097	-0.00098	-0.00097
	(!A * !C_N * X)	0.00131	0.00112	0.00111
	(!A * !C_N * X)	-0.00116	-0.00136	-0.00136
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	0.00127	0.00128	0.00127
	(A * C_N * X)	-0.00068	-0.00069	-0.00068
	(A * !C_N * X)	0.00109	0.00110	0.00107
	(A * !C_N * X)	-0.00099	-0.00100	-0.00100
	(!A * !C_N * X)	0.00124	0.00107	0.00106
	(!A * !C_N * X)	-0.00119	-0.00137	-0.00137
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	0.00158	0.00159	0.00157
	(A * C_N * X)	-0.00144	-0.00145	-0.00144
	(A * !C_N * X)	0.00138	0.00139	0.00133
	(A * !C_N * X)	-0.00191	-0.00194	-0.00192
	(!A * !C_N * X)	0.00164	0.00130	0.00128
	(!A * !C_N * X)	-0.00233	-0.00270	-0.00270

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)	-0.00123	-0.00124	-0.00123
	(A * C_N * X)	0.00076	0.00076	0.00076
	(A * !C_N * X)	-0.00110	-0.00111	-0.00110
	(A * !C_N * X)	0.00097	0.00098	0.00097
	(!A * !C_N * X)	-0.00110	-0.00111	-0.00110
	(!A * !C_N * X)	0.00136	0.00138	0.00137
sky130_fd_sc_hs__or3b_2	(A * C_N * X)	-0.00125	-0.00126	-0.00125
	(A * C_N * X)	0.00070	0.00070	0.00071
	(A * !C_N * X)	-0.00105	-0.00106	-0.00105
	(A * !C_N * X)	0.00099	0.00100	0.00100
	(!A * !C_N * X)	-0.00105	-0.00106	-0.00105
	(!A * !C_N * X)	0.00137	0.00139	0.00138
sky130_fd_sc_hs__or3b_4	(A * C_N * X)	-0.00155	-0.00156	-0.00154
	(A * C_N * X)	0.00147	0.00148	0.00148
	(A * !C_N * X)	-0.00130	-0.00131	-0.00130
	(A * !C_N * X)	0.00191	0.00194	0.00192
	(!A * !C_N * X)	-0.00128	-0.00128	-0.00127
	(!A * !C_N * X)	0.00271	0.00273	0.00271

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00327	0.00393	0.02651
	(B * X)	0.00051	0.00116	0.02375
	(A * !B * X)	0.00332	0.00399	0.02655
	(A * !B * X)	0.00053	0.00118	0.02376
sky130_fd_sc_hs__or3b_2	(B * X)	0.00368	0.00425	0.02635
	(B * X)	0.00082	0.00137	0.02349
	(A * !B * X)	0.00373	0.00430	0.02638
	(A * !B * X)	0.00084	0.00139	0.02350
sky130_fd_sc_hs__or3b_4	(B * X)	0.00461	0.00511	0.02735
	(B * X)	0.00119	0.00168	0.02392
	(A * !B * X)	0.00472	0.00522	0.02743
	(A * !B * X)	0.00124	0.00172	0.02395

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3b_1	(B * X)	0.00074	0.00199	0.02483
	(B * X)	0.00350	0.00475	0.02760
	(A * !B * X)	0.00074	0.00199	0.02483
	(A * !B * X)	0.00350	0.00476	0.02760
sky130_fd_sc_hs__or3b_2	(B * X)	0.00079	0.00198	0.02439
	(B * X)	0.00365	0.00485	0.02726
	(A * !B * X)	0.00079	0.00198	0.02439
	(A * !B * X)	0.00365	0.00486	0.02726
sky130_fd_sc_hs__or3b_4	(B * X)	0.00105	0.00196	0.02416
	(B * X)	0.00446	0.00539	0.02758
	(A * !B * X)	0.00105	0.00196	0.02417
	(A * !B * X)	0.00446	0.00539	0.02759

SKY130_FD_SC_HS__OR3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00241	0.00238	0.00233	1.20593
sky130_fd_sc_hs__or3_2	0.00244	0.00247	0.00254	2.26031
sky130_fd_sc_hs__or3_4	0.00453	0.00400	0.00390	4.21225

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or3_1	0.00000	0.01744	0.05847
sky130_fd_sc_hs__or3_2	0.00000	0.02233	0.06871
sky130_fd_sc_hs__or3_4	0.00000	0.04393	0.13166

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)	0.05583	0.52833	5.73603
	B->X (RR)	0.05474	0.51919	5.69501
	C->X (RR)	0.05132	0.50319	5.75462
sky130_fd_sc_hs__or3_2	A->X (RR)	0.05430	0.43165	5.60792
	B->X (RR)	0.05277	0.42309	5.57070
	C->X (RR)	0.05006	0.41159	5.63205
sky130_fd_sc_hs__or3_4	A->X (RR)	0.07172	0.42920	5.99554
	B->X (RR)	0.06816	0.41443	5.93932
	C->X (RR)	0.06216	0.39512	5.98524

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or3_1	A->X (FF)	0.16816	0.62864	4.92867
	B->X (FF)	0.15482	0.62785	5.03664
	C->X (FF)	0.12829	0.58685	4.88517
sky130_fd_sc_hs__or3_2	A->X (FF)	0.20428	0.65353	5.04618
	B->X (FF)	0.18946	0.65685	5.16341
	C->X (FF)	0.16525	0.61861	5.03084
sky130_fd_sc_hs__or3_4	A->X (FF)	0.18418	0.59504	4.75708
	B->X (FF)	0.16925	0.59319	4.85218
	C->X (FF)	0.14015	0.54665	4.65020

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00812	0.00800	0.01411
	A	0.00357	0.00345	0.00962
	B	0.00695	0.00713	0.01417
	B	0.00306	0.00325	0.01036
	C	0.00579	0.00609	0.01832
	C	0.00241	0.00273	0.01500
sky130_fd_sc_hs__or3_2	A	0.01009	0.01023	0.01791
	A	0.00553	0.00569	0.01364
	B	0.00882	0.00930	0.01767
	B	0.00488	0.00539	0.01406
	C	0.00775	0.00832	0.02165
	C	0.00431	0.00491	0.01842
sky130_fd_sc_hs__or3_4	A	0.01858	0.01880	0.02959
	A	0.01059	0.01090	0.02276
	B	0.01567	0.01644	0.02862
	B	0.00941	0.01034	0.02351
	C	0.01308	0.01393	0.03495
	C	0.00784	0.00871	0.03087

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	A	0.00290	0.00285	0.00770
	A	0.00750	0.00745	0.01229
	B	0.00293	0.00297	0.00980
	B	0.00684	0.00688	0.01348
	C	0.00285	0.00352	0.01705
	C	0.00621	0.00688	0.02040
sky130_fd_sc_hs__or3_2	A	0.00500	0.00499	0.01124
	A	0.00961	0.00960	0.01490
	B	0.00507	0.00512	0.01375
	B	0.00902	0.00907	0.01616
	C	0.00494	0.00574	0.02078
	C	0.00838	0.00918	0.02344
sky130_fd_sc_hs__or3_4	A	0.00921	0.00947	0.01825
	A	0.01731	0.01756	0.02528
	B	0.00960	0.00989	0.02218
	B	0.01593	0.01621	0.02694
	C	0.00936	0.01072	0.03508
	C	0.01460	0.01583	0.03894

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	0.00113	0.00114	0.00113
	(B * C * X)	-0.00117	-0.00120	-0.00120
	(B * !C * X)	0.00114	0.00114	0.00113
	(B * !C * X)	-0.00115	-0.00120	-0.00120
	(!B * C * X)	0.00114	0.00114	0.00113
	(!B * C * X)	-0.00108	-0.00117	-0.00117
sky130_fd_sc_hs__or3_2	(B * C * X)	0.00118	0.00118	0.00117
	(B * C * X)	-0.00119	-0.00122	-0.00122
	(B * !C * X)	0.00118	0.00118	0.00117
	(B * !C * X)	-0.00118	-0.00122	-0.00122
	(!B * C * X)	0.00118	0.00118	0.00117
	(!B * C * X)	-0.00110	-0.00118	-0.00118
sky130_fd_sc_hs__or3_4	(B * C * X)	0.00186	0.00186	0.00184
	(B * C * X)	-0.00232	-0.00242	-0.00240
	(B * !C * X)	0.00186	0.00186	0.00185
	(B * !C * X)	-0.00230	-0.00242	-0.00240
	(!B * C * X)	0.00187	0.00186	0.00184
	(!B * C * X)	-0.00216	-0.00235	-0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * C * X)	-0.00113	-0.00113	-0.00113
	(B * C * X)	0.00120	0.00120	0.00120
	(B * !C * X)	-0.00113	-0.00113	-0.00113
	(B * !C * X)	0.00120	0.00120	0.00120
	(!B * C * X)	-0.00113	-0.00113	-0.00113
	(!B * C * X)	0.00116	0.00117	0.00117
sky130_fd_sc_hs__or3_2	(B * C * X)	-0.00117	-0.00117	-0.00117
	(B * C * X)	0.00122	0.00122	0.00122
	(B * !C * X)	-0.00117	-0.00117	-0.00117
	(B * !C * X)	0.00122	0.00122	0.00122
	(!B * C * X)	-0.00117	-0.00117	-0.00117
	(!B * C * X)	0.00118	0.00118	0.00118
sky130_fd_sc_hs__or3_4	(B * C * X)	-0.00185	-0.00186	-0.00184
	(B * C * X)	0.00240	0.00242	0.00240
	(B * !C * X)	-0.00185	-0.00186	-0.00185
	(B * !C * X)	0.00240	0.00242	0.00240
	(!B * C * X)	-0.00184	-0.00185	-0.00184
	(!B * C * X)	0.00234	0.00235	0.00233

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	0.00110	0.00110	0.00106
	(A * C * X)	-0.00079	-0.00080	-0.00080
	(A * !C * X)	0.00105	0.00106	0.00105
	(A * !C * X)	-0.00069	-0.00069	-0.00069
	(!A * C * X)	0.00124	0.00106	0.00104
	(!A * C * X)	-0.00098	-0.00117	-0.00118
sky130_fd_sc_hs__or3_2	(A * C * X)	0.00110	0.00111	0.00107
	(A * C * X)	-0.00088	-0.00089	-0.00088
	(A * !C * X)	0.00107	0.00107	0.00106
	(A * !C * X)	-0.00078	-0.00078	-0.00078
	(!A * C * X)	0.00125	0.00107	0.00106
	(!A * C * X)	-0.00107	-0.00126	-0.00127
sky130_fd_sc_hs__or3_4	(A * C * X)	0.00138	0.00138	0.00133
	(A * C * X)	-0.00166	-0.00167	-0.00166
	(A * !C * X)	0.00131	0.00132	0.00130
	(A * !C * X)	-0.00146	-0.00146	-0.00146
	(!A * C * X)	0.00164	0.00131	0.00129
	(!A * C * X)	-0.00206	-0.00245	-0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(A * C * X)	-0.00104	-0.00105	-0.00105
	(A * C * X)	0.00079	0.00080	0.00080
	(A * !C * X)	-0.00104	-0.00104	-0.00103
	(A * !C * X)	0.00071	0.00071	0.00071
	(!A * C * X)	-0.00104	-0.00104	-0.00104
	(!A * C * X)	0.00117	0.00119	0.00118
sky130_fd_sc_hs__or3_2	(A * C * X)	-0.00105	-0.00106	-0.00105
	(A * C * X)	0.00088	0.00089	0.00088
	(A * !C * X)	-0.00104	-0.00105	-0.00104
	(A * !C * X)	0.00079	0.00080	0.00080
	(!A * C * X)	-0.00105	-0.00106	-0.00105
	(!A * C * X)	0.00127	0.00128	0.00127
sky130_fd_sc_hs__or3_4	(A * C * X)	-0.00130	-0.00131	-0.00130
	(A * C * X)	0.00166	0.00167	0.00166
	(A * !C * X)	-0.00128	-0.00129	-0.00127
	(A * !C * X)	0.00149	0.00149	0.00150
	(!A * C * X)	-0.00128	-0.00128	-0.00127
	(!A * C * X)	0.00245	0.00248	0.00246

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	0.00116	0.00117	0.00116
	(B * X)	-0.00064	-0.00064	-0.00064
	(A * !B * X)	0.00116	0.00117	0.00116
	(A * !B * X)	-0.00064	-0.00064	-0.00064
sky130_fd_sc_hs__or3_2	(B * X)	0.00129	0.00130	0.00129
	(B * X)	-0.00065	-0.00066	-0.00065
	(A * !B * X)	0.00129	0.00130	0.00129
	(A * !B * X)	-0.00065	-0.00065	-0.00065
sky130_fd_sc_hs__or3_4	(B * X)	0.00162	0.00164	0.00163
	(B * X)	-0.00129	-0.00130	-0.00129
	(A * !B * X)	0.00163	0.00164	0.00163
	(A * !B * X)	-0.00128	-0.00129	-0.00128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or3_1	(B * X)	-0.00113	-0.00113	-0.00116
	(B * X)	0.00067	0.00067	0.00065
	(A * !B * X)	-0.00107	-0.00108	-0.00115
	(A * !B * X)	0.00071	0.00071	0.00065
sky130_fd_sc_hs__or3_2	(B * X)	-0.00125	-0.00126	-0.00129
	(B * X)	0.00068	0.00069	0.00066
	(A * !B * X)	-0.00120	-0.00121	-0.00128
	(A * !B * X)	0.00072	0.00072	0.00066
sky130_fd_sc_hs__or3_4	(B * X)	-0.00154	-0.00155	-0.00162
	(B * X)	0.00137	0.00138	0.00131
	(A * !B * X)	-0.00143	-0.00144	-0.00159
	(A * !B * X)	0.00143	0.00143	0.00131

SKY130_FD_SC_HS__OR4BBx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00237	0.00233	0.00221	0.00224	1.17717
sky130_fd_sc_hs__or4bb_2	0.00234	0.00248	0.00218	0.00215	1.96196
sky130_fd_sc_hs__or4bb_4	0.00363	0.00371	0.00239	0.00237	3.64743

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4bb_1	0.00000	0.23965	0.49205
sky130_fd_sc_hs__or4bb_2	0.00000	0.24246	0.52724
sky130_fd_sc_hs__or4bb_4	0.00000	0.08512	0.24794

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)	0.05724	0.54529	5.76069
	B->X (RR)	0.05727	0.53785	5.71500
	C_N->X (FR)	0.11477	0.76303	8.43188
	D_N->X (FR)	0.10385	0.74296	8.41372
sky130_fd_sc_hs__or4bb_2	A->X (RR)	0.05647	0.45924	5.55716
	B->X (RR)	0.05741	0.45282	5.51984
	C_N->X (FR)	0.10500	0.66246	8.24529
	D_N->X (FR)	0.10664	0.66845	8.29545
sky130_fd_sc_hs__or4bb_4	A->X (RR)	0.07756	0.46341	5.97225
	B->X (RR)	0.07972	0.45820	5.93114
	C_N->X (FR)	0.14449	0.66390	8.52558
	D_N->X (FR)	0.14634	0.67114	8.53968

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4bb_1	A->X (FF)	0.23909	0.71334	5.01114
	B->X (FF)	0.22243	0.70472	5.13139
	C_N->X (RF)	0.22237	0.45391	1.83741
	D_N->X (RF)	0.17539	0.39709	1.75173
sky130_fd_sc_hs__or4bb_2	A->X (FF)	0.28789	0.74520	4.89485
	B->X (FF)	0.27814	0.74414	5.00417
	C_N->X (RF)	0.27202	0.47566	1.52841
	D_N->X (RF)	0.23604	0.43588	1.52025
sky130_fd_sc_hs__or4bb_4	A->X (FF)	0.31800	0.75012	4.70081
	B->X (FF)	0.30516	0.74037	4.80606
	C_N->X (RF)	0.30134	0.47932	1.44978
	D_N->X (RF)	0.24099	0.42116	1.37671

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00751	0.00724	0.01252
	A	0.00406	0.00379	0.00912
	B	0.00649	0.00669	0.01254
	B	0.00348	0.00369	0.00960
	C_N	0.00596	0.00730	0.03006
	C_N	0.00833	0.00969	0.03246
	D_N	0.00520	0.00657	0.02969
	D_N	0.00728	0.00866	0.03339
sky130_fd_sc_hs__or4bb_2	A	0.00937	0.00979	0.01861
	A	0.00589	0.00634	0.01549
	B	0.00854	0.00906	0.01753
	B	0.00539	0.00592	0.01472
	C_N	0.00756	0.00932	0.03283
	C_N	0.00985	0.01164	0.03526
	D_N	0.00736	0.00857	0.03054
	D_N	0.00944	0.01069	0.03265
sky130_fd_sc_hs__or4bb_4	A	0.01885	0.01938	0.03085
	A	0.01277	0.01333	0.02592
	B	0.01611	0.01673	0.02811
	B	0.01124	0.01188	0.02436
	C_N	0.01571	0.01769	0.03766
	C_N	0.01781	0.01982	0.04007
	D_N	0.01387	0.01569	0.03695
	D_N	0.01599	0.01784	0.03907

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	A	0.00481	0.00466	0.00904
	A	0.00831	0.00818	0.01217
	B	0.00467	0.00461	0.01048
	B	0.00768	0.00763	0.01275
	C_N	0.00966	0.01018	0.03206
	C_N	0.00729	0.00774	0.02961
	D_N	0.00851	0.00917	0.03190
	D_N	0.00642	0.00705	0.02974
sky130_fd_sc_hs__or4bb_2	A	0.00681	0.00669	0.01295
	A	0.01032	0.01022	0.01573
	B	0.00659	0.00634	0.01265
	B	0.00974	0.00963	0.01525
	C_N	0.01145	0.01190	0.03415
	C_N	0.00916	0.00959	0.03181
	D_N	0.01091	0.01116	0.03029
	D_N	0.00881	0.00908	0.02818
sky130_fd_sc_hs__or4bb_4	A	0.01459	0.01425	0.02162
	A	0.02080	0.02051	0.02734
	B	0.01482	0.01408	0.02386
	B	0.01972	0.01928	0.02678
	C_N	0.02034	0.02061	0.03944
	C_N	0.01825	0.01829	0.03723
	D_N	0.01969	0.01949	0.04018
	D_N	0.01756	0.01737	0.03802

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)**	0.00109	0.00109	0.00108
	(B * C_N * D_N * X)	-0.00117	-0.00122	-0.00121
	(B * !D_N * X)	0.00109	0.00109	0.00108
	(B * !D_N * X)	-0.00117	-0.00122	-0.00121
	(B * !C_N * D_N * X)	0.00108	0.00109	0.00108
	(B * !C_N * D_N * X)	-0.00118	-0.00122	-0.00121
	(!B * C_N * !D_N * X)	0.00114	0.00111	0.00109
	(!B * C_N * !D_N * X)	-0.00109	-0.00118	-0.00117
	(!B * !C_N * D_N * X)	0.00107	0.00108	0.00108
	(!B * !C_N * D_N * X)	-0.00111	-0.00119	-0.00118
	(!B * !C_N * !D_N * X)	0.00107	0.00108	0.00107
	(!B * !C_N * !D_N * X)	-0.00111	-0.00119	-0.00118
sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	0.00115	0.00114	0.00113
	(B * C_N * D_N * X)	-0.00116	-0.00121	-0.00120
	(B * !D_N * X)	0.00115	0.00114	0.00113
	(B * !D_N * X)	-0.00117	-0.00121	-0.00120
	(B * !C_N * D_N * X)	0.00101	0.00102	0.00101
	(B * !C_N * D_N * X)	-0.00130	-0.00133	-0.00133
	(!B * C_N * !D_N * X)	0.00120	0.00116	0.00115
	(!B * C_N * !D_N * X)	-0.00108	-0.00117	-0.00116
	(!B * !C_N * D_N * X)	0.00101	0.00101	0.00101
	(!B * !C_N * D_N * X)	-0.00122	-0.00130	-0.00129
	(!B * !C_N * !D_N * X)	0.00100	0.00101	0.00101
	(!B * !C_N * !D_N * X)	-0.00122	-0.00130	-0.00129

sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	0.00141	0.00139	0.00137
	(B * C_N * D_N * X)	-0.00236	-0.00250	-0.00249
	(B * !D_N * X)	0.00140	0.00139	0.00137
	(B * !D_N * X)	-0.00238	-0.00250	-0.00248
	(B * !C_N * D_N * X)	0.00137	0.00139	0.00137
	(B * !C_N * D_N * X)	-0.00240	-0.00251	-0.00249
	(!B * C_N * !D_N * X)	0.00152	0.00144	0.00141
	(!B * C_N * !D_N * X)	-0.00222	-0.00240	-0.00237
	(!B * !C_N * D_N * X)	0.00138	0.00138	0.00137
	(!B * !C_N * D_N * X)	-0.00225	-0.00242	-0.00241
	(!B * !C_N * !D_N * X)	0.00138	0.00138	0.00137
	(!B * !C_N * !D_N * X)	-0.00225	-0.00241	-0.00241

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)**	-0.00106	-0.00107	-0.00107
	(B * C_N * D_N * X)	0.00121	0.00122	0.00122
	(B * !D_N * X)	-0.00107	-0.00107	-0.00107
	(B * !D_N * X)	0.00122	0.00122	0.00121
	(B * !C_N * D_N * X)	-0.00107	-0.00107	-0.00107
	(B * !C_N * D_N * X)	0.00122	0.00122	0.00121
	(!B * C_N * !D_N * X)	-0.00110	-0.00111	-0.00109
	(!B * C_N * !D_N * X)	0.00117	0.00118	0.00117
	(!B * !C_N * D_N * X)	-0.00107	-0.00107	-0.00107
	(!B * !C_N * D_N * X)	0.00119	0.00119	0.00118
	(!B * !C_N * !D_N * X)	-0.00107	-0.00108	-0.00107
	(!B * !C_N * !D_N * X)	0.00118	0.00119	0.00118

sky130_fd_sc_hs__or4bb_2	**(B * C_N * D_N * X)**	-0.00112	-0.00112	-0.00112
	(B * C_N * D_N * X)	0.00121	0.00121	0.00121
	(B * !D_N * X)	-0.00112	-0.00113	-0.00112
	(B * !D_N * X)	0.00121	0.00121	0.00120
	(B * !C_N * D_N * X)	-0.00100	-0.00101	-0.00100
	(B * !C_N * D_N * X)	0.00133	0.00133	0.00133
	(!B * C_N * !D_N * X)	-0.00116	-0.00116	-0.00115
	(!B * C_N * !D_N * X)	0.00116	0.00117	0.00116
	(!B * !C_N * D_N * X)	-0.00100	-0.00101	-0.00100
	(!B * !C_N * D_N * X)	0.00130	0.00130	0.00129
	(!B * !C_N * !D_N * X)	-0.00100	-0.00101	-0.00100
	(!B * !C_N * !D_N * X)	0.00129	0.00130	0.00129
sky130_fd_sc_hs__or4bb_4	**(B * C_N * D_N * X)**	-0.00137	-0.00137	-0.00137
	(B * C_N * D_N * X)	0.00249	0.00250	0.00249
	(B * !D_N * X)	-0.00138	-0.00138	-0.00137
	(B * !D_N * X)	0.00249	0.00250	0.00248
	(B * !C_N * D_N * X)	-0.00137	-0.00137	-0.00137
	(B * !C_N * D_N * X)	0.00249	0.00251	0.00249
	(!B * C_N * !D_N * X)	-0.00145	-0.00144	-0.00141
	(!B * C_N * !D_N * X)	0.00237	0.00240	0.00237
	(!B * !C_N * D_N * X)	-0.00137	-0.00137	-0.00137
	(!B * !C_N * D_N * X)	0.00241	0.00242	0.00241
	(!B * !C_N * !D_N * X)	-0.00137	-0.00137	-0.00137
	(!B * !C_N * !D_N * X)	0.00241	0.00241	0.00241

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)**	0.00115	0.00117	0.00116
	(A * C_N * D_N * X)	-0.00077	-0.00078	-0.00077
	(A * C_N * !D_N * X)	0.00127	0.00131	0.00131
	(A * C_N * !D_N * X)	-0.00088	-0.00090	-0.00088
	(A * !C_N * D_N * X)	0.00094	0.00095	0.00093
	(A * !C_N * D_N * X)	-0.00112	-0.00113	-0.00112
	(A * !C_N * !D_N * X)	0.00093	0.00094	0.00093
	(A * !C_N * !D_N * X)	-0.00116	-0.00116	-0.00116
	(!A * C_N * !D_N * X)	0.00128	0.00119	0.00117
	(!A * C_N * !D_N * X)	-0.00112	-0.00122	-0.00122
	(!A * !C_N * D_N * X)	0.00098	0.00094	0.00093
	(!A * !C_N * D_N * X)	-0.00143	-0.00148	-0.00148
	(!A * !C_N * !D_N * X)	0.00093	0.00093	0.00093
	(!A * !C_N * !D_N * X)	-0.00148	-0.00148	-0.00148
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	0.00140	0.00142	0.00140
	(A * C_N * D_N * X)	-0.00069	-0.00070	-0.00069
	(A * C_N * !D_N * X)	0.00151	0.00155	0.00155
	(A * C_N * !D_N * X)	-0.00079	-0.00080	-0.00080
	(A * !C_N * D_N * X)	0.00125	0.00125	0.00125
	(A * !C_N * D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !C_N * !D_N * X)	0.00124	0.00126	0.00124
	(A * !C_N * !D_N * X)	-0.00099	-0.00101	-0.00100
	(!A * C_N * !D_N * X)	0.00153	0.00142	0.00140
	(!A * C_N * !D_N * X)	-0.00104	-0.00115	-0.00114
	(!A * !C_N * D_N * X)	0.00129	0.00125	0.00124
	(!A * !C_N * D_N * X)	-0.00127	-0.00132	-0.00132
	(!A * !C_N * !D_N * X)	0.00125	0.00125	0.00124
	(!A * !C_N * !D_N * X)	-0.00131	-0.00133	-0.00132

sky130_fd_sc_hs__or4bb_4	**(A * C_N * D_N * X)**	0.00141	0.00142	0.00141
	(A * C_N * D_N * X)	-0.00150	-0.00150	-0.00149
	(A * C_N * !D_N * X)	0.00161	0.00168	0.00168
	(A * C_N * !D_N * X)	-0.00173	-0.00175	-0.00173
	(A * !C_N * D_N * X)	0.00135	0.00137	0.00135
	(A * !C_N * D_N * X)	-0.00180	-0.00183	-0.00181
	(A * !C_N * !D_N * X)	0.00135	0.00136	0.00134
	(A * !C_N * !D_N * X)	-0.00189	-0.00189	-0.00189
	(!A * C_N * !D_N * X)	0.00163	0.00146	0.00141
	(!A * C_N * !D_N * X)	-0.00223	-0.00241	-0.00240
	(!A * !C_N * D_N * X)	0.00139	0.00134	0.00133
	(!A * !C_N * D_N * X)	-0.00244	-0.00253	-0.00254
	(!A * !C_N * !D_N * X)	0.00134	0.00133	0.00133
	(!A * !C_N * !D_N * X)	-0.00248	-0.00254	-0.00253

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)**	-0.00113	-0.00114	-0.00114
	(A * C_N * D_N * X)	0.00080	0.00080	0.00080
	(A * C_N * !D_N * X)	-0.00124	-0.00126	-0.00124
	(A * C_N * !D_N * X)	0.00088	0.00090	0.00088
	(A * !C_N * D_N * X)	-0.00092	-0.00093	-0.00092
	(A * !C_N * D_N * X)	0.00112	0.00113	0.00112
	(A * !C_N * !D_N * X)	-0.00092	-0.00093	-0.00092
	(A * !C_N * !D_N * X)	0.00116	0.00116	0.00116
	(!A * C_N * !D_N * X)	-0.00119	-0.00119	-0.00117
	(!A * C_N * !D_N * X)	0.00122	0.00122	0.00122
	(!A * !C_N * D_N * X)	-0.00092	-0.00093	-0.00092
	(!A * !C_N * D_N * X)	0.00148	0.00150	0.00149
	(!A * !C_N * !D_N * X)	-0.00092	-0.00093	-0.00092
	(!A * !C_N * !D_N * X)	0.00148	0.00148	0.00148
sky130_fd_sc_hs__or4bb_2	**(A * C_N * D_N * X)**	-0.00138	-0.00139	-0.00138
	(A * C_N * D_N * X)	0.00070	0.00072	0.00071
	(A * C_N * !D_N * X)	-0.00148	-0.00148	-0.00148
	(A * C_N * !D_N * X)	0.00079	0.00080	0.00080
	(A * !C_N * D_N * X)	-0.00124	-0.00124	-0.00124
	(A * !C_N * D_N * X)	0.00096	0.00096	0.00096
	(A * !C_N * !D_N * X)	-0.00124	-0.00125	-0.00124
	(A * !C_N * !D_N * X)	0.00099	0.00101	0.00100
	(!A * C_N * !D_N * X)	-0.00143	-0.00142	-0.00140
	(!A * C_N * !D_N * X)	0.00114	0.00115	0.00114
	(!A * !C_N * D_N * X)	-0.00124	-0.00124	-0.00124
	(!A * !C_N * D_N * X)	0.00132	0.00133	0.00133
	(!A * !C_N * !D_N * X)	-0.00124	-0.00124	-0.00124
	(!A * !C_N * !D_N * X)	0.00132	0.00133	0.00132

sky130_fd_sc_hs__or4bb_4	(A * C_N * D_N * X)	-0.00135	-0.00136	-0.00137
	(A * C_N * D_N * X)	0.00155	0.00156	0.00155
	(A * C_N * !D_N * X)	-0.00158	-0.00159	-0.00158
	(A * C_N * !D_N * X)	0.00173	0.00175	0.00173
	(A * !C_N * D_N * X)	-0.00134	-0.00135	-0.00134
	(A * !C_N * D_N * X)	0.00180	0.00183	0.00181
	(A * !C_N * !D_N * X)	-0.00134	-0.00134	-0.00134
	(A * !C_N * !D_N * X)	0.00189	0.00189	0.00189
	(!A * C_N * !D_N * X)	-0.00148	-0.00146	-0.00141
	(!A * C_N * !D_N * X)	0.00240	0.00241	0.00240
	(!A * !C_N * D_N * X)	-0.00132	-0.00133	-0.00133
	(!A * !C_N * D_N * X)	0.00253	0.00253	0.00254
	(!A * !C_N * !D_N * X)	-0.00132	-0.00133	-0.00133
	(!A * !C_N * !D_N * X)	0.00252	0.00255	0.00253

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00378	0.00431	0.02635
	(B * X)	0.00084	0.00135	0.02342
	(A * !B * X) + (!A * !B * !D_N * X)	0.00383	0.00435	0.02638
	(A * !B * X) + (!A * !B * !D_N * X)	0.00084	0.00135	0.02340
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00343	0.00405	0.02664
	(B * X)	0.00060	0.00121	0.02380
	(A * !B * X) + (!A * !B * !D_N * X)	0.00348	0.00410	0.02664
	(A * !B * X) + (!A * !B * !D_N * X)	0.00060	0.00121	0.02376
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00411	0.00455	0.02657
	(B * X)	0.00114	0.00157	0.02359
	(A * !B * X) + (!A * !B * !D_N * X)	0.00422	0.00467	0.02664
	(A * !B * X) + (!A * !B * !D_N * X)	0.00117	0.00159	0.02359

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4bb_1	(B * X)	0.00090	0.00206	0.02439
	(B * X)	0.00383	0.00501	0.02732
	(A * !B * X) + (!A * !B * !D_N * X)	0.00091	0.00207	0.02439
	(A * !B * X) + (!A * !B * !D_N * X)	0.00384	0.00502	0.02733
sky130_fd_sc_hs__or4bb_2	(B * X)	0.00077	0.00200	0.02483
	(B * X)	0.00360	0.00485	0.02767
	(A * !B * X) + (!A * !B * !D_N * X)	0.00078	0.00201	0.02481
	(A * !B * X) + (!A * !B * !D_N * X)	0.00361	0.00484	0.02765
sky130_fd_sc_hs__or4bb_4	(B * X)	0.00152	0.00242	0.02424
	(B * X)	0.00447	0.00540	0.02721
	(A * !B * X) + (!A * !B * !D_N * X)	0.00152	0.00243	0.02425
	(A * !B * X) + (!A * !B * !D_N * X)	0.00449	0.00542	0.02722

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)	0.00326	0.00386	0.02604
	(B * C_N * X)	0.00063	0.00121	0.02341
	(A * !B * C_N * X)	0.00333	0.00393	0.02609
	(A * !B * C_N * X)	0.00067	0.00126	0.02344
	(!C_N * X)	0.00335	0.00394	0.02613
	(!C_N * X)	0.00072	0.00131	0.02351
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00334	0.00392	0.02606
	(B * C_N * X)	0.00072	0.00129	0.02344
	(A * !B * C_N * X)	0.00340	0.00399	0.02610
	(A * !B * C_N * X)	0.00076	0.00132	0.02347
	(!C_N * X)	0.00343	0.00402	0.02616
	(!C_N * X)	0.00082	0.00139	0.02355
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00472	0.00511	0.02701
	(B * C_N * X)	0.00175	0.00211	0.02404
	(A * !B * C_N * X)	0.00489	0.00528	0.02714
	(A * !B * C_N * X)	0.00187	0.00222	0.02412
	(!C_N * X)	0.00502	0.00541	0.02733
	(!C_N * X)	0.00207	0.00243	0.02437

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)	0.00089	0.00209	0.02453
	(B * C_N * X)	0.00352	0.00474	0.02717
	(A * !B * C_N * X)	0.00090	0.00209	0.02453
	(A * !B * C_N * X)	0.00352	0.00473	0.02717
	(!C_N * X)	0.00077	0.00197	0.02442
	(!C_N * X)	0.00340	0.00462	0.02705
sky130_fd_sc_hs__or4bb_2	(B * C_N * X)	0.00108	0.00227	0.02472
	(B * C_N * X)	0.00369	0.00490	0.02734
	(A * !B * C_N * X)	0.00108	0.00227	0.02472
	(A * !B * C_N * X)	0.00369	0.00490	0.02734
	(!C_N * X)	0.00095	0.00214	0.02459
	(!C_N * X)	0.00356	0.00477	0.02721
sky130_fd_sc_hs__or4bb_4	(B * C_N * X)	0.00182	0.00270	0.02446
	(B * C_N * X)	0.00478	0.00567	0.02741
	(A * !B * C_N * X)	0.00182	0.00270	0.02446
	(A * !B * C_N * X)	0.00478	0.00567	0.02741
	(!C_N * X)	0.00146	0.00234	0.02410
	(!C_N * X)	0.00442	0.00531	0.02705

SKY130_FD_SC_HS__OR4Bx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00242	0.00230	0.00239	0.00226	1.13466
sky130_fd_sc_hs__or4b_2	0.00249	0.00239	0.00240	0.00215	1.96124
sky130_fd_sc_hs__or4b_4	0.00359	0.00411	0.00414	0.00233	4.35916

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__or4b_1	0.00000	0.12504	0.26343
sky130_fd_sc_hs__or4b_2	0.00000	0.12785	0.29862
sky130_fd_sc_hs__or4b_4	0.00000	0.05556	0.19013

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)	0.06008	0.55641	5.77112
	B->X (RR)	0.05999	0.55011	5.72697
	C->X (RR)	0.05802	0.53725	5.67764
	D_N->X (FR)	0.10397	0.74839	8.36107
sky130_fd_sc_hs__or4b_2	A->X (RR)	0.05687	0.45737	5.49589
	B->X (RR)	0.05715	0.45215	5.45842
	C->X (RR)	0.05554	0.44245	5.41643
	D_N->X (FR)	0.11170	0.67644	8.27094
sky130_fd_sc_hs__or4b_4	A->X (RR)	0.07870	0.45954	6.17394
	B->X (RR)	0.07877	0.44961	6.12562
	C->X (RR)	0.07282	0.42922	6.06140
	D_N->X (FR)	0.12831	0.63302	8.63572

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4b_1	A->X (FF)	0.24971	0.72645	4.96911
	B->X (FF)	0.23292	0.71777	5.09155
	C->X (FF)	0.20973	0.70326	5.11535
	D_N->X (RF)	0.17935	0.40827	1.70642
sky130_fd_sc_hs__or4b_2	A->X (FF)	0.30407	0.76455	4.89811
	B->X (FF)	0.28778	0.75824	5.04500
	C->X (FF)	0.25925	0.74307	5.09082
	D_N->X (RF)	0.24186	0.44956	1.54217
sky130_fd_sc_hs__or4b_4	A->X (FF)	0.30572	0.75156	5.10980
	B->X (FF)	0.29387	0.74314	5.18723
	C->X (FF)	0.25331	0.71160	5.21286
	D_N->X (RF)	0.22458	0.40874	1.75953

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00859	0.00834	0.01334
	A	0.00419	0.00395	0.00903
	B	0.00741	0.00759	0.01312
	B	0.00371	0.00391	0.00950
	C	0.00640	0.00663	0.01227
	C	0.00310	0.00332	0.00905
	D_N	0.00561	0.00702	0.03027
	D_N	0.00752	0.00893	0.03217
sky130_fd_sc_hs__or4b_2	A	0.01067	0.01067	0.01669
	A	0.00621	0.00624	0.01259
	B	0.00947	0.00991	0.01635
	B	0.00573	0.00618	0.01296
	C	0.00841	0.00889	0.01551
	C	0.00505	0.00553	0.01240
	D_N	0.00776	0.00935	0.03081
	D_N	0.00979	0.01140	0.03291
sky130_fd_sc_hs__or4b_4	A	0.01969	0.02024	0.03156
	A	0.01223	0.01284	0.02510
	B	0.01770	0.01833	0.02962
	B	0.01101	0.01171	0.02396
	C	0.01494	0.01573	0.02773
	C	0.00924	0.01012	0.02310
	D_N	0.01345	0.01556	0.03678
	D_N	0.01526	0.01741	0.03859

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	A	0.00410	0.00382	0.00793
	A	0.00856	0.00834	0.01224
	B	0.00409	0.00398	0.00897
	B	0.00781	0.00773	0.01267
	C	0.00399	0.00396	0.00949
	C	0.00730	0.00726	0.01279
	D_N	0.00836	0.00910	0.03221
	D_N	0.00645	0.00714	0.03023
sky130_fd_sc_hs__or4b_2	A	0.00602	0.00541	0.01011
	A	0.01052	0.01003	0.01405
	B	0.00603	0.00548	0.01177
	B	0.00982	0.00944	0.01450
	C	0.00587	0.00558	0.01143
	C	0.00925	0.00895	0.01456
	D_N	0.01107	0.01113	0.03020
	D_N	0.00903	0.00910	0.02813
sky130_fd_sc_hs__or4b_4	A	0.01340	0.01274	0.02181
	A	0.02106	0.02065	0.02747
	B	0.01325	0.01245	0.02290
	B	0.02004	0.01955	0.02712
	C	0.01273	0.01233	0.02379
	C	0.01841	0.01810	0.02721
	D_N	0.01892	0.01904	0.04029
	D_N	0.01709	0.01721	0.03815

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)**	0.00112	0.00113	0.00112
	(B * C * D_N * X)	-0.00116	-0.00120	-0.00120
	(B * !D_N * X)	0.00112	0.00113	0.00112
	(B * !D_N * X)	-0.00116	-0.00120	-0.00120
	(B * !C * D_N * X)	0.00112	0.00113	0.00112
	(B * !C * D_N * X)	-0.00115	-0.00120	-0.00120
	(!B * C * D_N * X)	0.00112	0.00113	0.00112
	(!B * C * D_N * X)	-0.00108	-0.00117	-0.00116
	(!B * C * !D_N * X)	0.00112	0.00112	0.00112
	(!B * C * !D_N * X)	-0.00108	-0.00116	-0.00116
	(!B * !C * !D_N * X)	0.00112	0.00113	0.00112
	(!B * !C * !D_N * X)	-0.00107	-0.00116	-0.00115
sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	0.00121	0.00122	0.00121
	(B * C * D_N * X)	-0.00118	-0.00122	-0.00121
	(B * !D_N * X)	0.00117	0.00118	0.00117
	(B * !D_N * X)	-0.00122	-0.00126	-0.00125
	(B * !C * D_N * X)	0.00121	0.00122	0.00121
	(B * !C * D_N * X)	-0.00116	-0.00122	-0.00121
	(!B * C * D_N * X)	0.00121	0.00122	0.00121
	(!B * C * D_N * X)	-0.00109	-0.00118	-0.00118
	(!B * C * !D_N * X)	0.00116	0.00117	0.00117
	(!B * C * !D_N * X)	-0.00114	-0.00122	-0.00121
	(!B * !C * !D_N * X)	0.00117	0.00118	0.00117
	(!B * !C * !D_N * X)	-0.00113	-0.00122	-0.00120

sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	0.00119	0.00119	0.00118
	(B * C * D_N * X)	-0.00237	-0.00247	-0.00246
	(B * !D_N * X)	0.00118	0.00119	0.00118
	(B * !D_N * X)	-0.00238	-0.00247	-0.00246
	(B * !C * D_N * X)	0.00120	0.00119	0.00119
	(B * !C * D_N * X)	-0.00233	-0.00246	-0.00246
	(!B * C * D_N * X)	0.00120	0.00120	0.00119
	(!B * C * D_N * X)	-0.00220	-0.00238	-0.00237
	(!B * C * !D_N * X)	0.00119	0.00119	0.00118
	(!B * C * !D_N * X)	-0.00221	-0.00239	-0.00238
	(!B * !C * !D_N * X)	0.00119	0.00119	0.00118
	(!B * !C * !D_N * X)	-0.00219	-0.00238	-0.00235

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)**	-0.00112	-0.00112	-0.00112
	(B * C * D_N * X)	0.00120	0.00120	0.00120
	(B * !D_N * X)	-0.00112	-0.00112	-0.00112
	(B * !D_N * X)	0.00120	0.00120	0.00120
	(B * !C * D_N * X)	-0.00111	-0.00112	-0.00112
	(B * !C * D_N * X)	0.00119	0.00120	0.00120
	(!B * C * D_N * X)	-0.00111	-0.00112	-0.00111
	(!B * C * D_N * X)	0.00116	0.00117	0.00116
	(!B * C * !D_N * X)	-0.00111	-0.00112	-0.00112
	(!B * C * !D_N * X)	0.00115	0.00116	0.00116
	(!B * !C * !D_N * X)	-0.00112	-0.00112	-0.00112
	(!B * !C * !D_N * X)	0.00115	0.00116	0.00115

sky130_fd_sc_hs__or4b_2	**(B * C * D_N * X)**	-0.00121	-0.00121	-0.00121
	(B * C * D_N * X)	0.00122	0.00122	0.00121
	(B * !D_N * X)	-0.00117	-0.00117	-0.00117
	(B * !D_N * X)	0.00125	0.00126	0.00125
	(B * !C * D_N * X)	-0.00121	-0.00121	-0.00121
	(B * !C * D_N * X)	0.00122	0.00122	0.00121
	(!B * C * D_N * X)	-0.00121	-0.00121	-0.00120
	(!B * C * D_N * X)	0.00118	0.00118	0.00118
	(!B * C * !D_N * X)	-0.00116	-0.00117	-0.00117
	(!B * C * !D_N * X)	0.00122	0.00122	0.00121
	(!B * !C * !D_N * X)	-0.00117	-0.00117	-0.00116
	(!B * !C * !D_N * X)	0.00121	0.00122	0.00120
sky130_fd_sc_hs__or4b_4	**(B * C * D_N * X)**	-0.00118	-0.00119	-0.00118
	(B * C * D_N * X)	0.00246	0.00248	0.00246
	(B * !D_N * X)	-0.00118	-0.00118	-0.00118
	(B * !D_N * X)	0.00246	0.00249	0.00246
	(B * !C * D_N * X)	-0.00118	-0.00119	-0.00118
	(B * !C * D_N * X)	0.00243	0.00248	0.00246
	(!B * C * D_N * X)	-0.00118	-0.00119	-0.00119
	(!B * C * D_N * X)	0.00236	0.00238	0.00237
	(!B * C * !D_N * X)	-0.00118	-0.00118	-0.00118
	(!B * C * !D_N * X)	0.00237	0.00239	0.00238
	(!B * !C * !D_N * X)	-0.00117	-0.00118	-0.00118
	(!B * !C * !D_N * X)	0.00234	0.00238	0.00235

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)**	0.00100	0.00100	0.00099
	(A * C * D_N * X)	-0.00079	-0.00080	-0.00079
	(A * C * !D_N * X)	0.00099	0.00100	0.00098
	(A * C * !D_N * X)	-0.00083	-0.00083	-0.00083
	(A * !C * D_N * X)	0.00098	0.00099	0.00098
	(A * !C * D_N * X)	-0.00068	-0.00069	-0.00068
	(A * !C * !D_N * X)	0.00098	0.00098	0.00098
	(A * !C * !D_N * X)	-0.00078	-0.00080	-0.00079
	(!A * C * D_N * X)	0.00103	0.00098	0.00098
	(!A * C * D_N * X)	-0.00108	-0.00116	-0.00116
	(!A * C * !D_N * X)	0.00098	0.00098	0.00097
	(!A * C * !D_N * X)	-0.00113	-0.00116	-0.00116
	(!A * !C * !D_N * X)	0.00099	0.00098	0.00097
	(!A * !C * !D_N * X)	-0.00102	-0.00113	-0.00112
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	0.00110	0.00111	0.00109
	(A * C * D_N * X)	-0.00080	-0.00081	-0.00080
	(A * C * !D_N * X)	0.00105	0.00106	0.00105
	(A * C * !D_N * X)	-0.00088	-0.00088	-0.00088
	(A * !C * D_N * X)	0.00108	0.00110	0.00109
	(A * !C * D_N * X)	-0.00069	-0.00070	-0.00069
	(A * !C * !D_N * X)	0.00105	0.00105	0.00105
	(A * !C * !D_N * X)	-0.00084	-0.00085	-0.00084
	(!A * C * D_N * X)	0.00113	0.00109	0.00108
	(!A * C * D_N * X)	-0.00111	-0.00118	-0.00118
	(!A * C * !D_N * X)	0.00105	0.00105	0.00105
	(!A * C * !D_N * X)	-0.00119	-0.00120	-0.00121
	(!A * !C * !D_N * X)	0.00106	0.00105	0.00105
	(!A * !C * !D_N * X)	-0.00107	-0.00117	-0.00117

sky130_fd_sc_hs__or4b_4	**(A * C * D_N * X)**	0.00152	0.00154	0.00153
	(A * C * D_N * X)	-0.00170	-0.00171	-0.00170
	(A * C * !D_N * X)	0.00149	0.00150	0.00149
	(A * C * !D_N * X)	-0.00182	-0.00182	-0.00182
	(A * !C * D_N * X)	0.00149	0.00151	0.00150
	(A * !C * D_N * X)	-0.00149	-0.00150	-0.00149
	(A * !C * !D_N * X)	0.00148	0.00149	0.00148
	(A * !C * !D_N * X)	-0.00171	-0.00174	-0.00172
	(!A * C * D_N * X)	0.00157	0.00150	0.00148
	(!A * C * D_N * X)	-0.00232	-0.00248	-0.00247
	(!A * C * !D_N * X)	0.00149	0.00148	0.00148
	(!A * C * !D_N * X)	-0.00240	-0.00249	-0.00248
	(!A * !C * !D_N * X)	0.00151	0.00148	0.00148
	(!A * !C * !D_N * X)	-0.00221	-0.00240	-0.00240

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)**	-0.00097	-0.00098	-0.00098
	(A * C * D_N * X)	0.00079	0.00080	0.00079
	(A * C * !D_N * X)	-0.00098	-0.00098	-0.00098
	(A * C * !D_N * X)	0.00083	0.00083	0.00083
	(A * !C * D_N * X)	-0.00096	-0.00096	-0.00096
	(A * !C * D_N * X)	0.00071	0.00071	0.00071
	(A * !C * !D_N * X)	-0.00097	-0.00098	-0.00098
	(A * !C * !D_N * X)	0.00078	0.00080	0.00079
	(!A * C * D_N * X)	-0.00097	-0.00098	-0.00097
	(!A * C * D_N * X)	0.00116	0.00117	0.00116
	(!A * C * !D_N * X)	-0.00097	-0.00097	-0.00097
	(!A * C * !D_N * X)	0.00115	0.00116	0.00116
	(!A * !C * !D_N * X)	-0.00097	-0.00097	-0.00097
	(!A * !C * !D_N * X)	0.00113	0.00113	0.00112
sky130_fd_sc_hs__or4b_2	**(A * C * D_N * X)**	-0.00108	-0.00109	-0.00108
	(A * C * D_N * X)	0.00080	0.00081	0.00080
	(A * C * !D_N * X)	-0.00105	-0.00105	-0.00105
	(A * C * !D_N * X)	0.00088	0.00088	0.00088
	(A * !C * D_N * X)	-0.00108	-0.00108	-0.00107
	(A * !C * D_N * X)	0.00071	0.00071	0.00071
	(A * !C * !D_N * X)	-0.00105	-0.00105	-0.00105
	(A * !C * !D_N * X)	0.00084	0.00085	0.00084
	(!A * C * D_N * X)	-0.00107	-0.00108	-0.00108
	(!A * C * D_N * X)	0.00117	0.00119	0.00118
	(!A * C * !D_N * X)	-0.00104	-0.00104	-0.00105
	(!A * C * !D_N * X)	0.00121	0.00120	0.00121
	(!A * !C * !D_N * X)	-0.00104	-0.00105	-0.00104
	(!A * !C * !D_N * X)	0.00117	0.00117	0.00117

sky130_fd_sc_hs__or4b_4	(A * C * D_N * X)	-0.00150	-0.00151	-0.00151
	(A * C * D_N * X)	0.00170	0.00171	0.00170
	(A * C * !D_N * X)	-0.00148	-0.00148	-0.00148
	(A * C * !D_N * X)	0.00182	0.00182	0.00182
	(A * !C * D_N * X)	-0.00148	-0.00149	-0.00149
	(A * !C * D_N * X)	0.00151	0.00152	0.00151
	(A * !C * !D_N * X)	-0.00147	-0.00148	-0.00147
	(A * !C * !D_N * X)	0.00171	0.00174	0.00172
	(!A * C * D_N * X)	-0.00149	-0.00149	-0.00148
	(!A * C * D_N * X)	0.00247	0.00248	0.00247
	(!A * C * !D_N * X)	-0.00148	-0.00148	-0.00147
	(!A * C * !D_N * X)	0.00249	0.00249	0.00248
	(!A * !C * !D_N * X)	-0.00147	-0.00147	-0.00147
	(!A * !C * !D_N * X)	0.00240	0.00240	0.00240

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)	0.00117	0.00118	0.00117
	(B * D_N * X)	-0.00067	-0.00068	-0.00068
	(B * !D_N * X)	0.00110	0.00111	0.00108
	(B * !D_N * X)	-0.00086	-0.00087	-0.00087
	(A * !B * D_N * X)	0.00117	0.00118	0.00117
	(A * !B * D_N * X)	-0.00067	-0.00067	-0.00067
	(A * !B * !D_N * X)	0.00112	0.00108	0.00107
	(A * !B * !D_N * X)	-0.00090	-0.00090	-0.00090
	(!A * !B * !D_N * X)	0.00126	0.00108	0.00107
	(!A * !B * !D_N * X)	-0.00105	-0.00125	-0.00126

sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	0.00127	0.00129	0.00127
	(B * D_N * X)	-0.00070	-0.00070	-0.00070
	(B * !D_N * X)	0.00105	0.00107	0.00104
	(B * !D_N * X)	-0.00103	-0.00104	-0.00103
	(A * !B * D_N * X)	0.00128	0.00129	0.00127
	(A * !B * D_N * X)	-0.00069	-0.00070	-0.00070
	(A * !B * !D_N * X)	0.00108	0.00105	0.00104
	(A * !B * !D_N * X)	-0.00106	-0.00106	-0.00106
	(!A * !B * !D_N * X)	0.00123	0.00105	0.00104
	(!A * !B * !D_N * X)	-0.00121	-0.00141	-0.00141
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	0.00186	0.00188	0.00186
	(B * D_N * X)	-0.00143	-0.00145	-0.00144
	(B * !D_N * X)	0.00152	0.00152	0.00151
	(B * !D_N * X)	-0.00204	-0.00205	-0.00204
	(A * !B * D_N * X)	0.00187	0.00189	0.00186
	(A * !B * D_N * X)	-0.00143	-0.00144	-0.00143
	(A * !B * !D_N * X)	0.00157	0.00152	0.00150
	(A * !B * !D_N * X)	-0.00207	-0.00207	-0.00206
	(!A * !B * !D_N * X)	0.00186	0.00152	0.00150
	(!A * !B * !D_N * X)	-0.00239	-0.00277	-0.00278

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)**	-0.00115	-0.00116	-0.00115
	(B * D_N * X)	0.00069	0.00070	0.00070
	(B * !D_N * X)	-0.00106	-0.00107	-0.00107
	(B * !D_N * X)	0.00086	0.00087	0.00087
	(A * !B * D_N * X)	-0.00112	-0.00112	-0.00115
	(A * !B * D_N * X)	0.00070	0.00070	0.00069
	(A * !B * !D_N * X)	-0.00107	-0.00107	-0.00107
	(A * !B * !D_N * X)	0.00090	0.00090	0.00090
	(!A * !B * !D_N * X)	-0.00106	-0.00107	-0.00106
	(!A * !B * !D_N * X)	0.00125	0.00127	0.00126
sky130_fd_sc_hs__or4b_2	**(B * D_N * X)**	-0.00126	-0.00127	-0.00126
	(B * D_N * X)	0.00072	0.00072	0.00072
	(B * !D_N * X)	-0.00103	-0.00104	-0.00104
	(B * !D_N * X)	0.00103	0.00104	0.00103
	(A * !B * D_N * X)	-0.00123	-0.00123	-0.00125
	(A * !B * D_N * X)	0.00072	0.00072	0.00071
	(A * !B * !D_N * X)	-0.00104	-0.00104	-0.00104
	(A * !B * !D_N * X)	0.00106	0.00106	0.00106
	(!A * !B * !D_N * X)	-0.00103	-0.00103	-0.00103
	(!A * !B * !D_N * X)	0.00141	0.00141	0.00142
sky130_fd_sc_hs__or4b_4	**(B * D_N * X)**	-0.00183	-0.00184	-0.00184
	(B * D_N * X)	0.00147	0.00148	0.00148
	(B * !D_N * X)	-0.00150	-0.00151	-0.00150
	(B * !D_N * X)	0.00204	0.00205	0.00204
	(A * !B * D_N * X)	-0.00174	-0.00175	-0.00182
	(A * !B * D_N * X)	0.00150	0.00150	0.00147
	(A * !B * !D_N * X)	-0.00150	-0.00151	-0.00150
	(A * !B * !D_N * X)	0.00207	0.00207	0.00206
	(!A * !B * !D_N * X)	-0.00149	-0.00148	-0.00148
	(!A * !B * !D_N * X)	0.00277	0.00277	0.00279

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00339	0.00396	0.02658
	(C * X)	0.00055	0.00112	0.02373
	(B * !C * X)	0.00344	0.00401	0.02662
	(B * !C * X)	0.00057	0.00114	0.02375
	(A * !B * !C * X)	0.00351	0.00408	0.02667
	(A * !B * !C * X)	0.00062	0.00118	0.02378
sky130_fd_sc_hs__or4b_2	(C * X)	0.00382	0.00435	0.02638
	(C * X)	0.00090	0.00142	0.02347
	(B * !C * X)	0.00387	0.00440	0.02642
	(B * !C * X)	0.00093	0.00144	0.02347
	(A * !B * !C * X)	0.00394	0.00446	0.02647
	(A * !B * !C * X)	0.00096	0.00148	0.02350
sky130_fd_sc_hs__or4b_4	(C * X)	0.00447	0.00496	0.02722
	(C * X)	0.00130	0.00178	0.02405
	(B * !C * X)	0.00463	0.00512	0.02733
	(B * !C * X)	0.00138	0.00185	0.02410
	(A * !B * !C * X)	0.00477	0.00525	0.02744
	(A * !B * !C * X)	0.00145	0.00192	0.02415

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4b_1	(C * X)	0.00075	0.00199	0.02480
	(C * X)	0.00358	0.00483	0.02764
	(B * !C * X)	0.00075	0.00200	0.02480
	(B * !C * X)	0.00358	0.00485	0.02764
	(A * !B * !C * X)	0.00075	0.00200	0.02480
	(A * !B * !C * X)	0.00358	0.00485	0.02764
sky130_fd_sc_hs__or4b_2	(C * X)	0.00090	0.00207	0.02443
	(C * X)	0.00381	0.00499	0.02734
	(B * !C * X)	0.00090	0.00207	0.02443
	(B * !C * X)	0.00382	0.00499	0.02735
	(A * !B * !C * X)	0.00090	0.00207	0.02443
	(A * !B * !C * X)	0.00382	0.00500	0.02735
sky130_fd_sc_hs__or4b_4	(C * X)	0.00138	0.00228	0.02449
	(C * X)	0.00454	0.00546	0.02764
	(B * !C * X)	0.00139	0.00228	0.02449
	(B * !C * X)	0.00455	0.00547	0.02765
	(A * !B * !C * X)	0.00139	0.00228	0.02449
	(A * !B * !C * X)	0.00455	0.00547	0.02765

SKY130_FD_SC_HS__OR4x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00240	0.00227	0.00233	0.00226	1.11494
sky130_fd_sc_hs__or4_2	0.00249	0.00245	0.00256	0.00254	2.25599
sky130_fd_sc_hs__or4_4	0.00354	0.00414	0.00420	0.00394	4.29918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__or4_1	0.00000	0.01043	0.05847
sky130_fd_sc_hs__or4_2	0.00000	0.01325	0.07000
sky130_fd_sc_hs__or4_4	0.00000	0.02601	0.13232

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)	0.05793	0.55003	5.68675
	B->X (RR)	0.05846	0.54437	5.64358
	C->X (RR)	0.05655	0.53029	5.59185
	D->X (RR)	0.05226	0.51378	5.62399
sky130_fd_sc_hs__or4_2	A->X (RR)	0.05504	0.44192	5.59997
	B->X (RR)	0.05518	0.43546	5.56083
	C->X (RR)	0.05385	0.42582	5.52470
	D->X (RR)	0.05086	0.41416	5.56922
sky130_fd_sc_hs__or4_4	A->X (RR)	0.07159	0.44124	6.06952
	B->X (RR)	0.07455	0.43774	6.04057
	C->X (RR)	0.06875	0.41508	5.96414
	D->X (RR)	0.06411	0.39850	6.00436

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__or4_1	A->X (FF)	0.24113	0.71075	4.86893
	B->X (FF)	0.22510	0.70245	4.99151
	C->X (FF)	0.19778	0.68284	5.01460
	D->X (FF)	0.15406	0.63098	4.83455
sky130_fd_sc_hs__or4_2	A->X (FF)	0.29238	0.75791	5.17331
	B->X (FF)	0.27612	0.75260	5.32098
	C->X (FF)	0.25279	0.74206	5.36989
	D->X (FF)	0.21168	0.68990	5.19952
sky130_fd_sc_hs__or4_4	A->X (FF)	0.29335	0.73227	5.03751
	B->X (FF)	0.28371	0.72458	5.08396
	C->X (FF)	0.24410	0.69448	5.13982
	D->X (FF)	0.18973	0.62913	4.90931

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00947	0.00924	0.01426
	A	0.00423	0.00400	0.00912
	B	0.00829	0.00845	0.01399
	B	0.00373	0.00389	0.00953
	C	0.00706	0.00729	0.01295
	C	0.00304	0.00326	0.00907
	D	0.00588	0.00614	0.01579
	D	0.00237	0.00264	0.01241
sky130_fd_sc_hs__or4_2	A	0.01148	0.01148	0.01857
	A	0.00600	0.00600	0.01340
	B	0.01023	0.01066	0.01804
	B	0.00540	0.00583	0.01355
	C	0.00914	0.00960	0.01725
	C	0.00483	0.00532	0.01329
	D	0.00797	0.00853	0.02034
	D	0.00417	0.00475	0.01687
sky130_fd_sc_hs__or4_4	A	0.02155	0.02211	0.03356
	A	0.01257	0.01320	0.02567
	B	0.01956	0.01966	0.02987
	B	0.01129	0.01147	0.02270
	C	0.01659	0.01732	0.02941
	C	0.00957	0.01048	0.02353
	D	0.01387	0.01486	0.03605
	D	0.00805	0.00907	0.03133

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	A	0.00280	0.00257	0.00697
	A	0.00813	0.00794	0.01185
	B	0.00283	0.00274	0.00777
	B	0.00744	0.00735	0.01236
	C	0.00286	0.00279	0.00847
	C	0.00690	0.00686	0.01250
	D	0.00274	0.00330	0.01534
	D	0.00625	0.00681	0.01843
sky130_fd_sc_hs__or4_2	A	0.00514	0.00466	0.00940
	A	0.01071	0.01042	0.01477
	B	0.00516	0.00480	0.01214
	B	0.01005	0.00984	0.01533
	C	0.00513	0.00495	0.01108
	C	0.00945	0.00927	0.01532
	D	0.00507	0.00554	0.01949
	D	0.00887	0.00934	0.02169
sky130_fd_sc_hs__or4_4	A	0.01060	0.01033	0.01964
	A	0.01981	0.01957	0.02661
	B	0.01040	0.01012	0.01751
	B	0.01881	0.01852	0.02544
	C	0.01050	0.01018	0.02166
	C	0.01755	0.01722	0.02656
	D	0.01009	0.01067	0.03221
	D	0.01590	0.01648	0.03685

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__or4_1	**(B * D * X)**	0.00110	0.00111	0.00110
	(B * D * X)	-0.00118	-0.00121	-0.00121
	(B * C * !D * X)	0.00110	0.00111	0.00110
	(B * C * !D * X)	-0.00118	-0.00121	-0.00121
	(B * !C * !D * X)	0.00110	0.00111	0.00110
	(B * !C * !D * X)	-0.00117	-0.00121	-0.00121
	(!B * C * D * X)	0.00110	0.00111	0.00110
	(!B * C * D * X)	-0.00110	-0.00118	-0.00117
	(!B * C * !D * X)	0.00110	0.00111	0.00110
	(!B * C * !D * X)	-0.00110	-0.00118	-0.00117
	(!B * !C * D * X)	0.00110	0.00111	0.00110
	(!B * !C * D * X)	-0.00108	-0.00117	-0.00116
sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00119	0.00120	0.00119
	(B * D * X)	-0.00120	-0.00123	-0.00123
	(B * C * !D * X)	0.00119	0.00120	0.00119
	(B * C * !D * X)	-0.00120	-0.00123	-0.00123
	(B * !C * !D * X)	0.00119	0.00120	0.00119
	(B * !C * !D * X)	-0.00119	-0.00123	-0.00123
	(!B * C * D * X)	0.00119	0.00120	0.00119
	(!B * C * D * X)	-0.00112	-0.00120	-0.00119
	(!B * C * !D * X)	0.00119	0.00120	0.00119
	(!B * C * !D * X)	-0.00112	-0.00120	-0.00119
	(!B * !C * D * X)	0.00119	0.00120	0.00119
	(!B * !C * D * X)	-0.00110	-0.00119	-0.00118

sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00119	0.00120	0.00119
	(B * D * X)	-0.00235	-0.00244	-0.00243
	(B * C * !D * X)	0.00119	0.00120	0.00119
	(B * C * !D * X)	-0.00235	-0.00244	-0.00243
	(B * !C * !D * X)	0.00120	0.00120	0.00119
	(B * !C * !D * X)	-0.00231	-0.00243	-0.00243
	(!B * C * D * X)	0.00120	0.00120	0.00119
	(!B * C * D * X)	-0.00218	-0.00236	-0.00234
	(!B * C * !D * X)	0.00120	0.00120	0.00119
	(!B * C * !D * X)	-0.00218	-0.00236	-0.00234
	(!B * !C * D * X)	0.00120	0.00120	0.00119
	(!B * !C * D * X)	-0.00214	-0.00234	-0.00231

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00110	-0.00110	-0.00110
	(B * D * X)	0.00121	0.00121	0.00121
	(B * C * !D * X)	-0.00110	-0.00110	-0.00110
	(B * C * !D * X)	0.00121	0.00121	0.00121
	(B * !C * !D * X)	-0.00110	-0.00110	-0.00110
	(B * !C * !D * X)	0.00121	0.00121	0.00121
	(!B * C * D * X)	-0.00110	-0.00110	-0.00110
	(!B * C * D * X)	0.00118	0.00118	0.00117
	(!B * C * !D * X)	-0.00110	-0.00110	-0.00110
	(!B * C * !D * X)	0.00117	0.00118	0.00117
	(!B * !C * D * X)	-0.00110	-0.00111	-0.00110
	(!B * !C * D * X)	0.00116	0.00117	0.00116

sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00119	-0.00119	-0.00119
	(B * D * X)	0.00123	0.00123	0.00123
	(B * C * !D * X)	-0.00119	-0.00119	-0.00119
	(B * C * !D * X)	0.00123	0.00123	0.00123
	(B * !C * !D * X)	-0.00119	-0.00119	-0.00119
	(B * !C * !D * X)	0.00123	0.00123	0.00123
	(!B * C * D * X)	-0.00119	-0.00119	-0.00119
	(!B * C * D * X)	0.00119	0.00120	0.00119
	(!B * C * !D * X)	-0.00119	-0.00119	-0.00119
	(!B * C * !D * X)	0.00119	0.00120	0.00119
	(!B * !C * D * X)	-0.00119	-0.00120	-0.00119
	(!B * !C * D * X)	0.00118	0.00119	0.00118
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00118	-0.00119	-0.00119
	(B * D * X)	0.00241	0.00245	0.00243
	(B * C * !D * X)	-0.00118	-0.00119	-0.00119
	(B * C * !D * X)	0.00241	0.00245	0.00243
	(B * !C * !D * X)	-0.00118	-0.00119	-0.00119
	(B * !C * !D * X)	0.00241	0.00245	0.00243
	(!B * C * D * X)	-0.00119	-0.00119	-0.00119
	(!B * C * D * X)	0.00234	0.00236	0.00234
	(!B * C * !D * X)	-0.00119	-0.00119	-0.00119
	(!B * C * !D * X)	0.00234	0.00236	0.00234
	(!B * !C * D * X)	-0.00118	-0.00119	-0.00118
	(!B * !C * D * X)	0.00230	0.00234	0.00231

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)**	0.00098	0.00099	0.00098
	(A * C * D * X)	-0.00087	-0.00088	-0.00087
	(A * C * !D * X)	0.00098	0.00099	0.00098
	(A * C * !D * X)	-0.00083	-0.00084	-0.00083
	(A * !C * D * X)	0.00098	0.00098	0.00098
	(A * !C * D * X)	-0.00081	-0.00082	-0.00081
	(A * !C * !D * X)	0.00097	0.00098	0.00098
	(A * !C * !D * X)	-0.00071	-0.00072	-0.00071
	(!A * C * D * X)	0.00098	0.00098	0.00097
	(!A * C * D * X)	-0.00116	-0.00120	-0.00119
	(!A * C * !D * X)	0.00100	0.00098	0.00097
	(!A * C * !D * X)	-0.00112	-0.00120	-0.00119
	(!A * !C * D * X)	0.00099	0.00098	0.00097
	(!A * !C * D * X)	-0.00104	-0.00115	-0.00115
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	0.00107	0.00107	0.00106
	(A * C * D * X)	-0.00093	-0.00092	-0.00092
	(A * C * !D * X)	0.00106	0.00107	0.00106
	(A * C * !D * X)	-0.00089	-0.00090	-0.00089
	(A * !C * D * X)	0.00106	0.00106	0.00106
	(A * !C * D * X)	-0.00087	-0.00088	-0.00087
	(A * !C * !D * X)	0.00106	0.00107	0.00106
	(A * !C * !D * X)	-0.00078	-0.00078	-0.00078
	(!A * C * D * X)	0.00106	0.00107	0.00106
	(!A * C * D * X)	-0.00122	-0.00126	-0.00126
	(!A * C * !D * X)	0.00109	0.00107	0.00106
	(!A * C * !D * X)	-0.00117	-0.00126	-0.00126
	(!A * !C * D * X)	0.00108	0.00107	0.00106
	(!A * !C * D * X)	-0.00110	-0.00122	-0.00121

sky130_fd_sc_hs__or4_4	**(A * C * D * X)**	0.00155	0.00156	0.00154
	(A * C * D * X)	-0.00179	-0.00180	-0.00180
	(A * C * !D * X)	0.00153	0.00156	0.00154
	(A * C * !D * X)	-0.00170	-0.00172	-0.00171
	(A * !C * D * X)	0.00153	0.00154	0.00153
	(A * !C * D * X)	-0.00168	-0.00171	-0.00169
	(A * !C * !D * X)	0.00152	0.00154	0.00153
	(A * !C * !D * X)	-0.00149	-0.00150	-0.00149
	(!A * C * D * X)	0.00154	0.00153	0.00152
	(!A * C * D * X)	-0.00236	-0.00247	-0.00246
	(!A * C * !D * X)	0.00156	0.00153	0.00152
	(!A * C * !D * X)	-0.00233	-0.00247	-0.00246
	(!A * !C * D * X)	0.00156	0.00153	0.00152
	(!A * !C * D * X)	-0.00216	-0.00237	-0.00237

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)**	-0.00097	-0.00098	-0.00098
	(A * C * D * X)	0.00087	0.00088	0.00087
	(A * C * !D * X)	-0.00097	-0.00098	-0.00098
	(A * C * !D * X)	0.00083	0.00084	0.00083
	(A * !C * D * X)	-0.00097	-0.00098	-0.00097
	(A * !C * D * X)	0.00081	0.00082	0.00081
	(A * !C * !D * X)	-0.00096	-0.00096	-0.00096
	(A * !C * !D * X)	0.00073	0.00074	0.00073
	(!A * C * D * X)	-0.00097	-0.00098	-0.00097
	(!A * C * D * X)	0.00119	0.00120	0.00119
	(!A * C * !D * X)	-0.00097	-0.00098	-0.00097
	(!A * C * !D * X)	0.00119	0.00120	0.00119
	(!A * !C * D * X)	-0.00097	-0.00097	-0.00097
	(!A * !C * D * X)	0.00115	0.00115	0.00115
sky130_fd_sc_hs__or4_2	**(A * C * D * X)**	-0.00106	-0.00106	-0.00106
	(A * C * D * X)	0.00093	0.00092	0.00092
	(A * C * !D * X)	-0.00106	-0.00106	-0.00106
	(A * C * !D * X)	0.00089	0.00090	0.00089
	(A * !C * D * X)	-0.00106	-0.00106	-0.00106
	(A * !C * D * X)	0.00087	0.00088	0.00087
	(A * !C * !D * X)	-0.00104	-0.00105	-0.00104
	(A * !C * !D * X)	0.00080	0.00080	0.00080
	(!A * C * D * X)	-0.00106	-0.00106	-0.00106
	(!A * C * D * X)	0.00126	0.00127	0.00126
	(!A * C * !D * X)	-0.00106	-0.00106	-0.00106
	(!A * C * !D * X)	0.00126	0.00127	0.00126
	(!A * !C * D * X)	-0.00105	-0.00106	-0.00106
	(!A * !C * D * X)	0.00121	0.00122	0.00121

sky130_fd_sc_hs__or4_4	(A * C * D * X)	-0.00153	-0.00154	-0.00153
	(A * C * D * X)	0.00179	0.00180	0.00180
	(A * C * !D * X)	-0.00153	-0.00153	-0.00153
	(A * C * !D * X)	0.00170	0.00172	0.00171
	(A * !C * D * X)	-0.00152	-0.00154	-0.00152
	(A * !C * D * X)	0.00168	0.00171	0.00169
	(A * !C * !D * X)	-0.00152	-0.00153	-0.00152
	(A * !C * !D * X)	0.00151	0.00152	0.00151
	(!A * C * D * X)	-0.00153	-0.00153	-0.00152
	(!A * C * D * X)	0.00247	0.00247	0.00246
	(!A * C * !D * X)	-0.00153	-0.00153	-0.00152
	(!A * C * !D * X)	0.00247	0.00247	0.00246
	(!A * !C * D * X)	-0.00152	-0.00152	-0.00151
	(!A * !C * D * X)	0.00237	0.00237	0.00237

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(B * D * X)	0.00102	0.00103	0.00100
	(B * D * X)	-0.00080	-0.00081	-0.00080
	(B * !D * X)	0.00099	0.00101	0.00099
	(B * !D * X)	-0.00070	-0.00071	-0.00070
	(A * !B * D * X)	0.00105	0.00100	0.00100
	(A * !B * D * X)	-0.00083	-0.00083	-0.00083
	(A * !B * !D * X)	0.00100	0.00101	0.00100
	(A * !B * !D * X)	-0.00069	-0.00070	-0.00070
	(!A * !B * D * X)	0.00119	0.00101	0.00099
	(!A * !B * D * X)	-0.00097	-0.00118	-0.00119

sky130_fd_sc_hs__or4_2	**(B * D * X)**	0.00117	0.00117	0.00114
	(B * D * X)	-0.00080	-0.00081	-0.00080
	(B * !D * X)	0.00114	0.00115	0.00113
	(B * !D * X)	-0.00071	-0.00072	-0.00072
	(A * !B * D * X)	0.00119	0.00114	0.00113
	(A * !B * D * X)	-0.00084	-0.00084	-0.00084
	(A * !B * !D * X)	0.00114	0.00116	0.00114
	(A * !B * !D * X)	-0.00070	-0.00071	-0.00071
	(!A * !B * D * X)	0.00134	0.00115	0.00113
	(!A * !B * D * X)	-0.00098	-0.00120	-0.00121
sky130_fd_sc_hs__or4_4	**(B * D * X)**	0.00159	0.00161	0.00158
	(B * D * X)	-0.00169	-0.00170	-0.00169
	(B * !D * X)	0.00157	0.00158	0.00156
	(B * !D * X)	-0.00147	-0.00148	-0.00147
	(A * !B * D * X)	0.00163	0.00158	0.00156
	(A * !B * D * X)	-0.00173	-0.00173	-0.00172
	(A * !B * !D * X)	0.00157	0.00159	0.00156
	(A * !B * !D * X)	-0.00146	-0.00147	-0.00146
	(!A * !B * D * X)	0.00192	0.00157	0.00155
	(!A * !B * D * X)	-0.00206	-0.00245	-0.00247

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

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

sky130_fd_sc_hs__or4_1	**(B * D * X)**	-0.00099	-0.00100	-0.00099
	(B * D * X)	0.00080	0.00081	0.00080
	(B * !D * X)	-0.00099	-0.00099	-0.00098
	(B * !D * X)	0.00072	0.00072	0.00072
	(A * !B * D * X)	-0.00099	-0.00099	-0.00099
	(A * !B * D * X)	0.00083	0.00083	0.00083
	(A * !B * !D * X)	-0.00096	-0.00096	-0.00098
	(A * !B * !D * X)	0.00073	0.00073	0.00071
	(!A * !B * D * X)	-0.00099	-0.00099	-0.00098
	(!A * !B * D * X)	0.00118	0.00119	0.00119
sky130_fd_sc_hs__or4_2	**(B * D * X)**	-0.00113	-0.00113	-0.00113
	(B * D * X)	0.00080	0.00081	0.00080
	(B * !D * X)	-0.00113	-0.00113	-0.00112
	(B * !D * X)	0.00073	0.00073	0.00073
	(A * !B * D * X)	-0.00113	-0.00113	-0.00113
	(A * !B * D * X)	0.00084	0.00084	0.00084
	(A * !B * !D * X)	-0.00111	-0.00111	-0.00112
	(A * !B * !D * X)	0.00073	0.00074	0.00073
	(!A * !B * D * X)	-0.00112	-0.00113	-0.00112
	(!A * !B * D * X)	0.00120	0.00121	0.00121
sky130_fd_sc_hs__or4_4	**(B * D * X)**	-0.00156	-0.00157	-0.00157
	(B * D * X)	0.00169	0.00170	0.00169
	(B * !D * X)	-0.00154	-0.00155	-0.00153
	(B * !D * X)	0.00151	0.00151	0.00151
	(A * !B * D * X)	-0.00156	-0.00156	-0.00156
	(A * !B * D * X)	0.00173	0.00173	0.00172
	(A * !B * !D * X)	-0.00147	-0.00148	-0.00152
	(A * !B * !D * X)	0.00153	0.00153	0.00149
	(!A * !B * D * X)	-0.00154	-0.00153	-0.00153
	(!A * !B * D * X)	0.00245	0.00245	0.00247

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	0.00110	0.00112	0.00111
	(C * X)	-0.00066	-0.00067	-0.00066
	(B * !C * X)	0.00110	0.00112	0.00111
	(B * !C * X)	-0.00066	-0.00067	-0.00066
	(A * !B * !C * X)	0.00110	0.00112	0.00111
	(A * !B * !C * X)	-0.00066	-0.00067	-0.00066
sky130_fd_sc_hs__or4_2	(C * X)	0.00129	0.00131	0.00130
	(C * X)	-0.00066	-0.00066	-0.00066
	(B * !C * X)	0.00129	0.00131	0.00130
	(B * !C * X)	-0.00066	-0.00066	-0.00065
	(A * !B * !C * X)	0.00129	0.00131	0.00130
	(A * !B * !C * X)	-0.00066	-0.00066	-0.00065
sky130_fd_sc_hs__or4_4	(C * X)	0.00177	0.00178	0.00177
	(C * X)	-0.00128	-0.00129	-0.00129
	(B * !C * X)	0.00177	0.00178	0.00177
	(B * !C * X)	-0.00128	-0.00128	-0.00128
	(A * !B * !C * X)	0.00177	0.00178	0.00177
	(A * !B * !C * X)	-0.00128	-0.00128	-0.00128

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__or4_1	(C * X)	-0.00107	-0.00108	-0.00110
	(C * X)	0.00070	0.00070	0.00067
	(B * !C * X)	-0.00102	-0.00102	-0.00109
	(B * !C * X)	0.00073	0.00073	0.00068
	(A * !B * !C * X)	-0.00095	-0.00095	-0.00107
	(A * !B * !C * X)	0.00077	0.00078	0.00069
sky130_fd_sc_hs__or4_2	(C * X)	-0.00126	-0.00127	-0.00129
	(C * X)	0.00069	0.00069	0.00067
	(B * !C * X)	-0.00121	-0.00122	-0.00128
	(B * !C * X)	0.00072	0.00072	0.00067
	(A * !B * !C * X)	-0.00114	-0.00115	-0.00126
	(A * !B * !C * X)	0.00077	0.00077	0.00068
sky130_fd_sc_hs__or4_4	(C * X)	-0.00168	-0.00169	-0.00176
	(C * X)	0.00137	0.00137	0.00131
	(B * !C * X)	-0.00154	-0.00154	-0.00173
	(B * !C * X)	0.00145	0.00145	0.00132
	(A * !B * !C * X)	-0.00140	-0.00141	-0.00168
	(A * !B * !C * X)	0.00154	0.00154	0.00135

SKY130_FD_SC_HS__SDFBBNx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00189	0.00169	0.00401	0.00175	0.00525	0.00278	1.14767	1.13743
sky130_fd_sc_hs__sdfbbn_2	0.00191	0.00171	0.00405	0.00162	0.00518	0.00275	2.31148	2.30779

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfbbn_1	0.00000	0.69226	1.28072
sky130_fd_sc_hs__sdfbbn_2	0.00000	0.62313	1.25760

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)	0.33186	1.01745	8.78903
	SET_B->Q (FR)	0.16217	0.87013	8.72556
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FR)	0.37623	0.95480	8.85238
	SET_B->Q (FR)	0.19164	0.80937	8.82271

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)	0.33813	0.75679	4.55080
	RESET_B->Q (FF)	0.21181	0.65602	4.42146
	SET_B->Q (RF)	0.11792	0.34611	1.62826
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q (FF)	0.36007	0.74768	4.61060
	RESET_B->Q (FF)	0.23664	0.65269	4.50973
	SET_B->Q (RF)	0.14244	0.35588	1.80157

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)	0.31060	1.00252	8.73622
	RESET_B->Q_N (FR)	0.18514	0.90693	8.62299
	SET_B->Q_N (RR)	0.09098	0.59982	6.04130
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FR)	0.30721	0.90205	8.70890
	RESET_B->Q_N (FR)	0.18585	0.80947	8.61881
	SET_B->Q_N (RR)	0.09140	0.51502	6.08356

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)	0.27965	0.76719	4.66418
	SET_B->Q_N (FF)	0.11364	0.62170	4.88866
sky130_fd_sc_hs__sdfbbn_2	CLK_N->Q_N (FF)	0.29681	0.76422	4.65833
	SET_B->Q_N (FF)	0.11988	0.60790	4.92951

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)	-0.01404	0.06191	2.46794
	setup	CLK_N (F)	0.13196	0.03696	-2.45407
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.01501	0.05881	2.44838
	setup	CLK_N (F)	0.13229	0.03711	-2.43659

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)	-0.18675	-0.20599	-0.44472
	setup	CLK_N (F)	0.22285	0.23899	0.45536
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20747	-0.22509	-0.49428
	setup	CLK_N (F)	0.24146	0.26189	0.51166

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)	-0.01404	0.06191	2.46794
	setup	CLK_N (F)	0.13196	0.03696	-2.45407
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.01501	0.05881	2.44838
	setup	CLK_N (F)	0.13229	0.03711	-2.43659

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)	-0.18675	-0.20599	-0.44472
	setup	CLK_N (F)	0.22285	0.23899	0.45536
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.20747	-0.22509	-0.49428
	setup	CLK_N (F)	0.24146	0.26189	0.51166

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)	-0.02534	0.04855	2.35674
	setup	CLK_N (F)	0.14624	0.05203	-2.33029
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02886	0.04437	2.34246
	setup	CLK_N (F)	0.15002	0.05392	-2.31167

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)	-0.23126	-0.26192	-0.81207
	setup	CLK_N (F)	0.28473	0.31181	0.87919
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25355	-0.28284	-0.86911
	setup	CLK_N (F)	0.30700	0.33669	0.93471

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)	-0.02534	0.04855	2.35674
	hold	CLK_N (F)	-0.02756	0.04642	2.34124
	setup	CLK_N (F)	0.14406	0.04923	-2.34635
	setup	CLK_N (F)	0.14624	0.05203	-2.33029
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02921	0.04437	2.34246
	hold	CLK_N (F)	-0.02886	0.04170	2.32686
	setup	CLK_N (F)	0.14760	0.05143	-2.32882
	setup	CLK_N (F)	0.15002	0.05392	-2.31167

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)	-0.24684	-0.27834	-0.86916
	hold	CLK_N (F)	-0.23126	-0.26192	-0.81207
	setup	CLK_N (F)	0.28473	0.31181	0.87919
	setup	CLK_N (F)	0.27533	0.29864	0.82669
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.26396	-0.29818	-0.92208
	hold	CLK_N (F)	-0.25355	-0.28284	-0.86911
	setup	CLK_N (F)	0.30700	0.33669	0.93471
	setup	CLK_N (F)	0.29610	0.32263	0.88363

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)	-0.02068	0.05055	2.42193
	setup	CLK_N (F)	0.27830	0.17017	-2.29152
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.02215	0.04620	2.40714
	setup	CLK_N (F)	0.29460	0.19300	-2.26668

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)	-0.07309	-0.06589	0.07597
	setup	CLK_N (F)	0.22640	0.25118	0.70600
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07562	-0.06695	0.06828
	setup	CLK_N (F)	0.24539	0.27439	0.76557

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)	-0.23863	-0.13580	2.30703
	hold	CLK_N (F)	-0.02068	0.05055	2.42193
	setup	CLK_N (F)	0.27830	0.17017	-2.29152
	setup	CLK_N (F)	0.13776	0.04672	-2.40557
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.25765	-0.15623	2.28029
	hold	CLK_N (F)	-0.02215	0.04620	2.40714
	setup	CLK_N (F)	0.29460	0.19300	-2.26668
	setup	CLK_N (F)	0.14099	0.04931	-2.39251

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)	-0.07309	-0.06589	0.07597
	hold	CLK_N (F)	-0.19068	-0.21850	-0.69256
	setup	CLK_N (F)	0.18757	0.16128	-0.06514
	setup	CLK_N (F)	0.22640	0.25118	0.70600
sky130_fd_sc_hs__sdfbbn_2	hold	CLK_N (F)	-0.07562	-0.06695	0.06828
	hold	CLK_N (F)	-0.20942	-0.23603	-0.75143
	setup	CLK_N (F)	0.19338	0.16421	-0.05616
	setup	CLK_N (F)	0.24539	0.27439	0.76557

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)	0.10171	-0.00929	-2.62373
	removal	CLK_N (F)	0.02208	0.11239	2.65806
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.10121	-0.00736	-2.62437
	removal	CLK_N (F)	0.02464	0.11591	2.66727

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)	0.10063	-0.00931	-2.62470
	recovery	CLK_N (F)	0.10171	-0.00929	-2.62373
	recovery	CLK_N (F)	0.10069	-0.00934	-2.62468
	removal	CLK_N (F)	0.02208	0.11239	2.65806
	removal	CLK_N (F)	0.02208	0.11239	2.65704
	removal	CLK_N (F)	0.02208	0.11239	2.65704
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	0.09953	-0.01089	-2.62437
	recovery	CLK_N (F)	0.10116	-0.00736	-2.62533
	recovery	CLK_N (F)	0.10121	-0.00744	-2.62523
	removal	CLK_N (F)	0.02094	0.11591	2.66727
	removal	CLK_N (F)	0.02464	0.11541	2.66725
	removal	CLK_N (F)	0.02464	0.11541	2.66725

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 ()	0.18299	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.15915	0.63599	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	RESET_B ()	0.18538	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.16392	0.63599	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)	-0.02780	-0.15001	-2.46986
	removal	CLK_N (F)	0.04063	0.16468	2.92175
	hold	RESET_B (R)	-0.04076	-0.08415	-0.39681
	setup	RESET_B (R)	0.09217	0.12807	0.65463
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02789	-0.14431	-2.25408
	removal	CLK_N (F)	0.03743	0.16046	2.90356
	hold	RESET_B (R)	-0.05402	-0.10616	-0.48718
	setup	RESET_B (R)	0.09325	0.14159	0.79874

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)	-0.02780	-0.15001	-2.46987
	recovery	CLK_N (F)	-0.02781	-0.15001	-2.46986
	recovery	CLK_N (F)	-0.02791	-0.15001	-2.47152
	removal	CLK_N (F)	0.04063	0.16468	2.92175
	removal	CLK_N (F)	0.04063	0.16468	2.92175
	removal	CLK_N (F)	0.04063	0.16468	2.92175
	hold	RESET_B (R)	-0.04076	-0.08471	-0.39681
	hold	RESET_B (R)	-0.04430	-0.08415	-0.39688
	setup	RESET_B (R)	0.09217	0.12807	0.65095
	setup	RESET_B (R)	0.06602	0.10963	0.65463
sky130_fd_sc_hs__sdfbbn_2	recovery	CLK_N (F)	-0.02789	-0.14440	-2.25505
	recovery	CLK_N (F)	-0.02790	-0.14437	-2.25735
	recovery	CLK_N (F)	-0.02798	-0.14431	-2.25408
	removal	CLK_N (F)	0.03743	0.16046	2.90356
	removal	CLK_N (F)	0.03743	0.16046	2.90250
	removal	CLK_N (F)	0.03743	0.16046	2.90250
	hold	RESET_B (R)	-0.05800	-0.10914	-0.50251
	hold	RESET_B (R)	-0.05402	-0.10616	-0.48718
	setup	RESET_B (R)	0.09325	0.14159	0.78530
	setup	RESET_B (R)	0.06936	0.13327	0.79874

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 ()	0.13531	0.63599	16.50020
	min_pulse_width	SET_B ()	0.11623	0.63599	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	SET_B ()	0.15200	0.63599	16.50020
	min_pulse_width	SET_B ()	0.13292	0.63599	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 ()	0.16869	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.12339	0.63599	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.17345	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.13054	0.63599	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 ()	0.15200	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.18299	0.63599	16.50020
sky130_fd_sc_hs__sdfbbn_2	min_pulse_width	CLK_N ()	0.16869	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.18538	0.63599	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	0.01053	0.01104	0.02052
	CLK_N	0.01222	0.01272	0.02182
	SET_B	0.01101	0.01189	0.03183
	SET_B	0.01420	0.01510	0.03468
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01256	0.01316	0.02237
	CLK_N	0.01417	0.01477	0.02386
	SET_B	0.01303	0.01401	0.03451
	SET_B	0.01614	0.01714	0.03676

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01113	0.01170	0.02044
	CLK_N	0.01258	0.01316	0.02173
	RESET_B	0.01340	0.01376	0.01961
	RESET_B	0.01433	0.01470	0.02036
	SET_B	0.01413	0.01409	0.03048
	SET_B	0.01092	0.01086	0.02728
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01304	0.01370	0.02289
	CLK_N	0.01453	0.01533	0.02396
	RESET_B	0.01563	0.01622	0.02243
	RESET_B	0.01660	0.01718	0.02303
	SET_B	0.01629	0.01644	0.03233
	SET_B	0.01316	0.01331	0.02922

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01114	0.01171	0.02062
	CLK_N	0.01259	0.01318	0.02195
	RESET_B	0.01341	0.01378	0.01980
	RESET_B	0.01435	0.01471	0.02061
	SET_B	0.01414	0.01410	0.03070
	SET_B	0.01093	0.01087	0.02756
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01306	0.01380	0.02326
	CLK_N	0.01453	0.01535	0.02426
	RESET_B	0.01564	0.01623	0.02255
	RESET_B	0.01661	0.01720	0.02327
	SET_B	0.01630	0.01647	0.03263
	SET_B	0.01317	0.01332	0.02966

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbn_1	CLK_N	0.01051	0.01099	0.02017
	CLK_N	0.01220	0.01271	0.02160
	SET_B	0.01097	0.01185	0.03121
	SET_B	0.01416	0.01504	0.03429
sky130_fd_sc_hs__sdfbbn_2	CLK_N	0.01254	0.01315	0.02245
	CLK_N	0.01415	0.01476	0.02363
	SET_B	0.01300	0.01397	0.03315
	SET_B	0.01610	0.01707	0.03624

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)**	0.00098	0.00099	0.00099
	(CLK_N * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00923	0.00923	0.01900
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00716	0.00714	0.01692
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00636	0.00637	0.01532
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00392	0.00392	0.01288
	(CLK_N * !SCD * SCE)	0.00040	0.00040	0.00039
	(CLK_N * !SCD * SCE)	-0.00108	-0.00110	-0.00112
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00541	0.00542	0.01432
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00300	0.00301	0.01190
	(!CLK_N * SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK_N * SCD * SCE)	-0.00044	-0.00045	-0.00045
	(!CLK_N * !SCE)	0.00364	0.00365	0.01367
	(!CLK_N * !SCE)	0.00122	0.00122	0.01126
	(!CLK_N * !SCD * SCE)	0.00040	0.00040	0.00039
	(!CLK_N * !SCD * SCE)	-0.00108	-0.00111	-0.00112

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	0.00101	0.00102	0.00101
	(CLK_N * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00935	0.00933	0.01892
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00720	0.00718	0.01678
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00649	0.00649	0.01530
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00401	0.00401	0.01282
	(CLK_N * !SCD * SCE)	0.00042	0.00043	0.00042
	(CLK_N * !SCD * SCE)	-0.00108	-0.00110	-0.00112
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00546	0.00548	0.01422
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00301	0.00302	0.01177
	(!CLK_N * SCD * SCE)	0.00101	0.00102	0.00101
	(!CLK_N * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK_N * !SCE)	0.00359	0.00359	0.01351
	(!CLK_N * !SCE)	0.00113	0.00113	0.01105
	(!CLK_N * !SCD * SCE)	0.00042	0.00042	0.00041
	(!CLK_N * !SCD * SCE)	-0.00109	-0.00111	-0.00112

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)**	-0.00094	-0.00095	-0.00098
	(CLK_N * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00859	0.00877	0.01950
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01068	0.01085	0.02158
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00264	0.00285	0.01237
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00508	0.00529	0.01482
	(CLK_N * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(CLK_N * !SCD * SCE)	0.00113	0.00113	0.00113
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00354	0.00376	0.01337
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00595	0.00618	0.01578
	(!CLK_N * SCD * SCE)	-0.00093	-0.00095	-0.00097
	(!CLK_N * SCD * SCE)	0.00050	0.00049	0.00048
	(!CLK_N * !SCE)	0.00169	0.00199	0.01219
	(!CLK_N * !SCE)	0.00411	0.00441	0.01461
	(!CLK_N * !SCD * SCE)	-0.00037	-0.00037	-0.00037
	(!CLK_N * !SCD * SCE)	0.00113	0.00113	0.00113

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * SCD * SCE)**	-0.00097	-0.00098	-0.00100
	(CLK_N * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00926	0.00942	0.02025
	(CLK_N * RESET_B * !SCE * SET_B * Q * !Q_N) + (CLK_N * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01140	0.01156	0.02240
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00286	0.00306	0.01246
	(CLK_N * !SCE * !SET_B * Q * !Q_N)	0.00535	0.00555	0.01494
	(CLK_N * !SCD * SCE)	-0.00039	-0.00039	-0.00039
	(CLK_N * !SCD * SCE)	0.00113	0.00113	0.00113
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00383	0.00404	0.01353
	(CLK_N * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00630	0.00650	0.01599
	(!CLK_N * SCD * SCE)	-0.00097	-0.00098	-0.00100
	(!CLK_N * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK_N * !SCE)	0.00187	0.00216	0.01225
	(!CLK_N * !SCE)	0.00433	0.00462	0.01471
	(!CLK_N * !SCD * SCE)	-0.00040	-0.00040	-0.00040
	(!CLK_N * !SCD * SCE)	0.00113	0.00113	0.00113

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)**	0.00771	0.00763	0.01159
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00447	0.00438	0.00836
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01057	0.01046	0.01491
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00769	0.00757	0.01204
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00676	0.00668	0.01060
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00355	0.00346	0.00739
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00822	0.00814	0.01195
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00492	0.00483	0.00865
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01108	0.01097	0.01523
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00814	0.00802	0.01230
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00727	0.00719	0.01096
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00399	0.00390	0.00769
	(!CLK_N * D * SCE)	0.00499	0.00491	0.00926
	(!CLK_N * D * SCE)	0.00178	0.00168	0.00605
	(!CLK_N * !D * SCE)	0.00550	0.00541	0.00958
	(!CLK_N * !D * SCE)	0.00222	0.00213	0.00631
	!SCE	0.00085	0.00077	0.00075
	!SCE	-0.00081	-0.00092	-0.00093

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00780	0.00772	0.01163
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00457	0.00448	0.00841
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01064	0.01053	0.01493
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00775	0.00763	0.01205
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00677	0.00669	0.01057
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00357	0.00349	0.00737
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00830	0.00822	0.01198
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00501	0.00492	0.00870
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01114	0.01103	0.01524
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00819	0.00807	0.01230
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00727	0.00719	0.01092
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00401	0.00392	0.00767
	(!CLK_N * D * SCE)	0.00490	0.00482	0.00913
	(!CLK_N * D * SCE)	0.00170	0.00161	0.00594
	(!CLK_N * !D * SCE)	0.00540	0.00532	0.00946
	(!CLK_N * !D * SCE)	0.00214	0.00205	0.00620
	!SCE	0.00085	0.00076	0.00075
	!SCE	-0.00082	-0.00093	-0.00093

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)**	0.00372	0.00364	0.00758
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00697	0.00690	0.01081
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00966	0.00958	0.01437
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01255	0.01246	0.01723
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00462	0.00454	0.00854
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00784	0.00776	0.01175
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00341	0.00333	0.00736
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00671	0.00663	0.01065
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00936	0.00924	0.01425
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01230	0.01217	0.01718
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00431	0.00423	0.00833
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00758	0.00751	0.01160
	(!CLK_N * D * SCE)	0.00280	0.00272	0.00701
	(!CLK_N * D * SCE)	0.00602	0.00595	0.01021
	(!CLK_N * !D * SCE)	0.00248	0.00241	0.00682
	(!CLK_N * !D * SCE)	0.00576	0.00568	0.01009
	!SCE	-0.00072	-0.00074	-0.00075
	!SCE	0.00093	0.00094	0.00094

sky130_fd_sc_hs__sdfbbn_2	**(CLK_N * D * SCE * !SET_B * Q * !Q_N)**	0.00395	0.00387	0.00776
	(CLK_N * D * SCE * !SET_B * Q * !Q_N)	0.00718	0.00711	0.01098
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01034	0.01020	0.01501
	(CLK_N * D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01323	0.01309	0.01788
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00493	0.00484	0.00880
	(CLK_N * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00813	0.00805	0.01199
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00363	0.00355	0.00754
	(CLK_N * !D * SCE * !SET_B * Q * !Q_N)	0.00692	0.00685	0.01082
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01004	0.00989	0.01489
	(CLK_N * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01298	0.01284	0.01782
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00461	0.00453	0.00858
	(CLK_N * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00787	0.00779	0.01184
	(!CLK_N * D * SCE)	0.00299	0.00291	0.00716
	(!CLK_N * D * SCE)	0.00619	0.00612	0.01035
	(!CLK_N * !D * SCE)	0.00267	0.00259	0.00698
	(!CLK_N * !D * SCE)	0.00593	0.00585	0.01022
	!SCE	-0.00072	-0.00074	-0.00074
	!SCE	0.00094	0.00095	0.00094

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)	0.00398	0.00412	0.01697
	(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)	-0.00033	-0.00022	0.01265
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01403	0.01415	0.02727
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01066	0.01075	0.02385
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00810	0.00820	0.02134
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00509	0.00517	0.01829
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00901	0.00911	0.02226
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00597	0.00604	0.01919
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00990	0.01009	0.02820
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00450	0.00468	0.02281
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)**	0.01277	0.01291	0.03177
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00773	0.00788	0.02675
	(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)	0.00390	0.00411	0.01692
	(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)	-0.00013	0.00006	0.01289
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00895	0.00914	0.02719
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00358	0.00375	0.02184
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00408	0.00422	0.01708
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00024	-0.00013	0.01275
	(!CLK_N * D * !SCD)	0.00736	0.00738	0.02058
	(!CLK_N * D * !SCD)	0.00432	0.00431	0.01749
	(!CLK_N * !D * SCD)	0.00727	0.00751	0.02604
	(!CLK_N * !D * SCD)	0.00189	0.00213	0.02068

	(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)	0.00405	0.00418	0.01706
	(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)	-0.00033	-0.00021	0.01268
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01473	0.01485	0.02800
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01135	0.01146	0.02457
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00836	0.00849	0.02164
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00532	0.00542	0.01854
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00934	0.00946	0.02263
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00627	0.00636	0.01951
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.01007	0.01026	0.02831
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00460	0.00477	0.02286
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)**	0.01292	0.01306	0.03187
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00779	0.00792	0.02675
	(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)	0.00394	0.00416	0.01699
	(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)	-0.00014	0.00006	0.01290
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00904	0.00923	0.02724
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00360	0.00377	0.02182
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00414	0.00428	0.01716
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00024	-0.00012	0.01278
	(!CLK_N * D * !SCD)	0.00759	0.00762	0.02083
	(!CLK_N * D * !SCD)	0.00452	0.00451	0.01772
	(!CLK_N * !D * SCD)	0.00726	0.00749	0.02600
	(!CLK_N * !D * SCD)	0.00182	0.00204	0.02057

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbn_1	**(CLK_N * D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * RESET_B * SCD * !SET_B * Q * !Q_N) + (CLK_N * D * !RESET_B * SCD * SET_B * !Q * Q_N) + (CLK_N * D * !RESET_B * SCD * !SET_B * Q * !Q_N)**	-0.00050	0.00014	0.01311
	(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)	0.00381	0.00447	0.01743
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00865	0.00923	0.02202
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01204	0.01262	0.02529
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00579	0.00637	0.01917
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00881	0.00942	0.02209
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00484	0.00543	0.01822
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00788	0.00849	0.02116
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00262	0.00306	0.02054
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00800	0.00845	0.02593
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00858	0.00897	0.02726
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01360	0.01399	0.03229
	(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)	-0.00026	0.00030	0.01321
	(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)	0.00377	0.00434	0.01723
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00352	0.00396	0.02152
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00887	0.00932	0.02689
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00058	0.00006	0.01303
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00373	0.00437	0.01735
	(!CLK_N * D * !SCD)	0.00301	0.00364	0.01651
	(!CLK_N * D * !SCD)	0.00605	0.00669	0.01944
	(!CLK_N * !D * SCD)	0.00159	0.00206	0.02016
	(!CLK_N * !D * SCD)	0.00695	0.00742	0.02551

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)	-0.00056	0.00021	0.01306
	(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)	0.00380	0.00459	0.01744
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00869	0.00937	0.02203
	(CLK_N * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01208	0.01279	0.02533
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00584	0.00653	0.01923
	(CLK_N * D * !SCD * !SET_B * Q * !Q_N)	0.00889	0.00960	0.02218
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00482	0.00551	0.01820
	(CLK_N * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00789	0.00861	0.02118
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00281	0.00323	0.02066
	(CLK_N * !D * SCD * !SET_B * Q * !Q_N)	0.00826	0.00870	0.02612
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00920	0.00958	0.02782
	(CLK_N * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01432	0.01469	0.03293
	(CLK_N * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (CLK_N * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (CLK_N * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (CLK_N * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00030	0.00026	0.01318
	(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)	0.00378	0.00435	0.01727
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00378	0.00420	0.02171
	(CLK_N * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00920	0.00965	0.02715
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	-0.00065	-0.00000	0.01297
	(!CLK_N * D * SCD) + (!CLK_N * !D * !SCD)	0.00371	0.00436	0.01735
	(!CLK_N * D * !SCD)	0.00288	0.00351	0.01639
	(!CLK_N * D * !SCD)	0.00596	0.00663	0.01937
	(!CLK_N * !D * SCD)	0.00173	0.00219	0.02023
	(!CLK_N * !D * SCD)	0.00716	0.00762	0.02567

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)	0.00924	0.00916	0.02063
	(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)	0.00713	0.00704	0.01852
	(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)	0.00540	0.00546	0.01686
	(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)	0.00295	0.00300	0.01440
	(!SET_B * Q * !Q_N)	0.00541	0.00547	0.01719
	(!SET_B * Q * !Q_N)	0.00290	0.00295	0.01467

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)**	0.00906	0.00893	0.02045
	(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)	0.00699	0.00686	0.01838
	(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)	0.00518	0.00523	0.01664
	(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)	0.00280	0.00284	0.01426
	(!SET_B * Q * !Q_N)	0.00532	0.00538	0.01711
	(!SET_B * Q * !Q_N)	0.00289	0.00294	0.01467

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)**	0.00801	0.00835	0.02051
	(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)	0.01012	0.01047	0.02262
	(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)	0.00263	0.00301	0.01484
	(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)	0.00508	0.00547	0.01730
	(!SET_B * Q * !Q_N)	0.00178	0.00220	0.01416
	(!SET_B * Q * !Q_N)	0.00430	0.00473	0.01667

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)**	0.00848	0.00882	0.02095
	(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)	0.01054	0.01089	0.02301
	(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)	0.00277	0.00315	0.01497
	(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)	0.00516	0.00553	0.01736
	(!SET_B * Q * !Q_N)	0.00179	0.00221	0.01416
	(!SET_B * Q * !Q_N)	0.00425	0.00467	0.01660

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)**	0.00256	0.00258	0.00256
	(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)	-0.00295	-0.00297	-0.00295
	(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)	0.00859	0.00852	0.02655
	(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)	0.00264	0.00253	0.02058

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)**	0.00264	0.00266	0.00263
	(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)	-0.00285	-0.00286	-0.00284
	(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)	0.00904	0.00896	0.02682
	(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)	0.00314	0.00303	0.02091

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)**	-0.00250	-0.00255	-0.00255
	(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)	0.00295	0.00297	0.00297
	(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)	0.00119	0.00188	0.02190
	(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)	0.00712	0.00783	0.02787

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)**	-0.00260	-0.00264	-0.00262
	(CLK_N * D * RESET_B * SCD * Q * !Q_N) + (CLK_N * D * RESET_B * !SCD * !SCE * Q * !Q_N) + (CLK_N * !D * RESET_B * SCD * SCE * Q * !Q_N) + (!CLK_N * RESET_B * Q * !Q_N)	0.00287	0.00289	0.00286
	(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)	0.00108	0.00175	0.02172
	(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)	0.00695	0.00768	0.02764

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)	0.01535	0.01563	0.03366
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01256	0.01282	0.03085
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00947	0.00964	0.02657
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00634	0.00648	0.02342
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01543	0.01570	0.03369
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01263	0.01288	0.03088
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00954	0.00971	0.02664
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00641	0.00655	0.02349
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01636	0.01645	0.03380
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01291	0.01297	0.03033
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00920	0.00930	0.02642
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00607	0.00615	0.02328
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01021	0.01032	0.02772
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00710	0.00718	0.02459
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01181	0.02982
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00840	0.00865	0.02667
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01160	0.01187	0.02985
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00847	0.00871	0.02670
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01535	0.01563	0.03366
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01256	0.01281	0.03085
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00947	0.00964	0.02657
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00634	0.00649	0.02342
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01641	0.01649	0.03386
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01294	0.01301	0.03037
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01636	0.01644	0.03380
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01290	0.01297	0.03033
	(!D * !SCE * SET_B * !Q * Q_N)	0.00927	0.00937	0.02647
	(!D * !SCE * SET_B * !Q * Q_N)	0.00614	0.00621	0.02332
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01028	0.01038	0.02779
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00716	0.00724	0.02466
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00920	0.00930	0.02642
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00607	0.00615	0.02328
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01021	0.01032	0.02773
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00710	0.00718	0.02460
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01153	0.01180	0.02982
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00840	0.00865	0.02667

sky130_fd_sc_hs__sdfbbn_2	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01558	0.01583	0.03384
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01281	0.01305	0.03105
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00942	0.00961	0.02650
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00634	0.00651	0.02341
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01565	0.01592	0.03388
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01288	0.01313	0.03109
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00948	0.00967	0.02656
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00640	0.00657	0.02346
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01671	0.01683	0.03412
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01333	0.01342	0.03072
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00920	0.00932	0.02640
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00611	0.00621	0.02330
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01014	0.01028	0.02765
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00708	0.00719	0.02456
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01195	0.02990
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00858	0.00884	0.02680
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01172	0.01200	0.02994
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00864	0.00889	0.02684
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01558	0.01583	0.03384
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01281	0.01304	0.03106
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00942	0.00962	0.02651
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00634	0.00651	0.02341
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01676	0.01687	0.03417
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01336	0.01345	0.03076
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01671	0.01683	0.03412
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01332	0.01342	0.03072
	(!D * !SCE * SET_B * !Q * Q_N)	0.00926	0.00937	0.02646
	(!D * !SCE * SET_B * !Q * Q_N)	0.00617	0.00626	0.02336
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01020	0.01034	0.02771
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00714	0.00724	0.02462
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00920	0.00932	0.02640
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00611	0.00621	0.02330
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01015	0.01028	0.02766
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00708	0.00719	0.02457
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01166	0.01194	0.02990
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00858	0.00883	0.02680

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)**	0.00741	0.00786	0.02547
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01055	0.01100	0.02861
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00735	0.00779	0.02541
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01048	0.01094	0.02855
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00768	0.00812	0.02557
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01082	0.01126	0.02872
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01015	0.01054	0.02862
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01328	0.01368	0.03176
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01025	0.01062	0.02799
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01338	0.01377	0.03114
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01018	0.01056	0.02793
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01332	0.01371	0.03108
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00741	0.00786	0.02547
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01055	0.01100	0.02861
	(!D * !SCE * SET_B * !Q * Q_N)	0.00762	0.00805	0.02551
	(!D * !SCE * SET_B * !Q * Q_N)	0.01075	0.01120	0.02865
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01009	0.01048	0.02856
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01321	0.01362	0.03170
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00768	0.00812	0.02557
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01082	0.01126	0.02872
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01015	0.01054	0.02863
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01327	0.01368	0.03176
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01025	0.01063	0.02799
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01339	0.01378	0.03114

sky130_fd_sc_hs__sdfbbn_2	**(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)**	0.00740	0.00784	0.02545
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01051	0.01094	0.02856
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00734	0.00779	0.02539
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01045	0.01088	0.02850
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00764	0.00806	0.02552
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01074	0.01117	0.02862
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01015	0.01053	0.02864
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01324	0.01362	0.03173
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01038	0.01075	0.02819
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01348	0.01385	0.03129
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01032	0.01069	0.02813
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01343	0.01379	0.03123
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00740	0.00785	0.02545
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01051	0.01094	0.02856
	(!D * !SCE * SET_B * !Q * Q_N)	0.00757	0.00800	0.02546
	(!D * !SCE * SET_B * !Q * Q_N)	0.01068	0.01111	0.02855
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01009	0.01046	0.02859
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01318	0.01356	0.03168
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00764	0.00806	0.02552
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01074	0.01117	0.02862
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01014	0.01053	0.02865
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01323	0.01362	0.03173
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01039	0.01075	0.02819
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01349	0.01385	0.03129

SKY130_FD_SC_HS__SDFBBP

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00189	0.00171	0.00391	0.00163	0.00600	0.00273	1.13351	1.05491

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfbbp_1	0.00000	0.69226	1.28072

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)	0.32235	0.79644	5.97773
	SET_B->Q (FR)	0.14914	0.86210	8.77354

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfbbp_1	CLK->Q (RF)	0.25256	0.44635	1.54574
	RESET_B->Q (FF)	0.20517	0.64184	4.35851
	SET_B->Q (RF)	0.12114	0.33587	1.55399

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)	0.22557	0.71156	5.88603
	RESET_B->Q_N (FR)	0.17913	0.91433	8.71799
	SET_B->Q_N (RR)	0.09459	0.60947	6.10130

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)	0.26945	0.52431	1.57421
	SET_B->Q_N (FF)	0.10246	0.58909	4.65511

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)	-0.06259	-0.13270	-0.85276
	setup	CLK (R)	0.10501	0.15453	0.88688

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)	-0.17585	-0.30738	-3.50783
	setup	CLK (R)	0.23004	0.35004	3.57514

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)	-0.06259	-0.13270	-0.85276
	setup	CLK (R)	0.10501	0.15453	0.88688

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)	-0.17585	-0.30738	-3.50783
	setup	CLK (R)	0.23004	0.35004	3.57514

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)	-0.07544	-0.15182	-0.89872
	setup	CLK (R)	0.12119	0.17586	0.93142

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)	-0.23195	-0.38252	-3.85384
	setup	CLK (R)	0.29931	0.43452	3.93299

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)	-0.07544	-0.15182	-0.90357
	hold	CLK (R)	-0.07988	-0.15348	-0.89872
	setup	CLK (R)	0.11896	0.17091	0.93142
	setup	CLK (R)	0.12119	0.17586	0.92734

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)	-0.24533	-0.38886	-3.86675
	hold	CLK (R)	-0.23195	-0.38252	-3.85384
	setup	CLK (R)	0.29931	0.43452	3.93299
	setup	CLK (R)	0.29129	0.42310	3.91823

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)	-0.07004	-0.14863	-0.48257
	setup	CLK (R)	0.28980	0.28937	0.87536

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)	-0.12399	-0.26787	-3.16007
	setup	CLK (R)	0.23586	0.36157	3.74161

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)	-0.23534	-0.24534	-0.48257
	hold	CLK (R)	-0.07004	-0.14863	-0.84655
	setup	CLK (R)	0.28980	0.28937	0.55312
	setup	CLK (R)	0.11442	0.17041	0.87536

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)	-0.12399	-0.26787	-3.16007
	hold	CLK (R)	-0.17906	-0.31872	-3.66991
	setup	CLK (R)	0.16738	0.28869	3.18907
	setup	CLK (R)	0.23586	0.36157	3.74161

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)	0.07530	0.09019	0.33418
	removal	CLK (R)	-0.02942	-0.04912	-0.24169

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)	0.07530	0.09019	0.33026
	recovery	CLK (R)	0.07282	0.09019	0.33418
	recovery	CLK (R)	0.07290	0.09019	0.33023
	removal	CLK (R)	-0.02942	-0.04912	-0.24169
	removal	CLK (R)	-0.02942	-0.04912	-0.24169
	removal	CLK (R)	-0.02942	-0.04912	-0.24169

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 ()	0.15915	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.16630	0.63599	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)	0.00411	0.00380	1.33353
	removal	CLK (R)	0.06164	0.08445	0.13345
	hold	RESET_B (R)	-0.04506	-0.09224	-0.44492
	setup	RESET_B (R)	0.08175	0.12845	0.68621

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)	0.00411	0.00380	1.33353
	recovery	CLK (R)	0.00380	0.00378	1.33159
	recovery	CLK (R)	0.00366	0.00365	1.32918
	removal	CLK (R)	0.06164	0.08445	0.13345
	removal	CLK (R)	0.06164	0.08445	0.13345
	removal	CLK (R)	0.06164	0.08445	0.13345
	hold	RESET_B (R)	-0.04707	-0.09372	-0.44512
	hold	RESET_B (R)	-0.04506	-0.09224	-0.44492
	setup	RESET_B (R)	0.07841	0.11698	0.68621
	setup	RESET_B (R)	0.08175	0.12845	0.67899

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 ()	0.10193	0.63599	16.50020
	min_pulse_width	SET_B ()	0.11623	0.63599	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 ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.11385	0.63599	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 ()	0.15200	0.63599	16.50020
	min_pulse_width	CLK ()	0.21637	0.63599	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	0.01215	0.01251	0.02129
	CLK	0.01055	0.01087	0.01978
	SET_B	0.01074	0.01150	0.03222
	SET_B	0.01417	0.01493	0.03526

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01204	0.01230	0.02110
	CLK	0.01027	0.01050	0.01938
	RESET_B	0.01226	0.01262	0.01820
	RESET_B	0.01311	0.01346	0.01900
	SET_B	0.01338	0.01322	0.03014
	SET_B	0.00994	0.00976	0.02670

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01205	0.01231	0.02141
	CLK	0.01029	0.01051	0.01975
	RESET_B	0.01227	0.01262	0.01862
	RESET_B	0.01313	0.01347	0.01936
	SET_B	0.01339	0.01323	0.03039
	SET_B	0.00995	0.00977	0.02703

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	CLK	0.01222	0.01256	0.02104
	CLK	0.01062	0.01094	0.01947
	SET_B	0.01070	0.01146	0.03149
	SET_B	0.01413	0.01489	0.03481

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	0.00100	0.00101	0.00100
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00044
	(CLK * !SCE)	0.00353	0.00358	0.01385
	(CLK * !SCE)	0.00110	0.00113	0.01141
	(CLK * !SCD * SCE)	0.00041	0.00041	0.00040
	(CLK * !SCD * SCE)	-0.00109	-0.00111	-0.00112
	(!CLK * SCD * SCE)	0.00099	0.00100	0.00100
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00921	0.00918	0.01911
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00694	0.00690	0.01684
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00607	0.00607	0.01507
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00342	0.00341	0.01242
	(!CLK * !SCD * SCE)	0.00041	0.00041	0.00040
	(!CLK * !SCD * SCE)	-0.00107	-0.00110	-0.00111
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00523	0.00524	0.01420
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00260	0.00260	0.01156

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfbbp_1	(CLK * SCD * SCE)	-0.00094	-0.00096	-0.00098
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00082	0.00125	0.01150
	(CLK * !SCE)	0.00326	0.00368	0.01394
	(CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00038
	(CLK * !SCD * SCE)	0.00112	0.00113	0.00112
	(!CLK * SCD * SCE)	-0.00095	-0.00096	-0.00099
	(!CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00687	0.00709	0.01796
	(!CLK * RESET_B * !SCE * SET_B * Q * !Q_N) + (!CLK * RESET_B * !SCE * SET_B * !Q * Q_N)	0.00915	0.00936	0.02023
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00253	0.00274	0.01225
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00518	0.00540	0.01490
	(!CLK * !SCD * SCE)	-0.00037	-0.00038	-0.00037
	(!CLK * !SCD * SCE)	0.00113	0.00113	0.00113
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00329	0.00351	0.01311
	(!CLK * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00592	0.00615	0.01575

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00491	0.00482	0.00927
	(CLK * D * SCE)	0.00168	0.00159	0.00604
	(CLK * !D * SCE)	0.00542	0.00533	0.00958
	(CLK * !D * SCE)	0.00212	0.00203	0.00630
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00744	0.00735	0.01133
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00399	0.00390	0.00789
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01056	0.01044	0.01494
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00750	0.00737	0.01188
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00660	0.00652	0.01046
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00317	0.00308	0.00703
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00794	0.00786	0.01169
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00443	0.00434	0.00819
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01107	0.01095	0.01523
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00794	0.00782	0.01212
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00711	0.00702	0.01082
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00362	0.00353	0.00734
	!SCE	0.00086	0.00077	0.00076
	!SCE	-0.00081	-0.00092	-0.00093

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfbbp_1	**(CLK * D * SCE)**	0.00193	0.00185	0.00622
	(CLK * D * SCE)	0.00516	0.00509	0.00943
	(CLK * !D * SCE)	0.00162	0.00155	0.00605
	(CLK * !D * SCE)	0.00490	0.00484	0.00933
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00360	0.00351	0.00745
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00705	0.00696	0.01088
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00795	0.00781	0.01284
	(!CLK * D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01102	0.01088	0.01589
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00435	0.00426	0.00828
	(!CLK * D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00778	0.00770	0.01169
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00329	0.00321	0.00724
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00679	0.00671	0.01073
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.00766	0.00755	0.01272
	(!CLK * !D * RESET_B * SCE * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * SET_B * !Q * Q_N)	0.01078	0.01068	0.01584
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00404	0.00396	0.00807
	(!CLK * !D * !RESET_B * SCE * SET_B * !Q * Q_N)	0.00753	0.00745	0.01155
	!SCE	-0.00072	-0.00074	-0.00074
	!SCE	0.00095	0.00095	0.00095

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)**	0.00395	0.00408	0.01681
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00029	-0.00018	0.01256
	(CLK * D * !SCD)	0.00639	0.00636	0.01946
	(CLK * D * !SCD)	0.00345	0.00340	0.01647
	(CLK * !D * SCD)	0.00706	0.00729	0.02579
	(CLK * !D * SCD)	0.00175	0.00196	0.02050
	(!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)	0.00411	0.00424	0.01695
	(!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)	-0.00013	-0.00004	0.01270
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01242	0.01253	0.02557
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00932	0.00939	0.02241
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00808	0.00819	0.02120
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00538	0.00544	0.01844
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00885	0.00895	0.02197
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00612	0.00618	0.01920
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00975	0.00993	0.02792
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00423	0.00441	0.02241
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01289	0.01302	0.03177
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00774	0.00787	0.02664
	(!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)	0.00403	0.00423	0.01691
	(!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	0.00027	0.01296
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00891	0.00910	0.02704
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00341	0.00358	0.02154

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)	-0.00041	0.00034	0.01305
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00381	0.00460	0.01729
	(CLK * D * !SCD)	0.00306	0.00366	0.01647
	(CLK * D * !SCD)	0.00603	0.00664	0.01932
	(CLK * !D * SCD)	0.00088	0.00136	0.01952
	(CLK * !D * SCD)	0.00617	0.00667	0.02483
	(!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)	-0.00057	0.00017	0.01288
	(!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)	0.00365	0.00443	0.01713
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.00854	0.00920	0.02174
	(!CLK * D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * SET_B * !Q * Q_N)	0.01167	0.01232	0.02475
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00540	0.00607	0.01863
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00815	0.00884	0.02127
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00457	0.00524	0.01780
	(!CLK * D * !RESET_B * !SCD * SET_B * !Q * Q_N)	0.00733	0.00802	0.02044
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00242	0.00285	0.02023
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00793	0.00836	0.02574
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.00677	0.00718	0.02550
	(!CLK * !D * RESET_B * SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * SET_B * !Q * Q_N)	0.01189	0.01231	0.03064
	(!CLK * !D * RESET_B * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * RESET_B * !SCD * !SET_B * Q * !Q_N) + (!CLK * !D * !RESET_B * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !RESET_B * !SCD * !SET_B * Q * !Q_N)	-0.00034	0.00026	0.01297
	(!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)	0.00361	0.00423	0.01693
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00317	0.00361	0.02107
	(!CLK * !D * !RESET_B * SCD * SET_B * !Q * Q_N)	0.00866	0.00911	0.02658

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)	0.00454	0.00461	0.01625
	(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)	0.00251	0.00257	0.01421
	(!SET_B * Q * !Q_N)	0.00496	0.00505	0.01699
	(!SET_B * Q * !Q_N)	0.00288	0.00295	0.01492
	(!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)	0.00870	0.00857	0.02026
	(!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)	0.00704	0.00691	0.01860

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)	0.00248	0.00287	0.01475
	(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)	0.00451	0.00491	0.01679
	(!SET_B * Q * !Q_N)	0.00121	0.00166	0.01368
	(!SET_B * Q * !Q_N)	0.00330	0.00376	0.01577
	(!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)	0.00654	0.00687	0.01906
	(!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)	0.00820	0.00853	0.02072

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)	0.00266	0.00270	0.00267
	(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)	-0.00355	-0.00359	-0.00357
	(!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)	0.00691	0.00688	0.02572
	(!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)	0.00019	0.00013	0.01898

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)	-0.00262	-0.00268	-0.00267
	(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)	0.00359	0.00361	0.00359
	(!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)	0.00158	0.00234	0.02279
	(!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)	0.00828	0.00907	0.02951

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)**	0.01095	0.01107	0.02788
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00758	0.00769	0.02451
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.01113	0.01125	0.02806
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00775	0.00787	0.02469
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01081	0.01094	0.02776
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00744	0.00756	0.02440
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01382	0.01402	0.03091
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01024	0.01043	0.02733
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01315	0.01323	0.03011
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00998	0.01005	0.02694
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01334	0.01332	0.03029
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01017	0.01015	0.02712
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.01095	0.01107	0.02788
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00758	0.00769	0.02451
	(!D * !SCE * SET_B * !Q * Q_N)	0.01099	0.01112	0.02794
	(!D * !SCE * SET_B * !Q * Q_N)	0.00762	0.00774	0.02458
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01400	0.01420	0.03109
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01042	0.01061	0.02752
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01081	0.01095	0.02776
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00744	0.00757	0.02440
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01383	0.01402	0.03090
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01025	0.01043	0.02733
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01316	0.01314	0.03011
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00999	0.00997	0.02694

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)	0.01173	0.01205	0.02988
	(D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01527	0.01558	0.03342
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00596	0.00642	0.02387
	(D * RESET_B * SCD * SCE * Q * !Q_N) + (D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00933	0.00979	0.02724
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01156	0.01188	0.02971
	(D * RESET_B * !SCE * SET_B * !Q * Q_N)	0.01510	0.01541	0.03324
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00578	0.00624	0.02369
	(D * RESET_B * !SCE * Q * !Q_N) + (D * !RESET_B * !SCE * !SET_B * Q * !Q_N)	0.00915	0.00961	0.02706
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01287	0.01341	0.03136
	(D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01611	0.01664	0.03460
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00609	0.00654	0.02391
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00946	0.00990	0.02727
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00839	0.00896	0.02677
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01198	0.01255	0.03036
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00751	0.00790	0.02567
	(D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01067	0.01107	0.02884
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.00732	0.00772	0.02549
	(D * !RESET_B * !SCE * SET_B * !Q * Q_N)	0.01049	0.01089	0.02865
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01173	0.01205	0.02988
	(!D * RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01526	0.01558	0.03342
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00596	0.00642	0.02387
	(!D * RESET_B * SCD * SCE * Q * !Q_N) + (!D * !RESET_B * SCD * SCE * !SET_B * Q * !Q_N)	0.00933	0.00979	0.02724
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01268	0.01321	0.03117
	(!D * RESET_B * !SCE * SET_B * Q * !Q_N)	0.01590	0.01642	0.03439
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01288	0.01342	0.03137
	(!D * RESET_B * !SCD * SCE * SET_B * Q * !Q_N)	0.01611	0.01665	0.03459
	(!D * !SCE * SET_B * !Q * Q_N)	0.00591	0.00636	0.02373
	(!D * !SCE * SET_B * !Q * Q_N)	0.00928	0.00972	0.02709
	(!D * !SCE * !SET_B * Q * !Q_N)	0.00821	0.00876	0.02664
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01180	0.01235	0.03023
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00609	0.00654	0.02392
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00946	0.00991	0.02729
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.00840	0.00896	0.02683
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01199	0.01254	0.03040
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.00751	0.00790	0.02567
	(!D * !RESET_B * SCD * SCE * SET_B * !Q * Q_N)	0.01067	0.01107	0.02884

SKY130_FD_SC_HS__SDFRBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00180	0.00185	0.00409	0.00558	0.00287	1.15540	1.16750
sky130_fd_sc_hs__sdfrbp_2	0.00183	0.00188	0.00420	0.00571	0.00281	2.33849	2.29500

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrbp_1	0.00000	0.37998	0.77066
sky130_fd_sc_hs__sdfrbp_2	0.00000	0.35659	0.63294

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)	0.19882	0.65833	5.77344
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RR)	0.22956	0.60358	6.25015

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrbp_1	CLK->Q (RF)	0.18127	0.37732	1.48089
	RESET_B->Q (FF)	0.26119	0.74404	4.90637
sky130_fd_sc_hs__sdfrbp_2	CLK->Q (RF)	0.20507	0.37637	1.65501
	RESET_B->Q (FF)	0.28802	0.74811	5.09999

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)	0.15357	0.62248	5.69059
	RESET_B->Q_N (FR)	0.23329	0.98563	9.11225
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RR)	0.15491	0.53007	5.65749
	RESET_B->Q_N (FR)	0.23787	0.89889	9.09949

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)	0.14851	0.41212	1.75806
sky130_fd_sc_hs__sdfrbp_2	CLK->Q_N (RF)	0.15571	0.39492	1.66479

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)	-0.06821	-0.16174	-1.06976
	setup	CLK (R)	0.13022	0.19970	1.09120
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07050	-0.16693	-1.09437
	setup	CLK (R)	0.12946	0.20462	1.12042

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)	-0.09745	-0.24531	-3.48675
	setup	CLK (R)	0.21593	0.35039	3.57136
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11178	-0.26592	-3.52306
	setup	CLK (R)	0.22587	0.35921	3.60991

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)	-0.06833	-0.16174	-1.06979
	hold	CLK (R)	-0.06821	-0.16190	-1.06976
	setup	CLK (R)	0.13017	0.19961	1.09064
	setup	CLK (R)	0.13022	0.19970	1.09120
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07243	-0.16700	-1.09437
	hold	CLK (R)	-0.07050	-0.16693	-1.09459
	setup	CLK (R)	0.12699	0.20462	1.12042
	setup	CLK (R)	0.12946	0.20462	1.12006

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)	-0.09761	-0.24933	-3.49313
	hold	CLK (R)	-0.09745	-0.24531	-3.48675
	setup	CLK (R)	0.21593	0.35014	3.56864
	setup	CLK (R)	0.21509	0.35039	3.57136
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.11178	-0.26606	-3.52306
	hold	CLK (R)	-0.11295	-0.26592	-3.52319
	setup	CLK (R)	0.22587	0.35921	3.60978
	setup	CLK (R)	0.22580	0.35919	3.60991

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)	-0.08294	-0.17735	-1.07609
	setup	CLK (R)	0.14098	0.21389	1.10368
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08413	-0.17887	-1.10042
	setup	CLK (R)	0.14009	0.21513	1.12678

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)	-0.13093	-0.29626	-3.87517
	setup	CLK (R)	0.27442	0.42126	3.95288
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.14509	-0.31793	-3.90510
	setup	CLK (R)	0.28156	0.42900	3.99106

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)	-0.08294	-0.17735	-1.08340
	hold	CLK (R)	-0.08473	-0.18017	-1.07609
	setup	CLK (R)	0.14098	0.21141	1.10368
	setup	CLK (R)	0.14052	0.21389	1.09442
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.08413	-0.17887	-1.10504
	hold	CLK (R)	-0.08853	-0.18379	-1.10042
	setup	CLK (R)	0.14009	0.21141	1.12678
	setup	CLK (R)	0.13948	0.21513	1.12162

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)	-0.13926	-0.31399	-3.89566
	hold	CLK (R)	-0.13093	-0.29626	-3.87517
	setup	CLK (R)	0.27442	0.42126	3.95288
	setup	CLK (R)	0.26040	0.40990	3.93833
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15343	-0.33154	-3.92248
	hold	CLK (R)	-0.14509	-0.31793	-3.90510
	setup	CLK (R)	0.28156	0.42900	3.99106
	setup	CLK (R)	0.26858	0.42069	3.97916

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)	-0.07159	-0.16403	-0.53111
	setup	CLK (R)	0.27160	0.29130	1.00929
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.07260	-0.16662	-0.54251
	setup	CLK (R)	0.28037	0.29872	1.03179

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)	-0.11187	-0.27003	-3.29788
	setup	CLK (R)	0.22779	0.37000	3.79044
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.12471	-0.28624	-3.30248
	setup	CLK (R)	0.23645	0.38000	3.82202

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)	-0.13871	-0.18192	-0.53111
	hold	CLK (R)	-0.07159	-0.16403	-0.98676
	setup	CLK (R)	0.27160	0.29130	0.56937
	setup	CLK (R)	0.12804	0.20068	1.00929
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.15472	-0.20058	-0.54251
	hold	CLK (R)	-0.07260	-0.16662	-1.00810
	setup	CLK (R)	0.28037	0.29872	0.58386
	setup	CLK (R)	0.12606	0.20268	1.03179

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)	-0.13459	-0.29949	-3.29788
	hold	CLK (R)	-0.11187	-0.27003	-3.72660
	setup	CLK (R)	0.19554	0.33499	3.31093
	setup	CLK (R)	0.22779	0.37000	3.79044
sky130_fd_sc_hs__sdfrbp_2	hold	CLK (R)	-0.13596	-0.29956	-3.30248
	hold	CLK (R)	-0.12471	-0.28624	-3.75392
	setup	CLK (R)	0.19211	0.33156	3.31917
	setup	CLK (R)	0.23645	0.38000	3.82202

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)	0.15786	0.21449	1.27467
	removal	CLK (R)	-0.11948	-0.18157	-1.20555
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.15453	0.21513	1.28916
	removal	CLK (R)	-0.12583	-0.18741	-1.22206

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)	0.15586	0.21302	1.27467
	recovery	CLK (R)	0.15333	0.20462	1.23411
	recovery	CLK (R)	0.15286	0.19868	1.21185
	recovery	CLK (R)	0.15786	0.21449	1.26801
	removal	CLK (R)	-0.12419	-0.19424	-1.26623
	removal	CLK (R)	-0.12326	-0.18741	-1.22926
	removal	CLK (R)	-0.11948	-0.18157	-1.20555
	removal	CLK (R)	-0.12528	-0.19846	-1.25668
sky130_fd_sc_hs__sdfrbp_2	recovery	CLK (R)	0.15252	0.21262	1.28916
	recovery	CLK (R)	0.15280	0.20730	1.25633
	recovery	CLK (R)	0.14990	0.20110	1.23167
	recovery	CLK (R)	0.15453	0.21513	1.28433
	removal	CLK (R)	-0.12715	-0.20014	-1.28269
	removal	CLK (R)	-0.12868	-0.19325	-1.24870
	removal	CLK (R)	-0.12583	-0.18741	-1.22206
	removal	CLK (R)	-0.12829	-0.20268	-1.28180

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 ()	0.14008	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.12339	0.63599	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	RESET_B ()	0.14246	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.13531	0.63599	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 ()	0.11385	0.63599	16.50020
	min_pulse_width	CLK ()	0.07093	0.63599	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.13531	0.63599	16.50020
	min_pulse_width	CLK ()	0.08047	0.63599	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 ()	0.15676	0.63599	16.50020
	min_pulse_width	CLK ()	0.19730	0.63599	16.50020
sky130_fd_sc_hs__sdfrbp_2	min_pulse_width	CLK ()	0.15200	0.63599	16.50020
	min_pulse_width	CLK ()	0.19730	0.63599	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	0.01112	0.01128	0.02033
	CLK	0.00939	0.00953	0.01862
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01317	0.01361	0.02258
	CLK	0.01140	0.01181	0.02089

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01128	0.01161	0.02047
	CLK	0.00959	0.00990	0.01884
	RESET_B	0.00952	0.00973	0.01949
	RESET_B	0.01373	0.01395	0.02360
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01314	0.01373	0.02274
	CLK	0.01157	0.01215	0.02122
	RESET_B	0.01146	0.01200	0.02219
	RESET_B	0.01577	0.01629	0.02595

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01129	0.01161	0.02079
	CLK	0.00959	0.00990	0.01914
	RESET_B	0.00954	0.00976	0.01989
	RESET_B	0.01376	0.01397	0.02388
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01315	0.01375	0.02323
	CLK	0.01157	0.01216	0.02172
	RESET_B	0.01148	0.01201	0.02202
	RESET_B	0.01579	0.01632	0.02619

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrbp_1	CLK	0.01110	0.01127	0.01991
	CLK	0.00938	0.00952	0.01819
sky130_fd_sc_hs__sdfrbp_2	CLK	0.01316	0.01360	0.02233
	CLK	0.01139	0.01180	0.02063

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	0.00097	0.00098	0.00097
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00410	0.00411	0.01385
	(CLK * RESET_B * SCD * !SCE)	0.00140	0.00141	0.01116
	(CLK * RESET_B * !SCD * !SCE)	0.00410	0.00411	0.01386
	(CLK * RESET_B * !SCD * !SCE)	0.00140	0.00141	0.01116
	(CLK * !SCD * SCE)	0.00050	0.00050	0.00049
	(CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00098
	(CLK * !RESET_B * SCD * SCE)	0.00048	0.00049	0.00048
	(CLK * !RESET_B * SCD * SCE)	-0.00096	-0.00098	-0.00099
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00029
	(CLK * !RESET_B * SCD * !SCE)	-0.00111	-0.00113	-0.00117
	(CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00030
	(CLK * !RESET_B * !SCD * !SCE)	-0.00114	-0.00115	-0.00119
	(!CLK * RESET_B * SCD * SCE)	0.00098	0.00098	0.00098
	(!CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00043
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00919	0.00927	0.01889
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00634	0.00642	0.01605
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00919	0.00927	0.01889
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00635	0.00643	0.01605
	(!CLK * !SCD * SCE)	0.00050	0.00051	0.00049
	(!CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00098
	(!CLK * !RESET_B * SCD * SCE)	0.00048	0.00049	0.00048
	(!CLK * !RESET_B * SCD * SCE)	-0.00096	-0.00098	-0.00099
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00029
	(!CLK * !RESET_B * SCD * !SCE)	-0.00111	-0.00113	-0.00117
	(!CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00030
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00115	-0.00115	-0.00119

	(CLK * RESET_B * SCD * SCE)	0.00100	0.00100	0.00100
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00434	0.00433	0.01397
	(CLK * RESET_B * SCD * !SCE)	0.00158	0.00158	0.01122
	(CLK * RESET_B * !SCD * !SCE)	0.00434	0.00433	0.01397
	(CLK * RESET_B * !SCD * !SCE)	0.00159	0.00158	0.01122
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099
	(CLK * !RESET_B * SCD * SCE)	0.00049	0.00049	0.00049
	(CLK * !RESET_B * SCD * SCE)	-0.00097	-0.00099	-0.00100
	(CLK * !RESET_B * SCD * !SCE)	0.00032	0.00032	0.00028
	(CLK * !RESET_B * SCD * !SCE)	-0.00114	-0.00116	-0.00120
	(CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00032	0.00029
	(CLK * !RESET_B * !SCD * !SCE)	-0.00117	-0.00119	-0.00122
	(!CLK * RESET_B * SCD * SCE)	0.00099	0.00100	0.00100
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00043
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00945	0.00953	0.01908
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00655	0.00663	0.01617
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00945	0.00953	0.01908
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00655	0.00663	0.01618
	(!CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00100
	(!CLK * !RESET_B * SCD * SCE)	0.00049	0.00049	0.00049
	(!CLK * !RESET_B * SCD * SCE)	-0.00097	-0.00100	-0.00100
	(!CLK * !RESET_B * SCD * !SCE)	0.00032	0.00032	0.00028
	(!CLK * !RESET_B * SCD * !SCE)	-0.00114	-0.00116	-0.00120
	(!CLK * !RESET_B * !SCD * !SCE)	0.00031	0.00032	0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00117	-0.00118	-0.00122

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * RESET_B * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00044	0.00077	0.01074
	(CLK * RESET_B * SCD * !SCE)	0.00314	0.00346	0.01344
	(CLK * RESET_B * !SCD * !SCE)	0.00044	0.00076	0.01075
	(CLK * RESET_B * !SCD * !SCE)	0.00314	0.00346	0.01344
	(CLK * !SCD * SCE)	-0.00048	-0.00048	-0.00048
	(CLK * !SCD * SCE)	0.00098	0.00099	0.00098
	(CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !RESET_B * SCD * SCE)	0.00099	0.00099	0.00099
	(CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B * SCD * !SCE)	0.00119	0.00120	0.00119
	(CLK * !RESET_B * !SCD * !SCE)	-0.00029	-0.00029	-0.00028
	(CLK * !RESET_B * !SCD * !SCE)	0.00119	0.00120	0.00119
	(!CLK * RESET_B * SCD * SCE)	-0.00093	-0.00094	-0.00096
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00541	0.00589	0.01748
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00825	0.00873	0.02033
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00541	0.00577	0.01748
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00825	0.00861	0.02033
	(!CLK * !SCD * SCE)	-0.00048	-0.00048	-0.00048
	(!CLK * !SCD * SCE)	0.00099	0.00098	0.00098
	(!CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK * !RESET_B * SCD * SCE)	0.00099	0.00099	0.00099
	(!CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B * SCD * !SCE)	0.00119	0.00120	0.00119
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00029	-0.00029	-0.00028
	(!CLK * !RESET_B * !SCD * !SCE)	0.00119	0.00120	0.00119

	(CLK * RESET_B * SCD * SCE)	-0.00095	-0.00096	-0.00099
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00052	0.00083	0.01074
	(CLK * RESET_B * SCD * !SCE)	0.00327	0.00358	0.01349
	(CLK * RESET_B * !SCD * !SCE)	0.00053	0.00082	0.01074
	(CLK * RESET_B * !SCD * !SCE)	0.00327	0.00358	0.01349
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00100	0.00100	0.00099
	(CLK * !RESET_B * SCD * SCE)	-0.00048	-0.00048	-0.00048
	(CLK * !RESET_B * SCD * SCE)	0.00100	0.00100	0.00100
	(CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !RESET_B * SCD * !SCE)	0.00122	0.00123	0.00122
	(CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(CLK * !RESET_B * !SCD * !SCE)	0.00122	0.00123	0.00122
	(!CLK * RESET_B * SCD * SCE)	-0.00095	-0.00096	-0.00099
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)**	0.00550	0.00585	0.01759
	(!CLK * RESET_B * SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * SCD * !SCE * !Q * Q_N)	0.00839	0.00875	0.02049
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00550	0.00585	0.01759
	(!CLK * RESET_B * !SCD * !SCE * Q * !Q_N) + (!CLK * RESET_B * !SCD * !SCE * !Q * Q_N)	0.00840	0.00875	0.02049
	(!CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * !SCD * SCE)	0.00100	0.00100	0.00100
	(!CLK * !RESET_B * SCD * SCE)	-0.00048	-0.00048	-0.00048
	(!CLK * !RESET_B * SCD * SCE)	0.00100	0.00100	0.00100
	(!CLK * !RESET_B * SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !RESET_B * SCD * !SCE)	0.00122	0.00123	0.00122
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00027	-0.00027	-0.00027
	(!CLK * !RESET_B * !SCD * !SCE)	0.00122	0.00123	0.00122

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00531	0.00520	0.00959
	(CLK * D * RESET_B * SCE)	0.00183	0.00171	0.00611
	(CLK * D * RESET_B * !SCE)	0.00093	0.00083	0.00082
	(CLK * D * RESET_B * !SCE)	-0.00081	-0.00091	-0.00092
	(CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * D * !RESET_B * SCE)	-0.00101	-0.00101	-0.00101
	(CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(CLK * D * !RESET_B * !SCE)	-0.00110	-0.00112	-0.00111
	(CLK * !D * RESET_B * SCE)	0.00582	0.00571	0.00991
	(CLK * !D * RESET_B * SCE)	0.00228	0.00216	0.00637
	(CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * !D * !RESET_B * SCE)	-0.00101	-0.00102	-0.00101
	(!D * RESET_B * !SCE)	0.00065	0.00066	0.00065
	(!D * RESET_B * !SCE)	-0.00107	-0.00109	-0.00109
	(!D * !RESET_B * !SCE)	0.00037	0.00037	0.00037
	(!D * !RESET_B * !SCE)	-0.00116	-0.00117	-0.00117
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01040	0.01033	0.01512
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00676	0.00668	0.01149
	(!CLK * D * RESET_B * !SCE)	0.00093	0.00083	0.00082
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * D * !RESET_B * SCE)	-0.00101	-0.00102	-0.00101
	(!CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!CLK * D * !RESET_B * !SCE)	-0.00110	-0.00112	-0.00111
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01091	0.01084	0.01537
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00721	0.00715	0.01168
	(!CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * !D * !RESET_B * SCE)	-0.00101	-0.00102	-0.00101

	(CLK * D * RESET_B * SCE)	0.00548	0.00538	0.00973
	(CLK * D * RESET_B * SCE)	0.00194	0.00183	0.00619
	(CLK * D * RESET_B * !SCE)	0.00095	0.00085	0.00084
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(CLK * D * !RESET_B * SCE)	0.00046	0.00046	0.00045
	(CLK * D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00101
	(CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(CLK * D * !RESET_B * !SCE)	-0.00111	-0.00113	-0.00112
	(CLK * !D * RESET_B * SCE)	0.00599	0.00588	0.01005
	(CLK * !D * RESET_B * SCE)	0.00239	0.00228	0.00645
	(CLK * !D * !RESET_B * SCE)	0.00046	0.00046	0.00045
	(CLK * !D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00101
	(!D * RESET_B * !SCE)	0.00067	0.00067	0.00067
	(!D * RESET_B * !SCE)	-0.00108	-0.00110	-0.00109
	(!D * !RESET_B * !SCE)	0.00037	0.00037	0.00037
	(!D * !RESET_B * !SCE)	-0.00117	-0.00118	-0.00118
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.01059	0.01052	0.01530
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.00690	0.00683	0.01161
	(!CLK * D * RESET_B * !SCE)	0.00095	0.00085	0.00084
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00046	0.00046	0.00045
	(!CLK * D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00101
	(!CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(!CLK * D * !RESET_B * !SCE)	-0.00111	-0.00113	-0.00112
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.01111	0.01104	0.01556
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00735	0.00728	0.01181
	(!CLK * !D * !RESET_B * SCE)	0.00046	0.00046	0.00045
	(!CLK * !D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK * D * RESET_B * SCE)	0.00145	0.00128	0.00567
	(CLK * D * RESET_B * SCE)	0.00494	0.00477	0.00915
	(CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00081
	(CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(CLK * D * !RESET_B * SCE)	0.00103	0.00104	0.00102
	(CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(CLK * D * !RESET_B * !SCE)	0.00112	0.00113	0.00112
	(CLK * !D * RESET_B * SCE)	0.00108	0.00093	0.00547
	(CLK * !D * RESET_B * SCE)	0.00463	0.00448	0.00900
	(CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(CLK * !D * !RESET_B * SCE)	0.00103	0.00104	0.00102
	(!D * RESET_B * !SCE)	-0.00061	-0.00065	-0.00065
	(!D * RESET_B * !SCE)	0.00110	0.00110	0.00109
	(!D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00037
	(!D * !RESET_B * !SCE)	0.00118	0.00120	0.00119
sky130_fd_sc_hs__sdfrbp_1	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00648	0.00633	0.01258
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01012	0.00997	0.01621
	(!CLK * D * RESET_B * !SCE)	-0.00078	-0.00080	-0.00081
	(!CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(!CLK * D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * D * !RESET_B * SCE)	0.00103	0.00104	0.00102
	(!CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * D * !RESET_B * !SCE)	0.00112	0.00113	0.00112
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00610	0.00606	0.01213
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00980	0.00975	0.01581
	(!CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * !D * !RESET_B * SCE)	0.00104	0.00104	0.00102

	(CLK * D * RESET_B * SCE)	0.00150	0.00133	0.00571
	(CLK * D * RESET_B * SCE)	0.00505	0.00488	0.00923
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00083	-0.00083
	(CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * D * !RESET_B * SCE)	0.00104	0.00104	0.00102
	(CLK * D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(CLK * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(CLK * !D * RESET_B * SCE)	0.00118	0.00103	0.00553
	(CLK * !D * RESET_B * SCE)	0.00478	0.00463	0.00912
	(CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(CLK * !D * !RESET_B * SCE)	0.00104	0.00104	0.00102
	(!D * RESET_B * !SCE)	-0.00062	-0.00067	-0.00067
	(!D * RESET_B * !SCE)	0.00111	0.00111	0.00110
	(!D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00037
	(!D * !RESET_B * !SCE)	0.00119	0.00120	0.00120
sky130_fd_sc_hs__sdfrbp_2	**(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)**	0.00651	0.00641	0.01263
	(!CLK * D * RESET_B * SCE * Q * !Q_N) + (!CLK * D * RESET_B * SCE * !Q * Q_N)	0.01021	0.01010	0.01630
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00082	-0.00083
	(!CLK * D * RESET_B * !SCE)	0.00094	0.00094	0.00094
	(!CLK * D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * D * !RESET_B * SCE)	0.00104	0.00104	0.00102
	(!CLK * D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00621	0.00615	0.01258
	(!CLK * !D * RESET_B * SCE * Q * !Q_N) + (!CLK * !D * RESET_B * SCE * !Q * Q_N)	0.00997	0.00990	0.01632
	(!CLK * !D * !RESET_B * SCE)	-0.00042	-0.00042	-0.00042
	(!CLK * !D * !RESET_B * SCE)	0.00104	0.00104	0.00102

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)**	0.00475	0.00470	0.01735
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00010	0.00002	0.01269
	(CLK * D * RESET_B * !SCD)	0.00667	0.00653	0.01955
	(CLK * D * RESET_B * !SCD)	0.00364	0.00346	0.01646
	(CLK * !D * RESET_B * SCD)	0.00861	0.00864	0.02671
	(CLK * !D * RESET_B * SCD)	0.00260	0.00261	0.02070
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00475	0.00470	0.01735
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00010	0.00003	0.01269
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01155	0.01153	0.02476
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00867	0.00860	0.02182
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00464	0.00471	0.01742
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00023	0.00027	0.01299
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01370	0.01375	0.03250
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00753	0.00759	0.02636

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00445	0.00442	0.01716
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00036	-0.00041	0.01234
	(CLK * D * RESET_B * !SCD)	0.00648	0.00637	0.01944
	(CLK * D * RESET_B * !SCD)	0.00333	0.00315	0.01622
	(CLK * !D * RESET_B * SCD)	0.00851	0.00854	0.02669
	(CLK * !D * RESET_B * SCD)	0.00229	0.00231	0.02049
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00446	0.00442	0.01716
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00036	-0.00041	0.01234
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01139	0.01137	0.02466
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00837	0.00832	0.02161
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00438	0.00446	0.01727
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00019	-0.00013	0.01268
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01362	0.01367	0.03250
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00725	0.00731	0.02615

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)**	-0.00034	0.00025	0.01302
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00432	0.00491	0.01768
	(CLK * D * RESET_B * !SCD)	0.00377	0.00421	0.01712
	(CLK * D * RESET_B * !SCD)	0.00685	0.00729	0.02007
	(CLK * !D * RESET_B * SCD)	0.00075	0.00109	0.01883
	(CLK * !D * RESET_B * SCD)	0.00675	0.00711	0.02485
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00034	0.00025	0.01302
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00432	0.00493	0.01767
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00884	0.00935	0.02218
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01177	0.01227	0.02498
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00032	0.00024	0.01294
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00410	0.00466	0.01735
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00572	0.00610	0.02498
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01186	0.01225	0.03113

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00031	0.00027	0.01311
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00451	0.00510	0.01791
	(CLK * D * RESET_B * !SCD)	0.00404	0.00449	0.01741
	(CLK * D * RESET_B * !SCD)	0.00724	0.00770	0.02049
	(CLK * !D * RESET_B * SCD)	0.00081	0.00116	0.01893
	(CLK * !D * RESET_B * SCD)	0.00701	0.00737	0.02513
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	-0.00031	0.00027	0.01311
	(!CLK * D * RESET_B * SCD * Q * !Q_N) + (!CLK * D * RESET_B * SCD * !Q * Q_N)	0.00451	0.00510	0.01792
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.00914	0.00965	0.02247
	(!CLK * D * RESET_B * !SCD * Q * !Q_N) + (!CLK * D * RESET_B * !SCD * !Q * Q_N)	0.01218	0.01269	0.02541
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	-0.00032	0.00024	0.01300
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD * Q * !Q_N) + (!CLK * !D * RESET_B * !SCD * !Q * Q_N) + (!CLK * !D * !RESET_B)	0.00425	0.00484	0.01757
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.00578	0.00617	0.02513
	(!CLK * !D * RESET_B * SCD * Q * !Q_N) + (!CLK * !D * RESET_B * SCD * !Q * Q_N)	0.01213	0.01253	0.03149

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)**	0.00781	0.00768	0.01722
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00032	-0.00050	0.00907
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00758	0.00745	0.01737
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00026	-0.00043	0.00951
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00270	0.00272	0.00271
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00327	-0.00329	-0.00328
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00720	0.00710	0.01719
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00025	-0.00042	0.00971
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00832	0.00817	0.01749
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00013	-0.00004	0.00928
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00268	0.00269	0.00269
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00329	-0.00330	-0.00330
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00269	0.00274	0.00271
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00326	-0.00330	-0.00328
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00269	0.00272	0.00269
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00330	-0.00333	-0.00330
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01342	0.01301	0.02365
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00516	0.00470	0.01538
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01319	0.01278	0.02378
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00521	0.00476	0.01579
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00271	0.00274	0.00272
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00328	-0.00330	-0.00328
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01281	0.01243	0.02364
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00522	0.00479	0.01604
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01393	0.01352	0.02388
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00561	0.00517	0.01555
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00268	0.00271	0.00269
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00329	-0.00330	-0.00329
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00272	0.00273	0.00272
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00329	-0.00328	-0.00328
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00269	0.00271	0.00270
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00329	-0.00331	-0.00330

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00787	0.00773	0.01719
	(CLK * D * SCD * SCE * !Q * Q_N)	-0.00029	-0.00046	0.00902
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00772	0.00759	0.01739
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00014	-0.00032	0.00951
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00260	0.00264	0.00261
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00336	-0.00338	-0.00336
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00735	0.00723	0.01722
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00014	-0.00030	0.00971
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00838	0.00825	0.01746
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00016	-0.00002	0.00923
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00258	0.00262	0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00337	-0.00340	-0.00338
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00260	0.00262	0.00261
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00336	-0.00337	-0.00336
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00258	0.00260	0.00259
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00338	-0.00339	-0.00338
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01348	0.01307	0.02367
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00519	0.00474	0.01535
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01334	0.01293	0.02385
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00533	0.00490	0.01583
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00261	0.00264	0.00261
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00337	-0.00339	-0.00337
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01296	0.01257	0.02373
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00534	0.00491	0.01609
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01400	0.01361	0.02389
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00564	0.00521	0.01553
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00257	0.00260	0.00258
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00337	-0.00340	-0.00338
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00260	0.00264	0.00261
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00336	-0.00339	-0.00337
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00258	0.00262	0.00259
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00338	-0.00341	-0.00339

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)**	0.00020	0.00043	0.01158
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00833	0.00860	0.01972
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00049	-0.00028	0.01084
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00735	0.00761	0.01869
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00265	-0.00271	-0.00271
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00330	0.00331	0.00329
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00072	-0.00046	0.01078
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00674	0.00702	0.01825
	(CLK * !D * SCD * SCE * !Q * Q_N)	-0.00016	0.00010	0.01139
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00802	0.00831	0.01958
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00260	-0.00269	-0.00269
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00333	0.00332	0.00330
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00265	-0.00271	-0.00271
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00330	0.00331	0.00329
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00261	-0.00270	-0.00269
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00334	0.00333	0.00331
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00553	0.00536	0.01975
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01378	0.01365	0.02804
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00484	0.00464	0.01897
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01280	0.01265	0.02695
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00265	-0.00274	-0.00272
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00330	0.00332	0.00329
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00462	0.00453	0.01856
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01219	0.01215	0.02618
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00517	0.00501	0.01924
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01348	0.01337	0.02758
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00260	-0.00271	-0.00269
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00333	0.00333	0.00330
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00265	-0.00270	-0.00272
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00330	0.00328	0.00329
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00262	-0.00271	-0.00270
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00333	0.00334	0.00330

sky130_fd_sc_hs__sdfrbp_2	**(CLK * D * SCD * SCE * !Q * Q_N)**	0.00034	0.00058	0.01168
	(CLK * D * SCD * SCE * !Q * Q_N)	0.00850	0.00877	0.01982
	(CLK * D * SCD * !SCE * !Q * Q_N)	-0.00039	-0.00017	0.01090
	(CLK * D * SCD * !SCE * !Q * Q_N)	0.00748	0.00774	0.01878
	(CLK * D * !SCD * SCE * !Q * Q_N)	-0.00255	-0.00264	-0.00261
	(CLK * D * !SCD * SCE * !Q * Q_N)	0.00338	0.00340	0.00337
	(CLK * D * !SCD * !SCE * !Q * Q_N)	-0.00061	-0.00035	0.01084
	(CLK * D * !SCD * !SCE * !Q * Q_N)	0.00687	0.00715	0.01834
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00002	0.00029	0.01152
	(CLK * !D * SCD * SCE * !Q * Q_N)	0.00824	0.00854	0.01974
	(CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00250	-0.00261	-0.00259
	(CLK * !D * SCD * !SCE * !Q * Q_N)	0.00341	0.00341	0.00338
	(CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00255	-0.00262	-0.00261
	(CLK * !D * !SCD * SCE * !Q * Q_N)	0.00338	0.00340	0.00337
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00252	-0.00260	-0.00259
	(CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00342	0.00342	0.00339
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.00569	0.00550	0.01986
	(!CLK * D * SCD * SCE * !Q * Q_N)	0.01397	0.01384	0.02818
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.00496	0.00483	0.01906
	(!CLK * D * SCD * !SCE * !Q * Q_N)	0.01296	0.01287	0.02707
	(!CLK * D * !SCD * SCE * !Q * Q_N)	-0.00255	-0.00263	-0.00261
	(!CLK * D * !SCD * SCE * !Q * Q_N)	0.00339	0.00340	0.00338
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.00474	0.00463	0.01867
	(!CLK * D * !SCD * !SCE * !Q * Q_N)	0.01235	0.01229	0.02632
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.00538	0.00529	0.01942
	(!CLK * !D * SCD * SCE * !Q * Q_N)	0.01372	0.01368	0.02779
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	-0.00250	-0.00260	-0.00258
	(!CLK * !D * SCD * !SCE * !Q * Q_N)	0.00341	0.00341	0.00339
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	-0.00255	-0.00263	-0.00261
	(!CLK * !D * !SCD * SCE * !Q * Q_N)	0.00339	0.00340	0.00338
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	-0.00251	-0.00262	-0.00259
	(!CLK * !D * !SCD * !SCE * !Q * Q_N)	0.00342	0.00342	0.00339

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)**	0.01057	0.01062	0.02735
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00716	0.00720	0.02393
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01057	0.01062	0.02733
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00716	0.00720	0.02391
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01057	0.01062	0.02733
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00716	0.00720	0.02391
	(D * !SCD * SCE * !Q * Q_N)	0.01093	0.01097	0.02772
	(D * !SCD * SCE * !Q * Q_N)	0.00752	0.00754	0.02429
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01093	0.01098	0.02772
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00753	0.00755	0.02430
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01093	0.01098	0.02772
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00752	0.00755	0.02430
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01093	0.01098	0.02772
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00752	0.00755	0.02430
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01057	0.01062	0.02735
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00716	0.00720	0.02393
	(!D * !SCE * !Q * Q_N)	0.01093	0.01097	0.02772
	(!D * !SCE * !Q * Q_N)	0.00752	0.00754	0.02429
	(!D * !SCD * SCE * !Q * Q_N)	0.01093	0.01097	0.02772
	(!D * !SCD * SCE * !Q * Q_N)	0.00752	0.00754	0.02429
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01093	0.01098	0.02772
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00753	0.00755	0.02429

sky130_fd_sc_hs__sdfrbp_2	**(D * RESET_B * SCD * SCE * Q * !Q_N)**	0.01065	0.01063	0.02748
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00730	0.00726	0.02413
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.01064	0.01063	0.02748
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00730	0.00726	0.02413
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.01065	0.01063	0.02748
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00730	0.00726	0.02413
	(D * !SCD * SCE * !Q * Q_N)	0.01095	0.01092	0.02779
	(D * !SCD * SCE * !Q * Q_N)	0.00761	0.00755	0.02443
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01095	0.01093	0.02779
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00761	0.00756	0.02444
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.01095	0.01093	0.02779
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00761	0.00756	0.02444
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.01095	0.01093	0.02779
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00761	0.00756	0.02444
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.01065	0.01063	0.02748
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00730	0.00726	0.02413
	(!D * !SCE * !Q * Q_N)	0.01095	0.01092	0.02778
	(!D * !SCE * !Q * Q_N)	0.00760	0.00755	0.02443
	(!D * !SCD * SCE * !Q * Q_N)	0.01095	0.01092	0.02777
	(!D * !SCD * SCE * !Q * Q_N)	0.00761	0.00755	0.02443
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.01095	0.01093	0.02778
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00761	0.00756	0.02443

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)	0.00576	0.00626	0.02343
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00919	0.00968	0.02685
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01049	0.01088	0.02867
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01377	0.01416	0.03195
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00576	0.00626	0.02343
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00919	0.00968	0.02685
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01045	0.01085	0.02863
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01373	0.01413	0.03192
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01135	0.01196	0.02953
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01495	0.01553	0.03312
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00576	0.00626	0.02343
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00919	0.00968	0.02685
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01045	0.01085	0.02863
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01373	0.01413	0.03192
	(D * !SCD * SCE * !Q * Q_N)	0.00533	0.00581	0.02305
	(D * !SCD * SCE * !Q * Q_N)	0.00876	0.00924	0.02647
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00582	0.02304
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00876	0.00925	0.02647
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00533	0.00581	0.02304
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00876	0.00925	0.02646
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00533	0.00581	0.02304
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00876	0.00925	0.02646
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00576	0.00626	0.02343
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00919	0.00968	0.02685
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01051	0.01091	0.02870
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01378	0.01418	0.03197
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01133	0.01194	0.02951
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01491	0.01551	0.03308
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01134	0.01192	0.02953
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01493	0.01551	0.03312
	(!D * !SCE * !Q * Q_N)	0.00533	0.00581	0.02304
	(!D * !SCE * !Q * Q_N)	0.00876	0.00924	0.02647
	(!D * !SCD * SCE * !Q * Q_N)	0.00533	0.00581	0.02305
	(!D * !SCD * SCE * !Q * Q_N)	0.00876	0.00924	0.02647
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00533	0.00582	0.02304
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00876	0.00925	0.02647

sky130_fd_sc_hs__sdfrbp_2	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00572	0.00622	0.02360
	(D * RESET_B * SCD * SCE * Q * !Q_N)	0.00906	0.00958	0.02696
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01051	0.01092	0.02886
	(D * RESET_B * SCD * SCE * !Q * Q_N)	0.01370	0.01413	0.03207
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00572	0.00622	0.02360
	(D * RESET_B * SCD * !SCE * Q * !Q_N)	0.00906	0.00958	0.02696
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01048	0.01089	0.02883
	(D * RESET_B * SCD * !SCE * !Q * Q_N)	0.01367	0.01410	0.03203
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01130	0.01190	0.02972
	(D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01481	0.01542	0.03323
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00572	0.00622	0.02360
	(D * RESET_B * !SCD * !SCE * Q * !Q_N)	0.00906	0.00958	0.02696
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01048	0.01089	0.02883
	(D * RESET_B * !SCD * !SCE * !Q * Q_N)	0.01367	0.01410	0.03203
	(D * !SCD * SCE * !Q * Q_N)	0.00536	0.00586	0.02328
	(D * !SCD * SCE * !Q * Q_N)	0.00870	0.00922	0.02664
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00536	0.00586	0.02327
	(D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00870	0.00922	0.02663
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00536	0.00586	0.02327
	(D * !RESET_B * SCD * !SCE * !Q * Q_N)	0.00870	0.00922	0.02663
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00536	0.00586	0.02327
	(D * !RESET_B * !SCD * !SCE * !Q * Q_N)	0.00870	0.00922	0.02663
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00572	0.00622	0.02360
	(!D * RESET_B * SCD * SCE * Q * !Q_N)	0.00906	0.00958	0.02696
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01054	0.01095	0.02889
	(!D * RESET_B * SCD * SCE * !Q * Q_N)	0.01371	0.01414	0.03208
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01128	0.01188	0.02970
	(!D * RESET_B * !SCE * Q * !Q_N)	0.01477	0.01539	0.03320
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01129	0.01190	0.02971
	(!D * RESET_B * !SCD * SCE * Q * !Q_N)	0.01479	0.01541	0.03323
	(!D * !SCE * !Q * Q_N)	0.00536	0.00586	0.02328
	(!D * !SCE * !Q * Q_N)	0.00870	0.00922	0.02664
	(!D * !SCD * SCE * !Q * Q_N)	0.00536	0.00586	0.02328
	(!D * !SCD * SCE * !Q * Q_N)	0.00870	0.00922	0.02664
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00536	0.00586	0.02327
	(!D * !RESET_B * SCD * SCE * !Q * Q_N)	0.00870	0.00922	0.02663

SKY130_FD_SC_HS__SDFRTN

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00191	0.00185	0.00403	0.00557	0.00268	1.14947

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfrtn_1	0.00000	0.36874	0.73824

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)	0.22220	0.91636	8.68574

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)	0.18302	0.61264	4.46336
	RESET_B->Q (FF)	0.25027	0.73051	4.86515

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)	-0.00383	0.06056	2.30430
	setup	CLK_N (F)	0.09198	0.01500	-2.24179

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)	-0.10931	-0.12923	-0.30454
	setup	CLK_N (F)	0.28151	0.26271	0.36849

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)	-0.00484	0.06056	2.29954
	hold	CLK_N (F)	-0.00383	0.05881	2.30430
	setup	CLK_N (F)	0.09191	0.01500	-2.24179
	setup	CLK_N (F)	0.09198	0.01500	-2.24233

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)	-0.10931	-0.12923	-0.30454
	hold	CLK_N (F)	-0.10954	-0.12977	-0.30702
	setup	CLK_N (F)	0.28151	0.26271	0.36849
	setup	CLK_N (F)	0.28110	0.26249	0.36801

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)	-0.01581	0.04838	2.22884
	setup	CLK_N (F)	0.10375	0.02300	-2.16221

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)	-0.13796	-0.17408	-0.71068
	setup	CLK_N (F)	0.33622	0.32591	0.82303

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)	-0.01581	0.04838	2.22884
	hold	CLK_N (F)	-0.01904	0.04250	2.20668
	setup	CLK_N (F)	0.10258	0.01919	-2.18322
	setup	CLK_N (F)	0.10375	0.02300	-2.16221

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)	-0.15076	-0.18940	-0.76519
	hold	CLK_N (F)	-0.13796	-0.17408	-0.71068
	setup	CLK_N (F)	0.33622	0.32591	0.82303
	setup	CLK_N (F)	0.33010	0.31649	0.76635

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)	-0.00518	0.05819	2.39473
	setup	CLK_N (F)	0.33129	0.19775	-2.26120

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)	-0.06837	-0.07587	0.00798
	setup	CLK_N (F)	0.29967	0.28976	0.69839

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)	-0.15205	-0.06216	2.39473
	hold	CLK_N (F)	-0.00518	0.05819	2.31522
	setup	CLK_N (F)	0.33129	0.19775	-2.36010
	setup	CLK_N (F)	0.08771	0.01400	-2.26120

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)	-0.06837	-0.07587	0.00798
	hold	CLK_N (F)	-0.12614	-0.15750	-0.64718
	setup	CLK_N (F)	0.15572	0.13462	0.01890
	setup	CLK_N (F)	0.29967	0.28976	0.69839

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)	0.11673	0.02181	-2.08127
	removal	CLK_N (F)	-0.07568	0.01983	2.15888

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)	0.11594	0.01736	-2.08859
	recovery	CLK_N (F)	0.11639	0.01500	-2.14014
	recovery	CLK_N (F)	0.11468	0.00570	-2.15402
	recovery	CLK_N (F)	0.11673	0.02181	-2.08127
	removal	CLK_N (F)	-0.07939	0.00705	2.09644
	removal	CLK_N (F)	-0.07861	0.01283	2.14277
	removal	CLK_N (F)	-0.07568	0.01983	2.15888
	removal	CLK_N (F)	-0.08007	0.00492	2.08496

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 ()	0.11623	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.13769	0.63599	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 ()	0.11862	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.18061	0.63599	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 ()	0.13054	0.63599	16.50020
	min_pulse_width	CLK_N ()	0.11862	0.63599	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	0.01788	0.01902	0.03783
	CLK_N	0.02136	0.02250	0.04139

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtn_1	CLK_N	0.01650	0.01718	0.03553
	CLK_N	0.01953	0.02020	0.03846
	RESET_B	0.01755	0.01761	0.03753
	RESET_B	0.02559	0.02563	0.04490

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)**	0.00101	0.00101	0.00101
	(CLK_N * RESET_B * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(CLK_N * RESET_B * SCD * !SCE)	0.00967	0.00968	0.01900
	(CLK_N * RESET_B * SCD * !SCE)	0.00689	0.00689	0.01622
	(CLK_N * RESET_B * !SCD * !SCE)	0.00967	0.00968	0.01900
	(CLK_N * RESET_B * !SCD * !SCE)	0.00689	0.00689	0.01622
	(CLK_N * !SCD * SCE)	0.00056	0.00057	0.00056
	(CLK_N * !SCD * SCE)	-0.00099	-0.00101	-0.00103
	(CLK_N * !RESET_B * SCD * SCE)	0.00054	0.00055	0.00054
	(CLK_N * !RESET_B * SCD * SCE)	-0.00101	-0.00103	-0.00103
	(CLK_N * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00025
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00127	-0.00129	-0.00133
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00028	0.00028	0.00025
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00130	-0.00132	-0.00134
	(!CLK_N * RESET_B * SCD * SCE)	0.00100	0.00101	0.00101
	(!CLK_N * RESET_B * SCD * SCE)	-0.00051	-0.00051	-0.00051
	(!CLK_N * RESET_B * SCD * !SCE)	0.00427	0.00428	0.01373
	(!CLK_N * RESET_B * SCD * !SCE)	0.00146	0.00146	0.01092
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00427	0.00428	0.01373
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00146	0.00146	0.01092
	(!CLK_N * !SCD * SCE)	0.00056	0.00056	0.00055
	(!CLK_N * !SCD * SCE)	-0.00099	-0.00101	-0.00103
	(!CLK_N * !RESET_B * SCD * SCE)	0.00054	0.00055	0.00054
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00101	-0.00103	-0.00103
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00028	0.00028	0.00025
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00127	-0.00129	-0.00133
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00028	0.00028	0.00025
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00130	-0.00132	-0.00134

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)**	-0.00096	-0.00097	-0.00100
	(CLK_N * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(CLK_N * RESET_B * SCD * !SCE)	0.00636	0.00665	0.01816
	(CLK_N * RESET_B * SCD * !SCE)	0.00915	0.00943	0.02094
	(CLK_N * RESET_B * !SCD * !SCE)	0.00636	0.00665	0.01816
	(CLK_N * RESET_B * !SCD * !SCE)	0.00915	0.00943	0.02094
	(CLK_N * !SCD * SCE)	-0.00054	-0.00054	-0.00054
	(CLK_N * !SCD * SCE)	0.00103	0.00103	0.00103
	(CLK_N * !RESET_B * SCD * SCE)	-0.00053	-0.00054	-0.00054
	(CLK_N * !RESET_B * SCD * SCE)	0.00102	0.00103	0.00103
	(CLK_N * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK_N * !RESET_B * SCD * !SCE)	0.00135	0.00136	0.00135
	(CLK_N * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(CLK_N * !RESET_B * !SCD * !SCE)	0.00135	0.00136	0.00135
	(!CLK_N * RESET_B * SCD * SCE)	-0.00096	-0.00098	-0.00100
	(!CLK_N * RESET_B * SCD * SCE)	0.00055	0.00055	0.00053
	(!CLK_N * RESET_B * SCD * !SCE)	0.00088	0.00118	0.01095
	(!CLK_N * RESET_B * SCD * !SCE)	0.00368	0.00399	0.01375
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00088	0.00118	0.01095
	(!CLK_N * RESET_B * !SCD * !SCE)	0.00368	0.00399	0.01375
	(!CLK_N * !SCD * SCE)	-0.00054	-0.00054	-0.00054
	(!CLK_N * !SCD * SCE)	0.00103	0.00102	0.00103
	(!CLK_N * !RESET_B * SCD * SCE)	-0.00054	-0.00054	-0.00054
	(!CLK_N * !RESET_B * SCD * SCE)	0.00103	0.00103	0.00103
	(!CLK_N * !RESET_B * SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(!CLK_N * !RESET_B * SCD * !SCE)	0.00135	0.00136	0.00135
	(!CLK_N * !RESET_B * !SCD * !SCE)	-0.00024	-0.00024	-0.00023
	(!CLK_N * !RESET_B * !SCD * !SCE)	0.00135	0.00136	0.00135

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)**	0.01087	0.01082	0.01549
	(CLK_N * D * RESET_B * SCE)	0.00739	0.00733	0.01200
	(CLK_N * D * RESET_B * !SCE)	0.00089	0.00078	0.00077
	(CLK_N * D * RESET_B * !SCE)	-0.00087	-0.00098	-0.00099
	(CLK_N * D * !RESET_B * SCE)	0.00050	0.00050	0.00049
	(CLK_N * D * !RESET_B * SCE)	-0.00097	-0.00097	-0.00096
	(CLK_N * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(CLK_N * D * !RESET_B * !SCE)	-0.00112	-0.00113	-0.00113
	(CLK_N * !D * RESET_B * SCE)	0.01137	0.01131	0.01579
	(CLK_N * !D * RESET_B * SCE)	0.00783	0.00776	0.01225
	(CLK_N * !D * !RESET_B * SCE)	0.00050	0.00050	0.00049
	(CLK_N * !D * !RESET_B * SCE)	-0.00097	-0.00097	-0.00096
	(!D * RESET_B * !SCE)	0.00067	0.00068	0.00067
	(!D * RESET_B * !SCE)	-0.00108	-0.00109	-0.00109
	(!D * !RESET_B * !SCE)	0.00036	0.00036	0.00036
	(!D * !RESET_B * !SCE)	-0.00118	-0.00119	-0.00119
	(!CLK_N * D * RESET_B * SCE)	0.00547	0.00538	0.00969
	(!CLK_N * D * RESET_B * SCE)	0.00196	0.00187	0.00619
	(!CLK_N * D * RESET_B * !SCE)	0.00088	0.00078	0.00077
	(!CLK_N * D * RESET_B * !SCE)	-0.00087	-0.00099	-0.00099
	(!CLK_N * D * !RESET_B * SCE)	0.00050	0.00050	0.00049
	(!CLK_N * D * !RESET_B * SCE)	-0.00097	-0.00097	-0.00096
	(!CLK_N * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!CLK_N * D * !RESET_B * !SCE)	-0.00112	-0.00113	-0.00113
	(!CLK_N * !D * RESET_B * SCE)	0.00597	0.00589	0.01000
	(!CLK_N * !D * RESET_B * SCE)	0.00240	0.00231	0.00644
	(!CLK_N * !D * !RESET_B * SCE)	0.00050	0.00050	0.00049
	(!CLK_N * !D * !RESET_B * SCE)	-0.00097	-0.00097	-0.00096

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)**	0.00725	0.00721	0.01317
	(CLK_N * D * RESET_B * SCE)	0.01074	0.01069	0.01665
	(CLK_N * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00075
	(CLK_N * D * RESET_B * !SCE)	0.00100	0.00101	0.00101
	(CLK_N * D * !RESET_B * SCE)	-0.00047	-0.00047	-0.00047
	(CLK_N * D * !RESET_B * SCE)	0.00099	0.00099	0.00097
	(CLK_N * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(CLK_N * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(CLK_N * !D * RESET_B * SCE)	0.00697	0.00691	0.01310
	(CLK_N * !D * RESET_B * SCE)	0.01051	0.01045	0.01664
	(CLK_N * !D * !RESET_B * SCE)	-0.00047	-0.00047	-0.00047
	(CLK_N * !D * !RESET_B * SCE)	0.00099	0.00099	0.00097
	(!D * RESET_B * !SCE)	-0.00062	-0.00066	-0.00067
	(!D * RESET_B * !SCE)	0.00111	0.00110	0.00110
	(!D * !RESET_B * !SCE)	-0.00036	-0.00036	-0.00036
	(!D * !RESET_B * !SCE)	0.00119	0.00121	0.00121
	(!CLK_N * D * RESET_B * SCE)	0.00174	0.00160	0.00594
	(!CLK_N * D * RESET_B * SCE)	0.00526	0.00512	0.00943
	(!CLK_N * D * RESET_B * !SCE)	-0.00073	-0.00075	-0.00076
	(!CLK_N * D * RESET_B * !SCE)	0.00100	0.00101	0.00101
	(!CLK_N * D * !RESET_B * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK_N * D * !RESET_B * SCE)	0.00099	0.00099	0.00097
	(!CLK_N * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK_N * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(!CLK_N * !D * RESET_B * SCE)	0.00143	0.00130	0.00576
	(!CLK_N * !D * RESET_B * SCE)	0.00500	0.00488	0.00932
	(!CLK_N * !D * !RESET_B * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK_N * !D * !RESET_B * SCE)	0.00099	0.00099	0.00097

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)	0.00439	0.00437	0.01701
	(CLK_N * D * RESET_B * SCD)	-0.00031	-0.00034	0.01231
	(CLK_N * D * RESET_B * !SCD)	0.01209	0.01209	0.02518
	(CLK_N * D * RESET_B * !SCD)	0.00901	0.00895	0.02203
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00429	0.00439	0.01708
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00017	-0.00008	0.01260
	(CLK_N * !D * RESET_B * SCD)	0.01384	0.01391	0.03234
	(CLK_N * !D * RESET_B * SCD)	0.00780	0.00786	0.02632
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00439	0.00437	0.01699
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00031	-0.00034	0.01230
	(!CLK_N * D * RESET_B * !SCD)	0.00666	0.00657	0.01952
	(!CLK_N * D * RESET_B * !SCD)	0.00359	0.00347	0.01641
	(!CLK_N * !D * RESET_B * SCD)	0.00844	0.00846	0.02629
	(!CLK_N * !D * RESET_B * SCD)	0.00237	0.00240	0.02025

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)	-0.00030	0.00030	0.01300
	(CLK_N * D * RESET_B * SCD)	0.00438	0.00500	0.01769
	(CLK_N * D * RESET_B * !SCD)	0.00944	0.00998	0.02267
	(CLK_N * D * RESET_B * !SCD)	0.01257	0.01311	0.02569
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	-0.00031	0.00027	0.01290
	(CLK_N * D * !RESET_B) + (CLK_N * !D * RESET_B * !SCD) + (CLK_N * !D * !RESET_B)	0.00415	0.00474	0.01736
	(CLK_N * !D * RESET_B * SCD)	0.00663	0.00701	0.02550
	(CLK_N * !D * RESET_B * SCD)	0.01264	0.01302	0.03152
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	-0.00030	0.00029	0.01300
	(!CLK_N * D * RESET_B * SCD) + (!CLK_N * D * !RESET_B) + (!CLK_N * !D * RESET_B * !SCD) + (!CLK_N * !D * !RESET_B)	0.00438	0.00500	0.01770
	(!CLK_N * D * RESET_B * !SCD)	0.00407	0.00453	0.01731
	(!CLK_N * D * RESET_B * !SCD)	0.00716	0.00765	0.02030
	(!CLK_N * !D * RESET_B * SCD)	0.00114	0.00147	0.01886
	(!CLK_N * !D * RESET_B * SCD)	0.00718	0.00753	0.02492

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.01423	0.01379	0.02414
	(CLK_N * D * SCD * SCE * !Q)	0.00610	0.00562	0.01599
	(CLK_N * D * SCD * !SCE * !Q)	0.01410	0.01364	0.02434
	(CLK_N * D * SCD * !SCE * !Q)	0.00626	0.00577	0.01649
	(CLK_N * D * !SCD * SCE * !Q)	0.00307	0.00311	0.00308
	(CLK_N * D * !SCD * SCE * !Q)	-0.00294	-0.00296	-0.00294
	(CLK_N * D * !SCD * !SCE * !Q)	0.01372	0.01328	0.02417
	(CLK_N * D * !SCD * !SCE * !Q)	0.00626	0.00578	0.01669
	(CLK_N * !D * SCD * SCE * !Q)	0.01473	0.01428	0.02431
	(CLK_N * !D * SCD * SCE * !Q)	0.00654	0.00607	0.01613
	(CLK_N * !D * SCD * !SCE * !Q)	0.00304	0.00307	0.00305
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00296	-0.00297	-0.00296
	(CLK_N * !D * !SCD * SCE * !Q)	0.00307	0.00310	0.00308
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00294	-0.00296	-0.00294
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00305	0.00308	0.00306
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00296	-0.00298	-0.00297
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00828	0.00813	0.01748
	(!CLK_N * D * SCD * SCE * !Q)	0.00011	-0.00008	0.00929
	(!CLK_N * D * SCD * !SCE * !Q)	0.00813	0.00800	0.01768
	(!CLK_N * D * SCD * !SCE * !Q)	0.00027	0.00008	0.00979
	(!CLK_N * D * !SCD * SCE * !Q)	0.00299	0.00304	0.00300
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00302	-0.00304	-0.00302
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00776	0.00765	0.01751
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00027	0.00009	0.00999
	(!CLK_N * !D * SCD * SCE * !Q)	0.00878	0.00864	0.01774
	(!CLK_N * !D * SCD * SCE * !Q)	0.00055	0.00036	0.00949
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00296	0.00300	0.00297
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00303	-0.00306	-0.00304
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00299	0.00300	0.00300
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00302	-0.00302	-0.00302
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00297	0.00301	0.00298
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00304	-0.00306	-0.00304

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(CLK_N * D * SCD * SCE * !Q)	0.00602	0.00588	0.01994
	(CLK_N * D * SCD * SCE * !Q)	0.01420	0.01406	0.02810
	(CLK_N * D * SCD * !SCE * !Q)	0.00528	0.00513	0.01912
	(CLK_N * D * SCD * !SCE * !Q)	0.01317	0.01300	0.02699
	(CLK_N * D * !SCD * SCE * !Q)	-0.00304	-0.00309	-0.00308
	(CLK_N * D * !SCD * SCE * !Q)	0.00298	0.00297	0.00295
	(CLK_N * D * !SCD * !SCE * !Q)	0.00505	0.00491	0.01906
	(CLK_N * D * !SCD * !SCE * !Q)	0.01255	0.01240	0.02656
	(CLK_N * !D * SCD * SCE * !Q)	0.00571	0.00560	0.01982
	(CLK_N * !D * SCD * SCE * !Q)	0.01394	0.01383	0.02804
	(CLK_N * !D * SCD * !SCE * !Q)	-0.00298	-0.00307	-0.00305
	(CLK_N * !D * SCD * !SCE * !Q)	0.00301	0.00298	0.00296
	(CLK_N * !D * !SCD * SCE * !Q)	-0.00304	-0.00309	-0.00308
	(CLK_N * !D * !SCD * SCE * !Q)	0.00298	0.00297	0.00295
	(CLK_N * !D * !SCD * !SCE * !Q)	-0.00300	-0.00307	-0.00306
	(CLK_N * !D * !SCD * !SCE * !Q)	0.00303	0.00299	0.00297
sky130_fd_sc_hs__sdfrtn_1	**(!CLK_N * D * SCD * SCE * !Q)**	0.00013	0.00040	0.01142
	(!CLK_N * D * SCD * SCE * !Q)	0.00835	0.00860	0.01959
	(!CLK_N * D * SCD * !SCE * !Q)	-0.00061	-0.00036	0.01064
	(!CLK_N * D * SCD * !SCE * !Q)	0.00732	0.00755	0.01853
	(!CLK_N * D * !SCD * SCE * !Q)	-0.00296	-0.00300	-0.00300
	(!CLK_N * D * !SCD * SCE * !Q)	0.00307	0.00304	0.00303
	(!CLK_N * D * !SCD * !SCE * !Q)	-0.00080	-0.00055	0.01058
	(!CLK_N * D * !SCD * !SCE * !Q)	0.00667	0.00698	0.01810
	(!CLK_N * !D * SCD * SCE * !Q)	-0.00017	0.00011	0.01128
	(!CLK_N * !D * SCD * SCE * !Q)	0.00810	0.00838	0.01950
	(!CLK_N * !D * SCD * !SCE * !Q)	-0.00290	-0.00298	-0.00297
	(!CLK_N * !D * SCD * !SCE * !Q)	0.00310	0.00306	0.00304
	(!CLK_N * !D * !SCD * SCE * !Q)	-0.00296	-0.00300	-0.00300
	(!CLK_N * !D * !SCD * SCE * !Q)	0.00307	0.00305	0.00303
	(!CLK_N * !D * !SCD * !SCE * !Q)	-0.00292	-0.00298	-0.00298
	(!CLK_N * !D * !SCD * !SCE * !Q)	0.00311	0.00306	0.00305

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)**	0.00988	0.00995	0.02674
	(D * RESET_B * SCD * SCE * Q)	0.00663	0.00669	0.02348
	(D * RESET_B * SCD * SCE * !Q)	0.01566	0.01582	0.03283
	(D * RESET_B * SCD * SCE * !Q)	0.01244	0.01258	0.02959
	(D * RESET_B * SCD * !SCE * Q)	0.00988	0.00995	0.02674
	(D * RESET_B * SCD * !SCE * Q)	0.00663	0.00669	0.02349
	(D * RESET_B * SCD * !SCE * !Q)	0.01564	0.01580	0.03281
	(D * RESET_B * SCD * !SCE * !Q)	0.01242	0.01256	0.02957
	(D * RESET_B * !SCD * SCE * Q)	0.01499	0.01492	0.03191
	(D * RESET_B * !SCD * SCE * Q)	0.01173	0.01165	0.02864
	(D * RESET_B * !SCD * !SCE * Q)	0.00988	0.00995	0.02674
	(D * RESET_B * !SCD * !SCE * Q)	0.00663	0.00669	0.02348
	(D * RESET_B * !SCD * !SCE * !Q)	0.01564	0.01580	0.03286
	(D * RESET_B * !SCD * !SCE * !Q)	0.01242	0.01256	0.02963
	(D * !SCD * SCE * !Q)	0.00972	0.00969	0.02657
	(D * !SCD * SCE * !Q)	0.00647	0.00643	0.02332
	(D * !RESET_B * SCD * SCE * !Q)	0.00972	0.00970	0.02656
	(D * !RESET_B * SCD * SCE * !Q)	0.00647	0.00644	0.02331
	(D * !RESET_B * SCD * !SCE * !Q)	0.00972	0.00970	0.02656
	(D * !RESET_B * SCD * !SCE * !Q)	0.00647	0.00644	0.02331
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00972	0.00970	0.02656
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00647	0.00644	0.02331
	(!D * RESET_B * SCD * SCE * Q)	0.00988	0.00995	0.02674
	(!D * RESET_B * SCD * SCE * Q)	0.00663	0.00669	0.02349
	(!D * RESET_B * SCD * SCE * !Q)	0.01569	0.01585	0.03286
	(!D * RESET_B * SCD * SCE * !Q)	0.01246	0.01260	0.02961
	(!D * RESET_B * !SCE * Q)	0.01497	0.01478	0.03189
	(!D * RESET_B * !SCE * Q)	0.01170	0.01149	0.02861
	(!D * RESET_B * !SCD * SCE * Q)	0.01499	0.01479	0.03190
	(!D * RESET_B * !SCD * SCE * Q)	0.01173	0.01151	0.02863
	(!D * !SCE * !Q)	0.00972	0.00969	0.02657
	(!D * !SCE * !Q)	0.00647	0.00643	0.02332
	(!D * !SCD * SCE * !Q)	0.00972	0.00969	0.02657
	(!D * !SCD * SCE * !Q)	0.00647	0.00643	0.02332
	(!D * !RESET_B * SCD * SCE * !Q)	0.00972	0.00970	0.02657
	(!D * !RESET_B * SCD * SCE * !Q)	0.00647	0.00644	0.02331

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)	0.00718	0.00755	0.02499
	(D * RESET_B * SCD * SCE * Q)	0.01044	0.01081	0.02825
	(D * RESET_B * SCD * !SCE * Q)	0.00718	0.00755	0.02499
	(D * RESET_B * SCD * !SCE * Q)	0.01044	0.01081	0.02825
	(D * RESET_B * !SCD * !SCE * Q)	0.00718	0.00755	0.02499
	(D * RESET_B * !SCD * !SCE * Q)	0.01044	0.01081	0.02825
	(D * !SCD * SCE * !Q)	0.00724	0.00759	0.02505
	(D * !SCD * SCE * !Q)	0.01050	0.01085	0.02831
	(D * !RESET_B * SCD * SCE * !Q)	0.00725	0.00760	0.02504
	(D * !RESET_B * SCD * SCE * !Q)	0.01050	0.01086	0.02830
	(D * !RESET_B * SCD * !SCE * !Q)	0.00724	0.00760	0.02504
	(D * !RESET_B * SCD * !SCE * !Q)	0.01050	0.01086	0.02830
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00724	0.00760	0.02504
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01050	0.01086	0.02830
	(!D * RESET_B * SCD * SCE * Q)	0.00718	0.00754	0.02499
	(!D * RESET_B * SCD * SCE * Q)	0.01044	0.01080	0.02825
	(!D * !SCE * !Q)	0.00724	0.00759	0.02505
	(!D * !SCE * !Q)	0.01050	0.01085	0.02831
	(!D * !SCD * SCE * !Q)	0.00724	0.00759	0.02505
	(!D * !SCD * SCE * !Q)	0.01050	0.01085	0.02831
	(!D * !RESET_B * SCD * SCE * !Q)	0.00725	0.00760	0.02504
	(!D * !RESET_B * SCD * SCE * !Q)	0.01050	0.01086	0.02830

SKY130_FD_SC_HS__SDFRTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00183	0.00189	0.00404	0.00554	0.00288	1.16924
sky130_fd_sc_hs__sdfrtp_2	0.00177	0.00190	0.00412	0.00561	0.00288	2.30279
sky130_fd_sc_hs__sdfrtp_4	0.00177	0.00188	0.00415	0.00554	0.00287	4.27185

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfrtp_1	0.00000	0.36874	0.73824
sky130_fd_sc_hs__sdfrtp_2	0.00000	0.33378	0.61399
sky130_fd_sc_hs__sdfrtp_4	0.00000	0.51027	0.96821

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)	0.16996	0.63176	5.76017
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RR)	0.18082	0.54213	5.73035
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RR)	0.21049	0.50381	5.79014

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfrtp_1	CLK->Q (RF)	0.17365	0.36976	1.48730
	RESET_B->Q (FF)	0.25067	0.73191	4.90666
sky130_fd_sc_hs__sdfrtp_2	CLK->Q (RF)	0.17917	0.34683	1.48606
	RESET_B->Q (FF)	0.25972	0.71484	4.93020
sky130_fd_sc_hs__sdfrtp_4	CLK->Q (RF)	0.18707	0.32959	1.40596
	RESET_B->Q (FF)	0.26613	0.69659	4.84901

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)	-0.07595	-0.17568	-1.11816
	setup	CLK (R)	0.15594	0.22249	1.14196
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07399	-0.16912	-1.09221
	setup	CLK (R)	0.15399	0.21849	1.11702
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07358	-0.16912	-1.09409
	setup	CLK (R)	0.14022	0.21111	1.11614

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)	-0.08537	-0.22959	-3.52479
	setup	CLK (R)	0.22548	0.36609	3.62112
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08524	-0.22819	-3.50779
	setup	CLK (R)	0.21846	0.35309	3.59198
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09804	-0.24247	-3.51564
	setup	CLK (R)	0.21705	0.35251	3.58845

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)	-0.07595	-0.17568	-1.11816
	hold	CLK (R)	-0.07645	-0.17568	-1.11825
	setup	CLK (R)	0.15215	0.22249	1.14196
	setup	CLK (R)	0.15594	0.22249	1.13935
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07399	-0.16912	-1.09221
	hold	CLK (R)	-0.07444	-0.16912	-1.09228
	setup	CLK (R)	0.15399	0.21849	1.11702
	setup	CLK (R)	0.15383	0.21849	1.11624
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07358	-0.16912	-1.09577
	hold	CLK (R)	-0.07361	-0.16994	-1.09409
	setup	CLK (R)	0.14022	0.21111	1.11614
	setup	CLK (R)	0.13835	0.21056	1.11550

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)	-0.08537	-0.22959	-3.52498
	hold	CLK (R)	-0.08805	-0.22976	-3.52479
	setup	CLK (R)	0.22523	0.36609	3.62112
	setup	CLK (R)	0.22548	0.36609	3.62112
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08531	-0.22819	-3.50779
	hold	CLK (R)	-0.08524	-0.22819	-3.50787
	setup	CLK (R)	0.21846	0.35306	3.59198
	setup	CLK (R)	0.21844	0.35309	3.59175
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.09854	-0.24265	-3.51568
	hold	CLK (R)	-0.09804	-0.24247	-3.51564
	setup	CLK (R)	0.21558	0.35251	3.58845
	setup	CLK (R)	0.21705	0.35228	3.58469

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)	-0.09024	-0.18699	-1.12799
	setup	CLK (R)	0.16707	0.23215	1.14923
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08729	-0.18246	-1.09847
	setup	CLK (R)	0.16709	0.22875	1.12454
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08676	-0.18246	-1.09465
	setup	CLK (R)	0.15214	0.22099	1.12336

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)	-0.11466	-0.27677	-3.87693
	setup	CLK (R)	0.28300	0.43100	4.00554
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.11887	-0.27523	-3.90321
	setup	CLK (R)	0.27898	0.42825	3.97554
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.12926	-0.29458	-3.90271
	setup	CLK (R)	0.27653	0.42516	3.98044

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)	-0.09024	-0.18699	-1.13181
	hold	CLK (R)	-0.09387	-0.19165	-1.12799
	setup	CLK (R)	0.16416	0.22999	1.14923
	setup	CLK (R)	0.16707	0.23215	1.14864
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.08729	-0.18246	-1.10604
	hold	CLK (R)	-0.09194	-0.18685	-1.09847
	setup	CLK (R)	0.16344	0.22817	1.12454
	setup	CLK (R)	0.16709	0.22875	1.11923
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.08676	-0.18246	-1.10534
	hold	CLK (R)	-0.09201	-0.18579	-1.09465
	setup	CLK (R)	0.15214	0.21960	1.12336
	setup	CLK (R)	0.15084	0.22099	1.11258

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)	-0.12051	-0.28638	-3.87693
	hold	CLK (R)	-0.11466	-0.27677	-3.89735
	setup	CLK (R)	0.28300	0.43100	4.00554
	setup	CLK (R)	0.27104	0.42153	3.99303
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12921	-0.29181	-3.91368
	hold	CLK (R)	-0.11887	-0.27523	-3.90321
	setup	CLK (R)	0.27898	0.42825	3.97554
	setup	CLK (R)	0.26915	0.42054	3.96686
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.14052	-0.31003	-3.92038
	hold	CLK (R)	-0.12926	-0.29458	-3.90271
	setup	CLK (R)	0.27653	0.42516	3.98044
	setup	CLK (R)	0.26347	0.41669	3.96279

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)	-0.07916	-0.15946	-0.50858
	setup	CLK (R)	0.27847	0.30037	1.05597
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.07623	-0.16146	-0.48800
	setup	CLK (R)	0.27320	0.29134	1.03528
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.07432	-0.17090	-0.50168
	setup	CLK (R)	0.27421	0.29087	1.03359

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)	-0.09739	-0.25204	-3.31056
	setup	CLK (R)	0.23665	0.38430	3.83957
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.09614	-0.24986	-3.28424
	setup	CLK (R)	0.22934	0.37396	3.80288
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.10959	-0.26354	-3.28321
	setup	CLK (R)	0.22442	0.37059	3.79642

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)	-0.12156	-0.15946	-0.50858
	hold	CLK (R)	-0.07916	-0.17468	-1.03729
	setup	CLK (R)	0.27847	0.30037	0.57878
	setup	CLK (R)	0.15108	0.22265	1.05597
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.12422	-0.16146	-0.48800
	hold	CLK (R)	-0.07623	-0.17137	-1.01468
	setup	CLK (R)	0.27320	0.29134	0.55757
	setup	CLK (R)	0.14875	0.21711	1.03528
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13426	-0.17116	-0.50168
	hold	CLK (R)	-0.07432	-0.17090	-1.01037
	setup	CLK (R)	0.27421	0.29087	0.56020
	setup	CLK (R)	0.13777	0.20984	1.03359

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)	-0.14052	-0.30649	-3.31056
	hold	CLK (R)	-0.09739	-0.25204	-3.70409
	setup	CLK (R)	0.21767	0.34524	3.32124
	setup	CLK (R)	0.23665	0.38430	3.83957
sky130_fd_sc_hs__sdfrtp_2	hold	CLK (R)	-0.13556	-0.29667	-3.28424
	hold	CLK (R)	-0.09614	-0.24986	-3.73245
	setup	CLK (R)	0.21310	0.33914	3.29450
	setup	CLK (R)	0.22934	0.37396	3.80288
sky130_fd_sc_hs__sdfrtp_4	hold	CLK (R)	-0.13570	-0.29568	-3.28321
	hold	CLK (R)	-0.10959	-0.26354	-3.73735
	setup	CLK (R)	0.20001	0.33345	3.29372
	setup	CLK (R)	0.22442	0.37059	3.79642

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)	0.18206	0.23204	1.31646
	removal	CLK (R)	-0.12412	-0.18899	-1.23455
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.17958	0.22870	1.28898
	removal	CLK (R)	-0.12341	-0.18410	-1.21669
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.16623	0.22168	1.28673
	removal	CLK (R)	-0.12259	-0.18473	-1.21507

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)	0.17960	0.23000	1.31646
	recovery	CLK (R)	0.17835	0.22450	1.28670
	recovery	CLK (R)	0.17504	0.21838	1.26429
	recovery	CLK (R)	0.18206	0.23204	1.31481
	removal	CLK (R)	-0.12960	-0.20177	-1.29218
	removal	CLK (R)	-0.12784	-0.19695	-1.26013
	removal	CLK (R)	-0.12412	-0.18899	-1.23455
	removal	CLK (R)	-0.12969	-0.20650	-1.29206
sky130_fd_sc_hs__sdfrtp_2	recovery	CLK (R)	0.17681	0.22749	1.28898
	recovery	CLK (R)	0.17958	0.22049	1.25085
	recovery	CLK (R)	0.17398	0.21449	1.23000
	recovery	CLK (R)	0.17822	0.22870	1.28384
	removal	CLK (R)	-0.12796	-0.19751	-1.27964
	removal	CLK (R)	-0.12860	-0.19267	-1.24067
	removal	CLK (R)	-0.12341	-0.18410	-1.21669
	removal	CLK (R)	-0.13212	-0.20226	-1.27150
sky130_fd_sc_hs__sdfrtp_4	recovery	CLK (R)	0.16623	0.22068	1.28673
	recovery	CLK (R)	0.16515	0.21520	1.25066
	recovery	CLK (R)	0.16117	0.20813	1.22876
	recovery	CLK (R)	0.16404	0.22168	1.28049
	removal	CLK (R)	-0.12801	-0.19751	-1.27964
	removal	CLK (R)	-0.12425	-0.19267	-1.24067
	removal	CLK (R)	-0.12259	-0.18473	-1.21507
	removal	CLK (R)	-0.12960	-0.20057	-1.27324

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 ()	0.13769	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11385	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	RESET_B ()	0.14008	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11385	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	RESET_B ()	0.14008	0.63599	16.50020
	min_pulse_width	RESET_B ()	0.11623	0.63599	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 ()	0.08524	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.09478	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.11385	0.63599	16.50020
	min_pulse_width	CLK ()	0.06855	0.63599	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 ()	0.17107	0.63599	16.50020
	min_pulse_width	CLK ()	0.19253	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_2	min_pulse_width	CLK ()	0.18061	0.63599	16.50020
	min_pulse_width	CLK ()	0.20206	0.63599	16.50020
sky130_fd_sc_hs__sdfrtp_4	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.19730	0.63599	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	0.01984	0.02007	0.03812
	CLK	0.01640	0.01663	0.03472
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02231	0.02283	0.04078
	CLK	0.01875	0.01928	0.03737
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02675	0.02744	0.04538
	CLK	0.02327	0.02412	0.04209

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfrtp_1	CLK	0.02065	0.02109	0.03894
	CLK	0.01729	0.01769	0.03554
	RESET_B	0.01712	0.01726	0.03678
	RESET_B	0.02552	0.02563	0.04505
sky130_fd_sc_hs__sdfrtp_2	CLK	0.02275	0.02348	0.04139
	CLK	0.01944	0.02017	0.03802
	RESET_B	0.01954	0.01988	0.04033
	RESET_B	0.02798	0.02837	0.04772
sky130_fd_sc_hs__sdfrtp_4	CLK	0.02816	0.02945	0.04756
	CLK	0.02478	0.02602	0.04393
	RESET_B	0.02499	0.02589	0.04572
	RESET_B	0.03334	0.03436	0.05374

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)**	0.00100	0.00101	0.00100
	(CLK * RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00046
	(CLK * RESET_B * SCD * !SCE)	0.00475	0.00475	0.01425
	(CLK * RESET_B * SCD * !SCE)	0.00198	0.00196	0.01147
	(CLK * RESET_B * !SCD * !SCE)	0.00475	0.00475	0.01425
	(CLK * RESET_B * !SCD * !SCE)	0.00198	0.00196	0.01148
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00099	-0.00101	-0.00102
	(CLK * !RESET_B * SCD * SCE)	0.00049	0.00049	0.00049
	(CLK * !RESET_B * SCD * SCE)	-0.00101	-0.00102	-0.00103
	(CLK * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00031
	(CLK * !RESET_B * SCD * !SCE)	-0.00116	-0.00117	-0.00122
	(CLK * !RESET_B * !SCD * !SCE)	0.00034	0.00034	0.00031
	(CLK * !RESET_B * !SCD * !SCE)	-0.00119	-0.00120	-0.00123
	(!CLK * RESET_B * SCD * SCE)	0.00100	0.00101	0.00101
	(!CLK * RESET_B * SCD * SCE)	-0.00046	-0.00047	-0.00046
	(!CLK * RESET_B * SCD * !SCE)	0.00988	0.00989	0.01939
	(!CLK * RESET_B * SCD * !SCE)	0.00696	0.00697	0.01646
	(!CLK * RESET_B * !SCD * !SCE)	0.00988	0.00997	0.01939
	(!CLK * RESET_B * !SCD * !SCE)	0.00696	0.00704	0.01646
	(!CLK * !SCD * SCE)	0.00052	0.00052	0.00051
	(!CLK * !SCD * SCE)	-0.00099	-0.00101	-0.00102
	(!CLK * !RESET_B * SCD * SCE)	0.00050	0.00049	0.00049
	(!CLK * !RESET_B * SCD * SCE)	-0.00101	-0.00103	-0.00103
	(!CLK * !RESET_B * SCD * !SCE)	0.00034	0.00034	0.00031
	(!CLK * !RESET_B * SCD * !SCE)	-0.00116	-0.00117	-0.00122
	(!CLK * !RESET_B * !SCD * !SCE)	0.00034	0.00034	0.00031
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00119	-0.00120	-0.00123

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	0.00095	0.00096	0.00096
	(CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00044
	(CLK * RESET_B * SCD * !SCE)	0.00407	0.00408	0.01386
	(CLK * RESET_B * SCD * !SCE)	0.00142	0.00143	0.01121
	(CLK * RESET_B * !SCD * !SCE)	0.00407	0.00409	0.01386
	(CLK * RESET_B * !SCD * !SCE)	0.00142	0.00143	0.01121
	(CLK * !SCD * SCE)	0.00050	0.00050	0.00049
	(CLK * !SCD * SCE)	-0.00093	-0.00095	-0.00096
	(CLK * !RESET_B * SCD * SCE)	0.00048	0.00048	0.00047
	(CLK * !RESET_B * SCD * SCE)	-0.00094	-0.00096	-0.00097
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00030
	(CLK * !RESET_B * SCD * !SCE)	-0.00109	-0.00110	-0.00115
	(CLK * !RESET_B * !SCD * !SCE)	0.00032	0.00033	0.00030
	(CLK * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00116
	(!CLK * RESET_B * SCD * SCE)	0.00095	0.00096	0.00095
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00044	-0.00044
	(!CLK * RESET_B * SCD * !SCE)	0.00938	0.00948	0.01897
	(!CLK * RESET_B * SCD * !SCE)	0.00659	0.00668	0.01618
	(!CLK * RESET_B * !SCD * !SCE)	0.00938	0.00948	0.01897
	(!CLK * RESET_B * !SCD * !SCE)	0.00659	0.00667	0.01618
	(!CLK * !SCD * SCE)	0.00050	0.00050	0.00049
	(!CLK * !SCD * SCE)	-0.00093	-0.00095	-0.00096
	(!CLK * !RESET_B * SCD * SCE)	0.00048	0.00048	0.00047
	(!CLK * !RESET_B * SCD * SCE)	-0.00094	-0.00096	-0.00097
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00030
	(!CLK * !RESET_B * SCD * !SCE)	-0.00109	-0.00110	-0.00115
	(!CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00030
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00112	-0.00113	-0.00116

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	0.00096	0.00096	0.00096
	(CLK * RESET_B * SCD * SCE)	-0.00044	-0.00044	-0.00043
	(CLK * RESET_B * SCD * !SCE)	0.00413	0.00414	0.01390
	(CLK * RESET_B * SCD * !SCE)	0.00145	0.00145	0.01122
	(CLK * RESET_B * !SCD * !SCE)	0.00413	0.00414	0.01390
	(CLK * RESET_B * !SCD * !SCE)	0.00145	0.00145	0.01122
	(CLK * !SCD * SCE)	0.00049	0.00049	0.00048
	(CLK * !SCD * SCE)	-0.00094	-0.00096	-0.00097
	(CLK * !RESET_B * SCD * SCE)	0.00047	0.00048	0.00047
	(CLK * !RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00098
	(CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00030
	(CLK * !RESET_B * SCD * !SCE)	-0.00108	-0.00110	-0.00114
	(CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00030
	(CLK * !RESET_B * !SCD * !SCE)	-0.00111	-0.00112	-0.00116
	(!CLK * RESET_B * SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * RESET_B * SCD * SCE)	-0.00043	-0.00043	-0.00043
	(!CLK * RESET_B * SCD * !SCE)	0.00947	0.00956	0.01913
	(!CLK * RESET_B * SCD * !SCE)	0.00664	0.00672	0.01629
	(!CLK * RESET_B * !SCD * !SCE)	0.00947	0.00956	0.01913
	(!CLK * RESET_B * !SCD * !SCE)	0.00664	0.00673	0.01629
	(!CLK * !SCD * SCE)	0.00050	0.00050	0.00049
	(!CLK * !SCD * SCE)	-0.00093	-0.00095	-0.00097
	(!CLK * !RESET_B * SCD * SCE)	0.00047	0.00048	0.00047
	(!CLK * !RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00098
	(!CLK * !RESET_B * SCD * !SCE)	0.00033	0.00033	0.00030
	(!CLK * !RESET_B * SCD * !SCE)	-0.00109	-0.00110	-0.00114
	(!CLK * !RESET_B * !SCD * !SCE)	0.00033	0.00033	0.00031
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00112	-0.00112	-0.00116

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)**	-0.00095	-0.00097	-0.00099
	(CLK * RESET_B * SCD * SCE)	0.00050	0.00050	0.00048
	(CLK * RESET_B * SCD * !SCE)	0.00049	0.00079	0.01063
	(CLK * RESET_B * SCD * !SCE)	0.00327	0.00356	0.01340
	(CLK * RESET_B * !SCD * !SCE)	0.00050	0.00079	0.01063
	(CLK * RESET_B * !SCD * !SCE)	0.00327	0.00356	0.01340
	(CLK * !SCD * SCE)	-0.00050	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00103	0.00102	0.00102
	(CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00048	-0.00048
	(CLK * !RESET_B * SCD * SCE)	0.00103	0.00102	0.00103
	(CLK * !RESET_B * SCD * !SCE)	-0.00030	-0.00029	-0.00029
	(CLK * !RESET_B * SCD * !SCE)	0.00123	0.00124	0.00123
	(CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(CLK * !RESET_B * !SCD * !SCE)	0.00124	0.00124	0.00124
	(!CLK * RESET_B * SCD * SCE)	-0.00095	-0.00097	-0.00099
	(!CLK * RESET_B * SCD * SCE)	0.00050	0.00050	0.00048
	(!CLK * RESET_B * SCD * !SCE)	0.00554	0.00589	0.01764
	(!CLK * RESET_B * SCD * !SCE)	0.00847	0.00881	0.02057
	(!CLK * RESET_B * !SCD * !SCE)	0.00554	0.00589	0.01764
	(!CLK * RESET_B * !SCD * !SCE)	0.00847	0.00881	0.02057
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00103	0.00103	0.00103
	(!CLK * !RESET_B * SCD * SCE)	-0.00049	-0.00049	-0.00048
	(!CLK * !RESET_B * SCD * SCE)	0.00103	0.00103	0.00103
	(!CLK * !RESET_B * SCD * !SCE)	-0.00030	-0.00029	-0.00029
	(!CLK * !RESET_B * SCD * !SCE)	0.00123	0.00124	0.00123
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00030	-0.00030	-0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	0.00124	0.00124	0.00124

sky130_fd_sc_hs__sdfrtp_2	**(CLK * RESET_B * SCD * SCE)**	-0.00090	-0.00092	-0.00094
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00053	0.00087	0.01087
	(CLK * RESET_B * SCD * !SCE)	0.00318	0.00352	0.01353
	(CLK * RESET_B * !SCD * !SCE)	0.00053	0.00087	0.01088
	(CLK * RESET_B * !SCD * !SCE)	0.00318	0.00352	0.01353
	(CLK * !SCD * SCE)	-0.00048	-0.00048	-0.00048
	(CLK * !SCD * SCE)	0.00096	0.00096	0.00096
	(CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !RESET_B * SCD * SCE)	0.00097	0.00097	0.00097
	(CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B * SCD * !SCE)	0.00117	0.00117	0.00117
	(CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !RESET_B * !SCD * !SCE)	0.00117	0.00118	0.00117
	(!CLK * RESET_B * SCD * SCE)	-0.00091	-0.00092	-0.00094
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * RESET_B * SCD * !SCE)	0.00598	0.00631	0.01782
	(!CLK * RESET_B * SCD * !SCE)	0.00877	0.00910	0.02061
	(!CLK * RESET_B * !SCD * !SCE)	0.00598	0.00630	0.01782
	(!CLK * RESET_B * !SCD * !SCE)	0.00877	0.00910	0.02061
	(!CLK * !SCD * SCE)	-0.00048	-0.00048	-0.00048
	(!CLK * !SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * !RESET_B * SCD * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK * !RESET_B * SCD * SCE)	0.00097	0.00097	0.00097
	(!CLK * !RESET_B * SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B * SCD * !SCE)	0.00117	0.00117	0.00117
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !RESET_B * !SCD * !SCE)	0.00117	0.00118	0.00117

sky130_fd_sc_hs__sdfrtp_4	**(CLK * RESET_B * SCD * SCE)**	-0.00090	-0.00092	-0.00094
	(CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * RESET_B * SCD * !SCE)	0.00048	0.00082	0.01082
	(CLK * RESET_B * SCD * !SCE)	0.00317	0.00350	0.01350
	(CLK * RESET_B * !SCD * !SCE)	0.00049	0.00082	0.01082
	(CLK * RESET_B * !SCD * !SCE)	0.00317	0.00350	0.01350
	(CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(CLK * !SCD * SCE)	0.00097	0.00097	0.00097
	(CLK * !RESET_B * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !RESET_B * SCD * SCE)	0.00098	0.00098	0.00098
	(CLK * !RESET_B * SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !RESET_B * SCD * !SCE)	0.00116	0.00117	0.00116
	(CLK * !RESET_B * !SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !RESET_B * !SCD * !SCE)	0.00116	0.00117	0.00116
	(!CLK * RESET_B * SCD * SCE)	-0.00090	-0.00092	-0.00094
	(!CLK * RESET_B * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * RESET_B * SCD * !SCE)	0.00571	0.00604	0.01764
	(!CLK * RESET_B * SCD * !SCE)	0.00854	0.00887	0.02047
	(!CLK * RESET_B * !SCD * !SCE)	0.00571	0.00604	0.01770
	(!CLK * RESET_B * !SCD * !SCE)	0.00854	0.00887	0.02054
	(!CLK * !SCD * SCE)	-0.00047	-0.00047	-0.00047
	(!CLK * !SCD * SCE)	0.00098	0.00098	0.00098
	(!CLK * !RESET_B * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(!CLK * !RESET_B * SCD * SCE)	0.00098	0.00098	0.00098
	(!CLK * !RESET_B * SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !RESET_B * SCD * !SCE)	0.00116	0.00117	0.00116
	(!CLK * !RESET_B * !SCD * !SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !RESET_B * !SCD * !SCE)	0.00116	0.00117	0.00116

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)**	0.00586	0.00575	0.01005
	(CLK * D * RESET_B * SCE)	0.00231	0.00220	0.00651
	(CLK * D * RESET_B * !SCE)	0.00096	0.00085	0.00084
	(CLK * D * RESET_B * !SCE)	-0.00082	-0.00092	-0.00094
	(CLK * D * !RESET_B * SCE)	0.00047	0.00047	0.00046
	(CLK * D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102
	(CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(CLK * D * !RESET_B * !SCE)	-0.00113	-0.00114	-0.00114
	(CLK * !D * RESET_B * SCE)	0.00637	0.00627	0.01037
	(CLK * !D * RESET_B * SCE)	0.00276	0.00265	0.00676
	(CLK * !D * !RESET_B * SCE)	0.00047	0.00047	0.00046
	(CLK * !D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102
	(!D * RESET_B * !SCE)	0.00067	0.00068	0.00067
	(!D * RESET_B * !SCE)	-0.00110	-0.00111	-0.00111
	(!D * !RESET_B * !SCE)	0.00037	0.00038	0.00037
	(!D * !RESET_B * !SCE)	-0.00118	-0.00120	-0.00120
	(!CLK * D * RESET_B * SCE)	0.01099	0.01092	0.01565
	(!CLK * D * RESET_B * SCE)	0.00729	0.00721	0.01196
	(!CLK * D * RESET_B * !SCE)	0.00096	0.00085	0.00084
	(!CLK * D * RESET_B * !SCE)	-0.00082	-0.00092	-0.00094
	(!CLK * D * !RESET_B * SCE)	0.00047	0.00047	0.00046
	(!CLK * D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102
	(!CLK * D * !RESET_B * !SCE)	0.00033	0.00033	0.00033
	(!CLK * D * !RESET_B * !SCE)	-0.00113	-0.00114	-0.00114
	(!CLK * !D * RESET_B * SCE)	0.01150	0.01143	0.01591
	(!CLK * !D * RESET_B * SCE)	0.00774	0.00766	0.01216
	(!CLK * !D * !RESET_B * SCE)	0.00047	0.00047	0.00046
	(!CLK * !D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00533	0.00522	0.00960
	(CLK * D * RESET_B * SCE)	0.00184	0.00171	0.00610
	(CLK * D * RESET_B * !SCE)	0.00096	0.00087	0.00085
	(CLK * D * RESET_B * !SCE)	-0.00081	-0.00091	-0.00092
	(CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * D * !RESET_B * SCE)	-0.00105	-0.00105	-0.00104
	(CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(CLK * D * !RESET_B * !SCE)	-0.00113	-0.00115	-0.00114
	(CLK * !D * RESET_B * SCE)	0.00584	0.00573	0.00991
	(CLK * !D * RESET_B * SCE)	0.00229	0.00216	0.00636
	(CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * !D * !RESET_B * SCE)	-0.00105	-0.00105	-0.00104
	(!D * RESET_B * !SCE)	0.00066	0.00067	0.00066
	(!D * RESET_B * !SCE)	-0.00110	-0.00111	-0.00111
	(!D * !RESET_B * !SCE)	0.00037	0.00037	0.00036
	(!D * !RESET_B * !SCE)	-0.00119	-0.00120	-0.00120
	(!CLK * D * RESET_B * SCE)	0.01064	0.01057	0.01530
	(!CLK * D * RESET_B * SCE)	0.00700	0.00692	0.01166
	(!CLK * D * RESET_B * !SCE)	0.00096	0.00087	0.00085
	(!CLK * D * RESET_B * !SCE)	-0.00081	-0.00092	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * D * !RESET_B * SCE)	-0.00105	-0.00105	-0.00104
	(!CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!CLK * D * !RESET_B * !SCE)	-0.00113	-0.00115	-0.00114
	(!CLK * !D * RESET_B * SCE)	0.01115	0.01108	0.01554
	(!CLK * !D * RESET_B * SCE)	0.00746	0.00737	0.01185
	(!CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * !D * !RESET_B * SCE)	-0.00105	-0.00104	-0.00104

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00535	0.00525	0.00963
	(CLK * D * RESET_B * SCE)	0.00185	0.00173	0.00612
	(CLK * D * RESET_B * !SCE)	0.00094	0.00085	0.00083
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102
	(CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(CLK * D * !RESET_B * !SCE)	-0.00111	-0.00112	-0.00112
	(CLK * !D * RESET_B * SCE)	0.00586	0.00575	0.00994
	(CLK * !D * RESET_B * SCE)	0.00230	0.00218	0.00638
	(CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(CLK * !D * !RESET_B * SCE)	-0.00102	-0.00102	-0.00102
	(!D * RESET_B * !SCE)	0.00066	0.00067	0.00066
	(!D * RESET_B * !SCE)	-0.00108	-0.00109	-0.00109
	(!D * !RESET_B * !SCE)	0.00037	0.00037	0.00037
	(!D * !RESET_B * !SCE)	-0.00117	-0.00118	-0.00118
	(!CLK * D * RESET_B * SCE)	0.01069	0.01063	0.01541
	(!CLK * D * RESET_B * SCE)	0.00704	0.00696	0.01175
	(!CLK * D * RESET_B * !SCE)	0.00095	0.00085	0.00084
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00091	-0.00092
	(!CLK * D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00102
	(!CLK * D * !RESET_B * !SCE)	0.00032	0.00032	0.00032
	(!CLK * D * !RESET_B * !SCE)	-0.00111	-0.00112	-0.00112
	(!CLK * !D * RESET_B * SCE)	0.01120	0.01113	0.01564
	(!CLK * !D * RESET_B * SCE)	0.00749	0.00741	0.01193
	(!CLK * !D * !RESET_B * SCE)	0.00044	0.00044	0.00043
	(!CLK * !D * !RESET_B * SCE)	-0.00102	-0.00103	-0.00102

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)	0.00150	0.00133	0.00567
	(CLK * D * RESET_B * SCE)	0.00505	0.00488	0.00920
	(CLK * D * RESET_B * !SCE)	-0.00080	-0.00083	-0.00083
	(CLK * D * RESET_B * !SCE)	0.00095	0.00096	0.00096
	(CLK * D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * D * !RESET_B * SCE)	0.00104	0.00105	0.00103
	(CLK * D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(CLK * D * !RESET_B * !SCE)	0.00114	0.00115	0.00114
	(CLK * !D * RESET_B * SCE)	0.00118	0.00102	0.00548
	(CLK * !D * RESET_B * SCE)	0.00478	0.00463	0.00907
	(CLK * !D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !D * !RESET_B * SCE)	0.00104	0.00105	0.00103
	(!D * RESET_B * !SCE)	-0.00063	-0.00067	-0.00067
	(!D * RESET_B * !SCE)	0.00112	0.00112	0.00111
	(!D * !RESET_B * !SCE)	-0.00037	-0.00038	-0.00037
	(!D * !RESET_B * !SCE)	0.00121	0.00121	0.00122
	(!CLK * D * RESET_B * SCE)	0.00659	0.00648	0.01268
	(!CLK * D * RESET_B * SCE)	0.01030	0.01018	0.01637
	(!CLK * D * RESET_B * !SCE)	-0.00080	-0.00083	-0.00083
	(!CLK * D * RESET_B * !SCE)	0.00095	0.00096	0.00096
	(!CLK * D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * D * !RESET_B * SCE)	0.00104	0.00105	0.00103
	(!CLK * D * !RESET_B * !SCE)	-0.00032	-0.00032	-0.00032
	(!CLK * D * !RESET_B * !SCE)	0.00114	0.00115	0.00114
	(!CLK * !D * RESET_B * SCE)	0.00628	0.00619	0.01261
	(!CLK * !D * RESET_B * SCE)	0.01005	0.00995	0.01636
	(!CLK * !D * !RESET_B * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !D * !RESET_B * SCE)	0.00104	0.00105	0.00103

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCE)**	0.00148	0.00131	0.00570
	(CLK * D * RESET_B * SCE)	0.00499	0.00482	0.00918
	(CLK * D * RESET_B * !SCE)	-0.00081	-0.00084	-0.00084
	(CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * D * !RESET_B * SCE)	0.00107	0.00107	0.00105
	(CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(CLK * D * !RESET_B * !SCE)	0.00114	0.00116	0.00115
	(CLK * !D * RESET_B * SCE)	0.00116	0.00100	0.00552
	(CLK * !D * RESET_B * SCE)	0.00471	0.00456	0.00906
	(CLK * !D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(CLK * !D * !RESET_B * SCE)	0.00107	0.00107	0.00105
	(!D * RESET_B * !SCE)	-0.00062	-0.00066	-0.00066
	(!D * RESET_B * !SCE)	0.00113	0.00112	0.00111
	(!D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00036
	(!D * !RESET_B * !SCE)	0.00121	0.00123	0.00122
	(!CLK * D * RESET_B * SCE)	0.00697	0.00688	0.01277
	(!CLK * D * RESET_B * SCE)	0.01061	0.01052	0.01640
	(!CLK * D * RESET_B * !SCE)	-0.00082	-0.00084	-0.00084
	(!CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(!CLK * D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * D * !RESET_B * SCE)	0.00107	0.00107	0.00105
	(!CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * D * !RESET_B * !SCE)	0.00114	0.00116	0.00115
	(!CLK * !D * RESET_B * SCE)	0.00668	0.00667	0.01271
	(!CLK * !D * RESET_B * SCE)	0.01038	0.01036	0.01640
	(!CLK * !D * !RESET_B * SCE)	-0.00041	-0.00041	-0.00041
	(!CLK * !D * !RESET_B * SCE)	0.00107	0.00107	0.00105

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCE)**	0.00150	0.00133	0.00571
	(CLK * D * RESET_B * SCE)	0.00501	0.00484	0.00920
	(CLK * D * RESET_B * !SCE)	-0.00079	-0.00082	-0.00082
	(CLK * D * RESET_B * !SCE)	0.00093	0.00094	0.00094
	(CLK * D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(CLK * D * !RESET_B * SCE)	0.00105	0.00105	0.00103
	(CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(CLK * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(CLK * !D * RESET_B * SCE)	0.00113	0.00097	0.00550
	(CLK * !D * RESET_B * SCE)	0.00469	0.00454	0.00905
	(CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(CLK * !D * !RESET_B * SCE)	0.00105	0.00105	0.00103
	(!D * RESET_B * !SCE)	-0.00062	-0.00066	-0.00066
	(!D * RESET_B * !SCE)	0.00111	0.00110	0.00109
	(!D * !RESET_B * !SCE)	-0.00037	-0.00037	-0.00037
	(!D * !RESET_B * !SCE)	0.00119	0.00121	0.00120
	(!CLK * D * RESET_B * SCE)	0.00676	0.00664	0.01264
	(!CLK * D * RESET_B * SCE)	0.01043	0.01029	0.01629
	(!CLK * D * RESET_B * !SCE)	-0.00079	-0.00082	-0.00082
	(!CLK * D * RESET_B * !SCE)	0.00094	0.00094	0.00094
	(!CLK * D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * D * !RESET_B * SCE)	0.00105	0.00105	0.00103
	(!CLK * D * !RESET_B * !SCE)	-0.00031	-0.00031	-0.00031
	(!CLK * D * !RESET_B * !SCE)	0.00113	0.00113	0.00113
	(!CLK * !D * RESET_B * SCE)	0.00644	0.00643	0.01255
	(!CLK * !D * RESET_B * SCE)	0.01016	0.01014	0.01625
	(!CLK * !D * !RESET_B * SCE)	-0.00040	-0.00041	-0.00041
	(!CLK * !D * !RESET_B * SCE)	0.00105	0.00105	0.00103

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)	0.00435	0.00433	0.01709
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00029	-0.00034	0.01245
	(CLK * D * RESET_B * !SCD)	0.00639	0.00629	0.01939
	(CLK * D * RESET_B * !SCD)	0.00339	0.00326	0.01633
	(CLK * !D * RESET_B * SCD)	0.00876	0.00881	0.02692
	(CLK * !D * RESET_B * SCD)	0.00274	0.00278	0.02092
	(!CLK * D * RESET_B * SCD)	0.00435	0.00433	0.01709
	(!CLK * D * RESET_B * SCD)	-0.00029	-0.00034	0.01245
	(!CLK * D * RESET_B * !SCD)	0.01141	0.01139	0.02463
	(!CLK * D * RESET_B * !SCD)	0.00857	0.00850	0.02173
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00431	0.00441	0.01723
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00009	-0.00001	0.01282
	(!CLK * !D * RESET_B * SCD)	0.01389	0.01398	0.03281
	(!CLK * !D * RESET_B * SCD)	0.00771	0.00779	0.02665

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00436	0.00436	0.01723
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00033	-0.00035	0.01253
	(CLK * D * RESET_B * !SCD)	0.00633	0.00625	0.01948
	(CLK * D * RESET_B * !SCD)	0.00321	0.00311	0.01632
	(CLK * !D * RESET_B * SCD)	0.00822	0.00831	0.02666
	(CLK * !D * RESET_B * SCD)	0.00217	0.00226	0.02064
	(!CLK * D * RESET_B * SCD)	0.00436	0.00437	0.01723
	(!CLK * D * RESET_B * SCD)	-0.00033	-0.00036	0.01253
	(!CLK * D * RESET_B * !SCD)	0.01169	0.01171	0.02506
	(!CLK * D * RESET_B * !SCD)	0.00873	0.00871	0.02203
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00426	0.00439	0.01731
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00018	-0.00010	0.01284
	(!CLK * !D * RESET_B * SCD)	0.01352	0.01365	0.03261
	(!CLK * !D * RESET_B * SCD)	0.00734	0.00746	0.02644

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	0.00437	0.00438	0.01724
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	-0.00033	-0.00036	0.01253
	(CLK * D * RESET_B * !SCD)	0.00634	0.00627	0.01949
	(CLK * D * RESET_B * !SCD)	0.00325	0.00315	0.01635
	(CLK * !D * RESET_B * SCD)	0.00826	0.00835	0.02671
	(CLK * !D * RESET_B * SCD)	0.00218	0.00227	0.02065
	(!CLK * D * RESET_B * SCD)	0.00438	0.00438	0.01725
	(!CLK * D * RESET_B * SCD)	-0.00033	-0.00035	0.01254
	(!CLK * D * RESET_B * !SCD)	0.01147	0.01150	0.02484
	(!CLK * D * RESET_B * !SCD)	0.00854	0.00853	0.02187
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00426	0.00439	0.01731
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00020	-0.00011	0.01283
	(!CLK * !D * RESET_B * SCD)	0.01360	0.01372	0.03274
	(!CLK * !D * RESET_B * SCD)	0.00737	0.00750	0.02654

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)**	-0.00027	0.00033	0.01318
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00436	0.00498	0.01780
	(CLK * D * RESET_B * !SCD)	0.00446	0.00491	0.01783
	(CLK * D * RESET_B * !SCD)	0.00749	0.00797	0.02074
	(CLK * !D * RESET_B * SCD)	0.00081	0.00117	0.01887
	(CLK * !D * RESET_B * SCD)	0.00682	0.00719	0.02488
	(!CLK * D * RESET_B * SCD)	-0.00027	0.00034	0.01318
	(!CLK * D * RESET_B * SCD)	0.00436	0.00498	0.01781
	(!CLK * D * RESET_B * !SCD)	0.00957	0.01008	0.02295
	(!CLK * D * RESET_B * !SCD)	0.01245	0.01298	0.02571
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00032	0.00026	0.01303
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00408	0.00465	0.01742
	(!CLK * !D * RESET_B * SCD)	0.00585	0.00626	0.02524
	(!CLK * !D * RESET_B * SCD)	0.01201	0.01243	0.03140

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00038	0.00024	0.01319
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00433	0.00496	0.01789
	(CLK * D * RESET_B * !SCD)	0.00372	0.00420	0.01725
	(CLK * D * RESET_B * !SCD)	0.00688	0.00735	0.02026
	(CLK * !D * RESET_B * SCD)	0.00080	0.00118	0.01918
	(CLK * !D * RESET_B * SCD)	0.00682	0.00721	0.02521
	(!CLK * D * RESET_B * SCD)	-0.00037	0.00025	0.01319
	(!CLK * D * RESET_B * SCD)	0.00433	0.00496	0.01789
	(!CLK * D * RESET_B * !SCD)	0.00901	0.00955	0.02254
	(!CLK * D * RESET_B * !SCD)	0.01202	0.01256	0.02542
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00035	0.00023	0.01310
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00408	0.00468	0.01756
	(!CLK * !D * RESET_B * SCD)	0.00624	0.00664	0.02559
	(!CLK * !D * RESET_B * SCD)	0.01240	0.01280	0.03177

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)**	-0.00040	0.00022	0.01317
	(CLK * D * RESET_B * SCD) + (CLK * D * !RESET_B) + (CLK * !D * RESET_B * !SCD) + (CLK * !D * !RESET_B)	0.00431	0.00494	0.01788
	(CLK * D * RESET_B * !SCD)	0.00375	0.00422	0.01728
	(CLK * D * RESET_B * !SCD)	0.00688	0.00735	0.02027
	(CLK * !D * RESET_B * SCD)	0.00075	0.00113	0.01914
	(CLK * !D * RESET_B * SCD)	0.00681	0.00720	0.02520
	(!CLK * D * RESET_B * SCD)	-0.00040	0.00022	0.01318
	(!CLK * D * RESET_B * SCD)	0.00432	0.00495	0.01789
	(!CLK * D * RESET_B * !SCD)	0.00906	0.00961	0.02258
	(!CLK * D * RESET_B * !SCD)	0.01204	0.01256	0.02543
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	-0.00036	0.00023	0.01310
	(!CLK * D * !RESET_B) + (!CLK * !D * RESET_B * !SCD) + (!CLK * !D * !RESET_B)	0.00409	0.00469	0.01756
	(!CLK * !D * RESET_B * SCD)	0.00596	0.00637	0.02541
	(!CLK * !D * RESET_B * SCD)	0.01217	0.01258	0.03163

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)**	0.00826	0.00812	0.01744
	(CLK * D * SCD * SCE * !Q)	0.00019	-0.00000	0.00933
	(CLK * D * SCD * !SCE * !Q)	0.00815	0.00799	0.01765
	(CLK * D * SCD * !SCE * !Q)	0.00035	0.00017	0.00983
	(CLK * D * !SCD * SCE * !Q)	0.00264	0.00264	0.00264
	(CLK * D * !SCD * SCE * !Q)	-0.00327	-0.00327	-0.00327
	(CLK * D * !SCD * !SCE * !Q)	0.00777	0.00764	0.01747
	(CLK * D * !SCD * !SCE * !Q)	0.00035	0.00018	0.01003
	(CLK * !D * SCD * SCE * !Q)	0.00879	0.00863	0.01771
	(CLK * !D * SCD * SCE * !Q)	0.00063	0.00046	0.00955
	(CLK * !D * SCD * !SCE * !Q)	0.00260	0.00260	0.00261
	(CLK * !D * SCD * !SCE * !Q)	-0.00329	-0.00328	-0.00329
	(CLK * !D * !SCD * SCE * !Q)	0.00264	0.00266	0.00264
	(CLK * !D * !SCD * SCE * !Q)	-0.00327	-0.00328	-0.00327
	(CLK * !D * !SCD * !SCE * !Q)	0.00261	0.00263	0.00262
	(CLK * !D * !SCD * !SCE * !Q)	-0.00329	-0.00330	-0.00330
	(!CLK * D * SCD * SCE * !Q)	0.01392	0.01351	0.02395
	(!CLK * D * SCD * SCE * !Q)	0.00571	0.00523	0.01570
	(!CLK * D * SCD * !SCE * !Q)	0.01380	0.01339	0.02418
	(!CLK * D * SCD * !SCE * !Q)	0.00586	0.00541	0.01622
	(!CLK * D * !SCD * SCE * !Q)	0.00265	0.00267	0.00266
	(!CLK * D * !SCD * SCE * !Q)	-0.00326	-0.00327	-0.00326
	(!CLK * D * !SCD * !SCE * !Q)	0.01342	0.01301	0.02401
	(!CLK * D * !SCD * !SCE * !Q)	0.00586	0.00542	0.01643
	(!CLK * !D * SCD * SCE * !Q)	0.01443	0.01402	0.02418
	(!CLK * !D * SCD * SCE * !Q)	0.00616	0.00569	0.01588
	(!CLK * !D * SCD * !SCE * !Q)	0.00262	0.00265	0.00263
	(!CLK * !D * SCD * !SCE * !Q)	-0.00327	-0.00329	-0.00328
	(!CLK * !D * !SCD * SCE * !Q)	0.00265	0.00269	0.00266
	(!CLK * !D * !SCD * SCE * !Q)	-0.00326	-0.00328	-0.00326
	(!CLK * !D * !SCD * !SCE * !Q)	0.00262	0.00266	0.00263
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00328	-0.00330	-0.00328

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00773	0.00760	0.01713
	(CLK * D * SCD * SCE * !Q)	-0.00034	-0.00051	0.00905
	(CLK * D * SCD * !SCE * !Q)	0.00749	0.00736	0.01727
	(CLK * D * SCD * !SCE * !Q)	-0.00028	-0.00045	0.00948
	(CLK * D * !SCD * SCE * !Q)	0.00264	0.00266	0.00265
	(CLK * D * !SCD * SCE * !Q)	-0.00329	-0.00330	-0.00330
	(CLK * D * !SCD * !SCE * !Q)	0.00712	0.00699	0.01710
	(CLK * D * !SCD * !SCE * !Q)	-0.00029	-0.00042	0.00968
	(CLK * !D * SCD * SCE * !Q)	0.00824	0.00810	0.01740
	(CLK * !D * SCD * SCE * !Q)	0.00011	-0.00005	0.00925
	(CLK * !D * SCD * !SCE * !Q)	0.00261	0.00265	0.00262
	(CLK * !D * SCD * !SCE * !Q)	-0.00331	-0.00333	-0.00331
	(CLK * !D * !SCD * SCE * !Q)	0.00264	0.00266	0.00265
	(CLK * !D * !SCD * SCE * !Q)	-0.00329	-0.00330	-0.00330
	(CLK * !D * !SCD * !SCE * !Q)	0.00262	0.00263	0.00262
	(CLK * !D * !SCD * !SCE * !Q)	-0.00331	-0.00332	-0.00332
	(!CLK * D * SCD * SCE * !Q)	0.01361	0.01317	0.02370
	(!CLK * D * SCD * SCE * !Q)	0.00541	0.00496	0.01549
	(!CLK * D * SCD * !SCE * !Q)	0.01337	0.01293	0.02382
	(!CLK * D * SCD * !SCE * !Q)	0.00547	0.00500	0.01590
	(!CLK * D * !SCD * SCE * !Q)	0.00264	0.00267	0.00264
	(!CLK * D * !SCD * SCE * !Q)	-0.00330	-0.00332	-0.00330
	(!CLK * D * !SCD * !SCE * !Q)	0.01300	0.01258	0.02364
	(!CLK * D * !SCD * !SCE * !Q)	0.00547	0.00502	0.01612
	(!CLK * !D * SCD * SCE * !Q)	0.01413	0.01371	0.02391
	(!CLK * !D * SCD * SCE * !Q)	0.00587	0.00543	0.01565
	(!CLK * !D * SCD * !SCE * !Q)	0.00260	0.00263	0.00261
	(!CLK * !D * SCD * !SCE * !Q)	-0.00331	-0.00333	-0.00332
	(!CLK * !D * !SCD * SCE * !Q)	0.00264	0.00266	0.00264
	(!CLK * !D * !SCD * SCE * !Q)	-0.00330	-0.00331	-0.00330
	(!CLK * !D * !SCD * !SCE * !Q)	0.00261	0.00265	0.00262
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00332	-0.00334	-0.00332

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00776	0.00762	0.01715
	(CLK * D * SCD * SCE * !Q)	-0.00028	-0.00046	0.00909
	(CLK * D * SCD * !SCE * !Q)	0.00752	0.00738	0.01728
	(CLK * D * SCD * !SCE * !Q)	-0.00023	-0.00040	0.00952
	(CLK * D * !SCD * SCE * !Q)	0.00260	0.00262	0.00261
	(CLK * D * !SCD * SCE * !Q)	-0.00327	-0.00328	-0.00327
	(CLK * D * !SCD * !SCE * !Q)	0.00715	0.00701	0.01711
	(CLK * D * !SCD * !SCE * !Q)	-0.00023	-0.00037	0.00972
	(CLK * !D * SCD * SCE * !Q)	0.00827	0.00813	0.01742
	(CLK * !D * SCD * SCE * !Q)	0.00017	-0.00001	0.00931
	(CLK * !D * SCD * !SCE * !Q)	0.00257	0.00261	0.00258
	(CLK * !D * SCD * !SCE * !Q)	-0.00328	-0.00331	-0.00329
	(CLK * !D * !SCD * SCE * !Q)	0.00260	0.00263	0.00261
	(CLK * !D * !SCD * SCE * !Q)	-0.00327	-0.00328	-0.00327
	(CLK * !D * !SCD * !SCE * !Q)	0.00258	0.00259	0.00259
	(CLK * !D * !SCD * !SCE * !Q)	-0.00329	-0.00329	-0.00330
	(!CLK * D * SCD * SCE * !Q)	0.01359	0.01316	0.02375
	(!CLK * D * SCD * SCE * !Q)	0.00541	0.00496	0.01556
	(!CLK * D * SCD * !SCE * !Q)	0.01335	0.01294	0.02386
	(!CLK * D * SCD * !SCE * !Q)	0.00546	0.00500	0.01597
	(!CLK * D * !SCD * SCE * !Q)	0.00259	0.00262	0.00260
	(!CLK * D * !SCD * SCE * !Q)	-0.00328	-0.00330	-0.00329
	(!CLK * D * !SCD * !SCE * !Q)	0.01298	0.01257	0.02369
	(!CLK * D * !SCD * !SCE * !Q)	0.00547	0.00503	0.01618
	(!CLK * !D * SCD * SCE * !Q)	0.01410	0.01369	0.02397
	(!CLK * !D * SCD * SCE * !Q)	0.00586	0.00541	0.01574
	(!CLK * !D * SCD * !SCE * !Q)	0.00257	0.00261	0.00258
	(!CLK * !D * SCD * !SCE * !Q)	-0.00330	-0.00331	-0.00330
	(!CLK * !D * !SCD * SCE * !Q)	0.00259	0.00263	0.00260
	(!CLK * !D * !SCD * SCE * !Q)	-0.00328	-0.00331	-0.00329
	(!CLK * !D * !SCD * !SCE * !Q)	0.00257	0.00260	0.00258
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00330	-0.00331	-0.00331

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)**	0.00035	0.00057	0.01163
	(CLK * D * SCD * SCE * !Q)	0.00844	0.00870	0.01972
	(CLK * D * SCD * !SCE * !Q)	-0.00041	-0.00019	0.01083
	(CLK * D * SCD * !SCE * !Q)	0.00739	0.00762	0.01864
	(CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00264	-0.00264
	(CLK * D * !SCD * SCE * !Q)	0.00330	0.00330	0.00329
	(CLK * D * !SCD * !SCE * !Q)	-0.00063	-0.00039	0.01077
	(CLK * D * !SCD * !SCE * !Q)	0.00678	0.00706	0.01820
	(CLK * !D * SCD * SCE * !Q)	0.00002	0.00027	0.01148
	(CLK * !D * SCD * SCE * !Q)	0.00817	0.00846	0.01960
	(CLK * !D * SCD * !SCE * !Q)	-0.00253	-0.00260	-0.00261
	(CLK * !D * SCD * !SCE * !Q)	0.00333	0.00331	0.00329
	(CLK * !D * !SCD * SCE * !Q)	-0.00258	-0.00265	-0.00264
	(CLK * !D * !SCD * SCE * !Q)	0.00330	0.00330	0.00329
	(CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00263	-0.00262
	(CLK * !D * !SCD * !SCE * !Q)	0.00333	0.00332	0.00330
	(!CLK * D * SCD * SCE * !Q)	0.00577	0.00559	0.01990
	(!CLK * D * SCD * SCE * !Q)	0.01399	0.01386	0.02815
	(!CLK * D * SCD * !SCE * !Q)	0.00502	0.00481	0.01906
	(!CLK * D * SCD * !SCE * !Q)	0.01295	0.01277	0.02702
	(!CLK * D * !SCD * SCE * !Q)	-0.00259	-0.00266	-0.00266
	(!CLK * D * !SCD * SCE * !Q)	0.00328	0.00329	0.00327
	(!CLK * D * !SCD * !SCE * !Q)	0.00480	0.00460	0.01900
	(!CLK * D * !SCD * !SCE * !Q)	0.01234	0.01220	0.02659
	(!CLK * !D * SCD * SCE * !Q)	0.00545	0.00528	0.01975
	(!CLK * !D * SCD * SCE * !Q)	0.01373	0.01359	0.02807
	(!CLK * !D * SCD * !SCE * !Q)	-0.00254	-0.00264	-0.00263
	(!CLK * !D * SCD * !SCE * !Q)	0.00331	0.00330	0.00328
	(!CLK * !D * !SCD * SCE * !Q)	-0.00259	-0.00266	-0.00266
	(!CLK * !D * !SCD * SCE * !Q)	0.00328	0.00329	0.00327
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00256	-0.00265	-0.00263
	(!CLK * !D * !SCD * !SCE * !Q)	0.00332	0.00330	0.00329

sky130_fd_sc_hs__sdfrtp_2	**(CLK * D * SCD * SCE * !Q)**	0.00026	0.00050	0.01164
	(CLK * D * SCD * SCE * !Q)	0.00833	0.00860	0.01971
	(CLK * D * SCD * !SCE * !Q)	-0.00042	-0.00020	0.01092
	(CLK * D * SCD * !SCE * !Q)	0.00735	0.00761	0.01871
	(CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00266	-0.00265
	(CLK * D * !SCD * SCE * !Q)	0.00332	0.00334	0.00331
	(CLK * D * !SCD * !SCE * !Q)	-0.00064	-0.00038	0.01086
	(CLK * D * !SCD * !SCE * !Q)	0.00674	0.00703	0.01827
	(CLK * !D * SCD * SCE * !Q)	-0.00006	0.00021	0.01149
	(CLK * !D * SCD * SCE * !Q)	0.00806	0.00835	0.01963
	(CLK * !D * SCD * !SCE * !Q)	-0.00253	-0.00264	-0.00262
	(CLK * !D * SCD * !SCE * !Q)	0.00335	0.00335	0.00332
	(CLK * !D * !SCD * SCE * !Q)	-0.00258	-0.00266	-0.00265
	(CLK * !D * !SCD * SCE * !Q)	0.00332	0.00334	0.00331
	(CLK * !D * !SCD * !SCE * !Q)	-0.00255	-0.00263	-0.00262
	(CLK * !D * !SCD * !SCE * !Q)	0.00335	0.00335	0.00332
	(!CLK * D * SCD * SCE * !Q)	0.00611	0.00598	0.01996
	(!CLK * D * SCD * SCE * !Q)	0.01430	0.01420	0.02816
	(!CLK * D * SCD * !SCE * !Q)	0.00544	0.00526	0.01918
	(!CLK * D * SCD * !SCE * !Q)	0.01333	0.01320	0.02711
	(!CLK * D * !SCD * SCE * !Q)	-0.00258	-0.00266	-0.00264
	(!CLK * D * !SCD * SCE * !Q)	0.00332	0.00334	0.00331
	(!CLK * D * !SCD * !SCE * !Q)	0.00522	0.00505	0.01914
	(!CLK * D * !SCD * !SCE * !Q)	0.01272	0.01261	0.02669
	(!CLK * !D * SCD * SCE * !Q)	0.00581	0.00567	0.01984
	(!CLK * !D * SCD * SCE * !Q)	0.01404	0.01395	0.02810
	(!CLK * !D * SCD * !SCE * !Q)	-0.00253	-0.00263	-0.00261
	(!CLK * !D * SCD * !SCE * !Q)	0.00335	0.00335	0.00332
	(!CLK * !D * !SCD * SCE * !Q)	-0.00258	-0.00266	-0.00264
	(!CLK * !D * !SCD * SCE * !Q)	0.00332	0.00334	0.00331
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00254	-0.00265	-0.00262
	(!CLK * !D * !SCD * !SCE * !Q)	0.00336	0.00336	0.00333

sky130_fd_sc_hs__sdfrtp_4	**(CLK * D * SCD * SCE * !Q)**	0.00028	0.00052	0.01165
	(CLK * D * SCD * SCE * !Q)	0.00832	0.00860	0.01969
	(CLK * D * SCD * !SCE * !Q)	-0.00041	-0.00019	0.01092
	(CLK * D * SCD * !SCE * !Q)	0.00734	0.00760	0.01868
	(CLK * D * !SCD * SCE * !Q)	-0.00254	-0.00261	-0.00261
	(CLK * D * !SCD * SCE * !Q)	0.00330	0.00330	0.00329
	(CLK * D * !SCD * !SCE * !Q)	-0.00063	-0.00037	0.01086
	(CLK * D * !SCD * !SCE * !Q)	0.00673	0.00702	0.01824
	(CLK * !D * SCD * SCE * !Q)	-0.00009	0.00018	0.01146
	(CLK * !D * SCD * SCE * !Q)	0.00800	0.00831	0.01957
	(CLK * !D * SCD * !SCE * !Q)	-0.00249	-0.00259	-0.00258
	(CLK * !D * SCD * !SCE * !Q)	0.00333	0.00331	0.00330
	(CLK * !D * !SCD * SCE * !Q)	-0.00254	-0.00261	-0.00261
	(CLK * !D * !SCD * SCE * !Q)	0.00330	0.00330	0.00329
	(CLK * !D * !SCD * !SCE * !Q)	-0.00251	-0.00259	-0.00259
	(CLK * !D * !SCD * !SCE * !Q)	0.00333	0.00332	0.00330
	(!CLK * D * SCD * SCE * !Q)	0.00591	0.00572	0.01986
	(!CLK * D * SCD * SCE * !Q)	0.01408	0.01393	0.02806
	(!CLK * D * SCD * !SCE * !Q)	0.00523	0.00509	0.01909
	(!CLK * D * SCD * !SCE * !Q)	0.01311	0.01302	0.02701
	(!CLK * D * !SCD * SCE * !Q)	-0.00253	-0.00260	-0.00260
	(!CLK * D * !SCD * SCE * !Q)	0.00331	0.00332	0.00330
	(!CLK * D * !SCD * !SCE * !Q)	0.00501	0.00489	0.01903
	(!CLK * D * !SCD * !SCE * !Q)	0.01250	0.01241	0.02657
	(!CLK * !D * SCD * SCE * !Q)	0.00555	0.00537	0.01972
	(!CLK * !D * SCD * SCE * !Q)	0.01377	0.01364	0.02796
	(!CLK * !D * SCD * !SCE * !Q)	-0.00248	-0.00257	-0.00258
	(!CLK * !D * SCD * !SCE * !Q)	0.00334	0.00331	0.00331
	(!CLK * !D * !SCD * SCE * !Q)	-0.00253	-0.00260	-0.00260
	(!CLK * !D * !SCD * SCE * !Q)	0.00331	0.00332	0.00330
	(!CLK * !D * !SCD * !SCE * !Q)	-0.00250	-0.00257	-0.00258
	(!CLK * !D * !SCD * !SCE * !Q)	0.00334	0.00331	0.00331

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)	0.01073	0.01078	0.02748
	(D * RESET_B * SCD * SCE * Q)	0.00733	0.00737	0.02406
	(D * RESET_B * SCD * !SCE * Q)	0.01073	0.01078	0.02748
	(D * RESET_B * SCD * !SCE * Q)	0.00733	0.00736	0.02407
	(D * RESET_B * !SCD * !SCE * Q)	0.01073	0.01078	0.02748
	(D * RESET_B * !SCD * !SCE * Q)	0.00733	0.00736	0.02406
	(D * !SCD * SCE * !Q)	0.01108	0.01112	0.02786
	(D * !SCD * SCE * !Q)	0.00768	0.00770	0.02444
	(D * !RESET_B * SCD * SCE * !Q)	0.01108	0.01113	0.02785
	(D * !RESET_B * SCD * SCE * !Q)	0.00769	0.00771	0.02444
	(D * !RESET_B * SCD * !SCE * !Q)	0.01108	0.01113	0.02786
	(D * !RESET_B * SCD * !SCE * !Q)	0.00768	0.00770	0.02444
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01108	0.01113	0.02786
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00768	0.00770	0.02444
	(!D * RESET_B * SCD * SCE * Q)	0.01073	0.01078	0.02748
	(!D * RESET_B * SCD * SCE * Q)	0.00733	0.00737	0.02407
	(!D * !SCE * !Q)	0.01108	0.01112	0.02785
	(!D * !SCE * !Q)	0.00768	0.00770	0.02444
	(!D * !SCD * SCE * !Q)	0.01108	0.01112	0.02785
	(!D * !SCD * SCE * !Q)	0.00768	0.00770	0.02444
	(!D * !RESET_B * SCD * SCE * !Q)	0.01108	0.01113	0.02785
	(!D * !RESET_B * SCD * SCE * !Q)	0.00769	0.00771	0.02444

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.01070	0.01075	0.02744
	(D * RESET_B * SCD * SCE * Q)	0.00728	0.00731	0.02400
	(D * RESET_B * SCD * !SCE * Q)	0.01070	0.01075	0.02744
	(D * RESET_B * SCD * !SCE * Q)	0.00728	0.00730	0.02400
	(D * RESET_B * !SCD * !SCE * Q)	0.01070	0.01075	0.02745
	(D * RESET_B * !SCD * !SCE * Q)	0.00728	0.00731	0.02401
	(D * !SCD * SCE * !Q)	0.01111	0.01113	0.02787
	(D * !SCD * SCE * !Q)	0.00768	0.00769	0.02443
	(D * !RESET_B * SCD * SCE * !Q)	0.01111	0.01114	0.02787
	(D * !RESET_B * SCD * SCE * !Q)	0.00768	0.00770	0.02443
	(D * !RESET_B * SCD * !SCE * !Q)	0.01111	0.01114	0.02787
	(D * !RESET_B * SCD * !SCE * !Q)	0.00768	0.00769	0.02443
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01111	0.01114	0.02787
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00768	0.00769	0.02443
	(!D * RESET_B * SCD * SCE * Q)	0.01070	0.01075	0.02745
	(!D * RESET_B * SCD * SCE * Q)	0.00728	0.00731	0.02400
	(!D * !SCE * !Q)	0.01111	0.01113	0.02786
	(!D * !SCE * !Q)	0.00768	0.00768	0.02442
	(!D * !SCD * SCE * !Q)	0.01111	0.01114	0.02787
	(!D * !SCD * SCE * !Q)	0.00768	0.00769	0.02442
	(!D * !RESET_B * SCD * SCE * !Q)	0.01111	0.01114	0.02786
	(!D * !RESET_B * SCD * SCE * !Q)	0.00768	0.00770	0.02442

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.01055	0.01061	0.02735
	(D * RESET_B * SCD * SCE * Q)	0.00714	0.00717	0.02391
	(D * RESET_B * SCD * !SCE * Q)	0.01055	0.01061	0.02735
	(D * RESET_B * SCD * !SCE * Q)	0.00713	0.00717	0.02391
	(D * RESET_B * !SCD * !SCE * Q)	0.01055	0.01061	0.02735
	(D * RESET_B * !SCD * !SCE * Q)	0.00714	0.00717	0.02392
	(D * !SCD * SCE * !Q)	0.01093	0.01097	0.02774
	(D * !SCD * SCE * !Q)	0.00751	0.00753	0.02430
	(D * !RESET_B * SCD * SCE * !Q)	0.01093	0.01098	0.02774
	(D * !RESET_B * SCD * SCE * !Q)	0.00752	0.00754	0.02430
	(D * !RESET_B * SCD * !SCE * !Q)	0.01093	0.01098	0.02774
	(D * !RESET_B * SCD * !SCE * !Q)	0.00751	0.00754	0.02430
	(D * !RESET_B * !SCD * !SCE * !Q)	0.01093	0.01098	0.02774
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00751	0.00754	0.02430
	(!D * RESET_B * SCD * SCE * Q)	0.01055	0.01061	0.02735
	(!D * RESET_B * SCD * SCE * Q)	0.00713	0.00717	0.02392
	(!D * !SCE * !Q)	0.01093	0.01097	0.02773
	(!D * !SCE * !Q)	0.00751	0.00753	0.02430
	(!D * !SCD * SCE * !Q)	0.01093	0.01097	0.02773
	(!D * !SCD * SCE * !Q)	0.00751	0.00753	0.02430
	(!D * !RESET_B * SCD * SCE * !Q)	0.01093	0.01098	0.02773
	(!D * !RESET_B * SCD * SCE * !Q)	0.00752	0.00754	0.02430

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)**	0.00576	0.00625	0.02341
	(D * RESET_B * SCD * SCE * Q)	0.00916	0.00967	0.02683
	(D * RESET_B * SCD * SCE * !Q)	0.01052	0.01091	0.02865
	(D * RESET_B * SCD * SCE * !Q)	0.01377	0.01417	0.03191
	(D * RESET_B * SCD * !SCE * Q)	0.00576	0.00625	0.02341
	(D * RESET_B * SCD * !SCE * Q)	0.00916	0.00966	0.02683
	(D * RESET_B * SCD * !SCE * !Q)	0.01049	0.01088	0.02862
	(D * RESET_B * SCD * !SCE * !Q)	0.01374	0.01414	0.03188
	(D * RESET_B * !SCD * SCE * Q)	0.01144	0.01203	0.02969
	(D * RESET_B * !SCD * SCE * Q)	0.01501	0.01562	0.03328
	(D * RESET_B * !SCD * !SCE * Q)	0.00576	0.00625	0.02341
	(D * RESET_B * !SCD * !SCE * Q)	0.00916	0.00967	0.02683
	(D * RESET_B * !SCD * !SCE * !Q)	0.01049	0.01088	0.02862
	(D * RESET_B * !SCD * !SCE * !Q)	0.01374	0.01414	0.03188
	(D * !SCD * SCE * !Q)	0.00534	0.00582	0.02303
	(D * !SCD * SCE * !Q)	0.00874	0.00924	0.02645
	(D * !RESET_B * SCD * SCE * !Q)	0.00534	0.00582	0.02302
	(D * !RESET_B * SCD * SCE * !Q)	0.00874	0.00925	0.02644
	(D * !RESET_B * SCD * !SCE * !Q)	0.00534	0.00582	0.02302
	(D * !RESET_B * SCD * !SCE * !Q)	0.00874	0.00925	0.02644
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00534	0.00582	0.02302
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00874	0.00925	0.02644
	(!D * RESET_B * SCD * SCE * Q)	0.00576	0.00625	0.02341
	(!D * RESET_B * SCD * SCE * Q)	0.00916	0.00967	0.02683
	(!D * RESET_B * SCD * SCE * !Q)	0.01055	0.01093	0.02868
	(!D * RESET_B * SCD * SCE * !Q)	0.01378	0.01419	0.03193
	(!D * RESET_B * !SCE * Q)	0.01141	0.01201	0.02967
	(!D * RESET_B * !SCE * Q)	0.01497	0.01559	0.03325
	(!D * RESET_B * !SCD * SCE * Q)	0.01142	0.01199	0.02968
	(!D * RESET_B * !SCD * SCE * Q)	0.01499	0.01557	0.03326
	(!D * !SCE * !Q)	0.00534	0.00582	0.02303
	(!D * !SCE * !Q)	0.00874	0.00924	0.02645
	(!D * !SCD * SCE * !Q)	0.00534	0.00582	0.02302
	(!D * !SCD * SCE * !Q)	0.00874	0.00924	0.02644
	(!D * !RESET_B * SCD * SCE * !Q)	0.00534	0.00582	0.02302
	(!D * !RESET_B * SCD * SCE * !Q)	0.00874	0.00925	0.02644

sky130_fd_sc_hs__sdfrtp_2	**(D * RESET_B * SCD * SCE * Q)**	0.00577	0.00626	0.02344
	(D * RESET_B * SCD * SCE * Q)	0.00920	0.00970	0.02688
	(D * RESET_B * SCD * SCE * !Q)	0.01076	0.01115	0.02890
	(D * RESET_B * SCD * SCE * !Q)	0.01404	0.01445	0.03219
	(D * RESET_B * SCD * !SCE * Q)	0.00577	0.00626	0.02343
	(D * RESET_B * SCD * !SCE * Q)	0.00920	0.00970	0.02687
	(D * RESET_B * SCD * !SCE * !Q)	0.01073	0.01112	0.02886
	(D * RESET_B * SCD * !SCE * !Q)	0.01401	0.01442	0.03215
	(D * RESET_B * !SCD * SCE * Q)	0.01187	0.01245	0.03012
	(D * RESET_B * !SCD * SCE * Q)	0.01546	0.01604	0.03372
	(D * RESET_B * !SCD * !SCE * Q)	0.00577	0.00626	0.02343
	(D * RESET_B * !SCD * !SCE * Q)	0.00920	0.00970	0.02687
	(D * RESET_B * !SCD * !SCE * !Q)	0.01073	0.01112	0.02886
	(D * RESET_B * !SCD * !SCE * !Q)	0.01401	0.01443	0.03216
	(D * !SCD * SCE * !Q)	0.00536	0.00584	0.02306
	(D * !SCD * SCE * !Q)	0.00879	0.00929	0.02650
	(D * !RESET_B * SCD * SCE * !Q)	0.00536	0.00585	0.02306
	(D * !RESET_B * SCD * SCE * !Q)	0.00879	0.00929	0.02649
	(D * !RESET_B * SCD * !SCE * !Q)	0.00536	0.00584	0.02306
	(D * !RESET_B * SCD * !SCE * !Q)	0.00879	0.00929	0.02649
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00536	0.00584	0.02306
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00879	0.00929	0.02649
	(!D * RESET_B * SCD * SCE * Q)	0.00577	0.00626	0.02344
	(!D * RESET_B * SCD * SCE * Q)	0.00920	0.00970	0.02688
	(!D * RESET_B * SCD * SCE * !Q)	0.01079	0.01118	0.02893
	(!D * RESET_B * SCD * SCE * !Q)	0.01406	0.01447	0.03221
	(!D * RESET_B * !SCE * Q)	0.01184	0.01243	0.03010
	(!D * RESET_B * !SCE * Q)	0.01541	0.01602	0.03369
	(!D * RESET_B * !SCD * SCE * Q)	0.01186	0.01242	0.03011
	(!D * RESET_B * !SCD * SCE * Q)	0.01544	0.01601	0.03371
	(!D * !SCE * !Q)	0.00536	0.00584	0.02306
	(!D * !SCE * !Q)	0.00879	0.00929	0.02650
	(!D * !SCD * SCE * !Q)	0.00536	0.00584	0.02305
	(!D * !SCD * SCE * !Q)	0.00879	0.00929	0.02650
	(!D * !RESET_B * SCD * SCE * !Q)	0.00537	0.00584	0.02306
	(!D * !RESET_B * SCD * SCE * !Q)	0.00879	0.00929	0.02649

sky130_fd_sc_hs__sdfrtp_4	**(D * RESET_B * SCD * SCE * Q)**	0.00574	0.00624	0.02341
	(D * RESET_B * SCD * SCE * Q)	0.00916	0.00967	0.02685
	(D * RESET_B * SCD * SCE * !Q)	0.01066	0.01105	0.02882
	(D * RESET_B * SCD * SCE * !Q)	0.01392	0.01434	0.03210
	(D * RESET_B * SCD * !SCE * Q)	0.00574	0.00624	0.02341
	(D * RESET_B * SCD * !SCE * Q)	0.00916	0.00967	0.02685
	(D * RESET_B * SCD * !SCE * !Q)	0.01062	0.01102	0.02877
	(D * RESET_B * SCD * !SCE * !Q)	0.01389	0.01431	0.03206
	(D * RESET_B * !SCD * SCE * Q)	0.01160	0.01219	0.02986
	(D * RESET_B * !SCD * SCE * Q)	0.01519	0.01580	0.03347
	(D * RESET_B * !SCD * !SCE * Q)	0.00574	0.00624	0.02341
	(D * RESET_B * !SCD * !SCE * Q)	0.00916	0.00967	0.02685
	(D * RESET_B * !SCD * !SCE * !Q)	0.01062	0.01102	0.02877
	(D * RESET_B * !SCD * !SCE * !Q)	0.01389	0.01431	0.03207
	(D * !SCD * SCE * !Q)	0.00529	0.00577	0.02301
	(D * !SCD * SCE * !Q)	0.00872	0.00921	0.02645
	(D * !RESET_B * SCD * SCE * !Q)	0.00529	0.00578	0.02300
	(D * !RESET_B * SCD * SCE * !Q)	0.00872	0.00922	0.02644
	(D * !RESET_B * SCD * !SCE * !Q)	0.00529	0.00578	0.02300
	(D * !RESET_B * SCD * !SCE * !Q)	0.00872	0.00922	0.02644
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00529	0.00578	0.02300
	(D * !RESET_B * !SCD * !SCE * !Q)	0.00872	0.00922	0.02644
	(!D * RESET_B * SCD * SCE * Q)	0.00574	0.00624	0.02340
	(!D * RESET_B * SCD * SCE * Q)	0.00916	0.00967	0.02684
	(!D * RESET_B * SCD * SCE * !Q)	0.01068	0.01108	0.02885
	(!D * RESET_B * SCD * SCE * !Q)	0.01394	0.01435	0.03212
	(!D * RESET_B * !SCE * Q)	0.01157	0.01217	0.02985
	(!D * RESET_B * !SCE * Q)	0.01514	0.01575	0.03343
	(!D * RESET_B * !SCD * SCE * Q)	0.01159	0.01219	0.02987
	(!D * RESET_B * !SCD * SCE * Q)	0.01517	0.01578	0.03347
	(!D * !SCE * !Q)	0.00529	0.00577	0.02301
	(!D * !SCE * !Q)	0.00872	0.00921	0.02645
	(!D * !SCD * SCE * !Q)	0.00529	0.00577	0.02301
	(!D * !SCD * SCE * !Q)	0.00872	0.00921	0.02644
	(!D * !RESET_B * SCD * SCE * !Q)	0.00529	0.00578	0.02299
	(!D * !RESET_B * SCD * SCE * !Q)	0.00872	0.00922	0.02643

SKY130_FD_SC_HS__SDFSBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00183	0.00202	0.00389	0.00339	0.00278	1.12337	1.04916
sky130_fd_sc_hs__sdfsbp_2	0.00190	0.00196	0.00409	0.00341	0.00281	2.27345	2.31005

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfsbp_1	0.00000	0.40016	0.60519
sky130_fd_sc_hs__sdfsbp_2	0.00000	0.37384	0.86778

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)	0.24253	0.70259	5.84400
	SET_B->Q (FR)	0.23340	1.00507	9.36360
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RR)	0.27100	0.63045	5.83229
	SET_B->Q (FR)	0.31576	0.98256	9.55428

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfsbp_1	CLK->Q (RF)	0.19744	0.38983	1.43603
sky130_fd_sc_hs__sdfsbp_2	CLK->Q (RF)	0.22247	0.40020	1.59008

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)	0.17101	0.66433	5.79256
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RR)	0.17158	0.56193	5.85589

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)	0.19146	0.44804	1.41947
	SET_B->Q_N (FF)	0.18096	0.75318	5.02178
sky130_fd_sc_hs__sdfsbp_2	CLK->Q_N (RF)	0.19542	0.43267	1.77191
	SET_B->Q_N (FF)	0.22210	0.80300	5.58059

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)	-0.06305	-0.15001	-0.99971
	setup	CLK (R)	0.10410	0.17662	1.00278
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08121	-0.16927	-1.03947
	setup	CLK (R)	0.12789	0.20150	1.10121

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)	-0.08351	-0.22660	-3.41816
	setup	CLK (R)	0.24105	0.37500	3.64447
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10746	-0.24865	-3.28989
	setup	CLK (R)	0.28482	0.40926	3.71872

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)	-0.06305	-0.15001	-0.99971
	setup	CLK (R)	0.10410	0.17662	1.00278
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08121	-0.16927	-1.03947
	setup	CLK (R)	0.12789	0.20150	1.10121

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)	-0.08351	-0.22660	-3.41816
	setup	CLK (R)	0.24105	0.37500	3.64447
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.10746	-0.24865	-3.28989
	setup	CLK (R)	0.28482	0.40926	3.71872

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)	-0.07887	-0.16490	-1.02281
	setup	CLK (R)	0.11917	0.19316	1.02958
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09257	-0.18046	-1.06167
	setup	CLK (R)	0.14451	0.21323	1.10553

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)	-0.10710	-0.26781	-3.80893
	setup	CLK (R)	0.29607	0.43609	3.99524
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13249	-0.29738	-3.71655
	setup	CLK (R)	0.34153	0.47672	4.08440

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)	-0.07887	-0.16490	-1.02642
	hold	CLK (R)	-0.07983	-0.16690	-1.02281
	setup	CLK (R)	0.11917	0.18779	1.02958
	setup	CLK (R)	0.11677	0.19316	1.02738
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.09257	-0.18046	-1.06167
	hold	CLK (R)	-0.09708	-0.18299	-1.06247
	setup	CLK (R)	0.14210	0.20923	1.10553
	setup	CLK (R)	0.14451	0.21323	1.10351

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)	-0.11521	-0.28222	-3.82569
	hold	CLK (R)	-0.10710	-0.26781	-3.80893
	setup	CLK (R)	0.29607	0.43609	3.99524
	setup	CLK (R)	0.28497	0.43238	3.98807
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.14273	-0.30892	-3.74999
	hold	CLK (R)	-0.13249	-0.29738	-3.71655
	setup	CLK (R)	0.34153	0.47672	4.08440
	setup	CLK (R)	0.32920	0.47304	4.07614

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)	-0.06791	-0.15009	-0.46595
	setup	CLK (R)	0.28707	0.30113	0.95492
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.08508	-0.17067	-0.37377
	setup	CLK (R)	0.33320	0.34030	1.04898

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)	-0.09805	-0.25567	-3.27826
	setup	CLK (R)	0.25848	0.39604	3.85933
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.12123	-0.27160	-3.24820
	setup	CLK (R)	0.29795	0.42888	3.93686

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)	-0.10847	-0.15009	-0.46595
	hold	CLK (R)	-0.06791	-0.15877	-0.94798
	setup	CLK (R)	0.28707	0.30113	0.56206
	setup	CLK (R)	0.10764	0.18579	0.95492
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13406	-0.17067	-0.37377
	hold	CLK (R)	-0.08508	-0.17755	-1.00331
	setup	CLK (R)	0.33320	0.34030	0.56046
	setup	CLK (R)	0.13208	0.21024	1.04898

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)	-0.12438	-0.28421	-3.27826
	hold	CLK (R)	-0.09805	-0.25567	-3.67573
	setup	CLK (R)	0.16466	0.30688	3.27478
	setup	CLK (R)	0.25848	0.39604	3.85933
sky130_fd_sc_hs__sdfsbp_2	hold	CLK (R)	-0.13800	-0.29378	-3.24820
	hold	CLK (R)	-0.12123	-0.27160	-3.57567
	setup	CLK (R)	0.18700	0.32263	3.26245
	setup	CLK (R)	0.29795	0.42888	3.93686

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)	-0.07715	-0.10856	-0.23645
	removal	CLK (R)	0.09752	0.12456	0.31738
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11088	-0.15601	-0.38430
	removal	CLK (R)	0.12303	0.17101	1.57484

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)	-0.07961	-0.10856	-0.23657
	recovery	CLK (R)	-0.07960	-0.10856	-0.23657
	recovery	CLK (R)	-0.07715	-0.10871	-0.23645
	removal	CLK (R)	0.09752	0.12456	0.31738
	removal	CLK (R)	0.09752	0.12456	0.31738
	removal	CLK (R)	0.09752	0.12456	0.31632
sky130_fd_sc_hs__sdfsbp_2	recovery	CLK (R)	-0.11088	-0.15601	-0.38432
	recovery	CLK (R)	-0.11090	-0.15601	-0.38432
	recovery	CLK (R)	-0.11127	-0.15604	-0.38430
	removal	CLK (R)	0.12303	0.17101	1.57484
	removal	CLK (R)	0.12303	0.17101	1.57468
	removal	CLK (R)	0.12228	0.17101	1.57199

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 ()	0.19014	0.63599	16.50020
	min_pulse_width	SET_B ()	0.18776	0.63599	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	SET_B ()	0.21875	0.63599	16.50020
	min_pulse_width	SET_B ()	0.25213	0.63599	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 ()	0.15200	0.63599	16.50020
	min_pulse_width	CLK ()	0.07809	0.63599	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.15915	0.63599	16.50020
	min_pulse_width	CLK ()	0.09239	0.63599	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 ()	0.14961	0.63599	16.50020
	min_pulse_width	CLK ()	0.24260	0.63599	16.50020
sky130_fd_sc_hs__sdfsbp_2	min_pulse_width	CLK ()	0.18538	0.63599	16.50020
	min_pulse_width	CLK ()	0.29743	0.63599	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	0.01141	0.01158	0.02053
	CLK	0.00980	0.00990	0.01892
	SET_B	0.01092	0.01091	0.01511
	SET_B	0.01276	0.01277	0.01667
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01591	0.01622	0.02512
	CLK	0.01424	0.01447	0.02348
	SET_B	0.01510	0.01519	0.01908
	SET_B	0.01702	0.01709	0.02090

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01189	0.01211	0.02055
	CLK	0.01017	0.01038	0.01885
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01590	0.01641	0.02486
	CLK	0.01421	0.01473	0.02321

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01191	0.01217	0.02093
	CLK	0.01019	0.01041	0.01928
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01593	0.01649	0.02527
	CLK	0.01424	0.01477	0.02358

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfsbp_1	CLK	0.01139	0.01155	0.02014
	CLK	0.00978	0.00988	0.01859
	SET_B	0.01090	0.01087	0.01462
	SET_B	0.01274	0.01275	0.01636
sky130_fd_sc_hs__sdfsbp_2	CLK	0.01590	0.01611	0.02486
	CLK	0.01422	0.01444	0.02324
	SET_B	0.01508	0.01517	0.01874
	SET_B	0.01700	0.01707	0.02059

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	0.00098	0.00099	0.00098
	(CLK * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(CLK * !SCE)	0.00326	0.00335	0.01376
	(CLK * !SCE)	0.00080	0.00089	0.01129
	(CLK * !SCD * SCE)	0.00051	0.00052	0.00051
	(CLK * !SCD * SCE)	-0.00096	-0.00099	-0.00100
	(!CLK * SCD * SCE)	0.00098	0.00099	0.00098
	(!CLK * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00859	0.00855	0.01731
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00585	0.00580	0.01457
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00686	0.00684	0.01551
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00403	0.00400	0.01267
	(!CLK * !SCD * SCE)	0.00051	0.00052	0.00051
	(!CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00100

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	0.00104	0.00105	0.00105
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00342	0.00349	0.01391
	(CLK * !SCE)	0.00090	0.00097	0.01141
	(CLK * !SCD * SCE)	0.00054	0.00055	0.00054
	(CLK * !SCD * SCE)	-0.00098	-0.00100	-0.00101
	(!CLK * SCD * SCE)	0.00104	0.00105	0.00105
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00960	0.00956	0.01790
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00693	0.00688	0.01523
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00792	0.00789	0.01612
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00515	0.00513	0.01334
	(!CLK * !SCD * SCE)	0.00054	0.00055	0.00053
	(!CLK * !SCD * SCE)	-0.00098	-0.00100	-0.00101

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * SCD * SCE)**	-0.00094	-0.00095	-0.00097
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00056	0.00096	0.01141
	(CLK * !SCE)	0.00302	0.00342	0.01387
	(CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !SCD * SCE)	0.00100	0.00100	0.00100
	(!CLK * SCD * SCE)	-0.00093	-0.00095	-0.00097
	(!CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00569	0.00589	0.01583
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00843	0.00863	0.01858
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00332	0.00354	0.01283
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00615	0.00638	0.01567
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00100	0.00100	0.00100

sky130_fd_sc_hs__sdfsbp_2	**(CLK * SCD * SCE)**	-0.00100	-0.00102	-0.00104
	(CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(CLK * !SCE)	0.00065	0.00103	0.01151
	(CLK * !SCE)	0.00317	0.00353	0.01402
	(CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00052
	(CLK * !SCD * SCE)	0.00102	0.00102	0.00101
	(!CLK * SCD * SCE)	-0.00100	-0.00102	-0.00104
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00045
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00731	0.00752	0.01717
	(!CLK * !SCE * SET_B * Q * !Q_N) + (!CLK * !SCE * SET_B * !Q * Q_N)	0.00998	0.01019	0.01984
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00479	0.00499	0.01404
	(!CLK * !SCE * !SET_B * Q * !Q_N)	0.00756	0.00777	0.01682
	(!CLK * !SCD * SCE)	-0.00052	-0.00052	-0.00052
	(!CLK * !SCD * SCE)	0.00102	0.00101	0.00101

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00465	0.00454	0.00920
	(CLK * D * SCE)	0.00118	0.00106	0.00572
	(CLK * !D * SCE)	0.00516	0.00506	0.00951
	(CLK * !D * SCE)	0.00163	0.00150	0.00597
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00986	0.00974	0.01381
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00611	0.00597	0.01005
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00813	0.00803	0.01201
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00429	0.00418	0.00816
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01037	0.01024	0.01414
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00656	0.00642	0.01034
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00864	0.00854	0.01236
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00474	0.00462	0.00846
	!SCE	0.00119	0.00108	0.00107
	!SCE	-0.00080	-0.00091	-0.00092

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00468	0.00459	0.00922
	(CLK * D * SCE)	0.00126	0.00116	0.00581
	(CLK * !D * SCE)	0.00520	0.00510	0.00954
	(CLK * !D * SCE)	0.00171	0.00161	0.00606
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01077	0.01067	0.01459
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00719	0.00708	0.01101
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00909	0.00902	0.01282
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00541	0.00532	0.00914
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01128	0.01119	0.01495
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00764	0.00753	0.01132
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00961	0.00952	0.01319
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00586	0.00577	0.00945
	!SCE	0.00112	0.00103	0.00101
	!SCE	-0.00081	-0.00093	-0.00093

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

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

sky130_fd_sc_hs__sdfsbp_1	**(CLK * D * SCE)**	0.00135	0.00122	0.00579
	(CLK * D * SCE)	0.00483	0.00470	0.00926
	(CLK * !D * SCE)	0.00102	0.00091	0.00564
	(CLK * !D * SCE)	0.00456	0.00445	0.00917
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00656	0.00644	0.01084
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01033	0.01019	0.01459
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00419	0.00404	0.00802
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00805	0.00791	0.01187
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00625	0.00611	0.01065
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01007	0.00993	0.01446
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00387	0.00373	0.00781
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00779	0.00765	0.01170
	!SCE	-0.00104	-0.00106	-0.00106
	!SCE	0.00094	0.00094	0.00094

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCE)**	0.00150	0.00138	0.00593
	(CLK * D * SCE)	0.00493	0.00481	0.00934
	(CLK * !D * SCE)	0.00117	0.00107	0.00576
	(CLK * !D * SCE)	0.00466	0.00456	0.00924
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.00821	0.00810	0.01237
	(!CLK * D * SCE * SET_B * Q * !Q_N) + (!CLK * D * SCE * SET_B * !Q * Q_N)	0.01179	0.01169	0.01593
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00569	0.00556	0.00938
	(!CLK * D * SCE * !SET_B * Q * !Q_N)	0.00938	0.00926	0.01306
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.00790	0.00780	0.01213
	(!CLK * !D * SCE * SET_B * Q * !Q_N) + (!CLK * !D * SCE * SET_B * !Q * Q_N)	0.01154	0.01144	0.01577
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00537	0.00525	0.00915
	(!CLK * !D * SCE * !SET_B * Q * !Q_N)	0.00912	0.00900	0.01288
	!SCE	-0.00097	-0.00099	-0.00099
	!SCE	0.00094	0.00095	0.00095

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)**	0.00411	0.00413	0.01685
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00033	-0.00033	0.01241
	(CLK * D * !SCD)	0.00618	0.00609	0.01921
	(CLK * D * !SCD)	0.00312	0.00298	0.01609
	(CLK * !D * SCD)	0.00712	0.00721	0.02550
	(CLK * !D * SCD)	0.00158	0.00167	0.02000
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00411	0.00413	0.01685
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00033	-0.00033	0.01241
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01111	0.01118	0.02420
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00831	0.00835	0.02136
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00873	0.00880	0.02182
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00604	0.00606	0.01907
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01245	0.01250	0.03020
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00663	0.00669	0.02440
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01071	0.01081	0.02833
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00481	0.00490	0.02245
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00398	0.00409	0.01674
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00016	-0.00006	0.01260

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00428	0.00431	0.01713
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00030	0.01254
	(CLK * D * !SCD)	0.00645	0.00637	0.01960
	(CLK * D * !SCD)	0.00323	0.00310	0.01632
	(CLK * !D * SCD)	0.00738	0.00748	0.02598
	(CLK * !D * SCD)	0.00171	0.00177	0.02031
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00428	0.00431	0.01713
	(!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	-0.00030	0.01254
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01290	0.01296	0.02610
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00983	0.00986	0.02297
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01036	0.01043	0.02355
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00740	0.00744	0.02054
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01357	0.01365	0.03136
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00771	0.00779	0.02552
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01189	0.01199	0.02953
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00593	0.00603	0.02359
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00411	0.00422	0.01696
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00020	-0.00010	0.01266

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)**	-0.00030	0.00038	0.01310
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00411	0.00482	0.01751
	(CLK * D * !SCD)	0.00305	0.00353	0.01645
	(CLK * D * !SCD)	0.00615	0.00665	0.01943
	(CLK * !D * SCD)	0.00081	0.00124	0.01913
	(CLK * !D * SCD)	0.00631	0.00676	0.02463
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	-0.00030	0.00038	0.01309
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00412	0.00482	0.01752
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00835	0.00891	0.02146
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01117	0.01174	0.02415
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00662	0.00718	0.01976
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00934	0.00993	0.02237
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00593	0.00631	0.02354
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01173	0.01210	0.02934
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00358	0.00394	0.02079
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00945	0.00984	0.02668
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00003	0.00055	0.01327
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00415	0.00470	0.01740

sky130_fd_sc_hs__sdfsbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00045	0.00022	0.01307
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00413	0.00480	0.01764
	(CLK * D * !SCD)	0.00298	0.00345	0.01647
	(CLK * D * !SCD)	0.00623	0.00671	0.01961
	(CLK * !D * SCD)	0.00090	0.00131	0.01939
	(CLK * !D * SCD)	0.00658	0.00700	0.02508
	(!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	0.00022	0.01306
	(!CLK * D * SCD * SET_B * Q * !Q_N) + (!CLK * D * SCD * SET_B * !Q * Q_N) + (!CLK * D * SCD * !SET_B * Q * !Q_N)	0.00413	0.00482	0.01765
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.00912	0.00968	0.02233
	(!CLK * D * !SCD * SET_B * Q * !Q_N) + (!CLK * D * !SCD * SET_B * !Q * Q_N)	0.01221	0.01277	0.02532
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.00744	0.00800	0.02069
	(!CLK * D * !SCD * !SET_B * Q * !Q_N)	0.01043	0.01101	0.02356
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.00755	0.00791	0.02525
	(!CLK * !D * SCD * SET_B * Q * !Q_N) + (!CLK * !D * SCD * SET_B * !Q * Q_N)	0.01338	0.01374	0.03109
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.00503	0.00539	0.02227
	(!CLK * !D * SCD * !SET_B * Q * !Q_N)	0.01097	0.01134	0.02822
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	-0.00006	0.00066	0.01330
	(!CLK * !D * !SCD * SET_B * Q * !Q_N) + (!CLK * !D * !SCD * SET_B * !Q * Q_N) + (!CLK * !D * !SCD * !SET_B * Q * !Q_N)	0.00423	0.00497	0.01760

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)	0.00211	0.00212	0.00211
	(CLK * Q * !Q_N)	-0.00174	-0.00175	-0.00174
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00224	0.00225	0.00224
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00161	-0.00161	-0.00161
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00409	0.00409	0.00847
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00010	0.00008	0.00446
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	0.00214	0.00217	0.00215
	(CLK * Q * !Q_N)	-0.00180	-0.00182	-0.00181
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00223	0.00226	0.00224
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00171	-0.00173	-0.00172
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00431	0.00432	0.00866
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00021	0.00017	0.00454

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)	-0.00208	-0.00212	-0.00210
	(CLK * Q * !Q_N)	0.00177	0.00177	0.00175
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00221	-0.00225	-0.00223
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00164	0.00164	0.00162
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00010	0.00011	0.00449
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00389	0.00413	0.00850
sky130_fd_sc_hs__sdfsbp_2	(CLK * Q * !Q_N)	-0.00212	-0.00215	-0.00214
	(CLK * Q * !Q_N)	0.00184	0.00183	0.00182
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	-0.00221	-0.00225	-0.00223
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * !SCD * !SCE * Q * !Q_N) + (!CLK * !D * SCD * SCE * Q * !Q_N)	0.00175	0.00175	0.00173
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	-0.00027	-0.00006	0.00428
	(!CLK * D * !SCD * SCE * Q * !Q_N) + (!CLK * !D * SCD * !SCE * Q * !Q_N) + (!CLK * !D * !SCD * Q * !Q_N)	0.00384	0.00408	0.00841

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)	0.01086	0.01085	0.02756
	(D * SCD * SCE * Q * !Q_N)	0.00753	0.00751	0.02423
	(D * !SCE * Q * !Q_N)	0.01085	0.01085	0.02756
	(D * !SCE * Q * !Q_N)	0.00753	0.00751	0.02423
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01082	0.01079	0.02753
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00750	0.00745	0.02419
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02004	0.02027	0.03786
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01635	0.01656	0.03416
	(!D * SCD * SCE * Q * !Q_N)	0.01085	0.01085	0.02756
	(!D * SCD * SCE * Q * !Q_N)	0.00753	0.00751	0.02423
	(!D * !SCE * SET_B * !Q * Q_N)	0.01082	0.01079	0.02753
	(!D * !SCE * SET_B * !Q * Q_N)	0.00750	0.00745	0.02419
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02004	0.02027	0.03786
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01635	0.01655	0.03415
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01083	0.01079	0.02753
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00750	0.00745	0.02419
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02009	0.02025	0.03786
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01639	0.01654	0.03416

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.01420	0.01413	0.03043
	(D * SCD * SCE * Q * !Q_N)	0.01084	0.01075	0.02706
	(D * !SCE * Q * !Q_N)	0.01420	0.01413	0.03043
	(D * !SCE * Q * !Q_N)	0.01084	0.01075	0.02706
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01414	0.01405	0.03038
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01077	0.01067	0.02701
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03237	0.03264	0.05141
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02876	0.02901	0.04779
	(!D * SCD * SCE * Q * !Q_N)	0.01420	0.01414	0.03043
	(!D * SCD * SCE * Q * !Q_N)	0.01084	0.01075	0.02706
	(!D * !SCE * SET_B * !Q * Q_N)	0.01413	0.01404	0.03038
	(!D * !SCE * SET_B * !Q * Q_N)	0.01077	0.01066	0.02701
	(!D * !SCE * !SET_B * Q * !Q_N)	0.03237	0.03266	0.05141
	(!D * !SCE * !SET_B * Q * !Q_N)	0.02875	0.02903	0.04778
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01414	0.01405	0.03038
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01077	0.01067	0.02701
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.03246	0.03267	0.05139
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.02883	0.02905	0.04776

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

Cell Name	When	Power(pJ)		
		first	mid	last

	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01134	0.01179	0.02938
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01441	0.01485	0.03244
	(D * SCD * SCE * Q * !Q_N)	0.00624	0.00672	0.02400
	(D * SCD * SCE * Q * !Q_N)	0.00955	0.01005	0.02733
	(D * !SCE * SET_B * !Q * Q_N)	0.01132	0.01176	0.02935
	(D * !SCE * SET_B * !Q * Q_N)	0.01439	0.01483	0.03242
	(D * !SCE * Q * !Q_N)	0.00624	0.00672	0.02400
	(D * !SCE * Q * !Q_N)	0.00955	0.01005	0.02733
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01270	0.01324	0.03088
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01631	0.01687	0.03451
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00632	0.00686	0.02413
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00966	0.01018	0.02747
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01027	0.01085	0.02846
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01396	0.01456	0.03218
sky130_fd_sc_hs__sdfsbp_1	**(!D * SCD * SCE * SET_B * !Q * Q_N)**	0.01137	0.01182	0.02941
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01443	0.01487	0.03246
	(!D * SCD * SCE * Q * !Q_N)	0.00624	0.00672	0.02400
	(!D * SCD * SCE * Q * !Q_N)	0.00955	0.01005	0.02734
	(!D * !SCE * SET_B * Q * !Q_N)	0.01269	0.01323	0.03087
	(!D * !SCE * SET_B * Q * !Q_N)	0.01628	0.01684	0.03448
	(!D * !SCE * SET_B * !Q * Q_N)	0.00632	0.00685	0.02413
	(!D * !SCE * SET_B * !Q * Q_N)	0.00966	0.01019	0.02747
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01030	0.01082	0.02846
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01399	0.01453	0.03217
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01269	0.01326	0.03088
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01630	0.01688	0.03451
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00633	0.00686	0.02413
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00966	0.01019	0.02747
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01029	0.01086	0.02847
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01398	0.01457	0.03219

sky130_fd_sc_hs__sdfsbp_2	**(D * SCD * SCE * SET_B * !Q * Q_N)**	0.01366	0.01396	0.03144
	(D * SCD * SCE * SET_B * !Q * Q_N)	0.01687	0.01718	0.03467
	(D * SCD * SCE * Q * !Q_N)	0.00757	0.00793	0.02523
	(D * SCD * SCE * Q * !Q_N)	0.01093	0.01130	0.02860
	(D * !SCE * SET_B * !Q * Q_N)	0.01364	0.01393	0.03141
	(D * !SCE * SET_B * !Q * Q_N)	0.01685	0.01716	0.03464
	(D * !SCE * Q * !Q_N)	0.00757	0.00793	0.02523
	(D * !SCE * Q * !Q_N)	0.01093	0.01130	0.02860
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01605	0.01643	0.03421
	(D * !SCD * SCE * SET_B * Q * !Q_N)	0.01957	0.01997	0.03776
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.00778	0.00815	0.02531
	(D * !SCD * SCE * SET_B * !Q * Q_N)	0.01114	0.01153	0.02869
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01344	0.01383	0.03161
	(D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01706	0.01747	0.03526
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01369	0.01399	0.03147
	(!D * SCD * SCE * SET_B * !Q * Q_N)	0.01689	0.01720	0.03469
	(!D * SCD * SCE * Q * !Q_N)	0.00757	0.00793	0.02523
	(!D * SCD * SCE * Q * !Q_N)	0.01093	0.01130	0.02860
	(!D * !SCE * SET_B * Q * !Q_N)	0.01603	0.01642	0.03420
	(!D * !SCE * SET_B * Q * !Q_N)	0.01954	0.01994	0.03773
	(!D * !SCE * SET_B * !Q * Q_N)	0.00778	0.00815	0.02531
	(!D * !SCE * SET_B * !Q * Q_N)	0.01114	0.01153	0.02869
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01343	0.01382	0.03160
	(!D * !SCE * !SET_B * Q * !Q_N)	0.01705	0.01746	0.03524
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01607	0.01644	0.03423
	(!D * !SCD * SCE * SET_B * Q * !Q_N)	0.01959	0.01996	0.03777
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.00778	0.00815	0.02531
	(!D * !SCD * SCE * SET_B * !Q * Q_N)	0.01114	0.01153	0.02868
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01346	0.01383	0.03161
	(!D * !SCD * SCE * !SET_B * Q * !Q_N)	0.01707	0.01747	0.03525

SKY130_FD_SC_HS__SDFSTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00182	0.00203	0.00387	0.00330	0.00277	1.12727
sky130_fd_sc_hs__sdfstp_2	0.00182	0.00198	0.00387	0.00340	0.00277	2.27387
sky130_fd_sc_hs__sdfstp_4	0.00182	0.00203	0.00393	0.00341	0.00276	4.27856

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfstp_1	0.00000	0.37833	0.57277
sky130_fd_sc_hs__sdfstp_2	0.00000	0.33018	0.86646
sky130_fd_sc_hs__sdfstp_4	0.00000	0.61874	0.93067

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)	0.19962	0.66332	5.78275
	SET_B->Q (FR)	0.20111	0.96651	9.22862
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RR)	0.18434	0.54834	5.71573
	SET_B->Q (FR)	0.22908	0.89991	9.30238
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RR)	0.21440	0.50891	5.76593
	SET_B->Q (FR)	0.26943	0.87529	9.40956

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfstp_1	CLK->Q (RF)	0.18807	0.38108	1.44204
sky130_fd_sc_hs__sdfstp_2	CLK->Q (RF)	0.20220	0.37438	1.53309
sky130_fd_sc_hs__sdfstp_4	CLK->Q (RF)	0.20772	0.36156	1.59188

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)	-0.06745	-0.15201	-0.99518
	setup	CLK (R)	0.10561	0.17852	1.00080
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08124	-0.16851	-1.04776
	setup	CLK (R)	0.13067	0.20395	1.10228
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07913	-0.17019	-1.05496
	setup	CLK (R)	0.12611	0.20275	1.10391

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)	-0.06942	-0.20693	-3.39991
	setup	CLK (R)	0.23447	0.36482	3.62256
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07503	-0.21350	-3.36738
	setup	CLK (R)	0.26590	0.39351	3.70119
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08446	-0.22510	-3.37442
	setup	CLK (R)	0.26582	0.39833	3.71734

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)	-0.06745	-0.15201	-0.99518
	setup	CLK (R)	0.10561	0.17852	1.00080
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08124	-0.16851	-1.04776
	setup	CLK (R)	0.13067	0.20395	1.10228
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.07913	-0.17019	-1.05496
	setup	CLK (R)	0.12611	0.20275	1.10391

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)	-0.06942	-0.20693	-3.39991
	setup	CLK (R)	0.23447	0.36482	3.62256
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.07503	-0.21350	-3.36738
	setup	CLK (R)	0.26590	0.39351	3.70119
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08446	-0.22510	-3.37442
	setup	CLK (R)	0.26582	0.39833	3.71734

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)	-0.07936	-0.16490	-1.02018
	setup	CLK (R)	0.12279	0.19249	1.02655
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09347	-0.18046	-1.07014
	setup	CLK (R)	0.14683	0.21537	1.11054
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09283	-0.18046	-1.07583
	setup	CLK (R)	0.14189	0.21256	1.11249

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)	-0.09583	-0.25656	-3.78641
	setup	CLK (R)	0.28458	0.43270	3.97817
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10102	-0.25925	-3.77667
	setup	CLK (R)	0.31898	0.45941	4.05673
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10551	-0.27085	-3.78208
	setup	CLK (R)	0.31882	0.46107	4.06725

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)	-0.07936	-0.16490	-1.02658
	hold	CLK (R)	-0.07983	-0.16890	-1.02018
	setup	CLK (R)	0.11958	0.19089	1.02655
	setup	CLK (R)	0.12279	0.19249	1.02619
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09347	-0.18046	-1.07434
	hold	CLK (R)	-0.09770	-0.18227	-1.07014
	setup	CLK (R)	0.14683	0.21256	1.11054
	setup	CLK (R)	0.14594	0.21537	1.10985
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09283	-0.18046	-1.07949
	hold	CLK (R)	-0.09689	-0.18446	-1.07583
	setup	CLK (R)	0.14189	0.21128	1.11249
	setup	CLK (R)	0.14085	0.21256	1.11050

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)	-0.10183	-0.26217	-3.80667
	hold	CLK (R)	-0.09583	-0.25656	-3.78641
	setup	CLK (R)	0.28458	0.43270	3.97817
	setup	CLK (R)	0.27387	0.42528	3.97152
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.10480	-0.26792	-3.79881
	hold	CLK (R)	-0.10102	-0.25925	-3.77667
	setup	CLK (R)	0.31898	0.45941	4.05673
	setup	CLK (R)	0.30682	0.45513	4.05370
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.11540	-0.27922	-3.80716
	hold	CLK (R)	-0.10551	-0.27085	-3.78208
	setup	CLK (R)	0.31882	0.46107	4.06725
	setup	CLK (R)	0.30653	0.45524	4.06359

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)	-0.06850	-0.13664	-0.45239
	setup	CLK (R)	0.28092	0.29466	0.95276
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.08743	-0.13876	-0.43677
	setup	CLK (R)	0.31393	0.32361	1.05182
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.08428	-0.14582	-0.43547
	setup	CLK (R)	0.31344	0.32483	1.05224

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)	-0.08593	-0.23920	-3.28023
	setup	CLK (R)	0.24909	0.38938	3.83919
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09104	-0.24190	-3.28725
	setup	CLK (R)	0.27910	0.42014	3.92868
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.09660	-0.25085	-3.29018
	setup	CLK (R)	0.28233	0.42126	3.94195

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)	-0.09325	-0.13664	-0.45239
	hold	CLK (R)	-0.06850	-0.16092	-0.94603
	setup	CLK (R)	0.28092	0.29466	0.55050
	setup	CLK (R)	0.11269	0.18579	0.95276
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.09991	-0.13876	-0.43677
	hold	CLK (R)	-0.08743	-0.17672	-1.00579
	setup	CLK (R)	0.31393	0.32361	0.56375
	setup	CLK (R)	0.13816	0.21256	1.05182
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.10705	-0.14582	-0.43547
	hold	CLK (R)	-0.08428	-0.17812	-1.00975
	setup	CLK (R)	0.31344	0.32483	0.57171
	setup	CLK (R)	0.13120	0.21013	1.05224

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)	-0.12707	-0.28499	-3.28023
	hold	CLK (R)	-0.08593	-0.23920	-3.65786
	setup	CLK (R)	0.16548	0.31012	3.27759
	setup	CLK (R)	0.24909	0.38938	3.83919
sky130_fd_sc_hs__sdfstp_2	hold	CLK (R)	-0.14011	-0.29740	-3.28725
	hold	CLK (R)	-0.09104	-0.24190	-3.65034
	setup	CLK (R)	0.19143	0.32829	3.29811
	setup	CLK (R)	0.27910	0.42014	3.92868
sky130_fd_sc_hs__sdfstp_4	hold	CLK (R)	-0.14274	-0.29740	-3.29018
	hold	CLK (R)	-0.09660	-0.25085	-3.66488
	setup	CLK (R)	0.18719	0.32388	3.29838
	setup	CLK (R)	0.28233	0.42126	3.94195

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)	-0.08315	-0.11823	-0.26778
	removal	CLK (R)	0.09931	0.13090	0.43904
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.11959	-0.14990	-0.30167
	removal	CLK (R)	0.15064	0.37581	5.28425
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.11194	-0.14990	-0.31927
	removal	CLK (R)	0.13076	0.30613	4.14669

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)	-0.08316	-0.11823	-0.26778
	recovery	CLK (R)	-0.08315	-0.11823	-0.26778
	recovery	CLK (R)	-0.08377	-0.11823	-0.26778
	removal	CLK (R)	0.09931	0.13090	0.43904
	removal	CLK (R)	0.09931	0.13090	0.43904
	removal	CLK (R)	0.09931	0.13090	0.43504
sky130_fd_sc_hs__sdfstp_2	recovery	CLK (R)	-0.11959	-0.14990	-0.30167
	recovery	CLK (R)	-0.11959	-0.14990	-0.30167
	recovery	CLK (R)	-0.11959	-0.14990	-0.30460
	removal	CLK (R)	0.15064	0.37581	5.28425
	removal	CLK (R)	0.15064	0.37581	5.28380
	removal	CLK (R)	0.15064	0.37581	5.26027
sky130_fd_sc_hs__sdfstp_4	recovery	CLK (R)	-0.11321	-0.14990	-0.32033
	recovery	CLK (R)	-0.11321	-0.14990	-0.32033
	recovery	CLK (R)	-0.11194	-0.14990	-0.31927
	removal	CLK (R)	0.12755	0.30613	4.14669
	removal	CLK (R)	0.12755	0.30613	4.14669
	removal	CLK (R)	0.13076	0.30613	4.13538

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 ()	0.17107	0.63599	16.50020
	min_pulse_width	SET_B ()	0.15438	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	SET_B ()	0.18299	0.63599	16.50020
	min_pulse_width	SET_B ()	0.17584	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	SET_B ()	0.18776	0.63599	16.50020
	min_pulse_width	SET_B ()	0.19491	0.63599	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 ()	0.10908	0.63599	16.50020
	min_pulse_width	CLK ()	0.07332	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.09239	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.11146	0.63599	16.50020
	min_pulse_width	CLK ()	0.08047	0.63599	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 ()	0.14961	0.63599	16.50020
	min_pulse_width	CLK ()	0.23544	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_2	min_pulse_width	CLK ()	0.18776	0.63599	16.50020
	min_pulse_width	CLK ()	0.28074	0.63599	16.50020
sky130_fd_sc_hs__sdfstp_4	min_pulse_width	CLK ()	0.18061	0.63599	16.50020
	min_pulse_width	CLK ()	0.27359	0.63599	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	0.02021	0.02018	0.03817
	CLK	0.01708	0.01706	0.03512
	SET_B	0.01911	0.01882	0.02644
	SET_B	0.02276	0.02249	0.03025
sky130_fd_sc_hs__sdfstp_2	CLK	0.02485	0.02501	0.04305
	CLK	0.02175	0.02192	0.04013
	SET_B	0.02469	0.02453	0.03193
	SET_B	0.02842	0.02827	0.03594
sky130_fd_sc_hs__sdfstp_4	CLK	0.02933	0.02996	0.04806
	CLK	0.02628	0.02697	0.04526
	SET_B	0.02917	0.02949	0.03703
	SET_B	0.03296	0.03323	0.04138

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfstp_1	CLK	0.02174	0.02191	0.03891
	CLK	0.01832	0.01844	0.03546
sky130_fd_sc_hs__sdfstp_2	CLK	0.02677	0.02714	0.04399
	CLK	0.02341	0.02377	0.04048
sky130_fd_sc_hs__sdfstp_4	CLK	0.03188	0.03292	0.04977
	CLK	0.02844	0.02942	0.04624

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	0.00097	0.00098	0.00098
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00330	0.00340	0.01381
	(CLK * !SCE)	0.00085	0.00094	0.01136
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099
	(!CLK * SCD * SCE)	0.00097	0.00098	0.00098
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * SET_B)	0.00834	0.00829	0.01710
	(!CLK * !SCE * SET_B)	0.00566	0.00561	0.01442
	(!CLK * !SCE * !SET_B * Q)	0.00671	0.00670	0.01538
	(!CLK * !SCE * !SET_B * Q)	0.00396	0.00393	0.01262
	(!CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK * !SCD * SCE)	-0.00095	-0.00098	-0.00099
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	0.00097	0.00098	0.00097
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00046
	(CLK * !SCE)	0.00326	0.00336	0.01377
	(CLK * !SCE)	0.00081	0.00090	0.01132
	(CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099
	(!CLK * SCD * SCE)	0.00097	0.00098	0.00097
	(!CLK * SCD * SCE)	-0.00046	-0.00046	-0.00046
	(!CLK * !SCE * SET_B)	0.00946	0.00943	0.01783
	(!CLK * !SCE * SET_B)	0.00669	0.00664	0.01505
	(!CLK * !SCE * !SET_B * Q)	0.00774	0.00772	0.01600
	(!CLK * !SCE * !SET_B * Q)	0.00488	0.00485	0.01314
	(!CLK * !SCD * SCE)	0.00051	0.00051	0.00050
	(!CLK * !SCD * SCE)	-0.00096	-0.00098	-0.00099

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	0.00097	0.00098	0.00097
	(CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(CLK * !SCE)	0.00338	0.00347	0.01382
	(CLK * !SCE)	0.00093	0.00101	0.01137
	(CLK * !SCD * SCE)	0.00051	0.00052	0.00051
	(CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00099
	(!CLK * SCD * SCE)	0.00097	0.00098	0.00098
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCE * SET_B)	0.00938	0.00935	0.01774
	(!CLK * !SCE * SET_B)	0.00667	0.00663	0.01504
	(!CLK * !SCE * !SET_B * Q)	0.00768	0.00768	0.01594
	(!CLK * !SCE * !SET_B * Q)	0.00490	0.00488	0.01315
	(!CLK * !SCD * SCE)	0.00051	0.00052	0.00051
	(!CLK * !SCD * SCE)	-0.00095	-0.00097	-0.00098

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00097
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00048	0.00088	0.01134
	(CLK * !SCE)	0.00294	0.00333	0.01380
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * SCD * SCE)	0.00048	0.00049	0.00047
	(!CLK * !SCE * SET_B)	0.00564	0.00585	0.01581
	(!CLK * !SCE * SET_B)	0.00831	0.00853	0.01849
	(!CLK * !SCE * !SET_B * Q)	0.00340	0.00363	0.01293
	(!CLK * !SCE * !SET_B * Q)	0.00616	0.00639	0.01569
	(!CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * !SCD * SCE)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__sdfstp_2	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00097
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00053	0.00093	0.01138
	(CLK * !SCE)	0.00298	0.00337	0.01383
	(CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(CLK * !SCD * SCE)	0.00099	0.00100	0.00099
	(!CLK * SCD * SCE)	-0.00093	-0.00094	-0.00097
	(!CLK * SCD * SCE)	0.00048	0.00049	0.00047
	(!CLK * !SCE * SET_B)	0.00662	0.00684	0.01649
	(!CLK * !SCE * SET_B)	0.00939	0.00962	0.01927
	(!CLK * !SCE * !SET_B * Q)	0.00426	0.00446	0.01354
	(!CLK * !SCE * !SET_B * Q)	0.00712	0.00733	0.01640
	(!CLK * !SCD * SCE)	-0.00049	-0.00049	-0.00049
	(!CLK * !SCD * SCE)	0.00100	0.00099	0.00099

sky130_fd_sc_hs__sdfstp_4	**(CLK * SCD * SCE)**	-0.00093	-0.00094	-0.00096
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00061	0.00099	0.01140
	(CLK * !SCE)	0.00305	0.00344	0.01385
	(CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(CLK * !SCD * SCE)	0.00099	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00092	-0.00094	-0.00096
	(!CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK * !SCE * SET_B)	0.00668	0.00690	0.01655
	(!CLK * !SCE * SET_B)	0.00938	0.00961	0.01927
	(!CLK * !SCE * !SET_B * Q)	0.00436	0.00456	0.01363
	(!CLK * !SCE * !SET_B * Q)	0.00715	0.00736	0.01642
	(!CLK * !SCD * SCE)	-0.00049	-0.00050	-0.00049
	(!CLK * !SCD * SCE)	0.00099	0.00099	0.00099

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00468	0.00457	0.00923
	(CLK * D * SCE)	0.00121	0.00109	0.00575
	(CLK * !D * SCE)	0.00519	0.00509	0.00954
	(CLK * !D * SCE)	0.00166	0.00153	0.00600
	(!CLK * D * SCE * SET_B)	0.00960	0.00948	0.01356
	(!CLK * D * SCE * SET_B)	0.00591	0.00577	0.00985
	(!CLK * D * SCE * !SET_B * Q)	0.00798	0.00788	0.01187
	(!CLK * D * SCE * !SET_B * Q)	0.00420	0.00409	0.00808
	(!CLK * !D * SCE * SET_B)	0.01012	0.01000	0.01390
	(!CLK * !D * SCE * SET_B)	0.00636	0.00622	0.01014
	(!CLK * !D * SCE * !SET_B * Q)	0.00849	0.00839	0.01222
	(!CLK * !D * SCE * !SET_B * Q)	0.00465	0.00454	0.00838
	!SCE	0.00118	0.00108	0.00106
	!SCE	-0.00082	-0.00092	-0.00094
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00461	0.00451	0.00916
	(CLK * D * SCE)	0.00117	0.00106	0.00572
	(CLK * !D * SCE)	0.00513	0.00502	0.00948
	(CLK * !D * SCE)	0.00162	0.00150	0.00597
	(!CLK * D * SCE * SET_B)	0.01071	0.01060	0.01454
	(!CLK * D * SCE * SET_B)	0.00693	0.00681	0.01077
	(!CLK * D * SCE * !SET_B * Q)	0.00898	0.00889	0.01273
	(!CLK * D * SCE * !SET_B * Q)	0.00513	0.00502	0.00887
	(!CLK * !D * SCE * SET_B)	0.01123	0.01111	0.01489
	(!CLK * !D * SCE * SET_B)	0.00738	0.00726	0.01105
	(!CLK * !D * SCE * !SET_B * Q)	0.00950	0.00940	0.01309
	(!CLK * !D * SCE * !SET_B * Q)	0.00558	0.00547	0.00917
	!SCE	0.00115	0.00105	0.00104
	!SCE	-0.00081	-0.00092	-0.00094

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00476	0.00466	0.00929
	(CLK * D * SCE)	0.00129	0.00117	0.00581
	(CLK * !D * SCE)	0.00528	0.00517	0.00960
	(CLK * !D * SCE)	0.00174	0.00162	0.00606
	(!CLK * D * SCE * SET_B)	0.01065	0.01054	0.01448
	(!CLK * D * SCE * SET_B)	0.00691	0.00679	0.01074
	(!CLK * D * SCE * !SET_B * Q)	0.00895	0.00886	0.01269
	(!CLK * D * SCE * !SET_B * Q)	0.00514	0.00503	0.00887
	(!CLK * !D * SCE * SET_B)	0.01116	0.01105	0.01484
	(!CLK * !D * SCE * SET_B)	0.00737	0.00724	0.01104
	(!CLK * !D * SCE * !SET_B * Q)	0.00946	0.00937	0.01306
	(!CLK * !D * SCE * !SET_B * Q)	0.00559	0.00547	0.00918
	!SCE	0.00118	0.00108	0.00106
	!SCE	-0.00082	-0.00093	-0.00094

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

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

sky130_fd_sc_hs__sdfstp_1	**(CLK * D * SCE)**	0.00128	0.00115	0.00573
	(CLK * D * SCE)	0.00477	0.00464	0.00920
	(CLK * !D * SCE)	0.00096	0.00085	0.00558
	(CLK * !D * SCE)	0.00450	0.00439	0.00911
	(!CLK * D * SCE * SET_B)	0.00652	0.00638	0.01081
	(!CLK * D * SCE * SET_B)	0.01023	0.01009	0.01450
	(!CLK * D * SCE * !SET_B * Q)	0.00428	0.00414	0.00812
	(!CLK * D * SCE * !SET_B * Q)	0.00807	0.00793	0.01189
	(!CLK * !D * SCE * SET_B)	0.00621	0.00607	0.01062
	(!CLK * !D * SCE * SET_B)	0.00997	0.00984	0.01438
	(!CLK * !D * SCE * !SET_B * Q)	0.00396	0.00382	0.00790
	(!CLK * !D * SCE * !SET_B * Q)	0.00781	0.00768	0.01173
	!SCE	-0.00103	-0.00105	-0.00105
	!SCE	0.00095	0.00096	0.00095
sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCE)**	0.00137	0.00125	0.00582
	(CLK * D * SCE)	0.00482	0.00470	0.00925
	(CLK * !D * SCE)	0.00105	0.00094	0.00567
	(CLK * !D * SCE)	0.00456	0.00445	0.00916
	(!CLK * D * SCE * SET_B)	0.00752	0.00741	0.01170
	(!CLK * D * SCE * SET_B)	0.01131	0.01120	0.01547
	(!CLK * D * SCE * !SET_B * Q)	0.00518	0.00504	0.00889
	(!CLK * D * SCE * !SET_B * Q)	0.00905	0.00891	0.01275
	(!CLK * !D * SCE * SET_B)	0.00721	0.00708	0.01148
	(!CLK * !D * SCE * SET_B)	0.01105	0.01092	0.01531
	(!CLK * !D * SCE * !SET_B * Q)	0.00486	0.00473	0.00867
	(!CLK * !D * SCE * !SET_B * Q)	0.00879	0.00865	0.01258
	!SCE	-0.00100	-0.00103	-0.00103
	!SCE	0.00094	0.00095	0.00095

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCE)**	0.00140	0.00127	0.00582
	(CLK * D * SCE)	0.00488	0.00476	0.00929
	(CLK * !D * SCE)	0.00107	0.00096	0.00566
	(CLK * !D * SCE)	0.00462	0.00450	0.00919
	(!CLK * D * SCE * SET_B)	0.00755	0.00742	0.01173
	(!CLK * D * SCE * SET_B)	0.01130	0.01117	0.01546
	(!CLK * D * SCE * !SET_B * Q)	0.00524	0.00509	0.00895
	(!CLK * D * SCE * !SET_B * Q)	0.00907	0.00893	0.01276
	(!CLK * !D * SCE * SET_B)	0.00724	0.00711	0.01151
	(!CLK * !D * SCE * SET_B)	0.01105	0.01091	0.01530
	(!CLK * !D * SCE * !SET_B * Q)	0.00492	0.00478	0.00872
	(!CLK * !D * SCE * !SET_B * Q)	0.00881	0.00867	0.01259
	!SCE	-0.00102	-0.00105	-0.00105
	!SCE	0.00095	0.00096	0.00095

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)**	0.00412	0.00414	0.01685
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00030	-0.00031	0.01243
	(CLK * D * !SCD)	0.00612	0.00604	0.01915
	(CLK * D * !SCD)	0.00307	0.00294	0.01603
	(CLK * !D * SCD)	0.00716	0.00726	0.02555
	(CLK * !D * SCD)	0.00164	0.00173	0.02006
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00412	0.00414	0.01685
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00030	-0.00031	0.01243
	(!CLK * D * !SCD * SET_B)	0.01108	0.01115	0.02417
	(!CLK * D * !SCD * SET_B)	0.00824	0.00828	0.02128
	(!CLK * D * !SCD * !SET_B * Q)	0.00884	0.00891	0.02192
	(!CLK * D * !SCD * !SET_B * Q)	0.00609	0.00611	0.01911
	(!CLK * !D * SCD * SET_B)	0.01220	0.01226	0.02996
	(!CLK * !D * SCD * SET_B)	0.00645	0.00651	0.02424
	(!CLK * !D * SCD * !SET_B * Q)	0.01057	0.01066	0.02819
	(!CLK * !D * SCD * !SET_B * Q)	0.00475	0.00484	0.02239
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00400	0.00411	0.01675
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00013	-0.00003	0.01262

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00412	0.00414	0.01684
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00030	-0.00031	0.01241
	(CLK * D * !SCD)	0.00621	0.00610	0.01922
	(CLK * D * !SCD)	0.00313	0.00302	0.01609
	(CLK * !D * SCD)	0.00713	0.00722	0.02550
	(CLK * !D * SCD)	0.00161	0.00169	0.02000
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00412	0.00414	0.01684
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00030	-0.00031	0.01241
	(!CLK * D * !SCD * SET_B)	0.01207	0.01214	0.02513
	(!CLK * D * !SCD * SET_B)	0.00932	0.00937	0.02234
	(!CLK * D * !SCD * !SET_B * Q)	0.00972	0.00980	0.02277
	(!CLK * D * !SCD * !SET_B * Q)	0.00705	0.00710	0.02007
	(!CLK * !D * SCD * SET_B)	0.01333	0.01340	0.03093
	(!CLK * !D * SCD * SET_B)	0.00748	0.00754	0.02510
	(!CLK * !D * SCD * !SET_B * Q)	0.01160	0.01169	0.02903
	(!CLK * !D * SCD * !SET_B * Q)	0.00567	0.00576	0.02313
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00401	0.00412	0.01675
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00013	-0.00003	0.01261

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00416	0.00417	0.01688
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00031	-0.00032	0.01242
	(CLK * D * !SCD)	0.00627	0.00619	0.01930
	(CLK * D * !SCD)	0.00317	0.00303	0.01613
	(CLK * !D * SCD)	0.00729	0.00738	0.02563
	(CLK * !D * SCD)	0.00172	0.00180	0.02010
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00416	0.00417	0.01690
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00031	-0.00032	0.01243
	(!CLK * D * !SCD * SET_B)	0.01214	0.01221	0.02522
	(!CLK * D * !SCD * SET_B)	0.00929	0.00933	0.02232
	(!CLK * D * !SCD * !SET_B * Q)	0.00982	0.00990	0.02288
	(!CLK * D * !SCD * !SET_B * Q)	0.00706	0.00709	0.02007
	(!CLK * !D * SCD * SET_B)	0.01329	0.01336	0.03089
	(!CLK * !D * SCD * SET_B)	0.00746	0.00752	0.02508
	(!CLK * !D * SCD * !SET_B * Q)	0.01159	0.01168	0.02902
	(!CLK * !D * SCD * !SET_B * Q)	0.00568	0.00576	0.02315
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00404	0.00415	0.01679
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00014	-0.00004	0.01261

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)**	-0.00027	0.00040	0.01310
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00412	0.00482	0.01750
	(CLK * D * !SCD)	0.00311	0.00359	0.01650
	(CLK * D * !SCD)	0.00619	0.00670	0.01948
	(CLK * !D * SCD)	0.00074	0.00117	0.01906
	(CLK * !D * SCD)	0.00623	0.00667	0.02456
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00027	0.00040	0.01310
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00412	0.00483	0.01752
	(!CLK * D * !SCD * SET_B)	0.00811	0.00867	0.02123
	(!CLK * D * !SCD * SET_B)	0.01097	0.01154	0.02399
	(!CLK * D * !SCD * !SET_B * Q)	0.00649	0.00705	0.01962
	(!CLK * D * !SCD * !SET_B * Q)	0.00927	0.00985	0.02229
	(!CLK * !D * SCD * SET_B)	0.00590	0.00627	0.02351
	(!CLK * !D * SCD * SET_B)	0.01161	0.01199	0.02925
	(!CLK * !D * SCD * !SET_B * Q)	0.00367	0.00403	0.02088
	(!CLK * !D * SCD * !SET_B * Q)	0.00947	0.00984	0.02669
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00004	0.00055	0.01326
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00415	0.00469	0.01738

sky130_fd_sc_hs__sdfstp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00028	0.00039	0.01309
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00412	0.00482	0.01750
	(CLK * D * !SCD)	0.00305	0.00353	0.01643
	(CLK * D * !SCD)	0.00617	0.00666	0.01943
	(CLK * !D * SCD)	0.00078	0.00121	0.01909
	(CLK * !D * SCD)	0.00627	0.00672	0.02459
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00028	0.00039	0.01309
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00413	0.00482	0.01751
	(!CLK * D * !SCD * SET_B)	0.00922	0.00980	0.02230
	(!CLK * D * !SCD * SET_B)	0.01201	0.01258	0.02497
	(!CLK * D * !SCD * !SET_B * Q)	0.00750	0.00807	0.02061
	(!CLK * D * !SCD * !SET_B * Q)	0.01020	0.01077	0.02319
	(!CLK * !D * SCD * SET_B)	0.00686	0.00722	0.02432
	(!CLK * !D * SCD * SET_B)	0.01268	0.01306	0.03016
	(!CLK * !D * SCD * !SET_B * Q)	0.00452	0.00488	0.02157
	(!CLK * !D * SCD * !SET_B * Q)	0.01043	0.01081	0.02748
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00003	0.00054	0.01325
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00415	0.00468	0.01738

sky130_fd_sc_hs__sdfstp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00032	0.00035	0.01306
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00413	0.00482	0.01751
	(CLK * D * !SCD)	0.00314	0.00363	0.01652
	(CLK * D * !SCD)	0.00630	0.00677	0.01953
	(CLK * !D * SCD)	0.00082	0.00125	0.01908
	(CLK * !D * SCD)	0.00637	0.00679	0.02464
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	-0.00031	0.00035	0.01306
	(!CLK * D * SCD * SET_B) + (!CLK * D * SCD * !SET_B * Q)	0.00413	0.00483	0.01752
	(!CLK * D * !SCD * SET_B)	0.00911	0.00968	0.02220
	(!CLK * D * !SCD * SET_B)	0.01200	0.01255	0.02497
	(!CLK * D * !SCD * !SET_B * Q)	0.00741	0.00798	0.02053
	(!CLK * D * !SCD * !SET_B * Q)	0.01022	0.01079	0.02321
	(!CLK * !D * SCD * SET_B)	0.00689	0.00726	0.02436
	(!CLK * !D * SCD * SET_B)	0.01269	0.01307	0.03018
	(!CLK * !D * SCD * !SET_B * Q)	0.00458	0.00494	0.02163
	(!CLK * !D * SCD * !SET_B * Q)	0.01047	0.01085	0.02752
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	-0.00000	0.00051	0.01323
	(!CLK * !D * !SCD * SET_B) + (!CLK * !D * !SCD * !SET_B * Q)	0.00417	0.00470	0.01740

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	0.00195	0.00196	0.00195
	(CLK * Q)	-0.00176	-0.00176	-0.00176
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00212	0.00214	0.00212
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00159	-0.00160	-0.00159
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00393	0.00393	0.00835
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00008	0.00007	0.00449
sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	0.00215	0.00219	0.00216
	(CLK * Q)	-0.00171	-0.00173	-0.00171
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00235	0.00237	0.00236
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00152	-0.00152	-0.00151
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00412	0.00414	0.00852
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00012	0.00009	0.00450

sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	0.00200	0.00204	0.00201
	(CLK * Q)	-0.00179	-0.00181	-0.00179
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00220	0.00221	0.00220
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00160	-0.00160	-0.00160
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00402	0.00400	0.00840
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00008	0.00007	0.00445

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfstp_1	**(CLK * Q)**	-0.00192	-0.00196	-0.00195
	(CLK * Q)	0.00179	0.00179	0.00177
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00209	-0.00213	-0.00211
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00162	0.00162	0.00160
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00013	0.00002	0.00449
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00371	0.00388	0.00835

sky130_fd_sc_hs__sdfstp_2	**(CLK * Q)**	-0.00214	-0.00216	-0.00216
	(CLK * Q)	0.00174	0.00173	0.00172
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00233	-0.00237	-0.00235
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00155	0.00155	0.00153
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00018	0.00006	0.00443
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00382	0.00408	0.00845
sky130_fd_sc_hs__sdfstp_4	**(CLK * Q)**	-0.00198	-0.00202	-0.00200
	(CLK * Q)	0.00183	0.00184	0.00181
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	-0.00217	-0.00221	-0.00219
	(!CLK * D * SCD * Q) + (!CLK * D * !SCD * !SCE * Q) + (!CLK * !D * SCD * SCE * Q)	0.00164	0.00164	0.00162
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	-0.00011	0.00010	0.00448
	(!CLK * D * !SCD * SCE * Q) + (!CLK * !D * SCD * !SCE * Q) + (!CLK * !D * !SCD * Q)	0.00383	0.00405	0.00842

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)**	0.01092	0.01095	0.02764
	(D * SCD * SCE * Q)	0.00766	0.00765	0.02436
	(D * !SCE * Q)	0.01092	0.01095	0.02764
	(D * !SCE * Q)	0.00766	0.00765	0.02436
	(D * !SCD * SCE * SET_B * !Q)	0.01080	0.01079	0.02751
	(D * !SCD * SCE * SET_B * !Q)	0.00753	0.00750	0.02424
	(D * !SCD * SCE * !SET_B * Q)	0.02007	0.02029	0.03778
	(D * !SCD * SCE * !SET_B * Q)	0.01650	0.01671	0.03420
	(!D * SCD * SCE * Q)	0.01092	0.01095	0.02764
	(!D * SCD * SCE * Q)	0.00766	0.00766	0.02437
	(!D * !SCE * SET_B * !Q)	0.01080	0.01079	0.02751
	(!D * !SCE * SET_B * !Q)	0.00753	0.00749	0.02424
	(!D * !SCE * !SET_B * Q)	0.02006	0.02028	0.03783
	(!D * !SCE * !SET_B * Q)	0.01649	0.01670	0.03426
	(!D * !SCD * SCE * SET_B * !Q)	0.01080	0.01079	0.02751
	(!D * !SCD * SCE * SET_B * !Q)	0.00754	0.00750	0.02424
	(!D * !SCD * SCE * !SET_B * Q)	0.02010	0.02029	0.03782
	(!D * !SCD * SCE * !SET_B * Q)	0.01653	0.01670	0.03425

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * Q)**	0.01256	0.01250	0.02871
	(D * SCD * SCE * Q)	0.00932	0.00925	0.02547
	(D * !SCE * Q)	0.01255	0.01250	0.02871
	(D * !SCE * Q)	0.00932	0.00925	0.02547
	(D * !SCD * SCE * SET_B * !Q)	0.01287	0.01278	0.02903
	(D * !SCD * SCE * SET_B * !Q)	0.00962	0.00951	0.02577
	(D * !SCD * SCE * !SET_B * Q)	0.02950	0.02971	0.04797
	(D * !SCD * SCE * !SET_B * Q)	0.02590	0.02608	0.04435
	(!D * SCD * SCE * Q)	0.01255	0.01250	0.02871
	(!D * SCD * SCE * Q)	0.00932	0.00925	0.02547
	(!D * !SCE * SET_B * !Q)	0.01287	0.01278	0.02902
	(!D * !SCE * SET_B * !Q)	0.00962	0.00951	0.02576
	(!D * !SCE * !SET_B * Q)	0.02949	0.02970	0.04783
	(!D * !SCE * !SET_B * Q)	0.02588	0.02606	0.04420
	(!D * !SCD * SCE * SET_B * !Q)	0.01287	0.01278	0.02902
	(!D * !SCD * SCE * SET_B * !Q)	0.00962	0.00951	0.02576
	(!D * !SCD * SCE * !SET_B * Q)	0.02957	0.02976	0.04781
	(!D * !SCD * SCE * !SET_B * Q)	0.02596	0.02613	0.04419

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * Q)**	0.01239	0.01236	0.02861
	(D * SCD * SCE * Q)	0.00915	0.00910	0.02536
	(D * !SCE * Q)	0.01239	0.01236	0.02861
	(D * !SCE * Q)	0.00915	0.00910	0.02536
	(D * !SCD * SCE * SET_B * !Q)	0.01275	0.01268	0.02898
	(D * !SCD * SCE * SET_B * !Q)	0.00950	0.00941	0.02571
	(D * !SCD * SCE * !SET_B * Q)	0.02931	0.02958	0.04815
	(D * !SCD * SCE * !SET_B * Q)	0.02577	0.02601	0.04459
	(!D * SCD * SCE * Q)	0.01239	0.01236	0.02861
	(!D * SCD * SCE * Q)	0.00915	0.00910	0.02536
	(!D * !SCE * SET_B * !Q)	0.01275	0.01268	0.02898
	(!D * !SCE * SET_B * !Q)	0.00950	0.00941	0.02571
	(!D * !SCE * !SET_B * Q)	0.02930	0.02961	0.04812
	(!D * !SCE * !SET_B * Q)	0.02575	0.02604	0.04455
	(!D * !SCD * SCE * SET_B * !Q)	0.01275	0.01268	0.02898
	(!D * !SCD * SCE * SET_B * !Q)	0.00950	0.00941	0.02571
	(!D * !SCD * SCE * !SET_B * Q)	0.02939	0.02964	0.04810
	(!D * !SCD * SCE * !SET_B * Q)	0.02583	0.02606	0.04453

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)**	0.01111	0.01154	0.02914
	(D * SCD * SCE * SET_B * !Q)	0.01418	0.01461	0.03221
	(D * SCD * SCE * Q)	0.00619	0.00670	0.02395
	(D * SCD * SCE * Q)	0.00947	0.00996	0.02723
	(D * !SCE * SET_B * !Q)	0.01108	0.01151	0.02912
	(D * !SCE * SET_B * !Q)	0.01416	0.01459	0.03219
	(D * !SCE * Q)	0.00619	0.00670	0.02394
	(D * !SCE * Q)	0.00947	0.00996	0.02722
	(D * !SCD * SCE * SET_B * Q)	0.01275	0.01330	0.03091
	(D * !SCD * SCE * SET_B * Q)	0.01627	0.01681	0.03443
	(D * !SCD * SCE * SET_B * !Q)	0.00638	0.00690	0.02418
	(D * !SCD * SCE * SET_B * !Q)	0.00967	0.01017	0.02746
	(D * !SCD * SCE * !SET_B * Q)	0.01047	0.01104	0.02862
	(D * !SCD * SCE * !SET_B * Q)	0.01406	0.01462	0.03222
	(!D * SCD * SCE * SET_B * !Q)	0.01114	0.01157	0.02917
	(!D * SCD * SCE * SET_B * !Q)	0.01420	0.01463	0.03223
	(!D * SCD * SCE * Q)	0.00619	0.00670	0.02395
	(!D * SCD * SCE * Q)	0.00947	0.00996	0.02723
	(!D * !SCE * SET_B * Q)	0.01274	0.01329	0.03090
	(!D * !SCE * SET_B * Q)	0.01624	0.01678	0.03440
	(!D * !SCE * SET_B * !Q)	0.00638	0.00690	0.02417
	(!D * !SCE * SET_B * !Q)	0.00966	0.01017	0.02746
	(!D * !SCE * !SET_B * Q)	0.01047	0.01101	0.02862
	(!D * !SCE * !SET_B * Q)	0.01406	0.01459	0.03220
	(!D * !SCD * SCE * SET_B * Q)	0.01275	0.01332	0.03091
	(!D * !SCD * SCE * SET_B * Q)	0.01626	0.01683	0.03443
	(!D * !SCD * SCE * SET_B * !Q)	0.00638	0.00690	0.02418
	(!D * !SCD * SCE * SET_B * !Q)	0.00967	0.01017	0.02746
	(!D * !SCD * SCE * !SET_B * Q)	0.01048	0.01105	0.02863
	(!D * !SCD * SCE * !SET_B * Q)	0.01406	0.01463	0.03222

sky130_fd_sc_hs__sdfstp_2	**(D * SCD * SCE * SET_B * !Q)**	0.01308	0.01348	0.03079
	(D * SCD * SCE * SET_B * !Q)	0.01601	0.01640	0.03372
	(D * SCD * SCE * Q)	0.00723	0.00768	0.02481
	(D * SCD * SCE * Q)	0.01048	0.01094	0.02805
	(D * !SCE * SET_B * !Q)	0.01306	0.01346	0.03077
	(D * !SCE * SET_B * !Q)	0.01599	0.01638	0.03370
	(D * !SCE * Q)	0.00724	0.00768	0.02481
	(D * !SCE * Q)	0.01047	0.01093	0.02805
	(D * !SCD * SCE * SET_B * Q)	0.01505	0.01557	0.03321
	(D * !SCD * SCE * SET_B * Q)	0.01861	0.01911	0.03676
	(D * !SCD * SCE * SET_B * !Q)	0.00706	0.00753	0.02453
	(D * !SCD * SCE * SET_B * !Q)	0.01032	0.01078	0.02780
	(D * !SCD * SCE * !SET_B * Q)	0.01263	0.01314	0.03077
	(D * !SCD * SCE * !SET_B * Q)	0.01626	0.01677	0.03440
	(!D * SCD * SCE * SET_B * !Q)	0.01311	0.01351	0.03082
	(!D * SCD * SCE * SET_B * !Q)	0.01602	0.01642	0.03374
	(!D * SCD * SCE * Q)	0.00724	0.00769	0.02481
	(!D * SCD * SCE * Q)	0.01047	0.01094	0.02806
	(!D * !SCE * SET_B * Q)	0.01504	0.01555	0.03318
	(!D * !SCE * SET_B * Q)	0.01858	0.01908	0.03672
	(!D * !SCE * SET_B * !Q)	0.00706	0.00752	0.02453
	(!D * !SCE * SET_B * !Q)	0.01032	0.01078	0.02780
	(!D * !SCE * !SET_B * Q)	0.01262	0.01314	0.03076
	(!D * !SCE * !SET_B * Q)	0.01625	0.01676	0.03439
	(!D * !SCD * SCE * SET_B * Q)	0.01505	0.01557	0.03319
	(!D * !SCD * SCE * SET_B * Q)	0.01860	0.01911	0.03675
	(!D * !SCD * SCE * SET_B * !Q)	0.00706	0.00753	0.02453
	(!D * !SCD * SCE * SET_B * !Q)	0.01032	0.01078	0.02780
	(!D * !SCD * SCE * !SET_B * Q)	0.01263	0.01315	0.03077
	(!D * !SCD * SCE * !SET_B * Q)	0.01625	0.01678	0.03439

sky130_fd_sc_hs__sdfstp_4	**(D * SCD * SCE * SET_B * !Q)**	0.01273	0.01314	0.03047
	(D * SCD * SCE * SET_B * !Q)	0.01573	0.01613	0.03347
	(D * SCD * SCE * Q)	0.00708	0.00754	0.02469
	(D * SCD * SCE * Q)	0.01033	0.01079	0.02795
	(D * !SCE * SET_B * !Q)	0.01270	0.01311	0.03045
	(D * !SCE * SET_B * !Q)	0.01571	0.01611	0.03346
	(D * !SCE * Q)	0.00708	0.00754	0.02469
	(D * !SCE * Q)	0.01033	0.01079	0.02795
	(D * !SCD * SCE * SET_B * Q)	0.01476	0.01528	0.03296
	(D * !SCD * SCE * SET_B * Q)	0.01826	0.01877	0.03645
	(D * !SCD * SCE * SET_B * !Q)	0.00686	0.00733	0.02437
	(D * !SCD * SCE * SET_B * !Q)	0.01012	0.01059	0.02763
	(D * !SCD * SCE * !SET_B * Q)	0.01235	0.01287	0.03054
	(D * !SCD * SCE * !SET_B * Q)	0.01593	0.01645	0.03412
	(!D * SCD * SCE * SET_B * !Q)	0.01275	0.01316	0.03050
	(!D * SCD * SCE * SET_B * !Q)	0.01575	0.01615	0.03349
	(!D * SCD * SCE * Q)	0.00708	0.00754	0.02469
	(!D * SCD * SCE * Q)	0.01033	0.01079	0.02795
	(!D * !SCE * SET_B * Q)	0.01474	0.01526	0.03294
	(!D * !SCE * SET_B * Q)	0.01823	0.01874	0.03642
	(!D * !SCE * SET_B * !Q)	0.00685	0.00733	0.02437
	(!D * !SCE * SET_B * !Q)	0.01012	0.01059	0.02763
	(!D * !SCE * !SET_B * Q)	0.01235	0.01287	0.03053
	(!D * !SCE * !SET_B * Q)	0.01593	0.01644	0.03410
	(!D * !SCD * SCE * SET_B * Q)	0.01476	0.01528	0.03296
	(!D * !SCD * SCE * SET_B * Q)	0.01825	0.01877	0.03646
	(!D * !SCD * SCE * SET_B * !Q)	0.00686	0.00733	0.02436
	(!D * !SCD * SCE * SET_B * !Q)	0.01012	0.01059	0.02763
	(!D * !SCD * SCE * !SET_B * Q)	0.01235	0.01288	0.03054
	(!D * !SCD * SCE * !SET_B * Q)	0.01591	0.01645	0.03412

SKY130_FD_SC_HS__SDFXBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00183	0.00184	0.00393	0.00276	1.17418	1.11871
sky130_fd_sc_hs__sdfxbp_2	0.00181	0.00181	0.00399	0.00276	2.29816	2.28867

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdfxbp_1	0.00000	0.53813	0.82727
sky130_fd_sc_hs__sdfxbp_2	0.00000	0.48584	0.76258

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)	0.18040	0.63856	5.74875
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RR)	0.17595	0.53833	5.73444

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxbp_1	CLK->Q (RF)	0.19136	0.39994	1.54029
sky130_fd_sc_hs__sdfxbp_2	CLK->Q (RF)	0.20340	0.38909	1.52132

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)	0.22733	0.69067	5.76534
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RR)	0.26245	0.61898	5.84216

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)	0.20780	0.39573	1.43317
sky130_fd_sc_hs__sdfxbp_2	CLK->Q_N (RF)	0.22271	0.38647	1.60213

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)	-0.04936	-0.12223	-0.87355
	setup	CLK (R)	0.11315	0.16292	0.93631
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04631	-0.12026	-0.87546
	setup	CLK (R)	0.11255	0.16307	0.93804

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)	-0.07147	-0.21854	-3.35170
	setup	CLK (R)	0.19186	0.32955	3.55783
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06973	-0.21970	-3.36696
	setup	CLK (R)	0.19729	0.33509	3.56925

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)	-0.04936	-0.12223	-0.87355
	setup	CLK (R)	0.11315	0.16292	0.93631
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.04631	-0.12026	-0.87546
	setup	CLK (R)	0.11255	0.16307	0.93804

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)	-0.07147	-0.21854	-3.35170
	setup	CLK (R)	0.19186	0.32955	3.55783
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06973	-0.21970	-3.36696
	setup	CLK (R)	0.19729	0.33509	3.56925

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)	-0.06151	-0.13723	-0.90062
	setup	CLK (R)	0.13022	0.18246	0.96872
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06030	-0.13703	-0.89860
	setup	CLK (R)	0.13003	0.17936	0.96160

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)	-0.10248	-0.26412	-3.77832
	setup	CLK (R)	0.25400	0.39826	3.93276
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10092	-0.26400	-3.80319
	setup	CLK (R)	0.25466	0.40062	3.94949

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)	-0.06151	-0.13723	-0.90845
	hold	CLK (R)	-0.06183	-0.13912	-0.90062
	setup	CLK (R)	0.12940	0.18065	0.96872
	setup	CLK (R)	0.13022	0.18246	0.96322
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.06030	-0.13703	-0.90239
	hold	CLK (R)	-0.06298	-0.13997	-0.89860
	setup	CLK (R)	0.12780	0.17936	0.96160
	setup	CLK (R)	0.13003	0.17896	0.95633

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)	-0.11070	-0.27510	-3.80514
	hold	CLK (R)	-0.10248	-0.26412	-3.77832
	setup	CLK (R)	0.25400	0.39826	3.93276
	setup	CLK (R)	0.24144	0.39293	3.92435
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10756	-0.27577	-3.82661
	hold	CLK (R)	-0.10092	-0.26400	-3.80319
	setup	CLK (R)	0.25466	0.40062	3.94949
	setup	CLK (R)	0.24402	0.39331	3.93652

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)	-0.05310	-0.12782	-0.46854
	setup	CLK (R)	0.24464	0.26273	0.90516
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.05369	-0.13037	-0.47839
	setup	CLK (R)	0.24665	0.26766	0.90063

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)	-0.08994	-0.24404	-3.19565
	setup	CLK (R)	0.20917	0.35180	3.73667
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.08947	-0.24418	-3.20857
	setup	CLK (R)	0.21453	0.35747	3.75376

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)	-0.10129	-0.14653	-0.46854
	hold	CLK (R)	-0.05310	-0.12782	-0.83231
	setup	CLK (R)	0.24464	0.26273	0.52909
	setup	CLK (R)	0.12150	0.17569	0.90516
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10000	-0.14929	-0.47839
	hold	CLK (R)	-0.05369	-0.13037	-0.82730
	setup	CLK (R)	0.24665	0.26766	0.53969
	setup	CLK (R)	0.12058	0.17599	0.90063

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)	-0.10890	-0.26180	-3.19565
	hold	CLK (R)	-0.08994	-0.24404	-3.56868
	setup	CLK (R)	0.16979	0.29625	3.22853
	setup	CLK (R)	0.20917	0.35180	3.73667
sky130_fd_sc_hs__sdfxbp_2	hold	CLK (R)	-0.10975	-0.26487	-3.20857
	hold	CLK (R)	-0.08947	-0.24418	-3.59546
	setup	CLK (R)	0.17241	0.29913	3.23316
	setup	CLK (R)	0.21453	0.35747	3.75376

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 ()	0.08524	0.63599	16.50020
	min_pulse_width	CLK ()	0.06378	0.63599	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.08524	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	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 ()	0.15676	0.63599	16.50020
	min_pulse_width	CLK ()	0.19730	0.63599	16.50020
sky130_fd_sc_hs__sdfxbp_2	min_pulse_width	CLK ()	0.15915	0.63599	16.50020
	min_pulse_width	CLK ()	0.20206	0.63599	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	0.01106	0.01126	0.02061
	CLK	0.00941	0.00959	0.01898
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01327	0.01375	0.02314
	CLK	0.01164	0.01210	0.02151

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01142	0.01169	0.02086
	CLK	0.00978	0.01004	0.01924
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01356	0.01411	0.02331
	CLK	0.01192	0.01245	0.02176

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01143	0.01176	0.02123
	CLK	0.00979	0.01006	0.01967
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01357	0.01411	0.02378
	CLK	0.01193	0.01246	0.02228

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	CLK	0.01106	0.01124	0.02019
	CLK	0.00942	0.00958	0.01860
sky130_fd_sc_hs__sdfxbp_2	CLK	0.01327	0.01376	0.02279
	CLK	0.01164	0.01210	0.02121

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	0.00105	0.00105	0.00105
	(CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(CLK * !SCE)	0.00337	0.00346	0.01389
	(CLK * !SCE)	0.00081	0.00089	0.01133
	(CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(CLK * !SCD * SCE)	-0.00095	-0.00096	-0.00098
	(!CLK * SCD * SCE)	0.00104	0.00105	0.00105
	(!CLK * SCD * SCE)	-0.00045	-0.00046	-0.00045
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00772	0.00784	0.01856
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00516	0.00527	0.01600
	(!CLK * !SCD * SCE)	0.00060	0.00060	0.00059
	(!CLK * !SCD * SCE)	-0.00095	-0.00096	-0.00098
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	0.00106	0.00106	0.00106
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00330	0.00339	0.01381
	(CLK * !SCE)	0.00076	0.00084	0.01128
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00061
	(CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00096
	(!CLK * SCD * SCE)	0.00105	0.00106	0.00106
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00776	0.00789	0.01856
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00522	0.00534	0.01602
	(!CLK * !SCD * SCE)	0.00062	0.00062	0.00061
	(!CLK * !SCD * SCE)	-0.00093	-0.00094	-0.00095

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * SCD * SCE)	-0.00100	-0.00102	-0.00104
	(CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(CLK * !SCE)	0.00065	0.00103	0.01153
	(CLK * !SCE)	0.00322	0.00360	0.01410
	(CLK * !SCD * SCE)	-0.00057	-0.00057	-0.00057
	(CLK * !SCD * SCE)	0.00098	0.00098	0.00098
	(!CLK * SCD * SCE)	-0.00100	-0.00102	-0.00104
	(!CLK * SCD * SCE)	0.00049	0.00049	0.00047
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00551	0.00587	0.01765
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00809	0.00843	0.02022
	(!CLK * !SCD * SCE)	-0.00057	-0.00057	-0.00057
	(!CLK * !SCD * SCE)	0.00098	0.00098	0.00098
sky130_fd_sc_hs__sdfxbp_2	(CLK * SCD * SCE)	-0.00101	-0.00103	-0.00105
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00074	0.00113	0.01162
	(CLK * !SCE)	0.00328	0.00367	0.01416
	(CLK * !SCD * SCE)	-0.00059	-0.00059	-0.00059
	(CLK * !SCD * SCE)	0.00096	0.00096	0.00096
	(!CLK * SCD * SCE)	-0.00101	-0.00103	-0.00105
	(!CLK * SCD * SCE)	0.00047	0.00047	0.00046
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00552	0.00588	0.01765
	(!CLK * !SCE * Q * !Q_N) + (!CLK * !SCE * !Q * Q_N)	0.00807	0.00842	0.02018
	(!CLK * !SCD * SCE)	-0.00059	-0.00059	-0.00059
	(!CLK * !SCD * SCE)	0.00096	0.00096	0.00096

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00467	0.00458	0.00919
	(CLK * D * SCE)	0.00136	0.00125	0.00588
	(CLK * !D * SCE)	0.00519	0.00508	0.00951
	(CLK * !D * SCE)	0.00181	0.00170	0.00613
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00902	0.00896	0.01399
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00570	0.00563	0.01068
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00953	0.00947	0.01423
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00615	0.00608	0.01086
	!SCE	0.00097	0.00088	0.00086
	!SCE	-0.00082	-0.00093	-0.00094
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00458	0.00449	0.00912
	(CLK * D * SCE)	0.00131	0.00121	0.00585
	(CLK * !D * SCE)	0.00509	0.00500	0.00943
	(CLK * !D * SCE)	0.00176	0.00165	0.00610
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00904	0.00898	0.01401
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00577	0.00570	0.01074
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00955	0.00950	0.01426
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00622	0.00615	0.01094
	!SCE	0.00094	0.00084	0.00083
	!SCE	-0.00082	-0.00093	-0.00095

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxbp_1	(CLK * D * SCE)	0.00153	0.00141	0.00595
	(CLK * D * SCE)	0.00486	0.00474	0.00926
	(CLK * !D * SCE)	0.00121	0.00110	0.00579
	(CLK * !D * SCE)	0.00459	0.00449	0.00916
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00642	0.00640	0.01231
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00974	0.00972	0.01562
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00614	0.00608	0.01226
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00952	0.00946	0.01563
	!SCE	-0.00082	-0.00084	-0.00085
	!SCE	0.00095	0.00096	0.00096
sky130_fd_sc_hs__sdfxbp_2	(CLK * D * SCE)	0.00161	0.00150	0.00604
	(CLK * D * SCE)	0.00489	0.00478	0.00931
	(CLK * !D * SCE)	0.00128	0.00119	0.00588
	(CLK * !D * SCE)	0.00462	0.00453	0.00921
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00641	0.00637	0.01232
	(!CLK * D * SCE * Q * !Q_N) + (!CLK * D * SCE * !Q * Q_N)	0.00969	0.00964	0.01558
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00613	0.00613	0.01226
	(!CLK * !D * SCE * Q * !Q_N) + (!CLK * !D * SCE * !Q * Q_N)	0.00946	0.00947	0.01559
	!SCE	-0.00079	-0.00082	-0.00082
	!SCE	0.00096	0.00097	0.00097

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)**	0.00434	0.00437	0.01719
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00026	0.01257
	(CLK * D * !SCD)	0.00635	0.00630	0.01955
	(CLK * D * !SCD)	0.00314	0.00305	0.01628
	(CLK * !D * SCD)	0.00751	0.00762	0.02611
	(CLK * !D * SCD)	0.00177	0.00186	0.02038
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00433	0.00436	0.01718
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00027	-0.00026	0.01257
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01109	0.01116	0.02452
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00787	0.00791	0.02126
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01187	0.01200	0.03122
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00612	0.00624	0.02548
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00411	0.00423	0.01699
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00020	-0.00010	0.01266

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00450	0.00451	0.01730
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00021	-0.00021	0.01258
	(CLK * D * !SCD)	0.00659	0.00652	0.01973
	(CLK * D * !SCD)	0.00325	0.00313	0.01634
	(CLK * !D * SCD)	0.00763	0.00772	0.02616
	(CLK * !D * SCD)	0.00180	0.00189	0.02035
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00450	0.00451	0.01730
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00021	-0.00021	0.01258
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01126	0.01130	0.02463
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00792	0.00792	0.02123
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01209	0.01221	0.03137
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00626	0.00637	0.02556
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00427	0.00437	0.01709
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00015	-0.00007	0.01266

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)**	-0.00044	0.00019	0.01304
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00416	0.00481	0.01765
	(CLK * D * !SCD)	0.00302	0.00343	0.01650
	(CLK * D * !SCD)	0.00625	0.00669	0.01962
	(CLK * !D * SCD)	0.00086	0.00125	0.01931
	(CLK * !D * SCD)	0.00660	0.00701	0.02506
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00044	0.00017	0.01304
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00415	0.00478	0.01765
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00734	0.00786	0.02068
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01057	0.01111	0.02381
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00572	0.00612	0.02496
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01146	0.01187	0.03071
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00003	0.00056	0.01330
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00429	0.00490	0.01762

sky130_fd_sc_hs__sdfxbp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00048	0.00013	0.01296
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00422	0.00486	0.01768
	(CLK * D * !SCD)	0.00291	0.00333	0.01636
	(CLK * D * !SCD)	0.00630	0.00671	0.01962
	(CLK * !D * SCD)	0.00093	0.00130	0.01931
	(CLK * !D * SCD)	0.00674	0.00712	0.02515
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	-0.00048	0.00011	0.01296
	(!CLK * D * SCD * Q * !Q_N) + (!CLK * D * SCD * !Q * Q_N)	0.00422	0.00484	0.01767
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.00734	0.00785	0.02066
	(!CLK * D * !SCD * Q * !Q_N) + (!CLK * D * !SCD * !Q * Q_N)	0.01073	0.01124	0.02392
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.00571	0.00609	0.02489
	(!CLK * !D * SCD * Q * !Q_N) + (!CLK * !D * SCD * !Q * Q_N)	0.01153	0.01191	0.03071
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	-0.00005	0.00051	0.01324
	(!CLK * !D * !SCD * Q * !Q_N) + (!CLK * !D * !SCD * !Q * Q_N)	0.00438	0.00495	0.01767

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)	0.01027	0.01029	0.02744
	(D * SCD * SCE * Q * !Q_N)	0.00699	0.00698	0.02414
	(D * !SCE * Q * !Q_N)	0.01025	0.01028	0.02743
	(D * !SCE * Q * !Q_N)	0.00697	0.00698	0.02413
	(D * !SCD * SCE * !Q * Q_N)	0.01018	0.01018	0.02737
	(D * !SCD * SCE * !Q * Q_N)	0.00688	0.00687	0.02408
	(!D * SCD * SCE * Q * !Q_N)	0.01027	0.01029	0.02744
	(!D * SCD * SCE * Q * !Q_N)	0.00699	0.00698	0.02415
	(!D * !SCE * !Q * Q_N)	0.01017	0.01017	0.02735
	(!D * !SCE * !Q * Q_N)	0.00689	0.00687	0.02407
	(!D * !SCD * SCE * !Q * Q_N)	0.01017	0.01019	0.02737
	(!D * !SCD * SCE * !Q * Q_N)	0.00689	0.00688	0.02407
sky130_fd_sc_hs__sdfxbp_2	(D * SCD * SCE * Q * !Q_N)	0.01047	0.01052	0.02766
	(D * SCD * SCE * Q * !Q_N)	0.00720	0.00722	0.02436
	(D * !SCE * Q * !Q_N)	0.01046	0.01052	0.02765
	(D * !SCE * Q * !Q_N)	0.00718	0.00721	0.02435
	(D * !SCD * SCE * !Q * Q_N)	0.01040	0.01044	0.02758
	(D * !SCD * SCE * !Q * Q_N)	0.00712	0.00714	0.02430
	(!D * SCD * SCE * Q * !Q_N)	0.01047	0.01052	0.02766
	(!D * SCD * SCE * Q * !Q_N)	0.00720	0.00722	0.02437
	(!D * !SCE * !Q * Q_N)	0.01040	0.01043	0.02758
	(!D * !SCE * !Q * Q_N)	0.00712	0.00712	0.02430
	(!D * !SCD * SCE * !Q * Q_N)	0.01041	0.01028	0.02759
	(!D * !SCD * SCE * !Q * Q_N)	0.00712	0.00699	0.02431

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)**	0.00591	0.00630	0.02379
	(D * SCD * SCE * Q * !Q_N)	0.00921	0.00960	0.02709
	(D * SCD * SCE * !Q * Q_N)	0.01003	0.01030	0.02833
	(D * SCD * SCE * !Q * Q_N)	0.01333	0.01360	0.03162
	(D * !SCE * Q * !Q_N)	0.00591	0.00630	0.02378
	(D * !SCE * Q * !Q_N)	0.00920	0.00959	0.02707
	(D * !SCE * !Q * Q_N)	0.01000	0.01027	0.02846
	(D * !SCE * !Q * Q_N)	0.01330	0.01357	0.03175
	(D * !SCD * SCE * Q * !Q_N)	0.01178	0.01219	0.03027
	(D * !SCD * SCE * Q * !Q_N)	0.01507	0.01549	0.03358
	(D * !SCD * SCE * !Q * Q_N)	0.00596	0.00633	0.02389
	(D * !SCD * SCE * !Q * Q_N)	0.00924	0.00963	0.02719
	(!D * SCD * SCE * Q * !Q_N)	0.00591	0.00630	0.02379
	(!D * SCD * SCE * Q * !Q_N)	0.00921	0.00960	0.02709
	(!D * SCD * SCE * !Q * Q_N)	0.01006	0.01033	0.02838
	(!D * SCD * SCE * !Q * Q_N)	0.01334	0.01362	0.03166
	(!D * !SCE * Q * !Q_N)	0.01175	0.01216	0.03020
	(!D * !SCE * Q * !Q_N)	0.01505	0.01545	0.03350
	(!D * !SCE * !Q * Q_N)	0.00594	0.00633	0.02387
	(!D * !SCE * !Q * Q_N)	0.00924	0.00963	0.02715
	(!D * !SCD * SCE * Q * !Q_N)	0.01178	0.01218	0.03026
	(!D * !SCD * SCE * Q * !Q_N)	0.01506	0.01549	0.03356
	(!D * !SCD * SCE * !Q * Q_N)	0.00596	0.00634	0.02389
	(!D * !SCD * SCE * !Q * Q_N)	0.00924	0.00962	0.02718

sky130_fd_sc_hs__sdfxbp_2	**(D * SCD * SCE * Q * !Q_N)**	0.00599	0.00638	0.02389
	(D * SCD * SCE * Q * !Q_N)	0.00927	0.00967	0.02719
	(D * SCD * SCE * !Q * Q_N)	0.01020	0.01048	0.02857
	(D * SCD * SCE * !Q * Q_N)	0.01348	0.01376	0.03186
	(D * !SCE * Q * !Q_N)	0.00599	0.00638	0.02388
	(D * !SCE * Q * !Q_N)	0.00927	0.00967	0.02717
	(D * !SCE * !Q * Q_N)	0.01017	0.01045	0.02863
	(D * !SCE * !Q * Q_N)	0.01345	0.01374	0.03191
	(D * !SCD * SCE * Q * !Q_N)	0.01177	0.01218	0.03029
	(D * !SCD * SCE * Q * !Q_N)	0.01506	0.01549	0.03359
	(D * !SCD * SCE * !Q * Q_N)	0.00601	0.00640	0.02397
	(D * !SCD * SCE * !Q * Q_N)	0.00929	0.00969	0.02727
	(!D * SCD * SCE * Q * !Q_N)	0.00599	0.00638	0.02389
	(!D * SCD * SCE * Q * !Q_N)	0.00927	0.00967	0.02719
	(!D * SCD * SCE * !Q * Q_N)	0.01023	0.01051	0.02860
	(!D * SCD * SCE * !Q * Q_N)	0.01349	0.01378	0.03188
	(!D * !SCE * Q * !Q_N)	0.01174	0.01215	0.03016
	(!D * !SCE * Q * !Q_N)	0.01502	0.01544	0.03345
	(!D * !SCE * !Q * Q_N)	0.00600	0.00639	0.02395
	(!D * !SCE * !Q * Q_N)	0.00928	0.00969	0.02723
	(!D * !SCD * SCE * Q * !Q_N)	0.01177	0.01218	0.03028
	(!D * !SCD * SCE * Q * !Q_N)	0.01506	0.01547	0.03358
	(!D * !SCD * SCE * !Q * Q_N)	0.00601	0.00639	0.02397
	(!D * !SCD * SCE * !Q * Q_N)	0.00929	0.00969	0.02726

SKY130_FD_SC_HS__SDFXTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00185	0.00194	0.00408	0.00274	1.16631
sky130_fd_sc_hs__sdfxtp_2	0.00188	0.00190	0.00395	0.00276	2.23179
sky130_fd_sc_hs__sdfxtp_4	0.00186	0.00188	0.00407	0.00274	4.25089

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sdfxtp_1	0.00000	0.49204	0.86660
sky130_fd_sc_hs__sdfxtp_2	0.00000	0.42321	0.69644
sky130_fd_sc_hs__sdfxtp_4	0.00000	0.65600	1.09720

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)**	0.16691	0.62865	5.76570
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RR)**	0.17077	0.53355	5.63000
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RR)**	0.20227	0.49511	5.80330

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdfxtp_1	**CLK->Q (RF)**	0.18274	0.38362	1.49796
sky130_fd_sc_hs__sdfxtp_2	**CLK->Q (RF)**	0.18788	0.36283	1.45961
sky130_fd_sc_hs__sdfxtp_4	**CLK->Q (RF)**	0.18922	0.33789	1.51501

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)	-0.05034	-0.12468	-0.88248
	setup	CLK (R)	0.11076	0.16490	0.94249
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04905	-0.12468	-0.88155
	setup	CLK (R)	0.12018	0.16890	0.94716
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04984	-0.12223	-0.87332
	setup	CLK (R)	0.10824	0.16249	0.93792

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)	-0.07239	-0.22227	-3.37425
	setup	CLK (R)	0.19720	0.33761	3.57451
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07589	-0.22562	-3.38746
	setup	CLK (R)	0.21085	0.34697	3.59660
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07607	-0.21837	-3.36290
	setup	CLK (R)	0.19787	0.33400	3.56326

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)	-0.05034	-0.12468	-0.88248
	setup	CLK (R)	0.11076	0.16490	0.94249
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.04905	-0.12468	-0.88155
	setup	CLK (R)	0.12018	0.16890	0.94716
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.04984	-0.12223	-0.87332
	setup	CLK (R)	0.10824	0.16249	0.93792

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)	-0.07239	-0.22227	-3.37425
	setup	CLK (R)	0.19720	0.33761	3.57451
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.07589	-0.22562	-3.38746
	setup	CLK (R)	0.21085	0.34697	3.59660
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.07607	-0.21837	-3.36290
	setup	CLK (R)	0.19787	0.33400	3.56326

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)	-0.06354	-0.13912	-0.91141
	setup	CLK (R)	0.13152	0.18356	0.97770
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06490	-0.13928	-0.91836
	setup	CLK (R)	0.13624	0.18690	0.98366
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06359	-0.13723	-0.90251
	setup	CLK (R)	0.12838	0.18271	0.97181

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)	-0.10430	-0.26766	-3.80235
	setup	CLK (R)	0.26003	0.40685	3.95265
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10605	-0.26899	-3.82077
	setup	CLK (R)	0.27029	0.41533	3.97587
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10960	-0.26649	-3.83197
	setup	CLK (R)	0.25661	0.40297	3.94013

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)	-0.06354	-0.13912	-0.91692
	hold	CLK (R)	-0.06418	-0.14157	-0.91141
	setup	CLK (R)	0.13025	0.18019	0.97770
	setup	CLK (R)	0.13152	0.18356	0.97529
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.06490	-0.13928	-0.92242
	hold	CLK (R)	-0.06732	-0.14357	-0.91836
	setup	CLK (R)	0.13624	0.18487	0.98366
	setup	CLK (R)	0.13598	0.18690	0.98042
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.06359	-0.13723	-0.90879
	hold	CLK (R)	-0.06516	-0.13912	-0.90251
	setup	CLK (R)	0.12466	0.18057	0.97181
	setup	CLK (R)	0.12838	0.18271	0.96810

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)	-0.11213	-0.27971	-3.82497
	hold	CLK (R)	-0.10430	-0.26766	-3.80235
	setup	CLK (R)	0.26003	0.40685	3.95265
	setup	CLK (R)	0.24833	0.40000	3.93937
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11660	-0.28430	-3.83934
	hold	CLK (R)	-0.10605	-0.26899	-3.82077
	setup	CLK (R)	0.27029	0.41533	3.97587
	setup	CLK (R)	0.25861	0.40900	3.96491
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11955	-0.28043	-3.83370
	hold	CLK (R)	-0.10960	-0.26649	-3.83197
	setup	CLK (R)	0.25661	0.40297	3.94013
	setup	CLK (R)	0.24648	0.39674	3.92622

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)	-0.05637	-0.13131	-0.48259
	setup	CLK (R)	0.24991	0.27258	0.91766
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.05528	-0.13312	-0.47718
	setup	CLK (R)	0.26250	0.27792	0.92174
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.05525	-0.12885	-0.48162
	setup	CLK (R)	0.25060	0.26725	0.91139

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)	-0.09260	-0.24460	-3.21614
	setup	CLK (R)	0.21441	0.35862	3.75468
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.09557	-0.24850	-3.20803
	setup	CLK (R)	0.22564	0.36864	3.78086
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.09518	-0.24640	-3.20841
	setup	CLK (R)	0.21741	0.35862	3.74182

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)	-0.10584	-0.15253	-0.48259
	hold	CLK (R)	-0.05637	-0.13131	-0.84120
	setup	CLK (R)	0.24991	0.27258	0.54322
	setup	CLK (R)	0.12288	0.17833	0.91766
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.10954	-0.15185	-0.47718
	hold	CLK (R)	-0.05528	-0.13312	-0.84377
	setup	CLK (R)	0.26250	0.27792	0.54025
	setup	CLK (R)	0.12976	0.18150	0.92174
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.10892	-0.15181	-0.48162
	hold	CLK (R)	-0.05525	-0.12885	-0.83367
	setup	CLK (R)	0.25060	0.26725	0.54299
	setup	CLK (R)	0.11643	0.17605	0.91139

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)	-0.11180	-0.26624	-3.21614
	hold	CLK (R)	-0.09260	-0.24460	-3.58788
	setup	CLK (R)	0.17698	0.30402	3.24629
	setup	CLK (R)	0.21441	0.35862	3.75468
sky130_fd_sc_hs__sdfxtp_2	hold	CLK (R)	-0.11107	-0.26419	-3.20803
	hold	CLK (R)	-0.09557	-0.24850	-3.60149
	setup	CLK (R)	0.17760	0.30002	3.22064
	setup	CLK (R)	0.22564	0.36864	3.78086
sky130_fd_sc_hs__sdfxtp_4	hold	CLK (R)	-0.11251	-0.26729	-3.20841
	hold	CLK (R)	-0.09518	-0.24640	-3.57578
	setup	CLK (R)	0.16947	0.29996	3.21670
	setup	CLK (R)	0.21741	0.35862	3.74182

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 ()	0.07809	0.63599	16.50020
	min_pulse_width	CLK ()	0.06378	0.63599	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.08524	0.63599	16.50020
	min_pulse_width	CLK ()	0.06617	0.63599	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.10670	0.63599	16.50020
	min_pulse_width	CLK ()	0.06855	0.63599	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 ()	0.15676	0.63599	16.50020
	min_pulse_width	CLK ()	0.19968	0.63599	16.50020
sky130_fd_sc_hs__sdfxtp_2	min_pulse_width	CLK ()	0.16630	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
sky130_fd_sc_hs__sdfxtp_4	min_pulse_width	CLK ()	0.15438	0.63599	16.50020
	min_pulse_width	CLK ()	0.20206	0.63599	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	0.01717	0.01741	0.03597
	CLK	0.01393	0.01417	0.03279
sky130_fd_sc_hs__sdfxtp_2	CLK	0.01960	0.02009	0.03842
	CLK	0.01632	0.01681	0.03543
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02431	0.02500	0.04357
	CLK	0.02105	0.02179	0.04053

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	CLK	0.01816	0.01854	0.03709
	CLK	0.01491	0.01529	0.03381
sky130_fd_sc_hs__sdfxtp_2	CLK	0.02053	0.02121	0.03968
	CLK	0.01725	0.01791	0.03628
sky130_fd_sc_hs__sdfxtp_4	CLK	0.02559	0.02678	0.04539
	CLK	0.02233	0.02346	0.04209

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	0.00107	0.00108	0.00108
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00045
	(CLK * !SCE)	0.00338	0.00347	0.01387
	(CLK * !SCE)	0.00075	0.00083	0.01124
	(CLK * !SCD * SCE)	0.00062	0.00062	0.00061
	(CLK * !SCD * SCE)	-0.00095	-0.00096	-0.00098
	(!CLK * SCD * SCE)	0.00107	0.00108	0.00108
	(!CLK * SCD * SCE)	-0.00044	-0.00045	-0.00045
	(!CLK * !SCE)	0.00789	0.00801	0.01867
	(!CLK * !SCE)	0.00527	0.00537	0.01604
	(!CLK * !SCD * SCE)	0.00063	0.00062	0.00061
	(!CLK * !SCD * SCE)	-0.00095	-0.00096	-0.00097
sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	0.00111	0.00112	0.00111
	(CLK * SCD * SCE)	-0.00044	-0.00045	-0.00045
	(CLK * !SCE)	0.00364	0.00371	0.01403
	(CLK * !SCE)	0.00096	0.00102	0.01135
	(CLK * !SCD * SCE)	0.00065	0.00065	0.00063
	(CLK * !SCD * SCE)	-0.00096	-0.00097	-0.00099
	(!CLK * SCD * SCE)	0.00110	0.00111	0.00111
	(!CLK * SCD * SCE)	-0.00045	-0.00045	-0.00045
	(!CLK * !SCE)	0.00851	0.00862	0.01910
	(!CLK * !SCE)	0.00583	0.00594	0.01641
	(!CLK * !SCD * SCE)	0.00064	0.00065	0.00064
	(!CLK * !SCD * SCE)	-0.00094	-0.00097	-0.00099

sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	0.00109	0.00110	0.00110
	(CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(CLK * !SCE)	0.00339	0.00348	0.01389
	(CLK * !SCE)	0.00077	0.00085	0.01127
	(CLK * !SCD * SCE)	0.00065	0.00064	0.00063
	(CLK * !SCD * SCE)	-0.00094	-0.00096	-0.00097
	(!CLK * SCD * SCE)	0.00109	0.00110	0.00110
	(!CLK * SCD * SCE)	-0.00044	-0.00044	-0.00044
	(!CLK * !SCE)	0.00792	0.00803	0.01870
	(!CLK * !SCE)	0.00530	0.00540	0.01607
	(!CLK * !SCD * SCE)	0.00065	0.00065	0.00064
	(!CLK * !SCD * SCE)	-0.00094	-0.00095	-0.00096

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

Cell Name	**When**	**Power(pJ)**		
		first	**mid**	**last**
sky130_fd_sc_hs__sdfxtp_1	**(CLK * SCD * SCE)**	-0.00103	-0.00105	-0.00107
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00071	0.00110	0.01157
	(CLK * !SCE)	0.00335	0.00373	0.01420
	(CLK * !SCD * SCE)	-0.00060	-0.00060	-0.00060
	(CLK * !SCD * SCE)	0.00098	0.00098	0.00098
	(!CLK * SCD * SCE)	-0.00103	-0.00105	-0.00107
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE)	0.00538	0.00577	0.01753
	(!CLK * !SCE)	0.00802	0.00839	0.02017
	(!CLK * !SCD * SCE)	-0.00060	-0.00059	-0.00059
	(!CLK * !SCD * SCE)	0.00098	0.00098	0.00098

sky130_fd_sc_hs__sdfxtp_2	**(CLK * SCD * SCE)**	-0.00106	-0.00108	-0.00110
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00076	0.00113	0.01153
	(CLK * !SCE)	0.00344	0.00382	0.01422
	(CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00098	0.00099	0.00099
	(!CLK * SCD * SCE)	-0.00107	-0.00109	-0.00110
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE)	0.00551	0.00588	0.01754
	(!CLK * !SCE)	0.00819	0.00856	0.02023
	(!CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(!CLK * !SCD * SCE)	0.00099	0.00099	0.00099
sky130_fd_sc_hs__sdfxtp_4	**(CLK * SCD * SCE)**	-0.00105	-0.00107	-0.00108
	(CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(CLK * !SCE)	0.00068	0.00115	0.01155
	(CLK * !SCE)	0.00331	0.00377	0.01417
	(CLK * !SCD * SCE)	-0.00062	-0.00062	-0.00062
	(CLK * !SCD * SCE)	0.00097	0.00097	0.00097
	(!CLK * SCD * SCE)	-0.00105	-0.00107	-0.00108
	(!CLK * SCD * SCE)	0.00048	0.00048	0.00046
	(!CLK * !SCE)	0.00565	0.00602	0.01773
	(!CLK * !SCE)	0.00828	0.00864	0.02036
	(!CLK * !SCD * SCE)	-0.00061	-0.00061	-0.00061
	(!CLK * !SCD * SCE)	0.00098	0.00097	0.00098

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

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

sky130_fd_sc_hs__sdfxtp_1	**(CLK * D * SCE)**	0.00477	0.00466	0.00926
	(CLK * D * SCE)	0.00133	0.00121	0.00582
	(CLK * !D * SCE)	0.00528	0.00517	0.00957
	(CLK * !D * SCE)	0.00178	0.00166	0.00608
	(!CLK * D * SCE)	0.00927	0.00921	0.01422
	(!CLK * D * SCE)	0.00584	0.00576	0.01079
	(!CLK * !D * SCE)	0.00979	0.00972	0.01447
	(!CLK * !D * SCE)	0.00629	0.00621	0.01098
	!SCE	0.00099	0.00090	0.00088
	!SCE	-0.00087	-0.00099	-0.00099
sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCE)**	0.00489	0.00479	0.00936
	(CLK * D * SCE)	0.00148	0.00137	0.00595
	(CLK * !D * SCE)	0.00540	0.00529	0.00967
	(CLK * !D * SCE)	0.00193	0.00182	0.00620
	(!CLK * D * SCE)	0.00975	0.00968	0.01464
	(!CLK * D * SCE)	0.00634	0.00627	0.01124
	(!CLK * !D * SCE)	0.01026	0.01019	0.01492
	(!CLK * !D * SCE)	0.00679	0.00672	0.01145
	!SCE	0.00100	0.00090	0.00089
	!SCE	-0.00082	-0.00092	-0.00094
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCE)**	0.00473	0.00463	0.00924
	(CLK * D * SCE)	0.00137	0.00126	0.00588
	(CLK * !D * SCE)	0.00525	0.00513	0.00955
	(CLK * !D * SCE)	0.00182	0.00171	0.00613
	(!CLK * D * SCE)	0.00925	0.00918	0.01418
	(!CLK * D * SCE)	0.00589	0.00581	0.01082
	(!CLK * !D * SCE)	0.00976	0.00970	0.01444
	(!CLK * !D * SCE)	0.00634	0.00626	0.01102
	!SCE	0.00097	0.00087	0.00086
	!SCE	-0.00085	-0.00096	-0.00097

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdfxtp_1	(CLK * D * SCE)	0.00154	0.00141	0.00593
	(CLK * D * SCE)	0.00499	0.00485	0.00936
	(CLK * !D * SCE)	0.00122	0.00110	0.00577
	(CLK * !D * SCE)	0.00471	0.00460	0.00925
	(!CLK * D * SCE)	0.00623	0.00615	0.01214
	(!CLK * D * SCE)	0.00967	0.00958	0.01557
	(!CLK * !D * SCE)	0.00595	0.00591	0.01208
	(!CLK * !D * SCE)	0.00945	0.00940	0.01556
	!SCE	-0.00084	-0.00086	-0.00087
	!SCE	0.00100	0.00101	0.00101
sky130_fd_sc_hs__sdfxtp_2	(CLK * D * SCE)	0.00167	0.00154	0.00603
	(CLK * D * SCE)	0.00508	0.00495	0.00943
	(CLK * !D * SCE)	0.00134	0.00122	0.00586
	(CLK * !D * SCE)	0.00481	0.00470	0.00932
	(!CLK * D * SCE)	0.00643	0.00633	0.01223
	(!CLK * D * SCE)	0.00985	0.00974	0.01563
	(!CLK * !D * SCE)	0.00616	0.00612	0.01216
	(!CLK * !D * SCE)	0.00963	0.00958	0.01562
	!SCE	-0.00085	-0.00087	-0.00087
	!SCE	0.00095	0.00096	0.00096

sky130_fd_sc_hs__sdfxtp_4	(CLK * D * SCE)	0.00153	0.00141	0.00594
	(CLK * D * SCE)	0.00490	0.00478	0.00929
	(CLK * !D * SCE)	0.00120	0.00110	0.00577
	(CLK * !D * SCE)	0.00463	0.00453	0.00919
	(!CLK * D * SCE)	0.00652	0.00643	0.01235
	(!CLK * D * SCE)	0.00988	0.00979	0.01570
	(!CLK * !D * SCE)	0.00623	0.00619	0.01229
	(!CLK * !D * SCE)	0.00965	0.00962	0.01570
	!SCE	-0.00082	-0.00084	-0.00084
	!SCE	0.00098	0.00098	0.00098

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)	0.00459	0.00459	0.01734
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00030	0.01247
	(CLK * D * !SCD)	0.00667	0.00657	0.01976
	(CLK * D * !SCD)	0.00324	0.00311	0.01628
	(CLK * !D * SCD)	0.00777	0.00790	0.02626
	(CLK * !D * SCD)	0.00173	0.00184	0.02023
	(!CLK * D * SCD)	0.00459	0.00460	0.01734
	(!CLK * D * SCD)	-0.00028	-0.00030	0.01247
	(!CLK * D * !SCD)	0.01120	0.01123	0.02455
	(!CLK * D * !SCD)	0.00777	0.00777	0.02108
	(!CLK * !D * SCD)	0.01228	0.01239	0.03155
	(!CLK * !D * SCD)	0.00623	0.00633	0.02550
	(!CLK * !D * !SCD)	0.00436	0.00445	0.01714
	(!CLK * !D * !SCD)	-0.00021	-0.00015	0.01256

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00440	0.00443	0.01723
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00028	-0.00027	0.01254
	(CLK * D * !SCD)	0.00658	0.00652	0.01974
	(CLK * D * !SCD)	0.00335	0.00326	0.01646
	(CLK * !D * SCD)	0.00780	0.00790	0.02632
	(CLK * !D * SCD)	0.00192	0.00200	0.02045
	(!CLK * D * SCD)	0.00440	0.00443	0.01723
	(!CLK * D * SCD)	-0.00028	-0.00028	0.01254
	(!CLK * D * !SCD)	0.01121	0.01126	0.02457
	(!CLK * D * !SCD)	0.00800	0.00800	0.02129
	(!CLK * !D * SCD)	0.01266	0.01279	0.03194
	(!CLK * !D * SCD)	0.00678	0.00690	0.02607
	(!CLK * !D * !SCD)	0.00421	0.00431	0.01706
	(!CLK * !D * !SCD)	-0.00017	-0.00008	0.01266
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	0.00458	0.00459	0.01732
	(CLK * D * SCD) + (CLK * !D * !SCD)	-0.00027	-0.00030	0.01246
	(CLK * D * !SCD)	0.00662	0.00653	0.01969
	(CLK * D * !SCD)	0.00319	0.00305	0.01619
	(CLK * !D * SCD)	0.00779	0.00786	0.02625
	(CLK * !D * SCD)	0.00177	0.00183	0.02026
	(!CLK * D * SCD)	0.00458	0.00459	0.01732
	(!CLK * D * SCD)	-0.00027	-0.00030	0.01246
	(!CLK * D * !SCD)	0.01145	0.01146	0.02476
	(!CLK * D * !SCD)	0.00802	0.00801	0.02127
	(!CLK * !D * SCD)	0.01231	0.01240	0.03151
	(!CLK * !D * SCD)	0.00629	0.00637	0.02552
	(!CLK * !D * !SCD)	0.00435	0.00443	0.01711
	(!CLK * !D * !SCD)	-0.00021	-0.00015	0.01254

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)	-0.00046	0.00012	0.01294
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00439	0.00500	0.01781
	(CLK * D * !SCD)	0.00302	0.00341	0.01643
	(CLK * D * !SCD)	0.00649	0.00688	0.01977
	(CLK * !D * SCD)	0.00091	0.00126	0.01924
	(CLK * !D * SCD)	0.00694	0.00731	0.02528
	(!CLK * D * SCD)	-0.00046	0.00009	0.01294
	(!CLK * D * SCD)	0.00440	0.00497	0.01781
	(!CLK * D * !SCD)	0.00750	0.00799	0.02079
	(!CLK * D * !SCD)	0.01097	0.01145	0.02412
	(!CLK * !D * SCD)	0.00557	0.00593	0.02474
	(!CLK * !D * SCD)	0.01161	0.01198	0.03079
	(!CLK * !D * !SCD)	-0.00004	0.00048	0.01321
	(!CLK * !D * !SCD)	0.00454	0.00508	0.01780

sky130_fd_sc_hs__sdfxtp_2	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00045	0.00017	0.01300
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00422	0.00486	0.01769
	(CLK * D * !SCD)	0.00326	0.00367	0.01668
	(CLK * D * !SCD)	0.00650	0.00695	0.01982
	(CLK * !D * SCD)	0.00096	0.00133	0.01929
	(CLK * !D * SCD)	0.00683	0.00721	0.02517
	(!CLK * D * SCD)	-0.00045	0.00015	0.01300
	(!CLK * D * SCD)	0.00422	0.00485	0.01769
	(!CLK * D * !SCD)	0.00809	0.00861	0.02139
	(!CLK * D * !SCD)	0.01133	0.01186	0.02452
	(!CLK * !D * SCD)	0.00570	0.00607	0.02485
	(!CLK * !D * SCD)	0.01157	0.01196	0.03073
	(!CLK * !D * !SCD)	-0.00007	0.00055	0.01324
	(!CLK * !D * !SCD)	0.00433	0.00496	0.01764
sky130_fd_sc_hs__sdfxtp_4	**(CLK * D * SCD) + (CLK * !D * !SCD)**	-0.00044	0.00015	0.01295
	(CLK * D * SCD) + (CLK * !D * !SCD)	0.00440	0.00502	0.01781
	(CLK * D * !SCD)	0.00306	0.00345	0.01645
	(CLK * D * !SCD)	0.00651	0.00692	0.01980
	(CLK * !D * SCD)	0.00090	0.00125	0.01923
	(CLK * !D * SCD)	0.00690	0.00726	0.02524
	(!CLK * D * SCD)	-0.00044	0.00013	0.01295
	(!CLK * D * SCD)	0.00440	0.00500	0.01781
	(!CLK * D * !SCD)	0.00755	0.00803	0.02082
	(!CLK * D * !SCD)	0.01100	0.01152	0.02416
	(!CLK * !D * SCD)	0.00586	0.00622	0.02495
	(!CLK * !D * SCD)	0.01187	0.01222	0.03096
	(!CLK * !D * !SCD)	-0.00001	0.00054	0.01323
	(!CLK * !D * !SCD)	0.00456	0.00512	0.01780

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)	0.01015	0.01020	0.02731
	(D * SCD * SCE * Q)	0.00691	0.00693	0.02405
	(D * !SCE * Q)	0.01013	0.01019	0.02729
	(D * !SCE * Q)	0.00689	0.00692	0.02403
	(D * !SCD * SCE * !Q)	0.01017	0.01020	0.02733
	(D * !SCD * SCE * !Q)	0.00692	0.00693	0.02407
	(!D * SCD * SCE * Q)	0.01015	0.01020	0.02731
	(!D * SCD * SCE * Q)	0.00691	0.00693	0.02405
	(!D * !SCE * !Q)	0.01017	0.01019	0.02733
	(!D * !SCE * !Q)	0.00692	0.00692	0.02408
	(!D * !SCD * SCE * !Q)	0.01018	0.01006	0.02734
	(!D * !SCD * SCE * !Q)	0.00691	0.00680	0.02408
sky130_fd_sc_hs__sdfxtp_2	(D * SCD * SCE * Q)	0.01034	0.01038	0.02734
	(D * SCD * SCE * Q)	0.00707	0.00708	0.02405
	(D * !SCE * Q)	0.01032	0.01038	0.02732
	(D * !SCE * Q)	0.00705	0.00708	0.02402
	(D * !SCD * SCE * !Q)	0.01047	0.01051	0.02747
	(D * !SCD * SCE * !Q)	0.00718	0.00721	0.02418
	(!D * SCD * SCE * Q)	0.01034	0.01039	0.02733
	(!D * SCD * SCE * Q)	0.00707	0.00709	0.02404
	(!D * !SCE * !Q)	0.01046	0.01049	0.02746
	(!D * !SCE * !Q)	0.00718	0.00719	0.02418
	(!D * !SCD * SCE * !Q)	0.01047	0.01035	0.02748
	(!D * !SCD * SCE * !Q)	0.00718	0.00705	0.02419

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.01028	0.01030	0.02741
	(D * SCD * SCE * Q)	0.00702	0.00701	0.02414
	(D * !SCE * Q)	0.01026	0.01029	0.02740
	(D * !SCE * Q)	0.00700	0.00701	0.02412
	(D * !SCD * SCE * !Q)	0.01025	0.01026	0.02739
	(D * !SCD * SCE * !Q)	0.00699	0.00698	0.02412
	(!D * SCD * SCE * Q)	0.01028	0.01030	0.02741
	(!D * SCD * SCE * Q)	0.00702	0.00702	0.02414
	(!D * !SCE * !Q)	0.01025	0.01025	0.02737
	(!D * !SCE * !Q)	0.00699	0.00697	0.02410
	(!D * !SCD * SCE * !Q)	0.01026	0.01014	0.02740
	(!D * !SCD * SCE * !Q)	0.00698	0.00686	0.02413

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)**	0.00602	0.00641	0.02388
	(D * SCD * SCE * Q)	0.00928	0.00967	0.02715
	(D * SCD * SCE * !Q)	0.01019	0.01047	0.02851
	(D * SCD * SCE * !Q)	0.01345	0.01373	0.03176
	(D * !SCE * Q)	0.00602	0.00641	0.02387
	(D * !SCE * Q)	0.00928	0.00967	0.02713
	(D * !SCE * !Q)	0.01016	0.01044	0.02864
	(D * !SCE * !Q)	0.01342	0.01370	0.03189
	(D * !SCD * SCE * Q)	0.01165	0.01205	0.03010
	(D * !SCD * SCE * Q)	0.01493	0.01533	0.03338
	(D * !SCD * SCE * !Q)	0.00594	0.00633	0.02386
	(D * !SCD * SCE * !Q)	0.00920	0.00959	0.02712
	(!D * SCD * SCE * Q)	0.00602	0.00642	0.02388
	(!D * SCD * SCE * Q)	0.00928	0.00968	0.02715
	(!D * SCD * SCE * !Q)	0.01022	0.01050	0.02854
	(!D * SCD * SCE * !Q)	0.01346	0.01375	0.03179
	(!D * !SCE * Q)	0.01162	0.01202	0.03004
	(!D * !SCE * Q)	0.01488	0.01529	0.03330
	(!D * !SCE * !Q)	0.00593	0.00633	0.02384
	(!D * !SCE * !Q)	0.00920	0.00959	0.02710
	(!D * !SCD * SCE * Q)	0.01165	0.01205	0.03009
	(!D * !SCD * SCE * Q)	0.01492	0.01531	0.03336
	(!D * !SCD * SCE * !Q)	0.00594	0.00633	0.02386
	(!D * !SCD * SCE * !Q)	0.00920	0.00958	0.02712

sky130_fd_sc_hs__sdfxtp_2	**(D * SCD * SCE * Q)**	0.00628	0.00665	0.02405
	(D * SCD * SCE * Q)	0.00956	0.00994	0.02734
	(D * SCD * SCE * !Q)	0.01076	0.01100	0.02896
	(D * SCD * SCE * !Q)	0.01404	0.01430	0.03225
	(D * !SCE * Q)	0.00628	0.00666	0.02404
	(D * !SCE * Q)	0.00956	0.00995	0.02734
	(D * !SCE * !Q)	0.01074	0.01098	0.02909
	(D * !SCE * !Q)	0.01401	0.01427	0.03238
	(D * !SCD * SCE * Q)	0.01197	0.01237	0.03037
	(D * !SCD * SCE * Q)	0.01526	0.01567	0.03367
	(D * !SCD * SCE * !Q)	0.00610	0.00647	0.02393
	(D * !SCD * SCE * !Q)	0.00938	0.00976	0.02722
	(!D * SCD * SCE * Q)	0.00628	0.00665	0.02405
	(!D * SCD * SCE * Q)	0.00956	0.00994	0.02734
	(!D * SCD * SCE * !Q)	0.01079	0.01103	0.02899
	(!D * SCD * SCE * !Q)	0.01405	0.01430	0.03227
	(!D * !SCE * Q)	0.01194	0.01233	0.03026
	(!D * !SCE * Q)	0.01522	0.01562	0.03355
	(!D * !SCE * !Q)	0.00609	0.00647	0.02390
	(!D * !SCE * !Q)	0.00937	0.00976	0.02720
	(!D * !SCD * SCE * Q)	0.01196	0.01237	0.03036
	(!D * !SCD * SCE * Q)	0.01525	0.01566	0.03366
	(!D * !SCD * SCE * !Q)	0.00610	0.00647	0.02393
	(!D * !SCD * SCE * !Q)	0.00938	0.00976	0.02722

sky130_fd_sc_hs__sdfxtp_4	**(D * SCD * SCE * Q)**	0.00598	0.00638	0.02383
	(D * SCD * SCE * Q)	0.00925	0.00965	0.02710
	(D * SCD * SCE * !Q)	0.01021	0.01049	0.02847
	(D * SCD * SCE * !Q)	0.01348	0.01376	0.03173
	(D * !SCE * Q)	0.00598	0.00638	0.02382
	(D * !SCE * Q)	0.00925	0.00965	0.02709
	(D * !SCE * !Q)	0.01018	0.01046	0.02860
	(D * !SCE * !Q)	0.01345	0.01373	0.03187
	(D * !SCD * SCE * Q)	0.01194	0.01236	0.03041
	(D * !SCD * SCE * Q)	0.01523	0.01565	0.03369
	(D * !SCD * SCE * !Q)	0.00594	0.00634	0.02385
	(D * !SCD * SCE * !Q)	0.00922	0.00961	0.02712
	(!D * SCD * SCE * Q)	0.00598	0.00638	0.02383
	(!D * SCD * SCE * Q)	0.00925	0.00966	0.02710
	(!D * SCD * SCE * !Q)	0.01023	0.01052	0.02852
	(!D * SCD * SCE * !Q)	0.01349	0.01378	0.03177
	(!D * !SCE * Q)	0.01192	0.01233	0.03034
	(!D * !SCE * Q)	0.01519	0.01560	0.03361
	(!D * !SCE * !Q)	0.00594	0.00634	0.02383
	(!D * !SCE * !Q)	0.00921	0.00961	0.02709
	(!D * !SCD * SCE * Q)	0.01194	0.01236	0.03039
	(!D * !SCD * SCE * Q)	0.01523	0.01563	0.03367
	(!D * !SCD * SCE * !Q)	0.00594	0.00634	0.02385
	(!D * !SCD * SCE * !Q)	0.00922	0.00961	0.02712

SKY130_FD_SC_HS__SDLCLKPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00224	0.00205	0.00439	1.12323
sky130_fd_sc_hs__sdlclkp_2	0.00224	0.00204	0.00463	2.22732
sky130_fd_sc_hs__sdlclkp_4	0.00212	0.00192	0.00470	4.25918

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__sdlclkp_1	0.00000	0.57302	0.92500
sky130_fd_sc_hs__sdlclkp_2	0.00000	0.48066	0.78520
sky130_fd_sc_hs__sdlclkp_4	0.00000	0.50740	0.85004

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)	0.05869	0.50911	5.85031
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (RR)	0.06018	0.43353	5.84049
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (RR)	0.07787	0.41319	5.95624

Delay(ns) to GCLK falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sdlclkp_1	CLK->GCLK (FF)	0.07673	0.48644	4.45267
sky130_fd_sc_hs__sdlclkp_2	CLK->GCLK (FF)	0.08522	0.49850	4.54807
sky130_fd_sc_hs__sdlclkp_4	CLK->GCLK (FF)	0.11114	0.54782	4.84911

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)	-0.03397	-0.09290	-0.66882
	setup	CLK (R)	0.12179	0.21756	0.81964
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03170	-0.09078	-0.66487
	setup	CLK (R)	0.11720	0.18469	0.79787
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03150	-0.09290	-0.67195
	setup	CLK (R)	0.11685	0.15958	0.84902

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)	-0.11380	-0.25813	-3.44251
	setup	CLK (R)	0.15009	0.30183	3.89882
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11580	-0.25561	-3.43345
	setup	CLK (R)	0.14928	0.30152	3.88634
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11755	-0.26073	-3.44084
	setup	CLK (R)	0.15178	0.30682	3.89184

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)	-0.03397	-0.09290	-0.66882
	setup	CLK (R)	0.12179	0.21756	0.81964
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03170	-0.09078	-0.66487
	setup	CLK (R)	0.11720	0.18469	0.79787
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03150	-0.09290	-0.67195
	setup	CLK (R)	0.11685	0.15958	0.84902

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)	-0.11380	-0.25813	-3.44251
	setup	CLK (R)	0.15009	0.30183	3.89882
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.11580	-0.25561	-3.43345
	setup	CLK (R)	0.14928	0.30152	3.88634
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.11755	-0.26073	-3.44084
	setup	CLK (R)	0.15178	0.30682	3.89184

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)	-0.03649	-0.09923	-0.56003
	setup	CLK (R)	0.12219	0.22434	0.76815
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03496	-0.09923	-0.55816
	setup	CLK (R)	0.11792	0.19177	0.74411
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03516	-0.10134	-0.56485
	setup	CLK (R)	0.11534	0.16613	0.80743

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)	-0.12382	-0.27870	-3.62984
	setup	CLK (R)	0.15976	0.32269	3.83139
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.12376	-0.27609	-3.62096
	setup	CLK (R)	0.15605	0.31725	3.81631
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12915	-0.28128	-3.63112
	setup	CLK (R)	0.16266	0.32256	3.86204

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)	-0.03649	-0.09923	-0.56003
	setup	CLK (R)	0.12219	0.22434	0.76815
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.03496	-0.09923	-0.55816
	setup	CLK (R)	0.11792	0.19177	0.74411
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.03516	-0.10134	-0.56485
	setup	CLK (R)	0.11534	0.16613	0.80743

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)	-0.12382	-0.27870	-3.62984
	setup	CLK (R)	0.15976	0.32269	3.83139
sky130_fd_sc_hs__sdlclkp_2	hold	CLK (R)	-0.12376	-0.27609	-3.62096
	setup	CLK (R)	0.15605	0.31725	3.81631
sky130_fd_sc_hs__sdlclkp_4	hold	CLK (R)	-0.12915	-0.28128	-3.63112
	setup	CLK (R)	0.16266	0.32256	3.86204

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 ()	0.03994	0.63599	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.04471	0.63599	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.06140	0.63599	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 ()	0.17822	0.63599	16.50020
	min_pulse_width	CLK ()	0.15915	0.63599	16.50020
sky130_fd_sc_hs__sdlclkp_2	min_pulse_width	CLK ()	0.17107	0.63599	16.50020
	min_pulse_width	CLK ()	0.15676	0.63599	16.50020
sky130_fd_sc_hs__sdlclkp_4	min_pulse_width	CLK ()	0.17107	0.63599	16.50020
	min_pulse_width	CLK ()	0.16153	0.63599	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	0.01275	0.01363	0.05932
	CLK	0.00754	0.00842	0.05410
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01512	0.01596	0.05685
	CLK	0.00962	0.01046	0.05136
sky130_fd_sc_hs__sdlclkp_4	CLK	0.01947	0.02057	0.05734
	CLK	0.01386	0.01499	0.05287

Internal switching power(pJ) to GCLK falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	CLK	0.01506	0.01749	0.06195
	CLK	0.01992	0.02222	0.06673
sky130_fd_sc_hs__sdlclkp_2	CLK	0.01678	0.01966	0.06120
	CLK	0.02190	0.02473	0.06522
sky130_fd_sc_hs__sdlclkp_4	CLK	0.02192	0.02492	0.06386
	CLK	0.01956	0.02238	0.06097

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	0.00116	0.00117	0.00116
	(CLK * SCE)	-0.00056	-0.00056	-0.00056
	(CLK * !SCE)	0.00360	0.00400	0.02276
	(CLK * !SCE)	0.00085	0.00124	0.02000
	(!CLK * SCE * !GCLK)	0.00113	0.00114	0.00113
	(!CLK * SCE * !GCLK)	-0.00059	-0.00059	-0.00059
	(!CLK * !SCE * !GCLK)	0.00897	0.00906	0.02669
	(!CLK * !SCE * !GCLK)	0.00654	0.00662	0.02425
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	0.00116	0.00117	0.00116
	(CLK * SCE)	-0.00056	-0.00056	-0.00055
	(CLK * !SCE)	0.00356	0.00396	0.02273
	(CLK * !SCE)	0.00082	0.00122	0.01999
	(!CLK * SCE * !GCLK)	0.00113	0.00114	0.00113
	(!CLK * SCE * !GCLK)	-0.00059	-0.00059	-0.00059
	(!CLK * !SCE * !GCLK)	0.00883	0.00892	0.02662
	(!CLK * !SCE * !GCLK)	0.00644	0.00651	0.02422
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	0.00111	0.00112	0.00111
	(CLK * SCE)	-0.00053	-0.00054	-0.00053
	(CLK * !SCE)	0.00345	0.00385	0.02255
	(CLK * !SCE)	0.00084	0.00124	0.01994
	(!CLK * SCE * !GCLK)	0.00109	0.00110	0.00109
	(!CLK * SCE * !GCLK)	-0.00055	-0.00056	-0.00055
	(!CLK * !SCE * !GCLK)	0.00887	0.00897	0.02658
	(!CLK * !SCE * !GCLK)	0.00658	0.00667	0.02429

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * SCE)	-0.00112	-0.00113	-0.00115
	(CLK * SCE)	0.00059	0.00060	0.00057
	(CLK * !SCE)	0.00051	0.00142	0.02020
	(CLK * !SCE)	0.00326	0.00417	0.02296
	(!CLK * SCE * !GCLK)	-0.00110	-0.00110	-0.00112
	(!CLK * SCE * !GCLK)	0.00062	0.00062	0.00060
	(!CLK * !SCE * !GCLK)	0.00763	0.00836	0.02721
	(!CLK * !SCE * !GCLK)	0.01006	0.01080	0.02965
sky130_fd_sc_hs__sdlclkp_2	(CLK * SCE)	-0.00111	-0.00113	-0.00115
	(CLK * SCE)	0.00059	0.00060	0.00057
	(CLK * !SCE)	0.00054	0.00144	0.02023
	(CLK * !SCE)	0.00327	0.00417	0.02297
	(!CLK * SCE * !GCLK)	-0.00109	-0.00110	-0.00112
	(!CLK * SCE * !GCLK)	0.00062	0.00062	0.00060
	(!CLK * !SCE * !GCLK)	0.00764	0.00837	0.02724
	(!CLK * !SCE * !GCLK)	0.01003	0.01078	0.02965
sky130_fd_sc_hs__sdlclkp_4	(CLK * SCE)	-0.00107	-0.00108	-0.00110
	(CLK * SCE)	0.00058	0.00058	0.00055
	(CLK * !SCE)	0.00074	0.00167	0.02037
	(CLK * !SCE)	0.00335	0.00428	0.02298
	(!CLK * SCE * !GCLK)	-0.00105	-0.00106	-0.00108
	(!CLK * SCE * !GCLK)	0.00059	0.00059	0.00057
	(!CLK * !SCE * !GCLK)	0.00784	0.00858	0.02738
	(!CLK * !SCE * !GCLK)	0.01014	0.01087	0.02967

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	0.00113	0.00100	0.00098
	(CLK * GATE)	-0.00093	-0.00109	-0.00109
	(CLK * !GATE)	0.00448	0.00455	0.01379
	(CLK * !GATE)	0.00128	0.00135	0.01060
	(!CLK * GATE * !GCLK)	0.00113	0.00100	0.00098
	(!CLK * GATE * !GCLK)	-0.00094	-0.00109	-0.00110
	(!CLK * !GATE * !GCLK)	0.00985	0.00981	0.01877
	(!CLK * !GATE * !GCLK)	0.00698	0.00694	0.01591
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	0.00113	0.00099	0.00097
	(CLK * GATE)	-0.00093	-0.00108	-0.00109
	(CLK * !GATE)	0.00444	0.00451	0.01375
	(CLK * !GATE)	0.00126	0.00133	0.01059
	(!CLK * GATE * !GCLK)	0.00112	0.00099	0.00097
	(!CLK * GATE * !GCLK)	-0.00093	-0.00109	-0.00109
	(!CLK * !GATE * !GCLK)	0.00971	0.00967	0.01867
	(!CLK * !GATE * !GCLK)	0.00687	0.00683	0.01585
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	0.00108	0.00095	0.00093
	(CLK * GATE)	-0.00091	-0.00106	-0.00107
	(CLK * !GATE)	0.00434	0.00442	0.01363
	(CLK * !GATE)	0.00129	0.00137	0.01060
	(!CLK * GATE * !GCLK)	0.00108	0.00095	0.00092
	(!CLK * GATE * !GCLK)	-0.00091	-0.00106	-0.00107
	(!CLK * !GATE * !GCLK)	0.00975	0.00972	0.01867
	(!CLK * !GATE * !GCLK)	0.00702	0.00698	0.01596

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(CLK * GATE)	-0.00096	-0.00096	-0.00096
	(CLK * GATE)	0.00111	0.00111	0.00111
	(CLK * !GATE)	0.00058	0.00062	0.00942
	(CLK * !GATE)	0.00376	0.00381	0.01261
	(!CLK * GATE * !GCLK)	-0.00096	-0.00097	-0.00096
	(!CLK * GATE * !GCLK)	0.00110	0.00111	0.00111
	(!CLK * !GATE * !GCLK)	0.00764	0.00759	0.01607
	(!CLK * !GATE * !GCLK)	0.01051	0.01046	0.01893
sky130_fd_sc_hs__sdlclkp_2	(CLK * GATE)	-0.00095	-0.00095	-0.00095
	(CLK * GATE)	0.00110	0.00111	0.00111
	(CLK * !GATE)	0.00060	0.00065	0.00945
	(CLK * !GATE)	0.00376	0.00382	0.01261
	(!CLK * GATE * !GCLK)	-0.00095	-0.00096	-0.00095
	(!CLK * GATE * !GCLK)	0.00110	0.00111	0.00111
	(!CLK * !GATE * !GCLK)	0.00765	0.00760	0.01610
	(!CLK * !GATE * !GCLK)	0.01048	0.01043	0.01892
sky130_fd_sc_hs__sdlclkp_4	(CLK * GATE)	-0.00090	-0.00091	-0.00090
	(CLK * GATE)	0.00108	0.00109	0.00109
	(CLK * !GATE)	0.00081	0.00085	0.00961
	(CLK * !GATE)	0.00384	0.00390	0.01265
	(!CLK * GATE * !GCLK)	-0.00091	-0.00091	-0.00090
	(!CLK * GATE * !GCLK)	0.00108	0.00109	0.00109
	(!CLK * !GATE * !GCLK)	0.00786	0.00782	0.01623
	(!CLK * !GATE * !GCLK)	0.01058	0.01055	0.01896

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(!GATE * !SCE * !GCLK)	0.00799	0.00851	0.03390
	(!GATE * !SCE * !GCLK)	0.00304	0.00354	0.02894
sky130_fd_sc_hs__sdlclkp_2	(!GATE * !SCE * !GCLK)	0.00808	0.00856	0.03381
	(!GATE * !SCE * !GCLK)	0.00287	0.00332	0.02859
sky130_fd_sc_hs__sdlclkp_4	(!GATE * !SCE * !GCLK)	0.00820	0.00869	0.03413
	(!GATE * !SCE * !GCLK)	0.00290	0.00335	0.02881

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sdlclkp_1	(GATE * SCE * !GCLK)	0.00875	0.00980	0.03804
	(GATE * SCE * !GCLK)	0.01412	0.01516	0.04342
	(GATE * !SCE * !GCLK)	0.00874	0.00977	0.03794
	(GATE * !SCE * !GCLK)	0.01411	0.01514	0.04331
	(!GATE * SCE * !GCLK)	0.00878	0.00982	0.03804
	(!GATE * SCE * !GCLK)	0.01413	0.01518	0.04340
	(!GATE * !SCE * !GCLK)	0.00344	0.00450	0.02984
	(!GATE * !SCE * !GCLK)	0.00838	0.00946	0.03481
sky130_fd_sc_hs__sdlclkp_2	(GATE * SCE * !GCLK)	0.00847	0.00952	0.03734
	(GATE * SCE * !GCLK)	0.01413	0.01521	0.04301
	(GATE * !SCE * !GCLK)	0.00846	0.00950	0.03726
	(GATE * !SCE * !GCLK)	0.01412	0.01518	0.04294
	(!GATE * SCE * !GCLK)	0.00850	0.00955	0.03735
	(!GATE * SCE * !GCLK)	0.01415	0.01522	0.04301
	(!GATE * !SCE * !GCLK)	0.00325	0.00430	0.02972
	(!GATE * !SCE * !GCLK)	0.00845	0.00954	0.03494
sky130_fd_sc_hs__sdlclkp_4	(GATE * SCE * !GCLK)	0.00879	0.00978	0.03759
	(GATE * SCE * !GCLK)	0.01453	0.01555	0.04334
	(GATE * !SCE * !GCLK)	0.00878	0.00976	0.03750
	(GATE * !SCE * !GCLK)	0.01452	0.01553	0.04326
	(!GATE * SCE * !GCLK)	0.00881	0.00981	0.03759
	(!GATE * SCE * !GCLK)	0.01454	0.01557	0.04333
	(!GATE * !SCE * !GCLK)	0.00341	0.00446	0.02983
	(!GATE * !SCE * !GCLK)	0.00871	0.00978	0.03516

SKY130_FD_SC_HS__SEDFXBPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00193	0.00368	0.00170	0.00372	0.00261	1.17062	1.16120
sky130_fd_sc_hs__sedfxbp_2	0.00202	0.00373	0.00172	0.00379	0.00261	1.95854	2.02640

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxbp_1	0.00000	0.53053	0.99282
sky130_fd_sc_hs__sedfxbp_2	0.00000	0.55060	1.00051

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)	0.16508	0.63581	5.79894
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RR)	0.16836	0.55415	5.62214

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxbp_1	CLK->Q (RF)	0.15297	0.40159	1.67835
sky130_fd_sc_hs__sedfxbp_2	CLK->Q (RF)	0.17170	0.38764	1.28488

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)	0.23180	0.68613	5.83910
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RR)	0.27877	0.63410	5.72599

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)	0.22962	0.44745	1.59596
sky130_fd_sc_hs__sedfxbp_2	CLK->Q_N (RF)	0.25058	0.42914	1.36659

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)	-0.11843	-0.21526	-1.23769
	setup	CLK (R)	0.15011	0.23646	1.25116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12140	-0.21899	-1.24841
	setup	CLK (R)	0.15041	0.23555	1.26200

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)	-0.27741	-0.45106	-4.00574
	setup	CLK (R)	0.36538	0.51421	4.06202
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27665	-0.44976	-4.01478
	setup	CLK (R)	0.36375	0.51164	4.07221

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)	-0.11843	-0.21526	-1.23769
	setup	CLK (R)	0.15011	0.23646	1.25116
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.12140	-0.21899	-1.24841
	setup	CLK (R)	0.15041	0.23555	1.26200

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)	-0.27741	-0.45106	-4.00574
	setup	CLK (R)	0.36538	0.51421	4.06202
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.27665	-0.44976	-4.01478
	setup	CLK (R)	0.36375	0.51164	4.07221

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)	-0.02994	-0.05160	-0.16883
	setup	CLK (R)	0.39820	0.43565	1.19245
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03060	-0.05160	-0.17848
	setup	CLK (R)	0.39314	0.43512	1.19975

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)	-0.18054	-0.33938	-3.33762
	setup	CLK (R)	0.32975	0.50012	4.26152
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.18340	-0.33882	-3.34627
	setup	CLK (R)	0.32902	0.50121	4.27177

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)	-0.02994	-0.05160	-0.16883
	hold	CLK (R)	-0.14470	-0.18456	-0.58727
	setup	CLK (R)	0.15067	0.22295	1.19245
	setup	CLK (R)	0.39820	0.43565	0.80515
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.03060	-0.05160	-0.17848
	hold	CLK (R)	-0.14578	-0.18129	-0.59921
	setup	CLK (R)	0.15050	0.22533	1.19975
	setup	CLK (R)	0.39314	0.43512	0.80911

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)	-0.30199	-0.48253	-4.25642
	hold	CLK (R)	-0.18054	-0.33938	-3.33762
	setup	CLK (R)	0.32975	0.50012	4.26152
	setup	CLK (R)	0.19607	0.34659	3.34045
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.29842	-0.48092	-4.26791
	hold	CLK (R)	-0.18340	-0.33882	-3.34627
	setup	CLK (R)	0.32902	0.50121	4.27177
	setup	CLK (R)	0.19800	0.34937	3.35086

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)	-0.07052	-0.14981	-0.92808
	setup	CLK (R)	0.09101	0.16490	0.95343
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07349	-0.15267	-0.94297
	setup	CLK (R)	0.09369	0.16679	0.96322

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)	-0.20898	-0.36531	-3.89150
	setup	CLK (R)	0.27119	0.41864	3.95184
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21092	-0.36900	-3.90626
	setup	CLK (R)	0.26933	0.41751	3.96315

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)	-0.07052	-0.14981	-0.92808
	setup	CLK (R)	0.09101	0.16490	0.95343
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.07349	-0.15267	-0.94297
	setup	CLK (R)	0.09369	0.16679	0.96322

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)	-0.20898	-0.36531	-3.89150
	setup	CLK (R)	0.27119	0.41864	3.95184
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.21092	-0.36900	-3.90626
	setup	CLK (R)	0.26933	0.41751	3.96315

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)	0.00346	0.01900	0.28831
	setup	CLK (R)	0.27970	0.29738	0.91461
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	0.00367	0.01689	0.27176
	setup	CLK (R)	0.28226	0.30302	0.92346

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)	-0.12567	-0.29049	-3.30851
	setup	CLK (R)	0.23231	0.37417	3.80033
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.13033	-0.29772	-3.33551
	setup	CLK (R)	0.22908	0.37533	3.80712

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)	-0.21976	-0.24801	-0.51945
	hold	CLK (R)	0.00346	0.01900	0.28831
	hold	CLK (R)	-0.06057	-0.13941	-0.88494
	hold	CLK (R)	-0.10257	-0.13864	-0.40063
	setup	CLK (R)	0.27970	0.29737	0.60324
	setup	CLK (R)	0.08279	0.15506	0.91458
	setup	CLK (R)	0.08282	0.15501	0.91461
	setup	CLK (R)	0.27887	0.29738	0.60404
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.22260	-0.25218	-0.54335
	hold	CLK (R)	0.00367	0.01689	0.27176
	hold	CLK (R)	-0.06340	-0.14055	-0.89555
	hold	CLK (R)	-0.10354	-0.13985	-0.42870
	setup	CLK (R)	0.28001	0.30283	0.61892
	setup	CLK (R)	0.08030	0.15786	0.92346
	setup	CLK (R)	0.08026	0.15787	0.92345
	setup	CLK (R)	0.28226	0.30302	0.61853

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)	-0.13160	-0.29860	-3.32713
	hold	CLK (R)	-0.15891	-0.31922	-3.71459
	hold	CLK (R)	-0.15307	-0.31784	-3.73754
	hold	CLK (R)	-0.12567	-0.29049	-3.30851
	setup	CLK (R)	0.16179	0.31582	3.35094
	setup	CLK (R)	0.18433	0.33579	3.71881
	setup	CLK (R)	0.23231	0.37417	3.80033
	setup	CLK (R)	0.14285	0.30063	3.31461
sky130_fd_sc_hs__sedfxbp_2	hold	CLK (R)	-0.13872	-0.30423	-3.35488
	hold	CLK (R)	-0.16016	-0.31954	-3.72632
	hold	CLK (R)	-0.15234	-0.31778	-3.75174
	hold	CLK (R)	-0.13033	-0.29772	-3.33551
	setup	CLK (R)	0.16781	0.32036	3.37740
	setup	CLK (R)	0.18596	0.33672	3.73148
	setup	CLK (R)	0.22908	0.37533	3.80712
	setup	CLK (R)	0.14683	0.30759	3.33943

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 ()	0.07570	0.63599	16.50020
	min_pulse_width	CLK ()	0.07570	0.63599	16.50020
	min_pulse_width	CLK ()	0.12339	0.63599	16.50020
	min_pulse_width	CLK ()	0.07570	0.63599	16.50020
	min_pulse_width	CLK ()	0.12339	0.63599	16.50020
	min_pulse_width	CLK ()	0.07570	0.63599	16.50020
	min_pulse_width	CLK ()	0.12100	0.63599	16.50020
	min_pulse_width	CLK ()	0.12100	0.63599	16.50020
	min_pulse_width	CLK ()	0.07570	0.63599	16.50020
	min_pulse_width	CLK ()	0.12339	0.63599	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.16630	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.16392	0.63599	16.50020
	min_pulse_width	CLK ()	0.08286	0.63599	16.50020
	min_pulse_width	CLK ()	0.16630	0.63599	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 ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.21160	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.21160	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.22352	0.63599	16.50020
	min_pulse_width	CLK ()	0.21160	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.21160	0.63599	16.50020
sky130_fd_sc_hs__sedfxbp_2	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.21875	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	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	0.01373	0.01389	0.02275
	CLK	0.01177	0.01193	0.02080
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01566	0.01599	0.02494
	CLK	0.01372	0.01402	0.02316

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01244	0.01243	0.02116
	CLK	0.01128	0.01124	0.02002
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01447	0.01463	0.02324
	CLK	0.01329	0.01344	0.02218

Internal switching power(pJ) to Q_N rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01245	0.01247	0.02146
	CLK	0.01129	0.01127	0.02031
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01448	0.01467	0.02371
	CLK	0.01330	0.01347	0.02263

Internal switching power(pJ) to Q_N falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	CLK	0.01370	0.01386	0.02243
	CLK	0.01174	0.01190	0.02053
sky130_fd_sc_hs__sedfxbp_2	CLK	0.01563	0.01594	0.02451
	CLK	0.01369	0.01398	0.02268

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00392	0.00394	0.01413
	(DE * SCE)	0.00148	0.00150	0.01170
	(CLK * DE * !SCE)	0.00797	0.00797	0.01668
	(CLK * DE * !SCE)	0.00483	0.00482	0.01354
	(CLK * !DE * !SCE)	0.00093	0.00094	0.00093
	(CLK * !DE * !SCE)	-0.00063	-0.00064	-0.00063
	(!DE * SCE)	0.00093	0.00095	0.00093
	(!DE * SCE)	-0.00063	-0.00064	-0.00063
	(!CLK * DE * !SCE * Q * !Q_N)	0.01369	0.01371	0.02273
	(!CLK * DE * !SCE * Q * !Q_N)	0.01054	0.01055	0.01958
	(!CLK * DE * !SCE * !Q * Q_N)	0.01330	0.01332	0.02210
	(!CLK * DE * !SCE * !Q * Q_N)	0.01012	0.01013	0.01891
	(!CLK * !DE * !SCE)	0.00093	0.00094	0.00093
	(!CLK * !DE * !SCE)	-0.00063	-0.00065	-0.00063
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00398	0.00399	0.01422
	(DE * SCE)	0.00145	0.00146	0.01170
	(CLK * DE * !SCE)	0.00812	0.00812	0.01681
	(CLK * DE * !SCE)	0.00485	0.00484	0.01354
	(CLK * !DE * !SCE)	0.00097	0.00098	0.00097
	(CLK * !DE * !SCE)	-0.00066	-0.00067	-0.00066
	(!DE * SCE)	0.00097	0.00098	0.00098
	(!DE * SCE)	-0.00066	-0.00067	-0.00066
	(!CLK * DE * !SCE * Q * !Q_N)	0.01377	0.01379	0.02282
	(!CLK * DE * !SCE * Q * !Q_N)	0.01050	0.01052	0.01954
	(!CLK * DE * !SCE * !Q * Q_N)	0.01336	0.01337	0.02216
	(!CLK * DE * !SCE * !Q * Q_N)	0.01006	0.01006	0.01886
	(!CLK * !DE * !SCE)	0.00097	0.00097	0.00097
	(!CLK * !DE * !SCE)	-0.00066	-0.00067	-0.00066

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(DE * SCE)	0.00131	0.00174	0.01198
	(DE * SCE)	0.00378	0.00422	0.01444
	(CLK * DE * !SCE)	0.00243	0.00265	0.01211
	(CLK * DE * !SCE)	0.00563	0.00584	0.01530
	(CLK * !DE * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !DE * !SCE)	0.00133	0.00133	0.00132
	(!DE * SCE)	-0.00027	-0.00027	-0.00027
	(!DE * SCE)	0.00132	0.00133	0.00133
	(!CLK * DE * !SCE * Q * !Q_N)	0.00805	0.00838	0.02032
	(!CLK * DE * !SCE * Q * !Q_N)	0.01120	0.01153	0.02347
	(!CLK * DE * !SCE * !Q * Q_N)	0.00865	0.00893	0.02116
	(!CLK * DE * !SCE * !Q * Q_N)	0.01184	0.01211	0.02434
	(!CLK * !DE * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !DE * !SCE)	0.00132	0.00133	0.00132
sky130_fd_sc_hs__sedfxbp_2	(DE * SCE)	0.00112	0.00155	0.01182
	(DE * SCE)	0.00369	0.00412	0.01438
	(CLK * DE * !SCE)	0.00232	0.00264	0.01198
	(CLK * DE * !SCE)	0.00564	0.00594	0.01529
	(CLK * !DE * !SCE)	-0.00029	-0.00029	-0.00029
	(CLK * !DE * !SCE)	0.00139	0.00139	0.00139
	(!DE * SCE)	-0.00029	-0.00029	-0.00028
	(!DE * SCE)	0.00139	0.00139	0.00139
	(!CLK * DE * !SCE * Q * !Q_N)	0.00789	0.00820	0.02016
	(!CLK * DE * !SCE * Q * !Q_N)	0.01116	0.01147	0.02342
	(!CLK * DE * !SCE * !Q * Q_N)	0.00853	0.00886	0.02100
	(!CLK * DE * !SCE * !Q * Q_N)	0.01184	0.01216	0.02431
	(!CLK * !DE * !SCE)	-0.00029	-0.00029	-0.00029
	(!CLK * !DE * !SCE)	0.00139	0.00139	0.00139

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00722	0.00725	0.02436
	SCE	0.00187	0.00187	0.01899
	(CLK * !SCE)	0.01113	0.01115	0.02762
	(CLK * !SCE)	0.00505	0.00506	0.02155
	(!CLK * D * !SCE * Q * !Q_N)	0.00448	0.00445	0.01702
	(!CLK * D * !SCE * Q * !Q_N)	0.00007	0.00004	0.01261
	(!CLK * D * !SCE * !Q * Q_N)	0.01684	0.01688	0.03386
	(!CLK * D * !SCE * !Q * Q_N)	0.01076	0.01079	0.02778
	(!CLK * !D * !SCE * Q * !Q_N)	0.01335	0.01340	0.02606
	(!CLK * !D * !SCE * Q * !Q_N)	0.01058	0.01062	0.02328
	(!CLK * !D * !SCE * !Q * Q_N)	0.00440	0.00453	0.01706
	(!CLK * !D * !SCE * !Q * Q_N)	0.00005	0.00014	0.01270
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00724	0.00728	0.02442
	SCE	0.00180	0.00180	0.01896
	(CLK * !SCE)	0.01124	0.01128	0.02776
	(CLK * !SCE)	0.00506	0.00506	0.02156
	(!CLK * D * !SCE * Q * !Q_N)	0.00445	0.00443	0.01702
	(!CLK * D * !SCE * Q * !Q_N)	-0.00000	-0.00003	0.01255
	(!CLK * D * !SCE * !Q * Q_N)	0.01683	0.01690	0.03385
	(!CLK * D * !SCE * !Q * Q_N)	0.01065	0.01069	0.02764
	(!CLK * !D * !SCE * Q * !Q_N)	0.01322	0.01332	0.02597
	(!CLK * !D * !SCE * Q * !Q_N)	0.01045	0.01051	0.02317
	(!CLK * !D * !SCE * !Q * Q_N)	0.00441	0.00454	0.01709
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00001	0.00009	0.01265

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	SCE	0.00191	0.00230	0.01948
	SCE	0.00727	0.00766	0.02483
	(CLK * !SCE)	0.00299	0.00336	0.02002
	(CLK * !SCE)	0.00907	0.00945	0.02609
	(!CLK * D * !SCE * Q * !Q_N)	-0.00013	0.00042	0.01292
	(!CLK * D * !SCE * Q * !Q_N)	0.00427	0.00482	0.01732
	(!CLK * D * !SCE * !Q * Q_N)	0.00913	0.00953	0.02823
	(!CLK * D * !SCE * !Q * Q_N)	0.01522	0.01562	0.03430
	(!CLK * !D * !SCE * Q * !Q_N)	0.01357	0.01405	0.02635
	(!CLK * !D * !SCE * Q * !Q_N)	0.01631	0.01683	0.02914
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00023	0.00039	0.01285
	(!CLK * !D * !SCE * !Q * Q_N)	0.00411	0.00477	0.01722
sky130_fd_sc_hs__sedfxbp_2	SCE	0.00172	0.00212	0.01933
	SCE	0.00718	0.00758	0.02477
	(CLK * !SCE)	0.00288	0.00325	0.01991
	(CLK * !SCE)	0.00908	0.00945	0.02610
	(!CLK * D * !SCE * Q * !Q_N)	-0.00016	0.00039	0.01290
	(!CLK * D * !SCE * Q * !Q_N)	0.00431	0.00487	0.01737
	(!CLK * D * !SCE * !Q * Q_N)	0.00899	0.00939	0.02809
	(!CLK * D * !SCE * !Q * Q_N)	0.01520	0.01559	0.03428
	(!CLK * !D * !SCE * Q * !Q_N)	0.01357	0.01406	0.02636
	(!CLK * !D * !SCE * Q * !Q_N)	0.01633	0.01685	0.02918
	(!CLK * !D * !SCE * !Q * Q_N)	-0.00028	0.00032	0.01281
	(!CLK * !D * !SCE * !Q * Q_N)	0.00413	0.00477	0.01725

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00439	0.00434	0.00883
	(CLK * SCE)	0.00181	0.00174	0.00625
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01011	0.01006	0.01495
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00752	0.00746	0.01236
	!SCE	0.00087	0.00077	0.00075
	!SCE	-0.00082	-0.00094	-0.00095
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00449	0.00443	0.00892
	(CLK * SCE)	0.00185	0.00179	0.00628
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01008	0.01004	0.01493
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00744	0.00739	0.01229
	!SCE	0.00086	0.00077	0.00075
	!SCE	-0.00086	-0.00098	-0.00099

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxbp_1	(CLK * SCE)	0.00215	0.00208	0.00662
	(CLK * SCE)	0.00473	0.00466	0.00919
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00798	0.00794	0.01414
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01057	0.01052	0.01672
	!SCE	-0.00071	-0.00074	-0.00074
	!SCE	0.00096	0.00097	0.00097
sky130_fd_sc_hs__sedfxbp_2	(CLK * SCE)	0.00212	0.00205	0.00658
	(CLK * SCE)	0.00477	0.00470	0.00922
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.00793	0.00790	0.01411
	(!CLK * SCE * Q * !Q_N) + (!CLK * SCE * !Q * Q_N)	0.01057	0.01054	0.01674
	!SCE	-0.00071	-0.00073	-0.00073
	!SCE	0.00100	0.00101	0.00101

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00662	0.00691	0.02866
	(CLK * D)	0.00198	0.00225	0.02402
	(CLK * !D)	0.00691	0.00719	0.02880
	(CLK * !D)	0.00228	0.00253	0.02416
	(!CLK * D * SCD * Q * !Q_N)	0.00393	0.00409	0.01667
	(!CLK * D * SCD * Q * !Q_N)	0.00002	0.00016	0.01275
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00378	0.00394	0.01653
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00013	0.00001	0.01261
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01267	0.01266	0.02883
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00950	0.00945	0.02562
	(!CLK * D * !SCD * Q * !Q_N)	0.01268	0.01266	0.02886
	(!CLK * D * !SCD * Q * !Q_N)	0.00951	0.00946	0.02564
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01234	0.01256	0.03454
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00770	0.00791	0.02990
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00426	0.00442	0.01703
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00035	0.00049	0.01311
	(!CLK * !D * SCD * !Q * Q_N)	0.01234	0.01258	0.03440
	(!CLK * !D * SCD * !Q * Q_N)	0.00770	0.00792	0.02976
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01265	0.01286	0.03467
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00801	0.00821	0.03003
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00441	0.00457	0.01718
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00050	0.00064	0.01325
	(!CLK * !D * !SCD * !Q * Q_N)	0.00426	0.00442	0.01703
	(!CLK * !D * !SCD * !Q * Q_N)	0.00035	0.00049	0.01311
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00393	0.00409	0.01667
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00002	0.00016	0.01275
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01270	0.01265	0.02886
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00952	0.00945	0.02566

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00673	0.00698	0.02872
	(CLK * D)	0.00195	0.00220	0.02394
	(CLK * !D)	0.00700	0.00726	0.02883
	(CLK * !D)	0.00222	0.00246	0.02405
	(!CLK * D * SCD * Q * !Q_N)	0.00401	0.00416	0.01669
	(!CLK * D * SCD * Q * !Q_N)	-0.00002	0.00009	0.01266
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00387	0.00402	0.01656
	(!CLK * D * DE * SCD * !Q * Q_N)	-0.00015	-0.00004	0.01252
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01280	0.01275	0.02884
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00953	0.00945	0.02553
	(!CLK * D * !SCD * Q * !Q_N)	0.01276	0.01270	0.02881
	(!CLK * D * !SCD * Q * !Q_N)	0.00949	0.00940	0.02551
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01233	0.01254	0.03450
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00755	0.00775	0.02972
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00439	0.00454	0.01709
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00037	0.00050	0.01306
	(!CLK * !D * SCD * !Q * Q_N)	0.01232	0.01254	0.03436
	(!CLK * !D * SCD * !Q * Q_N)	0.00755	0.00776	0.02958
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01266	0.01287	0.03467
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00788	0.00807	0.02989
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00453	0.00467	0.01723
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00050	0.00063	0.01320
	(!CLK * !D * !SCD * !Q * Q_N)	0.00440	0.00454	0.01710
	(!CLK * !D * !SCD * !Q * Q_N)	0.00037	0.00050	0.01306
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00401	0.00415	0.01669
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00002	0.00010	0.01266
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01278	0.01269	0.02891
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00951	0.00939	0.02560

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxbp_1	**(CLK * D)**	0.00408	0.00534	0.02489
	(CLK * D)	0.00727	0.00853	0.02797
	(CLK * !D)	0.00407	0.00533	0.02493
	(CLK * !D)	0.00726	0.00853	0.02801
	(!CLK * D * SCD * Q * !Q_N)	-0.00002	0.00052	0.01324
	(!CLK * D * SCD * Q * !Q_N)	0.00388	0.00445	0.01715
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00013	0.00067	0.01339
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00403	0.00460	0.01730
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00973	0.01101	0.03037
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01292	0.01421	0.03348
	(!CLK * D * !SCD * Q * !Q_N)	0.00973	0.01100	0.03035
	(!CLK * D * !SCD * Q * !Q_N)	0.01291	0.01419	0.03346
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00690	0.00774	0.03114
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01152	0.01238	0.03578
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00030	0.00029	0.01289
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00360	0.00422	0.01681
	(!CLK * !D * SCD * !Q * Q_N)	0.00692	0.00776	0.03098
	(!CLK * !D * SCD * !Q * Q_N)	0.01155	0.01239	0.03561
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00663	0.00747	0.03069
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01125	0.01210	0.03533
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00044	0.00014	0.01274
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00346	0.00408	0.01666
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00030	0.00029	0.01289
	(!CLK * !D * !SCD * !Q * Q_N)	0.00360	0.00422	0.01681
	(!CLK * !D * !DE * SCD * Q * !Q_N)	-0.00002	0.00052	0.01324
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00388	0.00445	0.01715
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00973	0.01101	0.03036
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01292	0.01420	0.03345

sky130_fd_sc_hs__sedfxbp_2	**(CLK * D)**	0.00427	0.00550	0.02502
	(CLK * D)	0.00755	0.00880	0.02819
	(CLK * !D)	0.00426	0.00549	0.02506
	(CLK * !D)	0.00755	0.00879	0.02823
	(!CLK * D * SCD * Q * !Q_N)	0.00005	0.00058	0.01325
	(!CLK * D * SCD * Q * !Q_N)	0.00408	0.00463	0.01729
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00019	0.00072	0.01339
	(!CLK * D * DE * SCD * !Q * Q_N)	0.00421	0.00476	0.01742
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.00980	0.01102	0.03040
	(!CLK * D * DE * !SCD * !Q * Q_N)	0.01308	0.01430	0.03359
	(!CLK * D * !SCD * Q * !Q_N)	0.00985	0.01108	0.03043
	(!CLK * D * !SCD * Q * !Q_N)	0.01314	0.01437	0.03363
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.00691	0.00773	0.03112
	(!CLK * D * !DE * SCD * !Q * Q_N)	0.01167	0.01251	0.03591
	(!CLK * D * !DE * !SCD * !Q * Q_N)	-0.00027	0.00027	0.01285
	(!CLK * D * !DE * !SCD * !Q * Q_N)	0.00375	0.00432	0.01688
	(!CLK * !D * SCD * !Q * Q_N)	0.00693	0.00775	0.03091
	(!CLK * !D * SCD * !Q * Q_N)	0.01169	0.01253	0.03569
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.00661	0.00743	0.03064
	(!CLK * !D * DE * SCD * Q * !Q_N)	0.01137	0.01220	0.03541
	(!CLK * !D * DE * !SCD * Q * !Q_N)	-0.00041	0.00014	0.01271
	(!CLK * !D * DE * !SCD * Q * !Q_N)	0.00361	0.00418	0.01675
	(!CLK * !D * !SCD * !Q * Q_N)	-0.00027	0.00027	0.01285
	(!CLK * !D * !SCD * !Q * Q_N)	0.00375	0.00432	0.01688
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00005	0.00058	0.01325
	(!CLK * !D * !DE * SCD * Q * !Q_N)	0.00408	0.00463	0.01729
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.00985	0.01107	0.03043
	(!CLK * !D * !DE * !SCD * Q * !Q_N)	0.01314	0.01436	0.03362

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)	0.01112	0.01124	0.02807
	(SCD * SCE * Q * !Q_N)	0.00796	0.00807	0.02492
	(D * !SCE * Q * !Q_N)	0.01111	0.01121	0.02807
	(D * !SCE * Q * !Q_N)	0.00796	0.00805	0.02491
	(D * !DE * !SCE * !Q * Q_N)	0.01106	0.01106	0.02808
	(D * !DE * !SCE * !Q * Q_N)	0.00790	0.00789	0.02493
	(!SCD * SCE * !Q * Q_N)	0.01107	0.01107	0.02809
	(!SCD * SCE * !Q * Q_N)	0.00792	0.00790	0.02493
	(!D * !SCE * !Q * Q_N)	0.01106	0.01106	0.02809
	(!D * !SCE * !Q * Q_N)	0.00791	0.00789	0.02493
	(!D * !DE * !SCE * Q * !Q_N)	0.01111	0.01122	0.02806
	(!D * !DE * !SCE * Q * !Q_N)	0.00796	0.00805	0.02491
sky130_fd_sc_hs__sedfxbp_2	(SCD * SCE * Q * !Q_N)	0.01106	0.01122	0.02815
	(SCD * SCE * Q * !Q_N)	0.00791	0.00805	0.02500
	(D * !SCE * Q * !Q_N)	0.01104	0.01119	0.02814
	(D * !SCE * Q * !Q_N)	0.00789	0.00803	0.02498
	(D * !DE * !SCE * !Q * Q_N)	0.01108	0.01111	0.02827
	(D * !DE * !SCE * !Q * Q_N)	0.00794	0.00795	0.02512
	(!SCD * SCE * !Q * Q_N)	0.01110	0.01113	0.02829
	(!SCD * SCE * !Q * Q_N)	0.00796	0.00797	0.02514
	(!D * !SCE * !Q * Q_N)	0.01109	0.01112	0.02827
	(!D * !SCE * !Q * Q_N)	0.00794	0.00795	0.02512
	(!D * !DE * !SCE * Q * !Q_N)	0.01104	0.01120	0.02813
	(!D * !DE * !SCE * Q * !Q_N)	0.00789	0.00803	0.02498

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)	0.00618	0.00656	0.02396
	(SCD * SCE * Q * !Q_N)	0.00934	0.00972	0.02712
	(SCD * SCE * !Q * Q_N)	0.01179	0.01202	0.02990
	(SCD * SCE * !Q * Q_N)	0.01495	0.01518	0.03306
	(D * DE * !SCE * !Q * Q_N)	0.01175	0.01199	0.02987
	(D * DE * !SCE * !Q * Q_N)	0.01491	0.01515	0.03304
	(D * !SCE * Q * !Q_N)	0.00618	0.00656	0.02397
	(D * !SCE * Q * !Q_N)	0.00934	0.00972	0.02713
	(D * !DE * !SCE * !Q * Q_N)	0.00613	0.00649	0.02384
	(D * !DE * !SCE * !Q * Q_N)	0.00929	0.00964	0.02700
	(!SCD * SCE * Q * !Q_N)	0.01297	0.01346	0.03131
	(!SCD * SCE * Q * !Q_N)	0.01614	0.01663	0.03448
	(!SCD * SCE * !Q * Q_N)	0.00613	0.00649	0.02384
	(!SCD * SCE * !Q * Q_N)	0.00929	0.00964	0.02699
	(!D * DE * !SCE * Q * !Q_N)	0.01305	0.01352	0.03146
	(!D * DE * !SCE * Q * !Q_N)	0.01621	0.01668	0.03462
	(!D * !SCE * !Q * Q_N)	0.00613	0.00649	0.02384
	(!D * !SCE * !Q * Q_N)	0.00929	0.00964	0.02700
	(!D * !DE * !SCE * Q * !Q_N)	0.00618	0.00656	0.02396
	(!D * !DE * !SCE * Q * !Q_N)	0.00934	0.00972	0.02713

sky130_fd_sc_hs__sedfxbp_2	**(SCD * SCE * Q * !Q_N)**	0.00627	0.00666	0.02420
	(SCD * SCE * Q * !Q_N)	0.00942	0.00980	0.02735
	(SCD * SCE * !Q * Q_N)	0.01169	0.01194	0.02992
	(SCD * SCE * !Q * Q_N)	0.01484	0.01509	0.03307
	(D * DE * !SCE * !Q * Q_N)	0.01166	0.01191	0.02990
	(D * DE * !SCE * !Q * Q_N)	0.01481	0.01506	0.03305
	(D * !SCE * Q * !Q_N)	0.00628	0.00667	0.02421
	(D * !SCE * Q * !Q_N)	0.00943	0.00983	0.02736
	(D * !DE * !SCE * !Q * Q_N)	0.00614	0.00651	0.02398
	(D * !DE * !SCE * !Q * Q_N)	0.00930	0.00966	0.02714
	(!SCD * SCE * Q * !Q_N)	0.01301	0.01351	0.03153
	(!SCD * SCE * Q * !Q_N)	0.01617	0.01667	0.03469
	(!SCD * SCE * !Q * Q_N)	0.00613	0.00651	0.02397
	(!SCD * SCE * !Q * Q_N)	0.00929	0.00965	0.02713
	(!D * DE * !SCE * Q * !Q_N)	0.01309	0.01357	0.03157
	(!D * DE * !SCE * Q * !Q_N)	0.01624	0.01672	0.03472
	(!D * !SCE * !Q * Q_N)	0.00614	0.00651	0.02399
	(!D * !SCE * !Q * Q_N)	0.00930	0.00966	0.02714
	(!D * !DE * !SCE * Q * !Q_N)	0.00628	0.00667	0.02421
	(!D * !DE * !SCE * Q * !Q_N)	0.00943	0.00983	0.02736

SKY130_FD_SC_HS__SEDFXTPx

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00194	0.00375	0.00174	0.00367	0.00259	1.16516
sky130_fd_sc_hs__sedfxtp_2	0.00204	0.00378	0.00176	0.00372	0.00261	2.29067
sky130_fd_sc_hs__sedfxtp_4	0.00204	0.00376	0.00176	0.00370	0.00271	4.33116

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__sedfxtp_1	0.00000	0.55742	1.08014
sky130_fd_sc_hs__sedfxtp_2	0.00000	0.57396	1.11256
sky130_fd_sc_hs__sedfxtp_4	0.00000	0.60704	1.17740

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)**	0.16146	0.62888	5.76189
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RR)**	0.16496	0.54056	5.77030
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RR)**	0.18528	0.49478	5.80771

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__sedfxtp_1	**CLK->Q (RF)**	0.14365	0.37652	1.56098
sky130_fd_sc_hs__sedfxtp_2	**CLK->Q (RF)**	0.16399	0.38674	1.62870
sky130_fd_sc_hs__sedfxtp_4	**CLK->Q (RF)**	0.21740	0.43971	1.79238

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)	-0.11900	-0.21698	-1.23994
	setup	CLK (R)	0.15012	0.23555	1.25308
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.12162	-0.21746	-1.24426
	setup	CLK (R)	0.15027	0.23555	1.25505
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.12321	-0.21805	-1.24693
	setup	CLK (R)	0.15008	0.23555	1.25955

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)	-0.27891	-0.45185	-4.01316
	setup	CLK (R)	0.36666	0.51214	4.06776
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.27385	-0.45079	-4.00776
	setup	CLK (R)	0.36573	0.51359	4.06459
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.27649	-0.45078	-4.01434
	setup	CLK (R)	0.35785	0.50823	4.07774

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)	-0.02997	-0.04940	-0.16998
	setup	CLK (R)	0.39487	0.43479	1.19368
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03098	-0.05160	-0.16858
	setup	CLK (R)	0.39371	0.43244	1.19255
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02698	-0.05160	-0.17071
	setup	CLK (R)	0.39026	0.42906	1.19810

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)	-0.18139	-0.34049	-3.34146
	setup	CLK (R)	0.33182	0.50268	4.26711
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.18312	-0.33934	-3.34463
	setup	CLK (R)	0.33001	0.50075	4.26690
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.18496	-0.34006	-3.34125
	setup	CLK (R)	0.33055	0.50357	4.27489

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)	-0.02997	-0.04940	-0.16998
	hold	CLK (R)	-0.14203	-0.18816	-0.59120
	setup	CLK (R)	0.15139	0.22414	1.19368
	setup	CLK (R)	0.39487	0.43479	0.81018
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.03098	-0.05160	-0.16858
	hold	CLK (R)	-0.14271	-0.18129	-0.58601
	setup	CLK (R)	0.15039	0.22533	1.19255
	setup	CLK (R)	0.39371	0.43244	0.80669
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.02698	-0.05160	-0.17071
	hold	CLK (R)	-0.14417	-0.18096	-0.59590
	setup	CLK (R)	0.14925	0.22593	1.19810
	setup	CLK (R)	0.39026	0.42906	0.81536

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)	-0.30151	-0.48175	-4.26442
	hold	CLK (R)	-0.18139	-0.34049	-3.34146
	setup	CLK (R)	0.33182	0.50268	4.26711
	setup	CLK (R)	0.19909	0.35063	3.34965
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.29876	-0.48173	-4.26223
	hold	CLK (R)	-0.18312	-0.33934	-3.34463
	setup	CLK (R)	0.33001	0.50075	4.26690
	setup	CLK (R)	0.20075	0.35091	3.34973
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.30438	-0.48379	-4.27033
	hold	CLK (R)	-0.18496	-0.34006	-3.34125
	setup	CLK (R)	0.33055	0.50357	4.27489
	setup	CLK (R)	0.19787	0.34854	3.34749

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)	-0.07292	-0.15053	-0.93666
	setup	CLK (R)	0.09221	0.16679	0.96029
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.07111	-0.15237	-0.93582
	setup	CLK (R)	0.09181	0.16468	0.95840
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.07219	-0.15254	-0.94492
	setup	CLK (R)	0.09027	0.16679	0.96535

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)	-0.21277	-0.36702	-3.90183
	setup	CLK (R)	0.27129	0.41951	3.96627
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.20696	-0.36658	-3.89578
	setup	CLK (R)	0.26808	0.41637	3.95799
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.21235	-0.37214	-3.91198
	setup	CLK (R)	0.26308	0.41668	3.97252

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)	0.00460	0.01900	0.28538
	setup	CLK (R)	0.28412	0.30357	0.91604
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	0.00460	0.01900	0.28431
	setup	CLK (R)	0.28212	0.29846	0.91612
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	0.00585	0.01900	0.28538
	setup	CLK (R)	0.27907	0.29764	0.92478

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)	-0.12955	-0.29202	-3.32873
	setup	CLK (R)	0.23137	0.37510	3.80384
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.13009	-0.29332	-3.32870
	setup	CLK (R)	0.22796	0.37370	3.80025
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13258	-0.29678	-3.33130
	setup	CLK (R)	0.22317	0.37110	3.81568

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)	-0.22508	-0.25150	-0.53759
	hold	CLK (R)	0.00460	0.01900	0.28538
	hold	CLK (R)	-0.06137	-0.13973	-0.88672
	hold	CLK (R)	-0.10516	-0.14295	-0.42165
	setup	CLK (R)	0.28303	0.30357	0.61437
	setup	CLK (R)	0.08018	0.15588	0.91604
	setup	CLK (R)	0.08013	0.15598	0.91599
	setup	CLK (R)	0.28412	0.30166	0.61742
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.22090	-0.24884	-0.53216
	hold	CLK (R)	0.00460	0.01900	0.28431
	hold	CLK (R)	-0.06129	-0.13890	-0.88444
	hold	CLK (R)	-0.10322	-0.13864	-0.41244
	setup	CLK (R)	0.28212	0.29834	0.61510
	setup	CLK (R)	0.08237	0.15577	0.91609
	setup	CLK (R)	0.08250	0.15571	0.91612
	setup	CLK (R)	0.27950	0.29846	0.61500
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.22462	-0.25292	-0.53952
	hold	CLK (R)	0.00585	0.01900	0.28538
	hold	CLK (R)	-0.06324	-0.13987	-0.89352
	hold	CLK (R)	-0.10322	-0.13864	-0.42149
	setup	CLK (R)	0.27873	0.29760	0.62732
	setup	CLK (R)	0.08224	0.15440	0.92478
	setup	CLK (R)	0.08221	0.15446	0.92475
	setup	CLK (R)	0.27907	0.29764	0.62638

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)	-0.13378	-0.30258	-3.34982
	hold	CLK (R)	-0.16015	-0.32189	-3.72346
	hold	CLK (R)	-0.15287	-0.31866	-3.74543
	hold	CLK (R)	-0.12955	-0.29202	-3.32873
	setup	CLK (R)	0.16539	0.31956	3.37328
	setup	CLK (R)	0.18531	0.33827	3.72836
	setup	CLK (R)	0.23137	0.37510	3.80384
	setup	CLK (R)	0.14503	0.30524	3.33504
sky130_fd_sc_hs__sedfxtp_2	hold	CLK (R)	-0.13493	-0.30173	-3.34902
	hold	CLK (R)	-0.15631	-0.31821	-3.71326
	hold	CLK (R)	-0.14993	-0.31432	-3.73933
	hold	CLK (R)	-0.13009	-0.29332	-3.32870
	setup	CLK (R)	0.16654	0.31854	3.36953
	setup	CLK (R)	0.18283	0.33511	3.71932
	setup	CLK (R)	0.22796	0.37370	3.80025
	setup	CLK (R)	0.14593	0.30477	3.33636
sky130_fd_sc_hs__sedfxtp_4	hold	CLK (R)	-0.13531	-0.30277	-3.35222
	hold	CLK (R)	-0.15768	-0.31929	-3.72683
	hold	CLK (R)	-0.15149	-0.31830	-3.75121
	hold	CLK (R)	-0.13258	-0.29678	-3.33130
	setup	CLK (R)	0.16248	0.31867	3.37347
	setup	CLK (R)	0.18504	0.33704	3.73338
	setup	CLK (R)	0.22317	0.37110	3.81568
	setup	CLK (R)	0.14615	0.30531	3.33915

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 ()**	0.07332	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.07332	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.11862	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.07332	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.11862	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.07332	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.11862	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.11862	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.07332	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.11862	0.63599	16.50020
sky130_fd_sc_hs__sedfxtp_2	**min_pulse_width**	**CLK ()**	0.08047	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.08047	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.15676	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.08047	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.15915	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.08047	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.15676	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.15676	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.08047	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.15915	0.63599	16.50020
sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.09716	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.09716	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.22829	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.09716	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.23067	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.09716	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.22591	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.22591	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.09716	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.23067	0.63599	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 ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.21875	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.20683	0.63599	16.50020
sky130_fd_sc_hs__sedfxtp_2	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.13769	0.63599	16.50020
	min_pulse_width	CLK ()	0.20445	0.63599	16.50020
	min_pulse_width	CLK ()	0.12577	0.63599	16.50020
	min_pulse_width	CLK ()	0.20445	0.63599	16.50020
	min_pulse_width	CLK ()	0.12815	0.63599	16.50020
	min_pulse_width	CLK ()	0.21637	0.63599	16.50020
	min_pulse_width	CLK ()	0.20445	0.63599	16.50020
	min_pulse_width	CLK ()	0.12577	0.63599	16.50020
	min_pulse_width	CLK ()	0.20445	0.63599	16.50020

sky130_fd_sc_hs__sedfxtp_4	**min_pulse_width**	**CLK ()**	0.12577	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.13531	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.19968	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.12577	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.19968	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.12577	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.20922	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.19968	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.12577	0.63599	16.50020
	min_pulse_width	**CLK ()**	0.19968	0.63599	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	0.02386	0.02422	0.04205
	CLK	0.02006	0.02042	0.03834
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02609	0.02670	0.04465
	CLK	0.02225	0.02286	0.04104
sky130_fd_sc_hs__sedfxtp_4	CLK	0.03028	0.03129	0.04956
	CLK	0.02635	0.02735	0.04585

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	CLK	0.02163	0.02179	0.03949
	CLK	0.01925	0.01938	0.03708
sky130_fd_sc_hs__sedfxtp_2	CLK	0.02404	0.02437	0.04226
	CLK	0.02167	0.02197	0.03977
sky130_fd_sc_hs__sedfxtp_4	CLK	0.02863	0.02850	0.04637
	CLK	0.02614	0.02596	0.04375

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00387	0.00390	0.01413
	(DE * SCE)	0.00143	0.00145	0.01169
	(CLK * DE * !SCE)	0.00797	0.00797	0.01669
	(CLK * DE * !SCE)	0.00480	0.00479	0.01353
	(CLK * !DE * !SCE)	0.00094	0.00094	0.00094
	(CLK * !DE * !SCE)	-0.00064	-0.00065	-0.00064
	(!DE * SCE)	0.00094	0.00095	0.00094
	(!DE * SCE)	-0.00063	-0.00064	-0.00064
	(!CLK * DE * !SCE * Q)	0.01371	0.01373	0.02277
	(!CLK * DE * !SCE * Q)	0.01054	0.01056	0.01960
	(!CLK * DE * !SCE * !Q)	0.01330	0.01332	0.02216
	(!CLK * DE * !SCE * !Q)	0.01009	0.01011	0.01895
	(!CLK * !DE * !SCE)	0.00093	0.00094	0.00094
	(!CLK * !DE * !SCE)	-0.00064	-0.00065	-0.00064
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00400	0.00401	0.01421
	(DE * SCE)	0.00144	0.00144	0.01165
	(CLK * DE * !SCE)	0.00809	0.00809	0.01679
	(CLK * DE * !SCE)	0.00479	0.00478	0.01348
	(CLK * !DE * !SCE)	0.00098	0.00098	0.00098
	(CLK * !DE * !SCE)	-0.00068	-0.00068	-0.00068
	(!DE * SCE)	0.00098	0.00099	0.00098
	(!DE * SCE)	-0.00067	-0.00068	-0.00067
	(!CLK * DE * !SCE * Q)	0.01381	0.01383	0.02286
	(!CLK * DE * !SCE * Q)	0.01051	0.01052	0.01956
	(!CLK * DE * !SCE * !Q)	0.01344	0.01344	0.02224
	(!CLK * DE * !SCE * !Q)	0.01011	0.01011	0.01891
	(!CLK * !DE * !SCE)	0.00097	0.00097	0.00098
	(!CLK * !DE * !SCE)	-0.00067	-0.00067	-0.00067

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00401	0.00402	0.01424
	(DE * SCE)	0.00144	0.00145	0.01168
	(CLK * DE * !SCE)	0.00816	0.00815	0.01681
	(CLK * DE * !SCE)	0.00485	0.00484	0.01350
	(CLK * !DE * !SCE)	0.00098	0.00099	0.00098
	(CLK * !DE * !SCE)	-0.00068	-0.00068	-0.00068
	(!DE * SCE)	0.00098	0.00100	0.00098
	(!DE * SCE)	-0.00067	-0.00069	-0.00067
	(!CLK * DE * !SCE * Q)	0.01372	0.01374	0.02276
	(!CLK * DE * !SCE * Q)	0.01042	0.01043	0.01946
	(!CLK * DE * !SCE * !Q)	0.01331	0.01332	0.02215
	(!CLK * DE * !SCE * !Q)	0.00998	0.00997	0.01881
	(!CLK * !DE * !SCE)	0.00098	0.00098	0.00098
	(!CLK * !DE * !SCE)	-0.00067	-0.00068	-0.00068

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

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

sky130_fd_sc_hs__sedfxtp_1	**(DE * SCE)**	0.00123	0.00167	0.01193
	(DE * SCE)	0.00371	0.00415	0.01440
	(CLK * DE * !SCE)	0.00238	0.00257	0.01206
	(CLK * DE * !SCE)	0.00558	0.00578	0.01527
	(CLK * !DE * !SCE)	-0.00028	-0.00028	-0.00028
	(CLK * !DE * !SCE)	0.00133	0.00134	0.00133
	(!DE * SCE)	-0.00028	-0.00028	-0.00028
	(!DE * SCE)	0.00133	0.00134	0.00133
	(!CLK * DE * !SCE * Q)	0.00791	0.00814	0.02018
	(!CLK * DE * !SCE * Q)	0.01109	0.01131	0.02335
	(!CLK * DE * !SCE * !Q)	0.00852	0.00880	0.02103
	(!CLK * DE * !SCE * !Q)	0.01174	0.01201	0.02424
	(!CLK * !DE * !SCE)	-0.00028	-0.00028	-0.00028
	(!CLK * !DE * !SCE)	0.00133	0.00133	0.00133
sky130_fd_sc_hs__sedfxtp_2	**(DE * SCE)**	0.00118	0.00161	0.01185
	(DE * SCE)	0.00378	0.00419	0.01444
	(CLK * DE * !SCE)	0.00231	0.00262	0.01197
	(CLK * DE * !SCE)	0.00565	0.00595	0.01531
	(CLK * !DE * !SCE)	-0.00029	-0.00028	-0.00028
	(CLK * !DE * !SCE)	0.00141	0.00141	0.00141
	(!DE * SCE)	-0.00028	-0.00028	-0.00028
	(!DE * SCE)	0.00141	0.00141	0.00141
	(!CLK * DE * !SCE * Q)	0.00784	0.00815	0.02011
	(!CLK * DE * !SCE * Q)	0.01114	0.01145	0.02341
	(!CLK * DE * !SCE * !Q)	0.00843	0.00876	0.02091
	(!CLK * DE * !SCE * !Q)	0.01177	0.01209	0.02424
	(!CLK * !DE * !SCE)	-0.00029	-0.00028	-0.00028
	(!CLK * !DE * !SCE)	0.00141	0.00141	0.00141

sky130_fd_sc_hs__sedfxtp_4	**(DE * SCE)**	0.00114	0.00156	0.01182
	(DE * SCE)	0.00375	0.00416	0.01442
	(CLK * DE * !SCE)	0.00244	0.00275	0.01207
	(CLK * DE * !SCE)	0.00579	0.00609	0.01541
	(CLK * !DE * !SCE)	-0.00029	-0.00028	-0.00028
	(CLK * !DE * !SCE)	0.00141	0.00141	0.00141
	(!DE * SCE)	-0.00028	-0.00028	-0.00028
	(!DE * SCE)	0.00142	0.00142	0.00141
	(!CLK * DE * !SCE * Q)	0.00791	0.00823	0.02017
	(!CLK * DE * !SCE * Q)	0.01121	0.01153	0.02347
	(!CLK * DE * !SCE * !Q)	0.00855	0.00887	0.02101
	(!CLK * DE * !SCE * !Q)	0.01189	0.01221	0.02435
	(!CLK * !DE * !SCE)	-0.00029	-0.00029	-0.00028
	(!CLK * !DE * !SCE)	0.00141	0.00142	0.00141

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

Cell Name	When	Power(pJ)		
		first	**mid**	**last**
sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00722	0.00726	0.02438
	SCE	0.00180	0.00180	0.01895
	(CLK * !SCE)	0.01117	0.01120	0.02768
	(CLK * !SCE)	0.00501	0.00501	0.02152
	(!CLK * D * !SCE * Q)	0.00451	0.00449	0.01706
	(!CLK * D * !SCE * Q)	0.00004	0.00001	0.01258
	(!CLK * D * !SCE * !Q)	0.01688	0.01693	0.03389
	(!CLK * D * !SCE * !Q)	0.01072	0.01074	0.02774
	(!CLK * !D * !SCE * Q)	0.01321	0.01332	0.02598
	(!CLK * !D * !SCE * Q)	0.01039	0.01047	0.02314
	(!CLK * !D * !SCE * !Q)	0.00444	0.00457	0.01710
	(!CLK * !D * !SCE * !Q)	0.00001	0.00010	0.01267

sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00733	0.00736	0.02447
	SCE	0.00180	0.00180	0.01892
	(CLK * !SCE)	0.01132	0.01134	0.02781
	(CLK * !SCE)	0.00505	0.00505	0.02154
	(!CLK * D * !SCE * Q)	0.00453	0.00452	0.01709
	(!CLK * D * !SCE * Q)	0.00001	-0.00004	0.01254
	(!CLK * D * !SCE * !Q)	0.01699	0.01705	0.03401
	(!CLK * D * !SCE * !Q)	0.01071	0.01074	0.02773
	(!CLK * !D * !SCE * Q)	0.01325	0.01332	0.02599
	(!CLK * !D * !SCE * Q)	0.01041	0.01046	0.02313
	(!CLK * !D * !SCE * !Q)	0.00447	0.00457	0.01713
	(!CLK * !D * !SCE * !Q)	-0.00003	0.00008	0.01263
sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00731	0.00735	0.02446
	SCE	0.00180	0.00180	0.01894
	(CLK * !SCE)	0.01134	0.01137	0.02783
	(CLK * !SCE)	0.00509	0.00509	0.02157
	(!CLK * D * !SCE * Q)	0.00452	0.00451	0.01708
	(!CLK * D * !SCE * Q)	0.00001	-0.00003	0.01256
	(!CLK * D * !SCE * !Q)	0.01684	0.01689	0.03388
	(!CLK * D * !SCE * !Q)	0.01059	0.01062	0.02761
	(!CLK * !D * !SCE * Q)	0.01330	0.01339	0.02607
	(!CLK * !D * !SCE * Q)	0.01048	0.01054	0.02322
	(!CLK * !D * !SCE * !Q)	0.00446	0.00459	0.01713
	(!CLK * !D * !SCE * !Q)	-0.00002	0.00008	0.01265

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

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

sky130_fd_sc_hs__sedfxtp_1	**SCE**	0.00184	0.00222	0.01941
	SCE	0.00726	0.00766	0.02483
	(CLK * !SCE)	0.00294	0.00329	0.01995
	(CLK * !SCE)	0.00910	0.00947	0.02611
	(!CLK * D * !SCE * Q)	-0.00014	0.00038	0.01289
	(!CLK * D * !SCE * Q)	0.00433	0.00487	0.01737
	(!CLK * D * !SCE * !Q)	0.00902	0.00940	0.02810
	(!CLK * D * !SCE * !Q)	0.01518	0.01558	0.03425
	(!CLK * !D * !SCE * Q)	0.01356	0.01402	0.02628
	(!CLK * !D * !SCE * Q)	0.01636	0.01685	0.02913
	(!CLK * !D * !SCE * !Q)	-0.00024	0.00033	0.01283
	(!CLK * !D * !SCE * !Q)	0.00417	0.00478	0.01727
sky130_fd_sc_hs__sedfxtp_2	**SCE**	0.00184	0.00220	0.01938
	SCE	0.00737	0.00776	0.02492
	(CLK * !SCE)	0.00292	0.00327	0.01991
	(CLK * !SCE)	0.00920	0.00956	0.02618
	(!CLK * D * !SCE * Q)	-0.00016	0.00035	0.01287
	(!CLK * D * !SCE * Q)	0.00437	0.00491	0.01742
	(!CLK * D * !SCE * !Q)	0.00895	0.00933	0.02803
	(!CLK * D * !SCE * !Q)	0.01524	0.01563	0.03430
	(!CLK * !D * !SCE * Q)	0.01356	0.01402	0.02634
	(!CLK * !D * !SCE * Q)	0.01638	0.01687	0.02921
	(!CLK * !D * !SCE * !Q)	-0.00026	0.00030	0.01280
	(!CLK * !D * !SCE * !Q)	0.00422	0.00482	0.01732

sky130_fd_sc_hs__sedfxtp_4	**SCE**	0.00180	0.00217	0.01936
	SCE	0.00731	0.00771	0.02487
	(CLK * !SCE)	0.00306	0.00341	0.02004
	(CLK * !SCE)	0.00931	0.00967	0.02628
	(!CLK * D * !SCE * Q)	-0.00016	0.00036	0.01288
	(!CLK * D * !SCE * Q)	0.00435	0.00490	0.01740
	(!CLK * D * !SCE * !Q)	0.00907	0.00945	0.02814
	(!CLK * D * !SCE * !Q)	0.01533	0.01572	0.03439
	(!CLK * !D * !SCE * Q)	0.01347	0.01394	0.02620
	(!CLK * !D * !SCE * Q)	0.01627	0.01677	0.02905
	(!CLK * !D * !SCE * !Q)	-0.00026	0.00031	0.01281
	(!CLK * !D * !SCE * !Q)	0.00420	0.00481	0.01730

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00440	0.00435	0.00884
	(CLK * SCE)	0.00176	0.00169	0.00620
	(!CLK * SCE)	0.01011	0.01007	0.01496
	(!CLK * SCE)	0.00746	0.00742	0.01231
	!SCE	0.00086	0.00076	0.00074
	!SCE	-0.00089	-0.00100	-0.00101
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00450	0.00445	0.00893
	(CLK * SCE)	0.00182	0.00175	0.00625
	(!CLK * SCE)	0.01017	0.01013	0.01502
	(!CLK * SCE)	0.00749	0.00744	0.01233
	!SCE	0.00088	0.00078	0.00076
	!SCE	-0.00090	-0.00101	-0.00102
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00450	0.00445	0.00892
	(CLK * SCE)	0.00184	0.00177	0.00625
	(!CLK * SCE)	0.01001	0.00997	0.01485
	(!CLK * SCE)	0.00734	0.00729	0.01218
	!SCE	0.00087	0.00077	0.00075
	!SCE	-0.00090	-0.00101	-0.00102

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * SCE)	0.00217	0.00210	0.00664
	(CLK * SCE)	0.00482	0.00476	0.00928
	(!CLK * SCE)	0.00795	0.00790	0.01413
	(!CLK * SCE)	0.01060	0.01056	0.01677
	!SCE	-0.00070	-0.00072	-0.00073
	!SCE	0.00103	0.00104	0.00103
sky130_fd_sc_hs__sedfxtp_2	(CLK * SCE)	0.00209	0.00203	0.00657
	(CLK * SCE)	0.00478	0.00472	0.00924
	(!CLK * SCE)	0.00783	0.00780	0.01403
	(!CLK * SCE)	0.01051	0.01048	0.01671
	!SCE	-0.00072	-0.00074	-0.00074
	!SCE	0.00103	0.00105	0.00104
sky130_fd_sc_hs__sedfxtp_4	(CLK * SCE)	0.00231	0.00225	0.00675
	(CLK * SCE)	0.00499	0.00493	0.00941
	(!CLK * SCE)	0.00803	0.00798	0.01419
	(!CLK * SCE)	0.01071	0.01065	0.01686
	!SCE	-0.00071	-0.00074	-0.00074
	!SCE	0.00103	0.00104	0.00104

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

Cell Name	When	Power(pJ)		
		first	mid	last

sky130_fd_sc_hs__sedfxtp_1	**(CLK * D)**	0.00652	0.00681	0.02857
	(CLK * D)	0.00189	0.00217	0.02394
	(CLK * !D)	0.00679	0.00707	0.02868
	(CLK * !D)	0.00216	0.00243	0.02405
	(!CLK * D * SCD * Q)	0.00382	0.00399	0.01655
	(!CLK * D * SCD * Q)	-0.00006	0.00009	0.01267
	(!CLK * D * DE * SCD * !Q)	0.00371	0.00388	0.01644
	(!CLK * D * DE * SCD * !Q)	-0.00017	-0.00003	0.01255
	(!CLK * D * DE * !SCD * !Q)	0.01268	0.01266	0.02882
	(!CLK * D * DE * !SCD * !Q)	0.00955	0.00951	0.02565
	(!CLK * D * !SCD * Q)	0.01263	0.01259	0.02878
	(!CLK * D * !SCD * Q)	0.00950	0.00944	0.02561
	(!CLK * D * !DE * SCD * !Q)	0.01223	0.01247	0.03444
	(!CLK * D * !DE * SCD * !Q)	0.00761	0.00783	0.02981
	(!CLK * D * !DE * !SCD * !Q)	0.00425	0.00442	0.01700
	(!CLK * D * !DE * !SCD * !Q)	0.00037	0.00052	0.01311
	(!CLK * !D * SCD * !Q)	0.01223	0.01247	0.03431
	(!CLK * !D * SCD * !Q)	0.00761	0.00784	0.02968
	(!CLK * !D * DE * SCD * Q)	0.01254	0.01277	0.03458
	(!CLK * !D * DE * SCD * Q)	0.00792	0.00813	0.02995
	(!CLK * !D * DE * !SCD * Q)	0.00437	0.00454	0.01712
	(!CLK * !D * DE * !SCD * Q)	0.00049	0.00064	0.01323
	(!CLK * !D * !SCD * !Q)	0.00425	0.00442	0.01700
	(!CLK * !D * !SCD * !Q)	0.00037	0.00052	0.01311
	(!CLK * !D * !DE * SCD * Q)	0.00382	0.00399	0.01655
	(!CLK * !D * !DE * SCD * Q)	-0.00006	0.00009	0.01267
	(!CLK * !D * !DE * !SCD * Q)	0.01264	0.01259	0.02878
	(!CLK * !D * !DE * !SCD * Q)	0.00951	0.00943	0.02561

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00663	0.00691	0.02866
	(CLK * D)	0.00194	0.00221	0.02397
	(CLK * !D)	0.00684	0.00712	0.02871
	(CLK * !D)	0.00215	0.00240	0.02401
	(!CLK * D * SCD * Q)	0.00388	0.00404	0.01659
	(!CLK * D * SCD * Q)	-0.00007	0.00007	0.01264
	(!CLK * D * DE * SCD * !Q)	0.00377	0.00393	0.01648
	(!CLK * D * DE * SCD * !Q)	-0.00018	-0.00004	0.01253
	(!CLK * D * DE * !SCD * !Q)	0.01265	0.01261	0.02877
	(!CLK * D * DE * !SCD * !Q)	0.00946	0.00939	0.02555
	(!CLK * D * !SCD * Q)	0.01262	0.01258	0.02875
	(!CLK * D * !SCD * Q)	0.00943	0.00936	0.02553
	(!CLK * D * !DE * SCD * !Q)	0.01231	0.01254	0.03451
	(!CLK * D * !DE * SCD * !Q)	0.00762	0.00783	0.02981
	(!CLK * D * !DE * !SCD * !Q)	0.00430	0.00446	0.01703
	(!CLK * D * !DE * !SCD * !Q)	0.00036	0.00050	0.01308
	(!CLK * !D * SCD * !Q)	0.01231	0.01255	0.03437
	(!CLK * !D * SCD * !Q)	0.00761	0.00784	0.02968
	(!CLK * !D * DE * SCD * Q)	0.01257	0.01279	0.03461
	(!CLK * !D * DE * SCD * Q)	0.00788	0.00808	0.02991
	(!CLK * !D * DE * !SCD * Q)	0.00441	0.00457	0.01714
	(!CLK * !D * DE * !SCD * Q)	0.00047	0.00061	0.01319
	(!CLK * !D * !SCD * !Q)	0.00430	0.00446	0.01703
	(!CLK * !D * !SCD * !Q)	0.00036	0.00050	0.01308
	(!CLK * !D * !DE * SCD * Q)	0.00388	0.00404	0.01659
	(!CLK * !D * !DE * SCD * Q)	-0.00007	0.00007	0.01264
	(!CLK * !D * !DE * !SCD * Q)	0.01264	0.01256	0.02875
	(!CLK * !D * !DE * !SCD * Q)	0.00945	0.00935	0.02554

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00665	0.00693	0.02862
	(CLK * D)	0.00199	0.00225	0.02396
	(CLK * !D)	0.00687	0.00714	0.02868
	(CLK * !D)	0.00221	0.00247	0.02402
	(!CLK * D * SCD * Q)	0.00385	0.00401	0.01657
	(!CLK * D * SCD * Q)	-0.00007	0.00007	0.01265
	(!CLK * D * DE * SCD * !Q)	0.00374	0.00390	0.01646
	(!CLK * D * DE * SCD * !Q)	-0.00017	-0.00003	0.01254
	(!CLK * D * DE * !SCD * !Q)	0.01280	0.01277	0.02894
	(!CLK * D * DE * !SCD * !Q)	0.00963	0.00958	0.02574
	(!CLK * D * !SCD * Q)	0.01274	0.01271	0.02884
	(!CLK * D * !SCD * Q)	0.00957	0.00952	0.02565
	(!CLK * D * !DE * SCD * !Q)	0.01216	0.01239	0.03435
	(!CLK * D * !DE * SCD * !Q)	0.00750	0.00772	0.02968
	(!CLK * D * !DE * !SCD * !Q)	0.00428	0.00444	0.01702
	(!CLK * D * !DE * !SCD * !Q)	0.00036	0.00051	0.01310
	(!CLK * !D * SCD * !Q)	0.01216	0.01239	0.03420
	(!CLK * !D * SCD * !Q)	0.00750	0.00772	0.02954
	(!CLK * !D * DE * SCD * Q)	0.01245	0.01267	0.03448
	(!CLK * !D * DE * SCD * Q)	0.00779	0.00800	0.02982
	(!CLK * !D * DE * !SCD * Q)	0.00439	0.00455	0.01714
	(!CLK * !D * DE * !SCD * Q)	0.00048	0.00062	0.01321
	(!CLK * !D * !SCD * !Q)	0.00428	0.00444	0.01703
	(!CLK * !D * !SCD * !Q)	0.00037	0.00052	0.01310
	(!CLK * !D * !DE * SCD * Q)	0.00385	0.00401	0.01658
	(!CLK * !D * !DE * SCD * Q)	-0.00007	0.00007	0.01266
	(!CLK * !D * !DE * !SCD * Q)	0.01275	0.01269	0.02889
	(!CLK * !D * !DE * !SCD * Q)	0.00959	0.00951	0.02570

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(CLK * D)	0.00428	0.00552	0.02506
	(CLK * D)	0.00742	0.00868	0.02809
	(CLK * !D)	0.00430	0.00555	0.02514
	(CLK * !D)	0.00744	0.00871	0.02817
	(!CLK * D * SCD * Q)	0.00014	0.00069	0.01338
	(!CLK * D * SCD * Q)	0.00402	0.00459	0.01726
	(!CLK * D * DE * SCD * !Q)	0.00026	0.00081	0.01350
	(!CLK * D * DE * SCD * !Q)	0.00414	0.00471	0.01738
	(!CLK * D * DE * !SCD * !Q)	0.00992	0.01117	0.03055
	(!CLK * D * DE * !SCD * !Q)	0.01306	0.01432	0.03360
	(!CLK * D * !SCD * Q)	0.00998	0.01123	0.03059
	(!CLK * D * !SCD * Q)	0.01312	0.01437	0.03364
	(!CLK * D * !DE * SCD * !Q)	0.00692	0.00776	0.03117
	(!CLK * D * !DE * SCD * !Q)	0.01152	0.01239	0.03580
	(!CLK * D * !DE * !SCD * !Q)	-0.00022	0.00035	0.01293
	(!CLK * D * !DE * !SCD * !Q)	0.00365	0.00422	0.01682
	(!CLK * !D * SCD * !Q)	0.00694	0.00778	0.03099
	(!CLK * !D * SCD * !Q)	0.01155	0.01241	0.03562
	(!CLK * !D * DE * SCD * Q)	0.00664	0.00748	0.03071
	(!CLK * !D * DE * SCD * Q)	0.01125	0.01211	0.03533
	(!CLK * !D * DE * !SCD * Q)	-0.00034	0.00023	0.01281
	(!CLK * !D * DE * !SCD * Q)	0.00353	0.00410	0.01670
	(!CLK * !D * !SCD * !Q)	-0.00022	0.00035	0.01293
	(!CLK * !D * !SCD * !Q)	0.00365	0.00422	0.01682
	(!CLK * !D * !DE * SCD * Q)	0.00014	0.00069	0.01338
	(!CLK * !D * !DE * SCD * Q)	0.00402	0.00459	0.01726
	(!CLK * !D * !DE * !SCD * Q)	0.00998	0.01122	0.03059
	(!CLK * !D * !DE * !SCD * Q)	0.01312	0.01438	0.03363

sky130_fd_sc_hs__sedfxtp_2	**(CLK * D)**	0.00429	0.00552	0.02506
	(CLK * D)	0.00749	0.00874	0.02814
	(CLK * !D)	0.00427	0.00551	0.02508
	(CLK * !D)	0.00747	0.00872	0.02817
	(!CLK * D * SCD * Q)	0.00012	0.00066	0.01334
	(!CLK * D * SCD * Q)	0.00406	0.00462	0.01729
	(!CLK * D * DE * SCD * !Q)	0.00023	0.00077	0.01345
	(!CLK * D * DE * SCD * !Q)	0.00417	0.00473	0.01740
	(!CLK * D * DE * !SCD * !Q)	0.00989	0.01113	0.03051
	(!CLK * D * DE * !SCD * !Q)	0.01309	0.01434	0.03363
	(!CLK * D * !SCD * Q)	0.00993	0.01116	0.03052
	(!CLK * D * !SCD * Q)	0.01313	0.01436	0.03363
	(!CLK * D * !DE * SCD * !Q)	0.00682	0.00767	0.03107
	(!CLK * D * !DE * SCD * !Q)	0.01150	0.01236	0.03577
	(!CLK * D * !DE * !SCD * !Q)	-0.00025	0.00032	0.01290
	(!CLK * D * !DE * !SCD * !Q)	0.00369	0.00425	0.01685
	(!CLK * !D * SCD * !Q)	0.00685	0.00769	0.03089
	(!CLK * !D * SCD * !Q)	0.01152	0.01238	0.03559
	(!CLK * !D * DE * SCD * Q)	0.00660	0.00743	0.03065
	(!CLK * !D * DE * SCD * Q)	0.01127	0.01212	0.03534
	(!CLK * !D * DE * !SCD * Q)	-0.00036	0.00021	0.01279
	(!CLK * !D * DE * !SCD * Q)	0.00358	0.00414	0.01674
	(!CLK * !D * !SCD * !Q)	-0.00025	0.00032	0.01290
	(!CLK * !D * !SCD * !Q)	0.00369	0.00425	0.01685
	(!CLK * !D * !DE * SCD * Q)	0.00012	0.00066	0.01334
	(!CLK * !D * !DE * SCD * Q)	0.00406	0.00462	0.01729
	(!CLK * !D * !DE * !SCD * Q)	0.00993	0.01116	0.03052
	(!CLK * !D * !DE * !SCD * Q)	0.01313	0.01437	0.03362

sky130_fd_sc_hs__sedfxtp_4	**(CLK * D)**	0.00433	0.00557	0.02510
	(CLK * D)	0.00750	0.00876	0.02816
	(CLK * !D)	0.00432	0.00556	0.02514
	(CLK * !D)	0.00749	0.00875	0.02820
	(!CLK * D * SCD * Q)	0.00014	0.00068	0.01337
	(!CLK * D * SCD * Q)	0.00405	0.00461	0.01729
	(!CLK * D * DE * SCD * !Q)	0.00025	0.00080	0.01349
	(!CLK * D * DE * SCD * !Q)	0.00416	0.00473	0.01741
	(!CLK * D * DE * !SCD * !Q)	0.00977	0.01102	0.03045
	(!CLK * D * DE * !SCD * !Q)	0.01294	0.01419	0.03353
	(!CLK * D * !SCD * Q)	0.00983	0.01107	0.03046
	(!CLK * D * !SCD * Q)	0.01300	0.01424	0.03354
	(!CLK * D * !DE * SCD * !Q)	0.00702	0.00786	0.03124
	(!CLK * D * !DE * SCD * !Q)	0.01166	0.01252	0.03590
	(!CLK * D * !DE * !SCD * !Q)	-0.00023	0.00034	0.01293
	(!CLK * D * !DE * !SCD * !Q)	0.00367	0.00424	0.01685
	(!CLK * !D * SCD * !Q)	0.00704	0.00788	0.03107
	(!CLK * !D * SCD * !Q)	0.01168	0.01254	0.03573
	(!CLK * !D * DE * SCD * Q)	0.00676	0.00759	0.03079
	(!CLK * !D * DE * SCD * Q)	0.01139	0.01225	0.03545
	(!CLK * !D * DE * !SCD * Q)	-0.00034	0.00023	0.01281
	(!CLK * !D * DE * !SCD * Q)	0.00356	0.00413	0.01673
	(!CLK * !D * !SCD * !Q)	-0.00023	0.00034	0.01293
	(!CLK * !D * !SCD * !Q)	0.00368	0.00425	0.01685
	(!CLK * !D * !DE * SCD * Q)	0.00013	0.00068	0.01337
	(!CLK * !D * !DE * SCD * Q)	0.00405	0.00461	0.01729
	(!CLK * !D * !DE * !SCD * Q)	0.00983	0.01107	0.03045
	(!CLK * !D * !DE * !SCD * Q)	0.01300	0.01425	0.03353

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

Cell Name	When	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__sedfxtp_1	(SCD * SCE * Q)	0.01083	0.01096	0.02786
	(SCD * SCE * Q)	0.00772	0.00783	0.02473
	(D * !SCE * Q)	0.01082	0.01093	0.02785
	(D * !SCE * Q)	0.00770	0.00780	0.02472
	(D * !DE * !SCE * !Q)	0.01097	0.01098	0.02808
	(D * !DE * !SCE * !Q)	0.00785	0.00784	0.02496
	(!SCD * SCE * !Q)	0.01099	0.01100	0.02810
	(!SCD * SCE * !Q)	0.00787	0.00786	0.02498
	(!D * !SCE * !Q)	0.01097	0.01098	0.02808
	(!D * !SCE * !Q)	0.00786	0.00784	0.02496
	(!D * !DE * !SCE * Q)	0.01082	0.01093	0.02784
	(!D * !DE * !SCE * Q)	0.00770	0.00780	0.02472
sky130_fd_sc_hs__sedfxtp_2	(SCD * SCE * Q)	0.01095	0.01090	0.02797
	(SCD * SCE * Q)	0.00782	0.00776	0.02483
	(D * !SCE * Q)	0.01094	0.01089	0.02797
	(D * !SCE * Q)	0.00781	0.00774	0.02482
	(D * !DE * !SCE * !Q)	0.01110	0.01112	0.02819
	(D * !DE * !SCE * !Q)	0.00797	0.00797	0.02505
	(!SCD * SCE * !Q)	0.01111	0.01113	0.02821
	(!SCD * SCE * !Q)	0.00798	0.00798	0.02507
	(!D * !SCE * !Q)	0.01110	0.01112	0.02819
	(!D * !SCE * !Q)	0.00797	0.00797	0.02505
	(!D * !DE * !SCE * Q)	0.01094	0.01088	0.02797
	(!D * !DE * !SCE * Q)	0.00781	0.00775	0.02482

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.01097	0.01096	0.02797
	(SCD * SCE * Q)	0.00772	0.00770	0.02471
	(D * !SCE * Q)	0.01096	0.01098	0.02796
	(D * !SCE * Q)	0.00771	0.00772	0.02470
	(D * !DE * !SCE * !Q)	0.01101	0.01095	0.02809
	(D * !DE * !SCE * !Q)	0.00776	0.00769	0.02484
	(!SCD * SCE * !Q)	0.01102	0.01097	0.02811
	(!SCD * SCE * !Q)	0.00778	0.00771	0.02486
	(!D * !SCE * !Q)	0.01101	0.01096	0.02809
	(!D * !SCE * !Q)	0.00776	0.00769	0.02484
	(!D * !DE * !SCE * Q)	0.01096	0.01099	0.02795
	(!D * !DE * !SCE * Q)	0.00771	0.00772	0.02470

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

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

sky130_fd_sc_hs__sedfxtp_1	**(SCD * SCE * Q)**	0.00623	0.00663	0.02409
	(SCD * SCE * Q)	0.00936	0.00976	0.02722
	(SCD * SCE * !Q)	0.01165	0.01190	0.02985
	(SCD * SCE * !Q)	0.01477	0.01502	0.03298
	(D * DE * !SCE * !Q)	0.01162	0.01187	0.02984
	(D * DE * !SCE * !Q)	0.01474	0.01500	0.03297
	(D * !SCE * Q)	0.00624	0.00664	0.02410
	(D * !SCE * Q)	0.00937	0.00977	0.02724
	(D * !DE * !SCE * !Q)	0.00599	0.00637	0.02378
	(D * !DE * !SCE * !Q)	0.00912	0.00949	0.02691
	(!SCD * SCE * Q)	0.01294	0.01343	0.03136
	(!SCD * SCE * Q)	0.01608	0.01657	0.03449
	(!SCD * SCE * !Q)	0.00599	0.00636	0.02377
	(!SCD * SCE * !Q)	0.00912	0.00948	0.02690
	(!D * DE * !SCE * Q)	0.01302	0.01352	0.03139
	(!D * DE * !SCE * Q)	0.01614	0.01663	0.03451
	(!D * !SCE * !Q)	0.00600	0.00637	0.02378
	(!D * !SCE * !Q)	0.00912	0.00949	0.02691
	(!D * !DE * !SCE * Q)	0.00624	0.00664	0.02411
	(!D * !DE * !SCE * Q)	0.00937	0.00977	0.02723

sky130_fd_sc_hs__sedfxtp_2	**(SCD * SCE * Q)**	0.00629	0.00668	0.02414
	(SCD * SCE * Q)	0.00944	0.00982	0.02728
	(SCD * SCE * !Q)	0.01166	0.01191	0.02984
	(SCD * SCE * !Q)	0.01481	0.01504	0.03298
	(D * DE * !SCE * !Q)	0.01162	0.01188	0.02982
	(D * DE * !SCE * !Q)	0.01477	0.01501	0.03296
	(D * !SCE * Q)	0.00630	0.00669	0.02415
	(D * !SCE * Q)	0.00944	0.00982	0.02729
	(D * !DE * !SCE * !Q)	0.00605	0.00641	0.02381
	(D * !DE * !SCE * !Q)	0.00919	0.00955	0.02696
	(!SCD * SCE * Q)	0.01300	0.01349	0.03147
	(!SCD * SCE * Q)	0.01615	0.01664	0.03463
	(!SCD * SCE * !Q)	0.00605	0.00641	0.02381
	(!SCD * SCE * !Q)	0.00919	0.00955	0.02695
	(!D * DE * !SCE * Q)	0.01307	0.01355	0.03152
	(!D * DE * !SCE * Q)	0.01622	0.01668	0.03465
	(!D * !SCE * !Q)	0.00605	0.00641	0.02381
	(!D * !SCE * !Q)	0.00919	0.00955	0.02696
	(!D * !DE * !SCE * Q)	0.00630	0.00668	0.02415
	(!D * !DE * !SCE * Q)	0.00944	0.00982	0.02729

sky130_fd_sc_hs__sedfxtp_4	**(SCD * SCE * Q)**	0.00611	0.00649	0.02394
	(SCD * SCE * Q)	0.00935	0.00975	0.02720
	(SCD * SCE * !Q)	0.01146	0.01168	0.02961
	(SCD * SCE * !Q)	0.01469	0.01494	0.03287
	(D * DE * !SCE * !Q)	0.01143	0.01166	0.02961
	(D * DE * !SCE * !Q)	0.01466	0.01491	0.03285
	(D * !SCE * Q)	0.00613	0.00650	0.02397
	(D * !SCE * Q)	0.00936	0.00975	0.02722
	(D * !DE * !SCE * !Q)	0.00599	0.00633	0.02373
	(D * !DE * !SCE * !Q)	0.00922	0.00958	0.02699
	(!SCD * SCE * Q)	0.01275	0.01323	0.03114
	(!SCD * SCE * Q)	0.01599	0.01648	0.03440
	(!SCD * SCE * !Q)	0.00598	0.00633	0.02372
	(!SCD * SCE * !Q)	0.00921	0.00957	0.02698
	(!D * DE * !SCE * Q)	0.01282	0.01329	0.03118
	(!D * DE * !SCE * Q)	0.01605	0.01654	0.03443
	(!D * !SCE * !Q)	0.00599	0.00633	0.02373
	(!D * !SCE * !Q)	0.00922	0.00958	0.02699
	(!D * !DE * !SCE * Q)	0.00613	0.00650	0.02395
	(!D * !DE * !SCE * Q)	0.00936	0.00975	0.02721

SKY130_FD_SC_HS__XNOR2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00468	0.00486	0.57558
sky130_fd_sc_hs__xnor2_2	0.00780	0.00771	1.07482
sky130_fd_sc_hs__xnor2_4	0.01387	0.01407	1.75131

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor2_1	0.00000	0.14281	0.45790
sky130_fd_sc_hs__xnor2_2	0.00000	0.08506	0.13023
sky130_fd_sc_hs__xnor2_4	0.00000	0.30904	0.91711

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	0.06212	0.36505	2.61010
	A->Y (FR)	!B	0.08739	0.99394	11.39070
	B->Y (RR)	A	0.05605	0.34834	2.61867
	B->Y (FR)	!A	0.07505	0.96188	11.18110
sky130_fd_sc_hs__xnor2_2	A->Y (RR)	B	0.06687	0.32960	2.56709
	A->Y (FR)	!B	0.08588	0.85575	11.21350
	B->Y (RR)	A	0.06421	0.32179	2.49881
	B->Y (FR)	!A	0.07077	0.82200	11.00330
sky130_fd_sc_hs__xnor2_4	A->Y (RR)	B	0.08192	0.45072	5.35345
	A->Y (FR)	!B	0.08931	0.77447	11.13390
	B->Y (RR)	A	0.07781	0.43633	5.28984
	B->Y (FR)	!A	0.07189	0.75071	11.06790

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	0.08100	0.47032	3.81705
	A->Y (RF)	!B	0.03013	0.34292	3.81082
	B->Y (FF)	A	0.07574	0.46697	4.05235
	B->Y (RF)	!A	0.02390	0.33043	3.75136
sky130_fd_sc_hs__xnor2_2	A->Y (FF)	B	0.09597	0.50496	4.14756
	A->Y (RF)	!B	0.02849	0.28425	3.65248
	B->Y (FF)	A	0.08544	0.46282	3.90702
	B->Y (RF)	!A	0.02544	0.27973	3.68906
sky130_fd_sc_hs__xnor2_4	A->Y (FF)	B	0.09173	0.46753	4.21199
	A->Y (RF)	!B	0.03026	0.23638	3.38632
	B->Y (FF)	A	0.08325	0.42937	3.98813
	B->Y (RF)	!A	0.02614	0.22997	3.43924

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	0.00754	0.00808	0.03086
	A	B	0.00135	0.00186	0.02477
	A	!B	-0.00080	-0.00094	-0.00007
	A	!B	0.00525	0.00513	0.00600
	B	A	0.00694	0.00767	0.03246
	B	A	0.00191	0.00264	0.02751
	B	!A	-0.00002	0.00015	0.00360
	B	!A	0.00496	0.00513	0.00857
sky130_fd_sc_hs__xnor2_2	A	B	0.01185	0.01210	0.02922
	A	B	0.00296	0.00314	0.02055
	A	!B	-0.00029	-0.00056	0.00109
	A	!B	0.01032	0.01007	0.01183
	B	A	0.01133	0.01150	0.02629
	B	A	0.00396	0.00415	0.01911
	B	!A	0.00026	0.00051	0.00651
	B	!A	0.00923	0.00950	0.01555
sky130_fd_sc_hs__xnor2_4	A	B	0.01933	0.02006	0.06230
	A	B	0.00332	0.00397	0.04621
	A	!B	-0.00120	-0.00176	0.00182
	A	!B	0.01910	0.01859	0.02218
	B	A	0.01862	0.01903	0.05814
	B	A	0.00564	0.00609	0.04519
	B	!A	-0.00031	0.00023	0.01182
	B	!A	0.01686	0.01749	0.02911

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	0.00178	0.00324	0.02639
	A	B	0.00798	0.00941	0.03257
	A	!B	0.00703	0.00699	0.00757
	A	!B	0.00084	0.00075	0.00138
	B	A	0.00279	0.00359	0.02811
	B	A	0.00773	0.00850	0.03297
	B	!A	0.00480	0.00481	0.00554
	B	!A	-0.00013	-0.00015	0.00047
sky130_fd_sc_hs__xnor2_2	A	B	0.00380	0.00503	0.02325
	A	B	0.01276	0.01397	0.03216
	A	!B	0.01329	0.01308	0.01474
	A	!B	0.00248	0.00222	0.00349
	B	A	0.00576	0.00572	0.02463
	B	A	0.01290	0.01283	0.03172
	B	!A	0.00955	0.00952	0.01108
	B	!A	0.00058	0.00051	0.00182
sky130_fd_sc_hs__xnor2_4	A	B	0.00624	0.00836	0.05314
	A	B	0.02233	0.02442	0.06857
	A	!B	0.02451	0.02397	0.02722
	A	!B	0.00389	0.00338	0.00632
	B	A	0.00859	0.00933	0.05388
	B	A	0.02113	0.02189	0.06640
	B	!A	0.01774	0.01776	0.02120
	B	!A	0.00069	0.00059	0.00368

SKY130_FD_SC_HS__XNOR3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00248	0.00654	0.00404	1.12609
sky130_fd_sc_hs__xnor3_2	0.00253	0.00657	0.00409	2.23603
sky130_fd_sc_hs__xnor3_4	0.00251	0.00656	0.00400	4.37934

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xnor3_1	0.00000	0.77161	0.87561
sky130_fd_sc_hs__xnor3_2	0.00000	0.78815	0.90803
sky130_fd_sc_hs__xnor3_4	0.00000	0.82123	0.97288

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)	0.22416	0.93820	8.76570
	B->X (-R)	0.16143	0.83917	8.63597
	C->X (-R)	0.12162	0.79122	8.39550
sky130_fd_sc_hs__xnor3_2	A->X (-R)	0.23822	0.85944	8.76939
	B->X (-R)	0.16981	0.75334	8.62486
	C->X (-R)	0.12742	0.70500	8.38915
sky130_fd_sc_hs__xnor3_4	A->X (-R)	0.26919	0.83038	8.81283
	B->X (-R)	0.20646	0.73241	8.70798
	C->X (-R)	0.15809	0.67905	8.43819

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xnor3_1	A->X (-F)	0.17727	0.76196	5.18210
	B->X (-F)	0.17238	0.73394	5.37828
	C->X (-F)	0.10717	0.59615	4.92978
sky130_fd_sc_hs__xnor3_2	A->X (-F)	0.19355	0.75998	5.15520
	B->X (-F)	0.18399	0.72115	5.35158
	C->X (-F)	0.12095	0.60542	4.93097
sky130_fd_sc_hs__xnor3_4	A->X (-F)	0.23281	0.78993	5.35631
	B->X (-F)	0.22415	0.75728	5.57235
	C->X (-F)	0.16529	0.65191	5.17787

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01787	0.01818	0.03845
	A	0.01780	0.01893	0.03960
	B	0.01624	0.01765	0.06381
	B	0.01650	0.01922	0.06512
	C	0.00836	0.00877	0.03457
	C	0.00862	0.01056	0.03894
sky130_fd_sc_hs__xnor3_2	A	0.01974	0.02020	0.03976
	A	0.01945	0.02078	0.04117
	B	0.01801	0.01953	0.06459
	B	0.01818	0.02064	0.06615
	C	0.01030	0.01091	0.03613
	C	0.01032	0.01245	0.04278
sky130_fd_sc_hs__xnor3_4	A	0.02441	0.02499	0.04503
	A	0.02046	0.02185	0.04179
	B	0.02248	0.02407	0.06831
	B	0.02261	0.02517	0.07066
	C	0.01467	0.01541	0.04166
	C	0.01455	0.01695	0.05018

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xnor3_1	A	0.01448	0.01520	0.03577
	A	0.01842	0.01920	0.03927
	B	0.01496	0.01647	0.06238
	B	0.01731	0.01929	0.06448
	C	0.00942	0.01084	0.03650
	C	0.00757	0.00898	0.03624
sky130_fd_sc_hs__xnor3_2	A	0.01673	0.01710	0.03692
	A	0.02075	0.02110	0.04018
	B	0.01725	0.01843	0.06308
	B	0.01950	0.02119	0.06547
	C	0.01162	0.01289	0.03948
	C	0.00987	0.01104	0.03804
sky130_fd_sc_hs__xnor3_4	A	0.02295	0.02177	0.04337
	A	0.02690	0.02589	0.04504
	B	0.01696	0.01726	0.06293
	B	0.02540	0.02584	0.06971
	C	0.01764	0.01765	0.04396
	C	0.01601	0.01580	0.04287

SKY130_FD_SC_HS__XOR2x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00477	0.00497	0.52428
sky130_fd_sc_hs__xor2_2	0.00729	0.00723	0.97375
sky130_fd_sc_hs__xor2_4	0.01476	0.01454	1.65765

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
sky130_fd_sc_hs__xor2_1	0.00000	0.03494	0.05902
sky130_fd_sc_hs__xor2_2	0.00000	0.04956	0.06742
sky130_fd_sc_hs__xor2_4	0.00000	0.09850	0.13232

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	0.07855	0.68734	5.64670
	A->X (FR)	B	0.10395	1.03678	11.45030
	B->X (RR)	!A	0.09814	0.71983	6.18244
	B->X (FR)	A	0.07866	0.98091	11.08400
sky130_fd_sc_hs__xor2_2	A->X (RR)	!B	0.06648	0.57212	5.92472
	A->X (FR)	B	0.09136	0.88909	11.40010
	B->X (RR)	!A	0.08111	0.55935	5.98947
	B->X (FR)	A	0.07152	0.87063	11.39020
sky130_fd_sc_hs__xor2_4	A->X (RR)	!B	0.06426	0.46740	5.81134
	A->X (FR)	B	0.09196	0.76670	10.84610
	B->X (RR)	!A	0.07176	0.43854	5.57777
	B->X (FR)	A	0.07337	0.75840	11.03600

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	0.10589	0.48019	3.38212
	A->X (RF)	B	0.02759	0.31920	3.41655
	B->X (FF)	!A	0.09616	0.45442	3.27422
	B->X (RF)	A	0.02091	0.32706	3.58365
sky130_fd_sc_hs__xor2_2	A->X (FF)	!B	0.13829	0.58009	4.58174
	A->X (RF)	B	0.02528	0.27459	3.46028
	B->X (FF)	!A	0.12134	0.55115	4.48976
	B->X (RF)	A	0.02249	0.33433	4.32095
sky130_fd_sc_hs__xor2_4	A->X (FF)	!B	0.14024	0.54551	4.45542
	A->X (RF)	B	0.02668	0.22903	3.23430
	B->X (FF)	!A	0.11828	0.51065	4.28942
	B->X (RF)	A	0.02371	0.26474	3.85522

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	0.00003	-0.00006	0.00082
	A	B	0.00640	0.00632	0.00720
	A	!B	0.00872	0.00887	0.01788
	A	!B	0.00236	0.00249	0.01158
	B	A	-0.00003	-0.00014	0.00072
	B	A	0.00494	0.00484	0.00571
	B	!A	0.00790	0.00741	0.02382
	B	!A	0.00294	0.00243	0.01892
sky130_fd_sc_hs__xor2_2	A	B	0.00064	0.00047	0.00221
	A	B	0.01107	0.01092	0.01263
	A	!B	0.01163	0.01180	0.02292
	A	!B	0.00286	0.00303	0.01437
	B	A	-0.00022	-0.00041	0.00129
	B	A	0.00814	0.00799	0.00968
	B	!A	0.01154	0.01056	0.02927
	B	!A	0.00483	0.00383	0.02276
sky130_fd_sc_hs__xor2_4	A	B	0.00066	0.00016	0.00372
	A	B	0.02269	0.02228	0.02590
	A	!B	0.02330	0.02311	0.04239
	A	!B	0.00622	0.00599	0.02538
	B	A	-0.00036	-0.00068	0.00279
	B	A	0.01724	0.01697	0.02053
	B	!A	0.02049	0.01911	0.05281
	B	!A	0.00784	0.00647	0.04030

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	0.00636	0.00615	0.00687
	A	B	0.00004	-0.00021	0.00043
	A	!B	0.00146	0.00161	0.00958
	A	!B	0.00775	0.00788	0.01594
	B	A	0.00544	0.00541	0.00650
	B	A	0.00045	0.00037	0.00138
	B	!A	0.00235	0.00304	0.01931
	B	!A	0.00752	0.00817	0.02445
sky130_fd_sc_hs__xor2_2	A	B	0.01088	0.01057	0.01189
	A	B	0.00050	0.00008	0.00141
	A	!B	0.00136	0.00142	0.01081
	A	!B	0.00992	0.01005	0.01924
	B	A	0.00923	0.00902	0.01088
	B	A	0.00085	0.00064	0.00248
	B	!A	0.00263	0.00322	0.02156
	B	!A	0.00978	0.01039	0.02827
sky130_fd_sc_hs__xor2_4	A	B	0.02240	0.02159	0.02486
	A	B	0.00052	-0.00041	0.00250
	A	!B	0.00291	0.00303	0.02013
	A	!B	0.01965	0.01985	0.03646
	B	A	0.01887	0.01856	0.02248
	B	A	0.00120	0.00080	0.00480
	B	!A	0.00584	0.00707	0.03893
	B	!A	0.01934	0.02056	0.05200

SKY130_FD_SC_HS__XOR3x

sky130_fd_sc_hs_ff_1.56v_-40C.ccs
Cell Library: Process , Voltage
1.56, 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	0.00247	0.00671	0.00404	1.15367
sky130_fd_sc_hs__xor3_2	0.00249	0.00681	0.00403	2.23610
sky130_fd_sc_hs__xor3_4	0.00247	0.00691	0.00399	4.35586

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
sky130_fd_sc_hs__xor3_1	0.00000	0.77161	0.87562
sky130_fd_sc_hs__xor3_2	0.00000	0.78815	0.90804
sky130_fd_sc_hs__xor3_4	0.00000	0.82123	0.97289

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)	0.21862	0.92989	8.75525
	B->X (-R)	0.15393	0.82408	8.59070
	C->X (-R)	0.12238	0.79553	8.40751
sky130_fd_sc_hs__xor3_2	A->X (-R)	0.22751	0.84618	8.70207
	B->X (-R)	0.16459	0.74474	8.54681
	C->X (-R)	0.13040	0.71744	8.35341
sky130_fd_sc_hs__xor3_4	A->X (-R)	0.25667	0.81816	8.82212
	B->X (-R)	0.19682	0.71907	8.67499
	C->X (-R)	0.15476	0.68777	8.47416

Delay(ns) to X falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
sky130_fd_sc_hs__xor3_1	A->X (-F)	0.17364	0.75156	5.08675
	B->X (-F)	0.17028	0.72201	5.27820
	C->X (-F)	0.10322	0.57269	4.83474
sky130_fd_sc_hs__xor3_2	A->X (-F)	0.18774	0.75298	5.14568
	B->X (-F)	0.18431	0.72188	5.35747
	C->X (-F)	0.12211	0.61224	4.96817
sky130_fd_sc_hs__xor3_4	A->X (-F)	0.23125	0.79521	5.37654
	B->X (-F)	0.22781	0.76199	5.58681
	C->X (-F)	0.16240	0.66434	5.20872

Power Information

Internal switching power(pJ) to X rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01906	0.01925	0.03920
	A	0.01770	0.01876	0.03933
	B	0.01781	0.01912	0.06512
	B	0.01568	0.01840	0.06430
	C	0.00845	0.00888	0.03574
	C	0.00855	0.01047	0.03925
sky130_fd_sc_hs__xor3_2	A	0.02102	0.02141	0.04142
	A	0.01952	0.02081	0.04153
	B	0.01973	0.02121	0.06665
	B	0.01763	0.02051	0.06606
	C	0.01042	0.01098	0.03796
	C	0.01062	0.01275	0.03946
sky130_fd_sc_hs__xor3_4	A	0.02546	0.02603	0.04587
	A	0.02150	0.02209	0.04262
	B	0.02402	0.02562	0.07022
	B	0.02219	0.02515	0.07059
	C	0.01466	0.01534	0.04148
	C	0.00980	0.01050	0.03773

Internal switching power(pJ) to X falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
sky130_fd_sc_hs__xor3_1	A	0.01813	0.01821	0.03849
	A	0.01843	0.01918	0.03906
	B	0.01661	0.01787	0.06379
	B	0.01661	0.01868	0.06406
	C	0.01000	0.01139	0.03799
	C	0.00750	0.00892	0.03666
sky130_fd_sc_hs__xor3_2	A	0.01689	0.01719	0.03664
	A	0.02079	0.02108	0.04043
	B	0.01902	0.02006	0.06516
	B	0.01868	0.02050	0.06545
	C	0.01232	0.01369	0.03990
	C	0.00965	0.01095	0.03833
sky130_fd_sc_hs__xor3_4	A	0.02360	0.02226	0.04463
	A	0.02757	0.02636	0.04544
	B	0.01626	0.01681	0.06403
	B	0.02504	0.02558	0.07006
	C	0.01090	0.01088	0.03940
	C	0.01574	0.01581	0.04280