TMR_sky130_rhbd_tt_1P8_25C.ccs Library

Cell Groups
TMRDFFQNX1
TMRDFFQX1
TMRDFFRNQNX1
TMRDFFRNQX1
TMRDFFSNQNX1
TMRDFFSNQX1
TMRDFFSNRNQNX1
TMRDFFSNRNQX1

TMRDFFQNX1

TMR_sky130_rhbd_tt_1P8_25C.ccs Cell Library: Process , Voltage 1.80, Temp 25.00

Truth Table

INPUT		OUTPUT
D	CLK	QN
0	R	1
1	R	0
x	x	IQN

Footprint

Cell Name	Area
TMRDFFQNX1	550.33801

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	QN
TMRDFFQNX1	0.03880	0.07289	3.19295

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFQNX1	0.00000	80.34340	116.88600

Delay Information

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFQNX1	CLK->QN (RR)	0.48919	1.71462	7.70903

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFQNX1	CLK->QN (RF)	0.29802	0.72809	2.17277

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFQNX1	hold	CLK (R)	0.06737	0.10366	0.57852
	setup	CLK (R)	0.13351	0.27512	0.72763

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFQNX1	hold	CLK (R)	-0.07316	-0.18833	-0.72346
	setup	CLK (R)	0.09176	0.26588	1.32910

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFQNX1	min_pulse_width	CLK ()	D	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	!D	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFQNX1	min_pulse_width	CLK ()	D	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	!D	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFQNX1	CLK	0.00000	0.00000	0.00000
	CLK	74.71440	74.82220	75.38450

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFQNX1	CLK	0.00000	0.00000	0.00000
	CLK	63.43050	63.53300	64.05900

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQNX1	(CLK * QN)	0.00000	0.00000	0.00000
	(CLK * QN)	70.26690	70.26920	70.27230
	(CLK * !QN)	0.00000	0.00000	0.00000
	(CLK * !QN)	74.51000	74.58340	74.93980
	!CLK	0.00000	0.00000	0.00000
	!CLK	31.61860	31.73220	32.24860

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQNX1	(CLK * QN)	0.00000	0.00000	0.00000
	(CLK * QN)	72.12790	72.13110	72.13090
	(CLK * !QN)	0.00000	0.00000	0.00000
	(CLK * !QN)	50.49850	50.58190	50.94180
	!CLK	0.00000	0.00000	0.00000
	!CLK	31.67580	31.79500	32.32670

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQNX1	(D * !QN)	0.00000	0.00000	0.00000
	(D * !QN)	63.64350	63.74430	64.26290
	(!D * QN)	0.00000	0.00000	0.00000
	(!D * QN)	74.28820	74.37520	74.88090

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQNX1	(D * QN)	0.00000	0.00000	0.00000
	(D * QN)	29.43560	29.54430	30.06140
	(D * !QN)	0.00000	0.00000	0.00000
	(D * !QN)	36.52960	36.64430	37.17810
	(!D * QN)	0.00000	0.00000	0.00000
	(!D * QN)	29.76450	29.88680	30.40070
	(!D * !QN)	0.00000	0.00000	0.00000
	(!D * !QN)	35.01320	35.14440	35.66280

TMRDFFQX1

TMR_sky130_rhbd_tt_1P8_25C.ccs Cell
Library: Process , Voltage 1.80, Temp 25.00

Truth Table

INPUT		OUTPUT
D	CLK	Q
0	R	0
1	R	1
x	x	IQ

Footprint

Cell Name	Area
TMRDFFQX1	566.76599

Pin Capacitance Information

Cell Name	Pin Cap(pf)		Max Cap(pf)
	D	CLK	Q
TMRDFFQX1	0.03879	0.07298	5.23943

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFQX1	0.00000	83.30790	123.69400

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFQX1	CLK->Q (RR)	0.35605	1.35745	7.12728

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFQX1	CLK->Q (RF)	0.50488	1.27258	5.47985

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFQX1	hold	CLK (R)	0.06418	0.10337	0.56960
	setup	CLK (R)	0.11743	0.25909	0.71176

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFQX1	hold	CLK (R)	-0.07155	-0.18633	-0.71005
	setup	CLK (R)	0.09301	0.26588	1.33184

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFQX1	min_pulse_width	CLK ()	D	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	!D	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFQX1	min_pulse_width	CLK ()	D	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	!D	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFQX1	CLK	0.00000	0.00000	0.00000
	CLK	62.84200	62.94480	63.48180

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFQX1	CLK	0.00000	0.00000	0.00000
	CLK	78.99270	79.09290	79.61690

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQX1	(CLK * Q)	0.00000	0.00000	0.00000
	(CLK * Q)	73.77370	73.84700	74.20280
	(CLK * !Q)	0.00000	0.00000	0.00000
	(CLK * !Q)	74.45940	74.46240	74.46520
	!CLK	0.00000	0.00000	0.00000
	!CLK	35.23420	35.34810	35.86470

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQX1	(CLK * Q)	0.00000	0.00000	0.00000
	(CLK * Q)	50.03550	50.11950	50.47920
	(CLK * !Q)	0.00000	0.00000	0.00000
	(CLK * !Q)	76.32730	76.33010	76.33020
	!CLK	0.00000	0.00000	0.00000
	!CLK	35.29170	35.41180	35.94400

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQX1	(D * Q)	0.00000	0.00000	0.00000
	(D * Q)	63.00750	63.10790	63.62500
	(!D * !Q)	0.00000	0.00000	0.00000
	(!D * !Q)	78.59030	78.67770	79.18330

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFQX1	(D * Q)	0.00000	0.00000	0.00000
	(D * Q)	36.22370	36.33840	36.87220
	(D * !Q)	0.00000	0.00000	0.00000
	(D * !Q)	32.84550	32.95510	33.47300
	(!D * Q)	0.00000	0.00000	0.00000
	(!D * Q)	34.64490	34.77600	35.29330
	(!D * !Q)	0.00000	0.00000	0.00000
	(!D * !Q)	33.21300	33.33690	33.84820

TMRDFFRNQNX1

TMR_sky130_rhbd_tt_1P8_25C.ccs
Cell Library: Process , Voltage
1.80, Temp 25.00

Truth Table

INPUT			OUTPUT
D	RN	CLK	QN
x	x	x	-

Footprint

Cell Name	Area
TMRDFFRNQNX1	648.90601

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RN	CLK	QN
TMRDFFRNQNX1	0.03984	0.08896	0.06777	1.90988

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFRNQNX1	0.00000	599388.00000	943956.00000

Delay Information

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFRNQNX1	**CLK->QN (FR)**	0.76715	3.32718	13.34460

Constraint Information

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFRNQNX1	**min_pulse_width**	**CLK** ()	**(!D * RN)**	0.49510	2.66235	16.50020

Power Information

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFRNQNX1	CLK	0.00000	0.00000	0.00000
	CLK	483986.00000	483994.00000	484006.00000

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFRNQNX1	(CLK * RN * !QN)	0.00000	0.00000	0.00000
	(CLK * RN * !QN)	403891.00000	403892.00000	403889.00000
	(!CLK * RN * QN)	0.00000	0.00000	0.00000
	(!CLK * RN * QN)	430114.00000	430114.00000	430115.00000

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFRNQNX1	(!CLK * RN * QN)	0.00000	0.00000	0.00000
	(!CLK * RN * QN)	484211.00000	484212.00000	484215.00000

TMRDFFRNQX1

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Cell Library: Process , Voltage 1.80,
Temp 25.00

Truth Table

INPUT			OUTPUT
D	RN	CLK	Q
x	x	x	-

Footprint

Cell Name	Area
TMRDFFRNQX1	665.33398

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	RN	CLK	Q
TMRDFFRNQX1	0.03983	0.08898	0.06783	8.24161

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFRNQX1	0.00000	599844.00000	944539.00000

Delay Information

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFRNQX1	**CLK->Q (FF)**	0.73813	2.81551	13.64040

Constraint Information

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFRNQX1	**min_pulse_width**	**CLK ()**	**(!D * RN)**	0.48856	2.66235	16.50020

Power Information

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFRNQX1	CLK	-0.05433	-1.47488	-13.32260
	CLK	484277.00000	484286.00000	484297.00000

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFRNQX1	(CLK * RN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q)	404154.00000	404154.00000	404152.00000
	(!CLK * RN * !Q)	0.00000	0.00000	0.00000
	(!CLK * RN * !Q)	430652.00000	430651.00000	430652.00000

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFRNQX1	(!CLK * RN * !Q)	0.00000	0.00000	0.00000
	(!CLK * RN * !Q)	484524.00000	484524.00000	484527.00000

TMRDFFSNQNX1

TMR_sky130_rhbd_tt_1P8_25C.ccs
Cell Library: Process , Voltage
1.80, Temp 25.00

Truth Table

INPUT			OUTPUT
D	SN	CLK	QN
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQN

Footprint

Cell Name	Area
TMRDFFSNQNX1	616.04999

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SN	CLK	QN
TMRDFFSNQNX1	0.04043	0.06715	0.07093	3.08696

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFSNQNX1	0.00000	85.23720	151.46700

Delay Information

Delay(ns) to QN rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNQNX1	CLK->QN (RR)	0.47324	1.68623	7.50219
	SN->QN (FR)	0.55899	1.87685	8.19582

Delay(ns) to QN falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNQNX1	CLK->QN (RF)	0.31257	0.72655	2.14916

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQNX1	hold	CLK (R)	0.01427	0.05309	0.63107
	setup	CLK (R)	0.12855	0.29138	0.84885

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQNX1	hold	CLK (R)	-0.12872	-0.30774	-1.05647
	setup	CLK (R)	0.16438	0.40425	1.57377

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	hold	CLK (R)	SN	0.01427	0.05309	0.63107
	setup	CLK (R)	SN	0.12855	0.29138	0.84885

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	hold	CLK (R)	SN	-0.12872	-0.30774	-1.05647
	setup	CLK (R)	SN	0.16438	0.40425	1.57377

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQNX1	recovery	CLK (R)	0.03384	0.03064	0.27681
	removal	CLK (R)	-0.01259	-0.01108	-0.10599

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	recovery	CLK (R)	!D	0.03384	0.03064	0.27681
	removal	CLK (R)	!D	-0.01259	-0.01108	-0.10599

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	min_pulse_width	SN ()	(CLK * D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(CLK * !D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * !D)	0.42969	2.66235	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	min_pulse_width	CLK ()	(D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * SN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQNX1	min_pulse_width	CLK ()	(D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * SN)	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to QN rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	CLK	0.00000	0.00000	0.00000
	CLK	56.55360	56.67410	57.26160
	SN	54.93920	55.17290	55.96780

Internal switching power(pJ) to QN falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	CLK	0.00000	0.00000	0.00000
	CLK	105.53800	105.63300	106.14700

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(CLK * SN * !QN)	0.00000	0.00000	0.00000
	(CLK * SN * !QN)	101.11500	101.11300	101.11400
	(CLK * QN) + (!CLK * !SN * QN)	0.00000	0.00000	0.00000
	(CLK * QN) + (!CLK * !SN * QN)	69.03860	69.10600	69.43700
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	32.81540	32.91440	33.41480

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(CLK * SN * !QN)	0.00000	0.00000	0.00000
	(CLK * SN * !QN)	102.95400	102.95500	102.95400
	(CLK * QN) + (!CLK * !SN * QN)	0.00000	0.00000	0.00000
	(CLK * QN) + (!CLK * !SN * QN)	47.84680	47.92870	48.26910
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	46.31340	46.44150	46.95020

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(CLK * QN) + (!CLK * D * QN)	0.00000	0.00000	0.00000
	(CLK * QN) + (!CLK * D * QN)	51.93780	51.94190	51.94780
	(!CLK * !D * QN)	0.00000	0.00000	0.00000
	(!CLK * !D * QN)	39.58880	39.68870	40.15720

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(CLK * QN) + (!CLK * D * QN)	0.00000	0.00000	0.00000
	(CLK * QN) + (!CLK * D * QN)	55.78580	55.85830	56.10270
	(!CLK * !D * QN)	0.00000	0.00000	0.00000
	(!CLK * !D * QN)	10.94590	11.11190	11.75640

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(D * QN)	0.00000	0.00000	0.00000
	(D * QN)	56.42500	56.53010	57.08050
	(!D * SN * !QN)	0.00000	0.00000	0.00000
	(!D * SN * !QN)	105.20800	105.29900	105.79400
	(!D * !SN * QN)	0.00000	0.00000	0.00000
	(!D * !SN * QN)	29.17000	29.32230	29.95260

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQNX1	(D * SN * !QN)	0.00000	0.00000	0.00000
	(D * SN * !QN)	40.71700	40.83790	41.40850
	(D * QN)	0.00000	0.00000	0.00000
	(D * QN)	30.74900	30.86980	31.46480
	(!D * SN * QN)	0.00000	0.00000	0.00000
	(!D * SN * QN)	45.34150	45.47580	46.03410
	(!D * SN * !QN)	0.00000	0.00000	0.00000
	(!D * SN * !QN)	55.26570	55.39020	55.92520
	(!D * !SN * QN)	0.00000	0.00000	0.00000
	(!D * !SN * QN)	10.11780	10.26260	10.99670

TMRDFFSNQX1

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Cell Library: Process , Voltage 1.80,
Temp 25.00

Truth Table

INPUT			OUTPUT
D	SN	CLK	Q
0	1	R	0
1	1	R	1
x	0	x	1
x	1	x	IQ

Footprint

Cell Name	Area
TMRDFFSNQX1	632.47803

Pin Capacitance Information

Cell Name	Pin Cap(pf)			Max Cap(pf)
	D	SN	CLK	Q
TMRDFFSNQX1	0.04036	0.06958	0.07086	5.19317

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFSNQX1	0.00000	85.20620	149.46600

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNQX1	CLK->Q (RR)	0.35257	1.33769	7.04551
	SN->Q (FR)	0.28480	1.45638	7.89625

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNQX1	CLK->Q (RF)	0.55229	1.31751	5.53605

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQX1	hold	CLK (R)	0.01210	0.04031	0.46069
	setup	CLK (R)	0.14971	0.31364	0.91674

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQX1	hold	CLK (R)	-0.12656	-0.31296	-1.10931
	setup	CLK (R)	0.15525	0.36583	1.44070

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	hold	CLK (R)	SN	0.01210	0.04031	0.46069
	setup	CLK (R)	SN	0.14971	0.31364	0.91674

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	hold	CLK (R)	SN	-0.12656	-0.31296	-1.10931
	setup	CLK (R)	SN	0.15525	0.36583	1.44070

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNQX1	recovery	CLK (R)	0.02649	0.16056	3.67981
	removal	CLK (R)	-0.01122	-0.01108	-0.10886

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	recovery	CLK (R)	!D	0.02649	0.16056	3.67981
	removal	CLK (R)	!D	-0.01122	-0.01108	-0.10886

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	min_pulse_width	SN ()	(CLK * D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(CLK * !D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * D)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * !D)	0.42969	2.66235	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	min_pulse_width	CLK ()	(D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * SN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNQX1	min_pulse_width	CLK ()	(D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * SN)	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	CLK	0.00000	0.00000	0.00000
	CLK	58.90650	59.01830	59.56450
	SN	57.80580	57.95460	58.46270

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	CLK	0.00000	0.00000	0.00000
	CLK	105.54200	105.64500	106.18400

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(CLK * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q)	100.05700	100.06000	100.06200
	(CLK * Q) + (!CLK * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * Q) + (!CLK * !SN * Q)	79.38370	79.45190	79.78540
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	40.16770	40.26650	40.76510

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(CLK * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q)	101.96800	101.97000	101.97000
	(CLK * Q) + (!CLK * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * Q) + (!CLK * !SN * Q)	55.89770	55.97990	56.31590
	(!CLK * SN)	0.00000	0.00000	0.00000
	(!CLK * SN)	54.54100	54.66840	55.17850

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(CLK * Q) + (!CLK * D * Q)	0.00000	0.00000	0.00000
	(CLK * Q) + (!CLK * D * Q)	55.42420	55.42800	55.43210
	(!CLK * !D * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * Q)	44.35180	44.45180	44.92910

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(CLK * Q) + (!CLK * D * Q)	0.00000	0.00000	0.00000
	(CLK * Q) + (!CLK * D * Q)	58.77930	58.78370	58.78380
	(!CLK * !D * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * Q)	12.09730	12.22010	12.72150

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(D * Q)	0.00000	0.00000	0.00000
	(D * Q)	59.45670	59.56310	60.10070
	(!D * SN * !Q)	0.00000	0.00000	0.00000
	(!D * SN * !Q)	104.87500	104.96400	105.47700
	(!D * !SN * Q)	0.00000	0.00000	0.00000
	(!D * !SN * Q)	33.17800	33.33270	33.97920

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNQX1	(D * SN * !Q)	0.00000	0.00000	0.00000
	(D * SN * !Q)	40.86060	40.98260	41.56240
	(D * Q)	0.00000	0.00000	0.00000
	(D * Q)	37.77460	37.89610	38.48170
	(!D * SN * Q)	0.00000	0.00000	0.00000
	(!D * SN * Q)	54.54220	54.67420	55.23370
	(!D * SN * !Q)	0.00000	0.00000	0.00000
	(!D * SN * !Q)	53.49410	53.61080	54.12870
	(!D * !SN * Q)	0.00000	0.00000	0.00000
	(!D * !SN * Q)	11.60820	11.75080	12.47430

TMRDFFSNRNQNX1

TMR_sky130_rhbd_tt_1P8_25C.ccs
Cell Library: Process , Voltage
1.80, Temp 25.00

Truth Table

INPUT				OUTPUT
D	**RN**	**SN**	**CLK**	**Q**
0	**1**	**1**	**R**	**0**
1	**1**	**1**	**R**	**1**
x	**0**	**x**	**x**	**0**
x	**1**	**0**	**x**	**1**
x	**1**	**1**	**x**	**IQ**

Footprint

Cell Name	Area
TMRDFFSNRNQNX1	714.61798

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	**RN**	**SN**	**CLK**	**Q**
TMRDFFSNRNQNX1	0.04195	0.10404	0.07577	0.07534	3.09229

Leakage Information

Cell Name	Leakage(nW)		
	Min.	**Avg**	**Max.**
TMRDFFSNRNQNX1	0.00000	97.39300	168.17500

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNRNQNX1	CLK->Q (RR)	0.56598	1.81077	7.70300
	RN->Q (RR)	0.58446	1.97713	8.34619
	SN->Q (FR)	0.45750	1.80996	8.29121

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNRNQNX1	CLK->Q (RF)	0.32155	0.74692	2.20609
	RN->Q (FF)	0.23547	0.86499	3.02621

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQNX1	hold	CLK (R)	-0.01497	0.02241	1.88529
	setup	CLK (R)	0.15152	0.28008	0.59867

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQNX1	hold	CLK (R)	-0.12216	-0.29357	-1.00204
	setup	CLK (R)	0.16818	0.43683	2.03192

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	hold	CLK (R)	(RN * SN)	-0.01497	0.02241	1.88529
	setup	CLK (R)	(RN * SN)	0.15152	0.28008	0.59867

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	hold	CLK (R)	(RN * SN)	-0.12216	-0.29357	-1.00204
	setup	CLK (R)	(RN * SN)	0.16818	0.43683	2.03192

Constraints(ns) for RN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQNX1	recovery	CLK (R)	0.15377	0.50058	6.50874
	removal	CLK (R)	-0.02459	-0.03047	-0.06959
	hold	SN (R)	-0.00779	-0.05262	-0.11002
	setup	SN (R)	0.09553	0.16226	0.69732

Constraints(ns) for RN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	recovery	CLK (R)	(D * SN)	0.15377	0.50058	6.50874
	removal	CLK (R)	(D * SN)	-0.02459	-0.03047	-0.06959
	hold	SN (R)	(CLK * D)	-0.00779	-0.05262	-0.11002
	hold	SN (R)	(CLK * !D)	-0.00916	-0.05262	-0.11439
	hold	SN (R)	(!CLK * D)	-0.07584	-0.13294	-0.23257
	hold	SN (R)	(!CLK * !D)	-0.07970	-0.13571	-0.23817
	setup	SN (R)	(CLK * D)	0.01703	0.05769	0.22968
	setup	SN (R)	(CLK * !D)	0.01817	0.05874	0.25951
	setup	SN (R)	(!CLK * D)	0.09367	0.15710	0.52847
	setup	SN (R)	(!CLK * !D)	0.09553	0.16226	0.69732

Constraints(ns) for RN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	min_pulse_width	RN ()	(CLK * D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(CLK * !D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(!CLK * D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(!CLK * !D * SN)	0.42969	2.66235	16.50020

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQNX1	recovery	CLK (R)	0.01776	-0.00400	0.21138
	removal	CLK (R)	0.00907	0.02770	0.01826
	hold	RN (R)	0.11426	0.23541	0.50235
	setup	RN (R)	0.01141	0.01892	0.65308

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	recovery	CLK (R)	(!D * RN)	0.01776	-0.00400	0.21138
	removal	CLK (R)	(!D * RN)	0.00907	0.02770	0.01826
	hold	RN (R)	CLK	0.06553	0.16064	0.36014
	hold	RN (R)	(!CLK * D)	0.10944	0.22434	0.48618
	hold	RN (R)	(!CLK * !D)	0.11426	0.23541	0.50235
	setup	RN (R)	CLK	0.01141	0.01892	0.57553
	setup	RN (R)	(!CLK * D)	-0.06458	-0.07492	0.65308
	setup	RN (R)	(!CLK * !D)	-0.07145	-0.10849	0.08098

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	min_pulse_width	SN ()	(CLK * D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(CLK * !D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * !D * RN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	min_pulse_width	CLK ()	(D * RN * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * RN * SN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQNX1	min_pulse_width	CLK ()	(D * RN * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * RN * SN)	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	CLK	0.00000	0.00000	0.00000
	CLK	94.34080	94.43750	94.96560
	RN	95.16550	95.28360	96.30980
	SN	94.17200	94.40600	95.17960

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	CLK	0.00000	0.00000	0.00000
	CLK	97.44600	97.53310	98.02710
	RN	-0.05444	-0.82084	-5.00951
	RN	98.98910	99.23560	100.04300

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * RN * SN * !Q) + (CLK * !RN * !Q) + (!CLK * !RN * !Q)	0.00000	0.00000	0.00000
	(CLK * RN * SN * !Q) + (CLK * !RN * !Q) + (!CLK * !RN * !Q)	99.64630	99.67500	99.83210
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	93.55540	93.64230	94.12860
	(!CLK * RN * SN)	0.00000	0.00000	0.00000
	(!CLK * RN * SN)	50.17670	50.26590	50.75460

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * RN * SN * !Q) + (CLK * !RN * !Q) + (!CLK * !RN * !Q)	0.00000	0.00000	0.00000
	(CLK * RN * SN * !Q) + (CLK * !RN * !Q) + (!CLK * !RN * !Q)	95.53120	95.53120	95.53030
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	59.88230	59.96130	60.30380
	(!CLK * RN * SN)	0.00000	0.00000	0.00000
	(!CLK * RN * SN)	50.24800	50.37560	50.90030

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	91.68560	91.68430	91.68270
	(!CLK * D * SN * !Q)	0.00000	0.00000	0.00000
	(!CLK * D * SN * !Q)	51.92760	52.01610	52.48560

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	96.98160	96.98230	96.98170
	(!CLK * D * SN * !Q)	0.00000	0.00000	0.00000
	(!CLK * D * SN * !Q)	55.22470	55.33580	55.81390

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * RN * Q) + (!CLK * D * RN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * D * RN * Q)	88.04120	88.05060	88.05560
	(!RN * !Q)	0.00000	0.00000	0.00000
	(!RN * !Q)	98.44360	98.64790	99.62020
	(!CLK * !D * RN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * RN * Q)	49.41780	49.51550	49.98620

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(CLK * RN * Q) + (!CLK * D * RN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * D * RN * Q)	92.90720	92.97780	93.22110
	(!RN * !Q)	0.00000	0.00000	0.00000
	(!RN * !Q)	16.48660	16.73700	17.77300
	(!CLK * !D * RN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * RN * Q)	18.08370	18.24710	18.89150

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(D * RN * Q)	0.00000	0.00000	0.00000
	(D * RN * Q)	93.96520	94.04960	94.54680
	(D * !RN * !Q) + (!D * RN * SN * !Q) + (!D * !RN * !Q)	0.00000	0.00000	0.00000
	(D * !RN * !Q) + (!D * RN * SN * !Q) + (!D * !RN * !Q)	97.54890	97.63680	98.11170
	(!D * RN * !SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q)	51.19600	51.33720	51.94990

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQNX1	(D * RN * SN * !Q)	0.00000	0.00000	0.00000
	(D * RN * SN * !Q)	54.10840	54.22490	54.74880
	(D * RN * Q)	0.00000	0.00000	0.00000
	(D * RN * Q)	46.36360	46.48280	47.02280
	(D * !RN * !Q) + (!D * RN * SN * !Q) + (!D * !RN * !Q)	0.00000	0.00000	0.00000
	(D * !RN * !Q) + (!D * RN * SN * !Q) + (!D * !RN * !Q)	55.16010	55.28210	55.81380
	(!D * RN * SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * SN * Q)	50.25890	50.39920	50.99620
	(!D * RN * !SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q)	16.45990	16.59550	17.30340

TMRDFFSNRNQX1

TMR_sky130_rhbd_tt_1P8_25C.ccs
Cell Library: Process , Voltage
1.80, Temp 25.00

Truth Table

INPUT				OUTPUT
D	RN	SN	CLK	Q
0	1	1	R	0
1	1	1	R	1
x	x	0	x	1
x	0	1	x	0
x	1	1	x	IQ

Footprint

Cell Name	Area
TMRDFFSNRNQX1	731.04602

Pin Capacitance Information

Cell Name	Pin Cap(pf)				Max Cap(pf)
	D	RN	SN	CLK	Q
TMRDFFSNRNQX1	0.04197	0.10289	0.07610	0.07364	5.22649

Leakage Information

Cell Name	Leakage(nW)		
	Min.	Avg	Max.
TMRDFFSNRNQX1	0.00000	99.14950	165.06800

Delay Information

Delay(ns) to Q rising :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNRNQX1	CLK->Q (RR)	0.39162	1.41023	7.24492
	SN->Q (FR)	0.28301	1.46870	8.07026

Delay(ns) to Q falling :

Cell Name	Timing Arc(Dir)	Delay(ns)		
		First	Mid	Last
TMRDFFSNRNQX1	CLK->Q (RF)	0.58498	1.35825	5.61732
	RN->Q (FF)	0.50113	1.43956	6.19319
	SN->Q (RF)	0.38454	1.24071	5.74578

Constraint Information

Constraints(ns) for D rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQX1	hold	CLK (R)	-0.02056	0.00402	1.02242
	setup	CLK (R)	0.17892	0.31281	0.64112

Constraints(ns) for D falling :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQX1	hold	CLK (R)	-0.12215	-0.29511	-1.05099
	setup	CLK (R)	0.15629	0.38177	1.76181

Constraints(ns) for D rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	hold	CLK (R)	(RN * SN)	-0.02056	0.00402	1.02242
	setup	CLK (R)	(RN * SN)	0.17892	0.31281	0.64112

Constraints(ns) for D falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	hold	CLK (R)	(RN * SN)	-0.12215	-0.29511	-1.05099
	setup	CLK (R)	(RN * SN)	0.15629	0.38177	1.76181

Constraints(ns) for RN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQX1	recovery	CLK (R)	0.18394	0.50975	6.71173
	removal	CLK (R)	-0.02459	-0.03047	-0.06996
	hold	SN (R)	0.07456	0.16894	0.33070
	setup	SN (R)	0.02152	0.07079	1.34234

Constraints(ns) for RN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	recovery	CLK (R)	(D * SN)	0.18394	0.50975	6.71173
	removal	CLK (R)	(D * SN)	-0.02459	-0.03047	-0.06996
	hold	SN (R)	(CLK * D)	-0.00779	-0.05262	-0.11439
	hold	SN (R)	(CLK * !D)	-0.00916	-0.05262	-0.11839
	hold	SN (R)	(!CLK * D)	0.07456	0.16340	0.32001
	hold	SN (R)	(!CLK * !D)	0.07292	0.16894	0.33070
	setup	SN (R)	(CLK * D)	0.02152	0.07047	0.52589
	setup	SN (R)	(CLK * !D)	0.02033	0.07047	0.60177
	setup	SN (R)	(!CLK * D)	-0.00648	0.06908	1.34234
	setup	SN (R)	(!CLK * !D)	-0.00400	0.07079	1.06903

Constraints(ns) for RN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	min_pulse_width	RN ()	(CLK * D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(CLK * !D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(!CLK * D * SN)	0.42969	2.66235	16.50020
	min_pulse_width	RN ()	(!CLK * !D * SN)	0.42969	2.66235	16.50020

Constraints(ns) for SN rising :

Cell Name	Timing Check	Ref Pin(trans)	Reference Slew Rate(ns)		
			first	mid	last
TMRDFFSNRNQX1	recovery	CLK (R)	0.00594	0.14399	3.54600
	removal	CLK (R)	0.01044	0.02770	0.01939
	hold	RN (R)	0.01179	0.05539	0.11876
	setup	RN (R)	0.03607	0.07489	0.28294

Constraints(ns) for SN rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	recovery	CLK (R)	(!D * RN)	0.00594	0.14399	3.54600
	removal	CLK (R)	(!D * RN)	0.01044	0.02770	0.01939
	hold	RN (R)	CLK	0.01179	0.05539	0.11876
	hold	RN (R)	(!CLK * D)	-0.02458	-0.05816	-0.06637
	hold	RN (R)	(!CLK * !D)	-0.02448	-0.05816	-0.07098
	setup	RN (R)	CLK	0.01652	-0.03675	0.00704
	setup	RN (R)	(!CLK * D)	0.03504	0.07393	0.28294
	setup	RN (R)	(!CLK * !D)	0.03607	0.07489	0.15175

Constraints(ns) for SN falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	min_pulse_width	SN ()	(CLK * D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(CLK * !D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * D * RN)	0.42969	2.66235	16.50020
	min_pulse_width	SN ()	(!CLK * !D * RN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK rising (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	min_pulse_width	CLK ()	(D * RN * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * RN * SN)	0.42969	2.66235	16.50020

Constraints(ns) for CLK falling (conditional):

Cell Name	Timing Check	Ref Pin(trans)	When	Reference Slew Rate(ns)		
				first	mid	last
TMRDFFSNRNQX1	min_pulse_width	CLK ()	(D * RN * SN)	0.42969	2.66235	16.50020
	min_pulse_width	CLK ()	(!D * RN * SN)	0.42969	2.66235	16.50020

Power Information

Internal switching power(pJ) to Q rising :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	CLK	0.00000	0.00000	0.00000
	CLK	97.28840	97.37010	97.86440
	SN	96.81090	97.03620	97.82530

Internal switching power(pJ) to Q falling :

Cell Name	Input	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	CLK	0.00000	0.00000	0.00000
	CLK	98.09750	98.19580	98.71230
	RN	-0.05444	-1.12464	-8.46690
	RN	99.73580	99.97530	100.78500
	SN	98.73290	98.90860	99.84700

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * RN * SN * !Q) + (CLK * !RN * SN * !Q) + (CLK * !RN * !SN * Q) + (!CLK * !RN * SN * !Q) + (!CLK * !RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * SN * !Q) + (CLK * !RN * SN * !Q) + (CLK * !RN * !SN * Q) + (!CLK * !RN * SN * !Q) + (!CLK * !RN * !SN * Q)	95.18800	95.21720	95.37570
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	101.59600	101.65400	101.97100
	(!CLK * RN * SN)	0.00000	0.00000	0.00000
	(!CLK * RN * SN)	53.88790	53.97630	54.46330

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * RN * SN * !Q) + (CLK * !RN * SN * !Q) + (CLK * !RN * !SN * Q) + (!CLK * !RN * SN * !Q) + (!CLK * !RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * SN * !Q) + (CLK * !RN * SN * !Q) + (CLK * !RN * !SN * Q) + (!CLK * !RN * SN * !Q) + (!CLK * !RN * !SN * Q)	95.14620	95.14720	95.14640
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * RN * !SN * Q)	69.60500	69.68390	70.02410
	(!CLK * RN * SN)	0.00000	0.00000	0.00000
	(!CLK * RN * SN)	53.95640	54.08470	54.60540

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	91.11650	91.11730	91.11620
	(CLK * D * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * D * !SN * Q)	98.31440	98.43440	99.42480
	(CLK * !D * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * !D * !SN * Q)	53.67870	53.78000	54.49650
	(!CLK * D * SN * !Q)	0.00000	0.00000	0.00000
	(!CLK * D * SN * !Q)	51.98860	52.07830	52.54770
	(!CLK * D * !SN * Q)	0.00000	0.00000	0.00000
	(!CLK * D * !SN * Q)	46.99530	47.16320	48.04010
	(!CLK * !D * !SN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * !SN * Q)	13.73290	13.82080	14.24730

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	0.00000	0.00000	0.00000
	(CLK * SN * !Q) + (!CLK * !D * SN * !Q)	98.10980	98.18280	98.44050
	(CLK * D * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * D * !SN * Q)	16.10190	16.46750	17.86100
	(CLK * !D * !SN * Q)	0.00000	0.00000	0.00000
	(CLK * !D * !SN * Q)	19.57950	19.81750	20.75230
	(!CLK * D * SN * !Q)	0.00000	0.00000	0.00000
	(!CLK * D * SN * !Q)	56.12670	56.27610	56.87400
	(!CLK * D * !SN * Q)	0.00000	0.00000	0.00000
	(!CLK * D * !SN * Q)	0.35486	0.60216	1.64264
	(!CLK * !D * !SN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * !SN * Q)	0.27427	0.39008	0.85524

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * RN * Q) + (!CLK * D * RN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * D * RN * Q)	92.01890	92.02490	92.02800
	(!CLK * !D * RN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * RN * Q)	53.55810	53.65490	54.13270

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(CLK * RN * Q) + (!CLK * D * RN * Q)	0.00000	0.00000	0.00000
	(CLK * RN * Q) + (!CLK * D * RN * Q)	95.58520	95.58620	95.58660
	(!CLK * !D * RN * Q)	0.00000	0.00000	0.00000
	(!CLK * !D * RN * Q)	19.40660	19.52760	20.02800

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(D * RN * Q)	0.00000	0.00000	0.00000
	(D * RN * Q)	97.40420	97.48760	97.97250
	(D * !RN * SN * !Q) + (D * !RN * !SN * Q) + (!D * RN * SN * !Q) + (!D * !RN * SN * !Q) + (!D * !RN * !SN * Q)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q) + (D * !RN * !SN * Q) + (!D * RN * SN * !Q) + (!D * !RN * SN * !Q) + (!D * !RN * !SN * Q)	97.66490	97.75090	98.24920
	(!D * RN * !SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q)	55.03920	55.18580	55.80810

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

Cell Name	When	Power(pJ)		
		first	mid	last
TMRDFFSNRNQX1	(D * RN * SN * !Q)	0.00000	0.00000	0.00000
	(D * RN * SN * !Q)	51.39410	51.51590	52.02590
	(D * RN * Q)	0.00000	0.00000	0.00000
	(D * RN * Q)	55.41210	55.52760	56.06510
	(D * !RN * SN * !Q) + (D * !RN * !SN * Q) + (!D * RN * SN * !Q) + (!D * !RN * SN * !Q) + (!D * !RN * !SN * Q)	0.00000	0.00000	0.00000
	(D * !RN * SN * !Q) + (D * !RN * !SN * Q) + (!D * RN * SN * !Q) + (!D * !RN * SN * !Q) + (!D * !RN * !SN * Q)	51.72090	51.84640	52.38250
	(!D * RN * SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * SN * Q)	57.10650	57.23590	57.78750
	(!D * RN * !SN * Q)	0.00000	0.00000	0.00000
	(!D * RN * !SN * Q)	18.25160	18.38450	19.08360