

TOSHIBA Diode Silicon Epitaxial Planar Type

HN2D01F

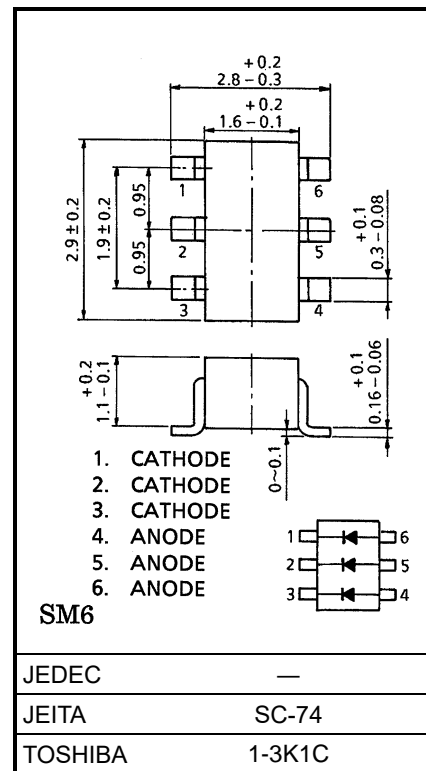
Unit: mm

Ultra High Speed Switching Application

- HN2D01F is composed of 3 independent diodes.
- Low forward voltage : $V_F(3) = 0.98\text{ V (typ.)}$
- Fast reverse recovery time: $t_{rr} = 1.6\text{ ns (typ.)}$
- Small total capacitance : $C_T = 0.5\text{ }\mu\text{F (typ.)}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	V_{RM}	85	V
Reverse voltage	V_R	80	V
Maximum (peak) forward current	I_{FM}	240 (*)	mA
Average forward current	I_O	80 (*)	mA
Surge current (10 ms)	I_{FSM}	1 (*)	A
Power dissipation	P_D (Note 3)	300	mW
Junction temperature	T_j (Note 1)	150	°C
	T_j (Note 2)	125	
Storage temperature	T_{stg} (Note 1)	-55 to 150	°C
	T_{stg} (Note 2)	-55 to 125	



Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

Note 1: For devices with the ordering part number ending in LF(T).

Note 2: For devices with the ordering part number in other than LF(T).

Note 3: Total rating.

(*) This is absolute maximum rating of single diode (Q1, Q2 or Q3).

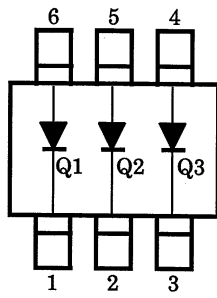
In the case of using 2 or 3 diodes, the absolute maximum ratings per diodes is 75 % of the single diode one.

Electrical Characteristics (Q1, Q2, Q3 Common, $T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F(1)$	$I_F = 1\text{ mA}$	—	0.62	—	V
	$V_F(2)$	$I_F = 10\text{ mA}$	—	0.75	—	
	$V_F(3)$	$I_F = 100\text{ mA}$	—	0.98	1.20	
Reverse current	$I_R(1)$	$V_R = 30\text{ V}$	—	—	0.1	μA
	$I_R(2)$	$V_R = 80\text{ V}$	—	—	0.5	
Total capacitance	C_T	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	0.5	3.0	pF
Reverse recovery time	t_{rr}	$I_F = 10\text{ mA (Fig.1)}$	—	1.6	4.0	ns

Start of commercial production
1988-11

Pin Assignment (Top View)



Marking

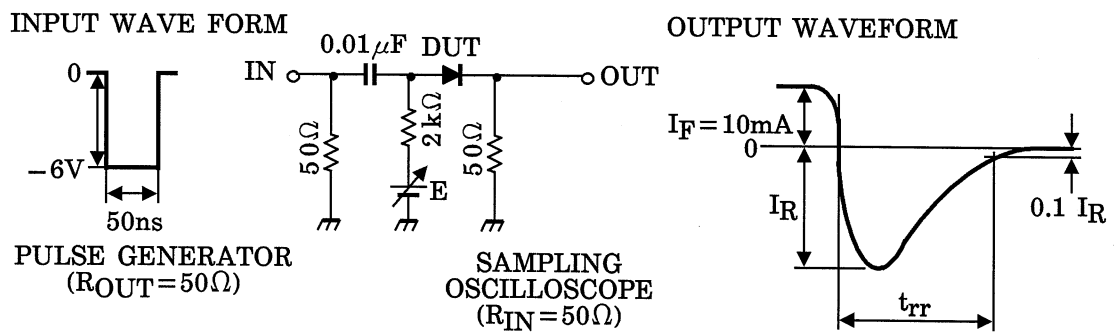
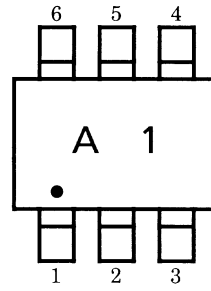
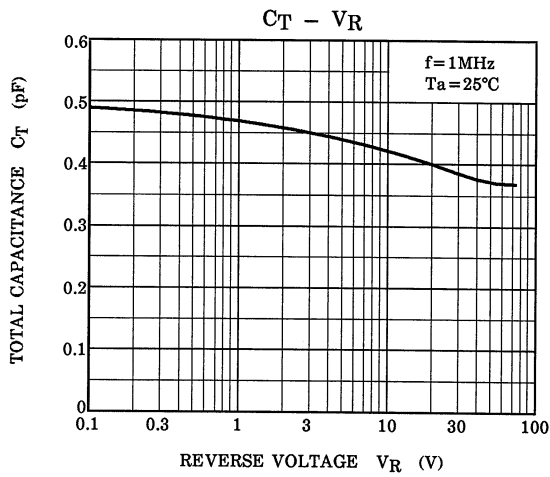
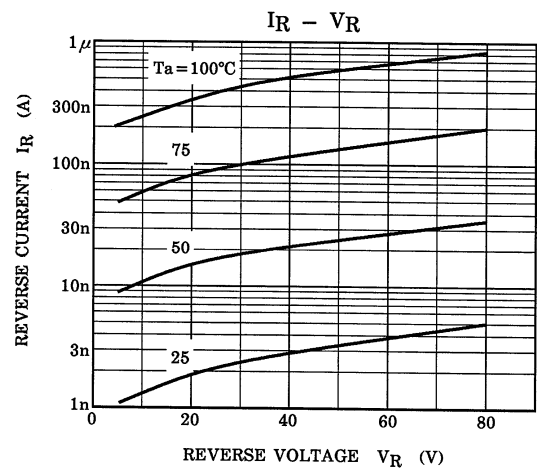
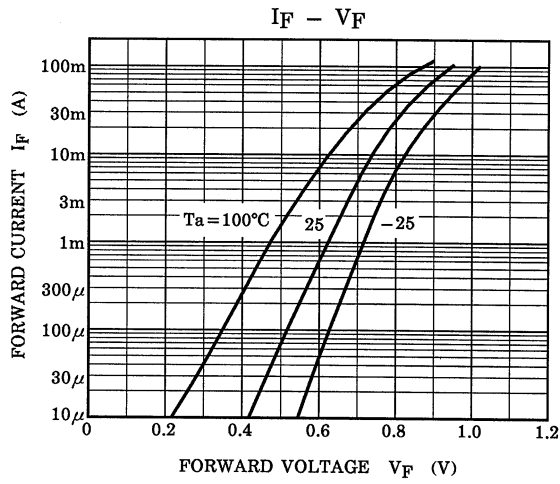


Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit

Characteristics Curves (Ta = 25°C) (Q1, Q2, Q3 Common)



The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

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