

TOSHIBA Diode Silicon Epitaxial Planar Type

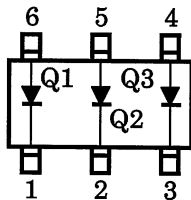
HN2D01FU

Ultra High Speed Switching Application

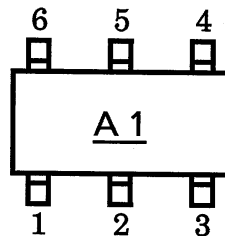
HN2D01FU is composed of 3 independent diodes.

- Low forward voltage : $V_F(3) = 0.98V$ (typ.)
- Fast reverse recovery time: $t_{rr} = 1.6ns$ (typ.)
- Small total capacitance : $C_T = 0.5pF$ (typ.)

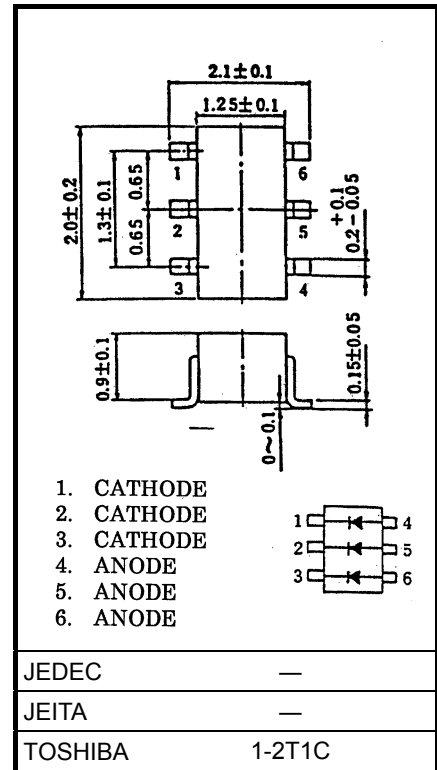
Pin Assignment (Top View)



Marking



Unit: mm



Weight: 6.2mg (typ.)

Absolute Maximum Ratings (Ta = 25°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 (10ms)	I_{FSM}	1 *	A
Power dissipation	P	200	mW
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	-55 to 125	°C

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).

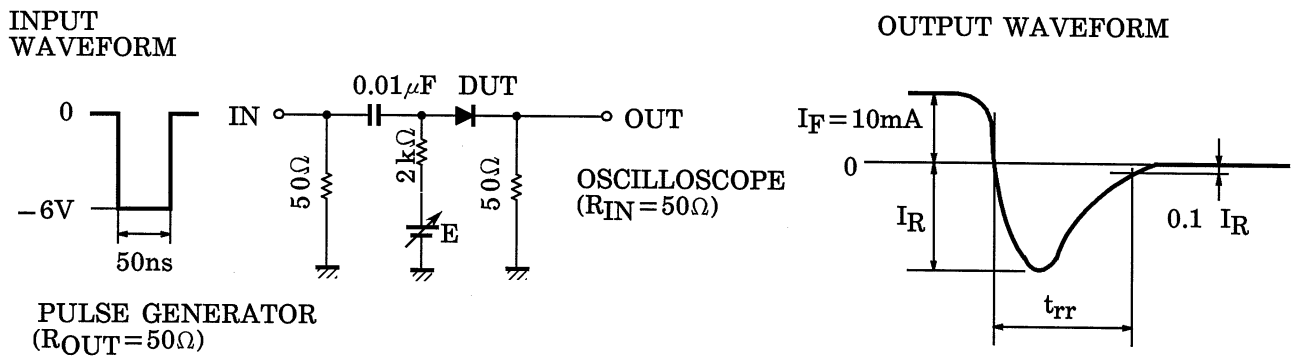
*: This is absolute maximum rating of single diode (Q1 or Q2 or Q3). In the case of using 2 to 3 diodes, the absolute maximum ratings per diodes is 75 % of the single diode one.

Start of commercial production
1990-10

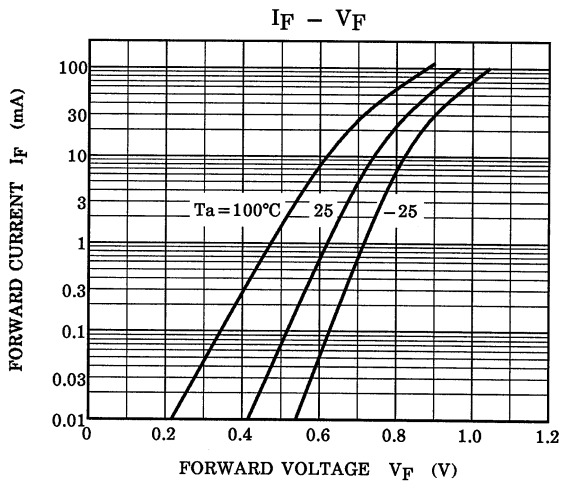
Electrical Characteristics (Q1, Q2, Q3 Common, Ta = 25°C)

Characteristic	Symbol	Test Circuit	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	—	$V_R = 0, f = 1\text{MHz}$	—	0.5	3.0	pF
Reverse recovery time	t_{rr}	—	$I_F = 10\text{mA}$ (Fig.1)	—	1.6	4.0	ns

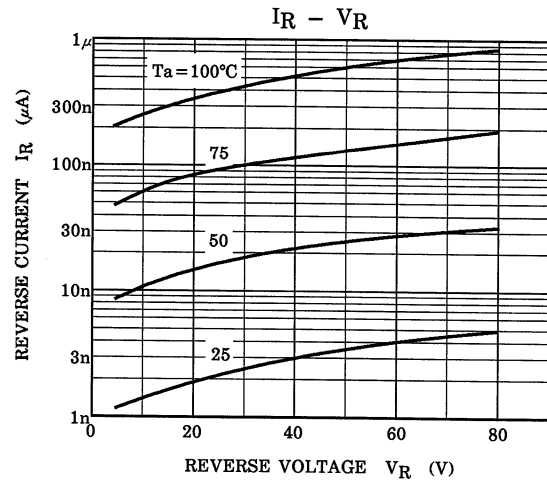
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit



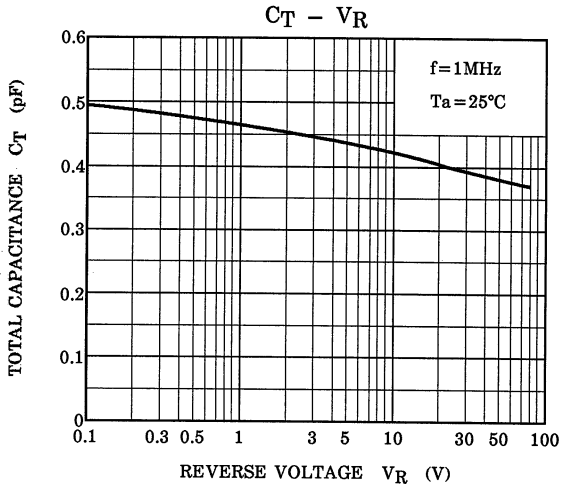
Q1, Q2, Q3 Common



Q1, Q2, Q3 Common



Q1, Q2, Q3 Common



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