

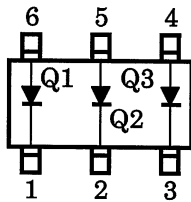
TOSHIBA Diode Silicon Epitaxial Planar Type

HN2D01FU

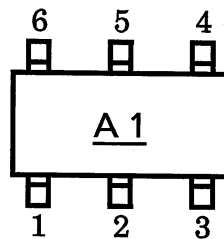
Ultra High Speed Switching Application

- 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.)

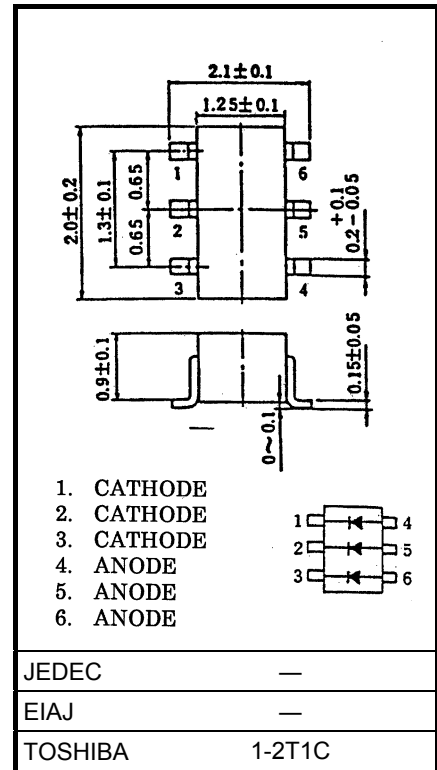
Pin Assignment (Top View)



Marking



Unit in mm



Weight: 6.2mg

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

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	$^{\circ}C$
Storage temperature	T_{stg}	-55~125	$^{\circ}C$

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.

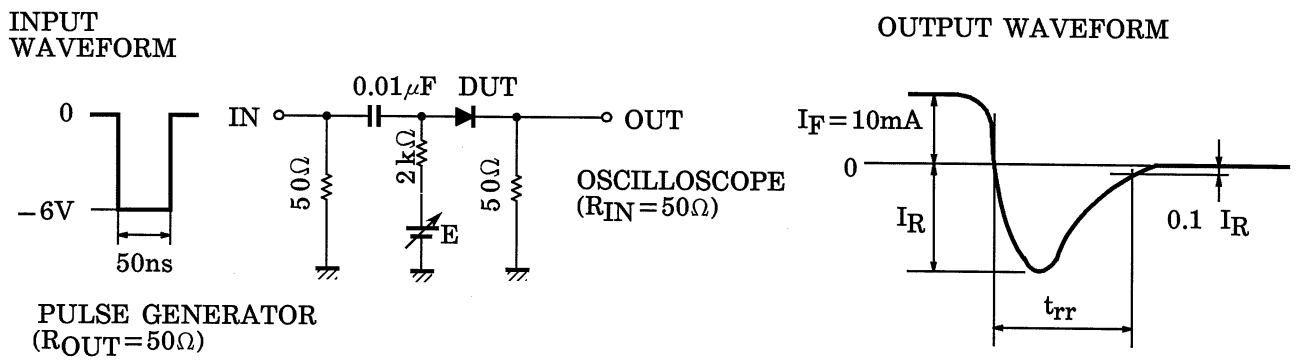
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

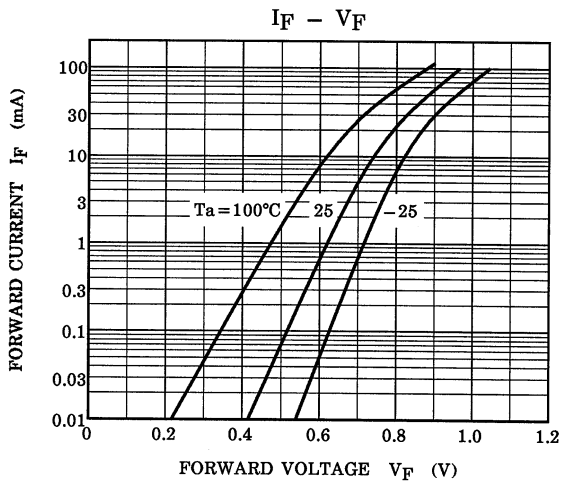
Electrical Characteristics (Q1 Q2 Q3 Common, Ta = 25°C)

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

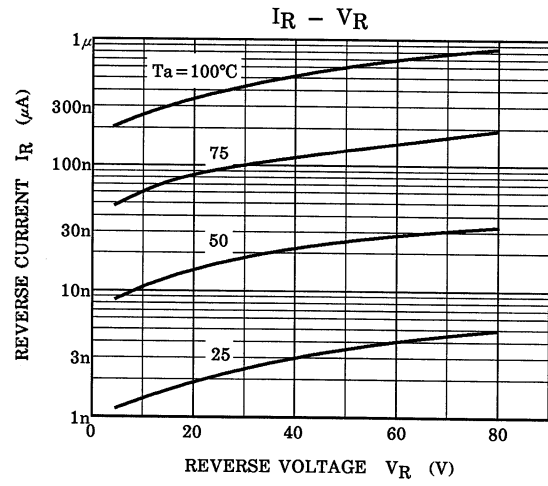
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit



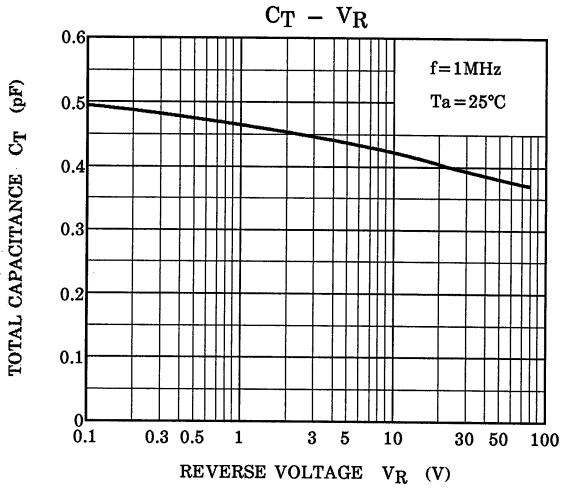
Q1, Q2, Q3 Common



Q1, Q2, Q3 Common



Q1, Q2, Q3 Common



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20070701-EN GENERAL

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- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
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