

TOSHIBA Diode Silicon Epitaxial Planar Type

## HN2D02FU

### Ultra High Speed Switching Application

- AEC-Q101 Qualified (Note1)
- HN2D02FU 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 :  $C_T = 0.5 \text{ pF (typ.)}$

Note1: For detail information, please contact our sales.

### 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 (10 ms)	$I_{FSM}$	1 *	A
Power dissipation	$P_D$ (Note 4)	200	mW
Junction temperature	$T_j$ (Note 2)	150	°C
	$T_j$ (Note 3)	125	
Storage temperature	$T_{stg}$ (Note 2)	-55 to 150	°C
	$T_{stg}$ (Note 3)	-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 2: For devices with the ordering part number ending in LF(T).

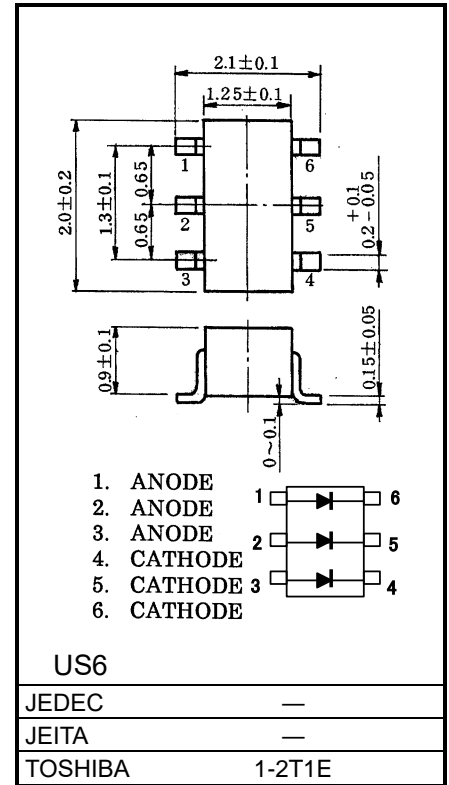
Note 3: For devices with the ordering part number in other than LF(T).

Note 4: Total rating, Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.32 mm<sup>2</sup> × 6).

\* : 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.

Unit: mm



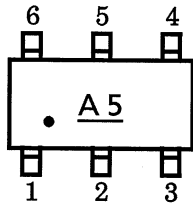
Weight: 6.8 mg (typ.)

Start of commercial production  
1990-10

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

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V <sub>F</sub> (1)	I <sub>F</sub> = 1 mA	—	0.62	—	V
	V <sub>F</sub> (2)	I <sub>F</sub> = 10 mA	—	0.75	—	
	V <sub>F</sub> (3)	I <sub>F</sub> = 100 mA	—	0.98	1.20	
Reverse current	I <sub>R</sub> (1)	V <sub>R</sub> = 30 V	—	—	0.1	μA
	I <sub>R</sub> (2)	V <sub>R</sub> = 80 V	—	—	0.5	
Total capacitance	C <sub>T</sub>	V <sub>R</sub> = 0 V, f = 1 MHz	—	0.5	3.0	pF
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> = 10mA (Fig.1)	—	1.6	4.0	ns

### Marking



### Pin Assignment (Top View)

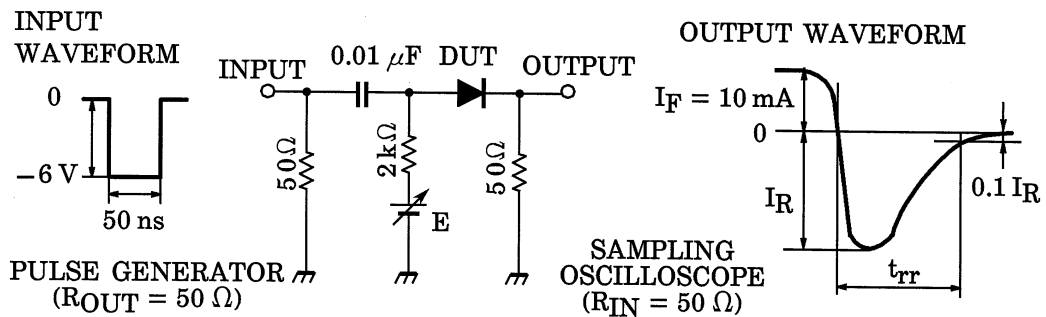
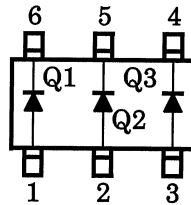
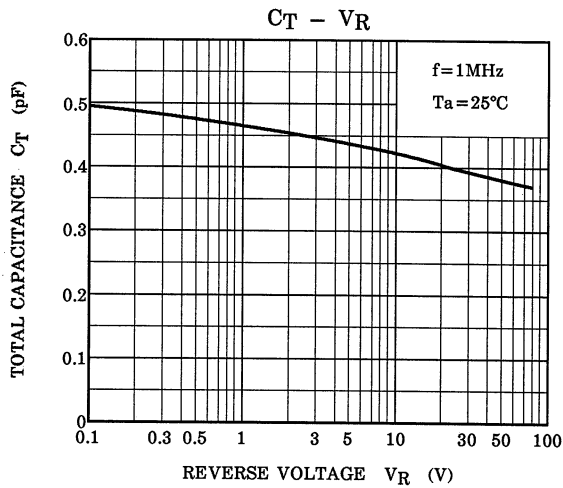
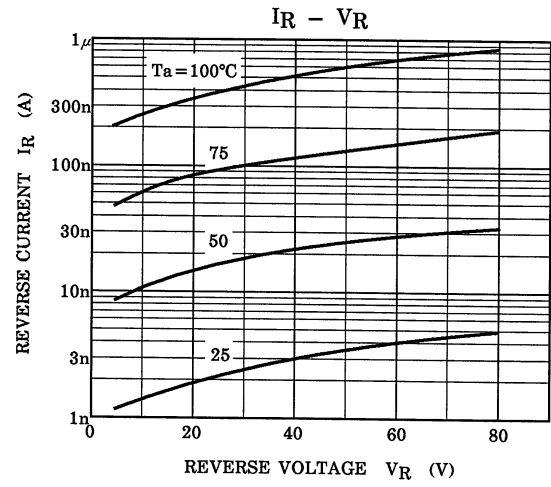
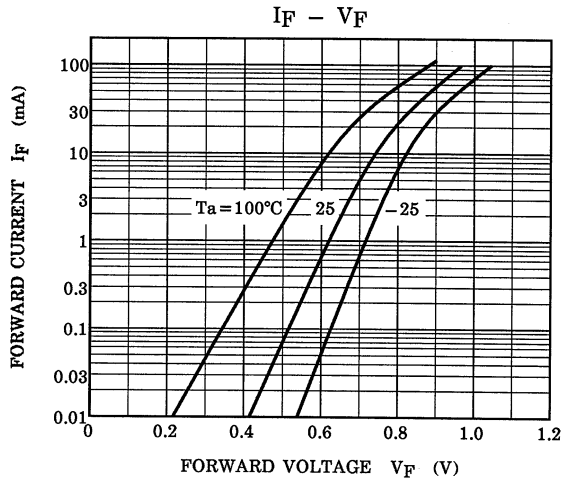


Fig.1 Reverse Recovery Time (t<sub>rr</sub>) Test Circuit

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



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

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