Unit: mm

TOSHIBA Diode Silicon Epitaxial Planar Type

HN1D02FE

Ultra High Speed Switching Application

The HN1D02FU is composed of 2 common cathode units.

Low forward voltage : V_{F (3)} = 0.90V (typ.)
 Fast reverse recovery time : t_{rr} = 1.6ns (typ.)
 Small total capacitance : C_T = 0.9pF (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}	300*	mA
Average forward current	IO	100*	mA
Surge current (10ms)	I _{FSM}	2*	Α
Power dissipation	Р	100**	mW
Junction temperature	Tj	150	°C
Storage temperature	T _{stg}	-55 to 150	°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).

*: These are the Absolute Maximum Ratings for a single diode (Q1, Q2, Q3 or Q4).

Where Unit 1 and Unit 2 are used independently or simultaneously, the Absolute Maximum Ratings per diode are 75% of those for a single diode.

**: Total rating.

Electrical Characteristics (Q1, Q2, Q3, Q4 Common; Ta = 25°C)

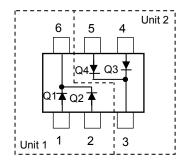
Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit
Forward voltage	V _{F (1)}	_	I _F = 1mA	_	0.60	_	V
	V _{F (2)}	_	I _F = 10mA	_	0.72	_	
	V _{F (3)}	_	I _F = 100mA	_	0.90	1.20	
Reverse current	I _{R (1)}	_	V _R = 30V	-	-	0.1	μА
	I _{R (2)}	_	V _R = 80V	_	_	0.5	
Total capacitance	C _T	_	V _R = 0, f = 1MHz	_	0.9	_	pF
Reverse recovery time	t _{rr}	_	I _F = 10mA (fig.1)	_	1.6	_	ns

1.6±0.05 1.2±0.05 1.0±0.05 0.2 ± 0.05 **ANODE** 1. ANODE 2. 3. **CATHODE ANODE ANODE** 5. **CATHODE JEDEC JEITA** 1-2X1B TOSHIBA

Weight: 0.003g (typ.)

Start of commercial production 2002-04

Pin Assignment (Top View)



Marking

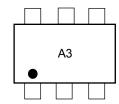
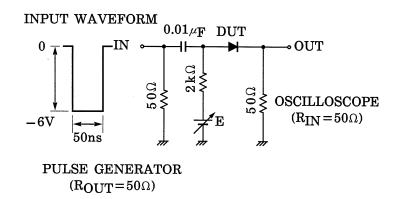
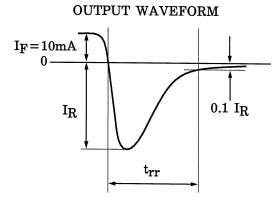
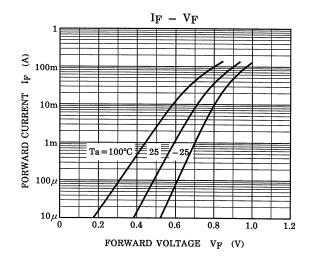
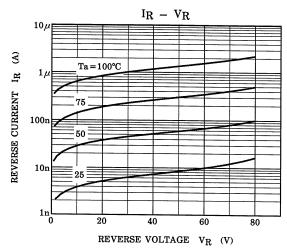


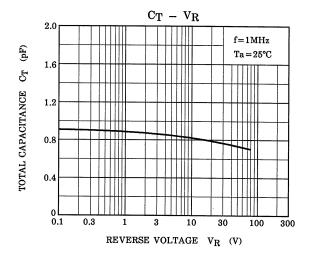
Fig. 1 Reverse Recovery Time (t_{rr}) Test Circuit

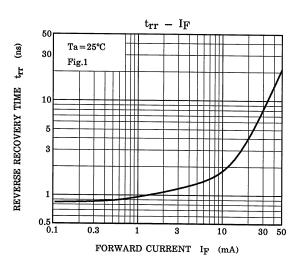












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