TOSHIBA Diode Silicon Epitaxial Planar Type

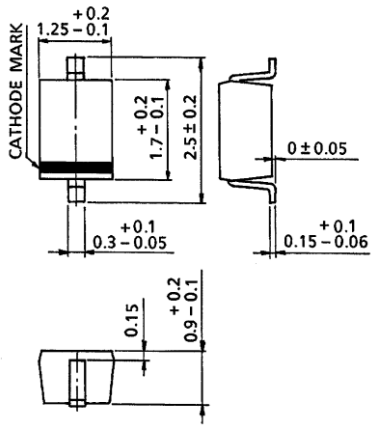
1SS403

High Voltage Switching Applications

- AEC-Q101 Qualified (Note1)
- Two-pin small packages are suitable for higher mounting densities.
- Excellent in forward current and forward voltage characteristics : $V_{F\ (2)}$ = 0.90 V (typ.)
- Fast reverse recovery time : t_{rr} = 60 ns (max)
- Small total capacitance : C_T = 1.5 pF (typ.)

Note1: For detail information, please contact our sales.

Unit: mm



USC	
JEDEC	—
JEITA	—
TOSHIBA	1-1E1A

Weight: 0.0045g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	V_{RM}	250	V
Reverse voltage	V_R	200	V
Maximum (peak) forward current	I_{FM}	300	mA
Average forward current	I_O	100	mA
Surge current (10ms)	I_{FSM}	2	A
Power dissipation	P_D (Note 4)	200	mW
Junction temperature	T_j (Note 2)	150	°C
	T_j (Note 3)	125	
Storage temperature range	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 H3F(T.
Note 3: For devices with the ordering part number in other than H3F(T.
Note 4: Mounted on a glass epoxy circuit board of 20 mm × 20 mm, Pad dimension of 4 mm × 4 mm.

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	I_F = 10 mA	—	0.72	1.0	V
	$V_{F\ (2)}$	I_F = 100 mA	—	0.90	1.2	
Reverse current	$I_{R\ (1)}$	V_R = 50 V	—	—	0.1	μA
	$I_{R\ (2)}$	V_R = 200 V	—	—	1.0	
Total capacitance	C_T	V_R = 0 V, f = 1 MHz	—	1.5	3.0	pF
Reverse recovery time	t_{rr}	I_F = 10 mA (Fig. 1)	—	10	60	ns

Start of commercial production
1998-10

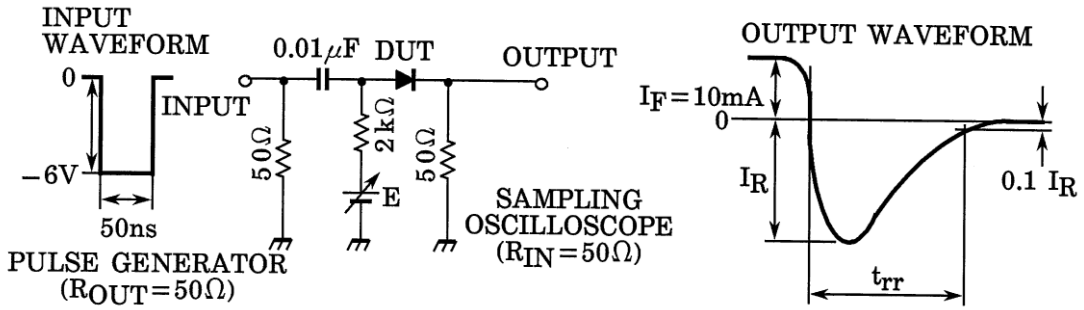
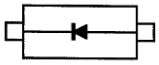


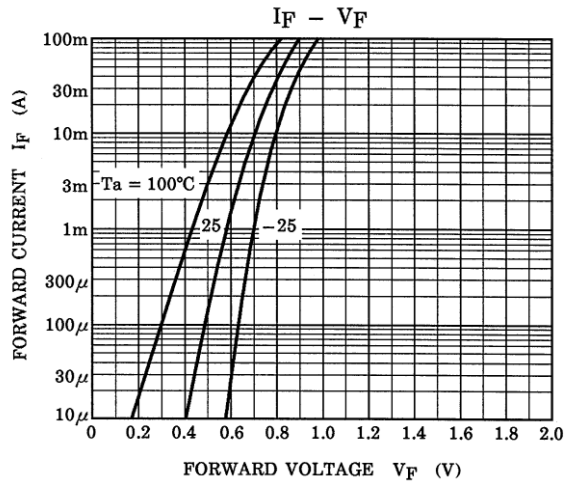
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit

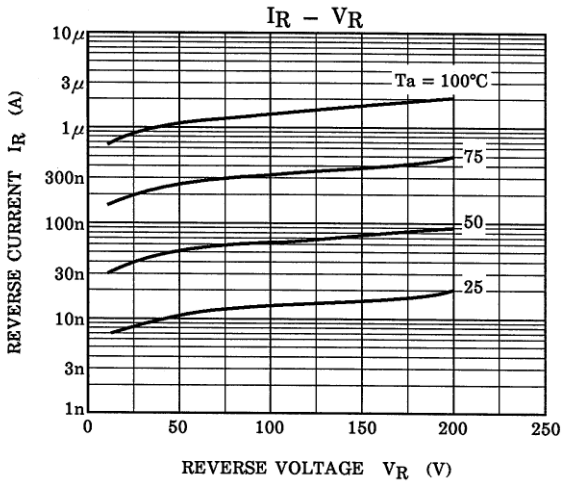
Equivalent Circuit (Top View)

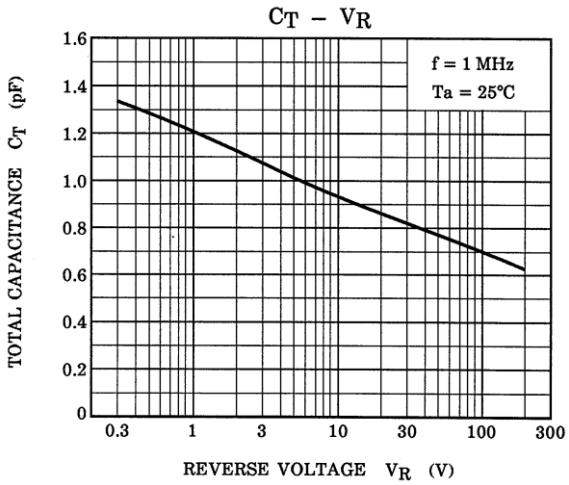


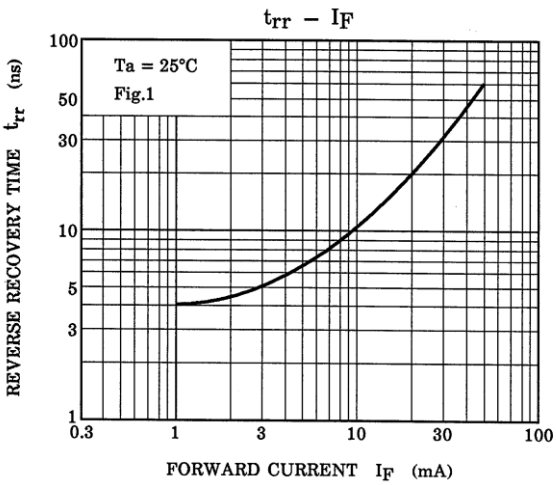
Marking

Characteristics Curves









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

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