

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 :  $V_F(2) = 0.90\text{ V (typ.)}$
- Fast reverse recovery time :  $t_{rr} = 60\text{ ns (max)}$
- Small total capacitance :  $C_T = 1.5\text{ pF (typ.)}$

Note1: For detail information, please contact our sales.

## Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	$V_{RM}$	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).

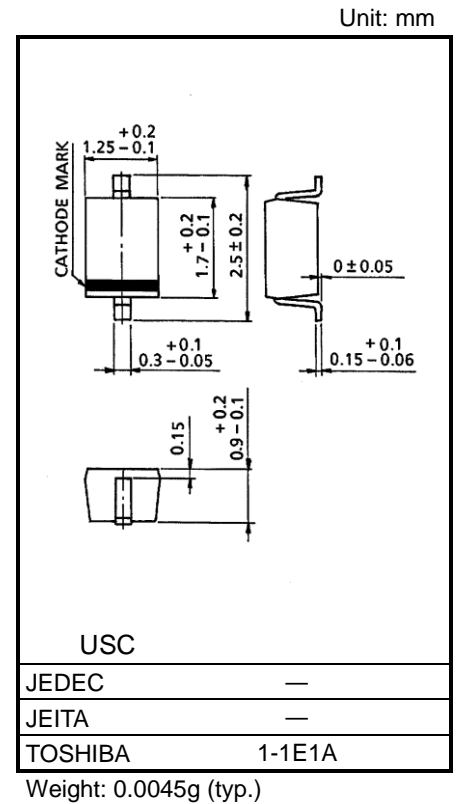
Note 2: For devices with the ordering part number ending in H3F(T).

Note 3: For devices with the ordering part number in other than H3F(T).

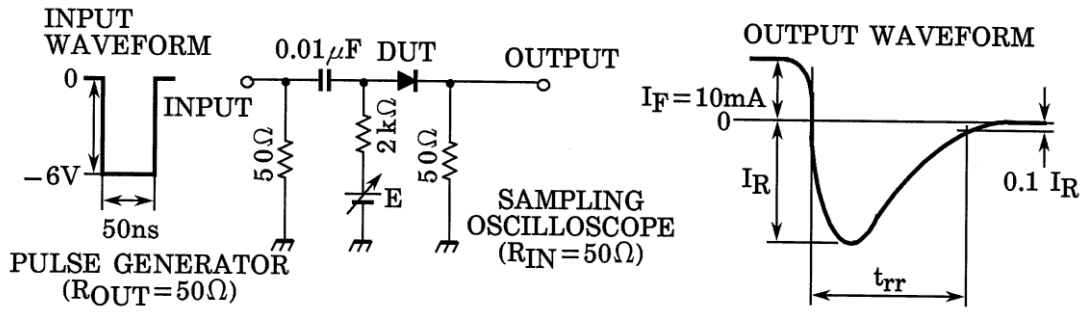
Note 4: Mounted on a glass epoxy circuit board of 20 mm x 20 mm, Pad dimension of 4 mm x 4 mm.

## Electrical Characteristics (Ta = 25°C)

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

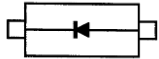


Start of commercial production  
1998-10



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

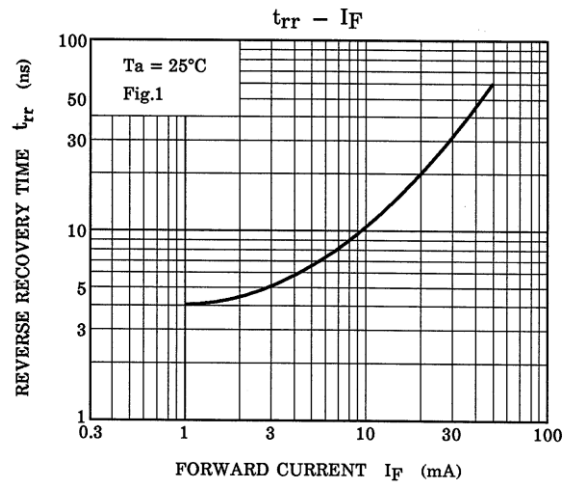
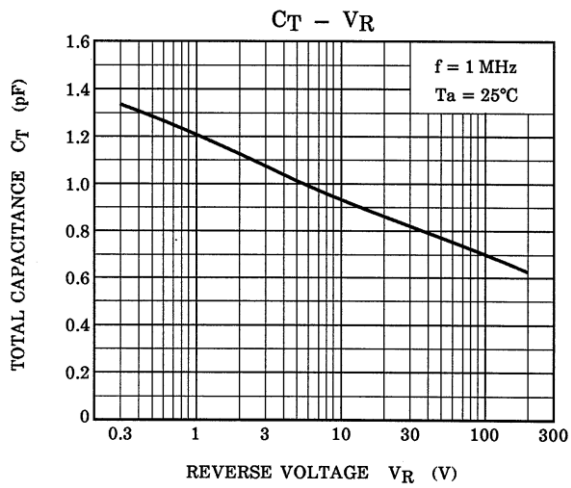
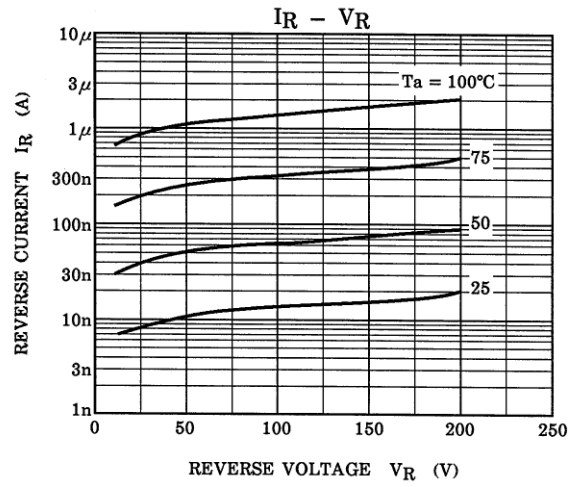
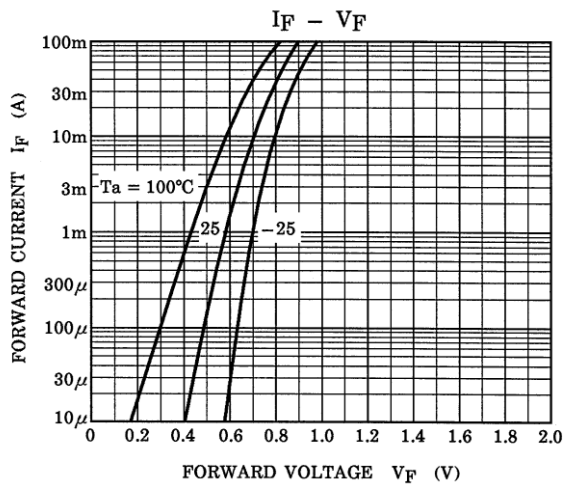
**Equivalent Circuit (Top View)**



**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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