

# TOSHIBA Diode Silicon Epitaxial Planar Type

# 1SS272

## Ultra High Speed Switching Application

- Low forward voltage :  $V_F(3) = 0.92V$  (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 <sub>RM</sub>	85	V
Reverse voltage	V <sub>R</sub>	80	V
Maximum (peak) forward current	I <sub>FM</sub>	300 *	mA
Average forward current	I <sub>O</sub>	100 *	mA
Surge current (10ms)	I <sub>FSM</sub>	2 *	A
Power dissipation	P <sub>D</sub> (Note 1, 3)	200 *	mW
	P <sub>D</sub> (Note 2)	150	
Junction temperature	T <sub>J</sub> (Note 1)	150	°C
	T <sub>J</sub> (Note 2)	125	
Storage temperature	T <sub>stg</sub> (Note 1)	-55 to 150	°C
	T <sub>stg</sub> (Note 2)	-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).

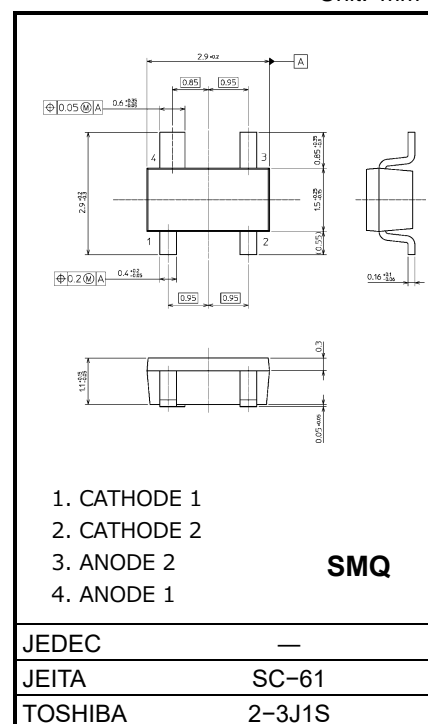
Note 1: For devices with the ordering part number ending in (TE85L,F).

Note 2: For devices with the ordering part number in other than (TE85L,F).

Note 3: Total rating, Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 1.215 mm<sup>2</sup> × 3 + 1.15 mm<sup>2</sup>)

\*: Unit rating. Total rating = Unit rating  $\times$  1.5.

Unit: mm



Weight: 13 mg (typ.)

Start of commercial production  
1984-10

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F (1)$	$I_F = 1 \text{ mA}$	—	0.61	—	V
	$V_F (2)$	$I_F = 10 \text{ mA}$	—	0.74	—	
	$V_F (3)$	$I_F = 100 \text{ mA}$	—	0.92	1.2	
Reverse current	$I_R (1)$	$V_R = 30 \text{ V}$	—	—	0.1	$\mu\text{A}$
	$I_R (2)$	$V_R = 80 \text{ V}$	—	—	0.5	
Total capacitance	$C_T$	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$	—	0.9	2.0	pF
Reverse recovery time	$t_{rr}$	$I_F = 10 \text{ mA}, \text{ Fig.1}$	—	1.6	4.0	ns

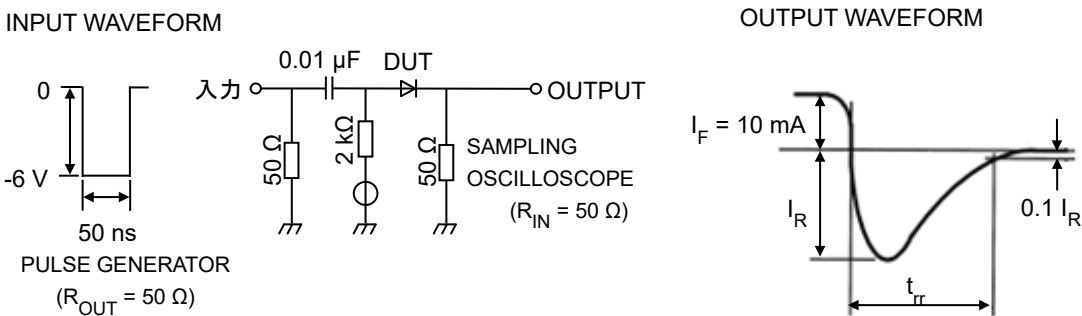
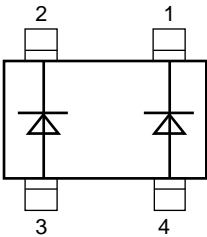
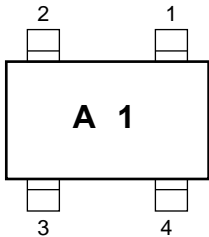


Fig.1 Reverse recovery time ( $t_{rr}$ ) test circuit

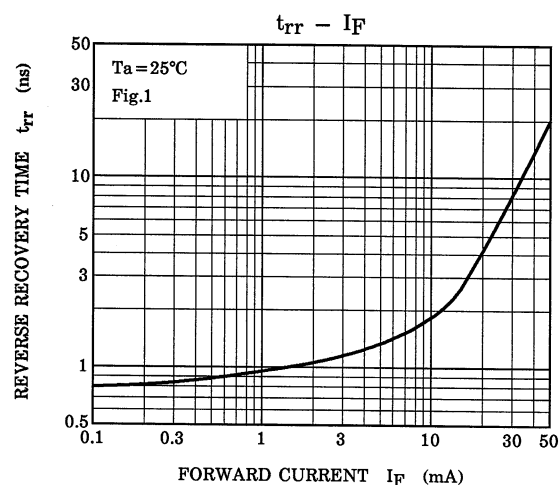
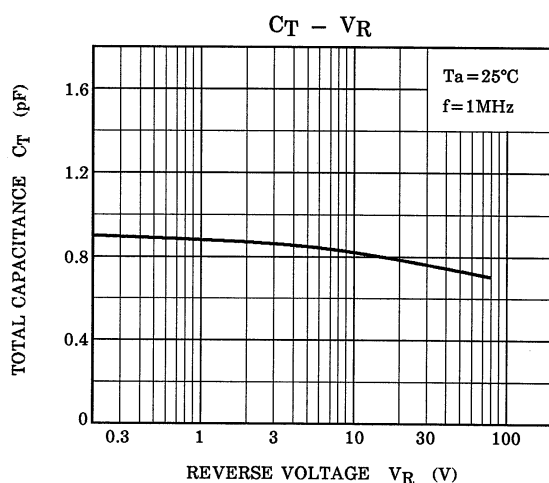
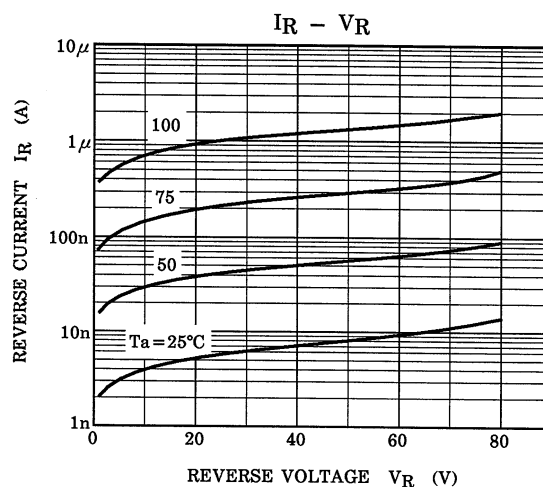
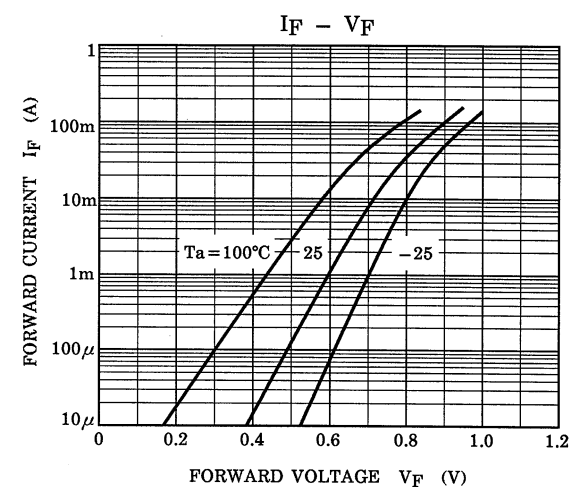
Equivalent circuit (Top view)



Marking



## Electrical Characteristics (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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