

TOSHIBA Diode Silicon Epitaxial Planar Type

1SS306

Ultra High Speed Switching Application

- Small package : SC-61
- Low forward voltage : $V_F(2) = 0.90\text{ V (typ.)}$
- Fast reverse recovery time : $t_{rr} = 30\text{ ns (typ.)}$
- Small total capacitance : $C_T = 1.5\text{ pF (typ.)}$

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 1, 3)	200	mW
	P_D (Note 2)	150	
Junction temperature	T_j (Note 1)	150	°C
	T_j (Note 2)	125	
Storage temperature	T_{stg} (Note 1)	-55 to 150	°C
	T_{stg} (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).

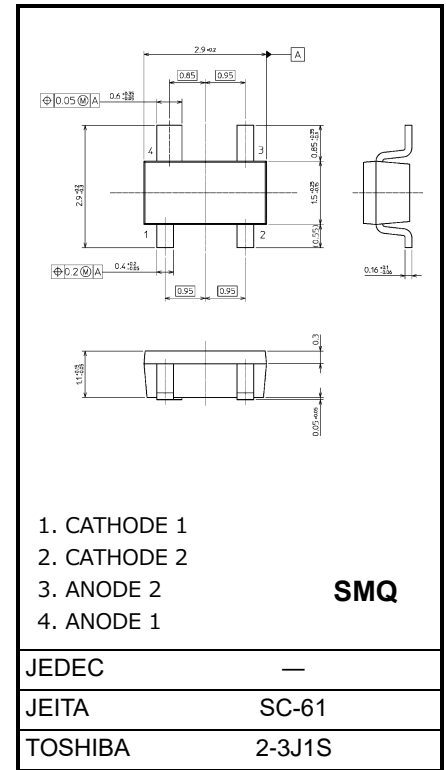
Note 1: For devices with the ordering part number ending in (TE85L,F).

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 mm² × 3 + 1.15 mm²)

*: Unit rating. Total rating = Unit rating × 1.5.

Unit: mm



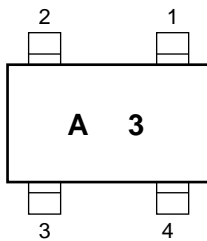
Weight: 0.013 g (typ.)

Start of commercial production
1986-10

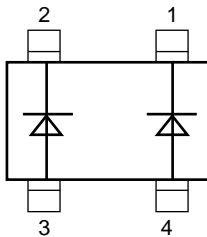
Electrical Characteristics (Ta = 25°C)

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	—	0.9	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	—	30	60	ns

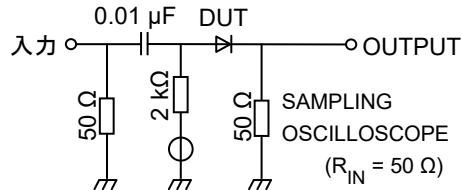
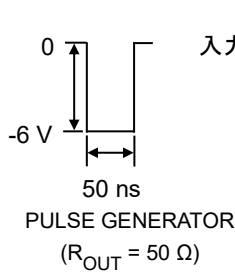
Marking



Equivalent circuit (Top view)



INPUT WAVEFORM



OUTPUT WAVEFORM

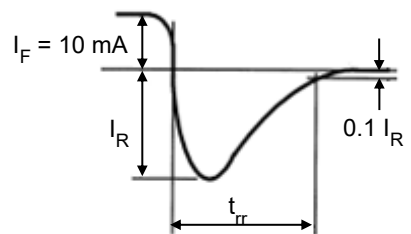
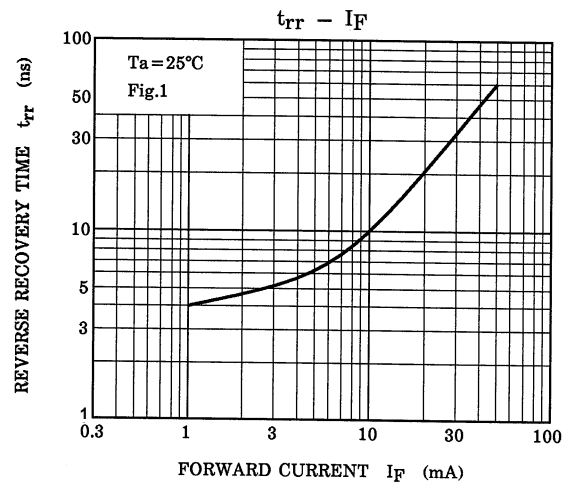
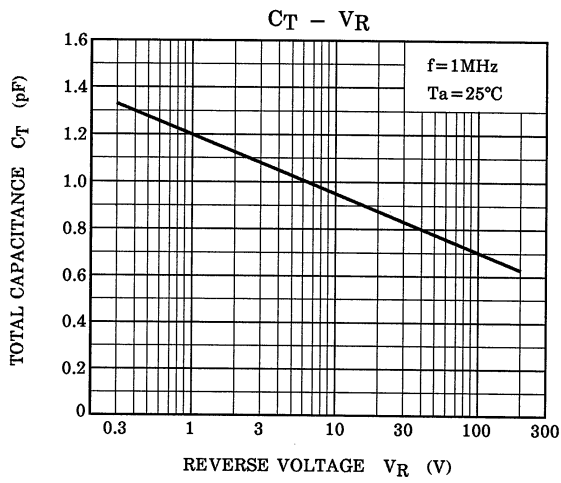
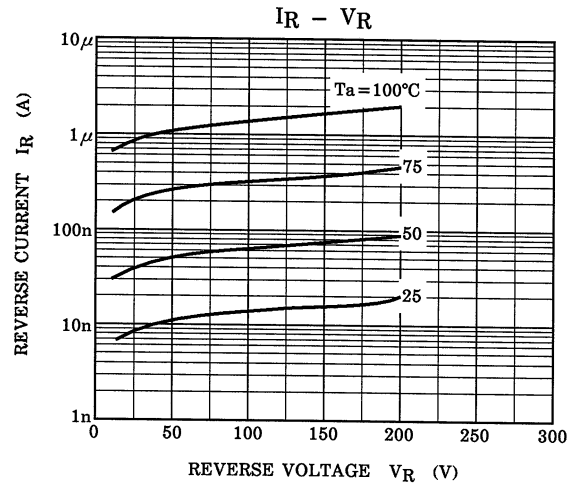
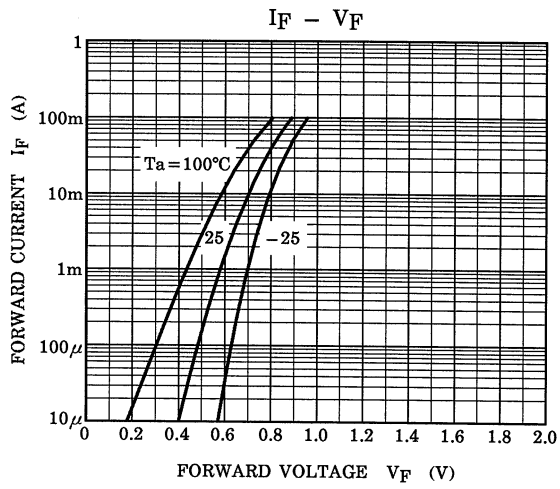


Fig.1 Reverse recovery time (t_{rr}) test circuit

Electrical Characteristics ($T_a = 25^\circ\text{C}$)



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

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