

TOSHIBA Diode Silicon Epitaxial Planar Type

1SS398

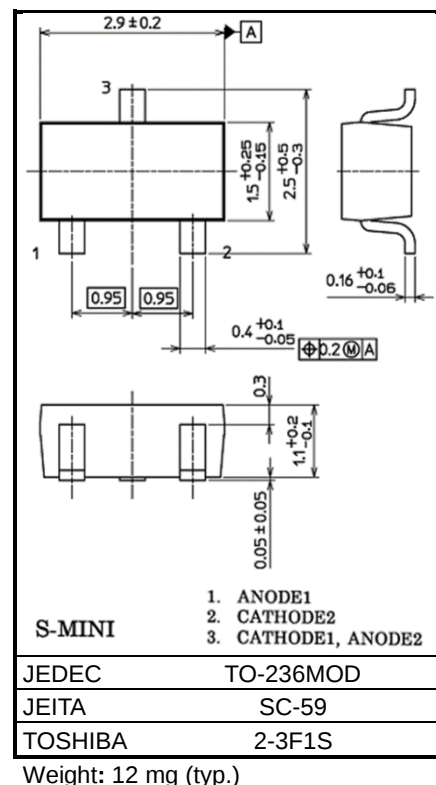
Unit: mm

High-Voltage, High-Speed Switching Applications

- Small package : SC-59
- Low forward voltage : $V_F(2) = 1.0 \text{ V (typ.)}$
- Fast reverse recovery time : $t_{rr} = 0.5 \text{ } \mu\text{s (typ.)}$
- Small total capacitance : $C_T = 2.5 \text{ pF (typ.)}$

Absolute Maximum Ratings (T_a = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse Voltage	V _{RM}	420	V
Reverse voltage	V _R	400	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 range	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 LF(T.

Note 2: For devices with the ordering part number in other than LF(T.

Note 3: Mounted on a FR4 board. (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.8 mm² × 3)

*: Unit rating. Total rating = unit rating $\times$ 0.7

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V _F (1)	I _F = 10 mA	—	0.8	—	V
	V _F (2)	I _F = 100 mA	—	1.0	1.3	
Reverse current	I _R (1)	V _R = 300 V	—	—	0.05	μA
	I _R (2)	V _R = 400 V	—	—	0.1	
Total capacitance	C _T	V _R = 0 V, f = 1 MHz	—	2.5	5.0	pF
Reverse recovery time	t _{rr}	I _F = 10 mA (Fig.1)	—	0.5	—	μs

Start of commercial production
1995-10

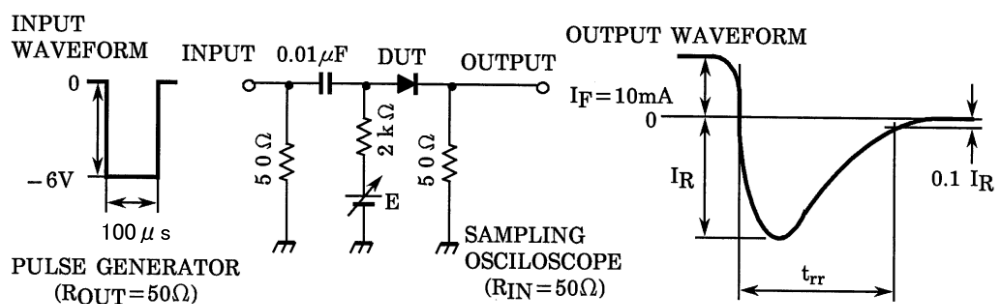
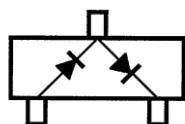
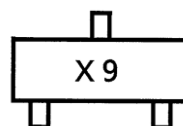


Fig.1 Reverse recovery time (t_{rr}) test circuit

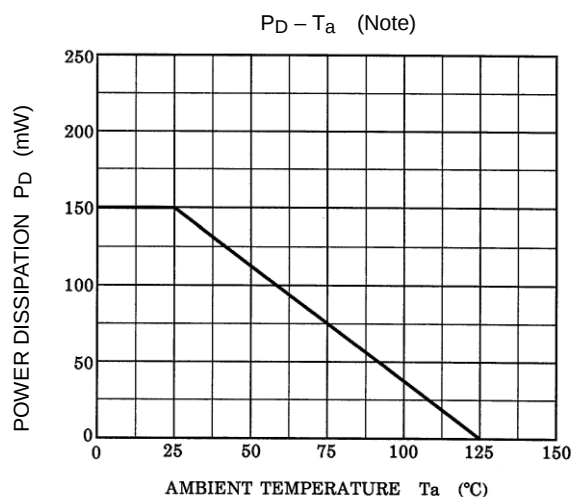
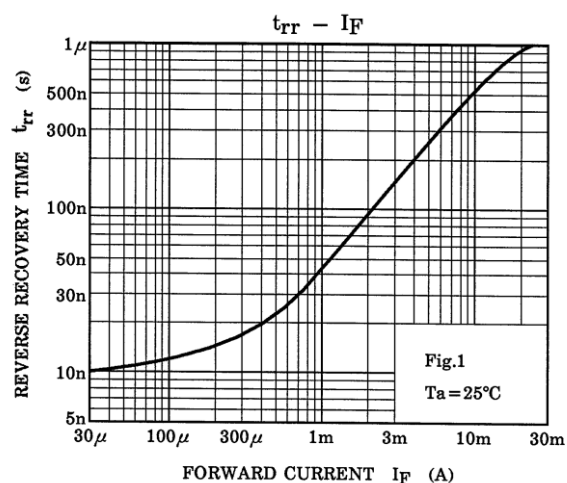
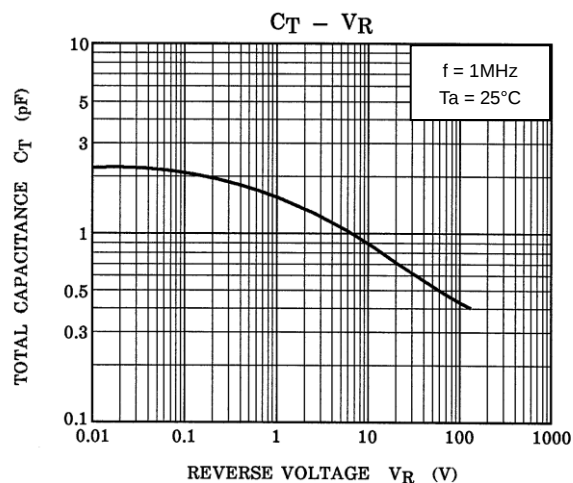
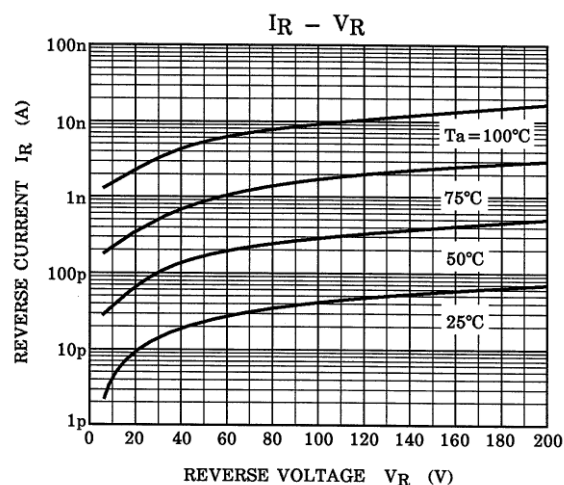
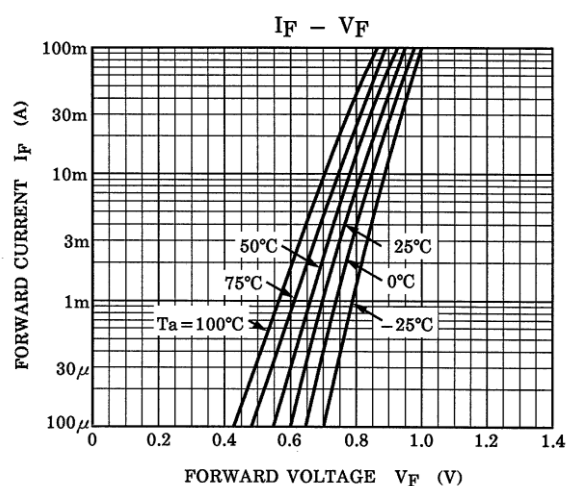
Equivalent Circuit (Top View)



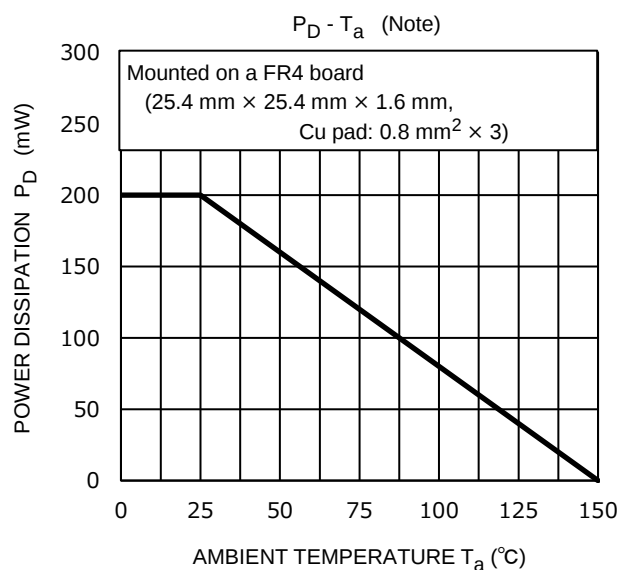
Marking



Characteristics Curves



Note: Reference only with T_j of 125°C .



Note: Reference only with T_j of 150°C .

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

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