

1SS398

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: $t_{rr} = 0.5 \mu\text{s (typ.)}$
- Small total capacitance : $C_T = 2.5 \text{ pF (typ.)}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

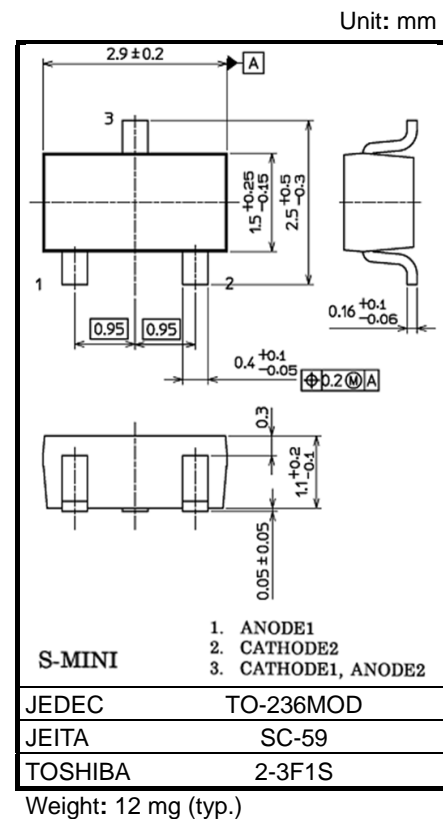
Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse Voltage	V_{RM}	420	V
Reverse voltage	V_R	400	V
Maximum (peak) forward current	I_{FM}	300 *	mA
Average forward current	I_O	100 *	mA
Surge current (10ms)	I_{FSM}	2 *	A
Power dissipation	P	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 125	$^\circ\text{C}$

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).

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

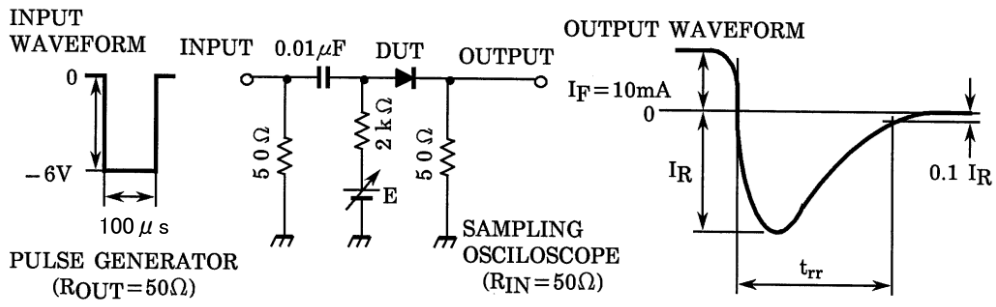
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F (1)$	$I_F = 10 \text{ mA}$	—	0.8	—	V
	$V_F (2)$	$I_F = 100 \text{ mA}$	—	1.0	1.3	
Reverse current	$I_R (1)$	$V_R = 300 \text{ V}$	—	—	0.05	μA
	$I_R (2)$	$V_R = 400 \text{ V}$	—	—	0.1	
Total capacitance	C_T	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$	—	2.5	5.0	pF
Reverse recovery time	t_{rr}	$I_F = 10 \text{ mA}$ (Fig.1)	—	0.5	—	μs

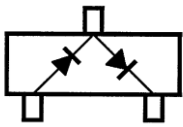


Start of commercial production
1995-10

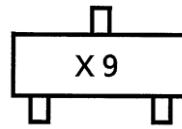
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit

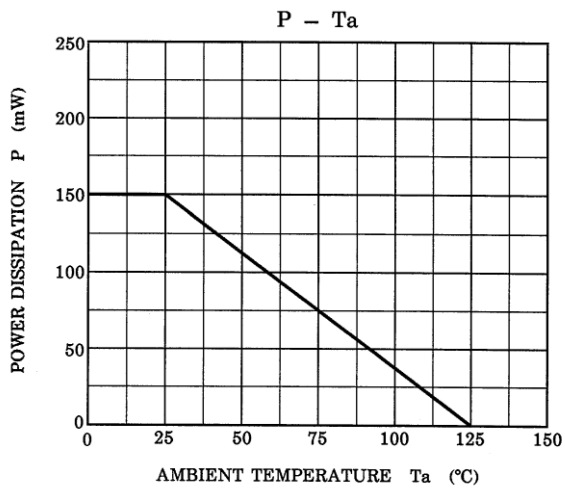
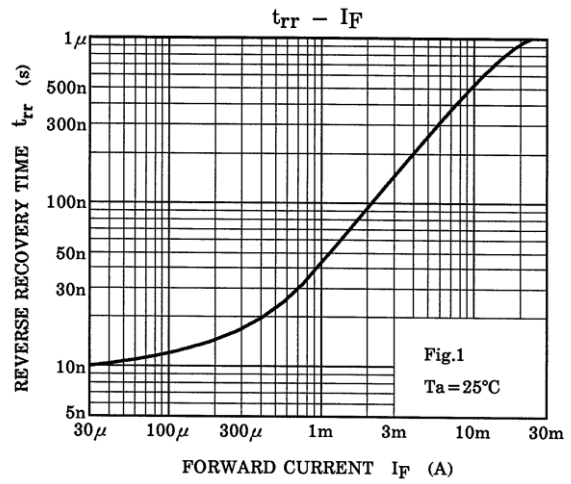
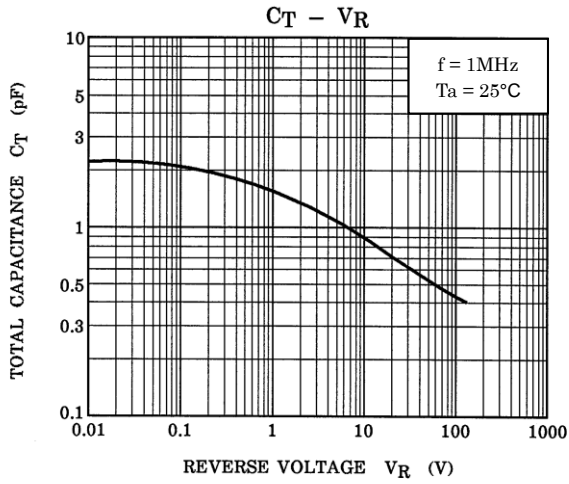
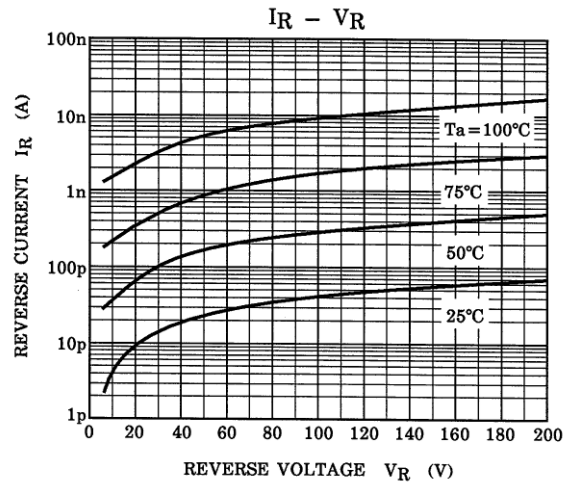
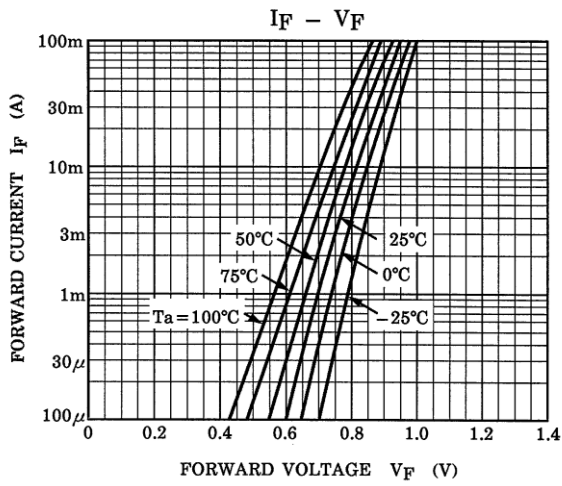


Equivalent Circuit (Top View)



Marking





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