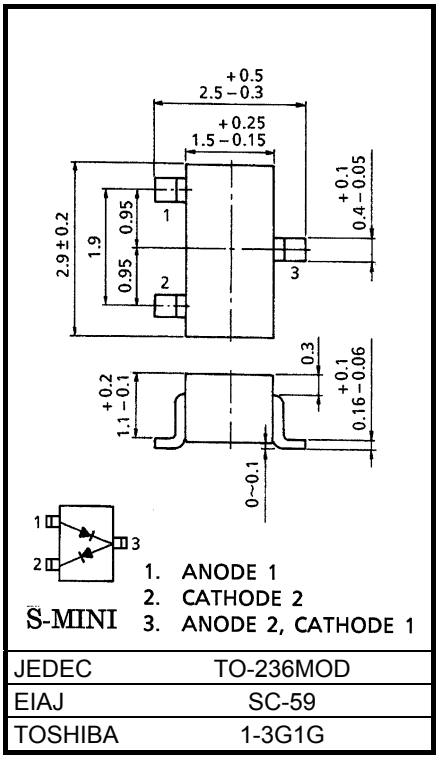
TOSHIBA Diode Silicon Epitaxial Planar Diode

1SS398

High Voltage, High Speed Switching Applications

- Low forward voltage : V_F = 1.0V (typ.)
- High voltage : V_R = 400V (min)
- Fast reverse recovery time : t_{rr} = 0.5μs (typ.)
- Small total capacitance : C_T = 2.5pF (typ.)
- Small package : SC-59

Unit: mm



JEDEC	TO-236MOD
EIAJ	SC-59
TOSHIBA	1-3G1G

Weight: 0.012g

Absolute Maximum Ratings (Ta = 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	150	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55~125	°C

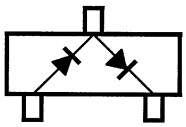
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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 × 0.7

Electrical Characteristics (Ta = 25°C)

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

Equivalent Circuit
(Top View)



Marking

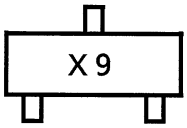
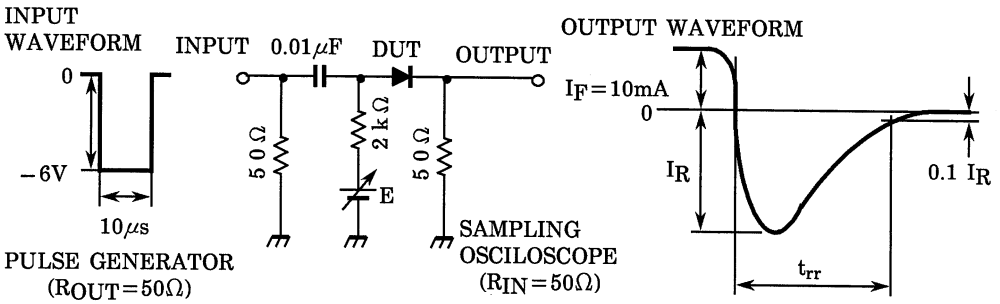
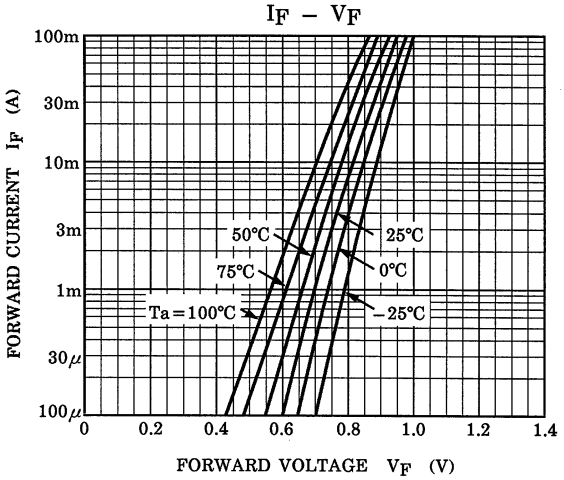


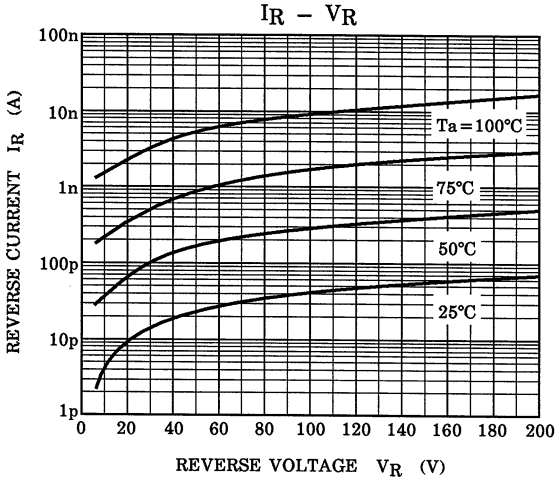
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit



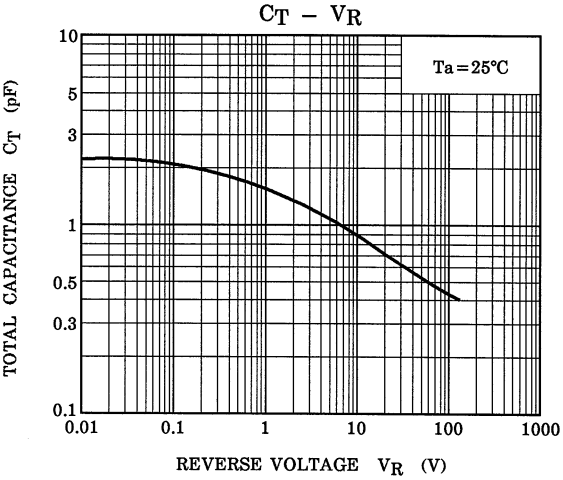
$I_F - V_F$



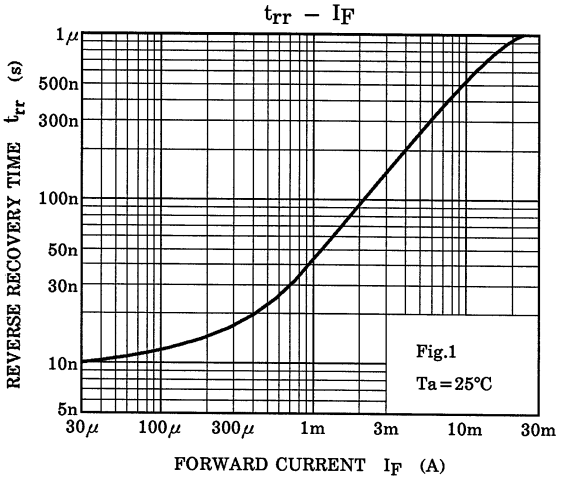
$I_R - V_R$



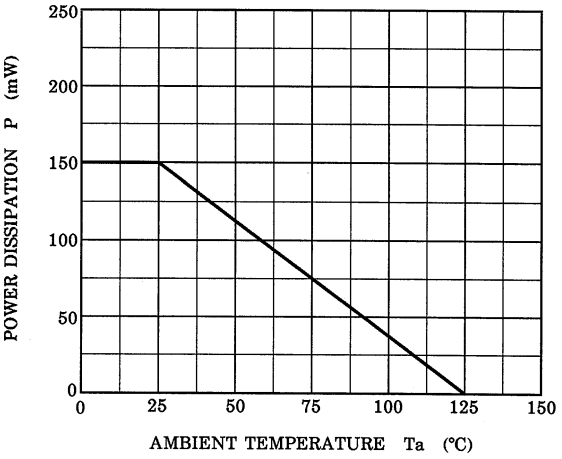
$C_T - V_R$



$t_{rr} - I_F$



P – Ta



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20070701-EN GENERAL

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