

1SS301

Ultra High Speed Switching Applications

Unit: mm

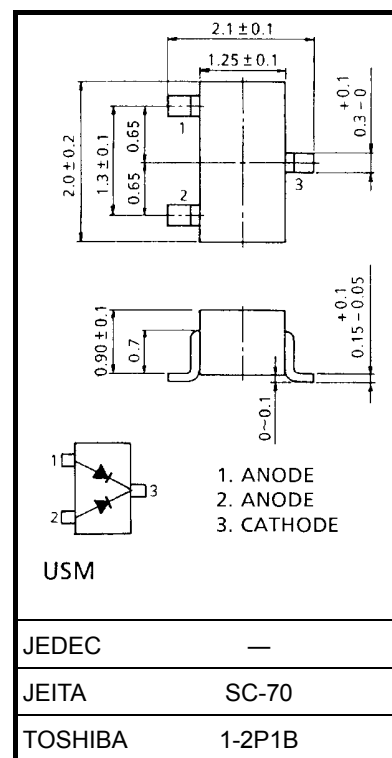
- Small package : SC-70
- Low forward voltage : $V_F(3) = 0.9 \text{ V (typ.)}$
- Fast reverse recovery time: $t_{rr} = 1.6 \text{ ns (typ.)}$
- Small total capacitance : $C_T = 0.9 \text{ pF (typ.)}$

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

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	V_{RM}	85	V
Reverse voltage	V_R	80	V
Maximum (peak) forward current	I_{FM}	300 (*)	mA
Average forward current	I_O	100 (*)	mA
Surge current (10 ms)	I_{FSM}	2 (*)	A
Power dissipation	P	100	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature	T_{stg}	-55~125	$^\circ\text{C}$

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 $\times$ 1.5



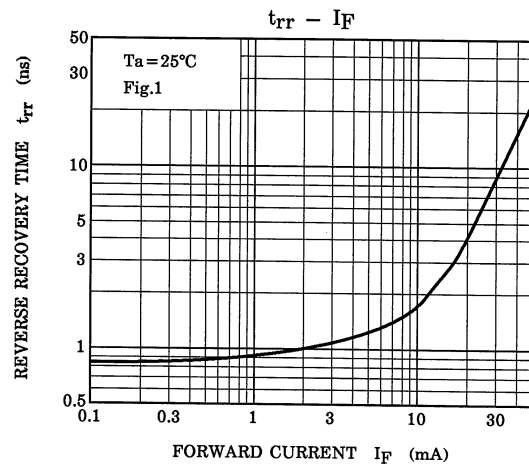
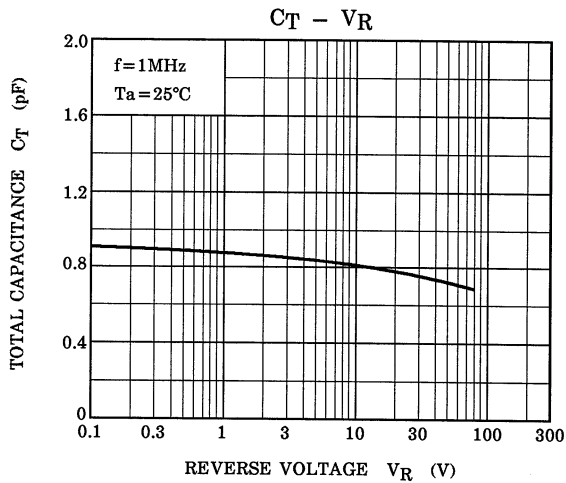
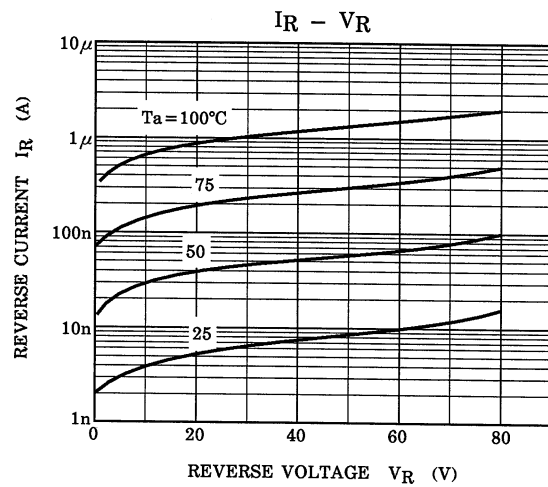
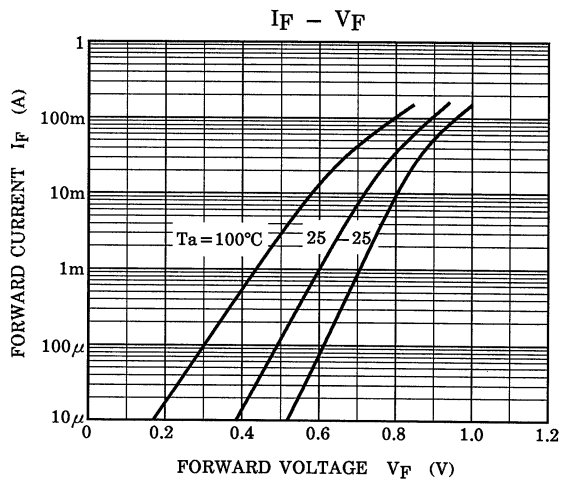
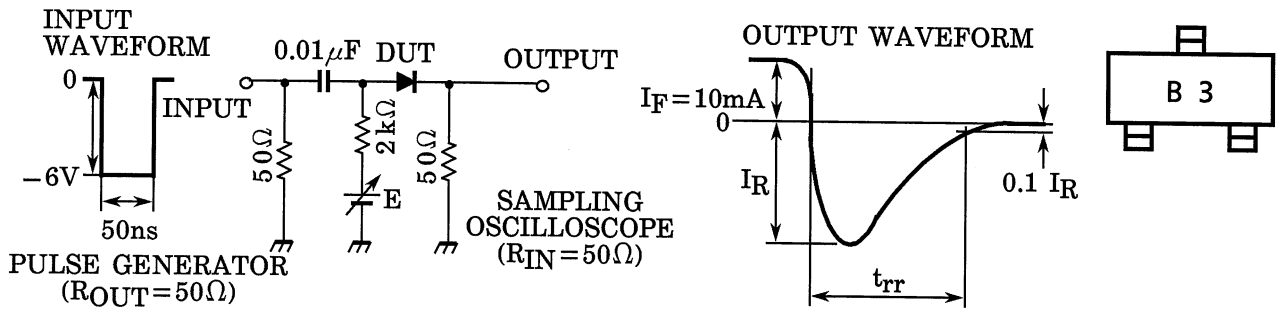
Weight: 0.006 g (typ.)

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

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F(1)$	—	$I_F = 1 \text{ mA}$	—	0.60	—	V
	$V_F(2)$	—	$I_F = 10 \text{ mA}$	—	0.72	—	
	$V_F(3)$	—	$I_F = 100 \text{ mA}$	—	0.90	1.20	
Reverse current	$I_R(1)$	—	$V_R = 30 \text{ V}$	—	—	0.1	μA
	$I_R(2)$	—	$V_R = 80 \text{ V}$	—	—	0.5	
Total capacitance	C_T	—	$V_R = 0, f = 1 \text{ MHz}$	—	0.9	3.0	pF
Reverse recovery time	t_{rr}	—	$I_F = 10 \text{ mA, Fig.1}$	—	1.6	4.0	ns

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

Marking



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