

# 1SS301

## Ultra High Speed Switching Applications

- 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 (Ta = 25°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	°C
Storage temperature	$T_{stg}$	-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.

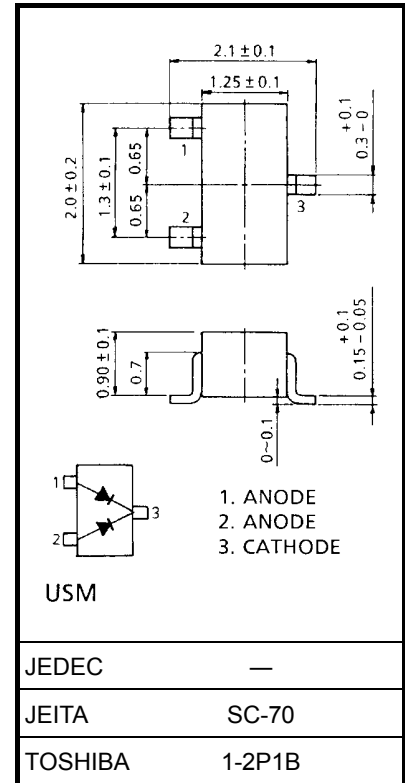
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

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

## Electrical Characteristics (Ta = 25°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

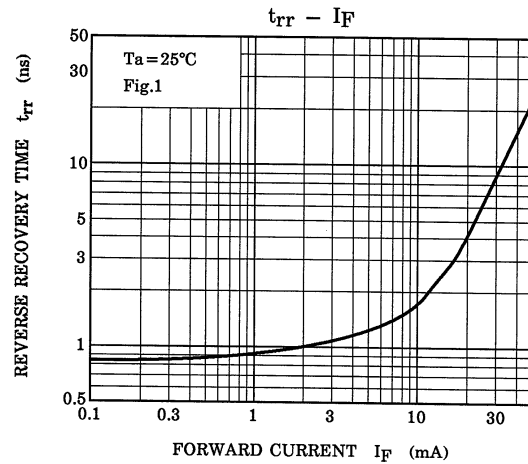
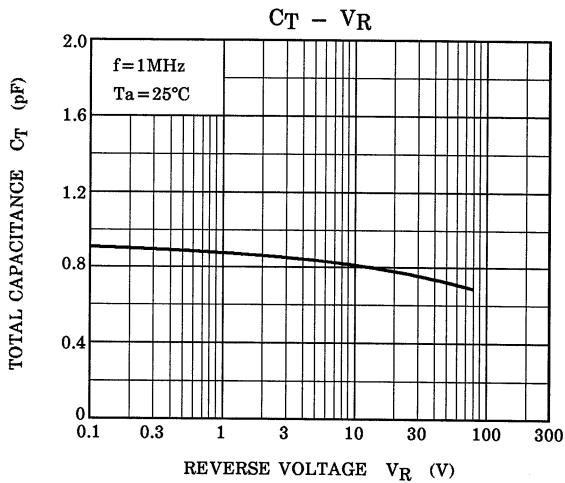
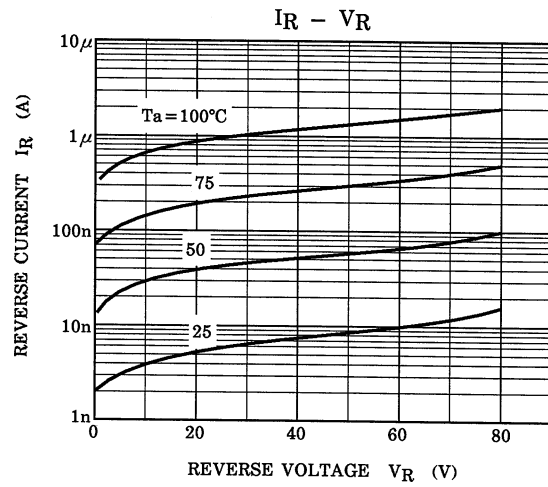
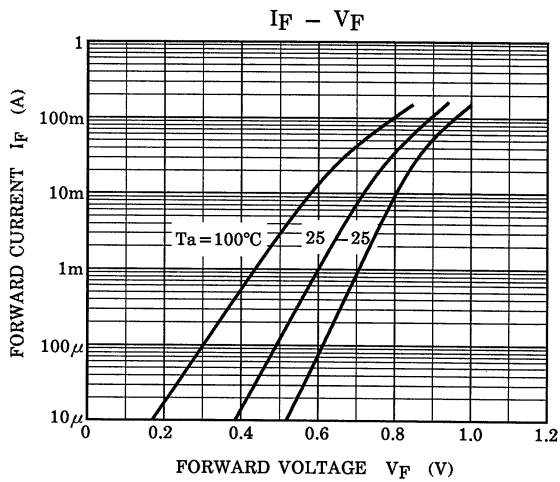
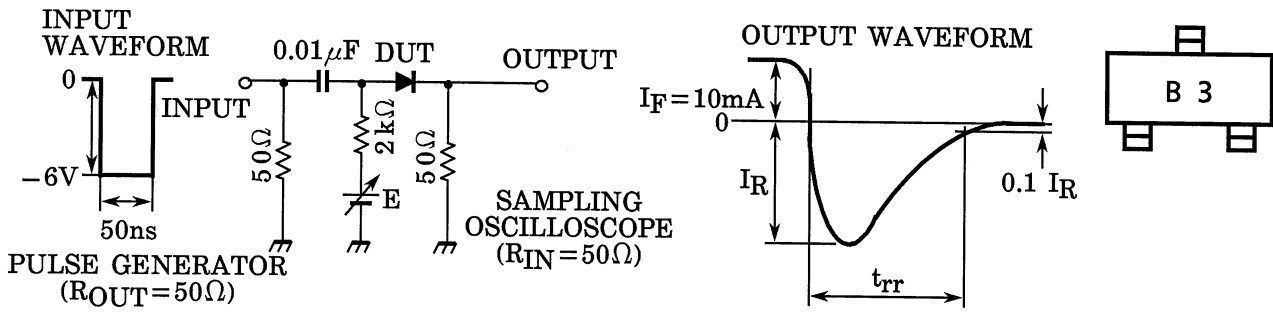
Unit: mm



Weight: 0.006 g (typ.)

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

**Marking**



**RESTRICTIONS ON PRODUCT USE**

20070701-EN GENERAL

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