

TOSHIBA Diode Silicon Epitaxial Planar Type

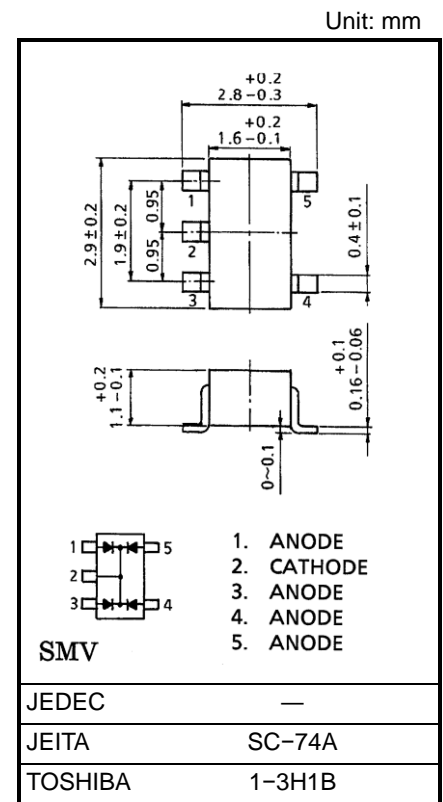
## 1SS309

### Ultra High Speed Switching Applications

- Small package : SC-74A
- Low forward voltage :  $V_F(3) = 0.90V$  (typ.)
- Fast reverse recovery time:  $t_{rr} = 1.6ns$  (typ.)
- Small total capacitance :  $C_T = 0.9pF$  (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 (10ms)	$I_{FSM}$	2 (*)	A
Power dissipation	$P_D$ (Note 1, 3)	300	mW
	$P_D$ (Note 2)	200	
Junction temperature	$T_j$ (Note 1)	150	°C
	$T_j$ (Note 2)	125	
Storage temperature	$T_{stg}$ (Note 1)	-55 to 150	°C
	$T_{stg}$ (Note 2)	-55 to 125	



Weight: 0.014g (typ.)

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: Total rating.

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

### Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	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	$C_T$	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	0.9	3.0	pF
Reverse recovery time	$t_{rr}$	$I_F = 10\text{ mA}, \text{ Fig.1}$	—	1.6	4.0	ns

Start of commercial production  
1987-07

## Marking

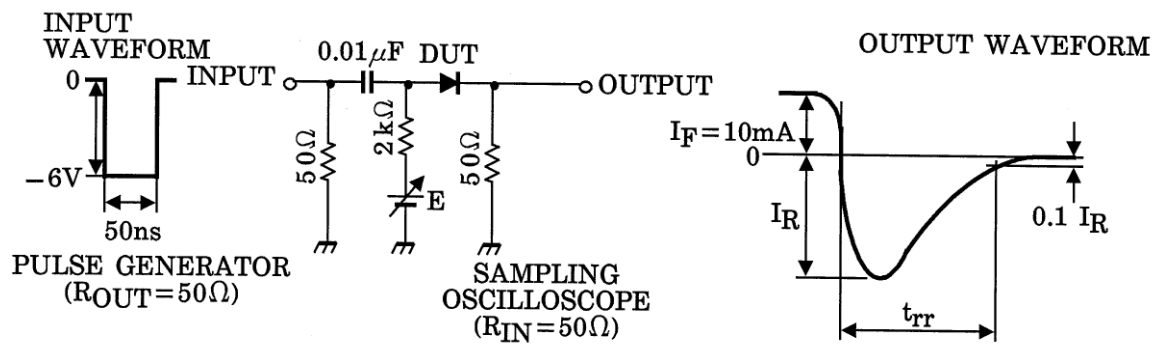
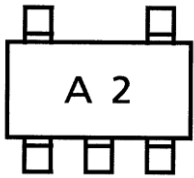
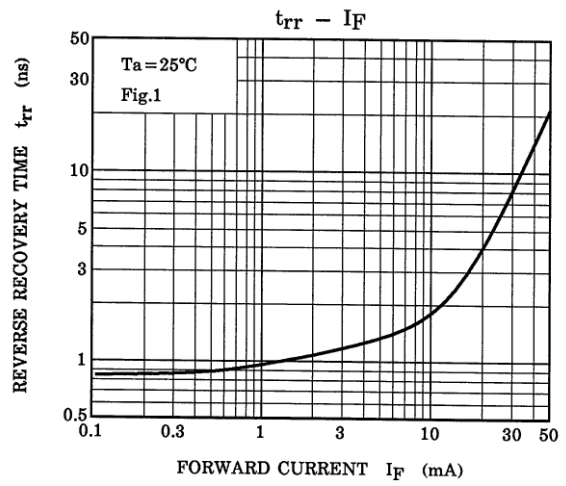
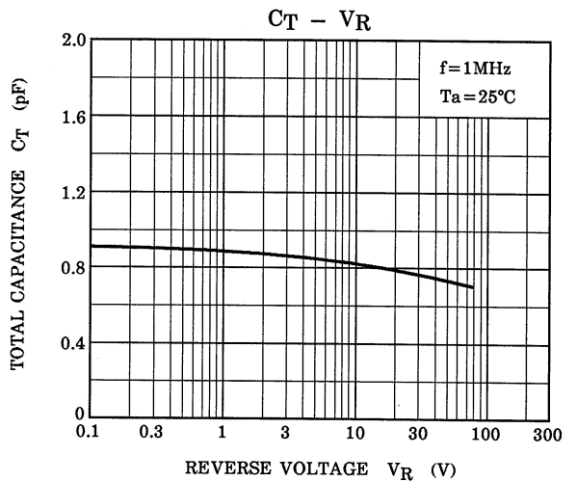
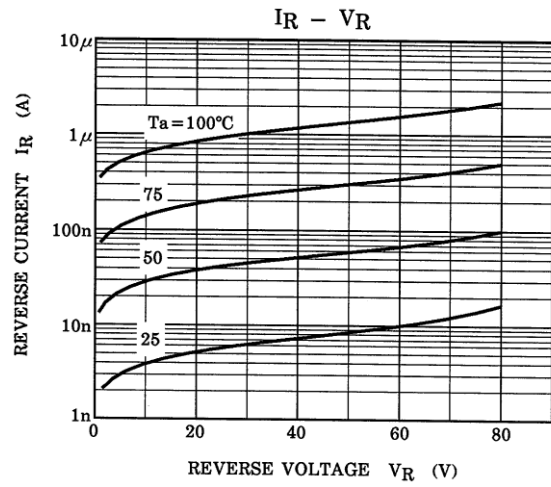
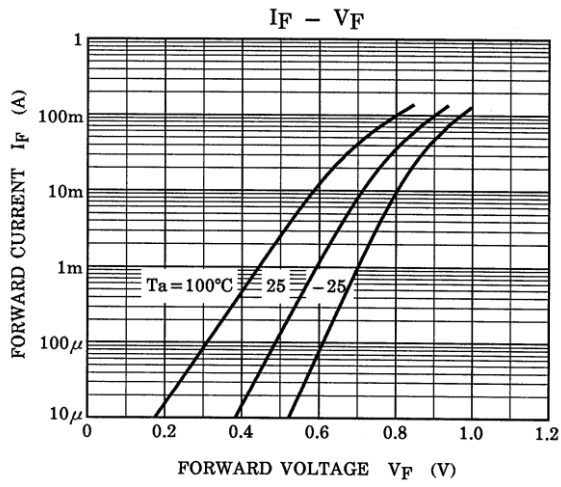


Fig.1 Reverse recovery time ( $t_{rr}$ ) test circuit

## Characteristics Curves



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

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