

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 ($T_a = 25^\circ C$)

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	$^\circ C$
	T_j (Note 2)	125	
Storage temperature	T_{stg} (Note 1)	-55 to 150	$^\circ C$
	T_{stg} (Note 2)	-55 to 125	

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).

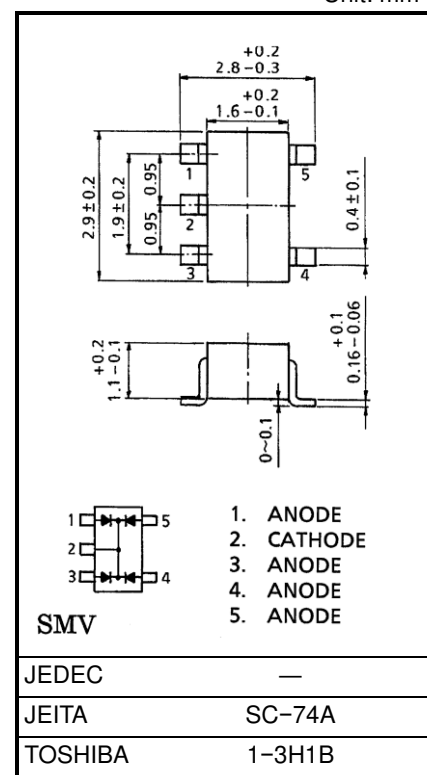
Note 3: Total rating.

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

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

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

Unit: mm



Weight: 0.014g (typ.)

Start of commercial production
1987-07

Marking

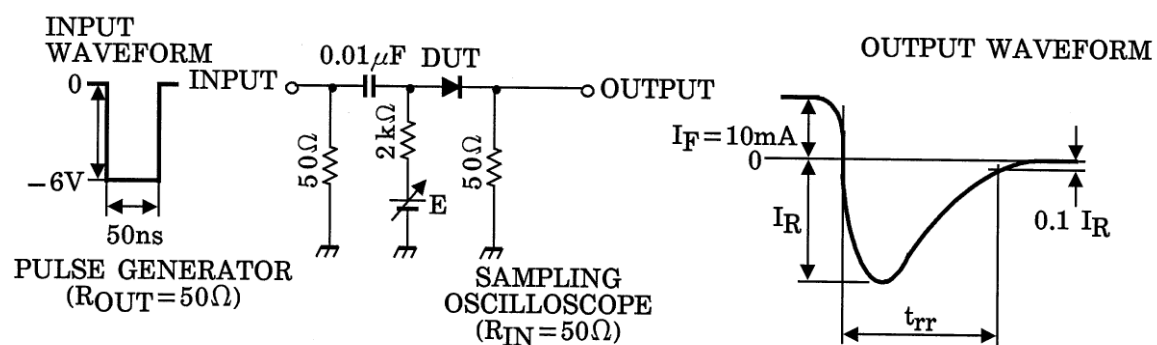
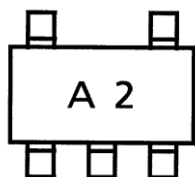
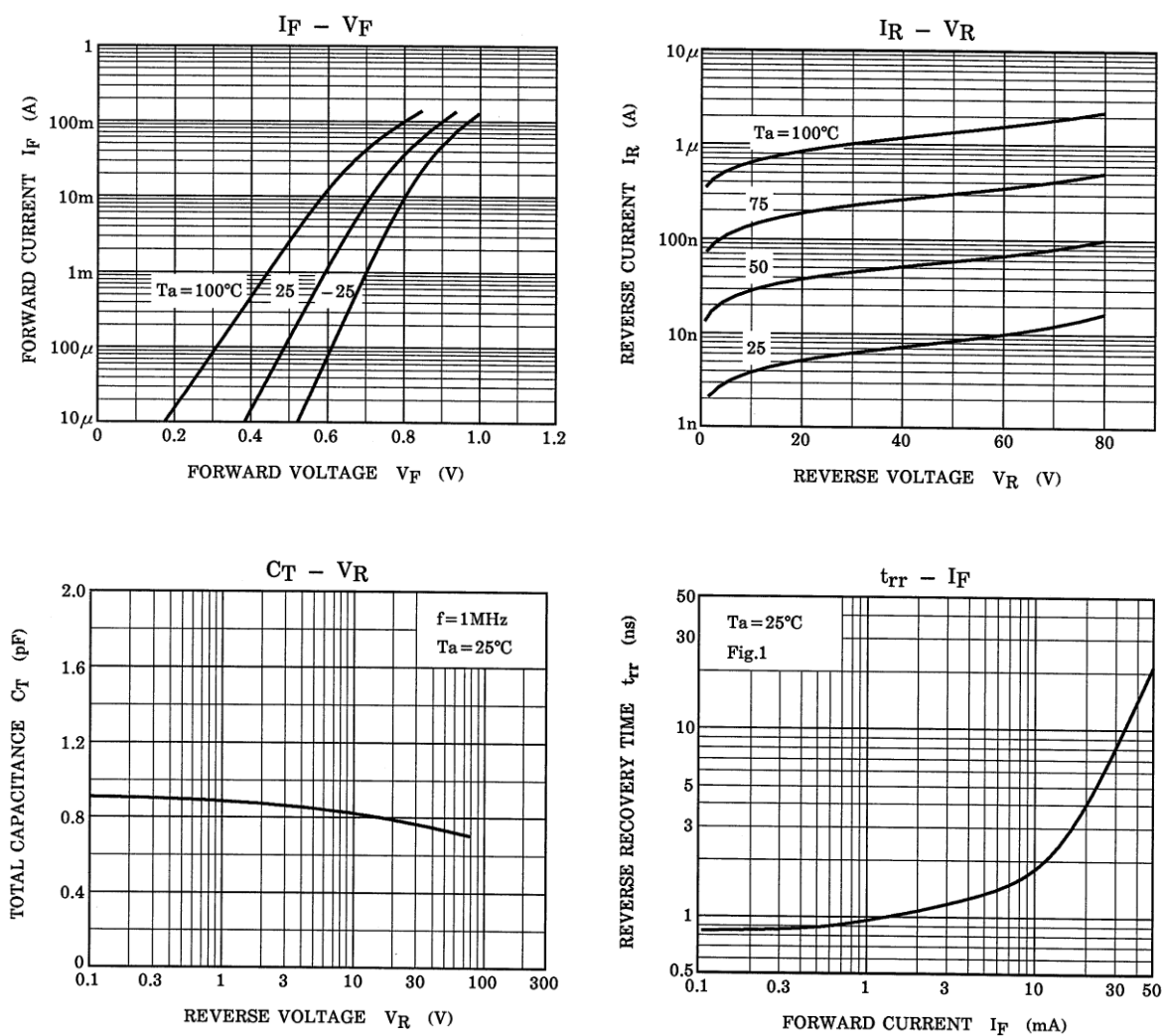


Fig.1 Reverse recovery time (t_{rr}) test circuit

Characteristics Curves



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

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