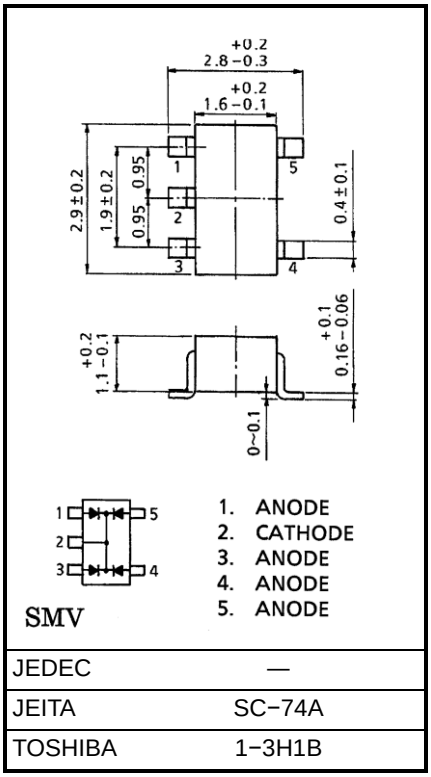
TOSHIBA Diode Silicon Epitaxial Planar Type

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.)

Unit: mm



JEDEC	—
JEITA	SC−74A
TOSHIBA	1−3H1B

Weight: 0.014g (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	

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.

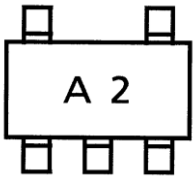
(*): Unit rating. Total rating = unit rating × 1.5

Electrical Characteristics (Ta = 25°C)

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

Start of commercial production
1987-07

Marking



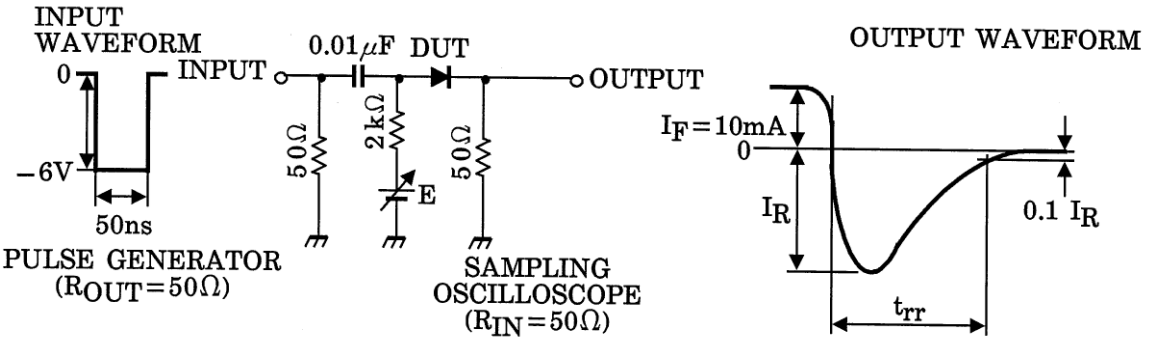
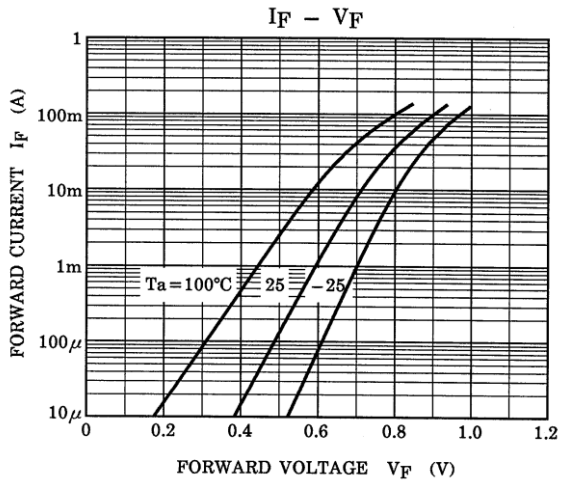
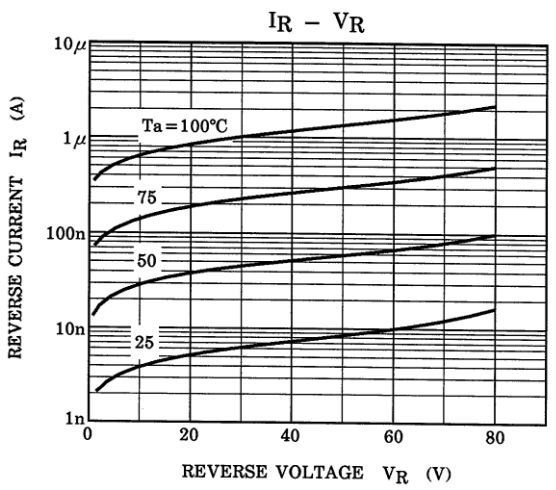
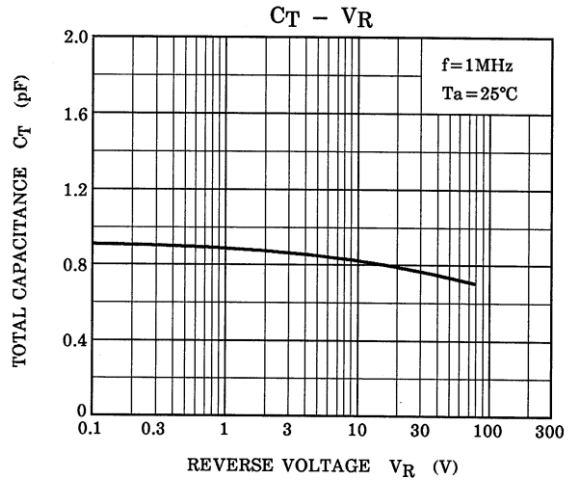


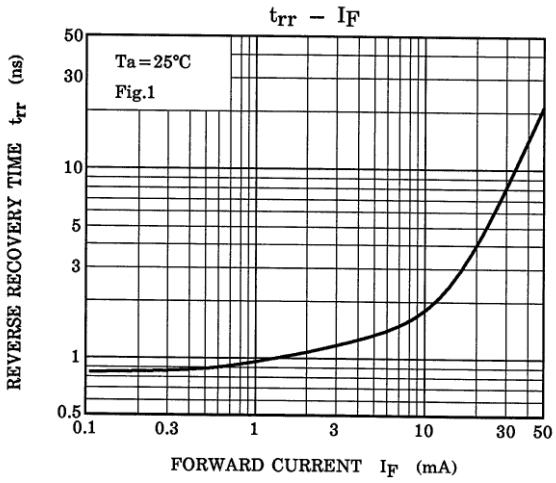
Fig.1 Reverse recovery time (t_{rr}) test circuit

Characteristics Curves









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