TOSHIBA Diode Silicon Epitaxial Planar Type

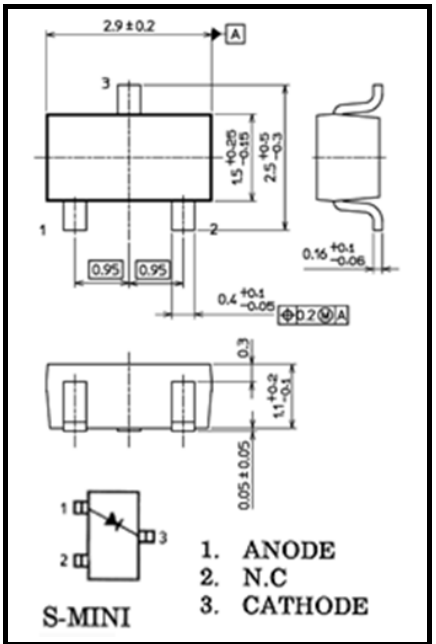
1SS193

Ultra High Speed Switching Application

- AEC-Q101 Qualified (Note1)
- Small package : SC-59
- Low forward voltage : $V_{F\ (3)}$ = 0.9V (typ.)
- Fast reverse recovery time : t_{rr} = 1.6ns (typ.)
- Small total capacitance : C_T = 0.9pF (typ.)

Note1: For detail information, please contact to our sales.

Unit: mm



JEDEC	TO–236MOD
JEITA	SC-59
TOSHIBA	2-3F1S

Weight: 12 mg (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	150	mW
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	−55 to 150	°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).

Electrical Characteristics (Ta = 25°C)

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

Start of commercial production
1982-05

Marking

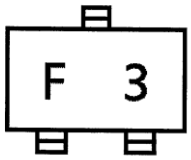
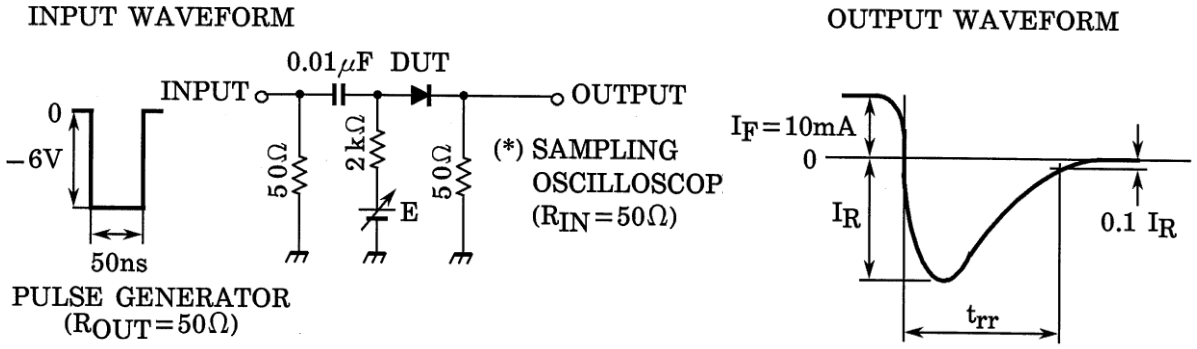
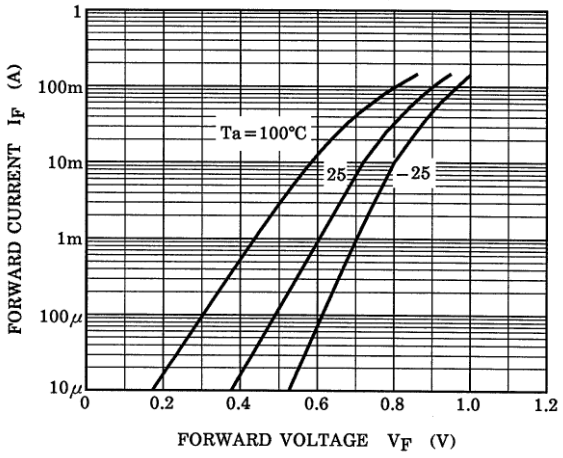


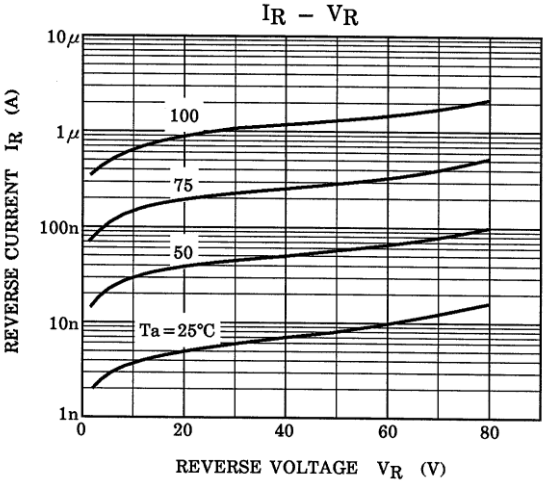
Fig.1 Reverse recovery time (t_{rr}) test circuit



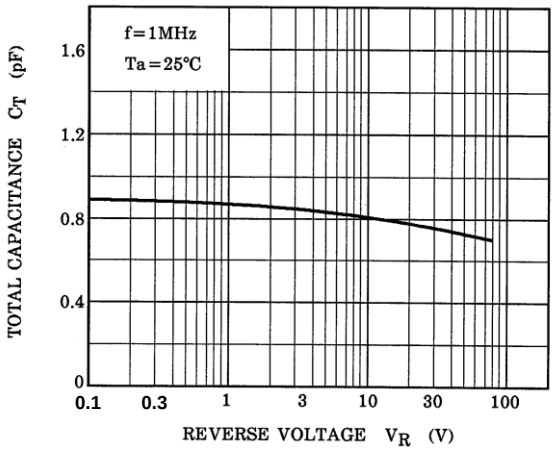
$I_F - V_F$



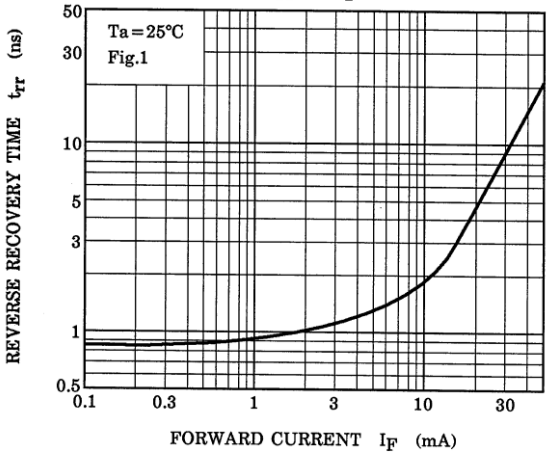
$I_R - V_R$



$C_T - V_R$



$t_{rr} - I_F$



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