TOSHIBA Diode Silicon Epitaxial Planar Type

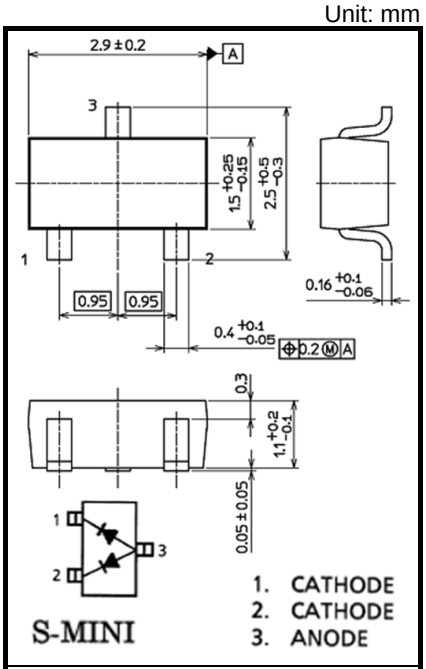
1SS181

Ultra High Speed Switching Application

- AEC-Q101 Qualified (Note1)
- Small package : SC-59
- Low forward voltage : $V_{F\ (3)}$ = 0.92V (Typ.)
- Fast reverse recovery time : t_{rr} = 1.6ns (Typ.)
- Small total capacitance : C_T = 2.2pF (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	125	°C
Storage temperature	T_{stg}	−55 to 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

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	I_F = 1mA	—	0.61	—	V
	$V_{F\ (2)}$	I_F = 10mA	—	0.74	—	
	$V_{F\ (3)}$	I_F = 100mA	—	0.92	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 = 0V, f = 1MHz	—	2.2	4.0	pF
Reverse recovery time	t_{rr}	I_F = 10mA (Fig.1)	—	1.6	4.0	ns

Start of commercial production
1982-06

Marking

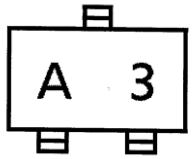
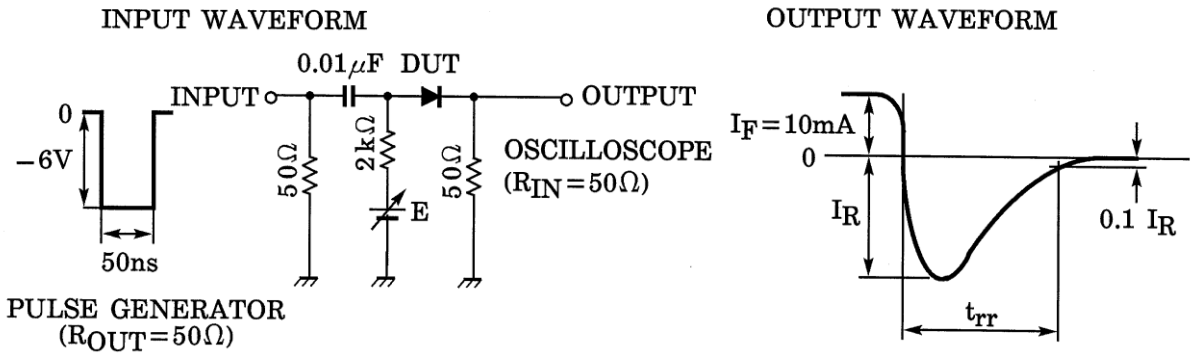
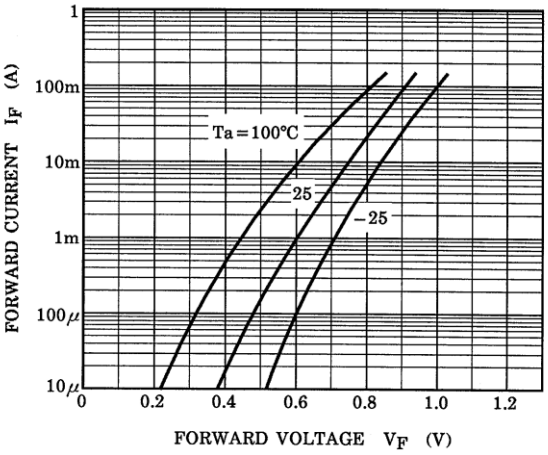


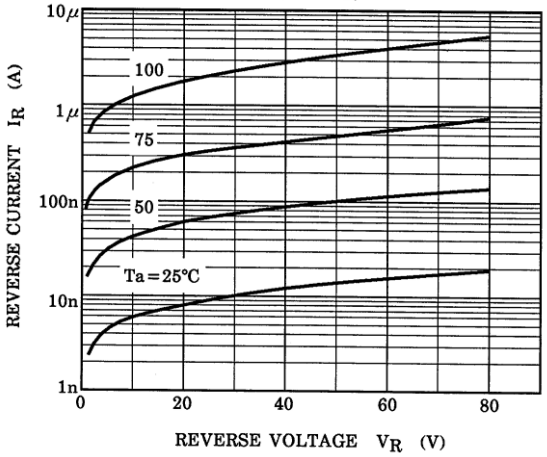
Fig.1 Reverse recovery time (t_{rr}) test circuit



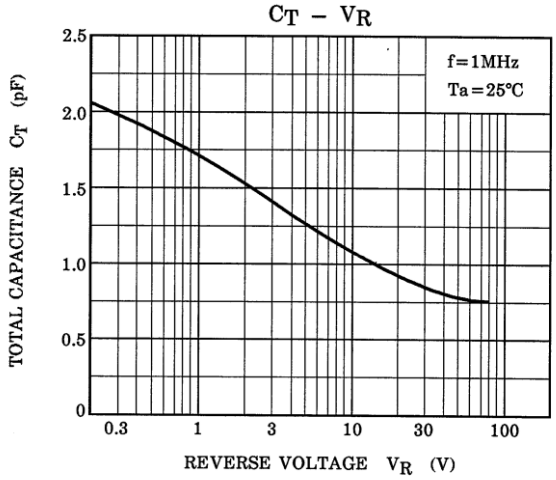
$I_F - V_F$



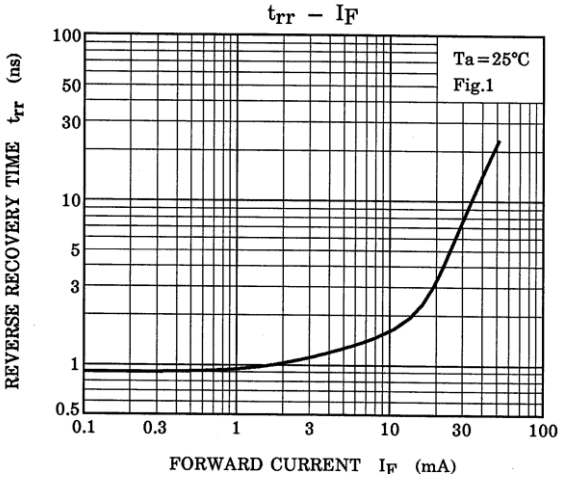
$I_R - V_R$



$C_T - V_R$



$t_{rr} - I_F$



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