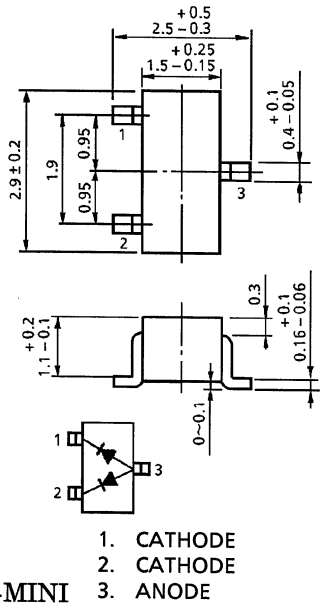
TOSHIBA Diode Silicon Epitaxial Planar Type

1SS181

Ultra High Speed Switching Application

- 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.)

Unit: mm



S-MINI

JEDEC	TO-236MOD
EIAJ	SC-59
TOSHIBA	1-3G1E

Weight: 0.012g

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}	−55~125	°C

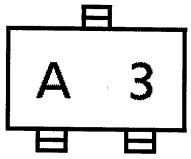
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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 Circuit	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 = 100mAs	—	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 = 0, f = 1MHz	—	2.2	4.0	pF
Reverse recovery time	t_{rr}	—	I_F = 10mA (Fig.1)	—	1.6	4.0	ns

Marking



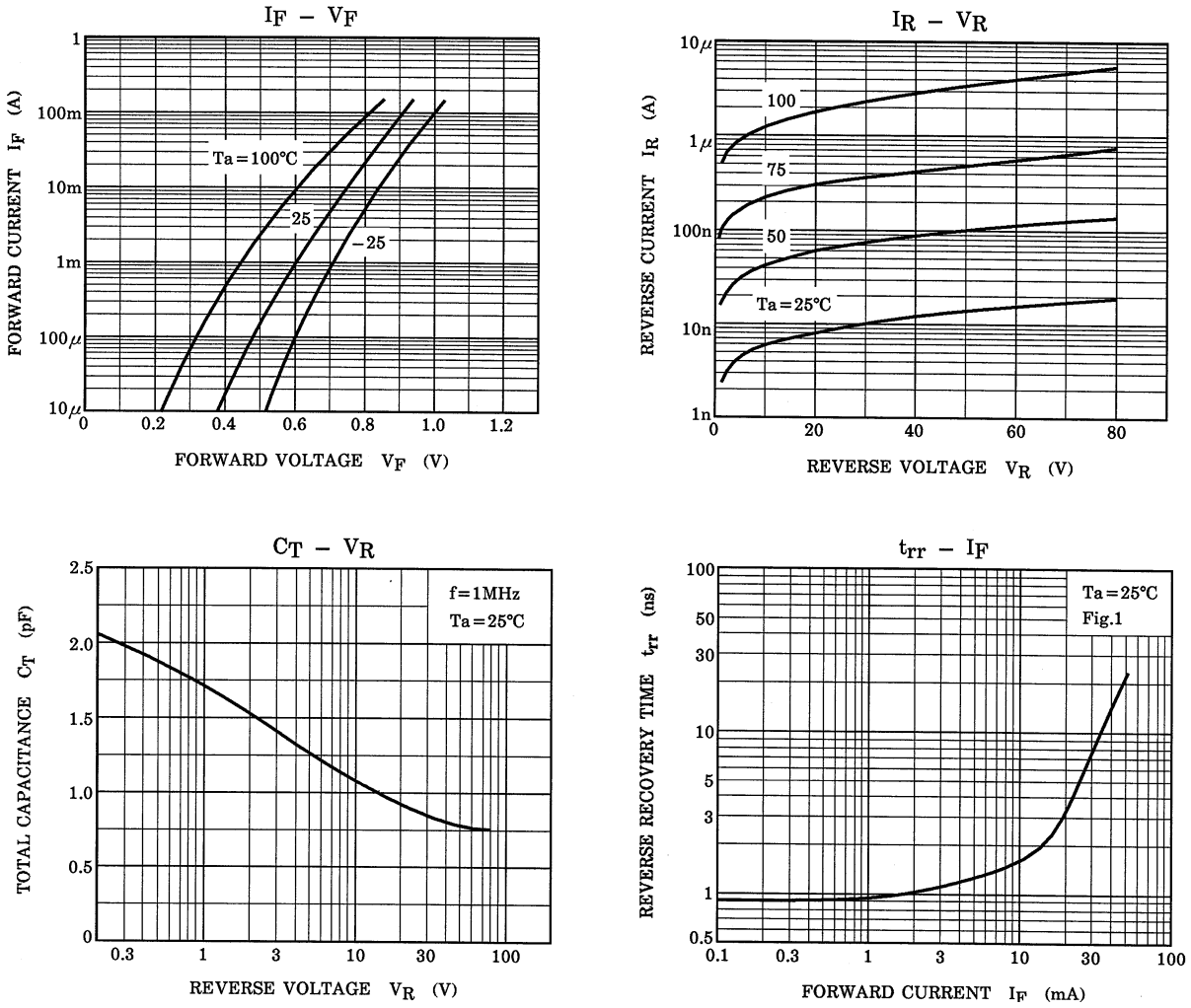
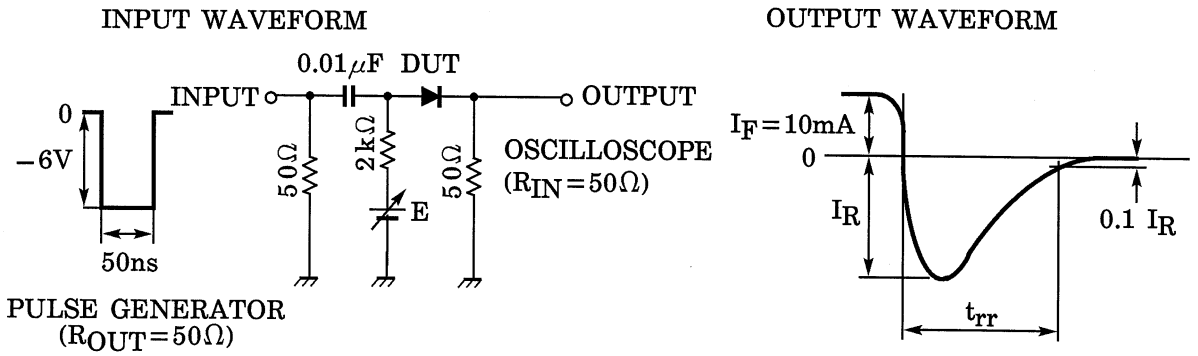


Fig.1 Reverse recovery time (t_{rr}) test circuit



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20070701-EN GENERAL

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  In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent TOSHIBA products specifications. Also, please keep in mind the precautions and conditions set forth in the “Handling Guide for Semiconductor Devices,” or “TOSHIBA Semiconductor Reliability Handbook” etc.
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