Switching Diodes Silicon Epitaxial Planar

1SS387CT

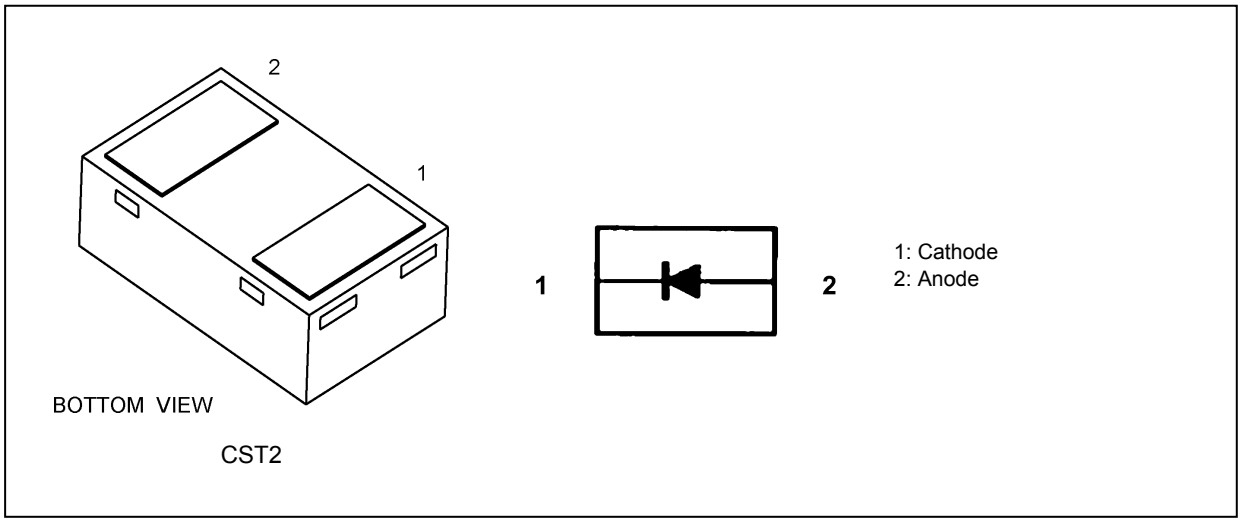
1. Applications

- Ultra-High-Speed Switching

2. Features

(1) Small package
(2) Low forward voltage: $V_{F(3)}$ = 0.98 V (typ.)
(3) Fast reverse recovery time: t_{rr} = 1.6 ns (typ.)
(4) Small total capacitance: C_t = 0.5 pF (typ.)

3. Packaging and Internal Circuit



Start of commercial production
2004-08

4. Absolute Maximum Ratings (Note) (Unless otherwise specified, T_a = 25 °C)

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	V_{RM}		85	V
Reverse voltage	V_R		80	
Peak forward current	I_{FM}		200	mA
Average rectified current	I_O		100	
Non-repetitive peak forward surge current	I_{FSM}		1	A
Power dissipation	P_D	(Note 1)	150	mW
Junction temperature	T_j		150	°C
Storage temperature	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).

Note 1: Mounted on a glass epoxy circuit board of 20 mm × 20 mm, Pad dimension of 4 mm × 4 mm.

5. Electrical Characteristics (Unless otherwise specified, T_a = 25 °C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F(1)}$	I_F = 1 mA	—	0.62	—	V
	$V_{F(2)}$	I_F = 10 mA	—	0.75	—	
	$V_{F(3)}$	I_F = 100 mA	—	0.98	1.2	
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	—	0.5	—	pF
Reverse recovery time	t_{rr}	I_F = 10 mA See Fig. 5.1.	—	1.6	—	ns

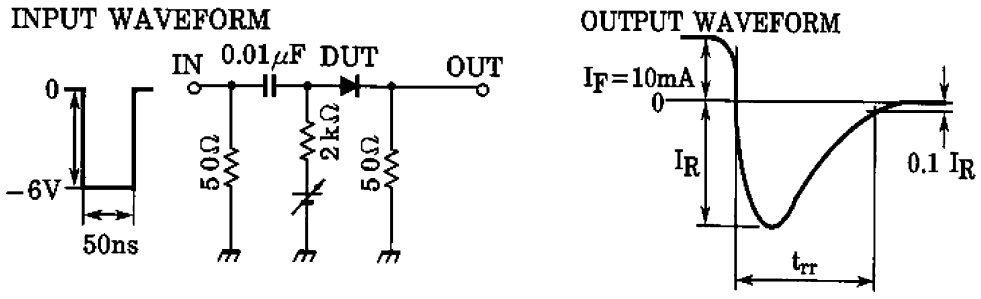
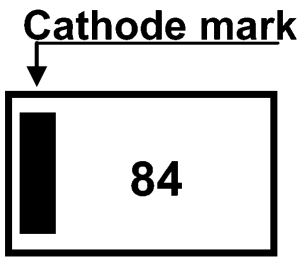
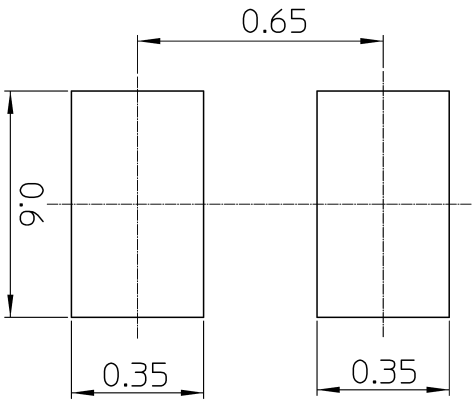


Fig. 5.1 Reverse recovery time (t_{rr}) Test circuit

6. Marking



7. Land Pattern Dimensions (for reference only)



(Unit: mm)

8. Characteristics Curves (Note)

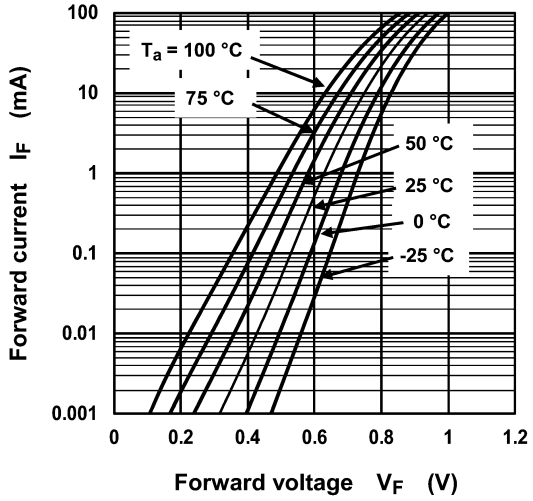


Fig. 8.1 I_F - V_F

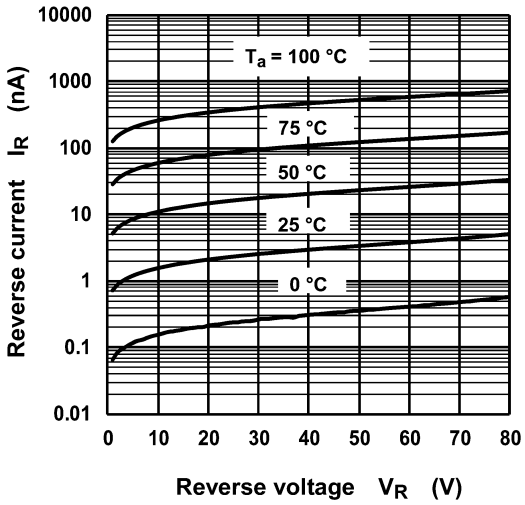


Fig. 8.2 I_R - V_R

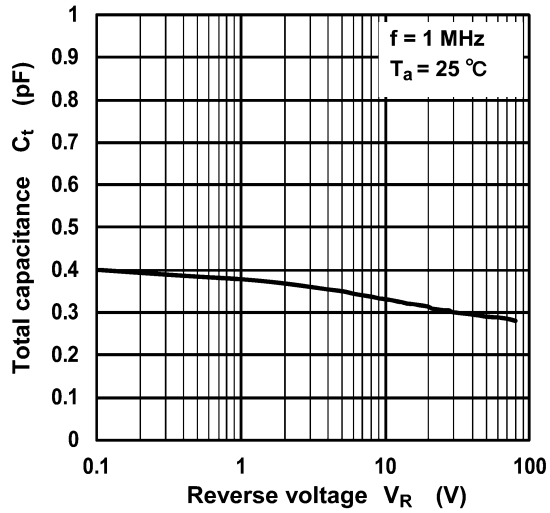


Fig. 8.3 C_t - V_R

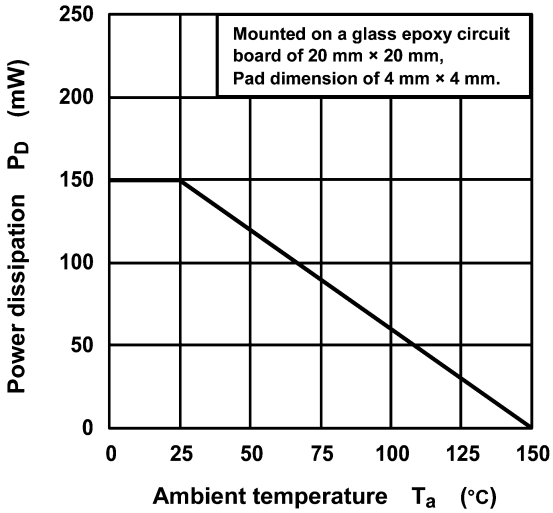
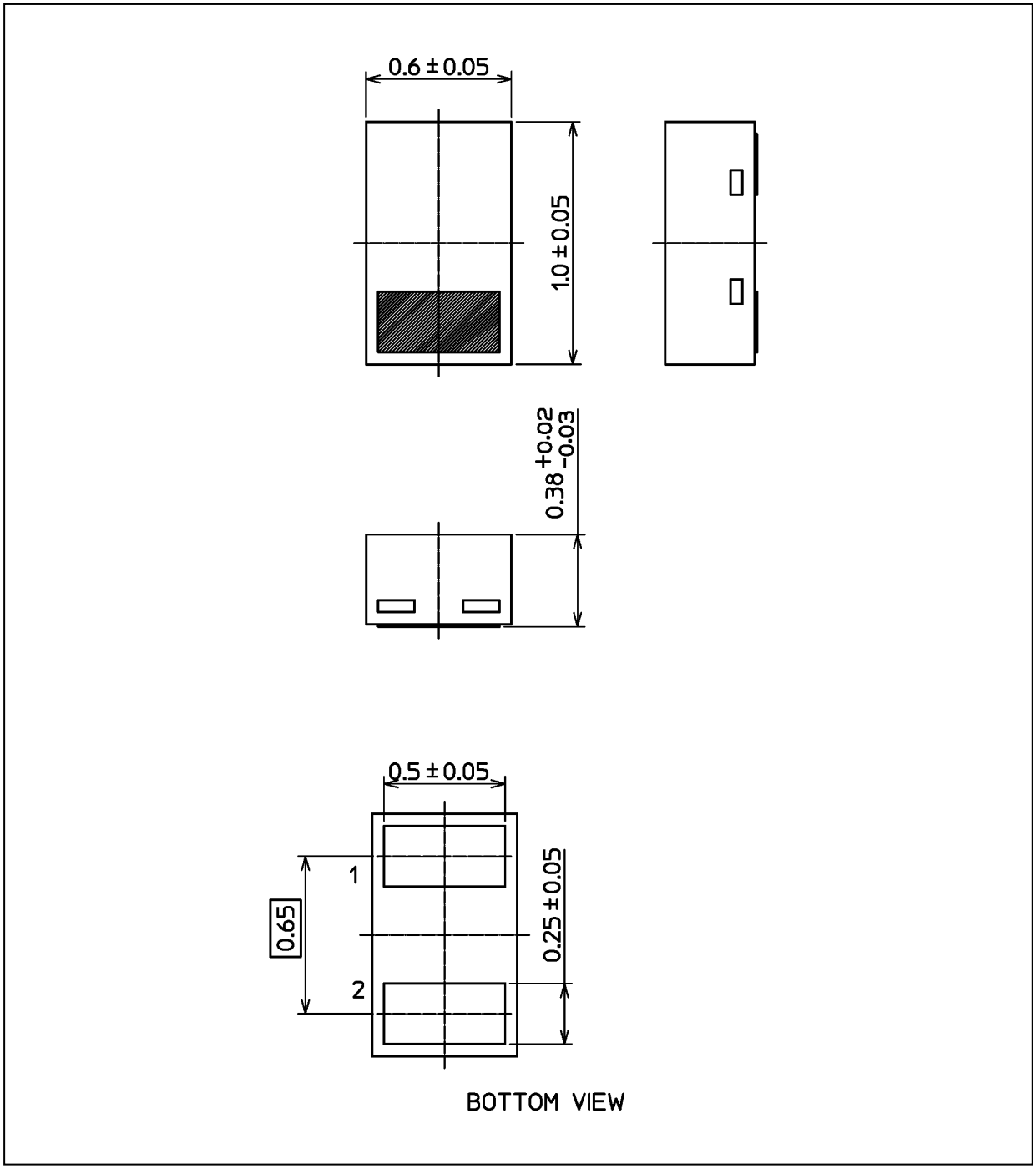


Fig. 8.4 P_D - T_a

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

Package Dimensions

Unit: mm



Weight: 0.7 mg (typ.)

Package Name(s)
TOSHIBA: 1-1P1S
Nickname: CST2

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