

CBS10S40

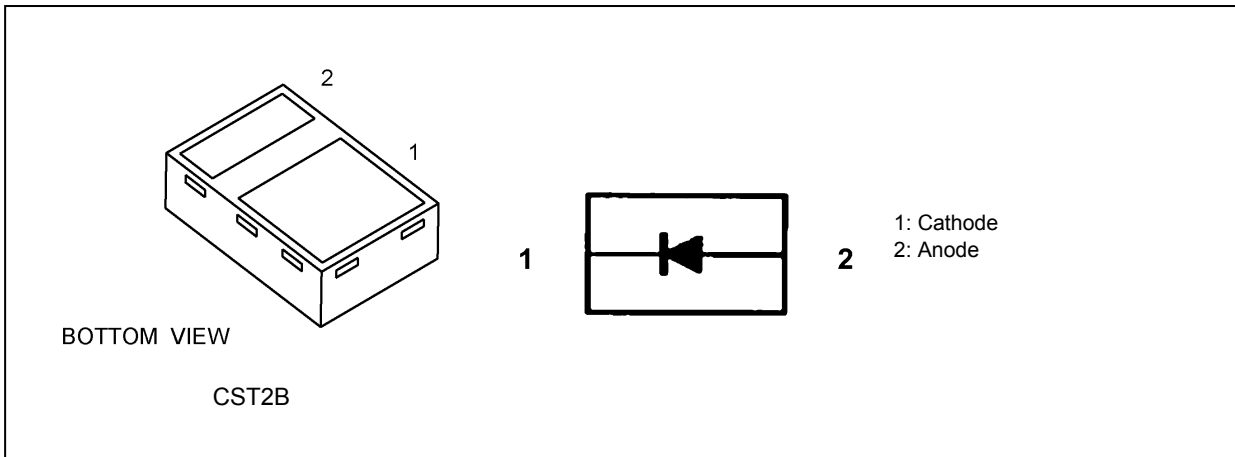
1. Applications

- High-Speed Switching

2. Features

- (1) Low forward voltage: $V_{F(2)} = 0.48 \text{ V (typ.)}$
- (2) Thin and compact packaging: Height = 0.40mm(max)

3. Packaging and Internal Circuit



4. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	V_{RM}	—	40	V
Average rectified current	I_O	(Note 1)	1.0	A
Non-repetitive peak forward surge current	I_{FSM}	(Note 2)	3	
Junction temperature	T_j	—	125	°C
Storage temperature	T_{stg}	—	-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: Mounted on an FR4 board.

(25.4 mm × 25.4 mm × 1.6 mm, Cu Pad: 645 mm²)

Note 2: Measured with a 10 ms pulse.

5. Electrical Characteristics (Unless otherwise specified, $T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F(1)}$	$I_F = 0.5 \text{ A}$ (pulse test)	—	0.36	0.40	V
	$V_{F(2)}$	$I_F = 1 \text{ A}$ (pulse test)	—	0.48	0.55	
Reverse current	I_R	$V_R = 40 \text{ V}$ (pulse test)	—	—	150	μA
Total capacitance	C_t	$V_R = 0 \text{ V}$, $f = 1 \text{ MHz}$	—	120	—	pF

6. Marking

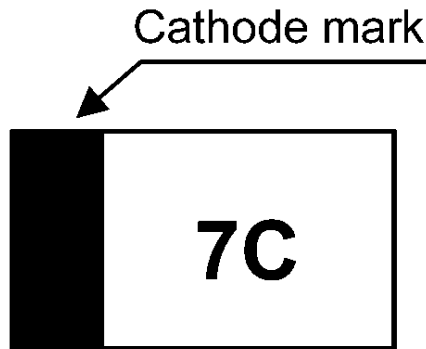
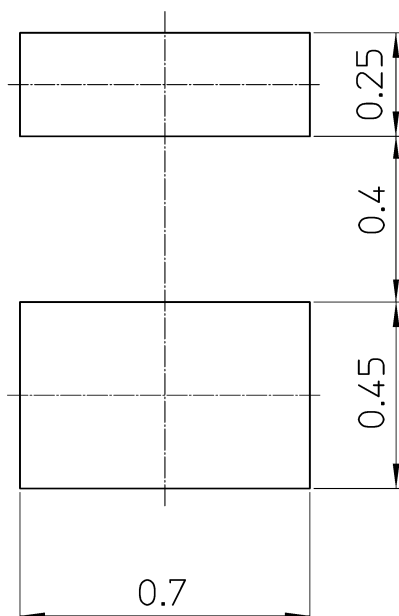


Fig. 6.1 Marking

Marking Code	Part Number
7C	CBS10S40

7. Usage Considerations

- Schottky barrier diodes (SBDs) have reverse leakage greater than other types of diodes. This makes SBDs more susceptible to thermal runaway under high-temperature and high-voltage conditions. Thus, both forward and reverse power losses of SBDs should be considered for thermal and safety design.

8. Land pattern dimensions for reference only**Fig. 8.1 Land pattern dimensions for reference only (Unit: mm)**

9. Characteristics Curves (Note)

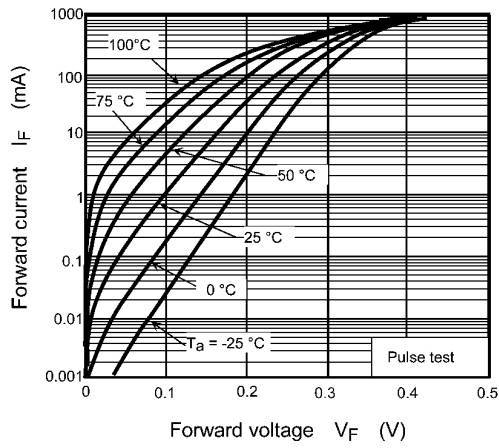


Fig. 9.1 $I_F - V_F$

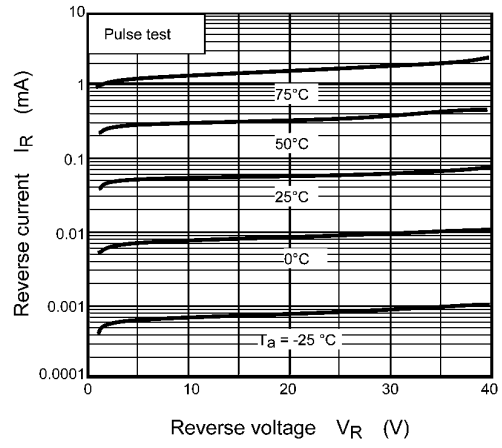


Fig. 9.2 $I_R - V_R$

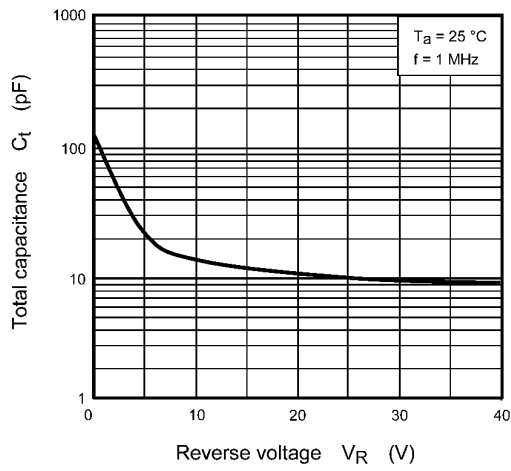
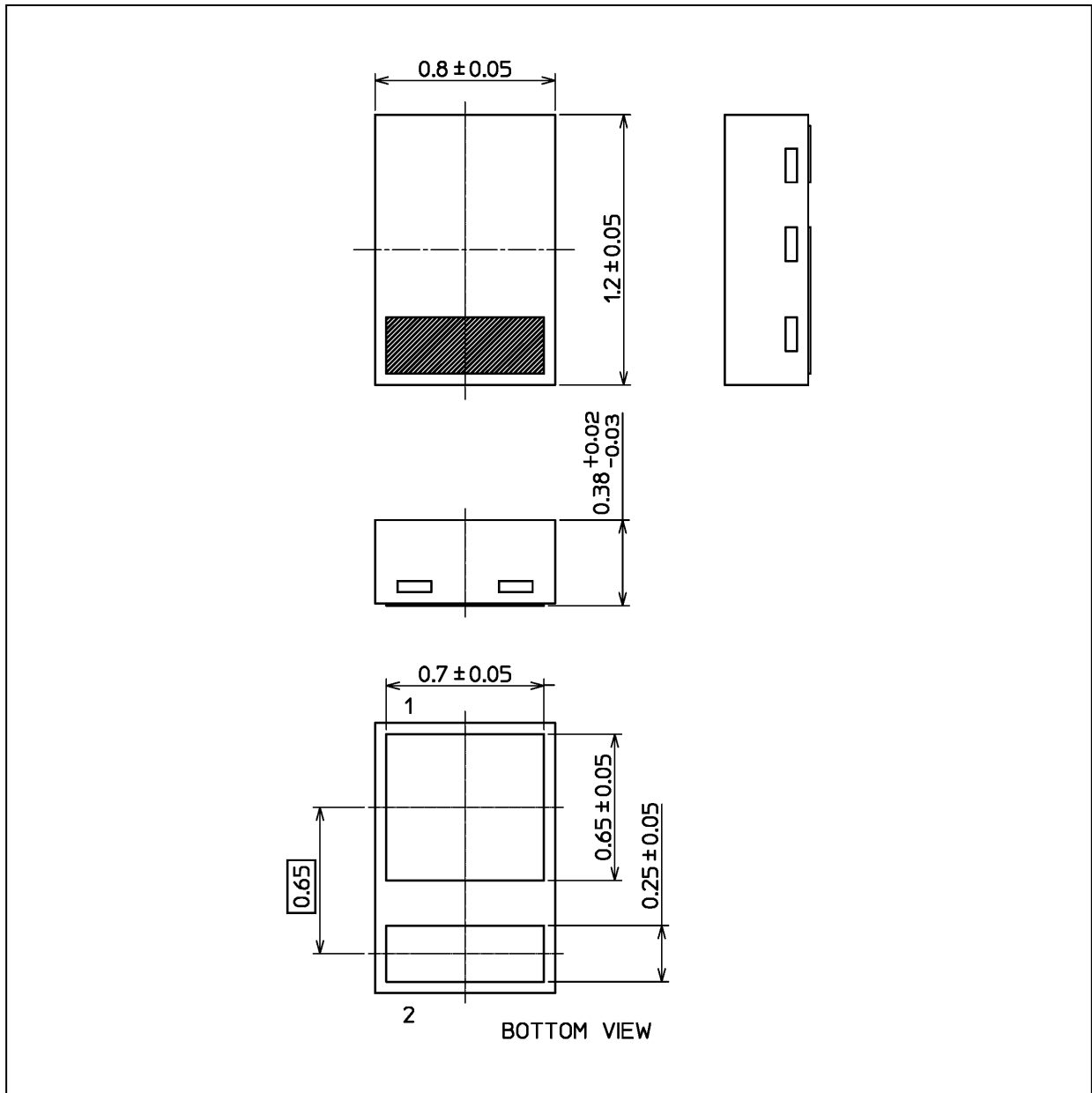


Fig. 9.3 $C_t - V_R$

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)
Nickname: CST2B

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