

Schottky Barrier Diode Silicon Epitaxial

CVJ10F30

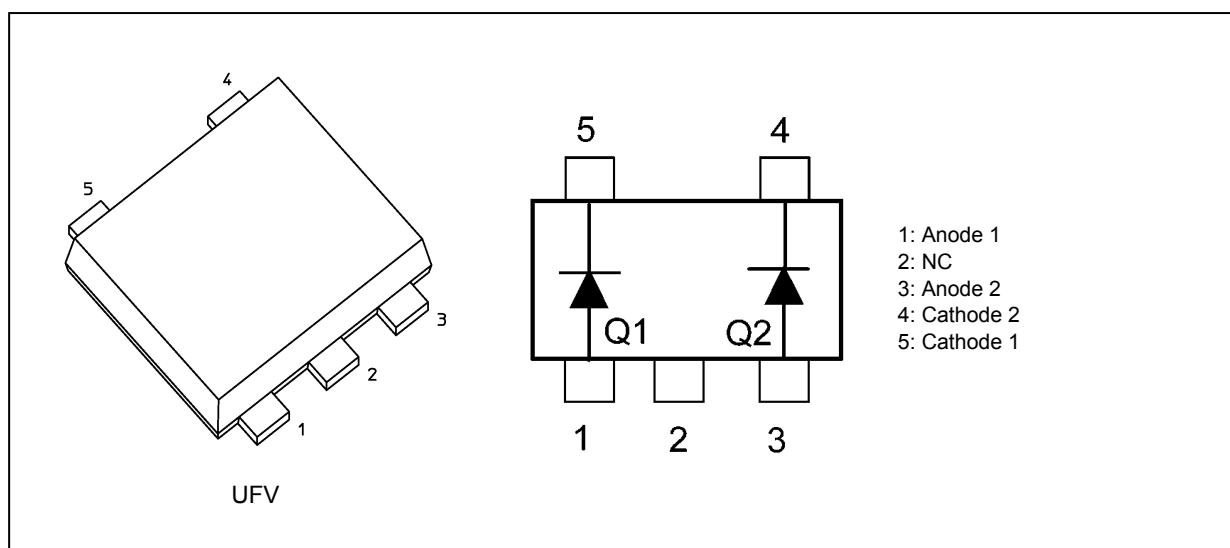
1. Applications

- High-Speed Switching

2. Features

- (1) Low forward voltage: $V_F(3) = 0.47 \text{ V (typ.)}$

3. Packaging and Internal Circuit



Start of commercial production

2011-03

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

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	V_{RM}		32	V
Reverse voltage	V_R		30	
Average rectified current	I_O	(Note 1)	1	A
Non-repetitive peak forward surge current	I_{FSM}	(Note 2)	5	
Junction temperature	T_J		125	$^{\circ}\text{C}$
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 a Ceramics circuit board of 25 mm × 25 mm, Pad dimension of 2 mm × 2 mm.

This is absolute maximum rating of single diode.

In the case of using 2 diodes, the absolute maximum ratings per diodes is 75 % of the single diode one.

Note 2: Measured with a 10 ms pulse. This is absolute maximum rating of single diode.

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

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F(1)$	$I_F = 10\text{ mA}$	—	0.23	—	V
Forward voltage	$V_F(2)$	$I_F = 100\text{ mA}$	—	0.31	—	V
Forward voltage	$V_F(3)$	$I_F = 1\text{ A}$	—	0.47	0.57	V
Reverse current	I_R	$V_R = 30\text{ V}$	—	—	50	μA
Total capacitance	C_t	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	120	—	pF

6. Marking

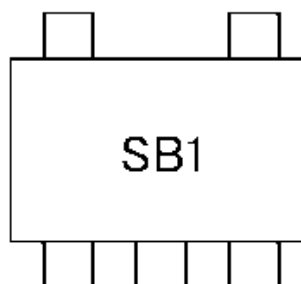


Fig. 6.1 Marking

Marking Code	Part Number
SB1	CVJ10F30

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)

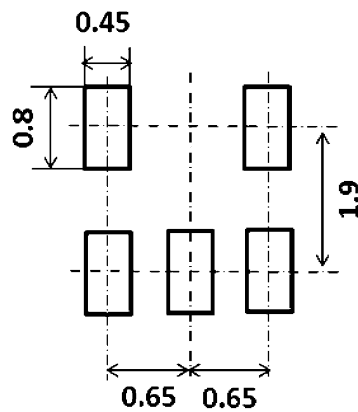


Fig. 8.1 Land Pattern Dimensions for Reference Only (Unit: mm)

9. Characteristics Curves (Note)

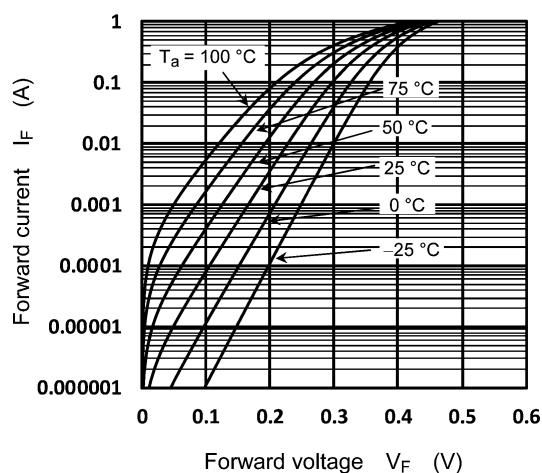


Fig. 9.1 $I_F - V_F$

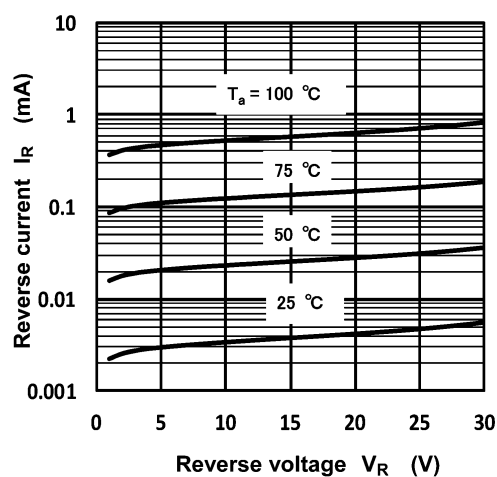


Fig. 9.2 $I_R - V_R$

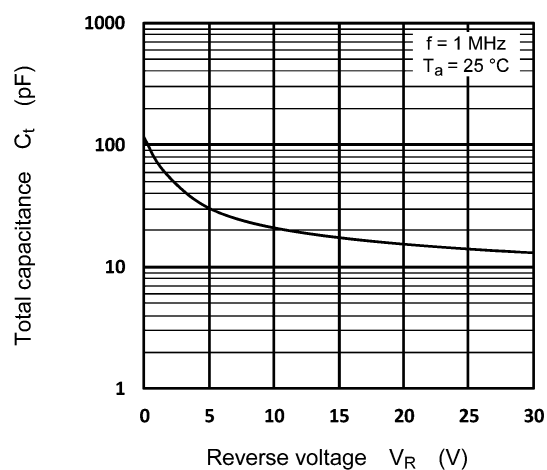
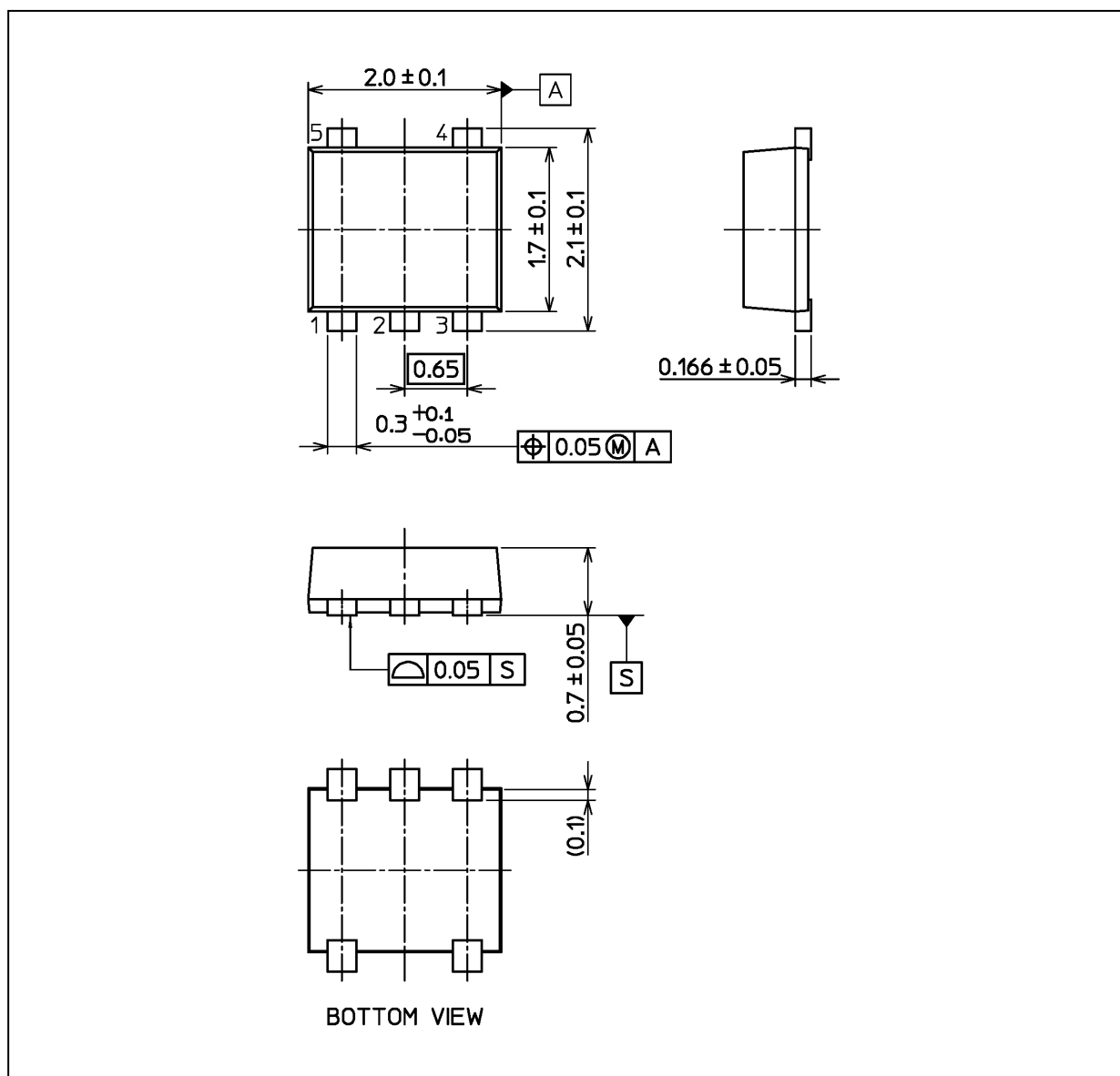


Fig. 9.3 $C_t - V_R$

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

Package Dimensions

Unit: mm



Weight: 0.007 g (typ.)

Package Name(s)
TOSHIBA: 1-2AA1S
Nickname: UFV

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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

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moschip.ru_9