ESD Protection Diodes Silicon Epitaxial Planar

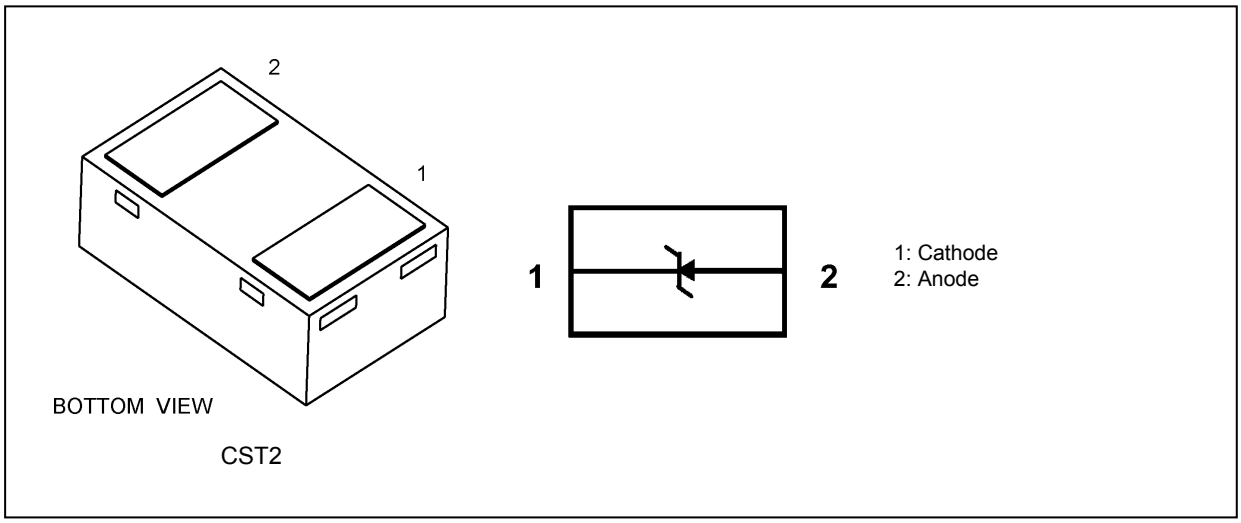
DF2S20CT

1. Applications

- ESD Protection

Note: This product is designed for protection against electrostatic discharge (ESD) and is not intended for any other purpose, including, but not limited to, voltage regulation.

2. Packaging and Internal Circuit



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

Characteristics	Symbol	Rating	Unit
Electrostatic discharge voltage (IEC61000-4-2)(Contact)	V_{ESD}	±12	kV
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).

Start of commercial production
2013-04

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

V_{RWM}: Working peak reverse voltage
V_{BR}: Reverse breakdown voltage
I_{BR}: Reverse breakdown current
I_R: Reverse current
V_C: Clamp voltage
I_{PP}: Peak pulse current
R_{DYN}: Dynamic resistance

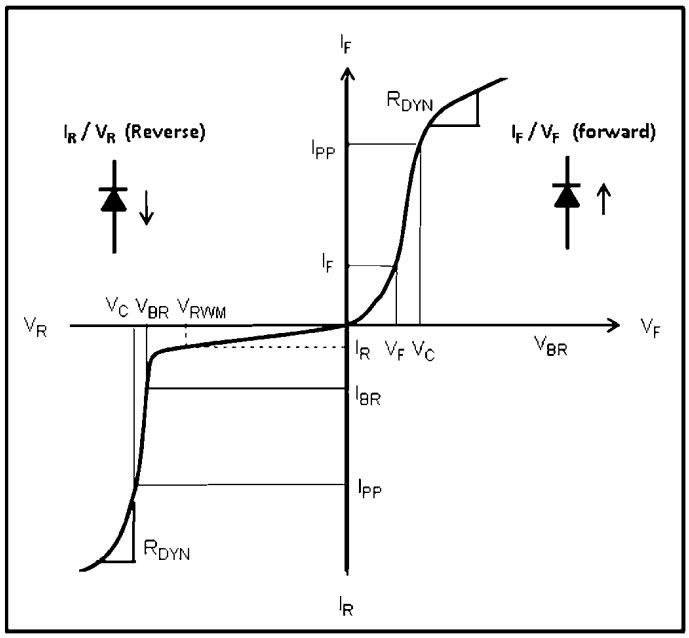


Fig. 4.1 Definitions of Electrical Characteristics

Characteristics	Symbol	Note	Test Condition	Min	Typ.	Max	Unit
Zener voltage	V_Z		I_Z = 5 mA	18.8	—	21.2	V
Dynamic impedance	Z_Z		I_Z = 5 mA	—	—	55	Ω
Reverse current	I_R		V_R = 15 V	—	—	0.5	μA
Total capacitance	C_t		V_R = 0 V, f = 1 MHz	—	9	—	pF

5. Guaranteed ESD Protection (Note)

Test Condition	ESD Protection
IEC61000-4-2 (Contact discharge)	±12 kV

Note: Criterion: No damage to devices.

6. Marking

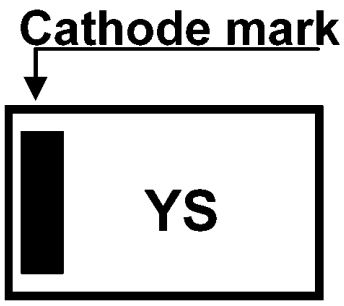


Fig. 6.1 Marking

Marking Code	Part Number
YS	DF2S20CT

7. Land Pattern Dimensions (for reference only)

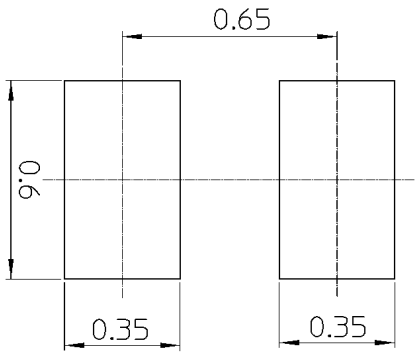


Fig. 7.1 Land Pattern Dimensions (Unit: mm)

8. Characteristics Curves (Note)

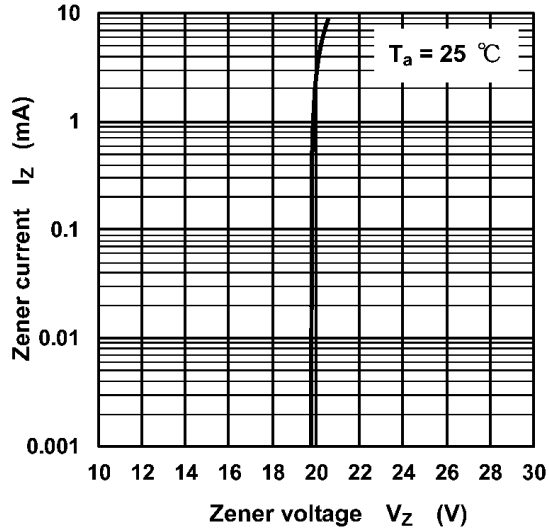


Fig. 8.1 I_Z - V_Z

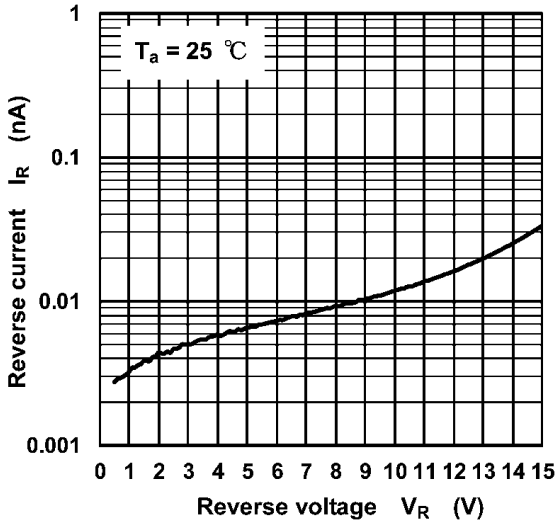


Fig. 8.2 I_R - V_R

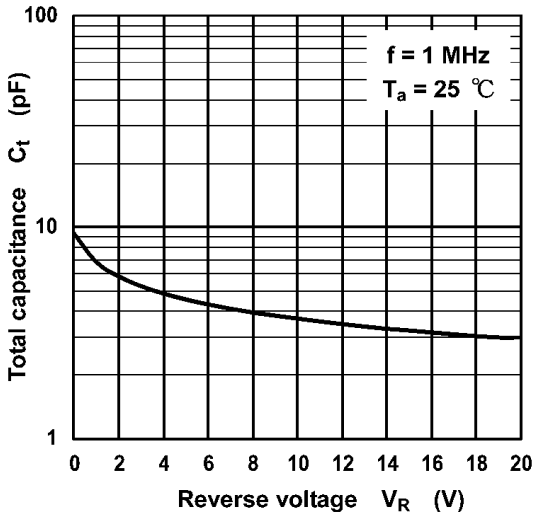
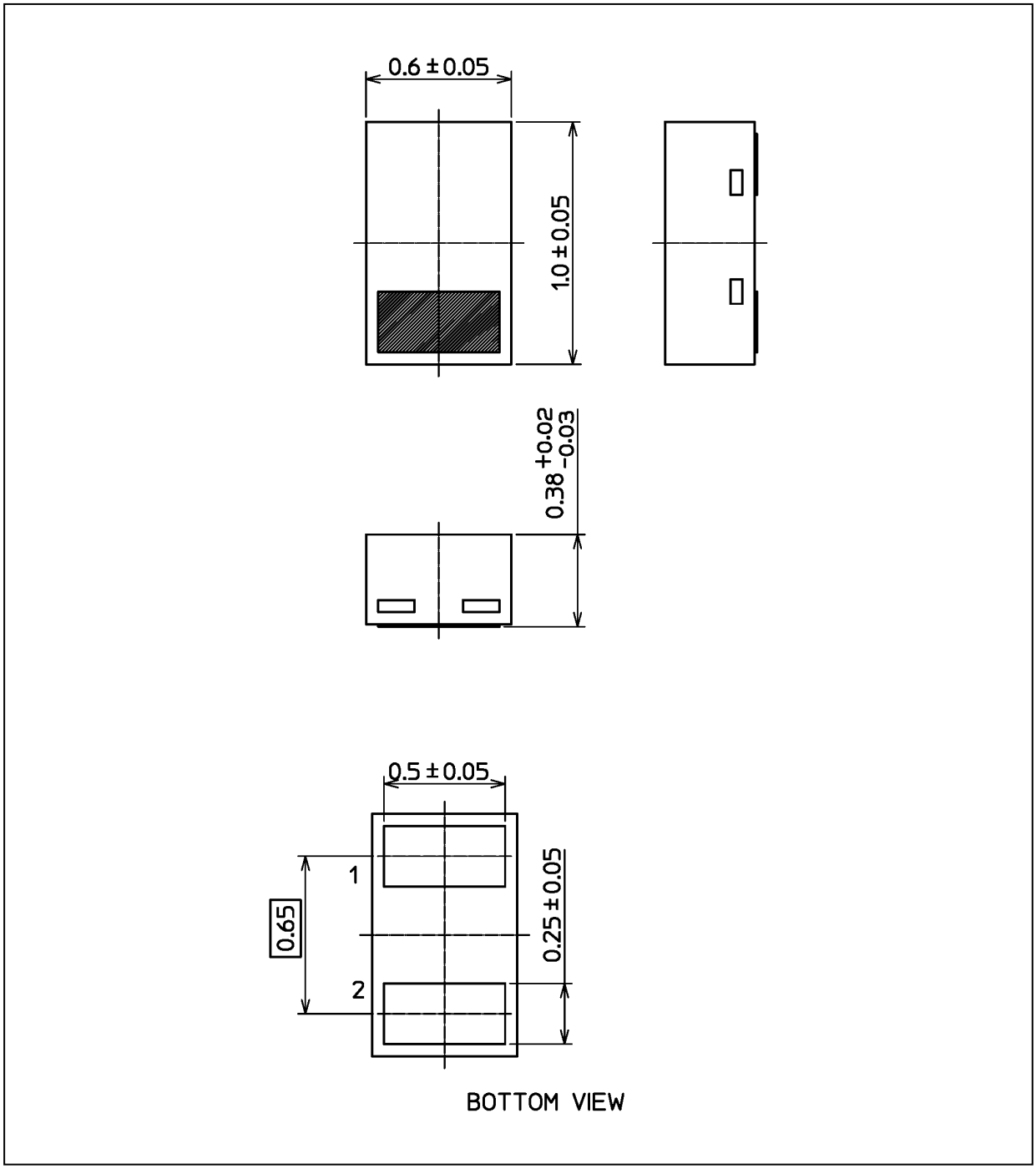


Fig. 8.3 C_t - V_R

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)
TOSHIBA: 1-1P1S
Nickname: CST2

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