

Switching Diodes Silicon Epitaxial Planar

1SS307E

1. Applications

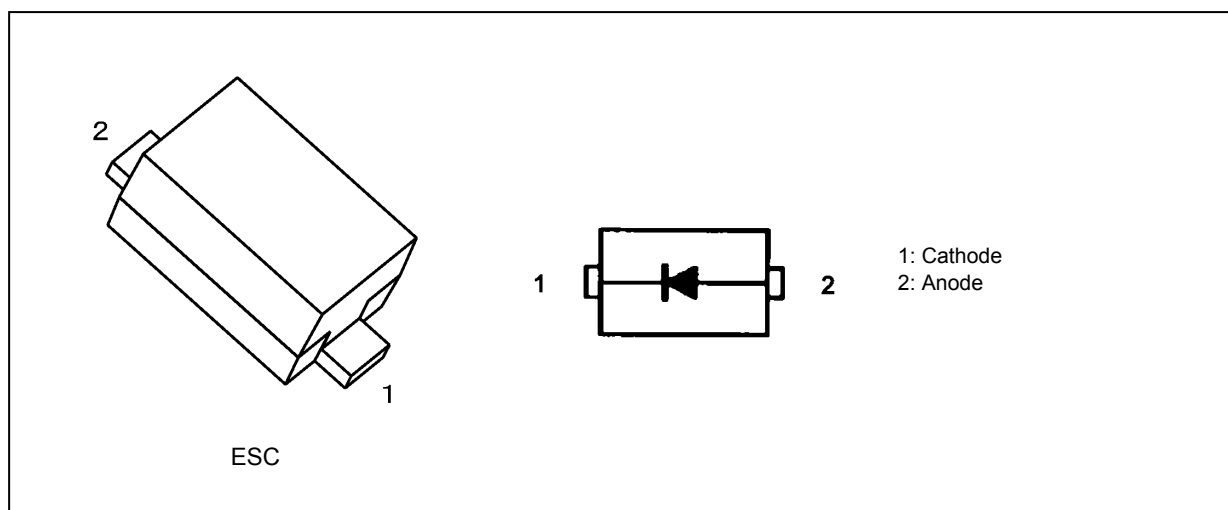
- General-Purpose Rectifiers

2. Features

- (1) Very low reverse current. : $I_R = 10 \text{ nA (max)}$
- (2) AEC-Q101 qualified (Note 1)

Note 1: For detail information, please contact to our sales.

3. Packaging and Internal Circuit



Start of commercial production
2014-12

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}		85	V
Reverse voltage	V_R		80	
Peak forward current	I_{FM}		300	mA
Average rectified current	I_O		100	
Power dissipation	P_D	(Note 1)	150	mW
Non-repetitive peak forward surge current	I_{FSM}	(Note 2)	1	A
Junction temperature	T_J		150	$^{\circ}\text{C}$
Storage temperature	T_{stg}		-55 to 150	$^{\circ}\text{C}$

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 $\times$ 20 mm, Pad dimension of 4 mm $\times$ 4 mm.

Note 2: Measured with a 10 ms pulse.

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	$I_F = 100\text{ mA}$	—	0.9	1.3	V
Reverse current	I_R	$V_R = 80\text{ V}$	—	—	10	nA
Total capacitance	C_t	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	2.0	6.0	pF

6. Marking

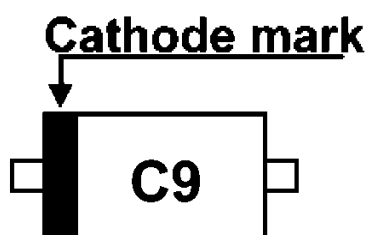


Fig. 6.1 Marking

7. Land Pattern Dimensions (for reference only)

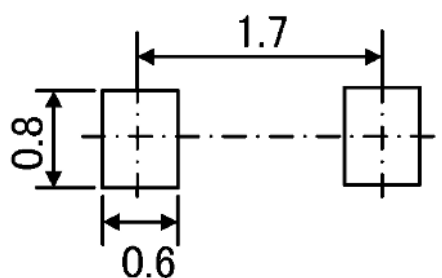


Fig. 7.1 ESC (Unit: mm)

8. Characteristics Curves (Note)

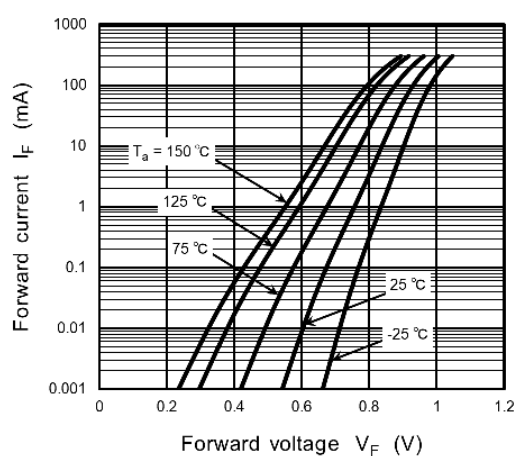


Fig. 8.1 $I_F - V_F$

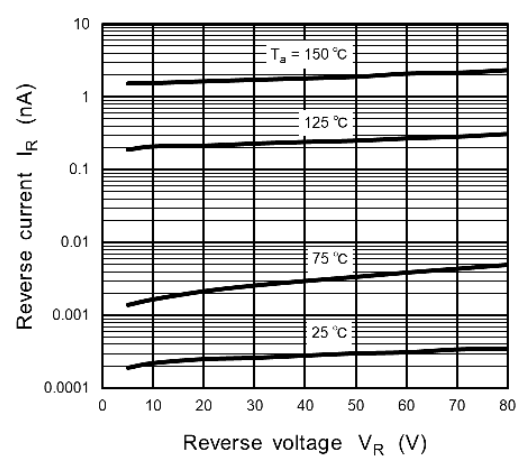


Fig. 8.2 $I_R - V_R$

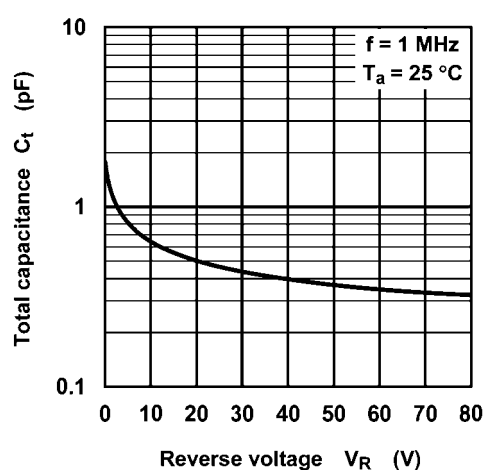


Fig. 8.3 $C_t - V_R$

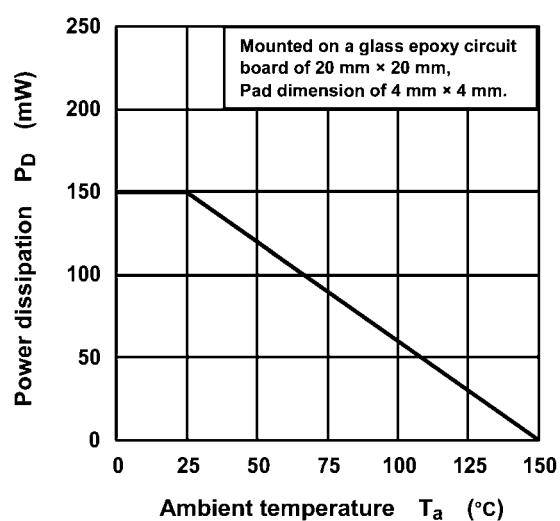
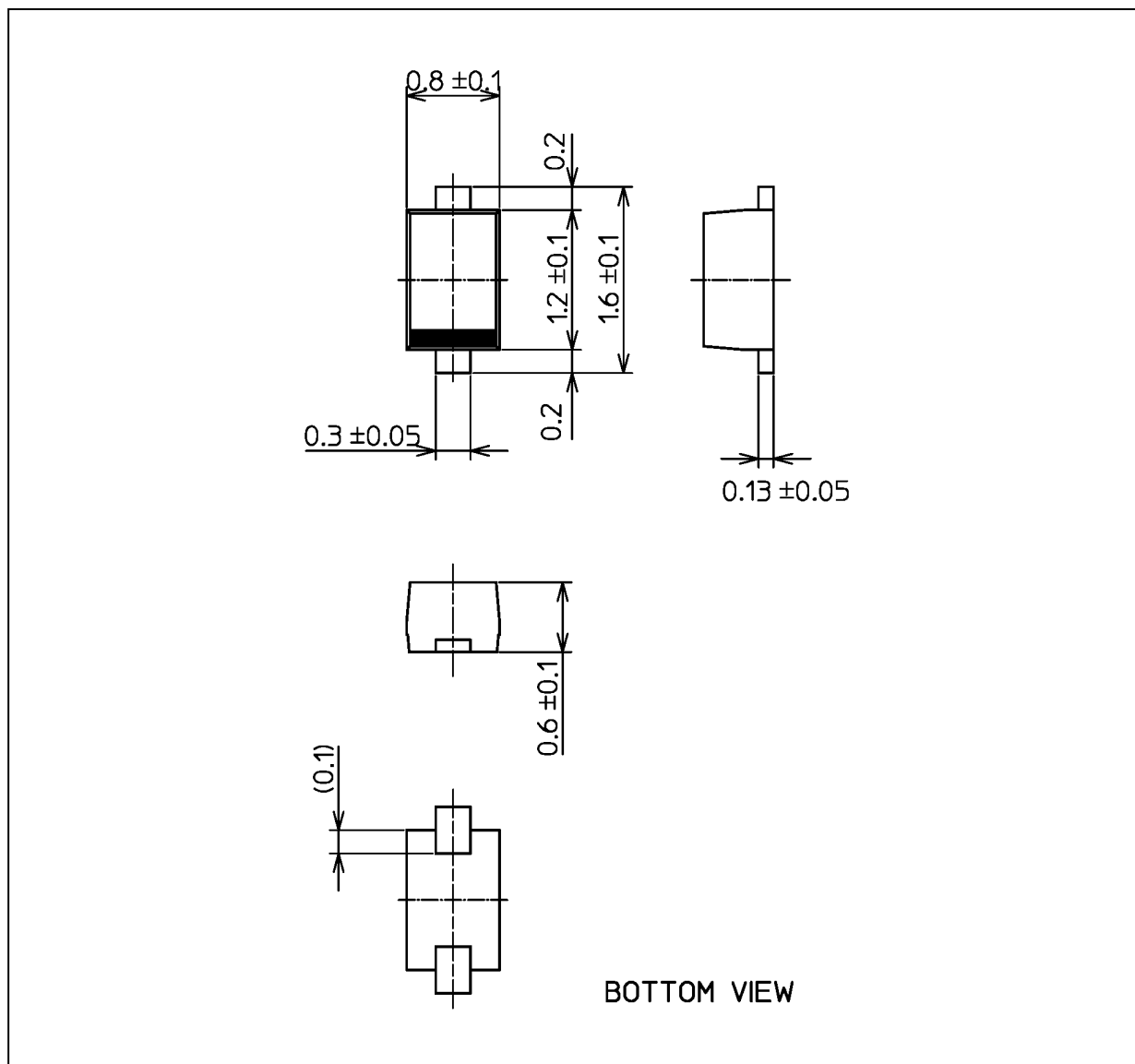


Fig. 8.4 $P_D - T_a$

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

Package Dimensions

Unit: mm



Weight: 1.4 mg (typ.)

Package Name(s)
TOSHIBA: 1-1G1S
Nickname: ESC

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