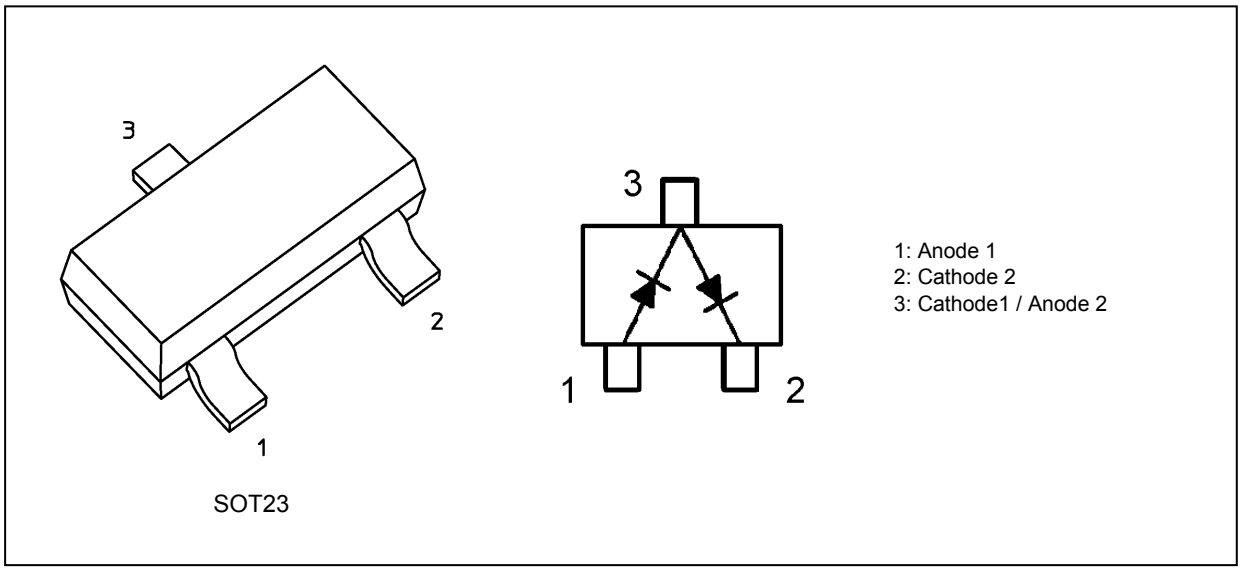
Switching Diodes Silicon Epitaxial Planar

TBAV99

1. Applications

- Ultra-High-Speed Switching

2. Packaging and Internal Circuit



Start of commercial production
2014-12

3. 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}	(Note 1)	300	mA
Average rectified current	I_O	(Note 1)	100	
Power dissipation	P_D		150	mW
Power dissipation	P_D	(Note 2)	320	mW
Non-repetitive peak forward surge current	I_{FSM}	(Note 1), (Note 3)	2	A
Junction temperature	T_j		125	°C
Storage temperature	T_{stg}		-55 to 125	°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: Unit rating. Total rating = Unit rating × 70 %

Note 2: Device mounted on a 25.4 mm × 25.4 mm × 1.6 mm FR-4 glass epoxy board (Cu pad: 0.42 mm^2 × 3)

Note 3: Measured with a 10 ms pulse.

4. 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	—	—	0.715	V
	$V_{F(2)}$	I_F = 10 mA	—	—	0.855	
	$V_{F(3)}$	I_F = 50 mA	—	—	1.0	
	$V_{F(4)}$	I_F = 150 mA	—	—	1.25	
Reverse current	$I_{R(1)}$	V_R = 25 V	—	—	30	nA
	$I_{R(2)}$	V_R = 80 V	—	—	0.5	μA
Total capacitance	C_t	V_R = 0 V, f = 1 MHz	—	—	1.5	pF
Reverse recovery time	t_{rr}	I_F = 10 mA See Fig. 4.1.	—	—	4.0	ns

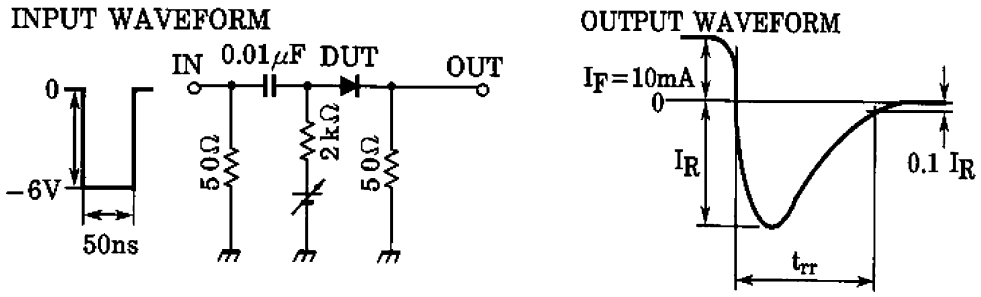


Fig. 4.1 Reverse recovery time (t_{rr}) Test circuit

5. Marking

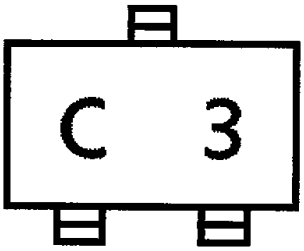


Fig. 5.1 Marking

6. Land Pattern Dimensions (for reference only)

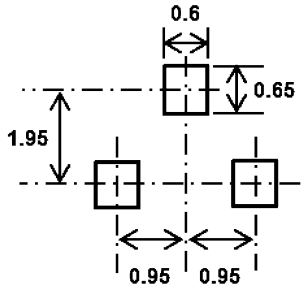


Fig. 6.1 SOT23 (Unit: mm)

7. Characteristics Curves (Note)

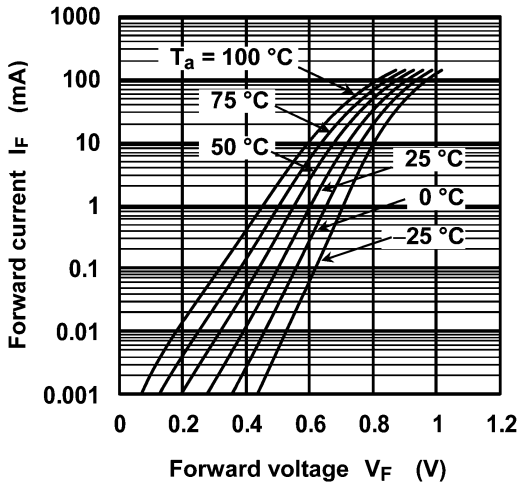


Fig. 7.1 I_F - V_F

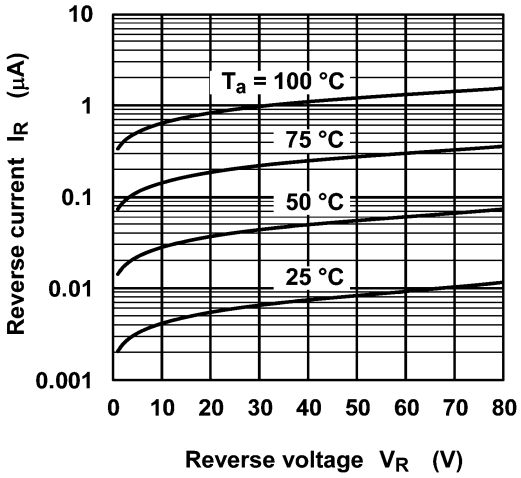


Fig. 7.2 I_R - V_R

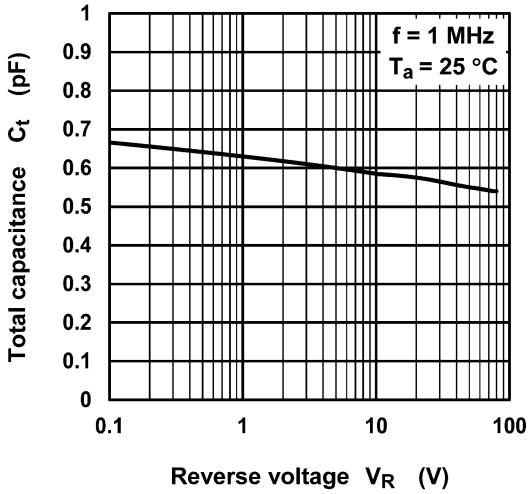


Fig. 7.3 C_t - V_R

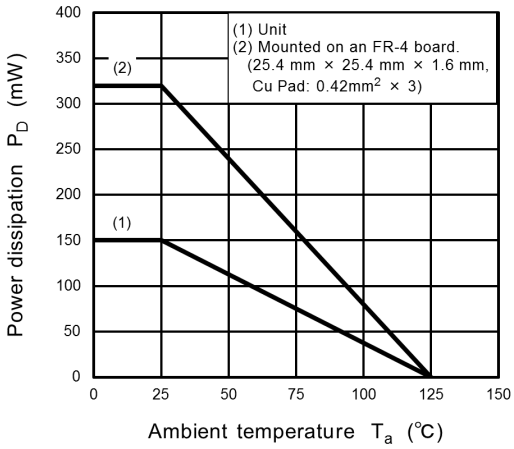
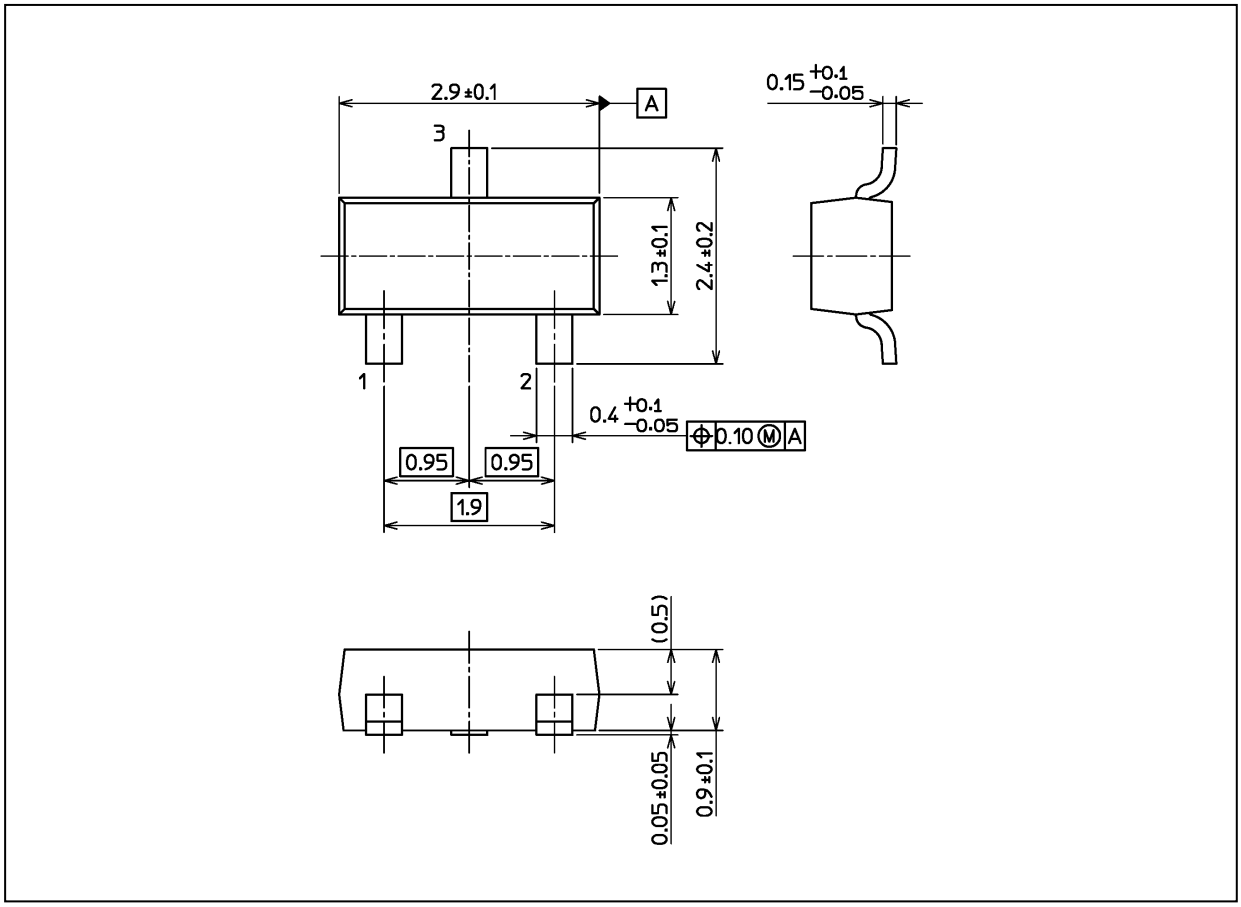


Fig. 7.4 P_D - T_a

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

Package Dimensions

Unit: mm



Weight: 9 mg (typ.)

Package Name(s)
TOSHIBA: 2-3AB1A
Nickname: SOT23

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