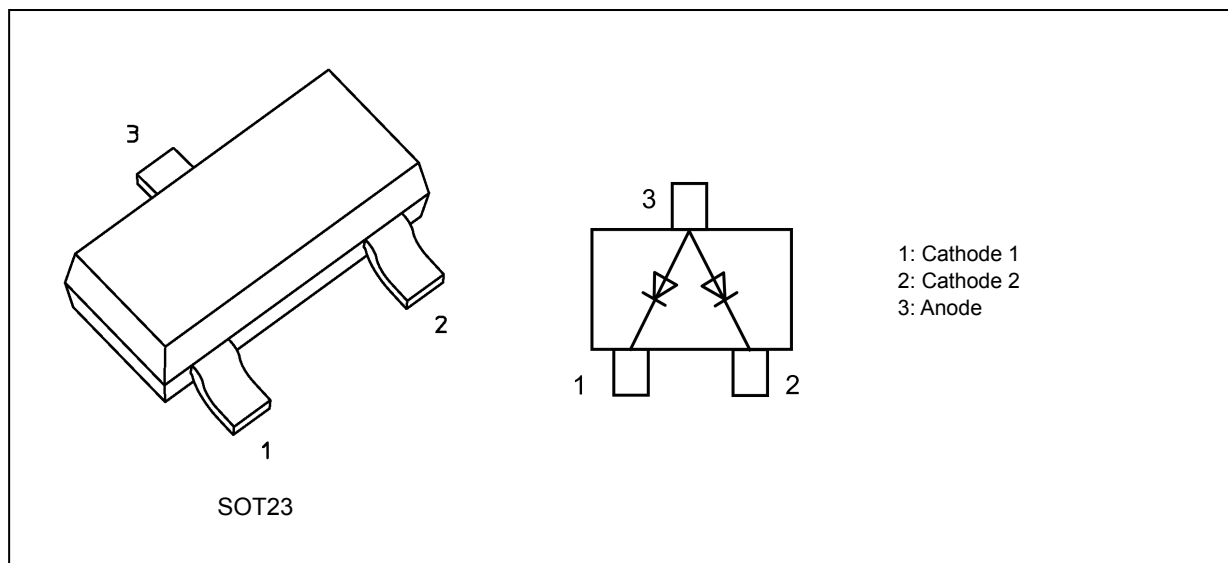


TBAW56

1. Applications

- Ultra-High-Speed Switching

2. Packaging and Internal Circuit



3. 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	
Average rectified current	I_O	(Note 1)	215	mA
Peak forward current	I_{FM}	(Note 1)	500	
Non-repetitive peak forward surge current	I_{FSM}	(Note 1), (Note 2)	2	A
Power dissipation	P_D	(Note 3)	320	mW
Junction temperature	T_j		150	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to 150	

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 \times 1.5

Note 2: Pulse width 10 ms

Note 3: Mounted on an FR4 board (25.4 mm \times 25.4 mm \times 1.6 mm, Cu pad: 0.42 mm² \times 3)

Start of commercial production

2016-05

4. Thermal resistance Characteristic

Characteristics	Symbol	Max	Unit
Junction-to-ambient thermal resistance (Note1)	$R_{th(j-a)}$	391	°C/W

Note1: Mounted on an FR4 board (25.4 mm × 25.4 mm × 1.6 mm, Cu pad: 0.42 mm² × 3)

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

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V_F (1)	$I_F = 1\text{ mA}$	—	—	0.715	V
	V_F (2)	$I_F = 10\text{ mA}$	—	—	0.855	
	V_F (3)	$I_F = 50\text{ mA}$	—	—	1.0	
	V_F (4)	$I_F = 150\text{ mA}$	—	—	1.25	
Reverse current	I_R (1)	$V_R = 25\text{ V}$	—	—	30	nA
	I_R (2)	$V_R = 80\text{ V}$	—	—	500	
	I_R (3)	$V_R = 25\text{ V}, T_j = 150\text{ °C}$	—	—	30	μA
	I_R (4)	$V_R = 80\text{ V}, T_j = 150\text{ °C}$	—	—	100	
Total capacitance	C_t	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	0.9	—	pF
Reverse recovery time	t_{rr}	$I_F = 10\text{ mA}$, See Fig. 5.1.	—	1.6	4.0	ns

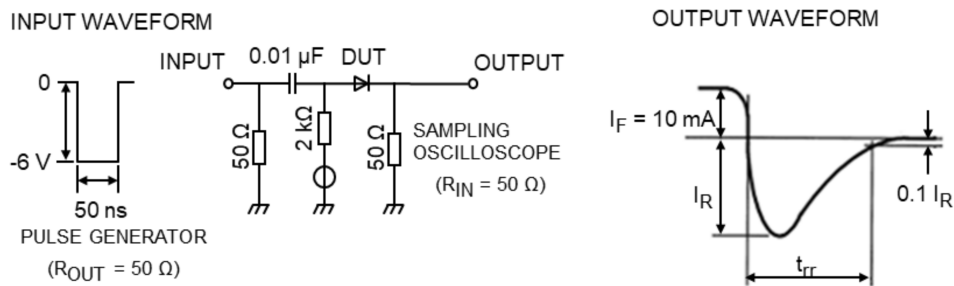


Fig. 5.1 Reverse recovery time (t_{rr}) Test circuit

6. Marking

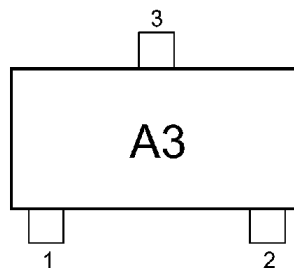


Fig. 6.1 Marking

7. Characteristics Curves (Note)

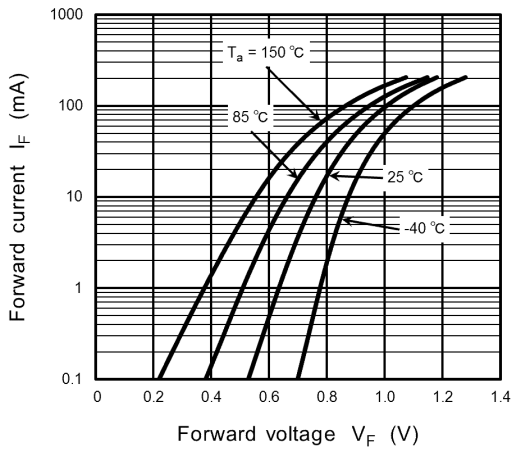


Fig. 7.1 $I_F - V_F$

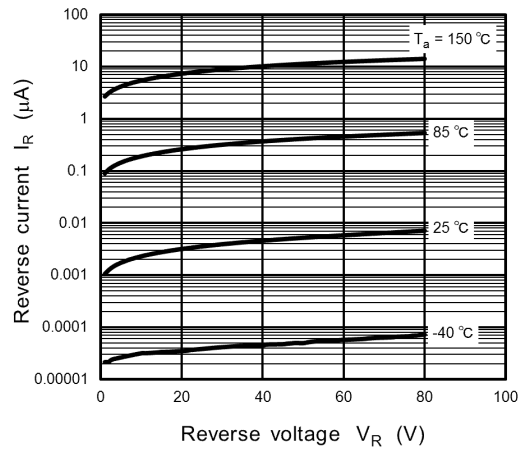


Fig. 7.2 $I_R - V_R$

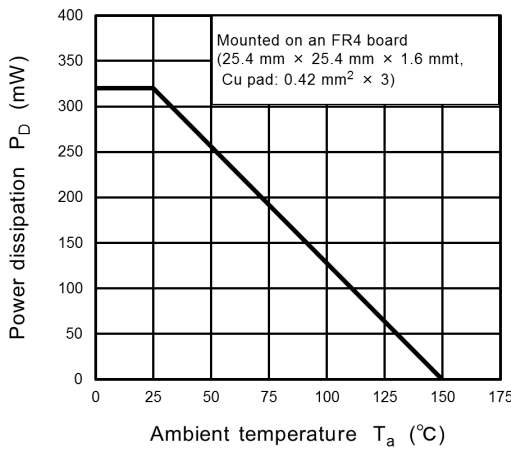
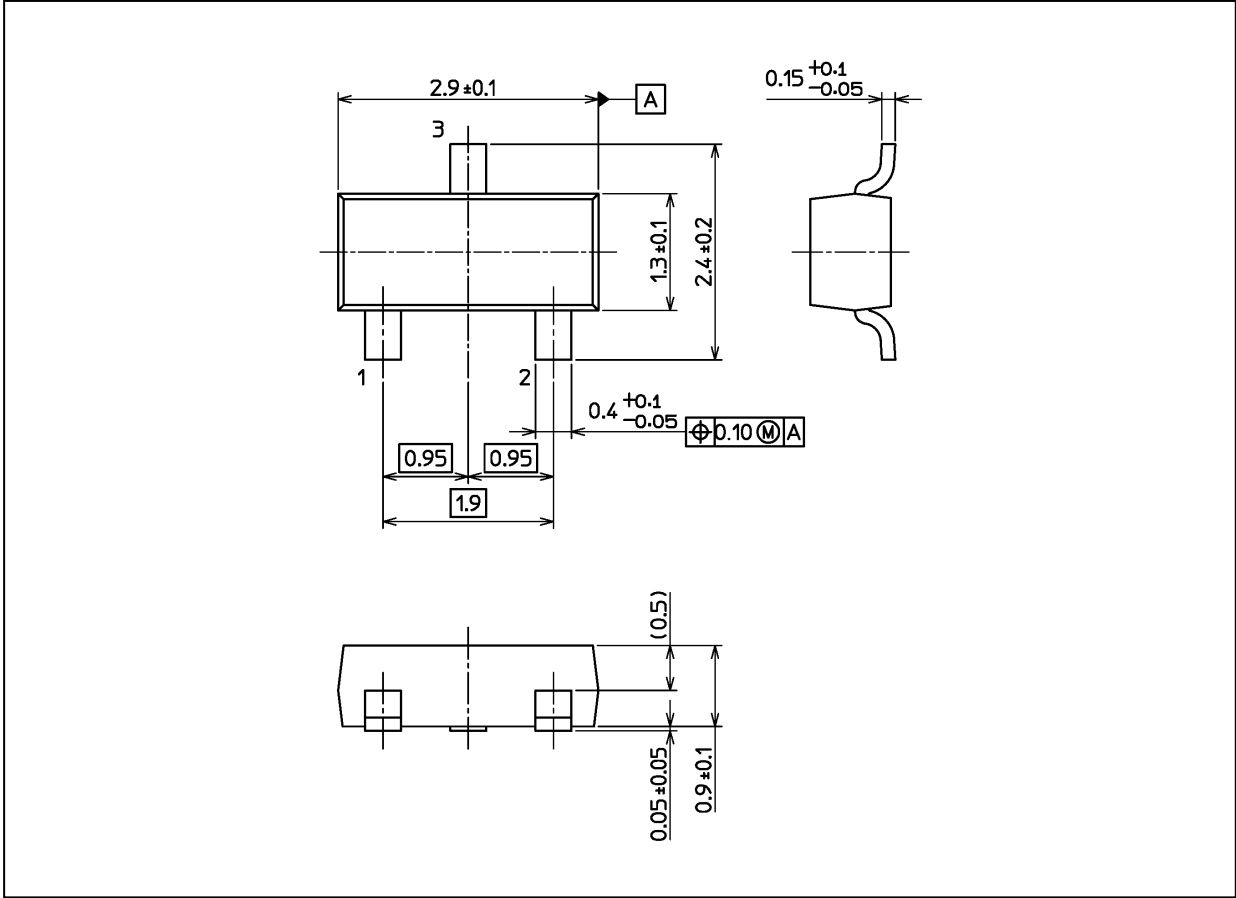


Fig. 7.3 $P_D - T_a$

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)
Nickname: SOT23

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