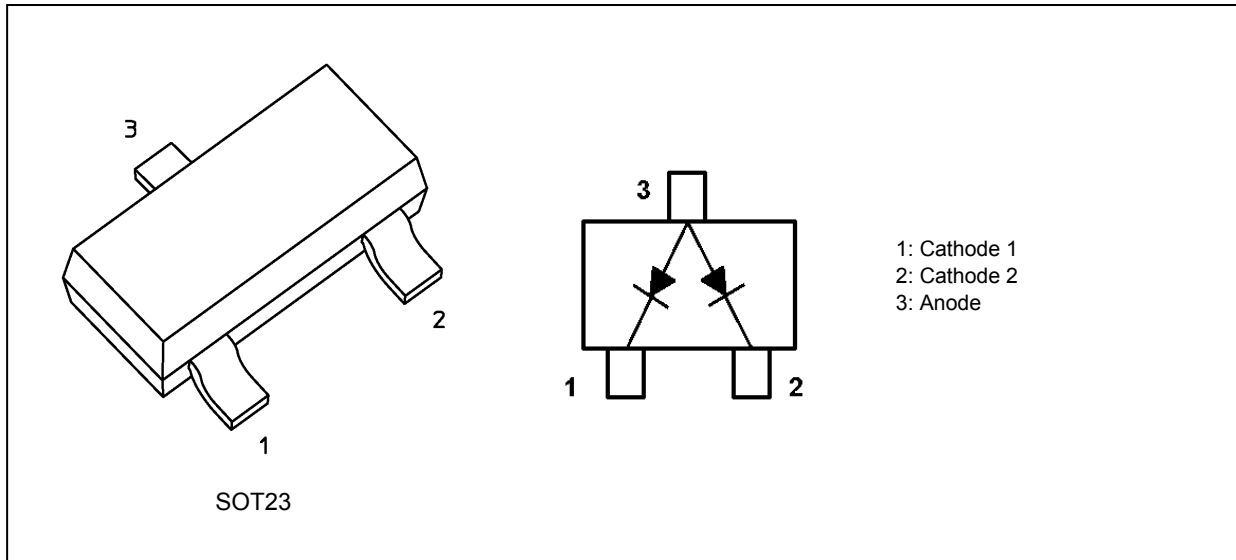


# TBAW56

## 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: Measured with a 10 ms pulse.

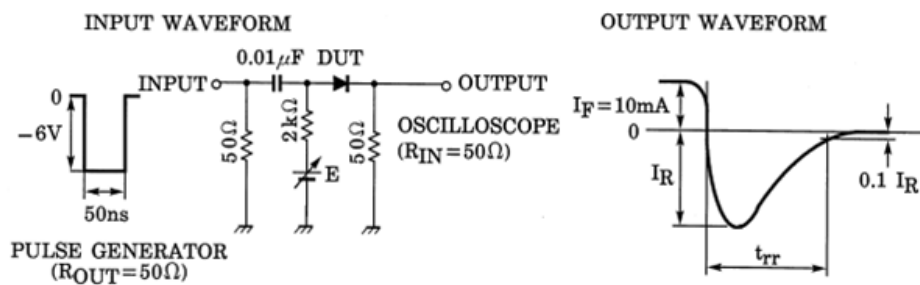
Note 3: Mounted on an FR4 board (25.4 mm  $\times$  25.4 mm  $\times$  1.6 mm, Cu pad: 0.42 mm<sup>2</sup>  $\times$  3)

Start of commercial production

2016-05

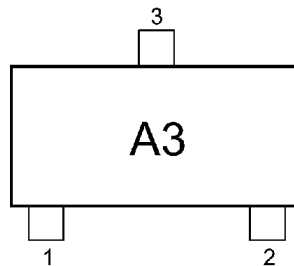
**4. Electrical Characteristics (Unless otherwise specified,  $T_a = 25\text{ }^\circ\text{C}$ )**

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F$ (1)	$I_F = 1\text{ mA}$	—	—	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)	$V_R = 25\text{ V}, T_j = 150\text{ }^\circ\text{C}$	—	—	30	$\mu\text{A}$
	$I_R$ (4)	$V_R = 80\text{ V}, T_j = 150\text{ }^\circ\text{C}$	—	—	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. 4.1.	—	1.6	4.0	ns



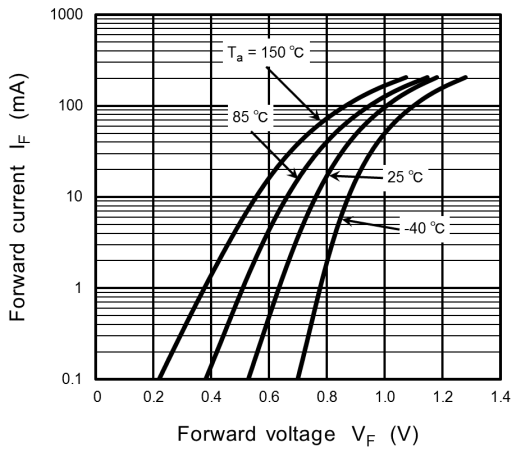
**Fig. 4.1 Reverse recovery time ( $t_{rr}$ ) Test circuit**

**5. Marking**

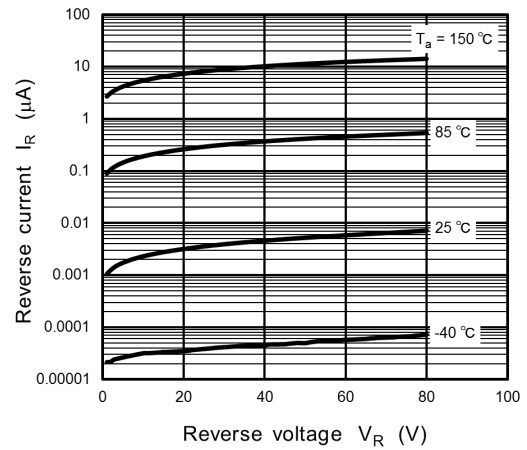


**Fig. 5.1 Marking**

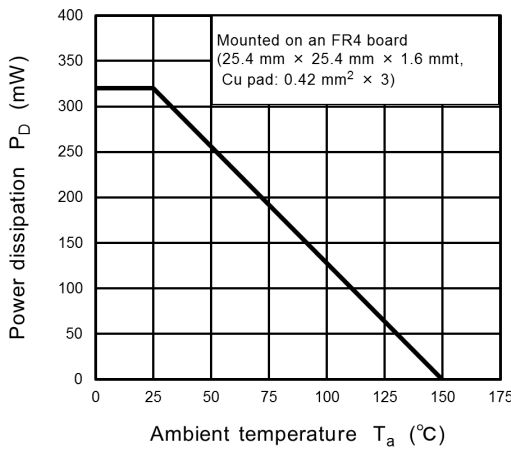
**6. Characteristics Curves (Note)**



**Fig. 6.1  $I_F - V_F$**



**Fig. 6.2  $I_R - V_R$**

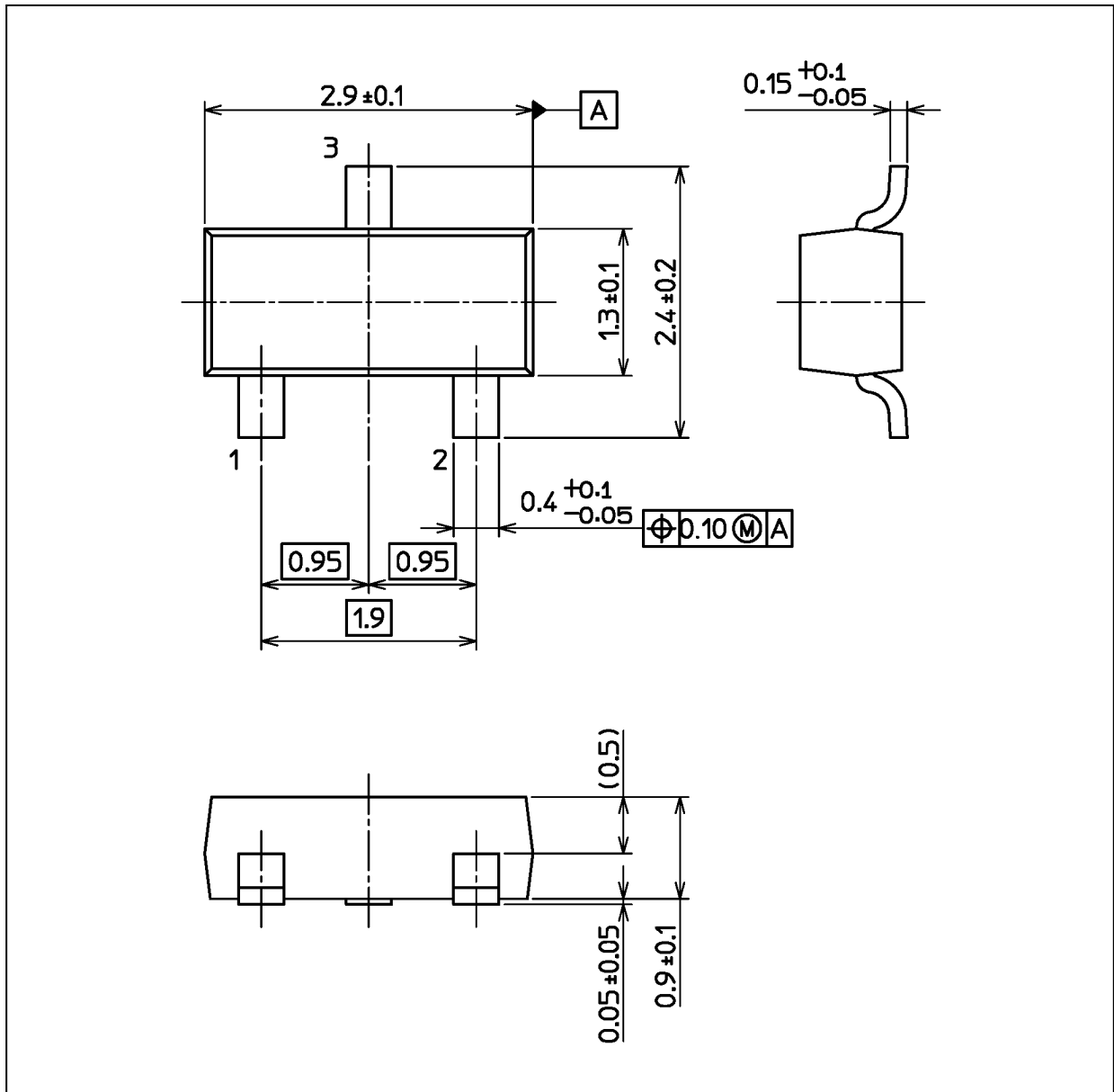


**Fig. 6.3  $P_D - T_a$**

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

Package Dimensions

Unit: mm



Weight: 0.009 g (typ.)

Package Name(s)
JEDEC: SOT-23
Nickname: SOT23

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