

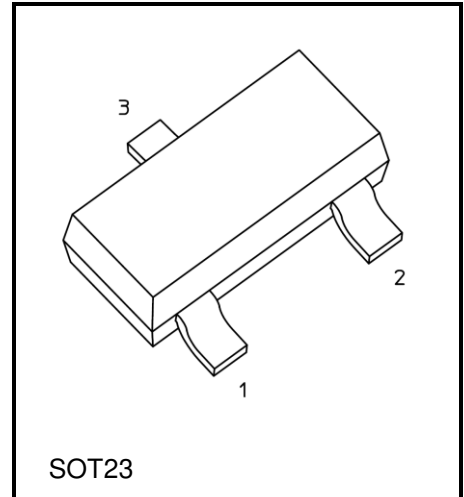
# TBAS16,TBAW56,TBAV70

Silicon Switching diodes

Pb-free (RoHS compliant) package

## Abusolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Peak reverse Voltage	$V_{RM}$	85	V
Reverse voltage	$V_R$	80	V
Average forward current (Note1)	$I_O$	215	mA
Peak forward current (Note1)	$I_{FM}$	500	mA
Non-repetitive peak forward surge current (Note1,Note2)	$I_{FSM}$	2	A
Power dissipation (Note 3)	$P_D$	320	mW
Junction temperature	$T_j$	150	°C
Storage temperature range	$T_{stg}$	-55 to 150	°C



SOT23

Weight : 0.009g (typ.)

Note1 : Unit rating. Total rating = Unit rating x 1.5 (TBAW56,TBAV70)

Note2 : Measured with a 10ms pulse.

Note3 : Mounted on an FR4 board (25.4 mm x 25.4 mm x 1.6 mm, Cu Pad: 0.42 mm<sup>2</sup> x 3)

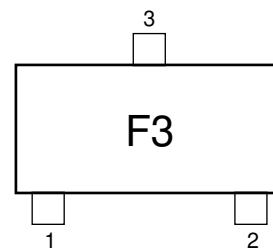
Note:Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

## List of Products Number and Marking, Configuration

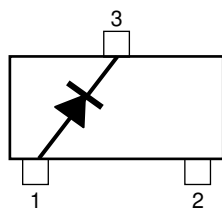
Products No.	Marking	Configuration
TBAS16	F3	single
TBAW56	A3	common anode
TBAV70	B3	common cathode

## Marking on the Product

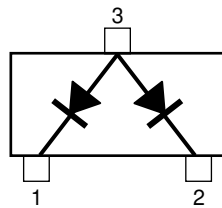
Example : TBAS16



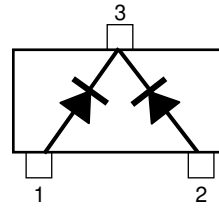
## Equivalent Circuit (top view)



TBAS16



TBAW56

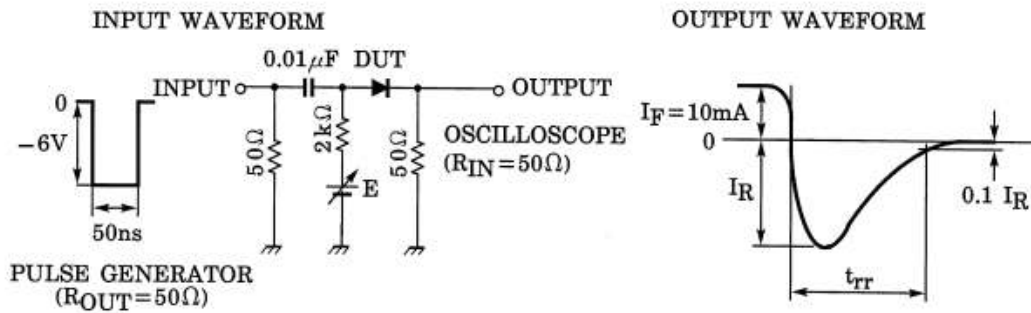


TBAV70

**Electrical Characteristics (Ta = 25°C)**

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F (1)$	$I_F = 1\text{mA}$	—	—	715	mV
	$V_F (2)$	$I_F = 10\text{mA}$	—	—	855	
	$V_F (3)$	$I_F = 50\text{mA}$	—	—	1000	
	$V_F (4)$	$I_F = 150\text{mA}$	—	—	1250	
Reverse current	$I_R(1)$	$V_R = 25\text{V}$	—	—	30	nA
	$I_R(2)$	$V_R = 80\text{V}$	—	—	0.5	$\mu\text{A}$
	$I_R(3)$	$V_R = 25\text{V}, T_j = 150^\circ\text{C}$	—	—	30	$\mu\text{A}$
	$I_R(4)$	$V_R = 80\text{V}, T_j = 150^\circ\text{C}$	—	—	100	$\mu\text{A}$
Total capacitance	$C_T$	$V_R = 1\text{V}, f = 1\text{MHz}$	—	0.9	—	pF
Reverse recovery time	$t_{rr}$	$I_F = 10\text{mA}, \text{Fig.1}$	—	1.6	4.0	ns

**Fig.1 Reverse recovery time ( $t_{rr}$ ) test circuit**



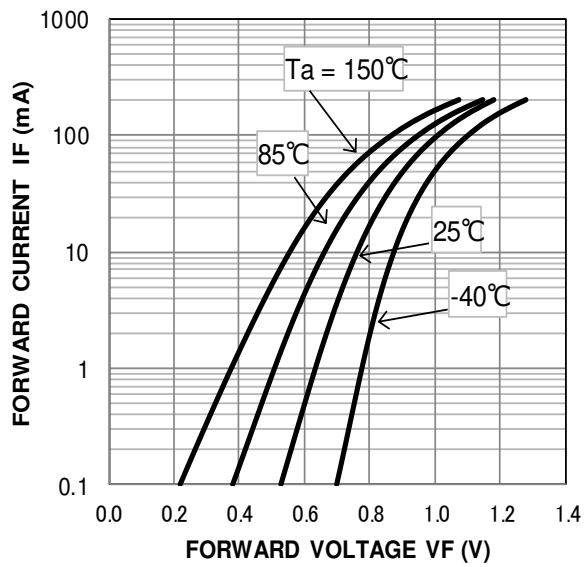


Fig IF - VF

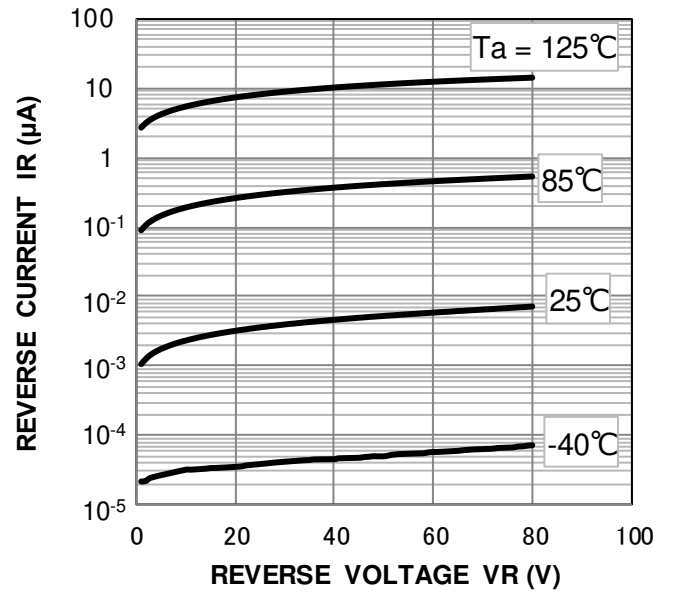


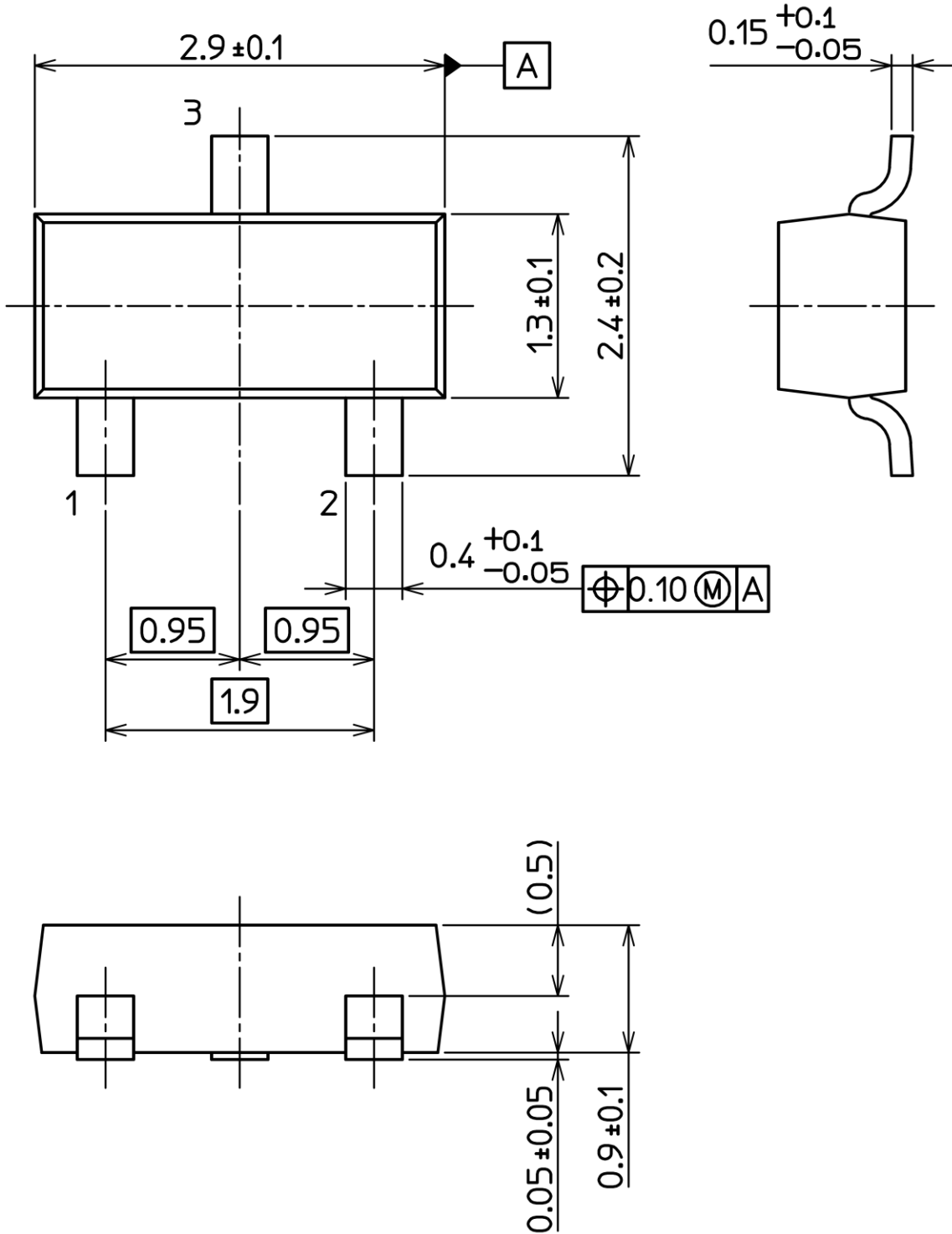
Fig IR - VR

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

Package Dimensions

Unit: mm

SOT23



Weight: 0.009g (typ.)

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