



# THE DATASHEET OF SBAW56TT1G



# BAW56TT1G, SBAW56TT1G

## Dual Switching Diode

### Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Rating	Symbol	Max	Unit
Reverse Voltage	V <sub>R</sub>	70	Vdc
Forward Current	I <sub>F</sub>	200	mAdc
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1), T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	225 1.8	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	555	°C/W
Total Device Dissipation, FR-4 Board (Note 2), T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	360 2.9	mW mW/°C
Thermal Resistance, Junction-to-Ambient (Note 2)	R <sub>θJA</sub>	345	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ Minimum Pad
2. FR-4 @ 1.0 × 1.0 Inch Pad

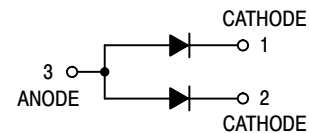


ON Semiconductor®

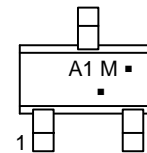
[www.onsemi.com](http://www.onsemi.com)



CASE 463  
SC-75/SOT-416  
STYLE 4



### MARKING DIAGRAM



A1 = Specific Device Code  
M = Date Code\*  
▪ = Pb-Free Package

(Note: Microdot may be in either location)

\*Date Code orientation may vary depending upon manufacturing location.

### ORDERING INFORMATION

Device	Package	Shipping†
BAW56TT1G	SC-75/SOT-416 (Pb-Free)	3,000 / Tape & Reel
SBAW56TT1G	SC-75/SOT-416 (Pb-Free)	3,000 / Tape & Reel

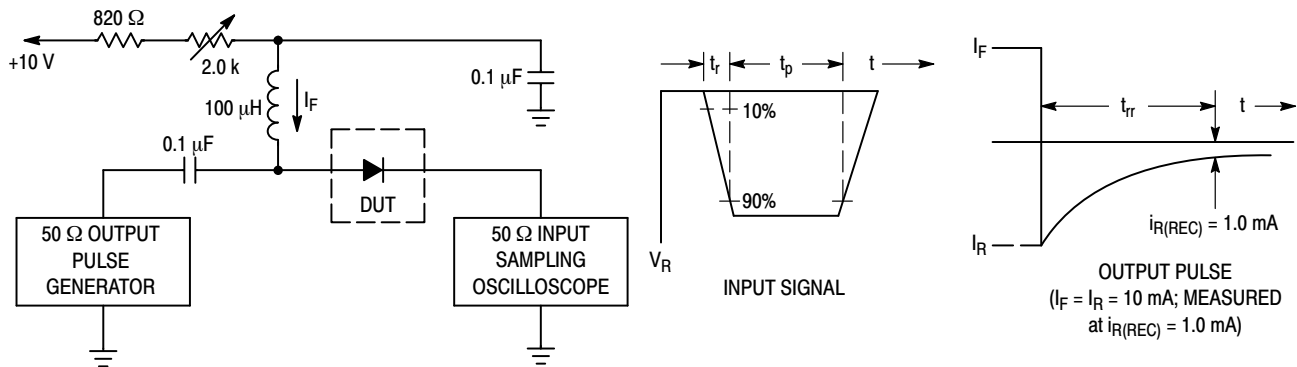
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BAW56TT1G, SBAW56TT1G

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage ( $I_{(BR)} = 100 \mu\text{A dc}$ )	$V_{(BR)}$	70	-	Vdc
Reverse Voltage Leakage Current ( $V_R = 25 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ ) ( $V_R = 70 \text{ Vdc}$ ) ( $V_R = 70 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	- - -	30 2.5 50	$\mu\text{A dc}$
Diode Capacitance ( $V_R = 0$ , $f = 1.0 \text{ MHz}$ )	$C_D$	-	2.0	pF
Forward Voltage ( $I_F = 1.0 \text{ mA dc}$ ) ( $I_F = 10 \text{ mA dc}$ ) ( $I_F = 50 \text{ mA dc}$ ) ( $I_F = 150 \text{ mA dc}$ )	$V_F$	- - - -	715 855 1000 1250	mVdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mA dc}$ , $R_L = 100 \Omega$ , $I_{R(REC)} = 1.0 \text{ mA dc}$ ) (Figure 1)	$t_{rr}$	-	6.0	ns

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.



- Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

**Figure 1. Recovery Time Equivalent Test Circuit**

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## TYPICAL CHARACTERISTICS

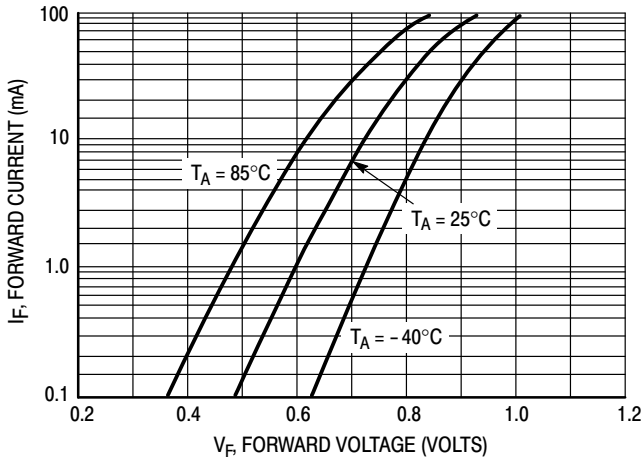


Figure 2. Forward Voltage

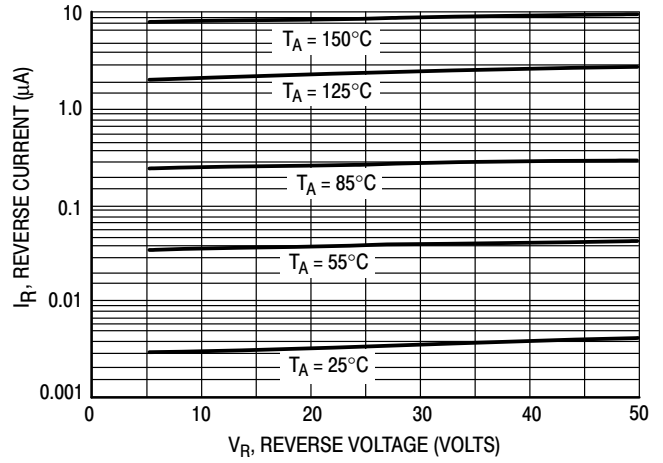


Figure 3. Leakage Current

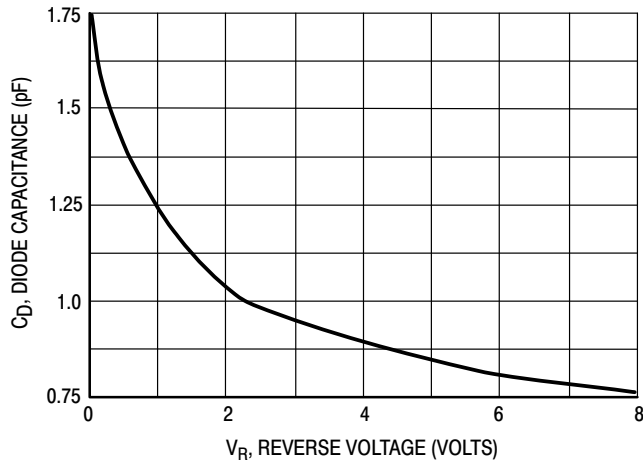


Figure 4. Capacitance

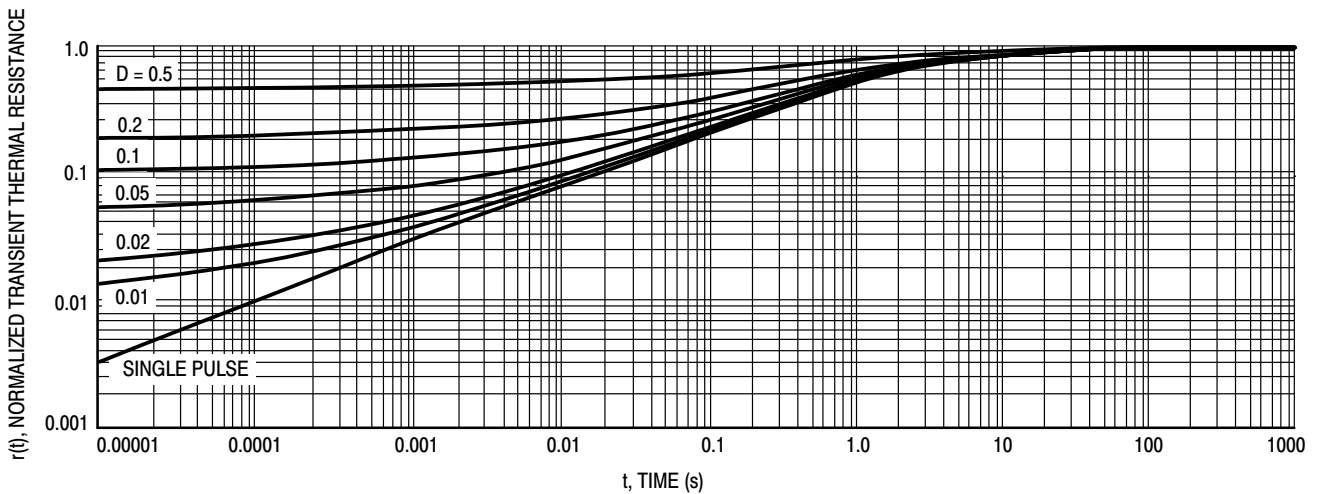


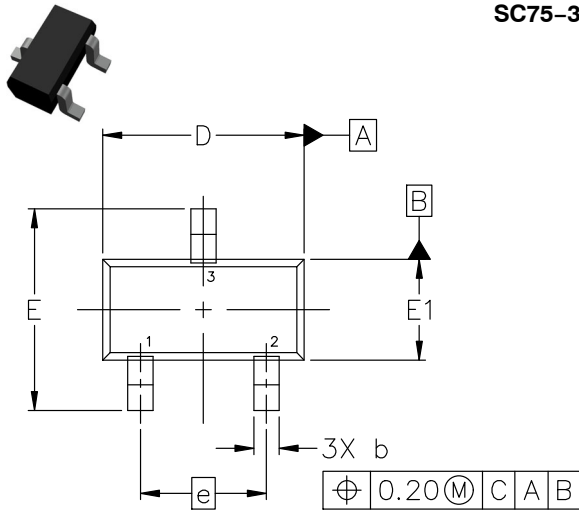
Figure 5. Normalized Thermal Response

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

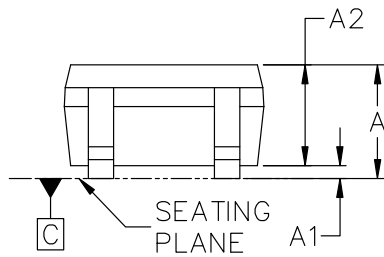


**SC75-3 1.60x0.80x0.80, 1.00P**  
CASE 463  
ISSUE H

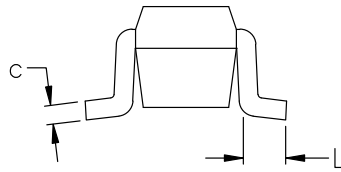
DATE 01 FEB 2024



TOP VIEW

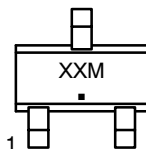


SIDE VIEW



END VIEW

**GENERIC MARKING DIAGRAM\***



- XX = Specific Device Code
- M = Date Code
- = Pb-Free Package

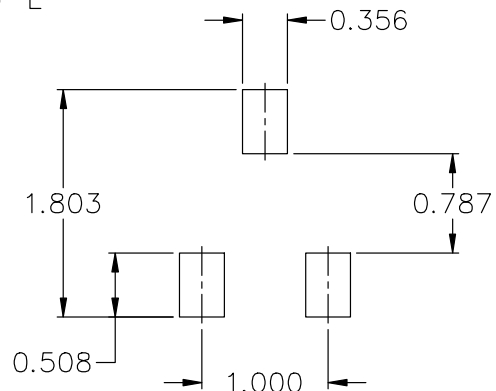
\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

- STYLE 1:  
PIN 1. BASE  
2. EMITTER  
3. COLLECTOR
- STYLE 2:  
PIN 1. ANODE  
2. N/C  
3. CATHODE
- STYLE 3:  
PIN 1. ANODE  
2. ANODE  
3. CATHODE
- STYLE 4:  
PIN 1. CATHODE  
2. CATHODE  
3. ANODE
- STYLE 5:  
PIN 1. GATE  
2. SOURCE  
3. DRAIN

NOTES:

1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
2. ALL DIMENSION ARE IN MILLIMETERS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.70	0.80	0.90
A1	0.00	0.05	0.10
A2	0.80 REF.		
b	0.15	0.20	0.30
c	0.10	0.15	0.25
D	1.55	1.60	1.65
E	1.50	1.60	1.70
E1	0.70	0.80	0.90
e	1.00 BSC		
L	0.10	0.15	0.20



RECOMMENDED MOUNTING FOOTPRINT\*

\* FOR ADDITIONAL INFORMATION ON OUR Pb-FREE STRATEGY AND SOLDERING DETAILS, PLEASE DOWNLOAD THE ON SEMICONDUCTOR SOLDERING AND MOUNTING TECHNIQUES REFERENCE MANUAL, SOLDERRM/D.

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