

# Silicon Switching Diode

## BAS16TT1G



CASE 463  
SOT-416  
STYLE 2

### Features

- 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
Continuous Reverse Voltage	V <sub>R</sub>	100	V
Recurrent Peak Forward Current	I <sub>F</sub>	200	mA
Peak Forward Surge Current Pulse Width = 10 μs	I <sub>FM(surge)</sub>	500	mA

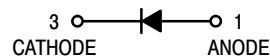
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

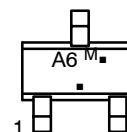
Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	225	mW
Thermal Resistance, Junction-to-Ambient (Note 1)	R <sub>θJA</sub>	555	°C/W
Total Device Dissipation, FR-4 Board (Note 2) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	360	mW
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



### MARKING DIAGRAM



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

### ORDERING INFORMATION

Device	Package	Shipping†
BAS16TT1G	SOT-416 (Pb-Free)	3000 / Tape & Reel
NSVBAS16TT1G	SOT-416 (Pb-Free)	3000 / 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](#).

# BAS16TT1G

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

Characteristic	Symbol	Min	Max	Unit
Forward Voltage ( $I_F = 1.0\text{ mA}$ ) ( $I_F = 10\text{ mA}$ ) ( $I_F = 50\text{ mA}$ ) ( $I_F = 150\text{ mA}$ )	$V_F$	– – – –	715 866 1000 1250	mV
Reverse Current ( $V_R = 100\text{ V}$ ) ( $V_R = 75\text{ V}, T_J = 150^\circ\text{C}$ ) ( $V_R = 25\text{ V}, T_J = 150^\circ\text{C}$ )	$I_R$	– – –	1.0 50 30	$\mu\text{A}$
Capacitance ( $V_R = 0, f = 1.0\text{ MHz}$ )	$C_D$	–	2.0	pF
Reverse Recovery Time ( $I_F = I_R = 10\text{ mA}, R_L = 50\ \Omega$ ) (Figure 1)	$t_{rr}$	–	6.0	ns
Stored Charge ( $I_F = 10\text{ mA}$ to $V_R = 6.0\text{ V}, R_L = 500\ \Omega$ ) (Figure 2)	QS	–	45	PC
Forward Recovery Voltage ( $I_F = 10\text{ mA}, t_r = 20\text{ ns}$ ) (Figure 3)	$V_{FR}$	–	1.75	V

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.

# BAS16TT1G

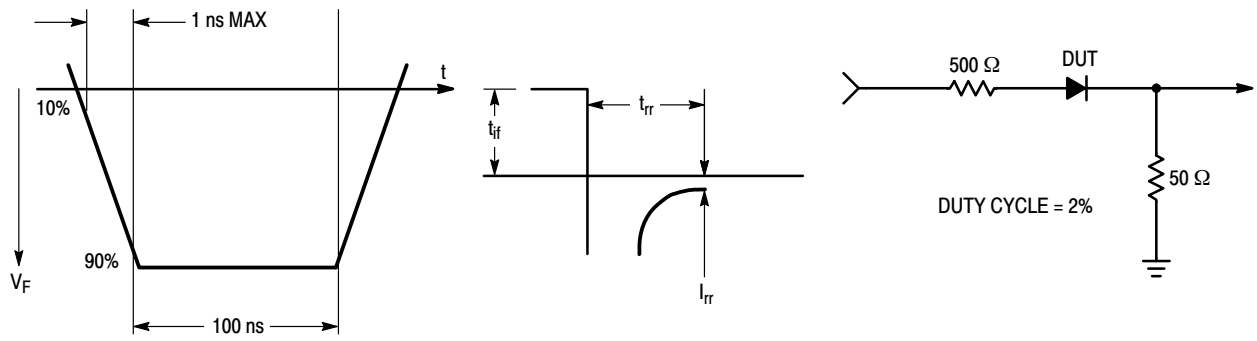


Figure 1. Reverse Recovery Time Equivalent Test Circuit

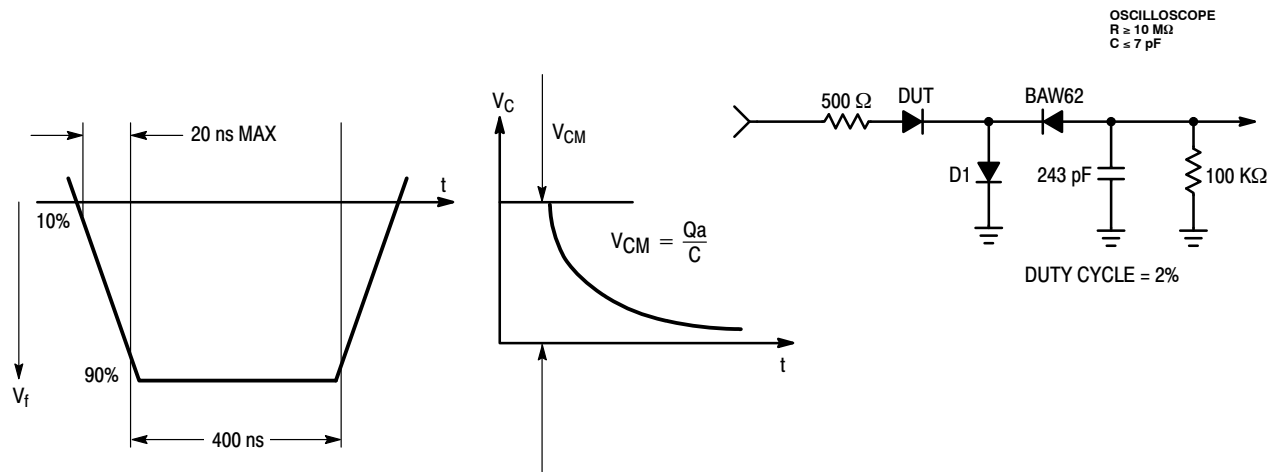


Figure 2. Stored Charge Equivalent Test Circuit

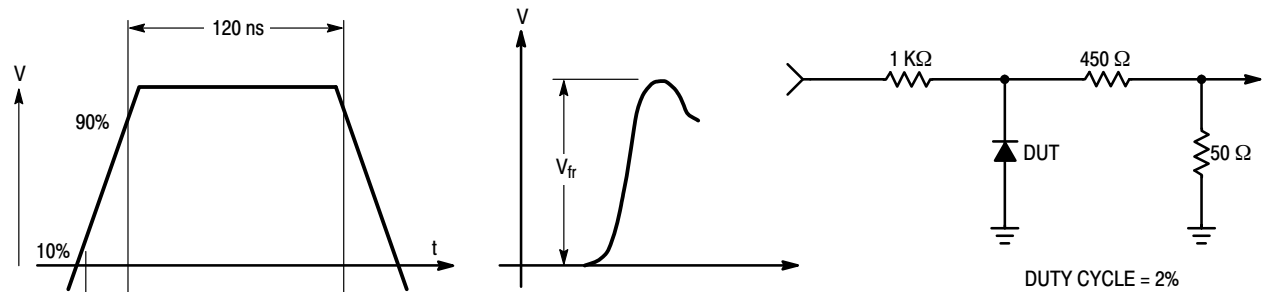


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

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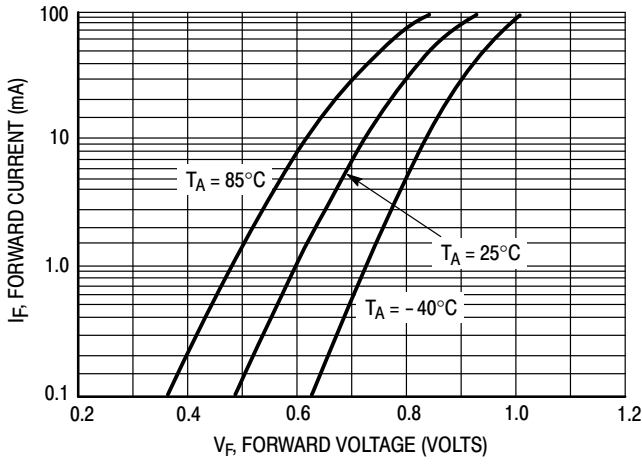


Figure 4. Forward Voltage

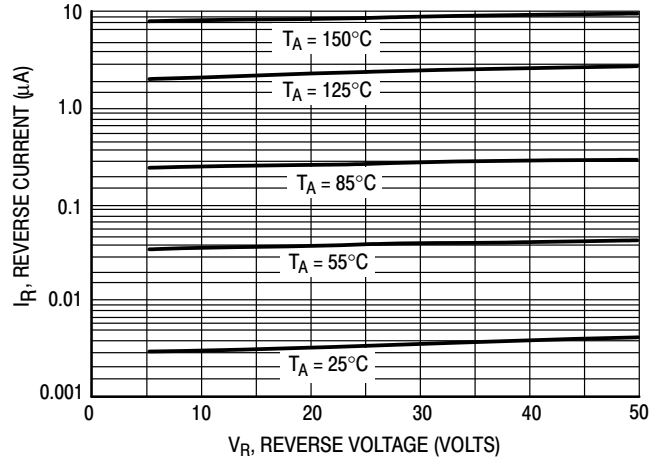


Figure 5. Leakage Current

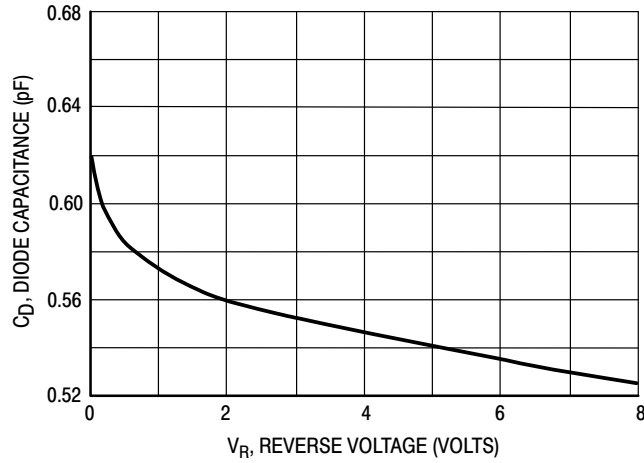


Figure 6. Capacitance

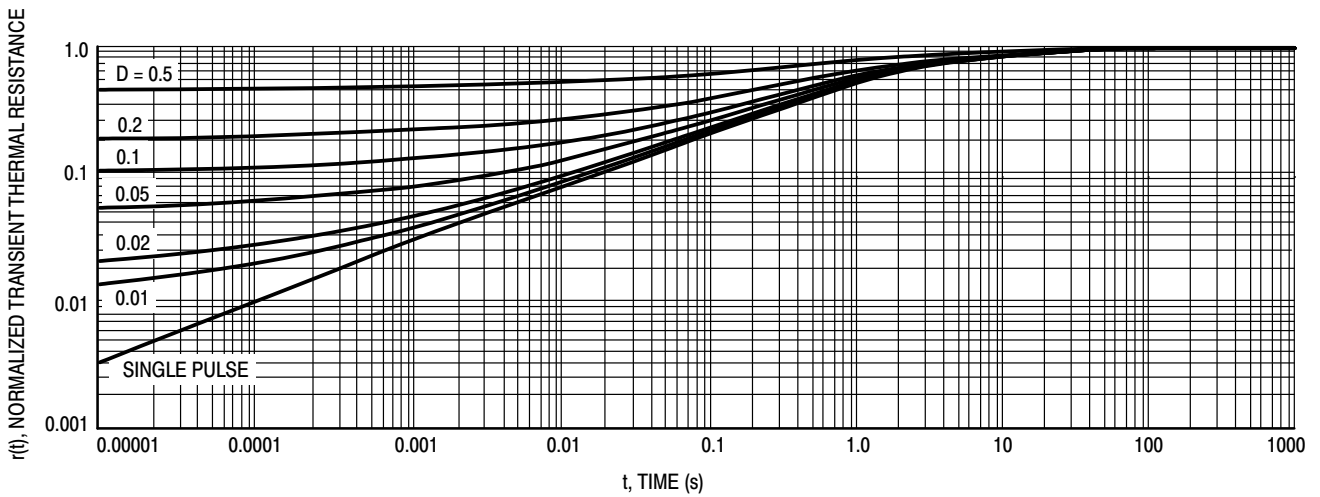


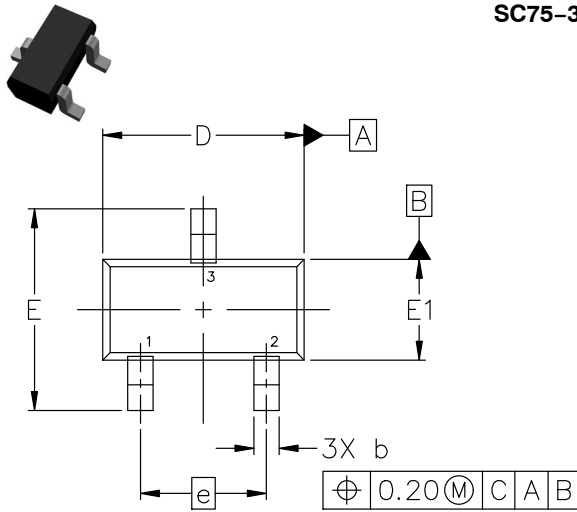
Figure 7. Normalized Thermal Response

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS

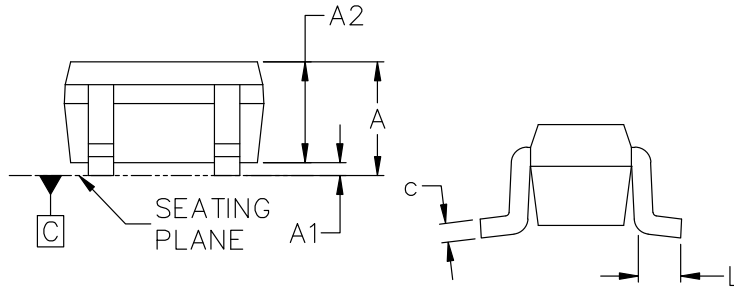


**SC75-3 1.60x0.80x0.80, 1.00P**  
CASE 463  
ISSUE H

DATE 01 FEB 2024



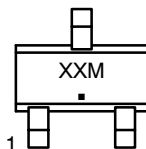
TOP VIEW



SIDE VIEW

END VIEW

### GENERIC MARKING DIAGRAM\*



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

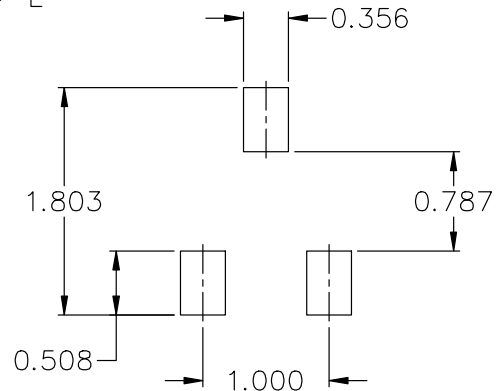
\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

- 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:

- DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
- 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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