

Silicon Switching Diode

BAS16TT1G

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Rating	Symbol	Max	Unit
Continuous Reverse Voltage	V_R	100	V
Recurrent Peak Forward Current	I_F	200	mA
Peak Forward Surge Current Pulse Width = 10 μs	$I_{FM(\text{surge})}$	500	mA

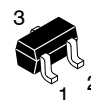
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

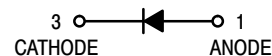
Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1) $T_A = 25^\circ\text{C}$ Derated above 25°C	P_D	225	mW
		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 1)	$R_{\theta JA}$	555	$^\circ\text{C}/\text{W}$
Total Device Dissipation, FR-4 Board (Note 2) $T_A = 25^\circ\text{C}$ Derated above 25°C	P_D	360	mW
		2.9	mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient (Note 2)	$R_{\theta JA}$	345	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

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.

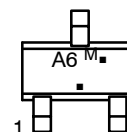
- FR-4 @ Minimum Pad
- FR-4 @ 1.0×1.0 Inch Pad



CASE 463
SOT-416
STYLE 2



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°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Forward Voltage (I _F = 1.0 mA) (I _F = 10 mA) (I _F = 50 mA) (I _F = 150 mA)	V _F	– – – –	715 866 1000 1250	mV
Reverse Current (V _R = 100 V) (V _R = 75 V, T _J = 150°C) (V _R = 25 V, T _J = 150°C)	I _R	– – –	1.0 50 30	μA
Capacitance (V _R = 0, f = 1.0 MHz)	C _D	–	2.0	pF
Reverse Recovery Time (I _F = I _R = 10 mA, R _L = 50 Ω) (Figure 1)	t _{rr}	–	6.0	ns
Stored Charge (I _F = 10 mA to V _R = 6.0 V, R _L = 500 Ω) (Figure 2)	Q _S	–	45	PC
Forward Recovery Voltage (I _F = 10 mA, t _r = 20 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

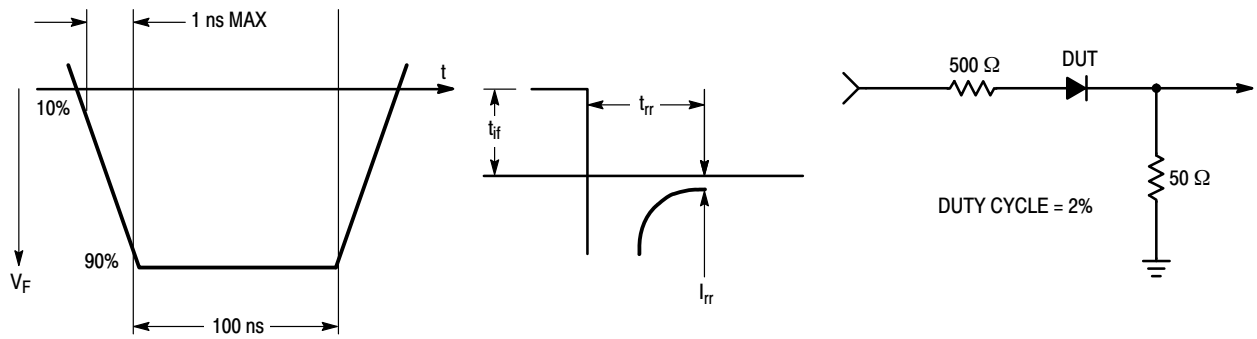


Figure 1. Reverse Recovery Time Equivalent Test Circuit

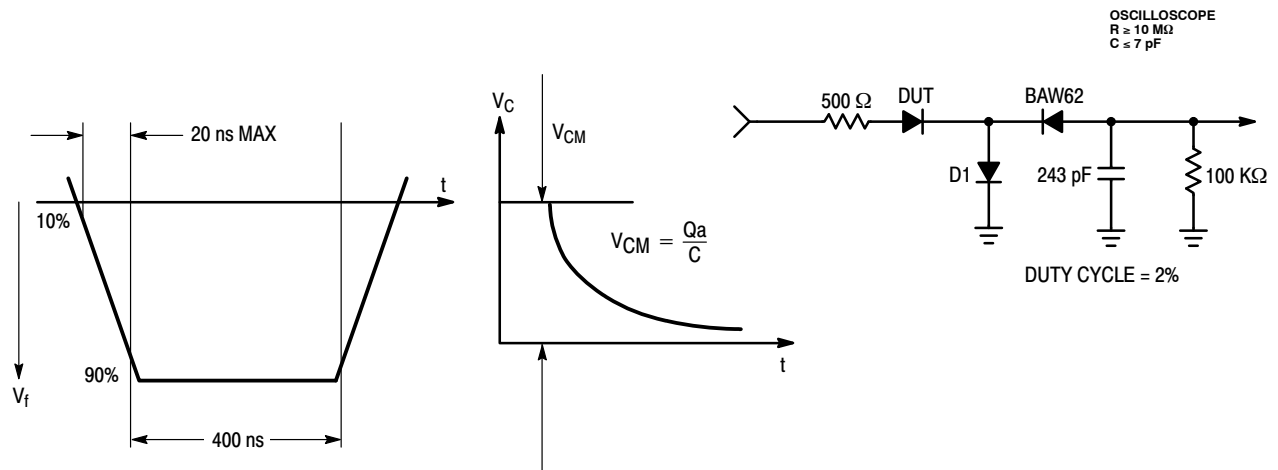


Figure 2. Stored Charge Equivalent Test Circuit

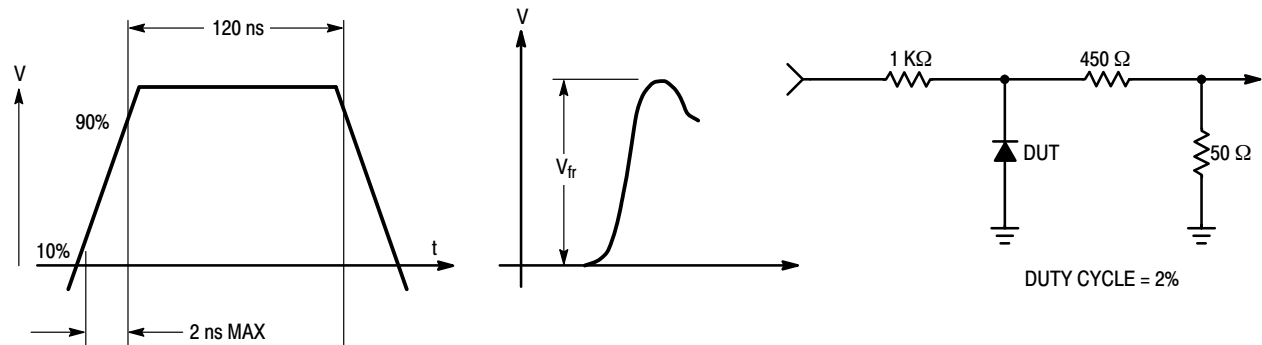


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

BAS16TT1G

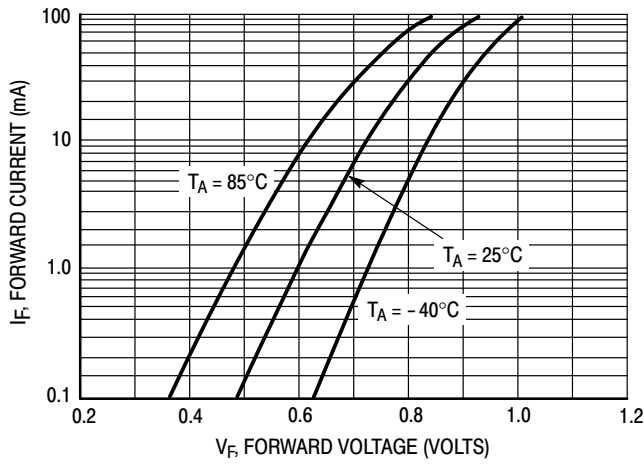


Figure 4. Forward Voltage

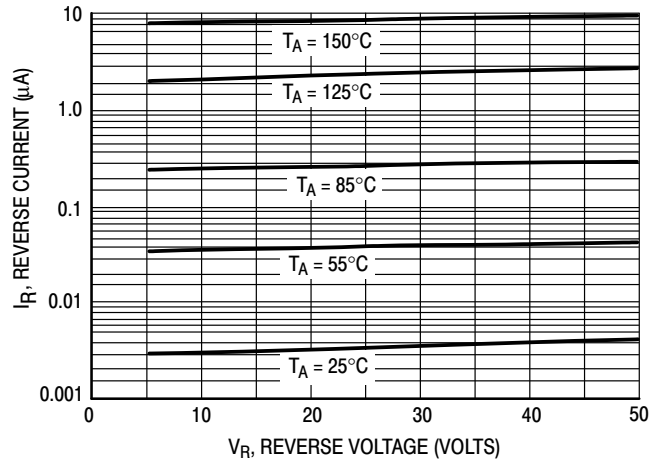


Figure 5. Leakage Current

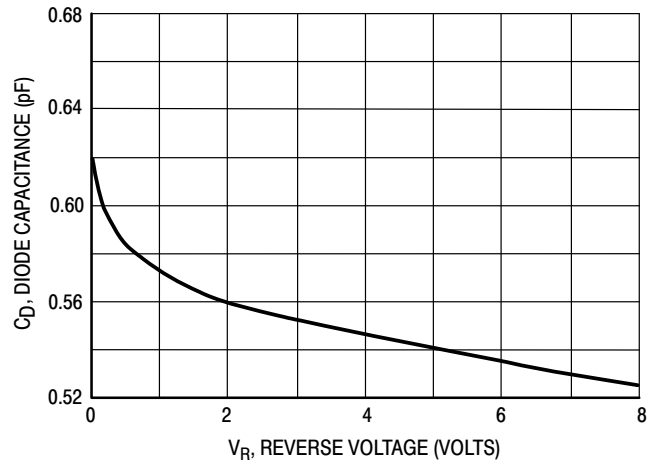


Figure 6. Capacitance

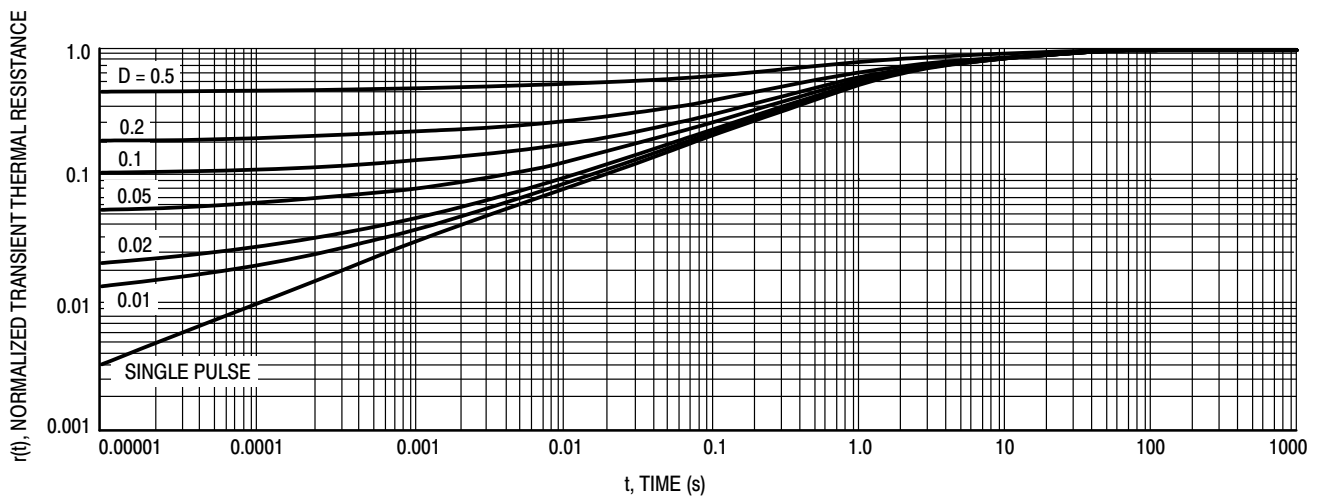


Figure 7. Normalized Thermal Response

MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



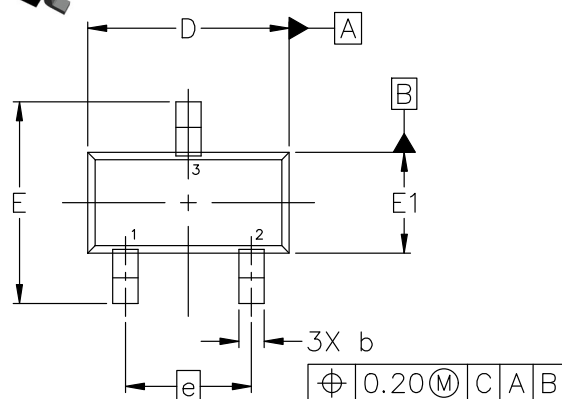
SC75-3 1.60x0.80x0.80, 1.00P

CASE 463
ISSUE H

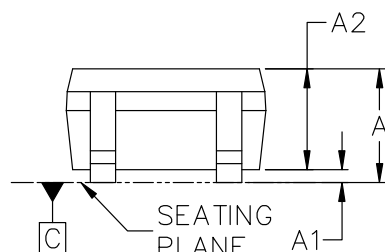
DATE 01 FEB 2024

NOTES:

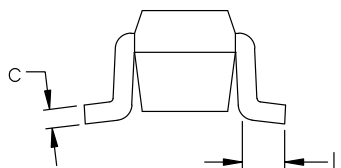
1. DIMENSIONING AND TOLERANCING CONFORM TO ASME Y14.5-2018.
2. ALL DIMENSION ARE IN MILLIMETERS.



TOP VIEW



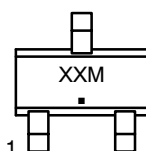
SIDE VIEW



END VIEW

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

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.

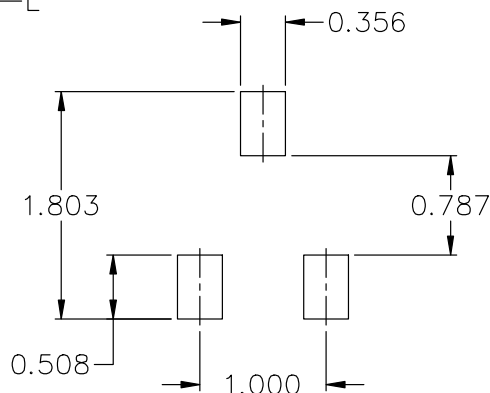
STYLE 1:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

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



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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DESCRIPTION:	SC75-3 1.60x0.80x0.80, 1.00P	PAGE 1 OF 1

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