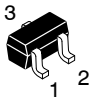
Silicon Switching Diode

BAS16TT1G



CASE 463
SOT−416
STYLE 2

Features

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

MAXIMUM RATINGS (T_A = 25°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	$I_{FM(surge)}$	500	mA

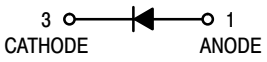
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

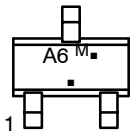
Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR−4 Board (Note 1) T_A = 25°C Derated above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance, Junction−to−Ambient (Note 1)	$R_{\theta JA}$	555	°C/W
Total Device Dissipation, FR−4 Board (Note 2) T_A = 25°C Derated above 25°C	P_D	360 2.9	mW mW/°C
Thermal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

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Forward Voltage	V_F			mV
(I_F = 1.0 mA)		–	715	
(I_F = 10 mA)		–	866	
(I_F = 50 mA)		–	1000	
(I_F = 150 mA)		–	1250	
Reverse Current	I_R			μA
(V_R = 100 V)		–	1.0	
(V_R = 75 V, T_J = 150°C)		–	50	
(V_R = 25 V, T_J = 150°C)		–	30	
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)	QS	–	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.

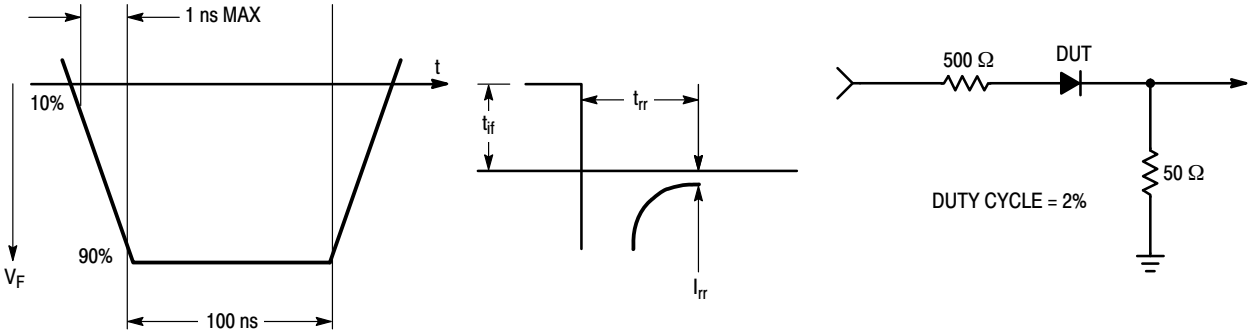


Figure 1. Reverse Recovery Time Equivalent Test Circuit

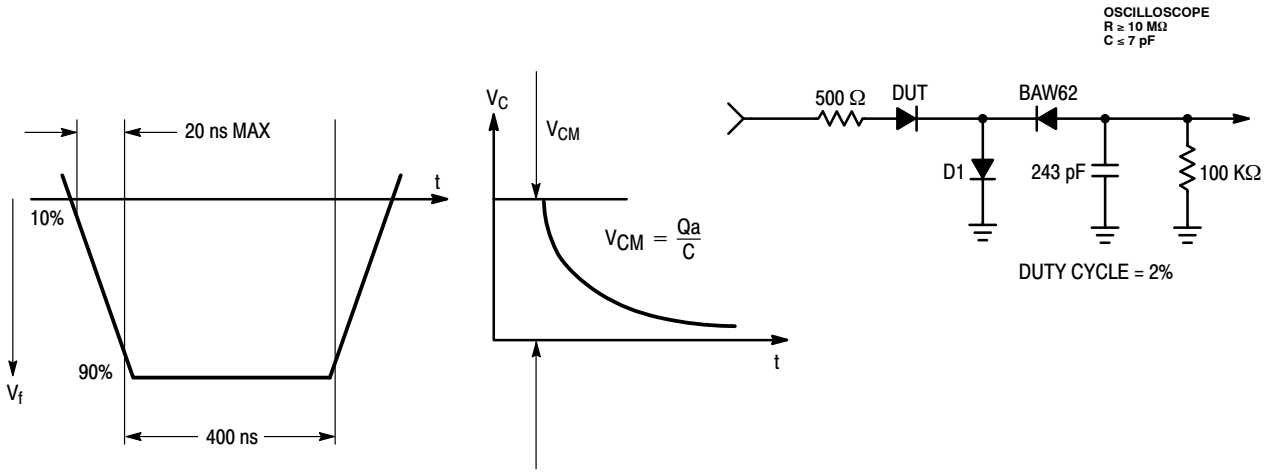


Figure 2. Stored Charge Equivalent Test Circuit

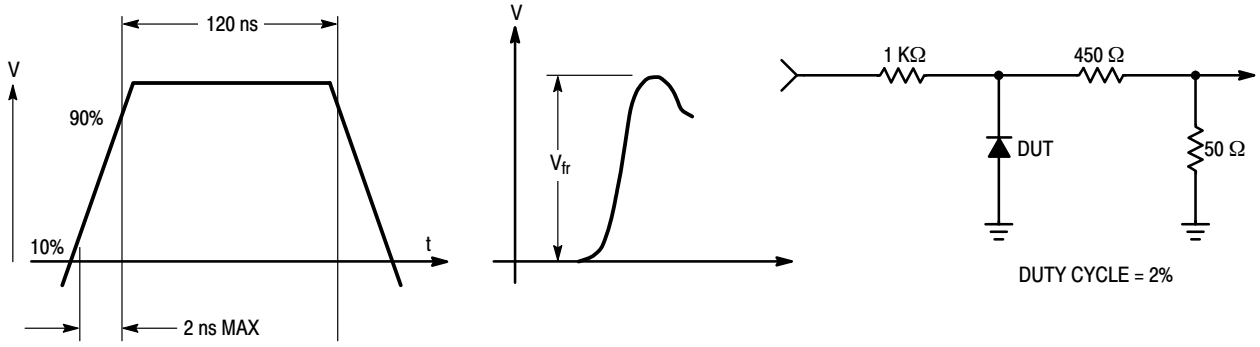


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

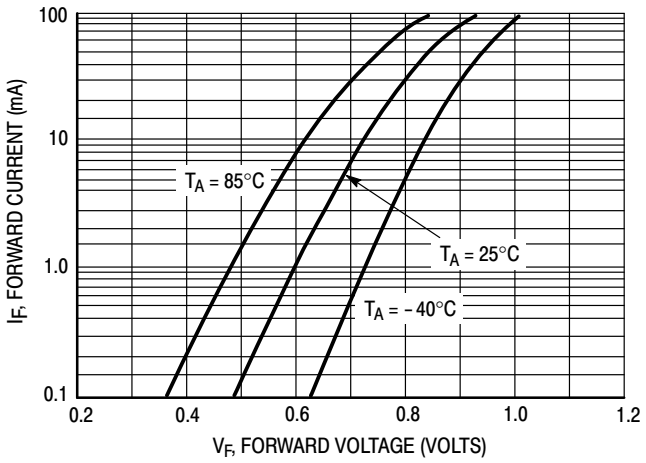


Figure 4. Forward Voltage

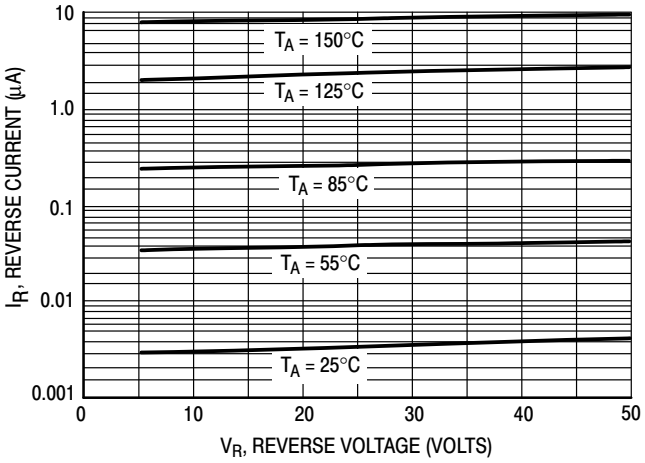


Figure 5. Leakage Current

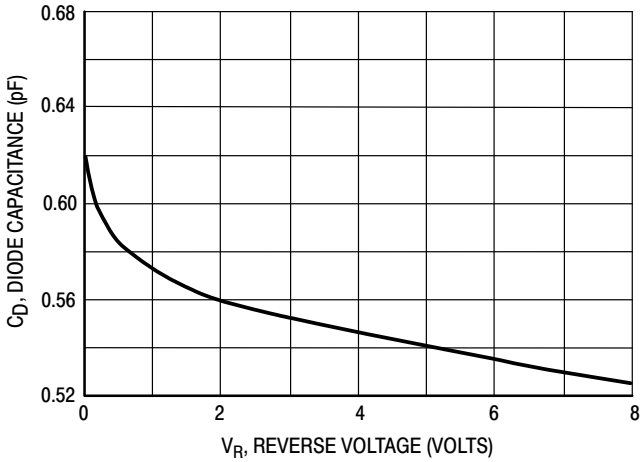


Figure 6. Capacitance

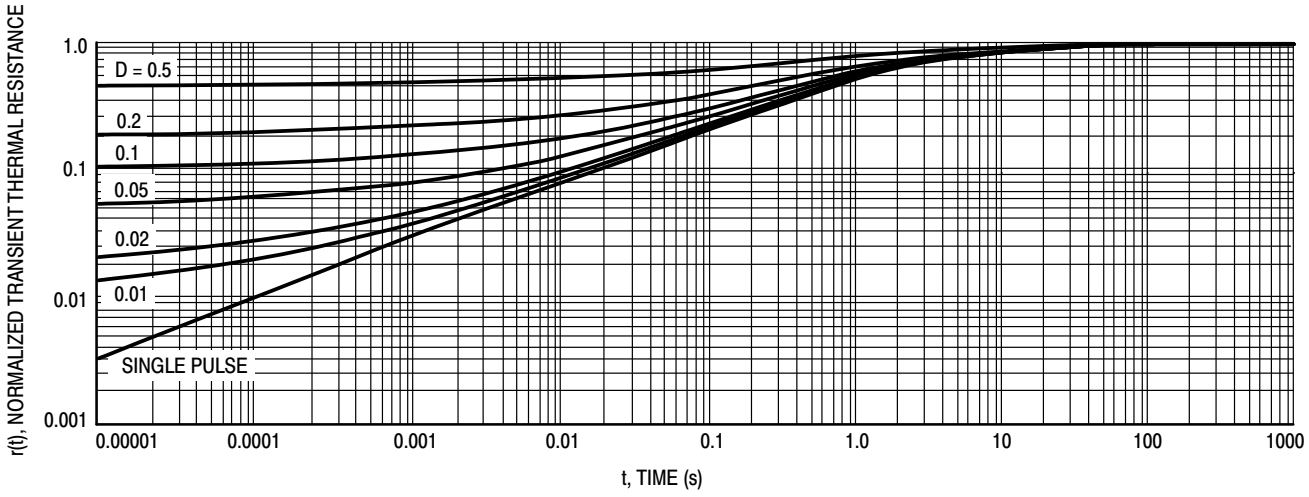
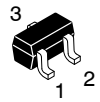


Figure 7. Normalized Thermal Response

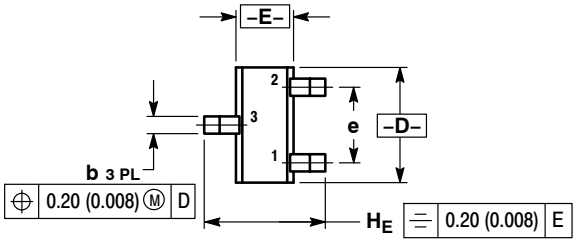
MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

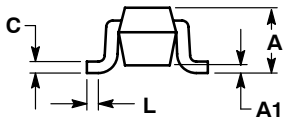
SC−75/SOT−416
CASE 463
ISSUE G

DATE 07 AUG 2015



SCALE 4:1





NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.70	0.80	0.90	0.027	0.031	0.035
A1	0.00	0.05	0.10	0.000	0.002	0.004
b	0.15	0.20	0.30	0.006	0.008	0.012
C	0.10	0.15	0.25	0.004	0.006	0.010
D	1.55	1.60	1.65	0.061	0.063	0.065
E	0.70	0.80	0.90	0.027	0.031	0.035
e	1.00 BSC			0.04 BSC		
L	0.10	0.15	0.20	0.004	0.006	0.008
H_E	1.50	1.60	1.70	0.060	0.063	0.067

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

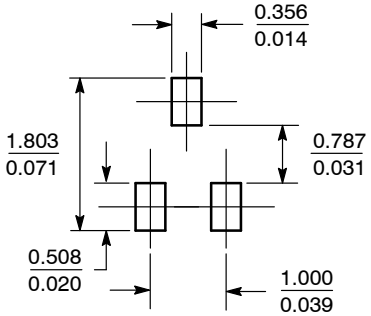
STYLE 2:
PIN 1. ANODE
2. N/C
3. CATHODE

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

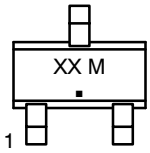
RECOMMENDED SOLDERING FOOTPRINT*



SCALE 10:1 (mm / inches)

*For additional information on our Pb−Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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.

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DESCRIPTION:	**SC−75/SOT−416**	**PAGE 1 OF 1**

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