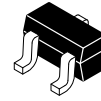


# Silicon Switching Diode

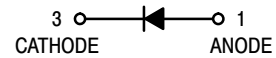
## BAS16WT1G

### Features

- S and NSV 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



SC-70  
CASE 419  
STYLE 2



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

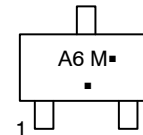
Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V <sub>R</sub>	100	V
Recurrent Peak Forward Current	I <sub>R</sub>	200	mA
Peak Forward Surge Current Pulse Width = 10 μs	I <sub>FM(surge)</sub>	500	mA
Total Power Dissipation, One Diode Loaded T <sub>A</sub> = 25°C Derate above 25°C Mounted on a Ceramic Substrate (10 x 8 x 0.6 mm)	P <sub>D</sub>	200 1.6	mW mW/°C
Operating and Storage Junction 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.

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction-to-Ambient One Diode Loaded Mounted on a Ceramic Substrate (10 x 8 x 0.6 mm)	R <sub>θJA</sub>	625	°C/W

### MARKING DIAGRAM



A6 = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package  
(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
BAS16WT1G	SC-70 (Pb-Free)	3000 / Tape & Reel
SBAS16WT1G	SC-70 (Pb-Free)	3000 / Tape & Reel
NSVBAS16WT3G	SC-70 (Pb-Free)	10000 / 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](#).

# BAS16WT1G

## 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

# BAS16WT1G

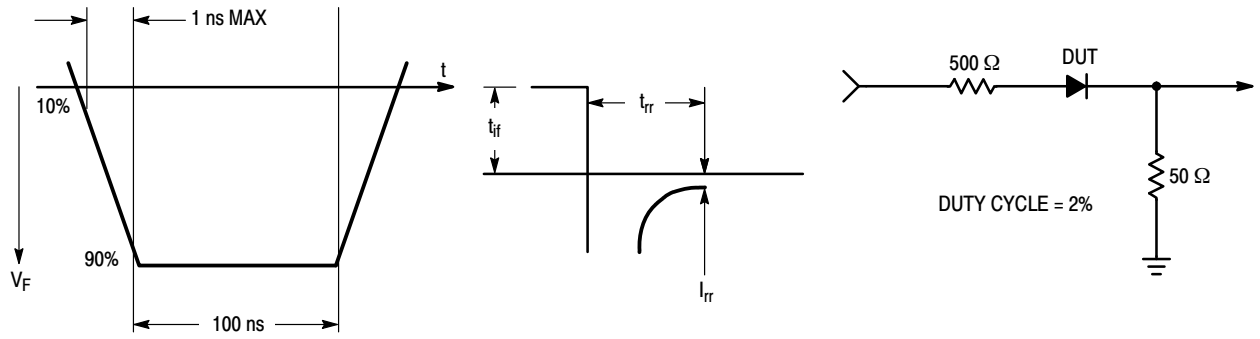


Figure 1. Reverse Recovery Time Equivalent Test Circuit

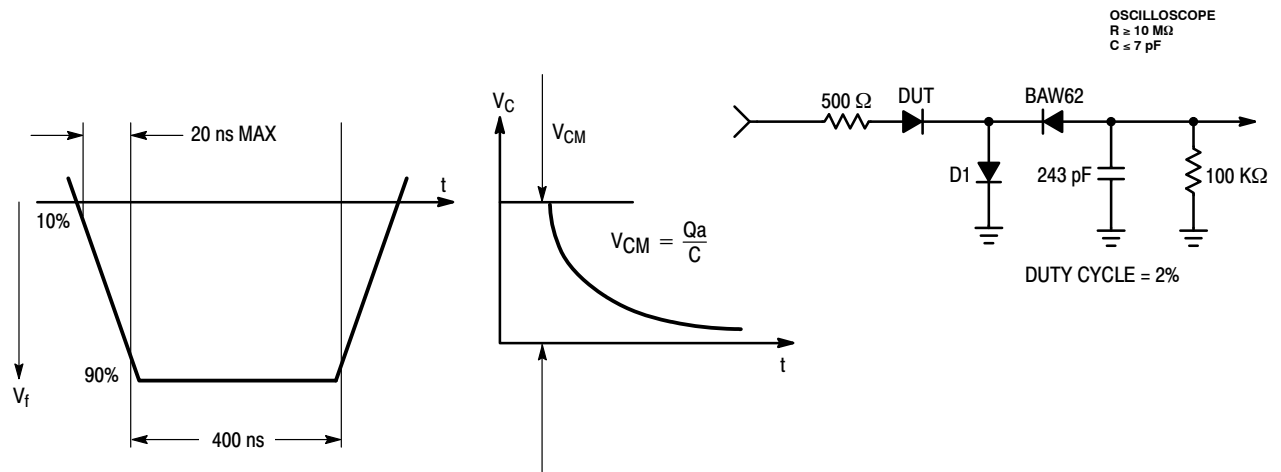


Figure 2. Stored Charge Equivalent Test Circuit

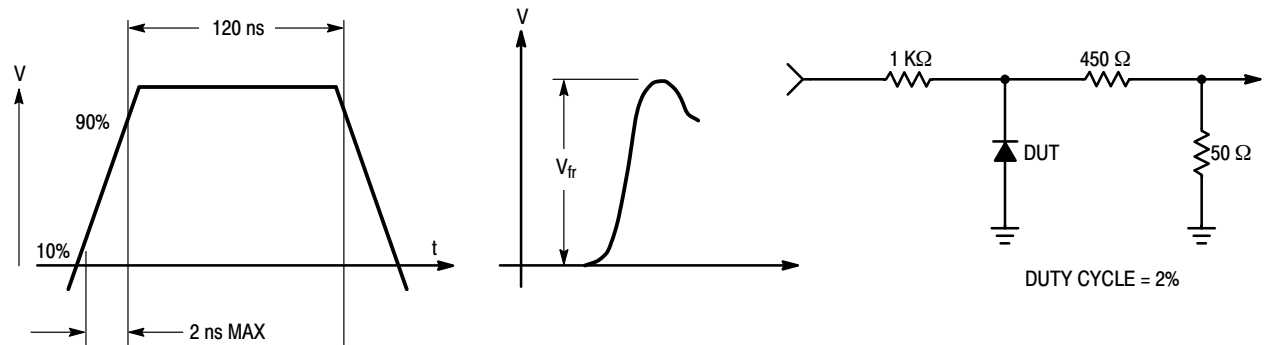


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

# BAS16WT1G

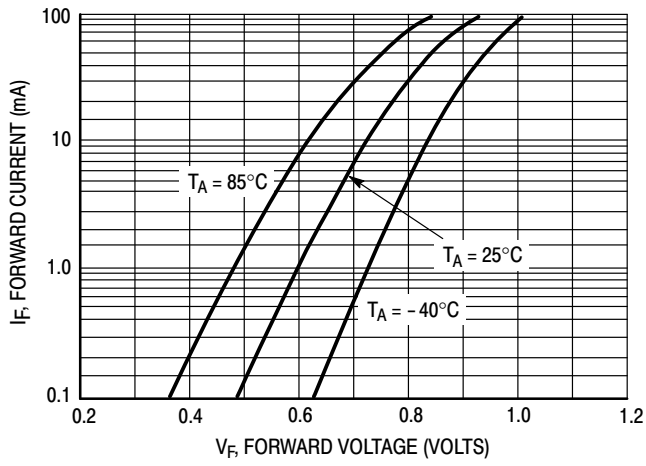


Figure 4. Forward Voltage

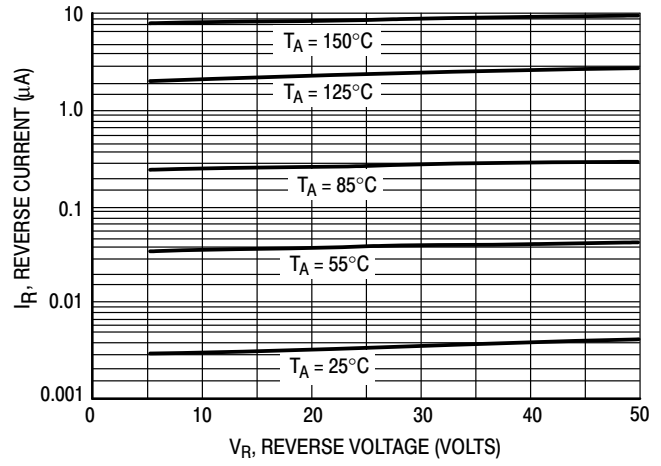


Figure 5. Leakage Current

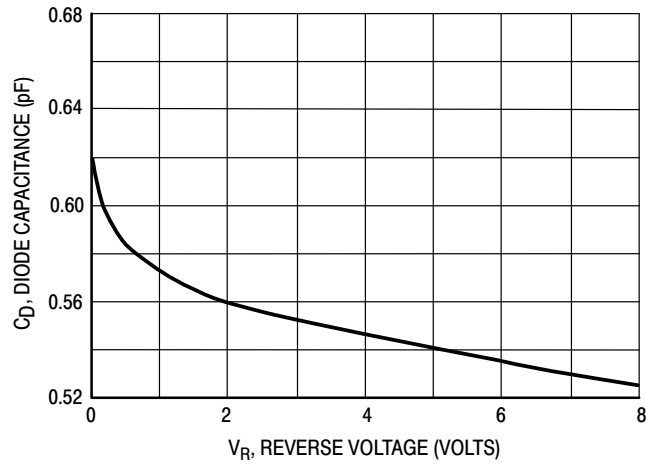
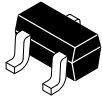


Figure 6. Capacitance

# MECHANICAL CASE OUTLINE PACKAGE DIMENSIONS



SCALE 4:1

## SC-70 (SOT-323) CASE 419 ISSUE R

DATE 11 OCT 2022



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH

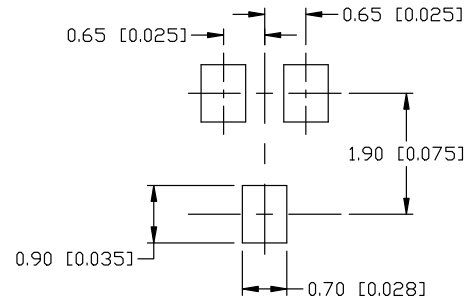
DIM	MILLIMETERS			INCHES		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.70 REF			0.028 BSC		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.00	2.20	0.071	0.080	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.20	0.38	0.56	0.008	0.015	0.022
H <sub>E</sub>	2.00	2.10	2.40	0.079	0.083	0.095

### 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.



\* For additional information on our Pb-Free strategy and soldering details, please download the DN Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERM/D.

### SOLDERING FOOTPRINT

- |   |   |   |  |   |   |
|---|---|---|--|---|---|
| STYLE 1:<br>CANCELLED                                 | STYLE 2:<br>PIN 1. ANODE<br>2. N.C.<br>3. CATHODE     | STYLE 3:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 4:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. ANODE       | STYLE 5:<br>PIN 1. ANODE<br>2. ANODE<br>3. CATHODE          |   |
| STYLE 6:<br>PIN 1. EMITTER<br>2. BASE<br>3. COLLECTOR | STYLE 7:<br>PIN 1. BASE<br>2. EMITTER<br>3. COLLECTOR | STYLE 8:<br>PIN 1. GATE<br>2. SOURCE<br>3. DRAIN      | STYLE 9:<br>PIN 1. ANODE<br>2. CATHODE<br>3. CATHODE-ANODE | STYLE 10:<br>PIN 1. CATHODE<br>2. ANODE<br>3. ANODE-CATHODE | STYLE 11:<br>PIN 1. CATHODE<br>2. CATHODE<br>3. CATHODE |

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<b>DESCRIPTION:</b>	<b>SC-70 (SOT-323)</b>	<b>PAGE 1 OF 1</b>

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