

# BAS16WT1G

## Silicon Switching Diode

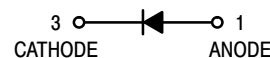
### Features

- 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



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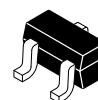
### MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

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 Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

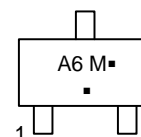
### THERMAL CHARACTERISTICS

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



**SC-70  
CASE 419  
STYLE 2**

### 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

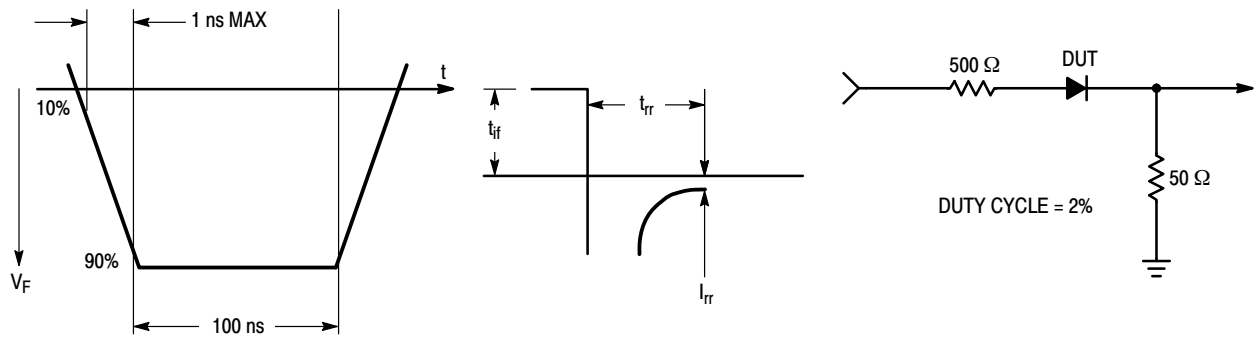


Figure 1. Reverse Recovery Time Equivalent Test Circuit

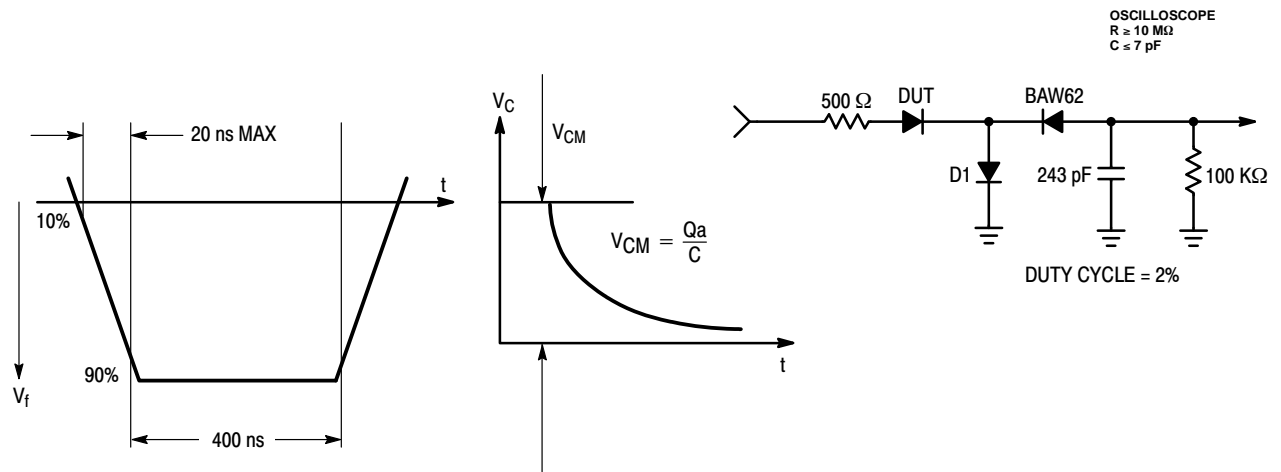


Figure 2. Stored Charge Equivalent Test Circuit

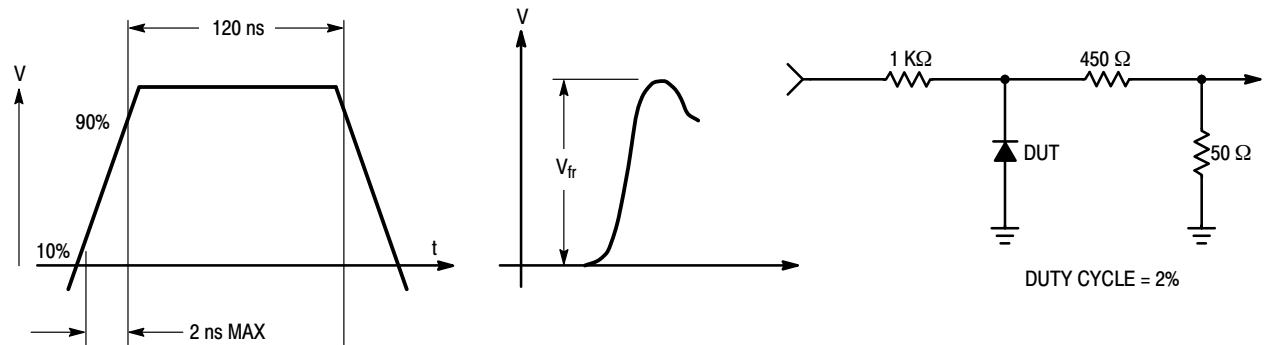


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

# BAS16WT1G

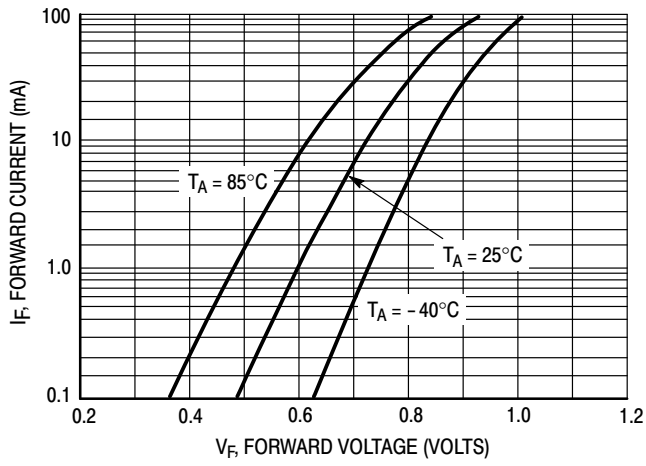


Figure 4. Forward Voltage

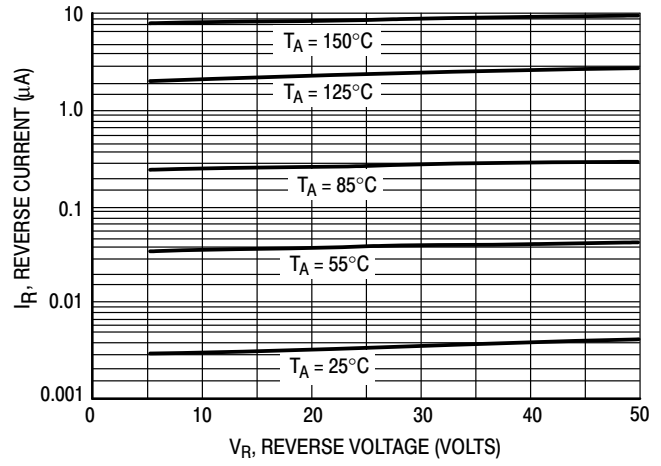


Figure 5. Leakage Current

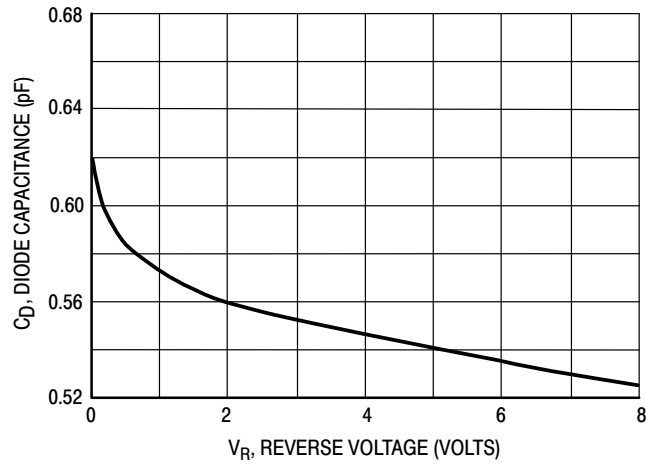
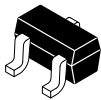


Figure 6. Capacitance

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

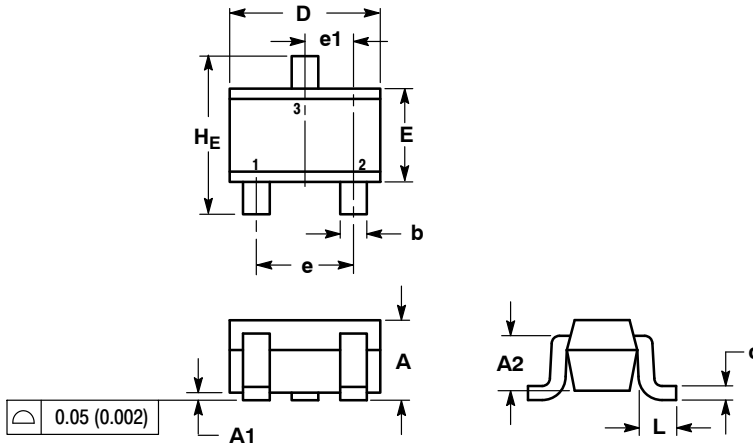
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SCALE 4:1

SC-70 (SOT-323)  
CASE 419-04  
ISSUE N

DATE 11 NOV 2008

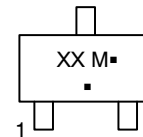


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI 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 REF		
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	2.10	2.20	0.071	0.083	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
HE	2.00	2.10	2.40	0.079	0.083	0.095

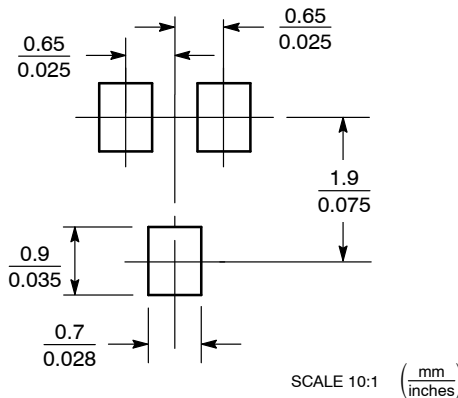
### GENERIC MARKING DIAGRAM



- 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.

### SOLDERING 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.

- |   |   |   |  |   |   |
|---|---|---|--|---|---|
| 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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