

BAS16WT1G

Silicon Switching Diode

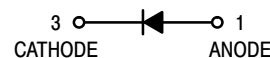
Features

- 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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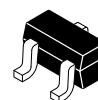
MAXIMUM RATINGS (T_A = 25°C)

| Rating | Symbol | Value | Unit |
|--|-----------------------------------|----------------|-------------|
| Continuous Reverse Voltage | V _R | 100 | V |
| Recurrent Peak Forward Current | I _R | 200 | mA |
| Peak Forward Surge Current Pulse Width = 10 μs | I _{FM(surge)} | 500 | mA |
| Total Power Dissipation, One Diode Loaded T _A = 25°C Derate above 25°C Mounted on a Ceramic Substrate (10 x 8 x 0.6 mm) | P _D | 200 1.6 | mW mW/°C |
| Operating and Storage Junction Temperature Range | T _J , T _{stg} | -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.

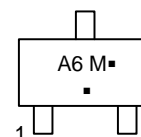
THERMAL CHARACTERISTICS

| 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 _{θJA} | 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.

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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 | μA |
| 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 |

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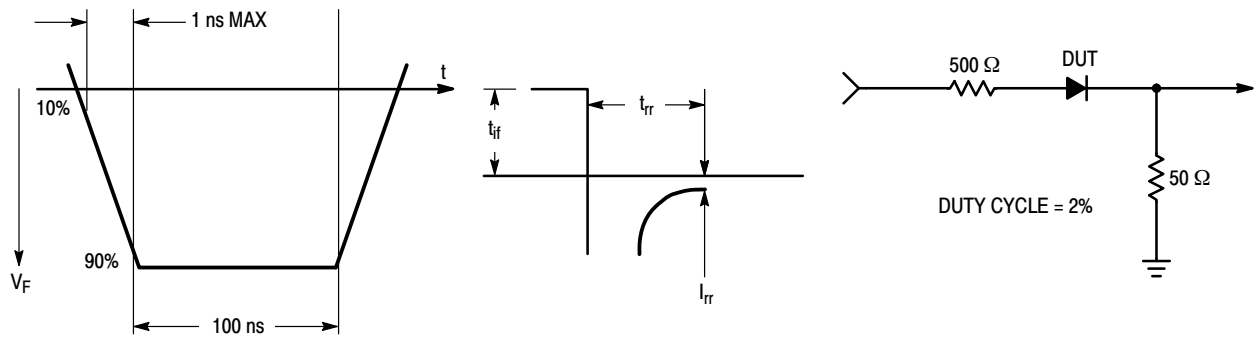


Figure 1. Reverse Recovery Time Equivalent Test Circuit

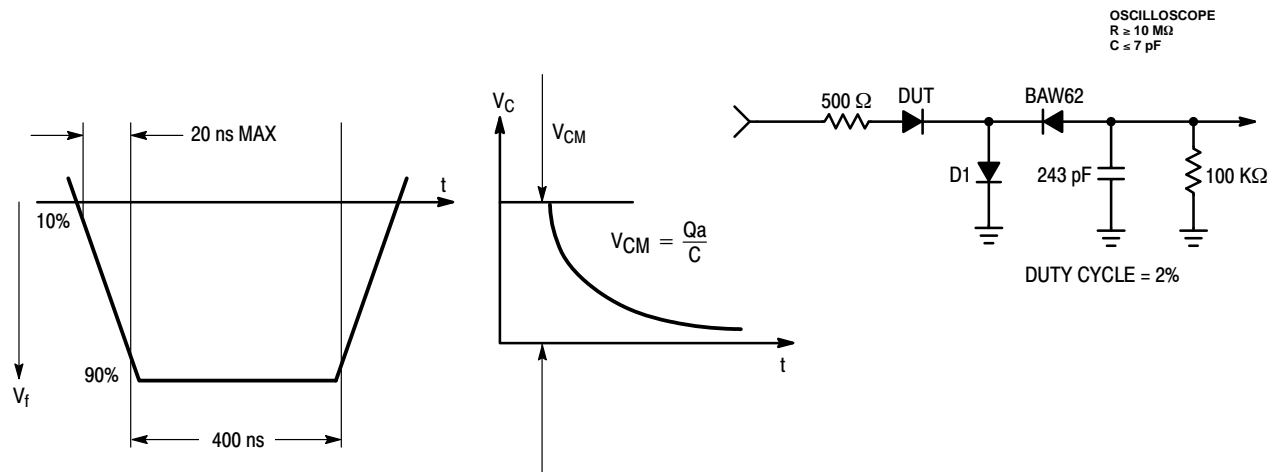


Figure 2. Stored Charge Equivalent Test Circuit

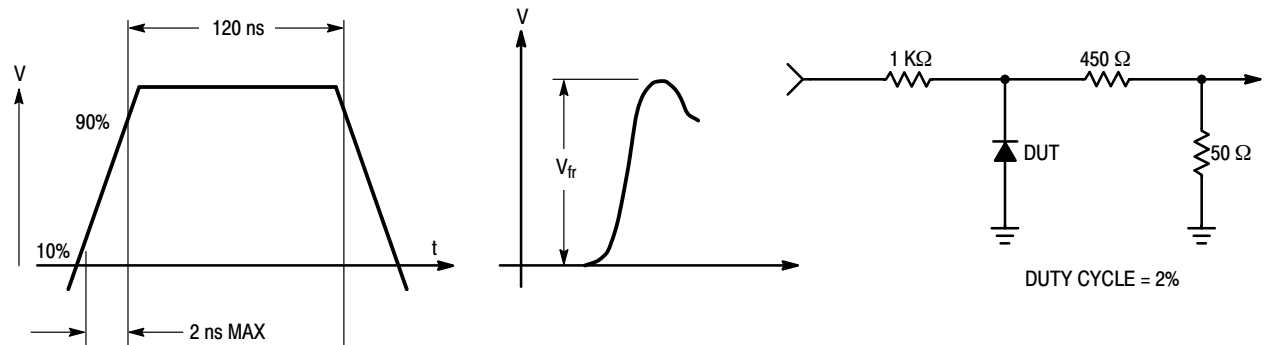


Figure 3. Forward Recovery Voltage Equivalent Test Circuit

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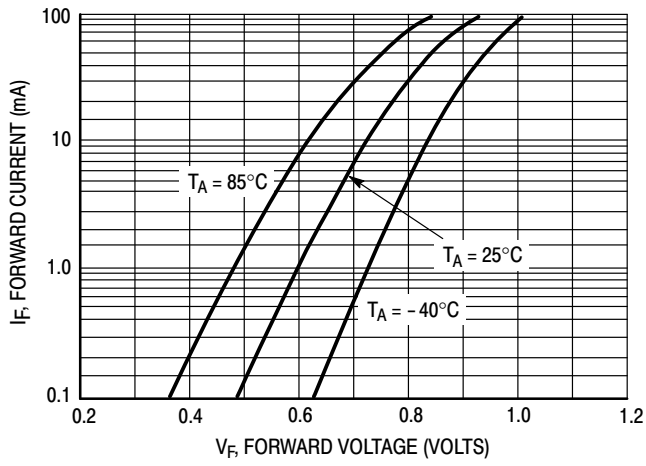


Figure 4. Forward Voltage

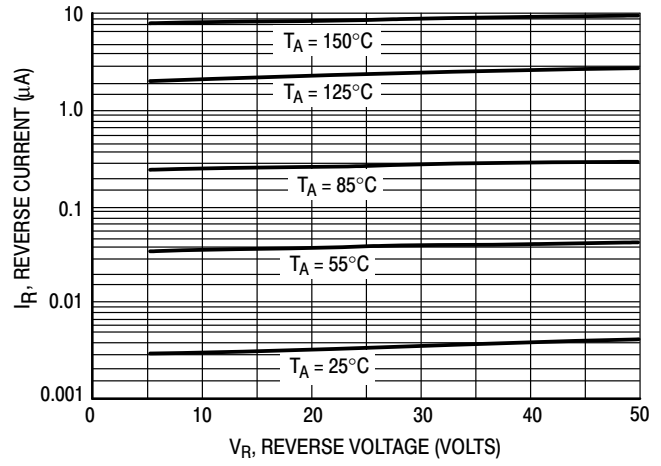


Figure 5. Leakage Current

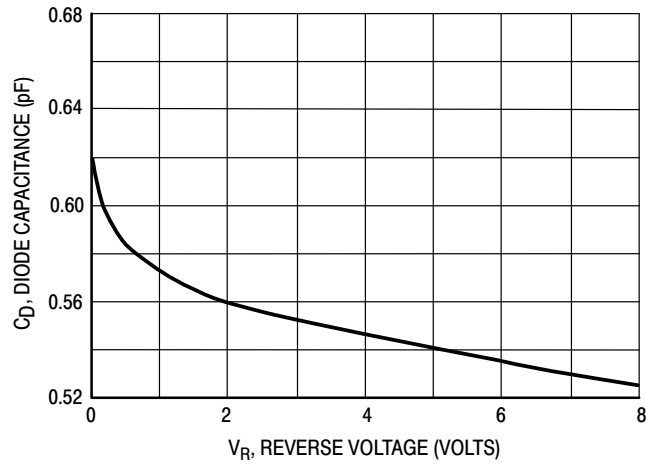
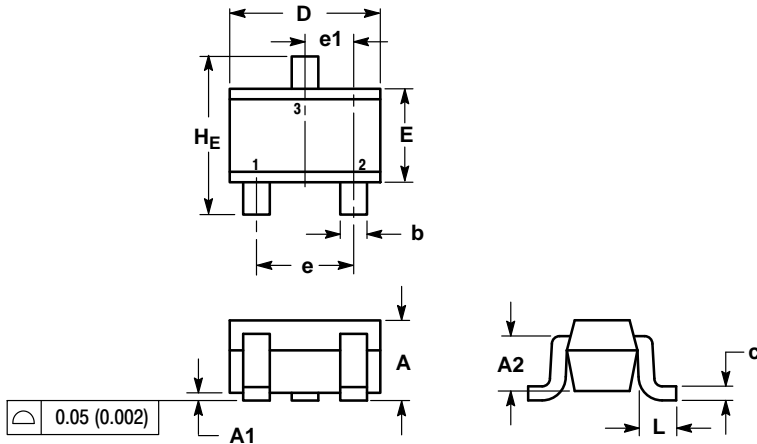


Figure 6. Capacitance

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PACKAGE DIMENSIONS

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

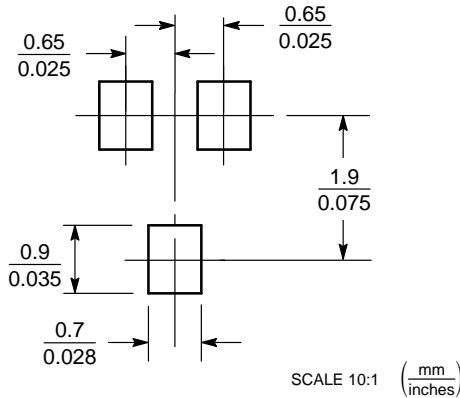


NOTES:


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 |

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.

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