

BAW56TT1G, SBAW56TT1G

Dual Switching Diode

Features

- AEC-Q101 Qualified and PPAP Capable
- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant*

MAXIMUM RATINGS (T_A = 25°C)

| Rating | Symbol | Max | Unit |
|----------------------------|------------------------|-----|------|
| Reverse Voltage | V _R | 70 | Vdc |
| Forward Current | I _F | 200 | mAdc |
| Peak Forward Surge Current | I _{FM(surge)} | 500 | mAdc |

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 _{θJA} | 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 _{θJA} | 345 | °C/W |
| Junction and Storage 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.

1. FR-4 @ Minimum Pad
2. FR-4 @ 1.0 × 1.0 Inch Pad

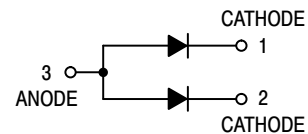


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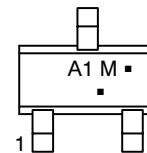
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CASE 463
SC-75/SOT-416
STYLE 4



MARKING DIAGRAM



- A1 = Specific Device Code
- M = Date Code*
- = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation may vary depending upon manufacturing location.

ORDERING INFORMATION

| Device | Package | Shipping† |
|------------|----------------------------|------------------------|
| BAW56TT1G | SC-75/SOT-416 (Pb-Free) | 3,000 / Tape & Reel |
| SBAW56TT1G | SC-75/SOT-416 (Pb-Free) | 3,000 / Tape & Reel |

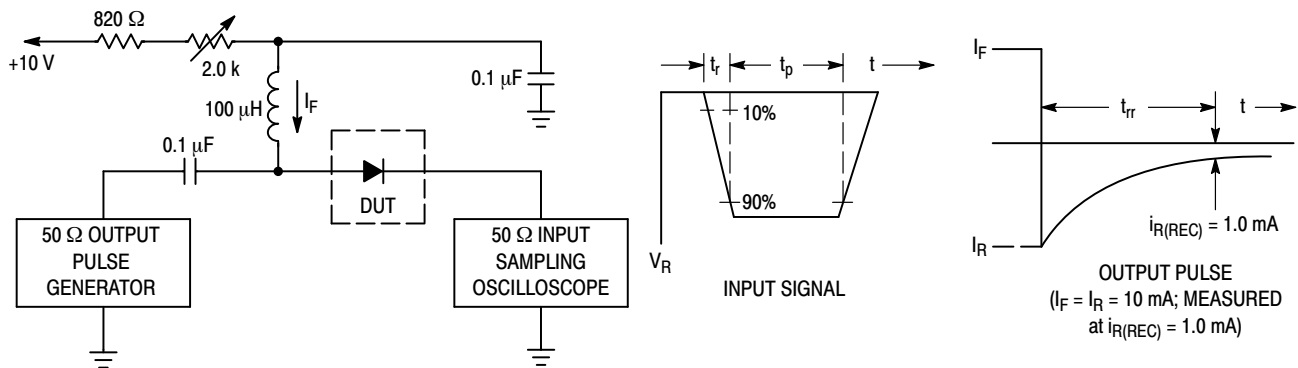
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*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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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|---|------------|------------------|----------------------------|------------------|
| OFF CHARACTERISTICS | | | | |
| Reverse Breakdown Voltage ($I_{(BR)} = 100 \mu\text{A dc}$) | $V_{(BR)}$ | 70 | - | Vdc |
| Reverse Voltage Leakage Current ($V_R = 25 \text{ Vdc}$, $T_J = 150^\circ\text{C}$) ($V_R = 70 \text{ Vdc}$) ($V_R = 70 \text{ Vdc}$, $T_J = 150^\circ\text{C}$) | I_R | - - - | 30 2.5 50 | $\mu\text{A dc}$ |
| Diode Capacitance ($V_R = 0$, $f = 1.0 \text{ MHz}$) | C_D | - | 2.0 | pF |
| Forward Voltage ($I_F = 1.0 \text{ mA dc}$) ($I_F = 10 \text{ mA dc}$) ($I_F = 60 \text{ mA dc}$) ($I_F = 150 \text{ mA dc}$) | V_F | - - - - | 715 855 1000 1250 | mVdc |
| Reverse Recovery Time ($I_F = I_R = 10 \text{ mA dc}$, $R_L = 100 \Omega$, $I_{R(REC)} = 1.0 \text{ mA dc}$) (Figure 1) | t_{rr} | - | 6.0 | ns |



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

BAW56TT1G, SBAW56TT1G

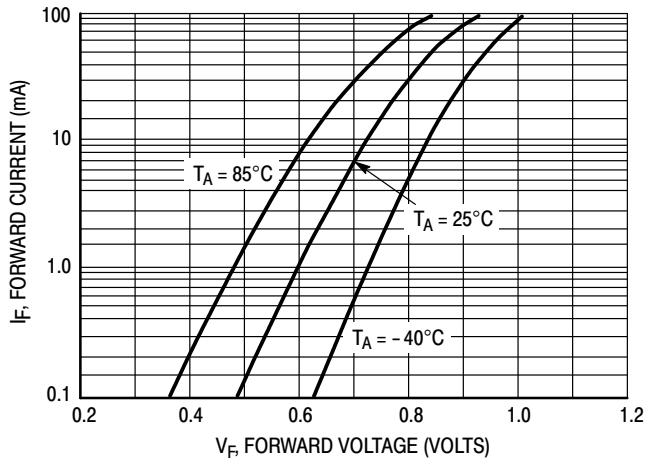


Figure 2. Forward Voltage

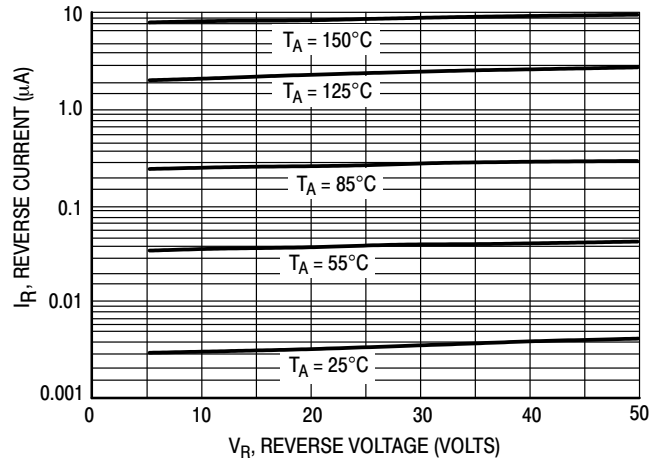


Figure 3. Leakage Current

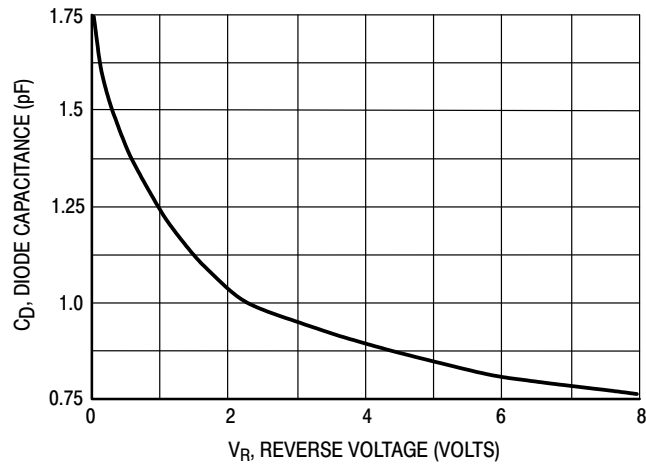


Figure 4. Capacitance

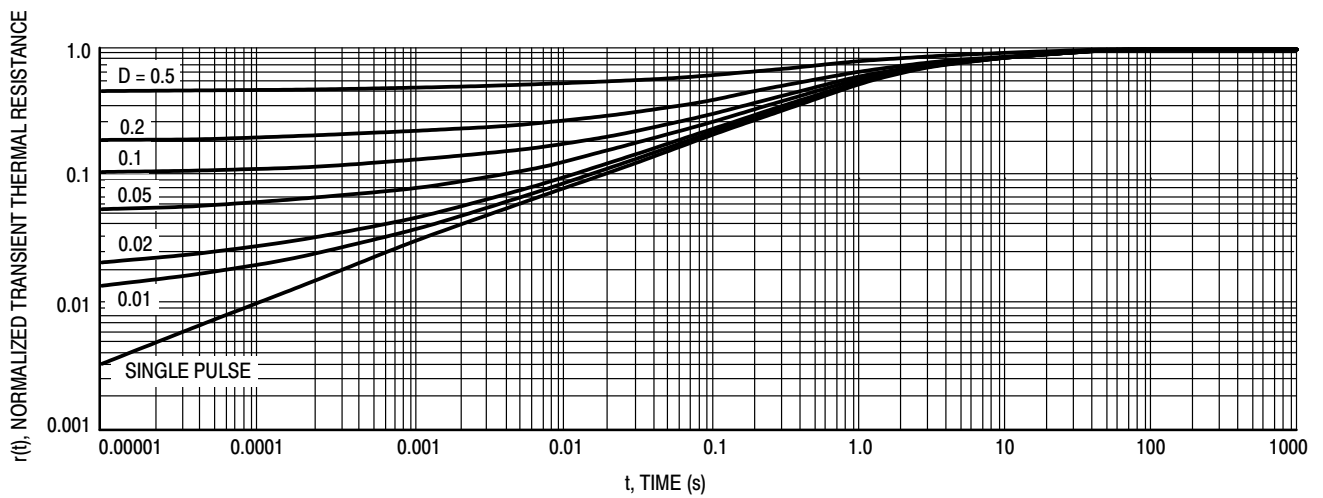
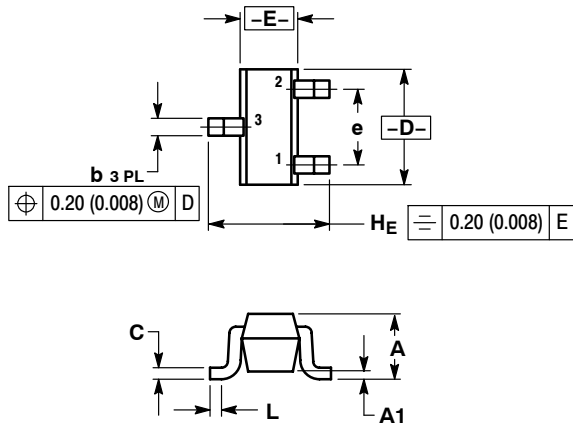


Figure 5. Normalized Thermal Response

BAW56TT1G, SBAW56TT1G

PACKAGE DIMENSIONS

SC-75/SOT-416
CASE 463-01
ISSUE F

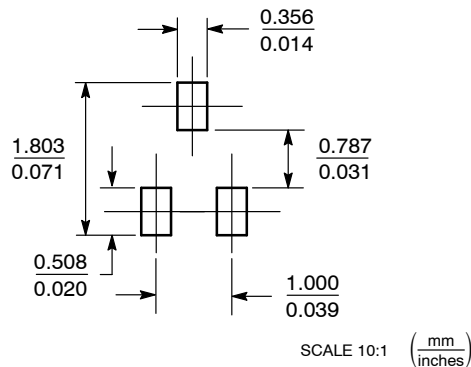


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

| DIM | MILLIMETERS | | | INCHES | | |
|-----|-------------|------|------|----------|-------|-------|
| | 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 | 0.059 | 0.063 | 0.067 |
| 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 |
| HE | 1.50 | 1.60 | 1.70 | 0.061 | 0.063 | 0.065 |

- STYLE 4:
PIN 1. CATHODE
2. CATHODE
3. ANODE

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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