

# BAW56WT1G, SBAW56WT1G

## Dual Switching Diode, Common Anode

### 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<sub>A</sub> = 25°C)

| Rating                     | Symbol                 | Max | Unit |
|----------------------------|------------------------|-----|------|
| Reverse Voltage            | V <sub>R</sub>         | 70  | V    |
| Forward Current            | I <sub>F</sub>         | 200 | mA   |
| Peak Forward Surge Current | I <sub>FM(surge)</sub> | 500 | mA   |

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 (T<sub>A</sub> = 25°C)

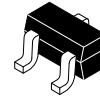
| Characteristic   | Symbol                            | Max         | Unit        |
|--|-----------------------------------|-------------|-------------|
| Total Device Dissipation FR-5 Board (Note 1)<br>T <sub>A</sub> = 25°C<br>Derate above 25°C     | P <sub>D</sub>                    | 200<br>1.6  | mW<br>mW/°C |
| Thermal Resistance, Junction-to-Ambient  | R <sub>θJA</sub>                  | 625         | °C/W        |
| Total Device Dissipation Alumina Substrate (Note 2) T <sub>A</sub> = 25°C<br>Derate above 25°C | P <sub>D</sub>                    | 300<br>2.4  | mW<br>mW/°C |
| Thermal Resistance, Junction-to-Ambient  | R <sub>θJA</sub>                  | 417         | °C/W        |
| Junction and Storage Temperature   | T <sub>J</sub> , T <sub>stg</sub> | -55 to +150 | °C          |

1. FR-5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

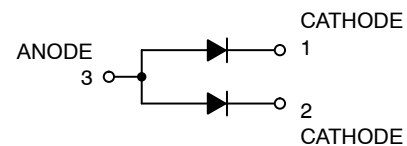


ON Semiconductor®

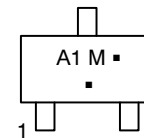
<http://onsemi.com>



SC-70  
CASE 419  
STYLE 4



### MARKING DIAGRAM



A1 = 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†           |
|------------|--------------------|---------------------|
| BAW56WT1G  | SC-70<br>(Pb-Free) | 3,000 / Tape & Reel |
| SBAW56WT1G | SC-70<br>(Pb-Free) | 3,000 / Tape & Reel |

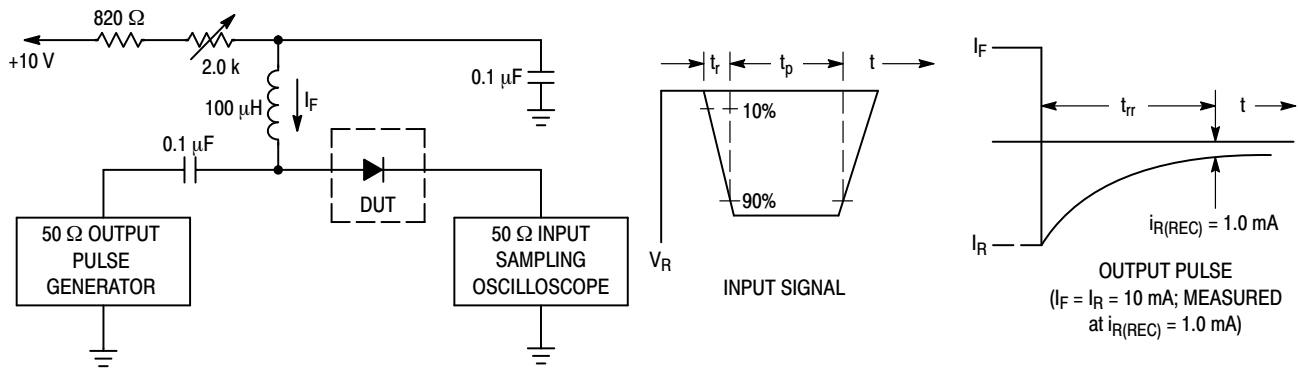
†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

# BAW56WT1G, SBAW56WT1G

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

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



- Notes: 1. A 2.0 k $\Omega$  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**

# BAW56WT1G, SBAW56WT1G

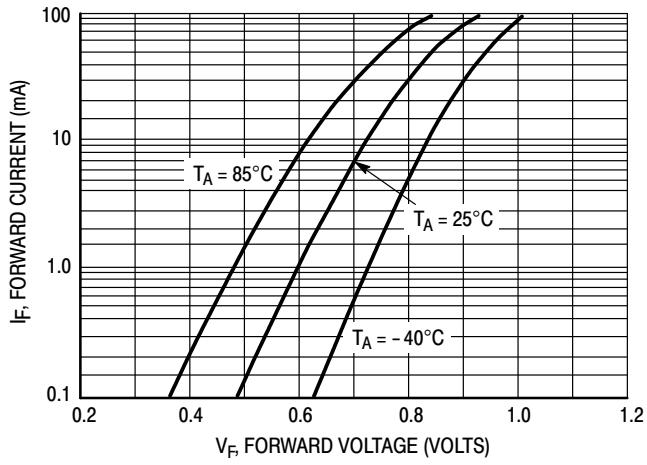


Figure 2. Forward Voltage

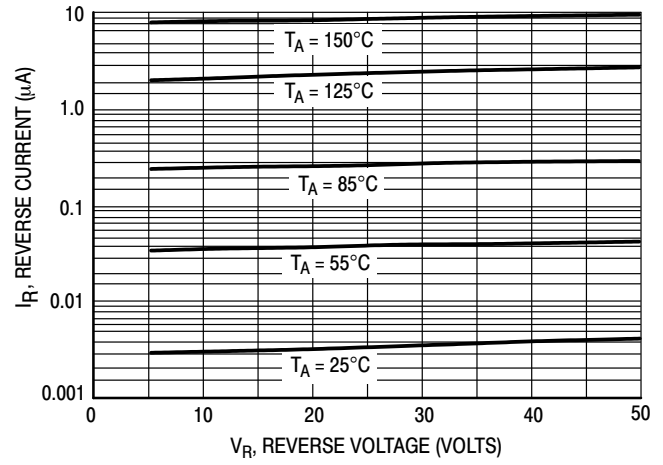


Figure 3. Leakage Current

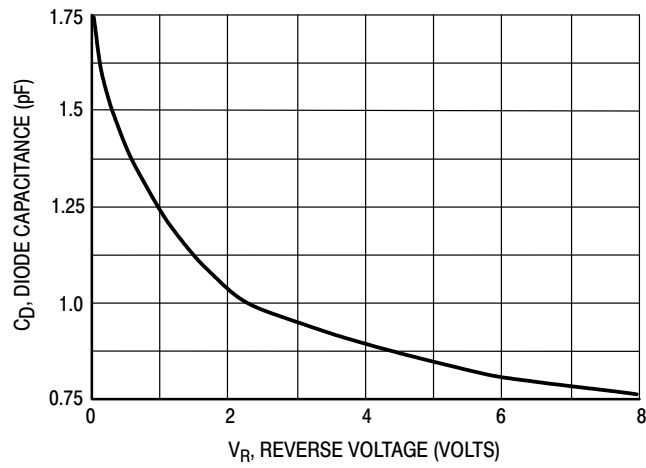
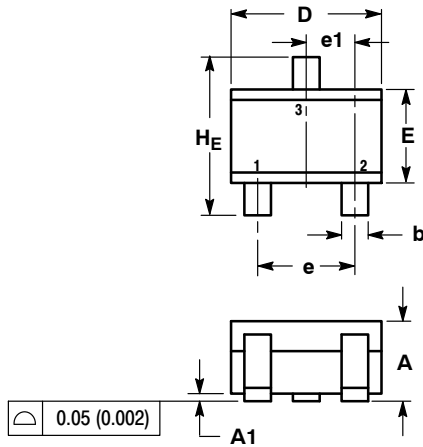


Figure 4. Capacitance

# BAW56WT1G, SBAW56WT1G

## PACKAGE DIMENSIONS

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



NOTES:

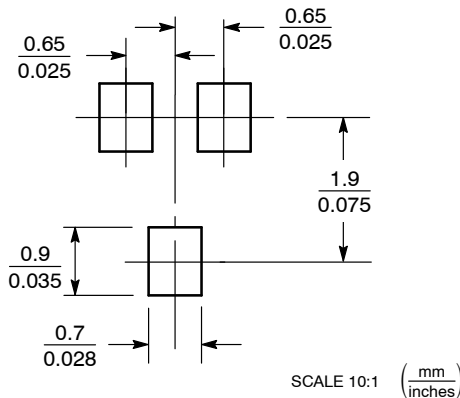
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

| 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 |

STYLE 4:

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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