

# BAV70WT1G, SBAV70WT1G

## Dual Switching Diode Common Cathode

### 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

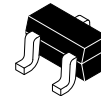
| Characteristic  | Symbol                            | Max            | Unit |
|---|-----------------------------------|----------------|------|
| Total Device Dissipation FR-5 Board<br>(Note 1)<br>T <sub>A</sub> = 25°C<br>Derate above 25°C     | P <sub>D</sub>                    | 200            |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

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

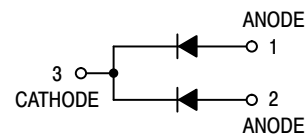


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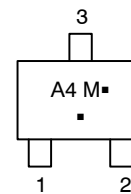
<http://onsemi.com>



SOT-323  
CASE 419  
STYLE 5



### MARKING DIAGRAM



A4 = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package  
(Note: Microdot may be in either location)

### ORDERING INFORMATION

| Device     | Package              | Shipping†           |
|------------|----------------------|---------------------|
| BAV70WT1G  | SOT-323<br>(Pb-Free) | 3,000 / Tape & Reel |
| SBAV70WT1G | SOT-323<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.

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

| Characteristic  | Symbol     | Min              | Max                        | Unit                |
|---|------------|------------------|----------------------------|---------------------|
| Reverse Breakdown Voltage<br>( $I_{BR} = 100 \mu\text{A}$ )   | $V_{(BR)}$ | 70               | –                          | V                   |
| Reverse Voltage Leakage Current (Note 3)<br>( $V_R = 70 \text{ V}$ )<br>( $V_R = 50 \text{ V}$ )                                      | $I_R$      | –<br>–           | 5.0<br>100                 | $\mu\text{A}$<br>nA |
| Forward Voltage<br>( $I_F = 1.0 \text{ mA}$ )<br>( $I_F = 10 \text{ mA}$ )<br>( $I_F = 50 \text{ mA}$ )<br>( $I_F = 150 \text{ mA}$ ) | $V_F$      | –<br>–<br>–<br>– | 715<br>855<br>1000<br>1250 | mV                  |
| Diode Capacitance<br>( $V_R = 0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )  | $C_D$      | –                | 1.5                        | pF                  |
| 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                  |
| Forward Recovery Voltage<br>( $I_F = 10 \text{ mA}$ , $t_r = 20 \text{ ns}$ ) (Figure 2)  | $V_{RF}$   | –                | 1.75                       | V                   |

3. For each individual diode while the second diode is unbiased.

# BAV70WT1G, SBAV70WT1G

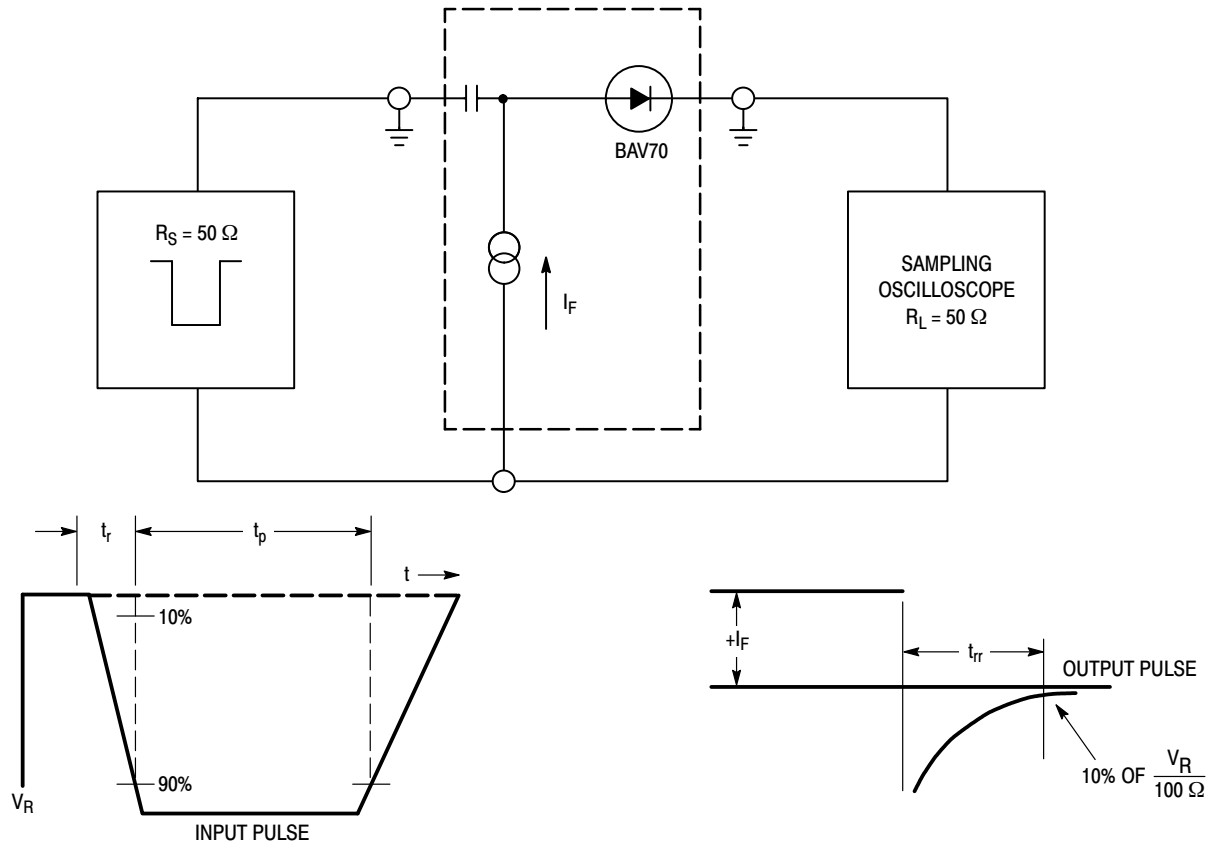


Figure 1. Recovery Time Equivalent Test Circuit

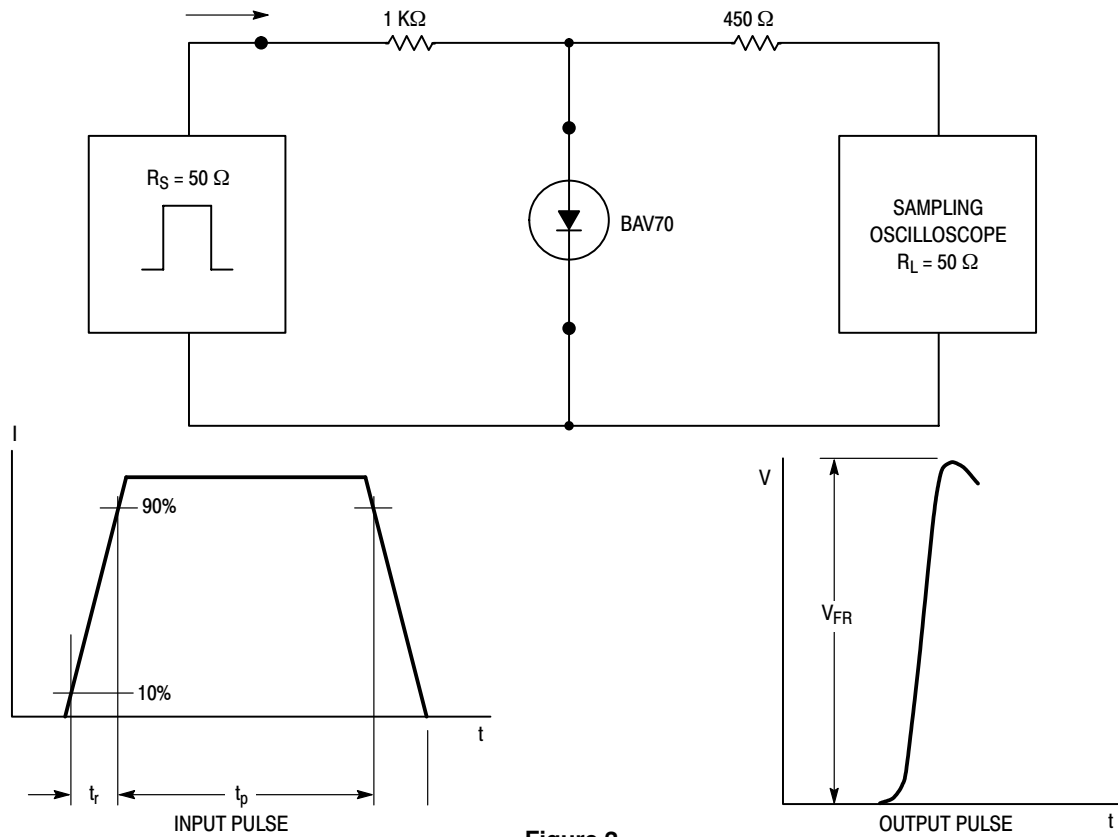


Figure 2.

# BAV70WT1G, SBAV70WT1G

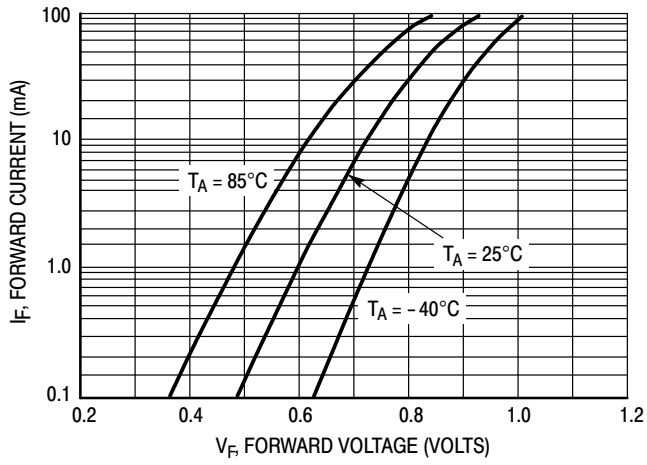


Figure 3. Forward Voltage

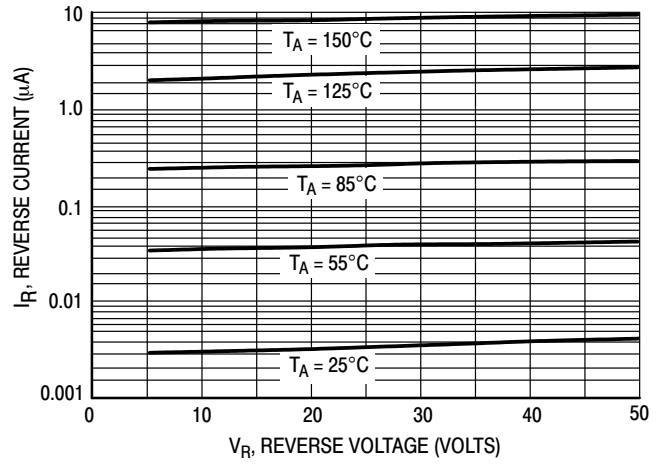


Figure 4. Leakage Current

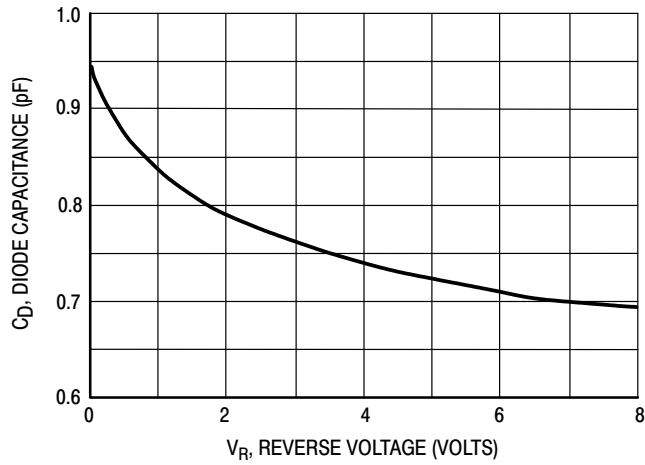
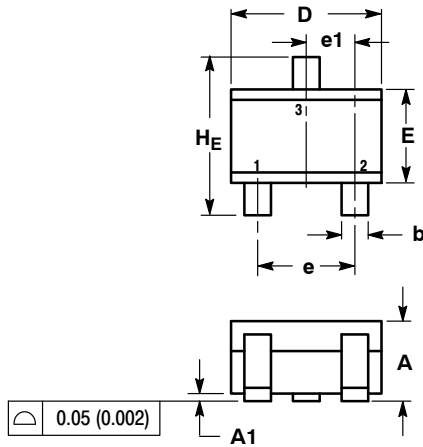


Figure 5. Capacitance

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## PACKAGE DIMENSIONS

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

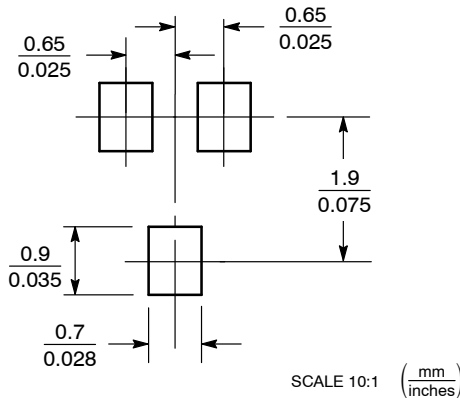


- NOTES:  
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.  
2. CONTROLLING DIMENSION: INCH.

| 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 |

- STYLE 5:  
PIN 1. ANODE  
2. ANODE  
3. CATHODE

### 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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