

# BAV70TT1

Preferred Device

## Dual Switching Diode

### Features

- Pb-Free Package May be Available.\* The G-Suffix Denotes a Pb-Free Lead Finish

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ )

| Rating                     | Symbol                 | Max | Unit |
|----------------------------|------------------------|-----|------|
| Reverse Voltage            | $V_R$                  | 70  | Vdc  |
| Forward Current            | $I_F$                  | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM}(\text{surge})$ | 500 | mAdc |

### THERMAL CHARACTERISTICS

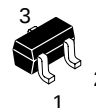
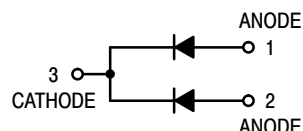
| Characteristic                                                                                              | Symbol          | Max            | Unit                       |
|-------------------------------------------------------------------------------------------------------------|-----------------|----------------|----------------------------|
| Total Device Dissipation,<br>FR-4 Board (1)<br>$T_A = 25^\circ\text{C}$<br>Derated above $25^\circ\text{C}$ | $P_D$           | 225<br>1.8     | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance,<br>Junction to Ambient (1)                                                              | $R_{\theta JA}$ | 555            | $^\circ\text{C}/\text{W}$  |
| Total Device Dissipation,<br>FR-4 Board (2)<br>$T_A = 25^\circ\text{C}$<br>Derated above $25^\circ\text{C}$ | $P_D$           | 360<br>2.9     | mW<br>mW/ $^\circ\text{C}$ |
| Thermal Resistance,<br>Junction-to-Ambient (2)                                                              | $R_{\theta JA}$ | 345            | $^\circ\text{C}/\text{W}$  |
| Junction and Storage<br>Temperature Range                                                                   | $T_J, T_{stg}$  | -55 to<br>+150 | $^\circ\text{C}$           |

- FR-4 @ Minimum Pad
- FR-4 @  $1.0 \times 1.0$  Inch Pad



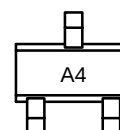
ON Semiconductor®

<http://onsemi.com>



CASE 463  
SOT-416/SC-75  
STYLE 3

### DEVICE MARKING



### ORDERING INFORMATION

| Device    | Package              | Shipping†          |
|-----------|----------------------|--------------------|
| BAV70TT1  | SOT-416              | 3000 / Tape & Reel |
| BAV70TT1G | SOT-416<br>(Pb-Free) | 3000 / 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.

Preferred devices are recommended choices for future use and best overall value.

# BAV70TT1

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

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

### OFF CHARACTERISTICS

|                                                                                                                                               |                |                  |                            |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------------|----------------------------|----------------------------------|
| Reverse Breakdown Voltage<br>( $I_{(BR)} = 100 \mu\text{Adc}$ )                                                                               | $V_{(BR)}$     | 70               | –                          | Vdc                              |
| Reverse Voltage Leakage Current (Note 3)<br>( $V_R = 70 \text{ Vdc}$ )<br>( $V_R = 50 \text{ Vdc}$ )                                          | $I_R$<br>$I_R$ | –<br>–           | 5.0<br>100                 | $\mu\text{Adc}$<br>$\text{nAdc}$ |
| Diode Capacitance<br>( $V_R = 0$ , $f = 1.0 \text{ MHz}$ )                                                                                    | $C_D$          | –                | 1.5                        | pF                               |
| Forward Voltage<br>( $I_F = 1.0 \text{ mAdc}$ )<br>( $I_F = 10 \text{ mAdc}$ )<br>( $I_F = 50 \text{ mAdc}$ )<br>( $I_F = 150 \text{ mAdc}$ ) | $V_F$          | –<br>–<br>–<br>– | 715<br>855<br>1000<br>1250 | mVdc                             |
| Reverse Recovery Time<br>( $I_F = I_R = 10 \text{ mAdc}$ , $R_L = 100 \Omega$ , $I_{R(REC)} = 1.0 \text{ mAdc}$ ) (Figure 1)                  | $t_{rr}$       | –                | 6.0                        | ns                               |
| Forward Recovery Voltage<br>( $I_F = 10 \text{ mAdc}$ , $t_r = 20 \text{ ns}$ ) (Figure 2)                                                    | $V_{RF}$       | –                | 1.75                       | V                                |

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

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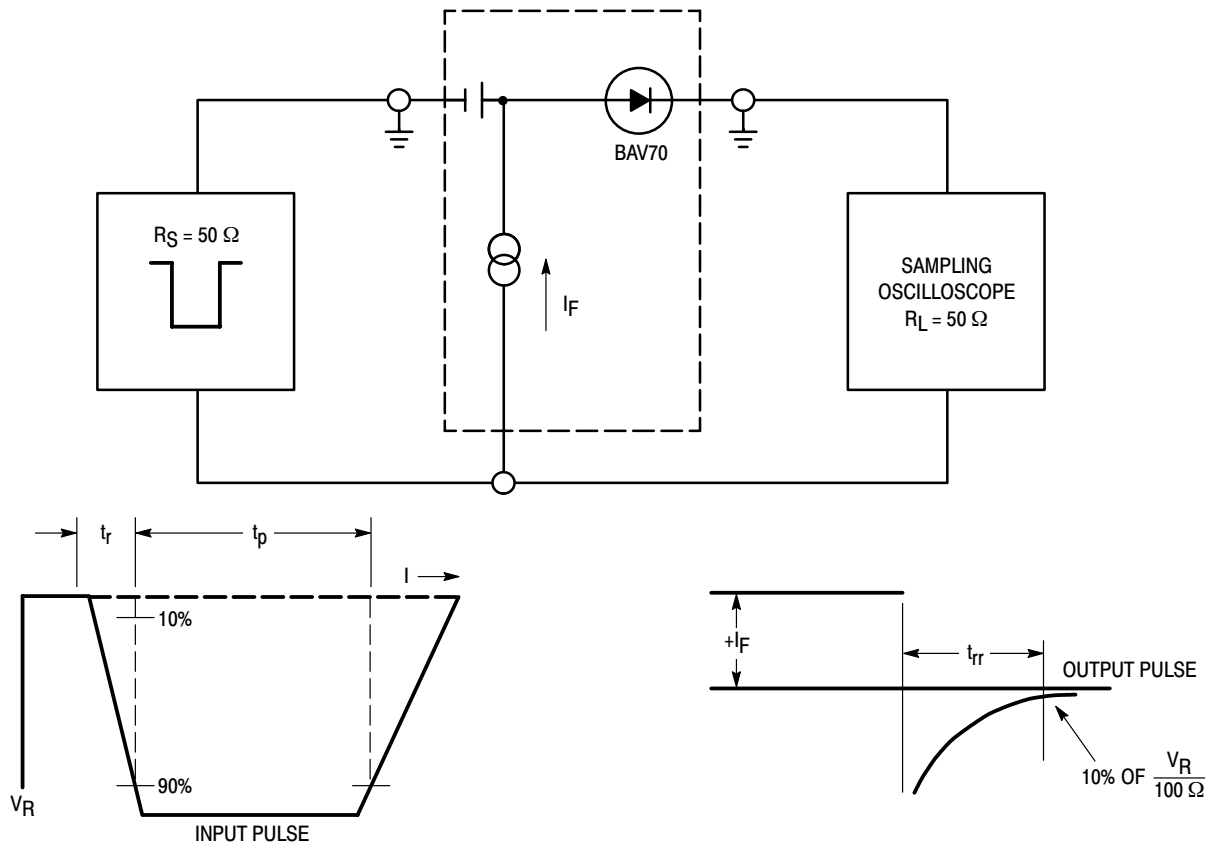


Figure 1. Recovery Time Equivalent Test Circuit

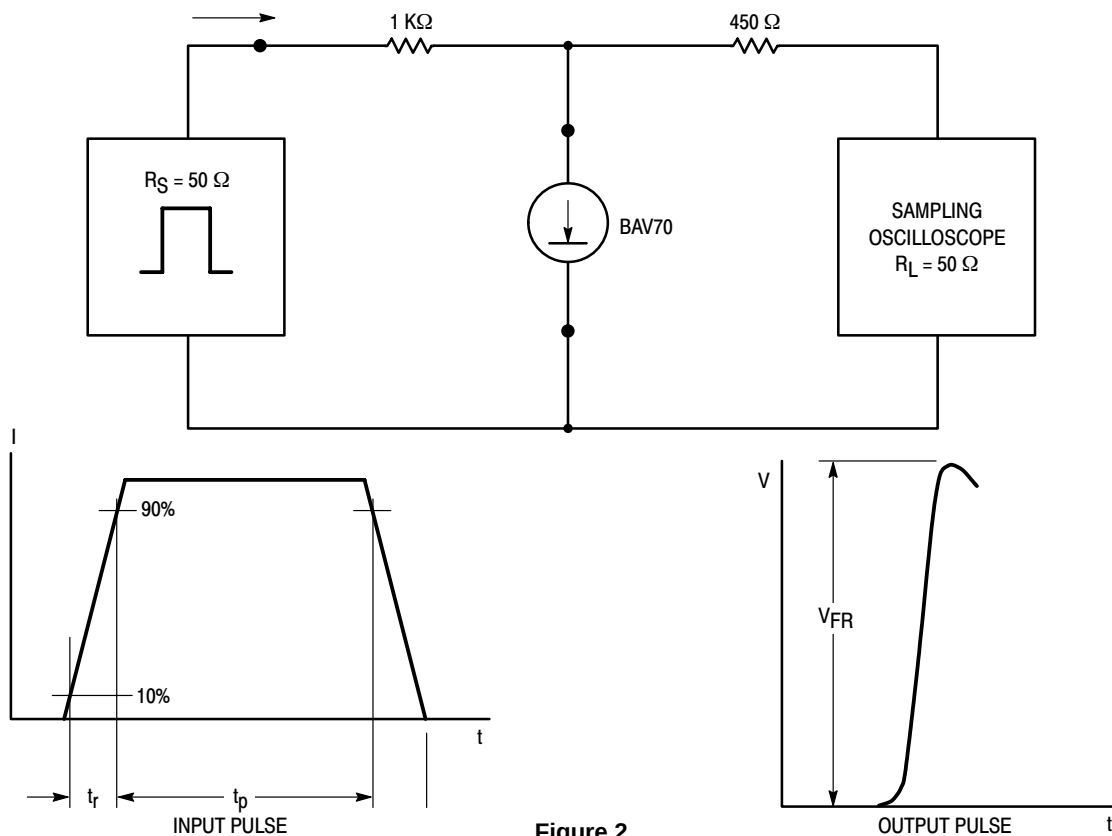


Figure 2.

# BAV70TT1

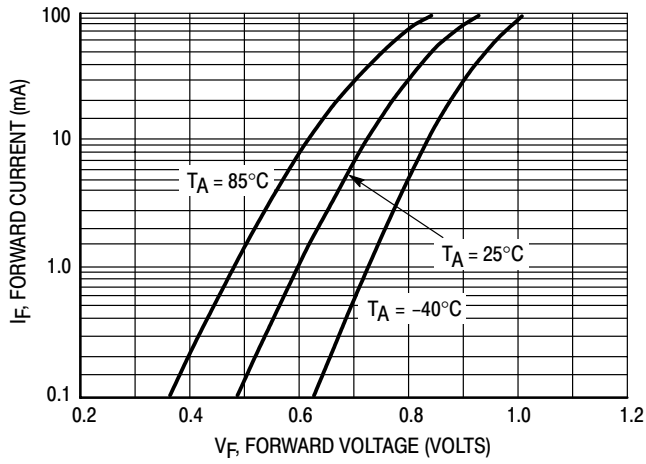


Figure 3. Forward Voltage

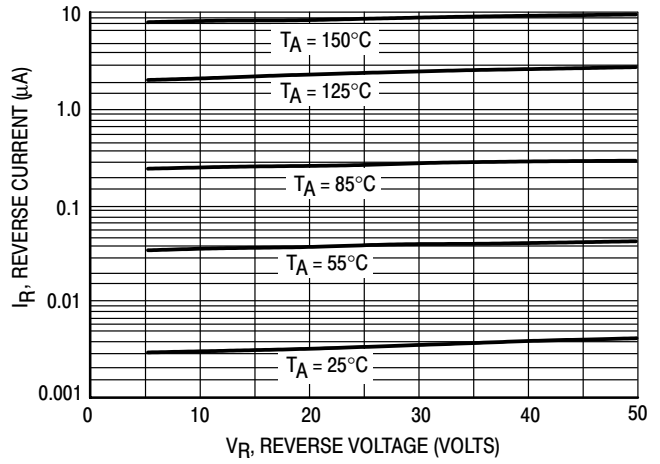


Figure 4. Leakage Current

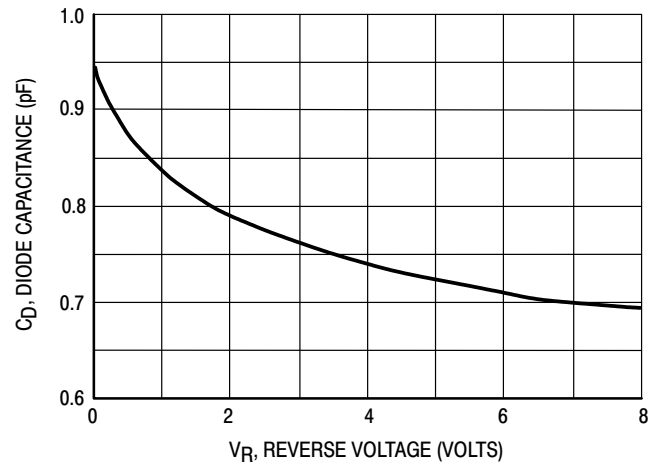


Figure 5. Capacitance

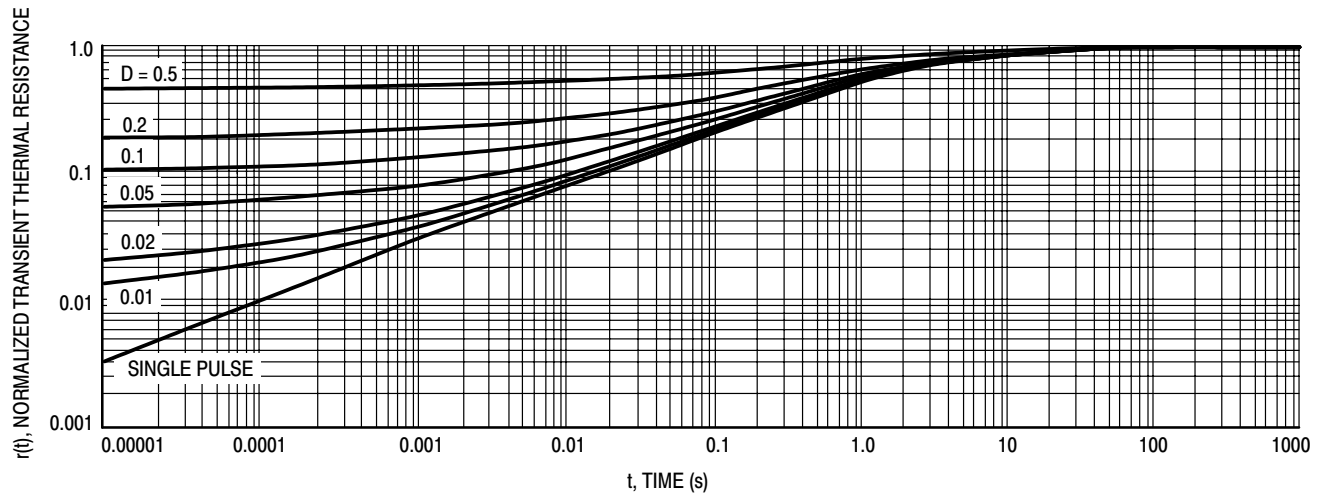


Figure 6. Normalized Thermal Response

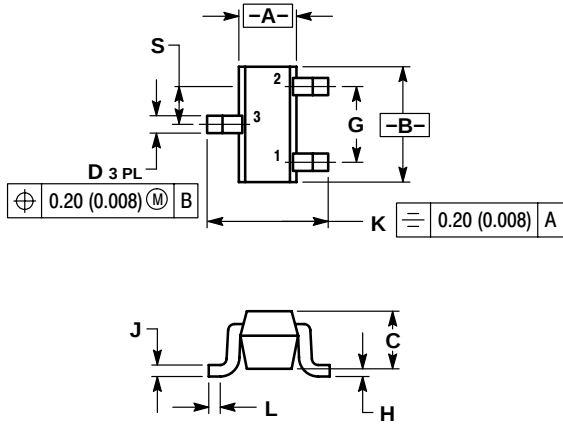
# BAV70TT1

## PACKAGE DIMENSIONS

SC-75 (SC-90, SOT-416)

CASE 463-01

ISSUE C



### NOTES:

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

| DIM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| A   | 0.70        | 0.90 | 0.028     | 0.035 |
| B   | 1.40        | 1.80 | 0.055     | 0.071 |
| C   | 0.60        | 0.90 | 0.024     | 0.035 |
| D   | 0.15        | 0.30 | 0.006     | 0.012 |
| G   | 1.00 BSC    |      | 0.039 BSC |       |
| H   | ---         | 0.10 | ---       | 0.004 |
| J   | 0.10        | 0.25 | 0.004     | 0.010 |
| K   | 1.45        | 1.75 | 0.057     | 0.069 |
| L   | 0.10        | 0.20 | 0.004     | 0.008 |
| S   | 0.50 BSC    |      | 0.020 BSC |       |

### STYLE 3:

- PIN 1. ANODE  
2. ANODE  
3. CATHODE

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