

BAV70TT1G, NSVBAV70TT1G, NSVBAV70TT3G

Dual Switching Diode

Features

- AEC-Q101 Qualified and PPAP Capable
- NSV 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 ($T_A = 25^\circ\text{C}$)

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

THERMAL CHARACTERISTICS

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

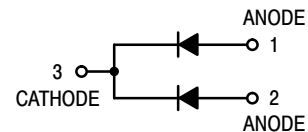
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

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

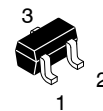


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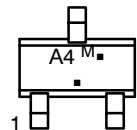
<http://onsemi.com>



MARKING DIAGRAM



CASE 463
SOT-416/SC-75
STYLE 3



- A4 = Specific Device Code
- M = Date Code
- = Pb-Free Package

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------------|----------------------|------------------------|
| BAV70TT1G | SOT-416 (Pb-Free) | 3000 / Tape & Reel |
| NSVBAV70TT1G | SOT-416 (Pb-Free) | 3000 / Tape & Reel |
| NSVBAV70TT3G | SOT-416 (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°C unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|---|----------------------------------|------------------|----------------------------|--------------|
| OFF CHARACTERISTICS | | | | |
| Reverse Breakdown Voltage (I _(BR) = 100 μAdc) | V _(BR) | 70 | – | Vdc |
| Reverse Voltage Leakage Current (Note 3) (V _R = 70 Vdc) (V _R = 50 Vdc) | I _R I _R | – – | 5.0 100 | μAdc nAdc |
| Diode Capacitance (V _R = 0, f = 1.0 MHz) | C _D | – | 1.5 | pF |
| Forward Voltage (I _F = 1.0 mAdc) (I _F = 10 mAdc) (I _F = 50 mAdc) (I _F = 150 mAdc) | V _F | – – – – | 715 855 1000 1250 | mVdc |
| Reverse Recovery Time (I _F = I _R = 10 mAdc, R _L = 100 Ω, I _{R(REC)} = 1.0 mAdc) (Figure 1) | t _{rr} | – | 6.0 | ns |
| Forward Recovery Voltage (I _F = 10 mAdc, t _r = 20 ns) (Figure 2) | V _{RF} | – | 1.75 | V |

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

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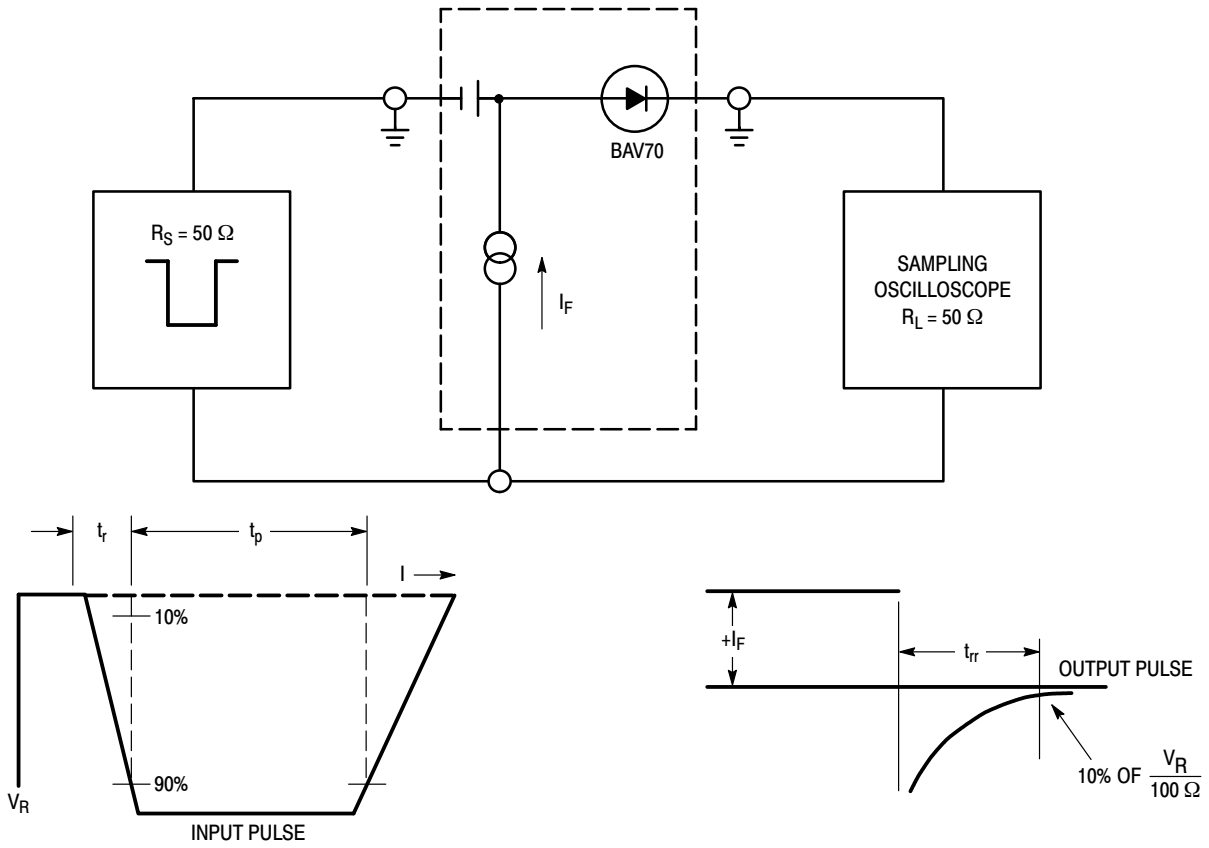


Figure 1. Recovery Time Equivalent Test Circuit

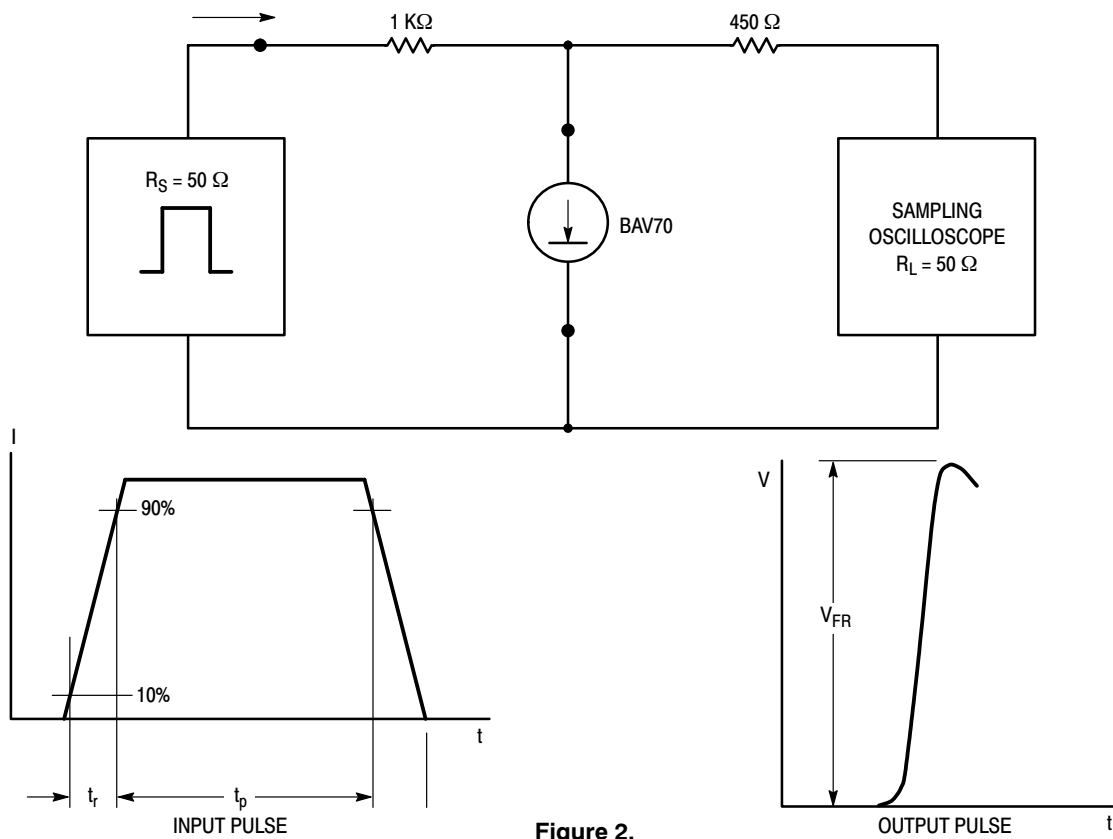


Figure 2.

BAV70TT1G, NSVBAV70TT1G, NSVBAV70TT3G

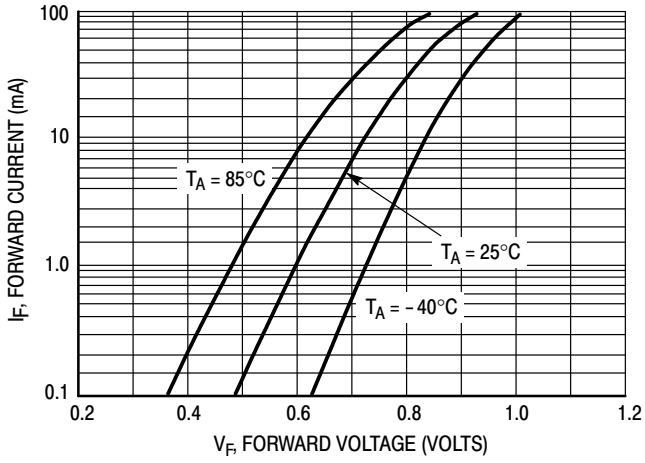


Figure 3. Forward Voltage

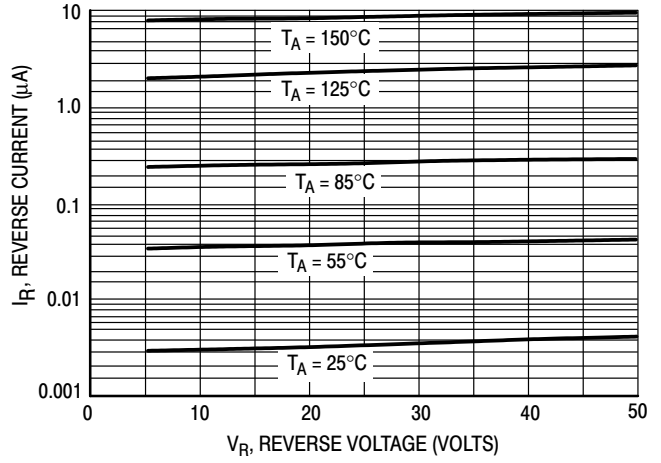


Figure 4. Leakage Current

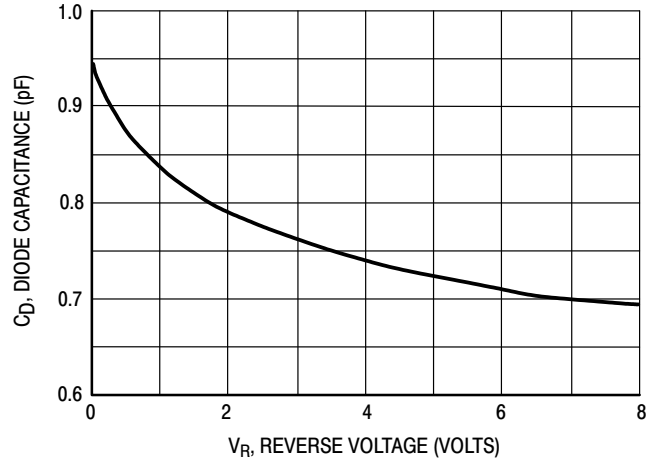


Figure 5. Capacitance

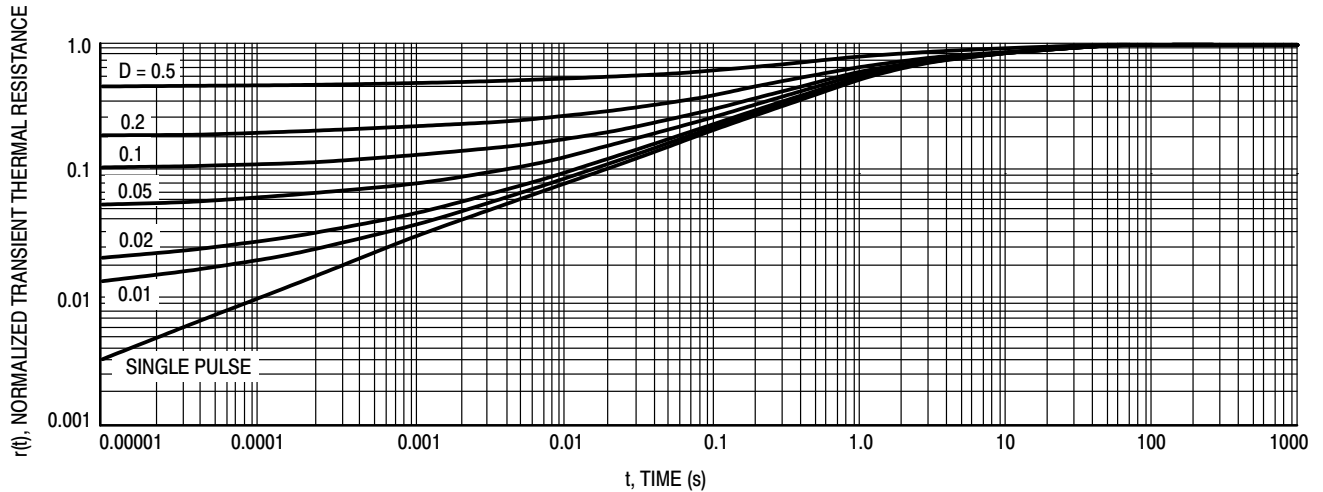
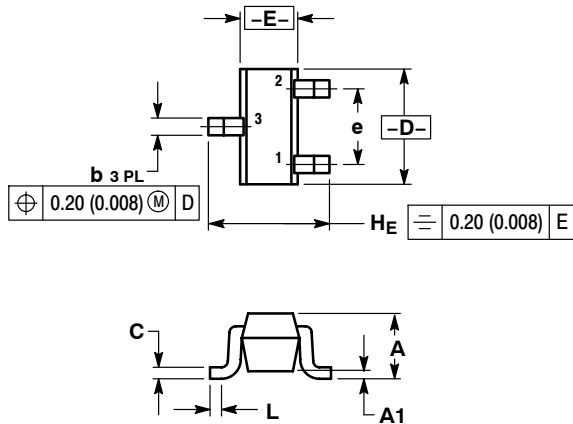


Figure 6. Normalized Thermal Response

BAV70TT1G, NSVBAV70TT1G, NSVBAV70TT3G

PACKAGE DIMENSIONS

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



NOTES:

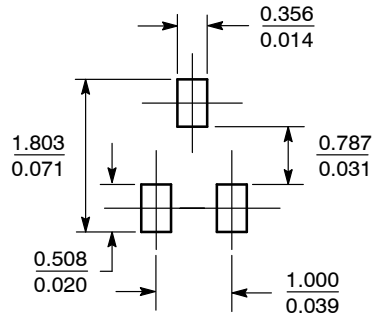
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.

| 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 3:

1. BASE
2. EMITTER
3. COLLECTOR

SOLDERING FOOTPRINT*



SCALE 10:1 (mm/inches)

*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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