

# BAV70T, NSVBAV70T

## Dual Switching Diode

### Features

- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- 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>	100	Vdc
Forward Current	I <sub>F</sub>	200	mAdc
Peak Forward Surge Current	I <sub>FM(surge)</sub>	500	mAdc

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation, FR-4 Board (Note 1) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	225	mW
Thermal Resistance, Junction to Ambient (Note 1)	R <sub>θJA</sub>	555	°C/W
Total Device Dissipation, FR-4 Board (Note 2) T <sub>A</sub> = 25°C Derated above 25°C	P <sub>D</sub>	360	mW
Thermal Resistance, Junction-to-Ambient (Note 2)	R <sub>θJA</sub>	345	°C/W
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-55 to +150	°C

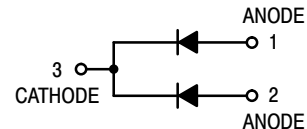
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

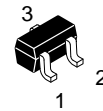


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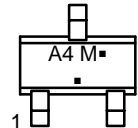
[www.onsemi.com](http://www.onsemi.com)



### 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.

# BAV70T, NSVBAV70T

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

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

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

# BAV70T, NSVBAV70T

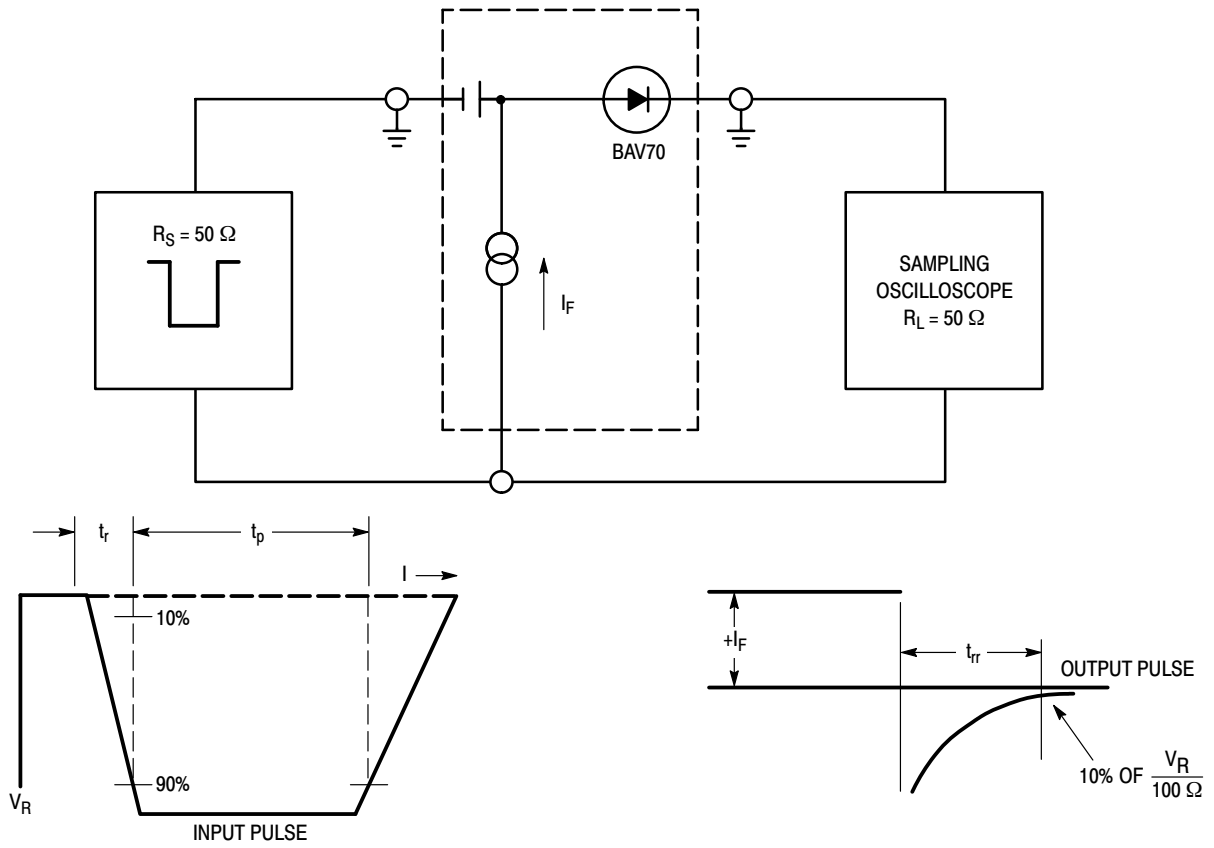


Figure 1. Recovery Time Equivalent Test Circuit

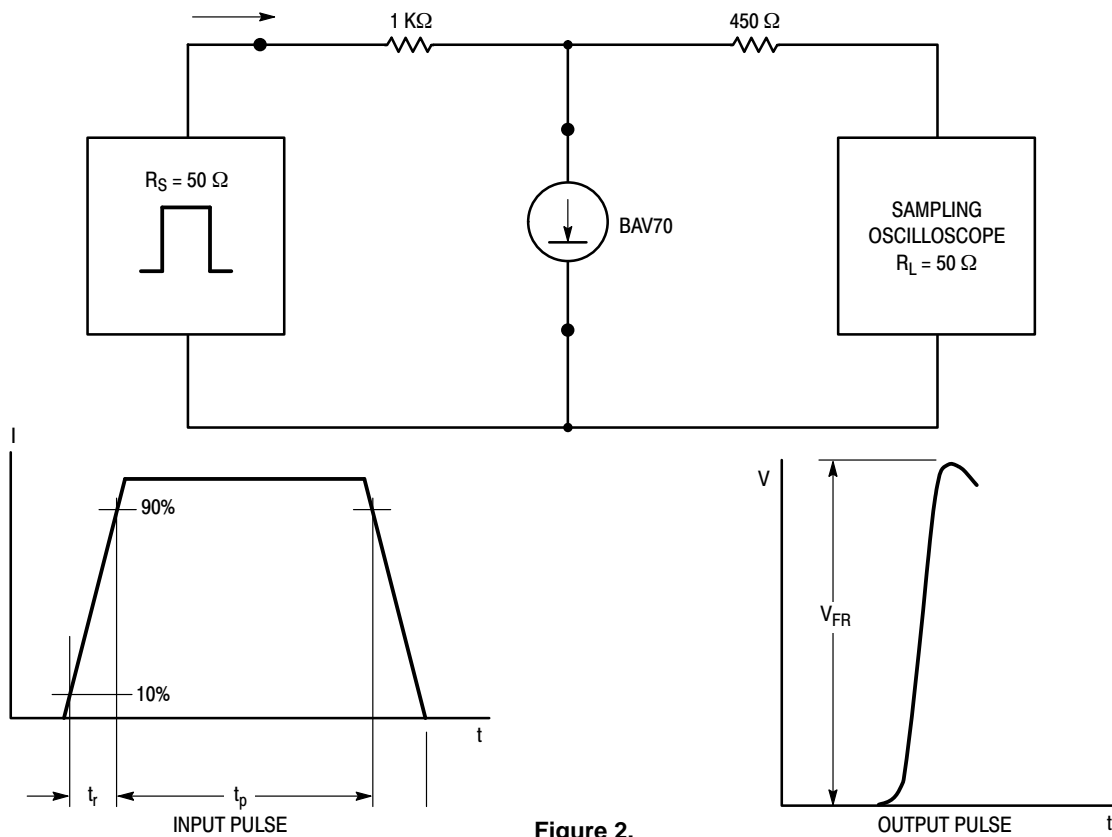


Figure 2.

# BAV70T, NSVBAV70T

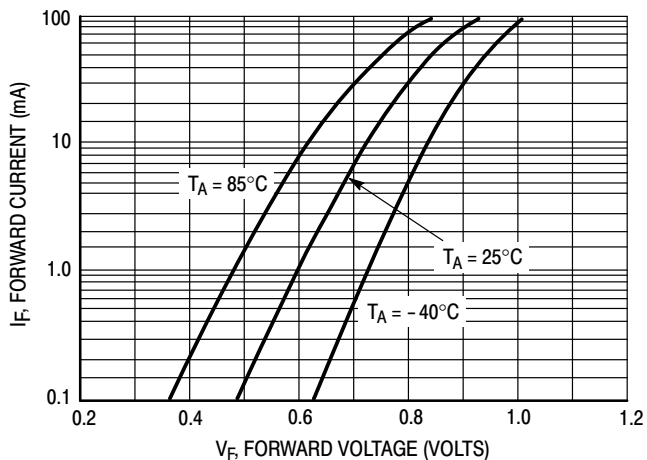


Figure 3. Forward Voltage

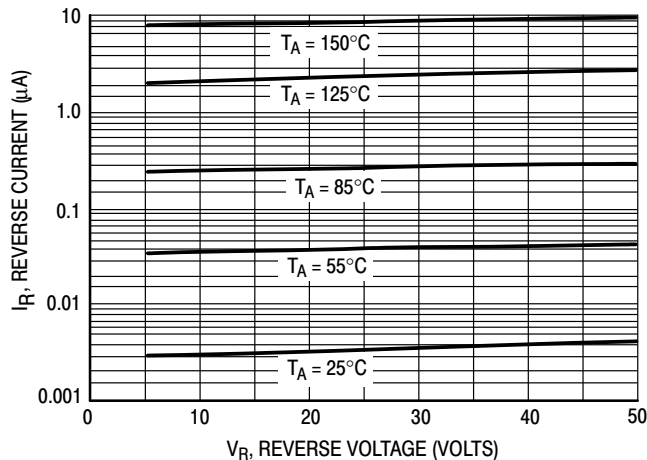


Figure 4. Leakage Current

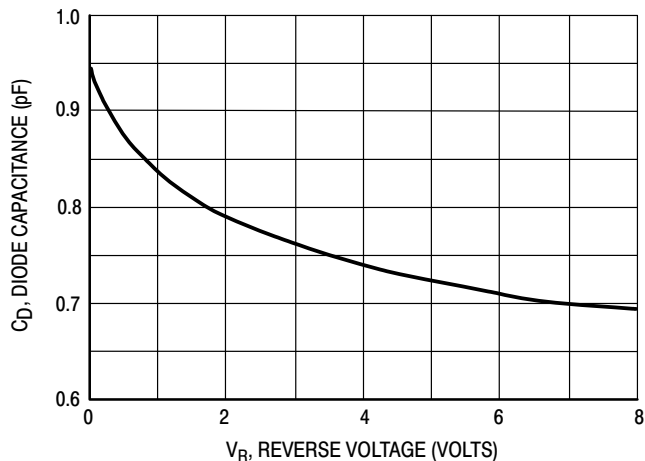


Figure 5. Capacitance

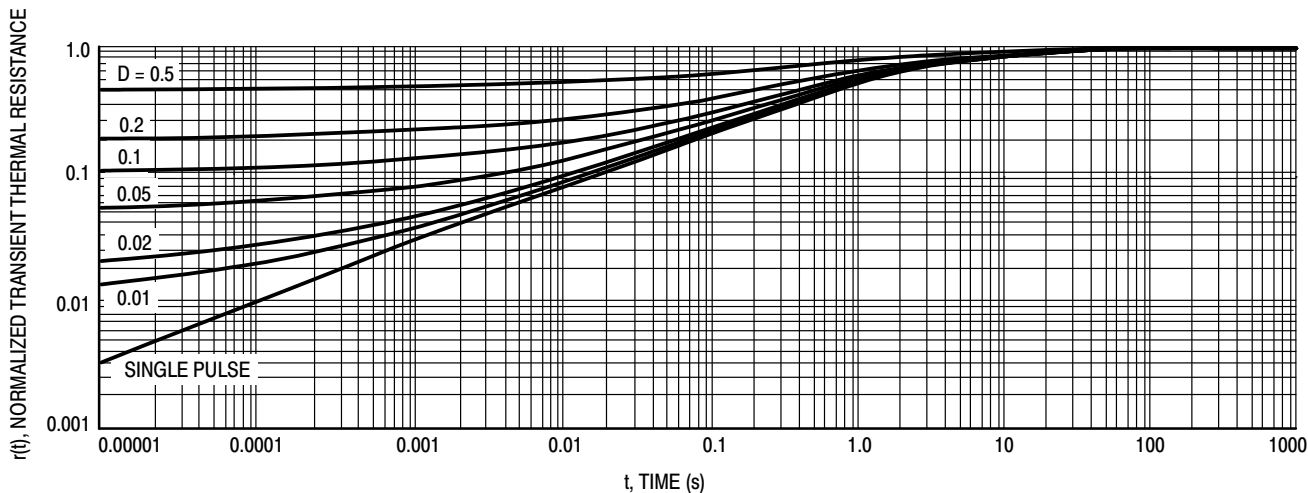


Figure 6. Normalized Thermal Response

# MECHANICAL CASE OUTLINE

## PACKAGE DIMENSIONS

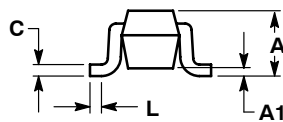
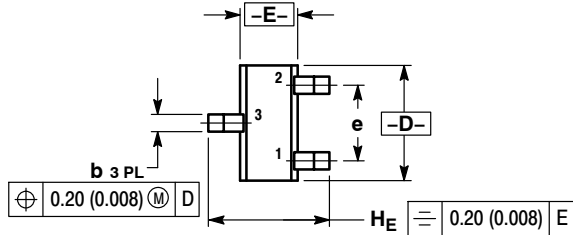
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SCALE 4:1

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

DATE 07 AUG 2015



STYLE 1:  
PIN 1. BASE  
2. EMITTER  
3. COLLECTOR

STYLE 2:  
PIN 1. ANODE  
2. N/C  
3. CATHODE

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

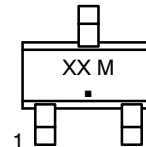
STYLE 4:  
PIN 1. CATHODE  
2. CATHODE  
3. ANODE

STYLE 5:  
PIN 1. GATE  
2. SOURCE  
3. DRAIN

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	0.061	0.063	0.065
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	0.060	0.063	0.067

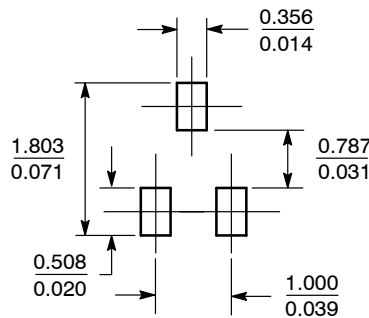
### GENERIC MARKING DIAGRAM\*



XX = Specific Device Code  
M = Date Code  
■ = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "■", may or may not be present.

### 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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