

# BAV70DXV6T1, BAV70DXV6T5

Preferred Device

## Monolithic Dual Switching Diode Common Cathode

### Features

- These are Pb-Free Devices

### MAXIMUM RATINGS (EACH DIODE)

Rating	Symbol	Value	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 (One Junction Heated)	Symbol	Max	Unit
Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	357 (Note 1) 2.9 (Note 1)	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	350 (Note 1)	$^\circ\text{C}/\text{W}$
Characteristic (Both Junctions Heated)	Symbol	Max	Unit
Total Device Dissipation, $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	500 (Note 1) 4.0 (Note 1)	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	250 (Note 1)	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

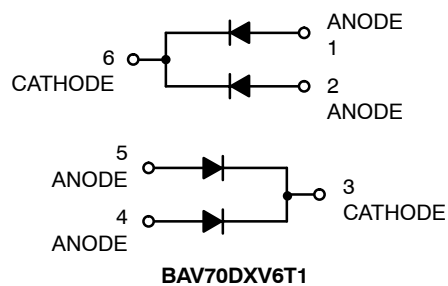
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-4 @ Minimum Pad



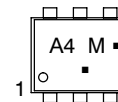
ON Semiconductor®

<http://onsemi.com>



SOT-563  
CASE 463A  
PLASTIC

### MARKING DIAGRAM



A4 = Specific Device Code

M = Month Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

### ORDERING INFORMATION

Device	Package	Shipping†
BAV70DXV6T1	SOT-563*	4000/Tape & Reel
BAV70DXV6T1G	SOT-563*	4000/Tape & Reel
BAV70DXV6T5	SOT-563*	8000/Tape & Reel
BAV70DXV6T5G	SOT-563*	8000/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.

\*These packages are inherently Pb-Free.

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

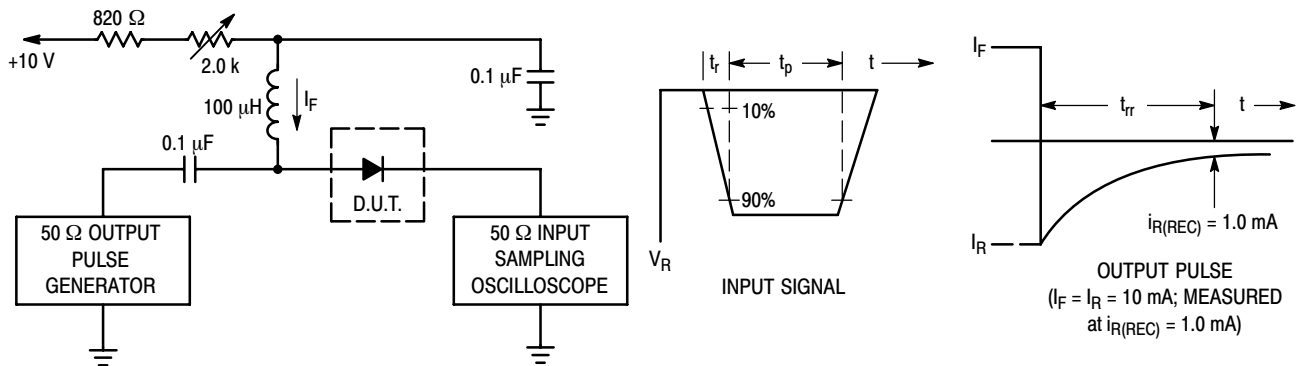


# BAV70DXV6T1, BAV70DXV6T5

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage (Note 2) ( $I_{(BR)} = 100 \mu\text{A}$ )	$V_{(BR)}$	70	–	Vdc
Reverse Voltage Leakage Current (Note 2) ( $V_R = 25 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ ) ( $V_R = 70 \text{ Vdc}$ ) ( $V_R = 70 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	–	60 2.5 100	$\mu\text{A}$ dc
Diode Capacitance (Note 2) ( $V_R = 0$ , $f = 1.0 \text{ MHz}$ )	$C_D$	–	1.5	pF
Forward Voltage (Note 2) ( $I_F = 1.0 \text{ mA}$ ) ( $I_F = 10 \text{ mA}$ ) ( $I_F = 50 \text{ mA}$ ) ( $I_F = 150 \text{ mA}$ )	$V_F$	–	715 855 1000 1250	mVdc
Reverse Recovery Time (Note 2) ( $I_F = I_R = 10 \text{ mA}$ , $V_R = 5.0 \text{ Vdc}$ , $I_{R(REC)} = 1.0 \text{ mA}$ ) (Figure 1)	$t_{rr}$	–	6.0	ns

2. For each individual diode while second diode is unbiased.



- 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**



# BAV70DXV6T1, BAV70DXV6T5

## Curves Applicable to Each Anode

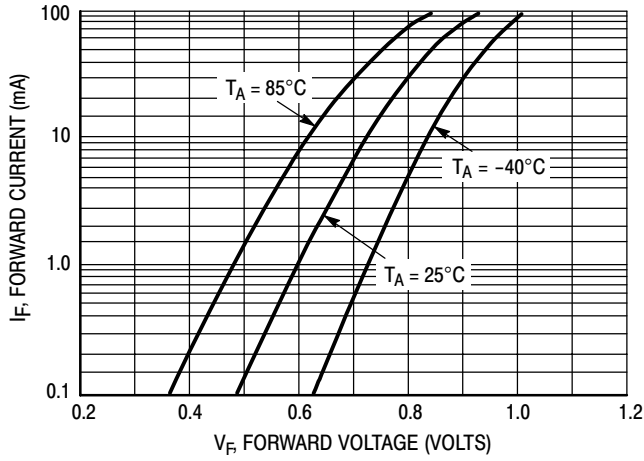


Figure 2. Forward Voltage

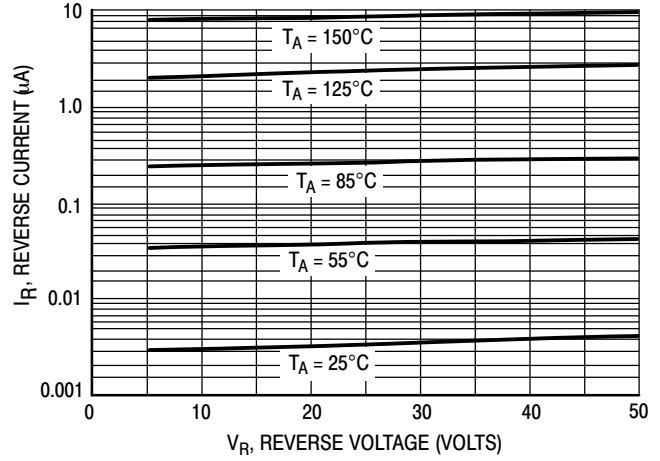


Figure 3. Leakage Current

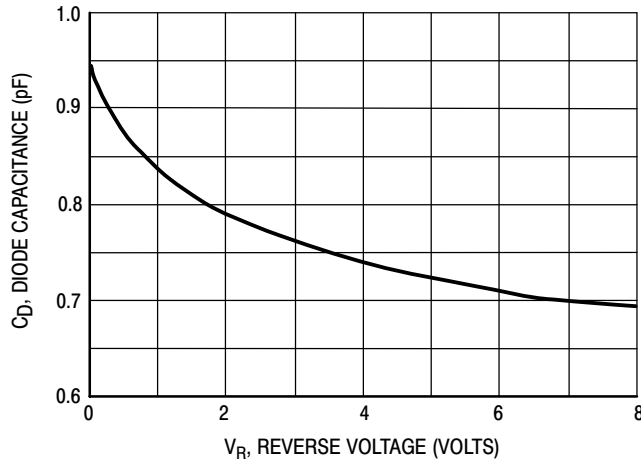


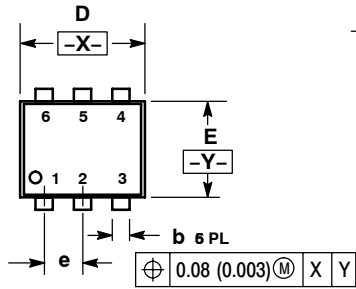
Figure 4. Capacitance



# BAV70DXV6T1, BAV70DXV6T5

## PACKAGE DIMENSIONS

SOT-563, 6 LEAD  
CASE 463A-01  
ISSUE F

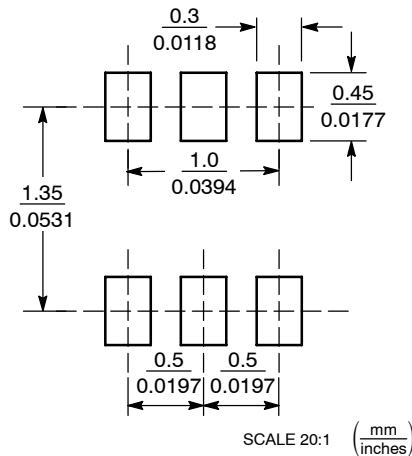


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.55	0.60	0.020	0.021	0.023
b	0.17	0.22	0.27	0.007	0.009	0.011
C	0.08	0.12	0.18	0.003	0.005	0.007
D	1.50	1.60	1.70	0.059	0.062	0.066
E	1.10	1.20	1.30	0.043	0.047	0.051
e	0.5 BSC			0.02 BSC		
L	0.10	0.20	0.30	0.004	0.008	0.012
HE	1.50	1.60	1.70	0.059	0.062	0.066

### 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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