

BAV70DXV6, NSVBAV70DXV6

Common Cathode Monolithic 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 (EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	100	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°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°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	$^\circ\text{C}$

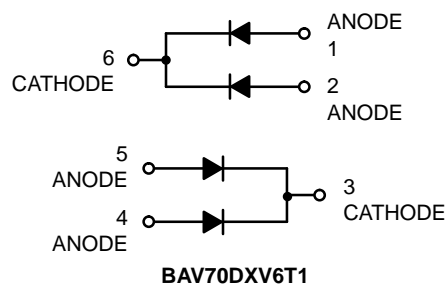
Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. FR-4 @ Minimum Pad



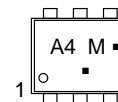
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SOT-563
CASE 463A

MARKING DIAGRAM



A4 = Specific Device Code

M = Month Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
BAV70DXV6T5G	SOT-563 (Pb-Free)	8000 / Tape & Reel
NSVBAV70DXV6T5G	SOT-563 (Pb-Free)	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.

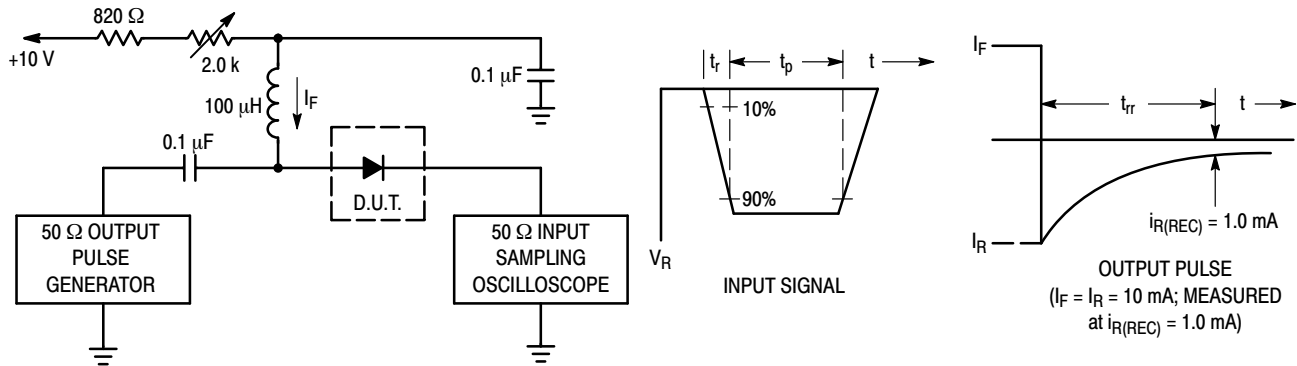
BAV70DXV6, NSVBAV70DXV6

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

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage (Note 2) ($I_{(BR)} = 100 \mu\text{A}$)	$V_{(BR)}$	100	–	Vdc
Reverse Voltage Leakage Current (Note 2) ($V_R = 25 \text{ Vdc}$, $T_J = 150^\circ\text{C}$) ($V_R = 100 \text{ Vdc}$) ($V_R = 70 \text{ Vdc}$, $T_J = 150^\circ\text{C}$)	I_R	–	60 1.0 100	μA
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

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

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



- Notes: 1. A 2.0 k Ω 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

BAV70DXV6, NSVBAV70DXV6

Curves Applicable to Each Anode

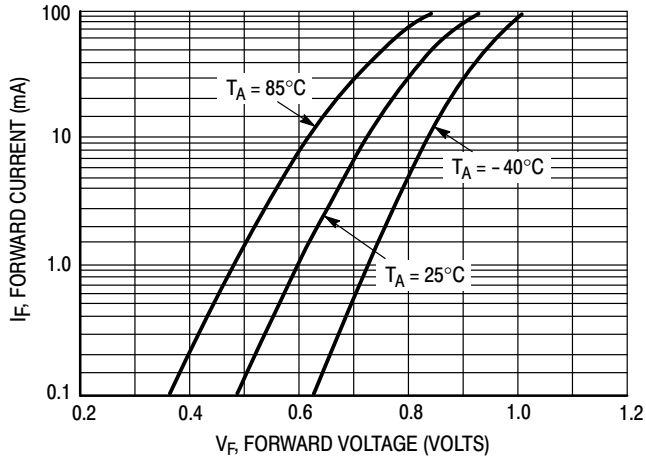


Figure 2. Forward Voltage

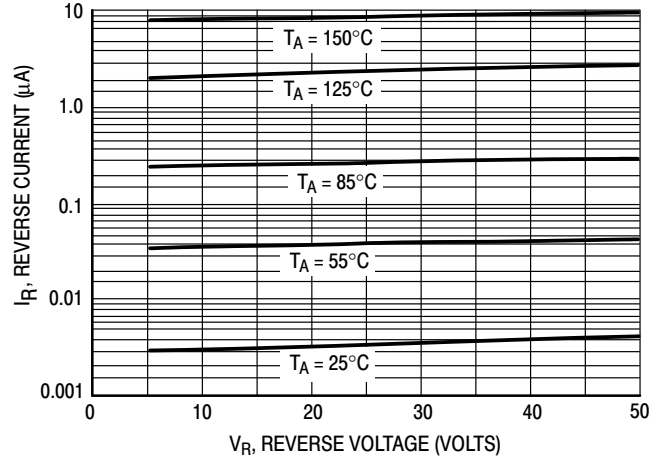


Figure 3. Leakage Current

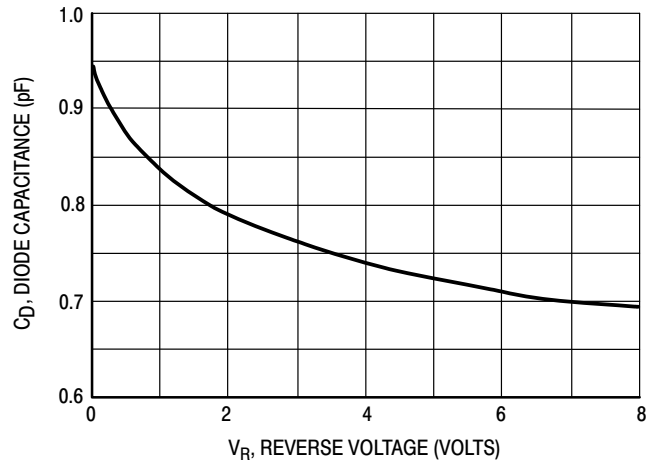
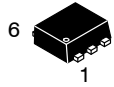


Figure 4. Capacitance

MECHANICAL CASE OUTLINE

PACKAGE DIMENSIONS

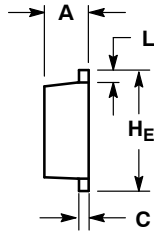
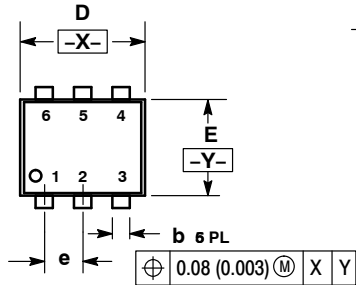
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SCALE 4:1

SOT-563, 6 LEAD CASE 463A ISSUE G

DATE 23 SEP 2015

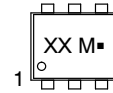


NOTES:

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
H _E	1.50	1.60	1.70	0.059	0.062	0.066

GENERIC MARKING DIAGRAM*

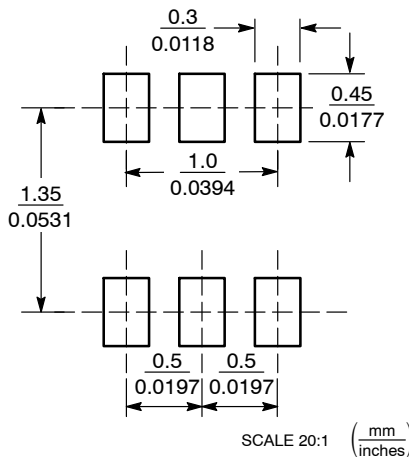


XX = Specific Device Code
M = Month Code
▪ = Pb-Free Package

*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.

- | | | |
|---|---|---|
| <p>STYLE 1:
PIN 1. EMITTER 1
2. BASE 1
3. COLLECTOR 2
4. EMITTER 2
5. BASE 2
6. COLLECTOR 1</p> | <p>STYLE 2:
PIN 1. EMITTER 1
2. EMITTER 2
3. BASE 2
4. COLLECTOR 2
5. BASE 1
6. COLLECTOR 1</p> | <p>STYLE 3:
PIN 1. CATHODE 1
2. CATHODE 1
3. ANODE/ANODE 2
4. CATHODE 2
5. CATHODE 2
6. ANODE/ANODE 1</p> |
| <p>STYLE 4:
PIN 1. COLLECTOR
2. COLLECTOR
3. BASE
4. EMITTER
5. COLLECTOR
6. COLLECTOR</p> | <p>STYLE 5:
PIN 1. CATHODE
2. CATHODE
3. ANODE
4. ANODE
5. CATHODE
6. CATHODE</p> | <p>STYLE 6:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE</p> |
| <p>STYLE 7:
PIN 1. CATHODE
2. ANODE
3. CATHODE
4. CATHODE
5. ANODE
6. CATHODE</p> | <p>STYLE 8:
PIN 1. DRAIN
2. DRAIN
3. GATE
4. SOURCE
5. DRAIN
6. DRAIN</p> | <p>STYLE 9:
PIN 1. SOURCE 1
2. GATE 1
3. DRAIN 2
4. SOURCE 2
5. GATE 2
6. DRAIN 1</p> |
| <p>STYLE 10:
PIN 1. CATHODE 1
2. N/C
3. CATHODE 2
4. ANODE 2
5. N/C
6. ANODE 1</p> | | |

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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