BAV70M3T5G

Dual Switching Diode Common Cathode

The BAV70M3T5G device is a spin−off of our popular SOT−23 three−leaded device. It is designed for switching applications and is housed in the SOT−723 surface mount package. This device is ideal for low−power surface mount applications where board space is at a premium.

Features

- Reduces Board Space
- This is a Halide−Free Device
- This is a Pb−Free Device

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	Symbol	Max	Unit
Total Device Dissipation FR−5 Board (Note 1) T_A = 25°C Derate above 25°C	P_D	265 2.1	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	470	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C Derate above 25°C	P_D	640 5.1	mW mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	195	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°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−5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

ON Semiconductor®

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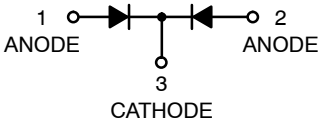
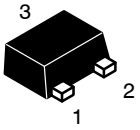
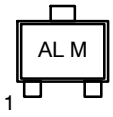
70 V
DUAL COMMON CATHODE
SWITCHING DIODES



MARKING DIAGRAM



SOT−723
CASE 631AA
STYLE 3



AL = Specific Device Code
M = Date Code

ORDERING INFORMATION

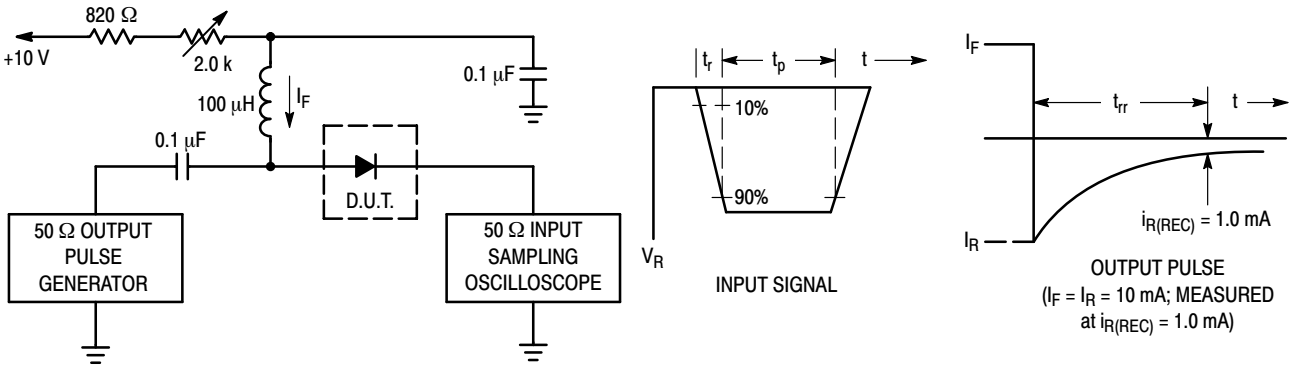
Device	Package	Shipping†
BAV70M3T5G	SOT−723 (Pb−Free)	8000/Tape & Reel

†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.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted) (Each Diode)

Characteristic		Symbol	Min	Max	Unit
Reverse Breakdown Voltage	($I_{(BR)}$ = 100 μA)	$V_{(BR)}$	100	–	V
Reverse Voltage Leakage Current (Note 3)		I_R			μA
	(V_R = 25 V, T_J = 150°C)		–	60	
	(V_R = 100 V)		–	2.5	
	(V_R = 70 V, T_J = 150°C)		–	100	
Diode Capacitance	(V_R = 0 V, f = 1.0 MHz)	C_D	–	1.5	pF
Forward Voltage		V_F			mV
	(I_F = 1.0 mA)		–	715	
	(I_F = 10 mA)		–	855	
	(I_F = 50 mA)		–	1000	
	(I_F = 150 mA)		–	1250	
Reverse Recovery Time (I_F = I_R = 10 mA, $I_{R(REC)}$ = 1.0 mA) (Figure 1)	R_L = 100 Ω	t_{rr}	–	6.0	ns

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



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

Curves Applicable to Each Anode

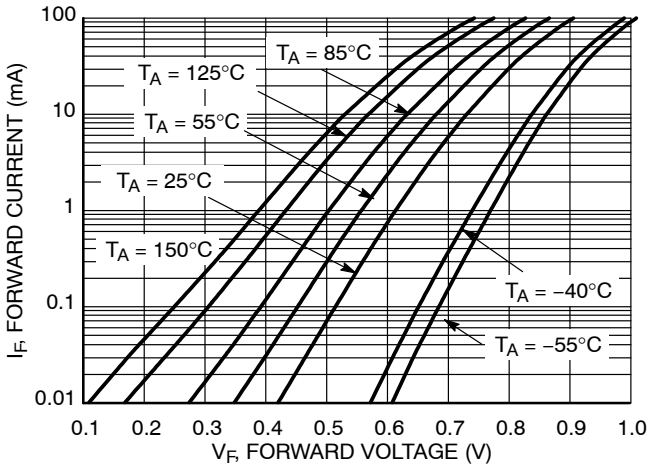


Figure 2. Forward Voltage

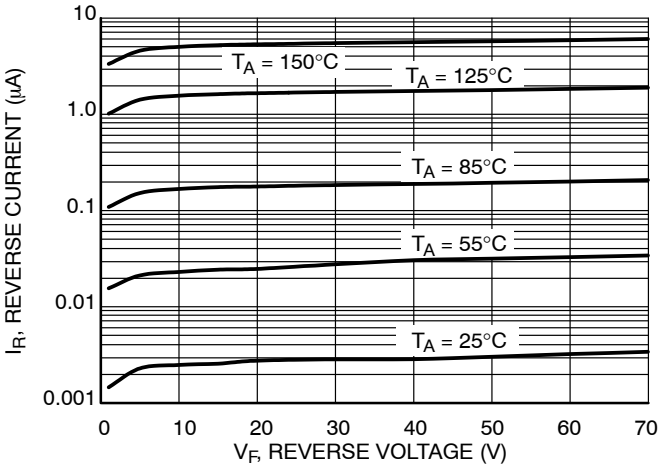


Figure 3. Leakage Current

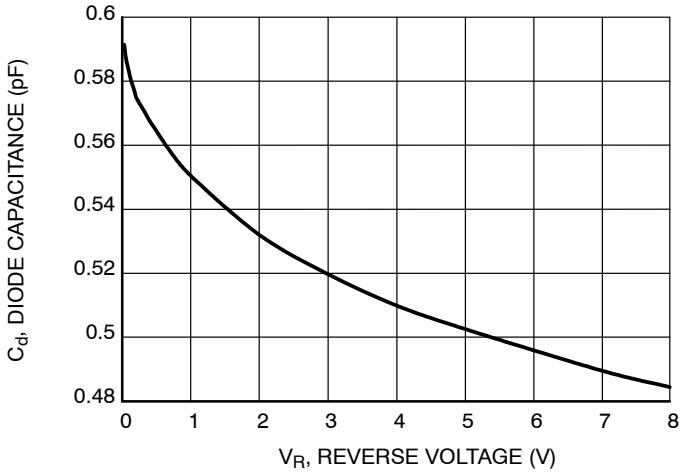
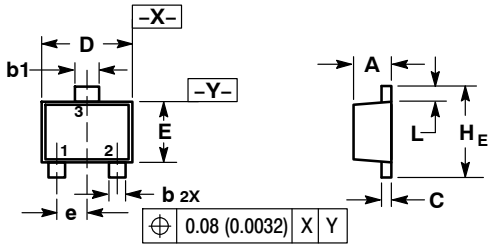


Figure 4. Capacitance

PACKAGE DIMENSIONS

SOT−723
CASE 631AA−01
ISSUE C

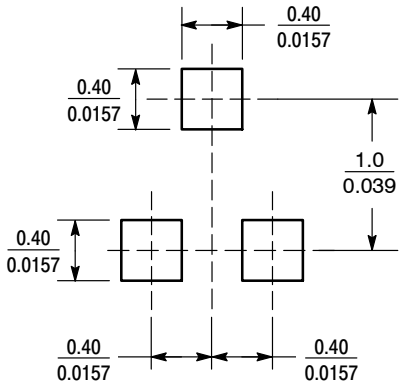


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
b	0.15	0.21	0.27	0.0059	0.0083	0.0106
b1	0.25	0.31	0.37	0.010	0.012	0.015
C	0.07	0.12	0.17	0.0028	0.0047	0.0067
D	1.15	1.20	1.25	0.045	0.047	0.049
E	0.75	0.80	0.85	0.03	0.032	0.034
e	0.40 BSC			0.016 BSC		
H_E	1.15	1.20	1.25	0.045	0.047	0.049
L	0.15	0.20	0.25	0.0059	0.0079	0.0098

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

SOLDERING FOOTPRINT*



SCALE 20:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303−675−2175 or 800−344−3860 Toll Free USA/Canada
Fax: 303−675−2176 or 800−344−3867 Toll Free USA/Canada
Email: orderlit@onsemi.com

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