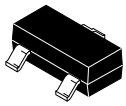
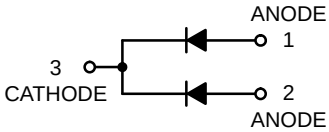
Dual Switching Diode Common Cathode

BAV70L, SBAV70L



SOT−23 (TO−236)
CASE 318
STYLE 9



Features

- S 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	V
Forward Current	I_F	200	mA
Repetitive Peak Forward Current (Pulse Wave = 1 sec, Duty Cycle = 66%)	I_{FRM}	1.5	A
Non−Repetitive Peak Forward Current (Square Wave, T_J = 25°C prior to surge)	I_{FSM}		A
t = 1 μs		31	
t = 10 μs		16	
t = 100 μs		10	
t = 1 ms		4.5	
t = 10 ms		2.5	
t = 100 ms		1.0	
t = 1 s		0.5	

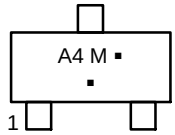
THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR−5 Board (Note 1) T_A = 25°C	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, (Note 2) T_A = 25°C	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction−to−Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−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−5 = 1.0 × 0.75 × 0.062 in.
2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

MARKING DIAGRAM



A4 = Device Code
M = Date Code*
▪ = Pb−Free Package

(Note: Microdot may be in either location)
*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
BAV70LT1G	SOT−23 (Pb−Free)	3,000 / Tape & Reel
SBAV70LT1G	SOT−23 (Pb−Free)	3,000 / Tape & Reel
BAV70LT3G	SOT−23 (Pb−Free)	10,000 / Tape & Reel
SBAV70LT3G	SOT−23 (Pb−Free)	10,000 / 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.

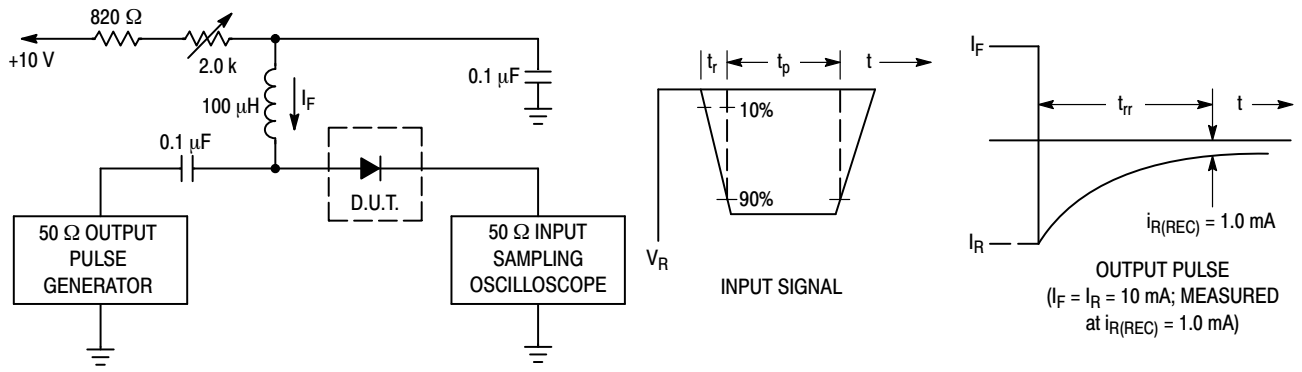
© Semiconductor Components Industries, LLC, 1994

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) (V_R = 25 V, T_J = 150°C) (V_R = 100 V) (V_R = 70 V, T_J = 150°C)	I_R	– – –	60 1.0 100	μA
Diode Capacitance (V_R = 0 V, f = 1.0 MHz)	C_D	–	1.5	pF
Forward Voltage (I_F = 1.0 mA) (I_F = 10 mA) (I_F = 50 mA) (I_F = 150 mA)	V_F	– – – –	715 855 1000 1250	mV
Reverse Recovery Time R_L = 100 Ω (I_F = I_R = 10 mA, $I_{R(REC)}$ = 1.0 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.

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

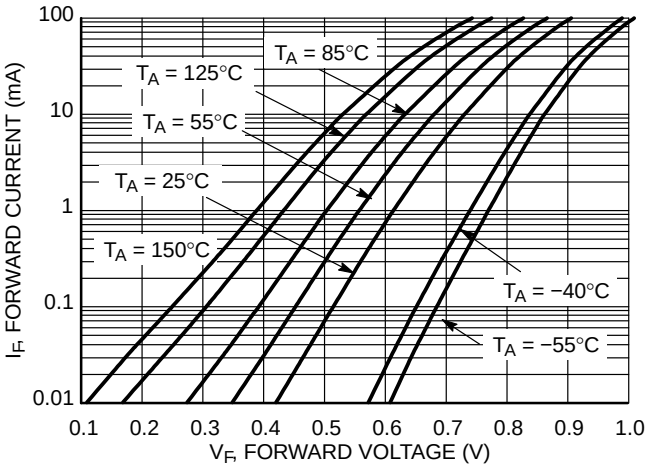


Figure 2. Forward Voltage

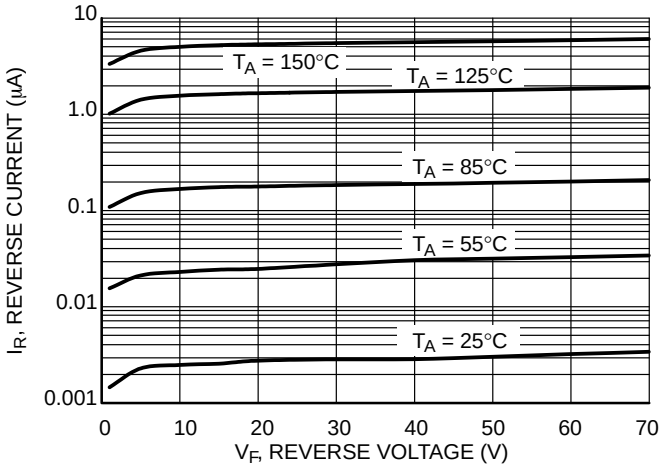


Figure 3. Leakage Current

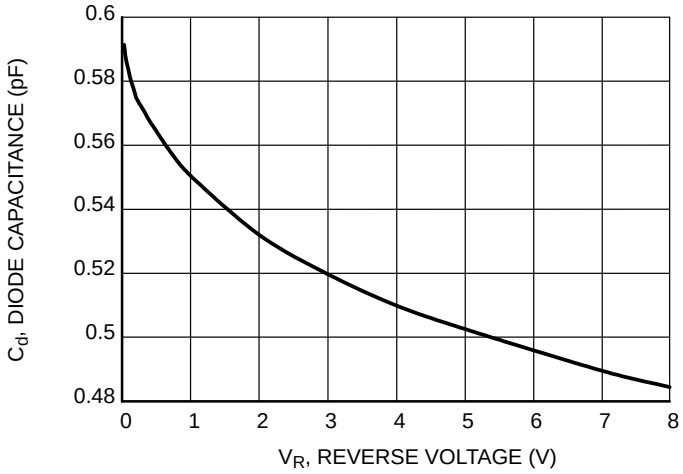


Figure 4. Capacitance

onsemi, onsemi, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent−Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as−is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales