

Small Signal Diode

BAV23S

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	Value	Unit
V_{RRM}	Maximum Repetitive Reverse Voltage	250	V
$I_{F(AV)}$	Average Rectified Forward Current	200	mA
I_{FSM}	Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 μs Pulse Width = 100 μs	9.0 3.0	A
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	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.

THERMAL CHARACTERISTICS

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

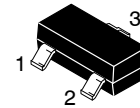
Symbol	Parameter	Value	Unit
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

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

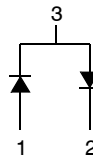
Symbol	Parameter	Test Conditions	Min	Max	Unit
B_V	Breakdown Voltage	$I_R = 100 \mu\text{A}$	250	–	V
V_F	Forward Voltage	$I_F = 100 \text{ mA}$	–	1.0	V
		$I_F = 200 \text{ mA}$	–	1.25	V
I_R	Reverse Leakage	$V_R = 250 \text{ V}$	–	100	nA
		$V_R = 250 \text{ V}, T_A = 150^\circ\text{C}$	–	100	μA
t_{rr}	Reverse Recovery Time	$I_F = I_R = 30 \text{ mA}$, $I_{RR} = 3.0 \text{ mA}$, $R_L = 100 \Omega$	–	50	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.

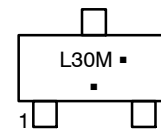


SOT-23 (TO-236)
CASE 318

CONNECTION DIAGRAM



MARKING DIAGRAM



L30 = Specific Device Code

M = Date Code

▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping [†]
BAV23S	SOT-23 (Pb-Free)	3,000 Units / 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.

TYPICAL PERFORMANCE CHARACTERISTICS

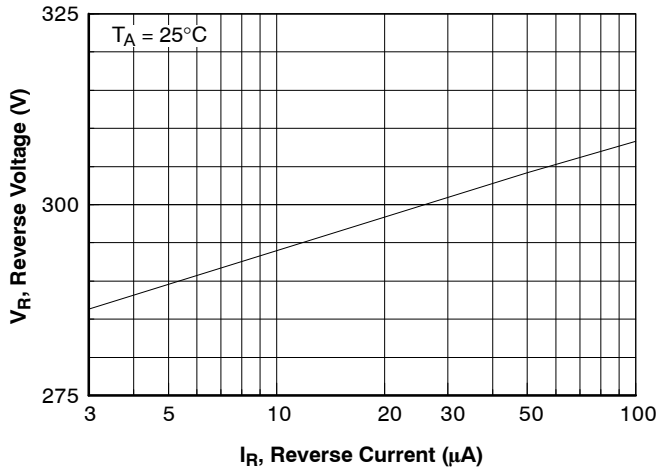


Figure 1. Reverse Voltage vs. Reverse Current
 $B_V - 1.0$ to $100\ \mu\text{A}$

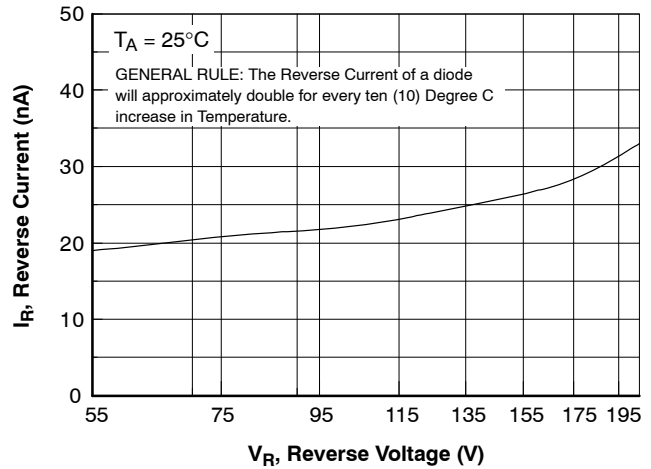


Figure 2. Reverse Current vs. Reverse Voltage
 $I_R - 55$ to $205\ \text{V}$

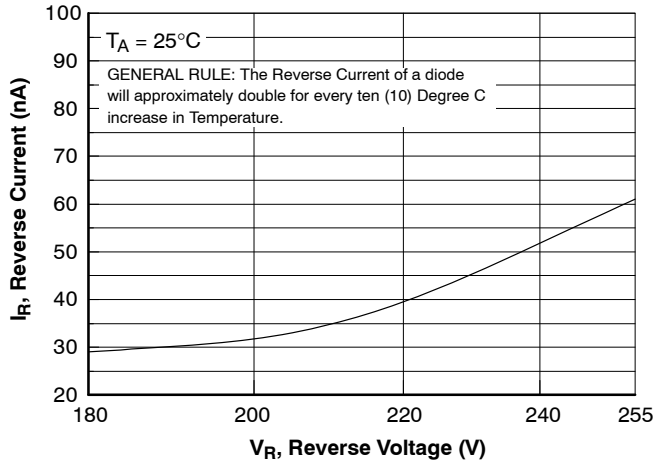


Figure 3. Reverse Current vs. Reverse Voltage
 $I_R - 180$ to $225\ \text{V}$

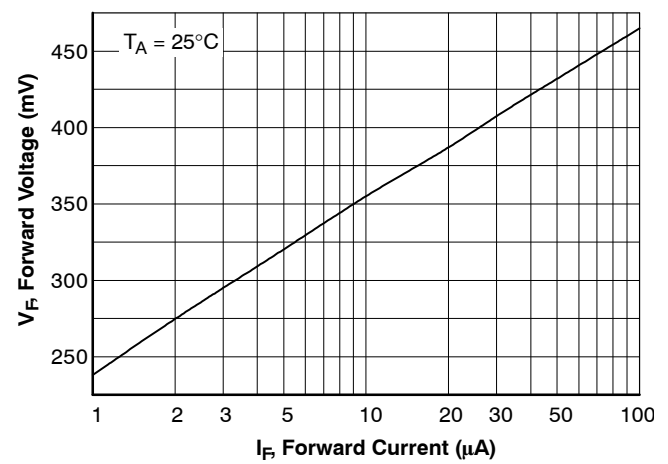


Figure 4. Forward Voltage vs. Forward Current
 $V_F - 1.0$ to $100\ \mu\text{A}$

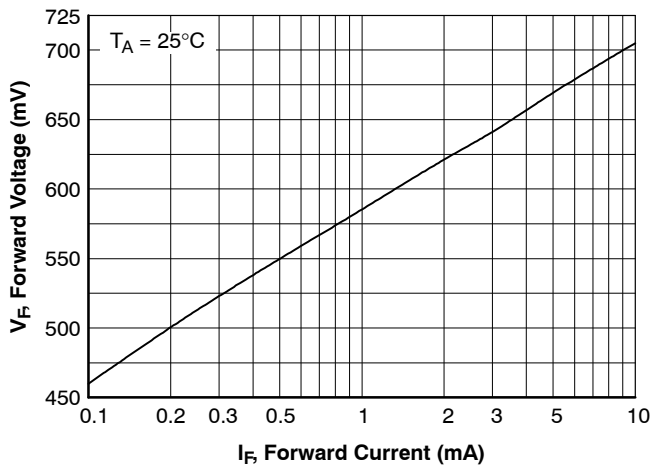


Figure 5. Forward Voltage vs. Forward Current
 $V_F - 0.1$ to $10\ \text{mA}$

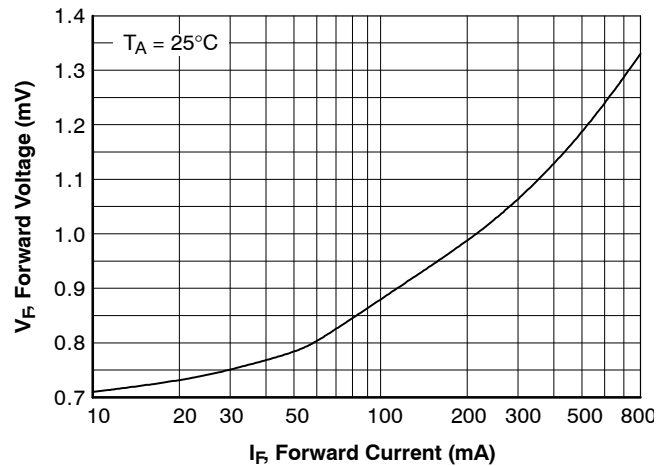


Figure 6. Forward Voltage vs. Forward Current
 $V_F - 10$ to $800\ \text{mA}$

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

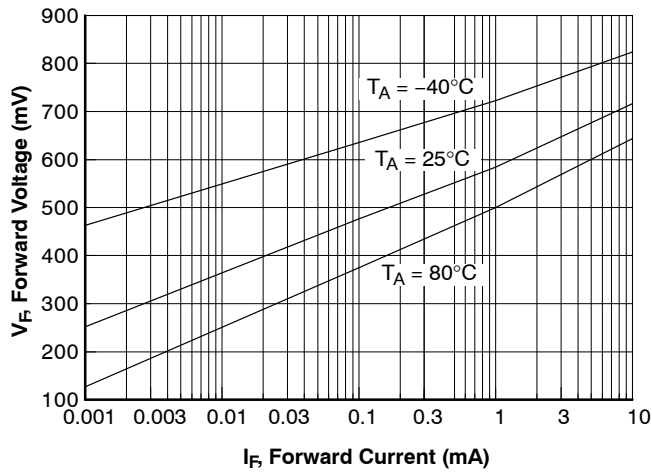


Figure 7. Forward Voltage vs. Ambient Temperature
 $V_F = 1.0 \mu\text{A} - 10 \text{ mA}$ (-40 to $+80^\circ\text{C}$)

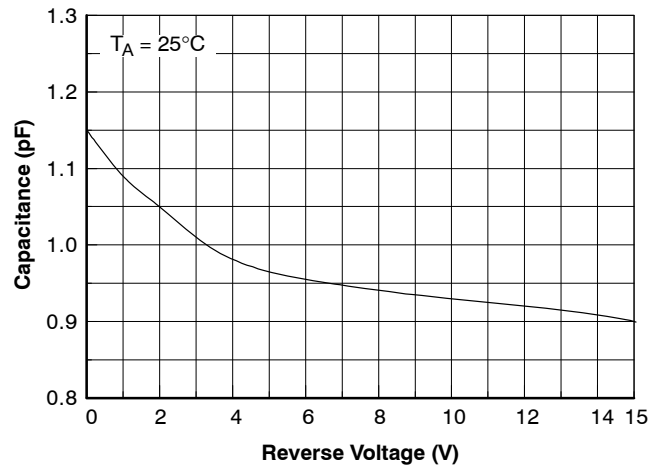


Figure 8. Capacitance vs. Reverse Voltage

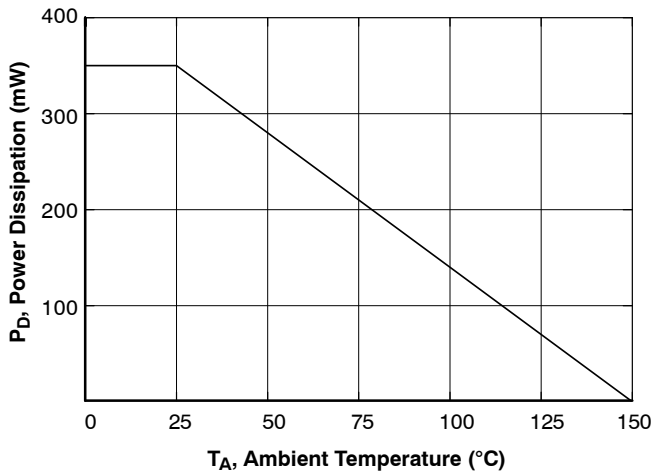


Figure 9. Power Derating Curve

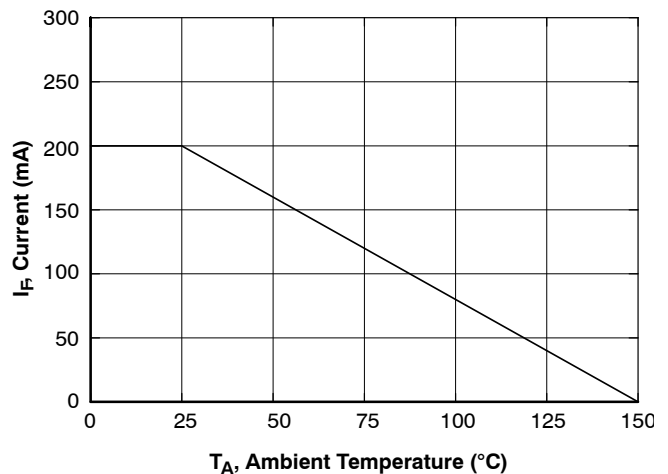


Figure 10. Average Rectified Current (I_O) vs. Ambient Temperature (T_A)

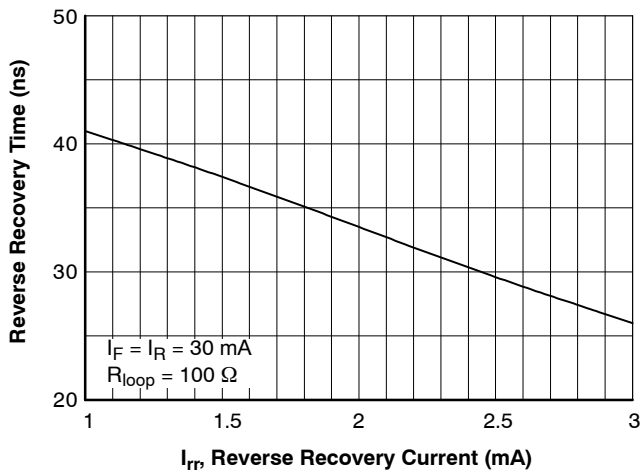


Figure 11. Reverse Recovery Time vs. Reverse Recovery Current (I_{rr})

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