

# 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<br>Pulse Width = 1.0 $\mu\text{s}$<br>Pulse Width = 100 $\mu\text{s}$ | 9.0<br>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)

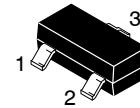
| Symbol          | Parameter                               | Value | Unit               |
|-----------------|-----------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                       | 350   | mW                 |
| $R_{\theta JA}$ | Thermal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

### ELECTRICAL CHARACTERISTICS

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

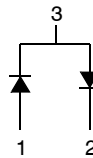
| Symbol   | Parameter             | Test Conditions                                                                    | Min | Max  | Unit          |
|----------|-----------------------|------------------------------------------------------------------------------------|-----|------|---------------|
| $B_V$    | 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  | $\mu\text{A}$ |
| $t_{rr}$ | Reverse Recovery Time | $I_F = I_R = 30 \text{ mA}$ ,<br>$I_{RR} = 3.0 \text{ mA}$ ,<br>$R_L = 100 \Omega$ | –   | 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.

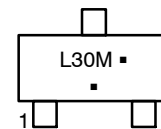


SOT-23 (TO-236)  
CASE 318

### 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 <sup>†</sup>        |
|--------|---------------------|------------------------------|
| BAV23S | SOT-23<br>(Pb-Free) | 3,000 Units /<br>Tape & Reel |

<sup>†</sup>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

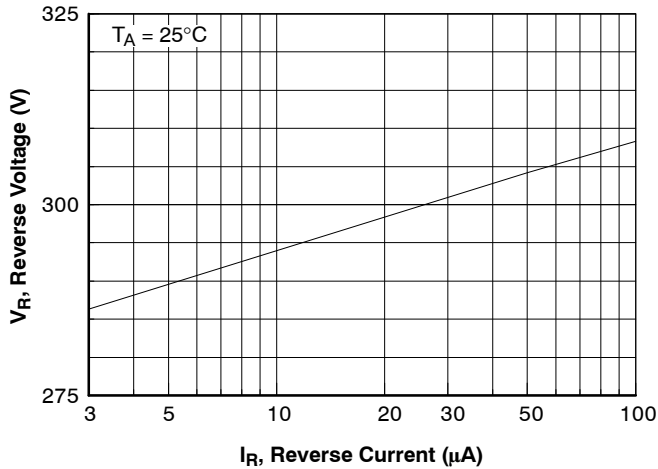


Figure 1. Reverse Voltage vs. Reverse Current  
 $B_V - 1.0$  to  $100\ \mu\text{A}$

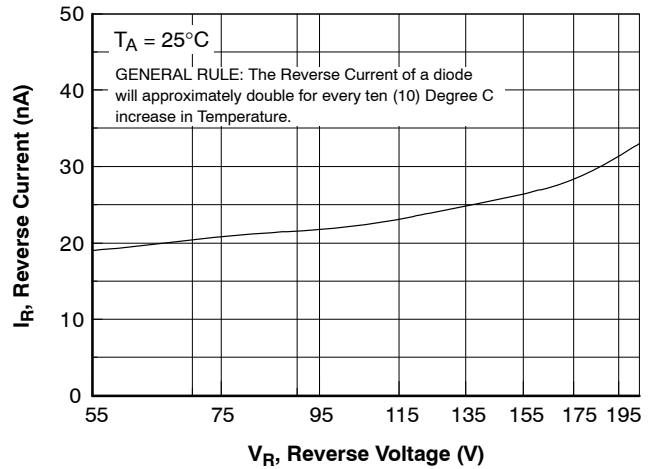


Figure 2. Reverse Current vs. Reverse Voltage  
 $I_R - 55$  to  $205\ \text{V}$

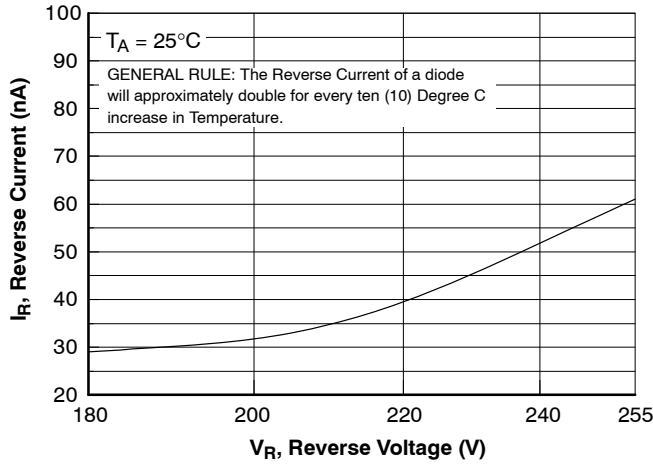


Figure 3. Reverse Current vs. Reverse Voltage  
 $I_R - 180$  to  $225\ \text{V}$

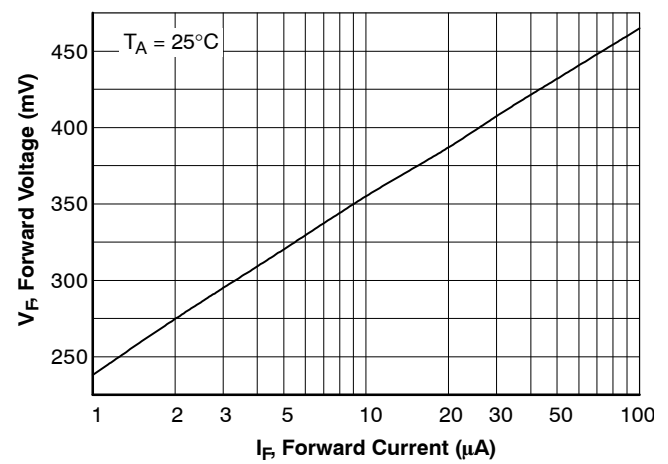


Figure 4. Forward Voltage vs. Forward Current  
 $V_F - 1.0$  to  $100\ \mu\text{A}$

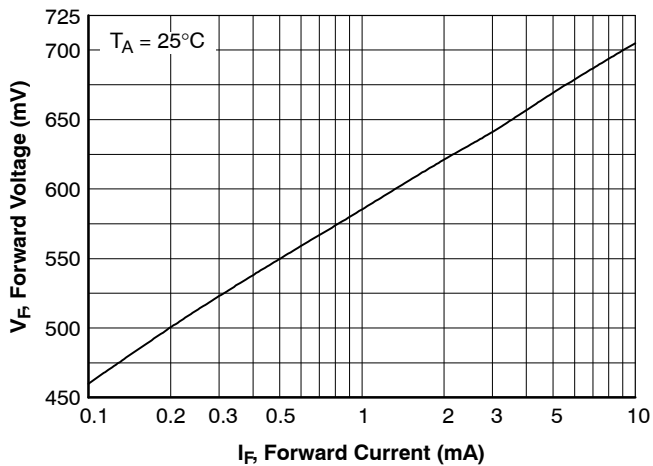


Figure 5. Forward Voltage vs. Forward Current  
 $V_F - 0.1$  to  $10\ \text{mA}$

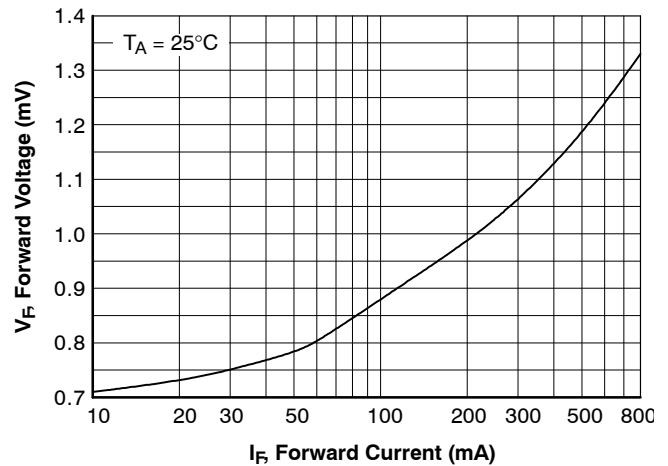


Figure 6. Forward Voltage vs. Forward Current  
 $V_F - 10$  to  $800\ \text{mA}$

TYPICAL PERFORMANCE CHARACTERISTICS (continued)

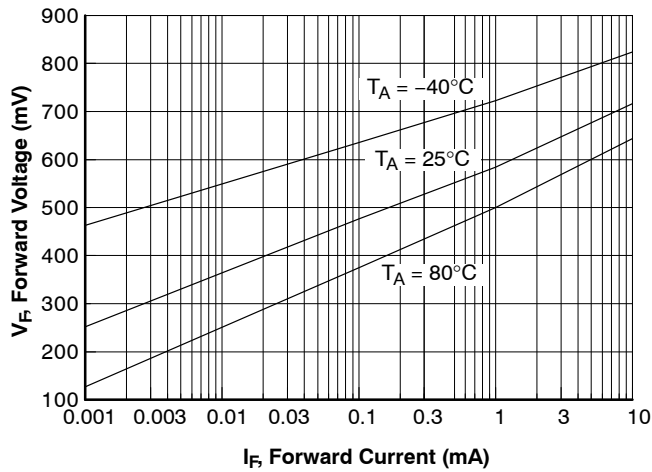


Figure 7. Forward Voltage vs. Ambient Temperature  
 $V_F = 1.0 \mu\text{A} - 10 \text{ mA}$  ( $-40$  to  $+80^\circ\text{C}$ )

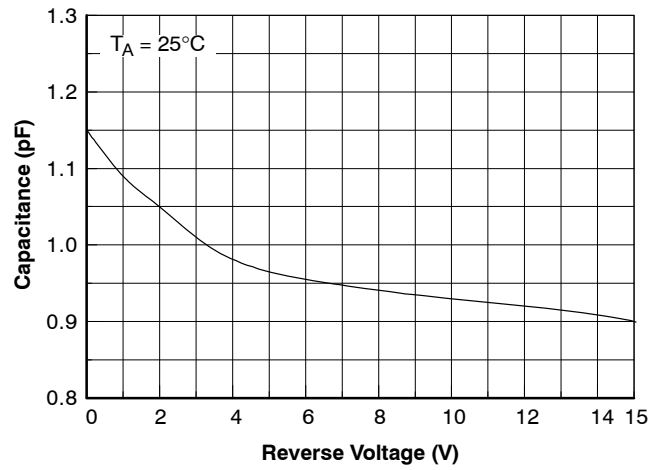


Figure 8. Capacitance vs. Reverse Voltage

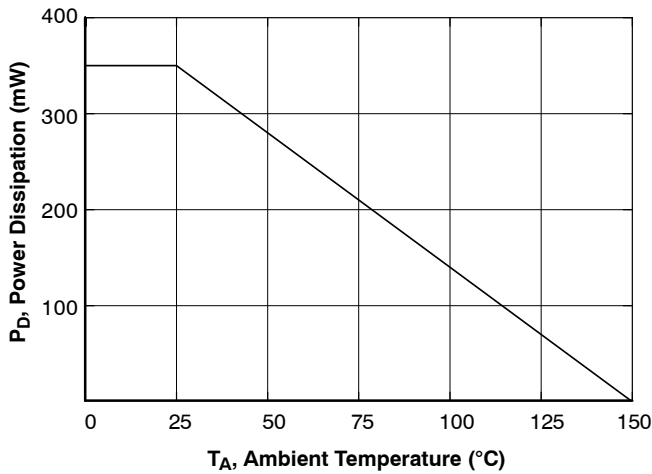


Figure 9. Power Derating Curve

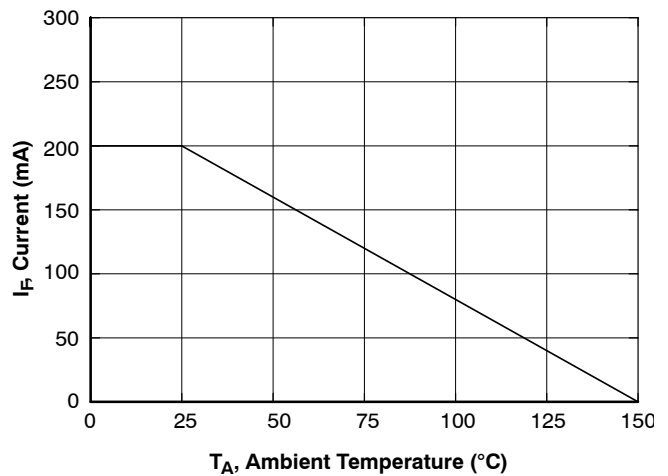


Figure 10. Average Rectified Current ( $I_O$ ) vs. Ambient Temperature ( $T_A$ )

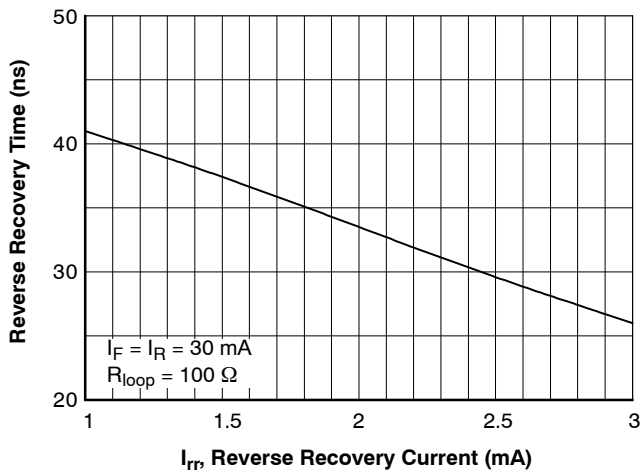


Figure 11. Reverse Recovery Time vs. Reverse Recovery Current ( $I_{rr}$ )

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