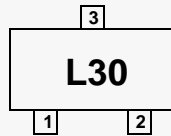


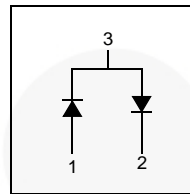


February 2015

# BAV23S Small Signal Diode



Connection Diagram



## Ordering Information

Part Number	Top Mark	Package	Packing Method
BAV23S	L30	SOT-23 3L	Tape and Reel

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  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 microsecond	9.0
		Pulse Width = 100 microsecond	3.0
$T_{STG}$	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature	150	$^\circ\text{C}$

## Thermal Characteristics

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

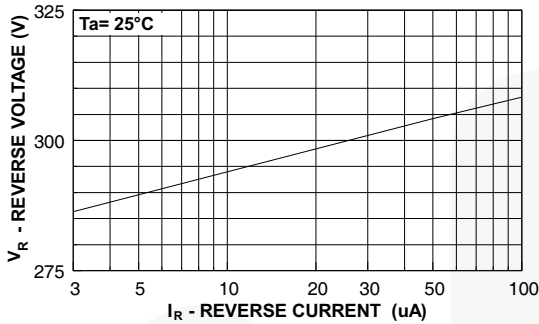
Symbol	Parameter	Max.	Unit
$P_D$	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	357	$^\circ\text{C}/\text{W}$

## Electrical Characteristics

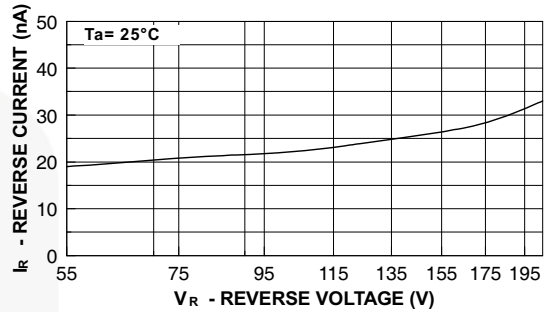
Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	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	$I_F = I_R = 30 \text{ mA}, I_{RR} = 3.0 \text{ mA}, R_L = 100 \Omega$		50	ns

## Typical Performance Characteristics

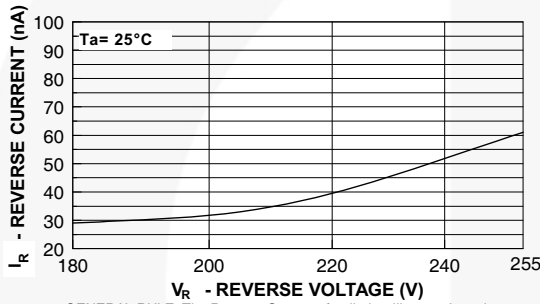


**Figure 1. Reverse Voltage vs. Reverse Current**  
BV - 1.0 to 100  $\mu$ A



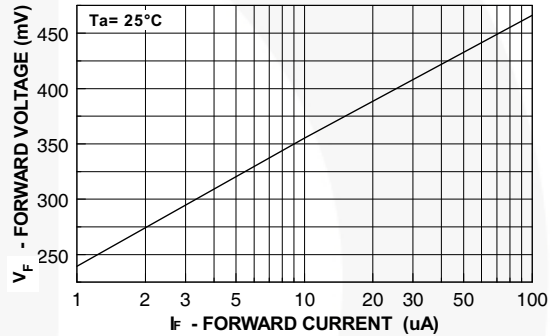
**Figure 2. Reverse Current vs. Reverse Voltage**  
 $I_R$  - 55 to 205 V

GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

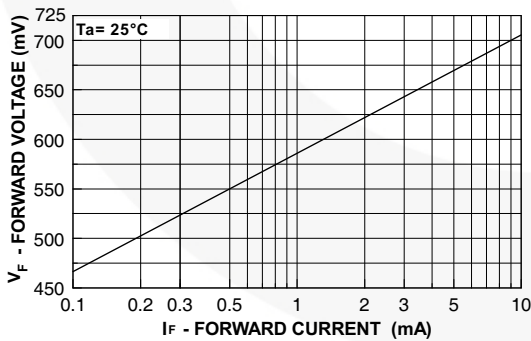


**Figure 3. Reverse Current vs. Reverse Voltage**  
 $I_R$  - 180 to 255 V

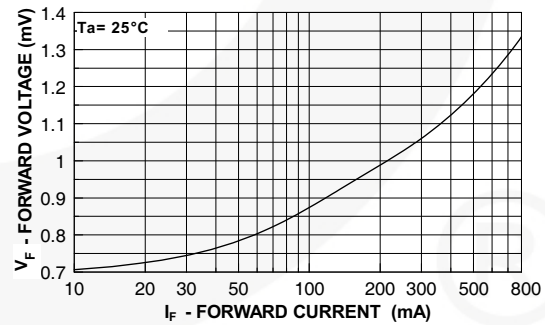
GENERAL RULE: The Reverse Current of a diode will approximately double for every ten Degree C increase in Temperature



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



**Figure 5. Forward Voltage vs. Forward Current**  
 $V_F$  - 0.1 to 10 mA



**Figure 6. Forward Voltage vs. Forward Current**  
 $V_F$  - 10 to 800 mA

Typical Performance Characteristics (Continued)

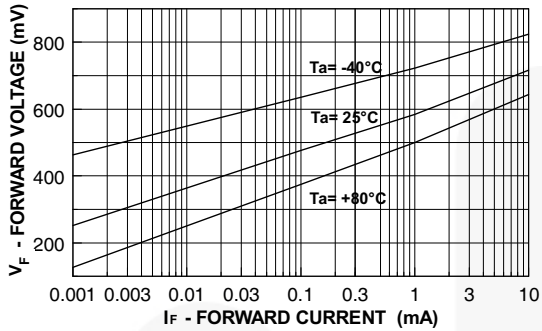


Figure 7. Forward Voltage vs. Ambient Temperature  
 $V_F$  - 1.0  $\mu$ A - 10 mA (- 40 to +80°C)

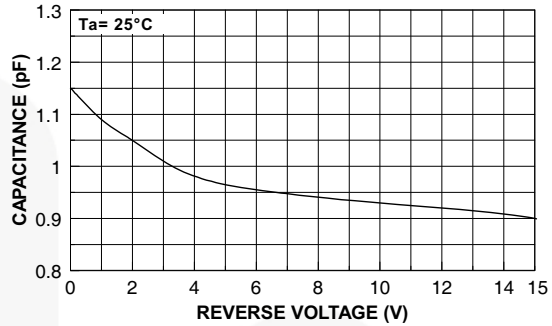


Figure 8. Capacitance vs. Reverse Voltage

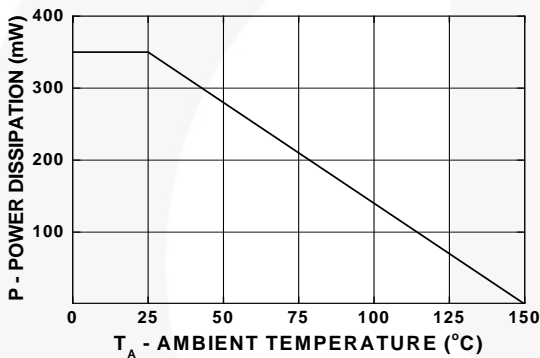


Figure 9. Power Derating Curve

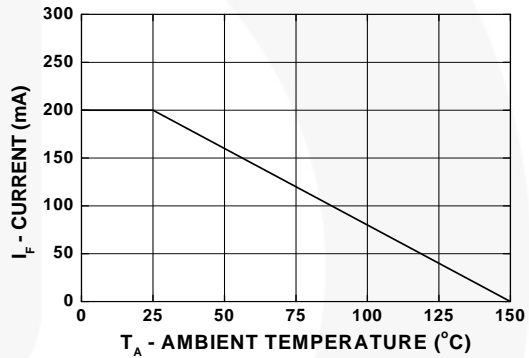


Figure 10. Average Rectified Current( $I_O$ ) vs. Ambient Temperature( $T_A$ )

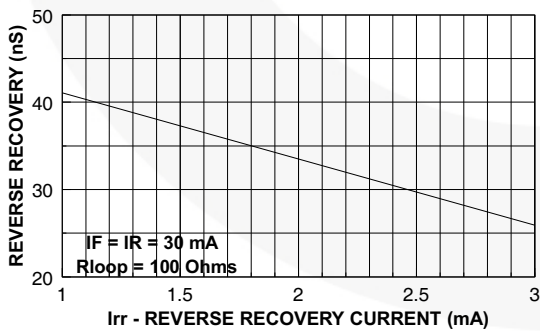


Figure 11. Reverse Recovery Time vs. Reverse Recovery Current ( $I_{rr}$ )

Physical Dimensions

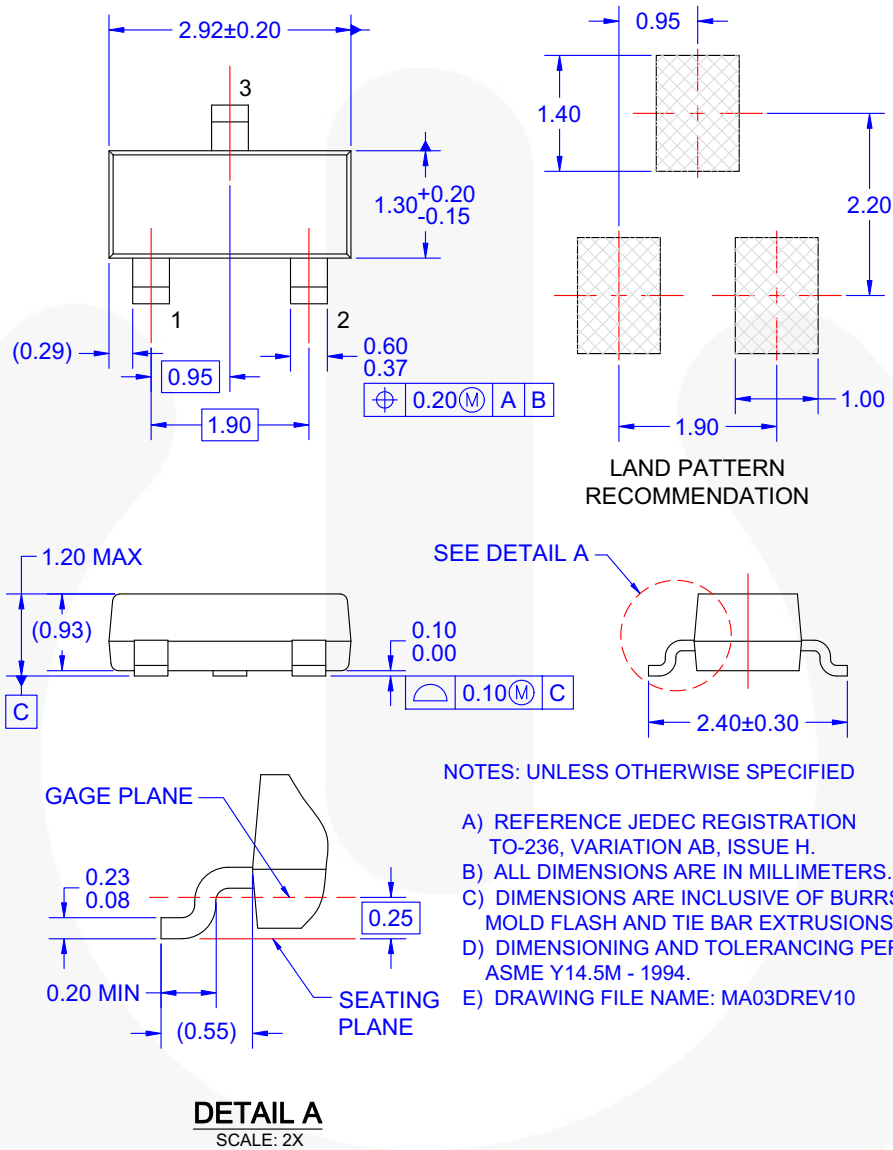


Figure 12. 3-LEAD, SOT23, JEDEC TO-236, LOW PROFILE



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