

BAV19 / 20 / 21



DO-35

Color Band Denotes Cathode

Small Signal Diode

Absolute Maximum Ratings*

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

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	BAV19 120	V
		BAV20 200	V
		BAV21 250	V
$I_{F(AV)}$	Average Rectified Forward Current	200	mA
I_{FSM}	Non-repetitive Peak Forward Surge Current Pulse Width = 1.0 second Pulse Width = 1.0 microsecond	1.0	A
		4.0	A
T_{stg}	Storage Temperature Range	-65 to +200	$^\circ\text{C}$
T_J	Operating Junction Temperature	175	$^\circ\text{C}$

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

1) These ratings are based on a maximum junction temperature of 200 degrees C.

2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	300	$^\circ\text{C/W}$

Electrical Characteristics

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

Symbol	Parameter	Test Conditions	Min	Max	Units
V_R	Breakdown Voltage	BAV19 $I_R = 100 \mu\text{A}$	120		V
		BAV20 $I_R = 100 \mu\text{A}$	200		V
		BAV21 $I_R = 100 \mu\text{A}$	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 Current	$V_R = 100 \text{ V}$		100	nA
		BAV19 $V_R = 100 \text{ V}, T_A = 150^\circ\text{C}$		100	μA
		$V_R = 150 \text{ V}$		100	nA
		BAV20 $V_R = 150 \text{ V}, T_A = 150^\circ\text{C}$		100	μA
		$V_R = 200 \text{ V}$		100	nA
		BAV21 $V_R = 200 \text{ V}, T_A = 150^\circ\text{C}$		100	μA
C_T	Total Capacitance	$V_R = 0, f = 1.0 \text{ MHz}$		5.0	pF
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 Characteristics

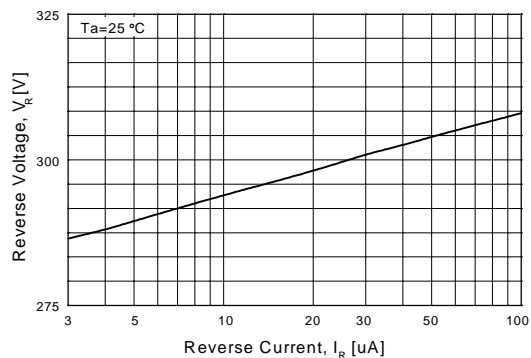


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100uA

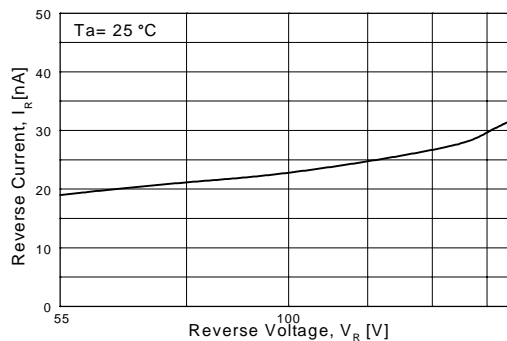


Figure 2. Reverse Current vs Reverse Voltage
IR - 55 to 205 V

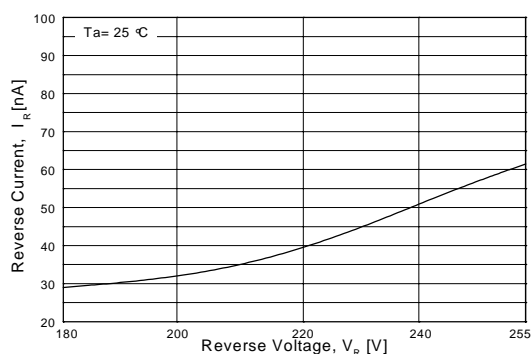


Figure 3. Reverse Current vs Reverse Voltage
IR - 180 to 225 V

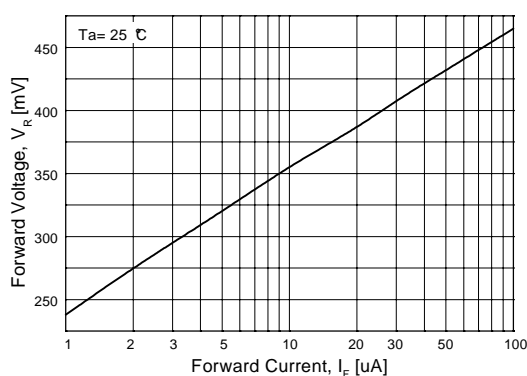


Figure 4. Forward Voltage vs Forward Current
VF - 1.0 to 100uA

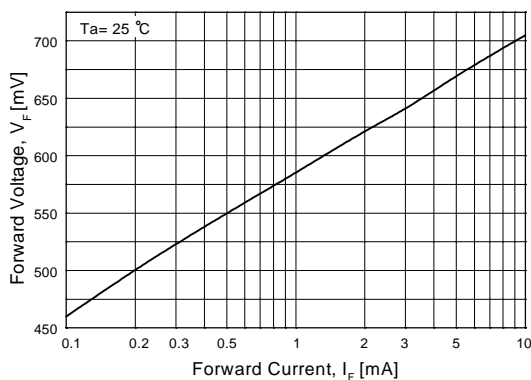


Figure 5. Forward Voltage vs Forward Current
VF - 0.1 to 10mA

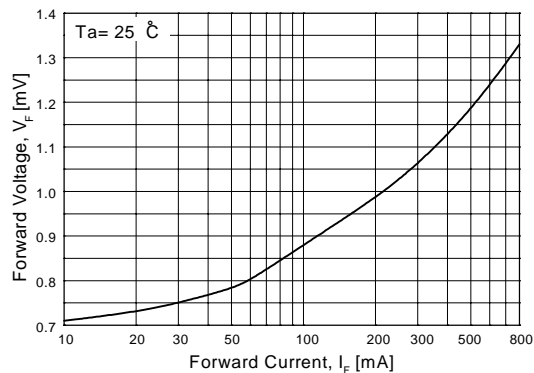


Figure 6. Forward Voltage vs Forward Current
VF - 10 to 800mA

Small Signal Diode

(continued)

Typical Characteristics (continued)

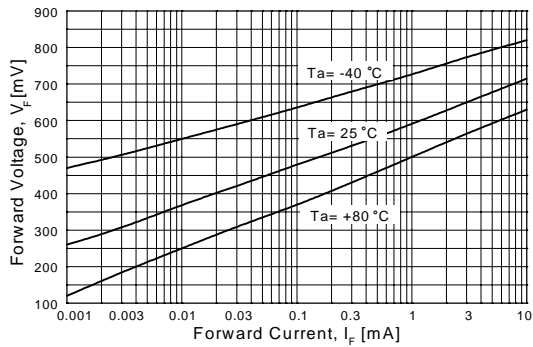


Figure 7. Forward Voltage vs Ambient Temperature
VF - 1.0 μ A - 10 mA (-40 to +80 Deg C)

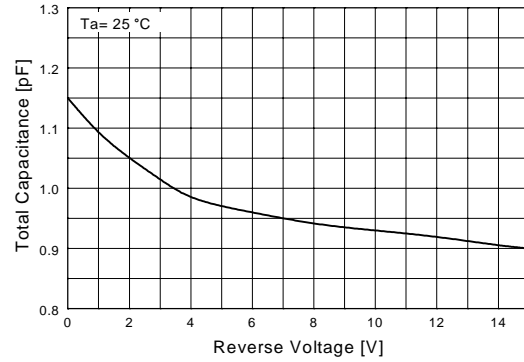


Figure 8. Total Capacitance

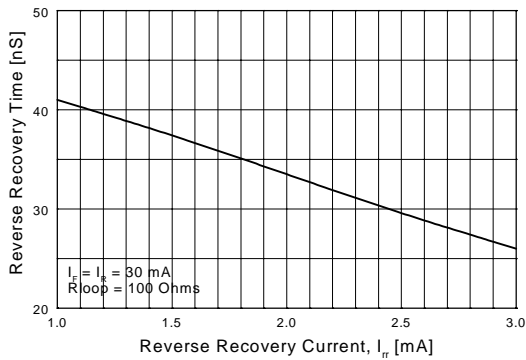


Figure 9. Reverse Recovery Time vs Reverse Recovery Current

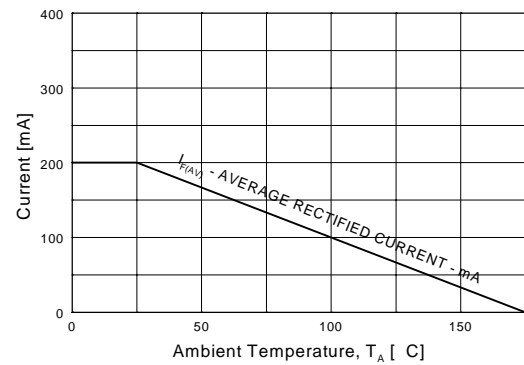


Figure 10. Average Rectified Current ($I_{F(AV)}$) versus Ambient Temperature (T_A)

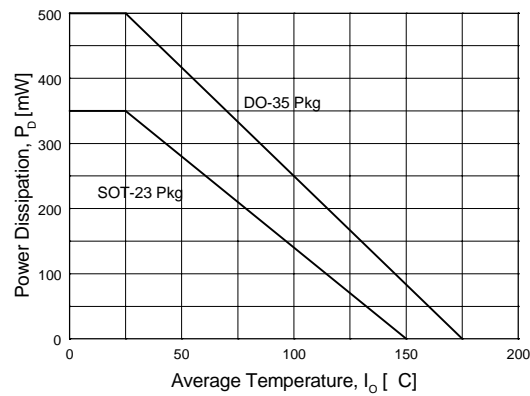


Figure 11. Power Derating Curve

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