

## BAV19 / 20 / 21



DO-35

### High Voltage General Purpose Diode

Sourced from Process 1J. NSC alternate for BAV19 & BAV20: FDH400.

#### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
W <sub>IV</sub>	Working Inverse Voltage	<b>BAV19</b>	100
		<b>BAV20</b>	150
		<b>BAV21</b>	200
I <sub>O</sub>	Average Rectified Current	200	mA
I <sub>F</sub>	DC Forward Current	500	mA
i <sub>f</sub>	Recurrent Peak Forward Current	600	mA
i <sub>r(surge)</sub>	Peak Forward Surge Current Pulse width = 1.0 second Pulse width = 1.0 microsecond	1.0	A
		4.0	A
T <sub>stg</sub>	Storage Temperature Range	-65 to +200	°C
T <sub>J</sub>	Operating Junction Temperature	175	°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

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		<b>BAV19 / 20 / 21</b>	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	500	mW
		3.33	mW/°C
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	300	°C/W

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(continued)

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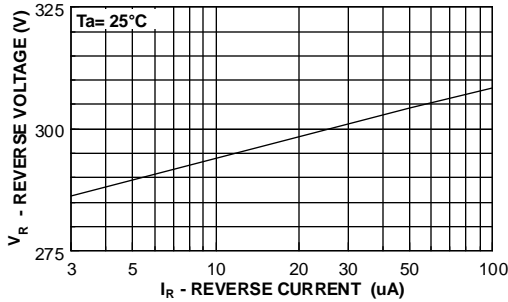
## Electrical Characteristics

TA = 25°C unless otherwise noted

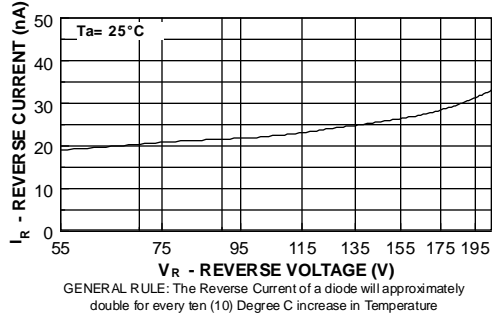
Symbol	Parameter	Test Conditions	Min	Max	Units
B <sub>V</sub>	Breakdown Voltage	BAV19 I <sub>R</sub> = 100 μA	120		V
		BAV20 I <sub>R</sub> = 100 μA	200		V
		BAV21 I <sub>R</sub> = 100 μA	250		V
I <sub>R</sub>	Reverse Current	BAV19 V <sub>R</sub> = 100 V		100	nA
		BAV20 V <sub>R</sub> = 100 V, T <sub>A</sub> = 150°C		100	μA
		BAV20 V <sub>R</sub> = 150 V		100	nA
		BAV20 V <sub>R</sub> = 150 V, T <sub>A</sub> = 150°C		100	μA
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 100 mA		1.0	V
		I <sub>F</sub> = 200 mA		1.25	V
C <sub>O</sub>	Diode Capacitance	V <sub>R</sub> = 0, f = 1.0 MHz		5.0	pF
T <sub>RR</sub>	Reverse Recovery Time	I <sub>F</sub> = I <sub>R</sub> = 30 mA, I <sub>RR</sub> = 3.0 mA, R <sub>L</sub> = 100Ω		50	nS

## Typical Characteristics

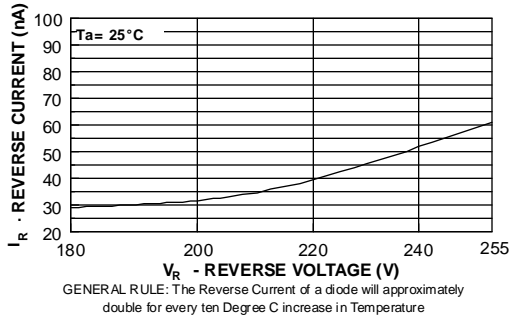
REVERSE VOLTAGE vs REVERSE CURRENT  
BV - 1.0 to 100 uA



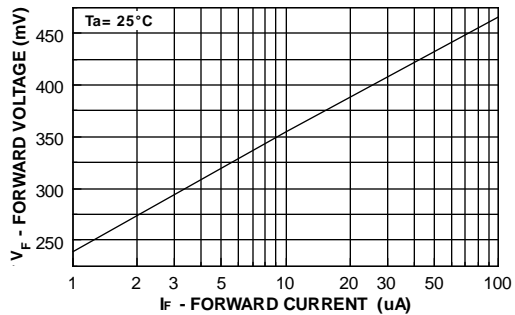
REVERSE CURRENT vs REVERSE VOLTAGE  
IR - 55 to 205 V



REVERSE CURRENT vs REVERSE VOLTAGE  
IR - 180 to 255 V



FORWARD VOLTAGE vs FORWARD CURRENT  
VF - 1.0 to 100 uA

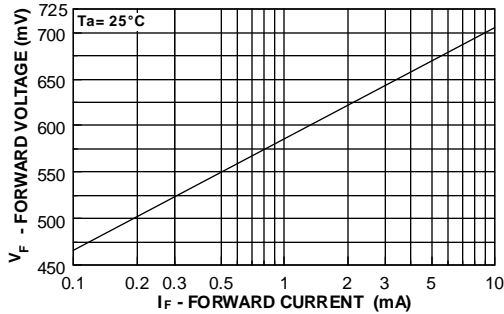


# High Voltage General Purpose Diode

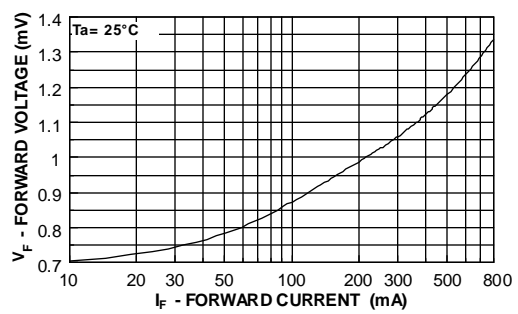
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## Typical Characteristics (continued)

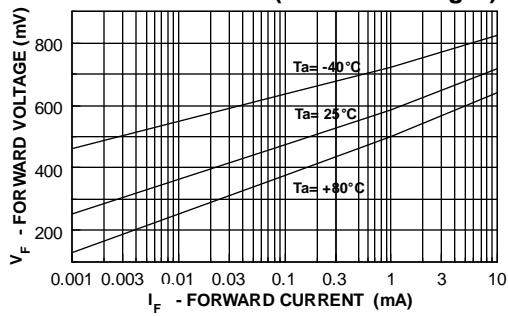
**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 0.1 to 10 mA



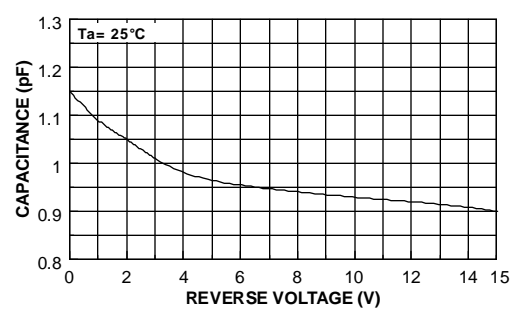
**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 10 to 800 mA



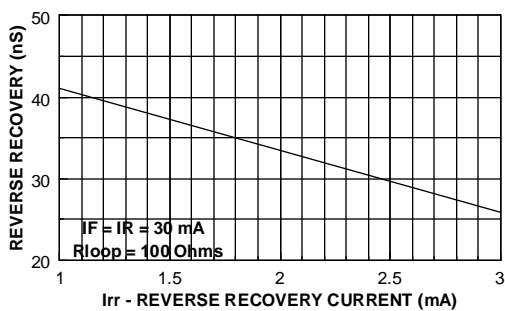
**Forward Voltage vs Ambient Temperature**  
VF - 1.0 uA - 10 mA (-40 to + 80 Deg C)



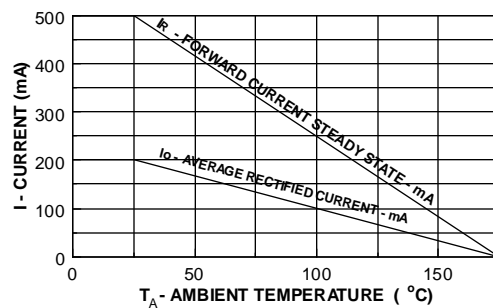
**CAPACITANCE vs REVERSE VOLTAGE**  
VR - 0 to 15 V



**REVERSE RECOVERY TIME vs REVERSE RECOVERY CURRENT (Irr)**



**Average Rectified Current (Io) & Forward Current (If) versus Ambient Temperature (TA)**



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(continued)

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## Typical Characteristics (continued)

