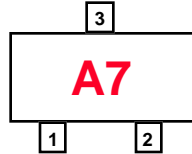
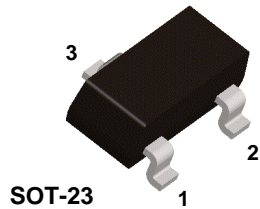
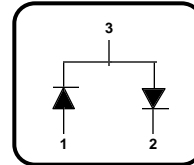


# BAV99



CONNECTION DIAGRAM



## High Conductance Ultra Fast Diode

Sourced from Process 1P.

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
$W_{IV}$	Working Inverse Voltage	70	V
$I_O$	Average Rectified Current	200	mA
$I_F$	DC Forward Current	600	mA
$i_f$	Recurrent Peak Forward Current	700	mA
$i_{f(surge)}$	Peak Forward Surge Current Pulse width = 1.0 second Pulse width = 1.0 microsecond	1.0 2.0	A A
$T_{stg}$	Storage Temperature Range	-55 to +150	°C
$T_J$	Operating Junction Temperature	150	°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 150 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
		BAV99	
$P_D$	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

# High Conductance Ultra Fast Diode

(continued)

BAV99

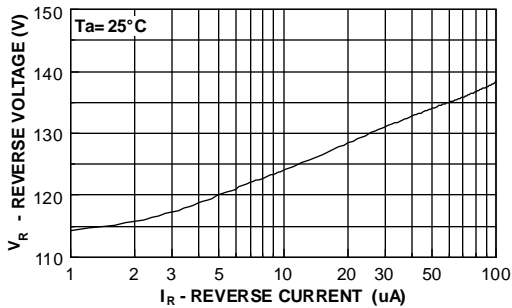
## Electrical Characteristics

TA = 25°C unless otherwise noted

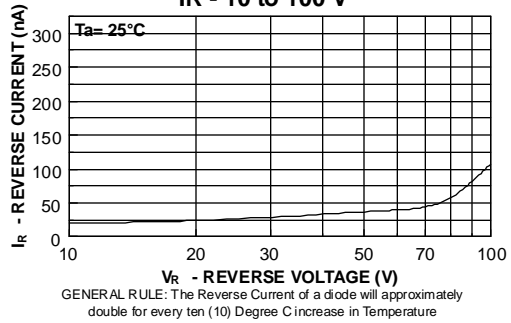
Symbol	Parameter	Test Conditions	Min	Max	Units
$B_V$	Breakdown Voltage	$I_R = 100 \mu A$	70		V
$I_R$	Reverse Current	$V_R = 70 V$ $V_R = 25 V, T_A = 150^\circ C$ $V_R = 70 V, T_A = 150^\circ C$		2.5 30 50	$\mu A$ $\mu A$ $\mu A$
$V_F$	Forward Voltage	$I_F = 1.0 mA$ $I_F = 10 mA$ $I_F = 50 mA$ $I_F = 150 mA$		715 855 1.0 1.25	mV mV V V
$C_O$	Diode Capacitance	$V_R = 0, f = 1.0 MHz$		1.5	pF
$T_{RR}$	Reverse Recovery Time	$I_F = I_R = 10 mA, I_{RR} = 1.0 mA,$ $R_L = 100\Omega$		6.0	nS
$V_{FM}$	Peak Forward Voltage	$I_F = 10 mA, t_r = 20 nS$		1.75	V

## Typical Characteristics

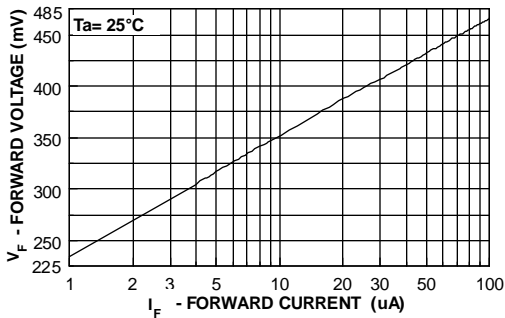
**REVERSE VOLTAGE vs REVERSE CURRENT**  
BV - 1.0 to 100 uA



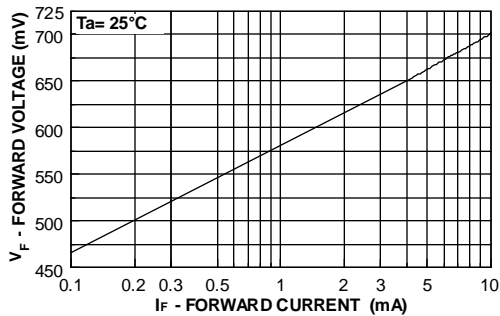
**REVERSE CURRENT vs REVERSE VOLTAGE**  
IR - 10 to 100 V



**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 1.0 to 100 uA



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



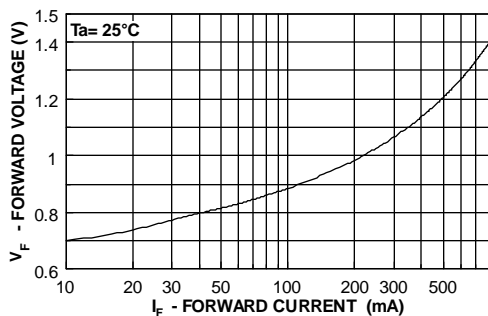
# High Conductance Ultra Fast Diode

(continued)

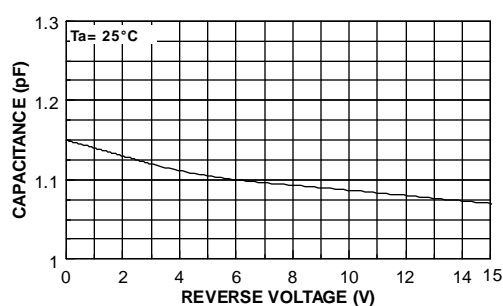
BAV99

## Typical Characteristics (continued)

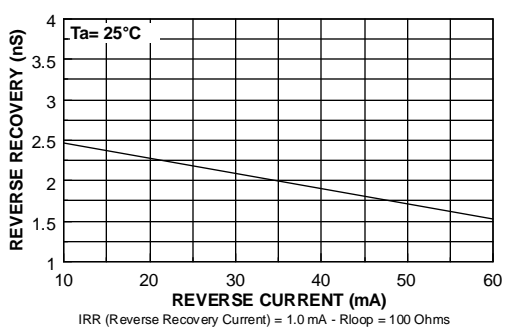
**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 10 - 800 mA



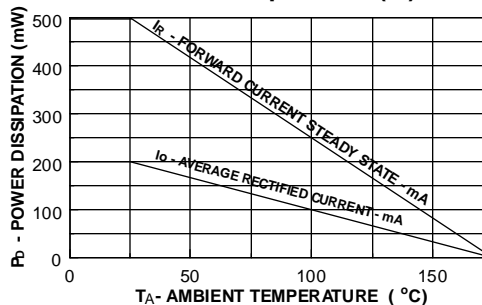
**CAPACITANCE vs REVERSE VOLTAGE**  
VR - 0.0 to 15 V



**REVERSE RECOVERY TIME vs REVERSE CURRENT**  
TRR - IR 10 mA vs 60 mA



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



**POWER DERATING CURVE**

