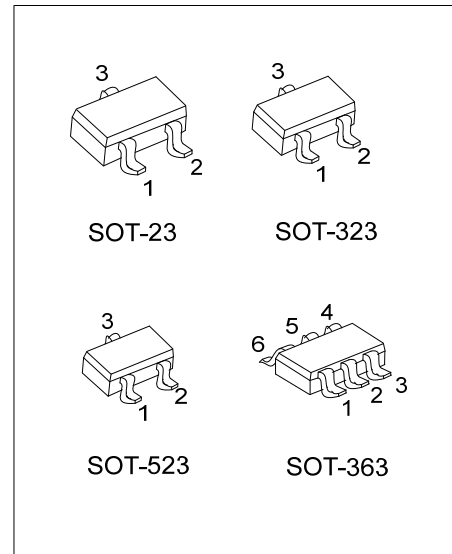
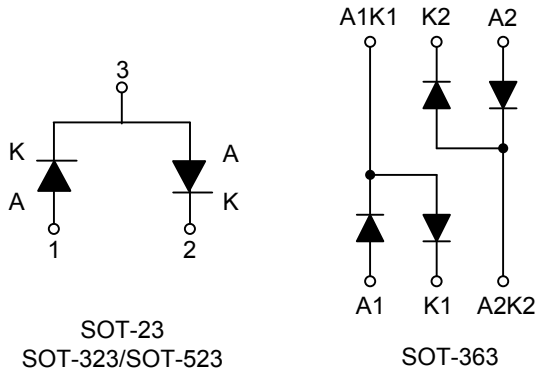


## BAV99

DIODE

### HIGH CONDUCTANCE ULTRA FAST DIODE

■ EQUIVALENT



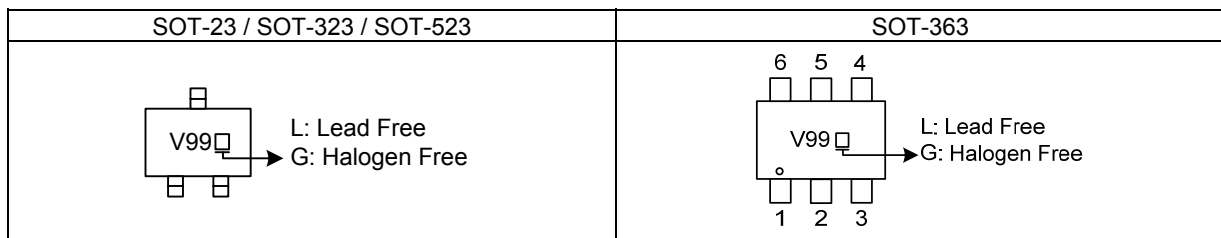
■ ORDERING INFORMATION

| Ordering Number |              | Package | Pin Assignment |    |      |    |    |      | Packing   |
|-----------------|--------------|---------|----------------|----|------|----|----|------|-----------|
| Lead Free       | Halogen Free |         | 1              | 2  | 3    | 4  | 5  | 6    |           |
| BAV99L-AE3-R    | BAV99G-AE3-R | SOT-23  | A1             | K2 | K1A2 | -  | -  | -    | Tape Reel |
| BAV99L-AL3-R    | BAV99G-AL3-R | SOT-323 | A1             | K2 | K1A2 | -  | -  | -    | Tape Reel |
| BAV99L-AN3-R    | BAV99G-AN3-R | SOT-523 | A1             | K2 | K1A2 | -  | -  | -    | Tape Reel |
| BAV99L-AL6-R    | BAV99G-AL6-R | SOT-363 | A1             | K1 | A2K2 | A2 | K2 | A1K1 | Tape Reel |

Note: Pin Assignment: A: Anode K: Cathode

|  |   |
|--|---|
| <p>BAV99G-AE3-R</p> <p>(1) Packing Type<br/>(2) Package Type<br/>(3) Green Package</p> | <p>(1) R: Tape Reel<br/>(2) AE3: SOT-23, AL3: SOT-523, AN3: SOT-523, AL6: SOT-363<br/>(3) G: Halogen Free and Lead Free, L: Lead Free</p> |
|--|---|

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified.)

| PARAMETER                                 | SYMBOL      | RATINGS                       | UNIT             |    |
|---|-------------|-------------------------------|------------------|----|
| Working Inverse Voltage                   | $W_{IV}$    | 85                            | V                |    |
| Average Rectified Current                 | $I_{F(AV)}$ | 200                           | mA               |    |
| DC Forward Current                        | $I_{FM}$    | 600                           | mA               |    |
| Recurrent Peak Forward Current            | $I_{FRM}$   | 700                           | mA               |    |
| Non-repetitive Peak Forward Surge Current |             | Pulse width = 1.0 second      | 1.0              | A  |
|   |             | Pulse width = 1.0 microsecond | 2.0              | A  |
| Power Dissipation                         | $P_D$       | SOT-23                        | 350              | mW |
|   |             | SOT-523                       | 150              | mW |
|   |             | SOT-323/SOT-363               | 200              | mW |
| Junction Temperature                      | $T_J$       | +150                          | $^\circ\text{C}$ |    |
| Storage Temperature                       | $T_{STG}$   | -65 ~ +150                    | $^\circ\text{C}$ |    |

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

■ THERMAL DATA

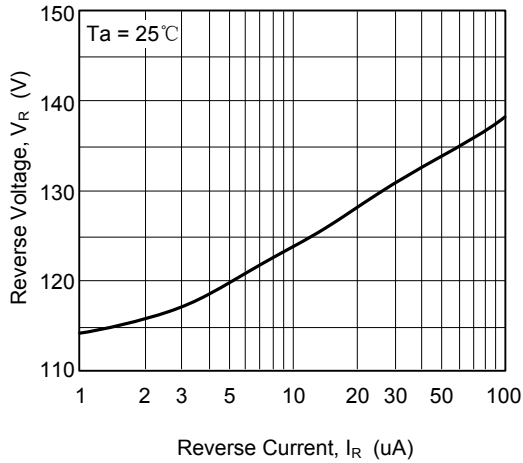
| PARAMETER           | SYMBOL        | RATINGS         | UNIT |                           |
|---------------------|---------------|-----------------|------|---------------------------|
| Junction to Ambient | $\theta_{JA}$ | SOT-23          | 357  | $^\circ\text{C}/\text{W}$ |
|                     |               | SOT-523         | 833  | $^\circ\text{C}/\text{W}$ |
|                     |               | SOT-323/SOT-363 | 625  | $^\circ\text{C}/\text{W}$ |

■ ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ , unless otherwise specified.)

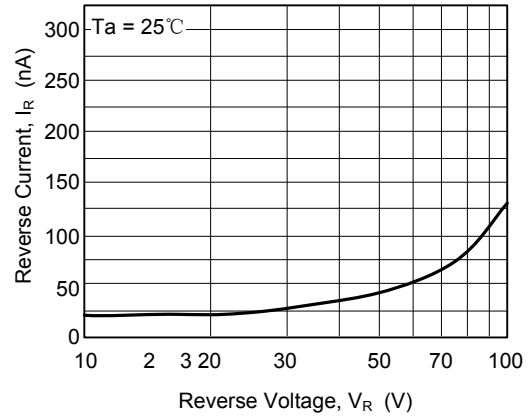
| PARAMETER                             | SYMBOL   | TEST CONDITIONS  | MIN | TYP | MAX  | UNIT          |
|---------------------------------------|----------|--|-----|-----|------|---------------|
| Breakdown Voltage                     | $V_R$    | $I_R=100\mu\text{A}$   | 85  |     |      | V             |
| Maximum Instantaneous Forward Voltage | $V_{FM}$ | $I_F=1.0\text{mA}$   |     |     | 775  | mV            |
|                                       |          | $I_F=10\text{mA}$  |     |     | 855  | mV            |
|                                       |          | $I_F=50\text{mA}$  |     |     | 1.0  | V             |
|                                       |          | $I_F=150\text{mA}$   |     |     | 1.25 | V             |
| Peak Forward Voltage                  | $V_{SM}$ | $I_F=10\text{mA}$ , $t_R=20\text{nS}$                            |     |     | 1.75 | V             |
| Maximum Instantaneous Reverse Current | $I_{RM}$ | $V_R=85\text{V}$   |     |     | 2.5  | $\mu\text{A}$ |
|                                       |          | $V_R=25\text{V}$ , $T_A=150^\circ\text{C}$                       |     |     | 30   | $\mu\text{A}$ |
|                                       |          | $V_R=85\text{V}$ , $T_A=150^\circ\text{C}$                       |     |     | 50   | $\mu\text{A}$ |
| Diode Capacitance                     | $C_O$    | $V_R=0$ , $f=1.0\text{MHz}$                                      |     |     | 1.5  | pF            |
| Reverse Recovery Time                 | $t_{RR}$ | $I_F=I_R=10\text{mA}$ , $I_{RR}=1.0\text{mA}$<br>$R_L=100\Omega$ |     |     | 6.0  | ns            |

## TYPICAL CHARACTERISTICS

Reverse Voltage vs. Reverse Current  
BV - 1.0 ~ 100  $\mu$ A

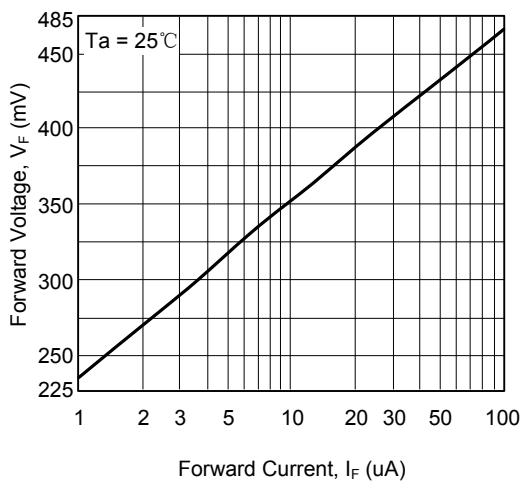


Reverse Current vs. Reverse Voltage  
 $I_R$  - 10 ~ 100 V

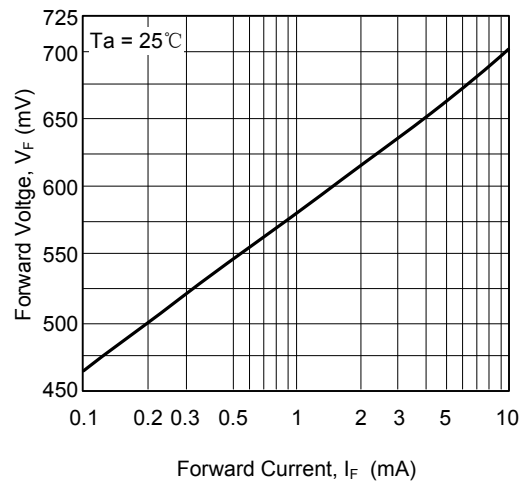


GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

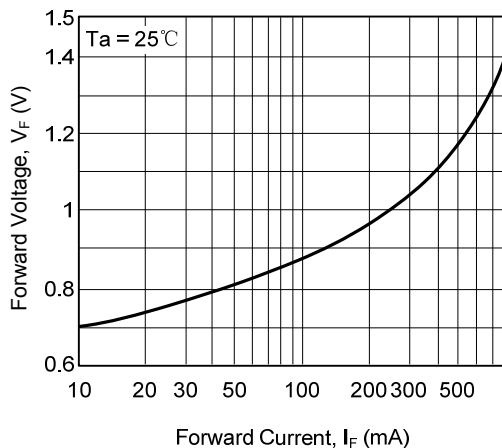
Forward Voltage vs. Forward Current  
 $V_F$  - 1.0 ~ 100  $\mu$ A



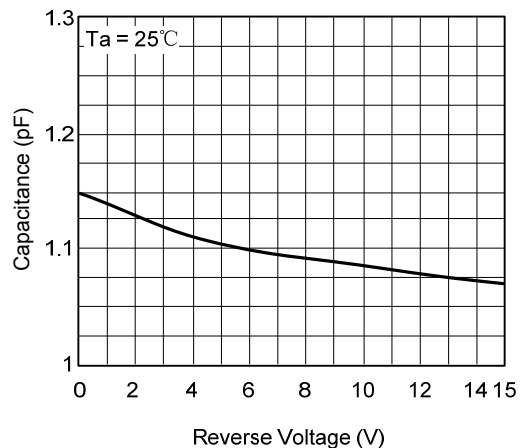
Forward Voltage vs. Forward Current  
 $V_F$  - 0.1 ~ 10 mA



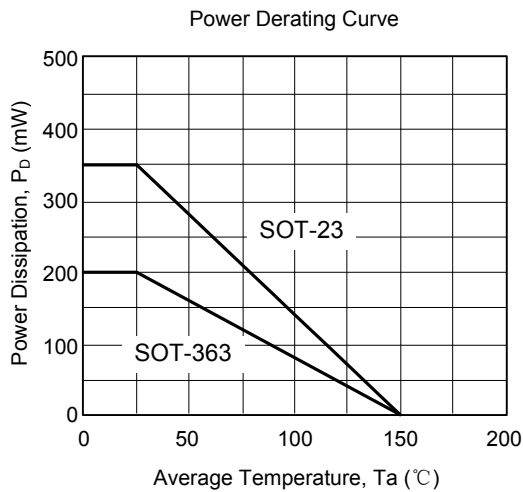
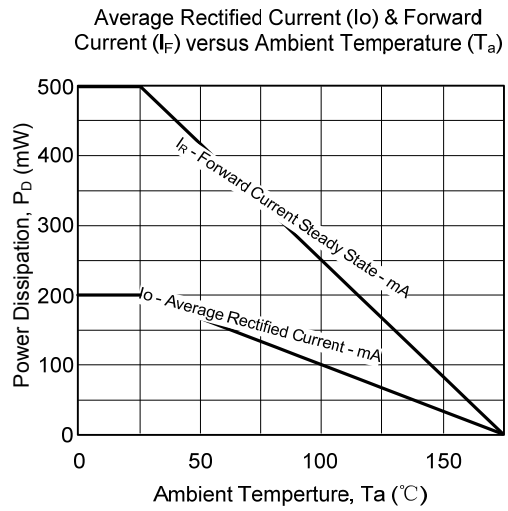
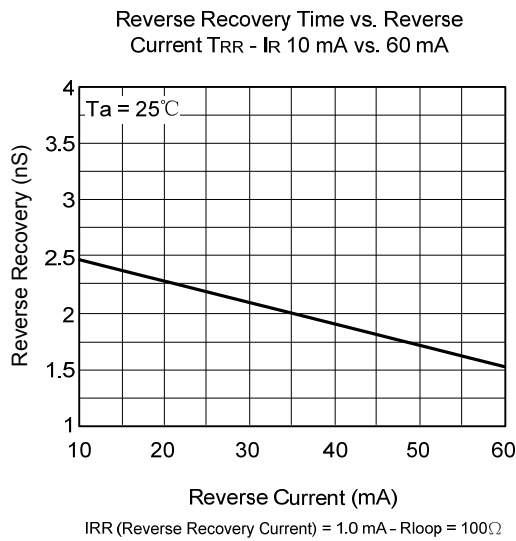
Forward Voltage vs. Forward Current  
 $V_F$  - 1.0 ~ 800 mA



Capacitance vs. Reverse Voltage  
 $V_R$  - 0.0 ~ 15 V



## ■ TYPICAL CHARACTERISTICS (Cont.)



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