

SOT-23 Fast Switching Diodes

Features

- $V_R=70V$
- $I_{F(AV)}=200mA$
- Extremely Fast Switching Speed
- Surface mount package ideally suited for automatic insertion
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Applications

- For General Purpose Switching Applications

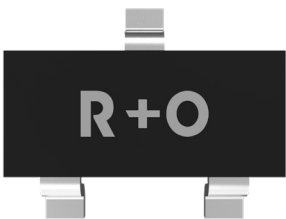
Mechanical Data

- Case: SOT-23  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

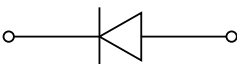
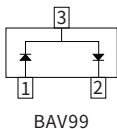
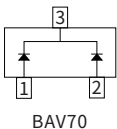
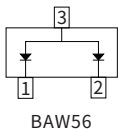
Function Diagram

Reverse Voltage  
70 V  
Forward Current  
0.2 Ampere

SOT-23



Marking:  
BAW56:A1  
BAV70:A4  
BAV99:A7



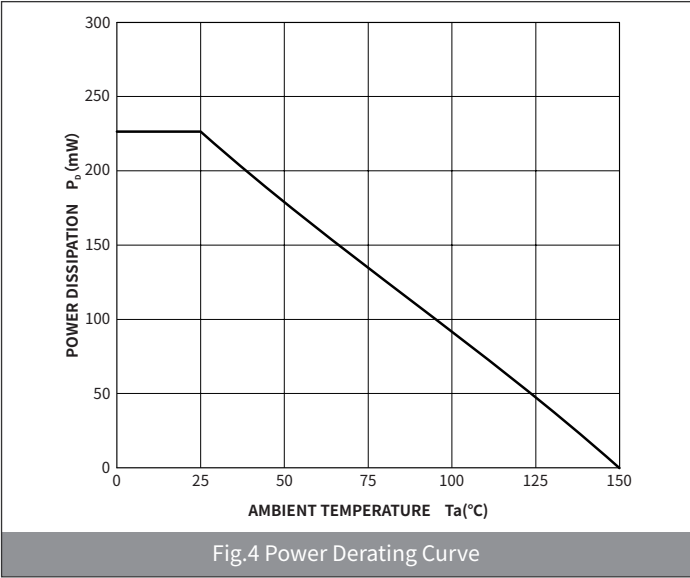
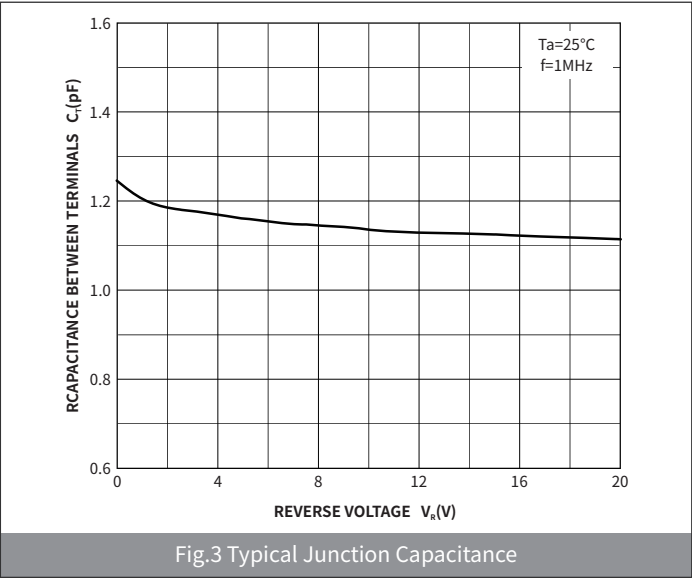
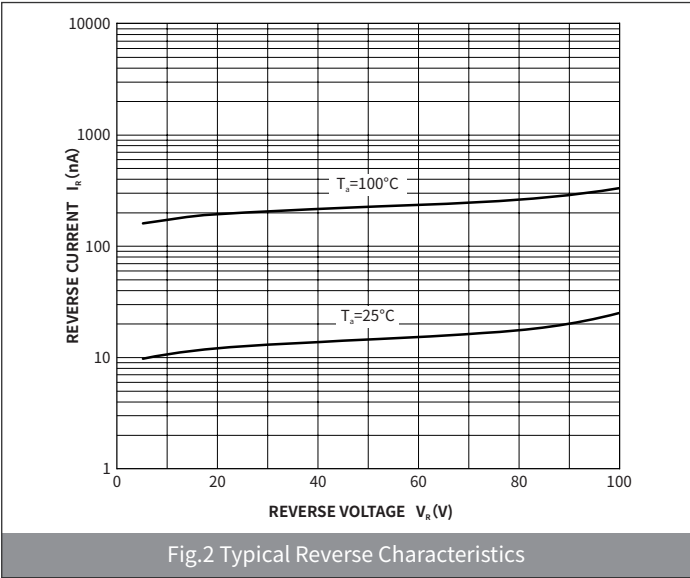
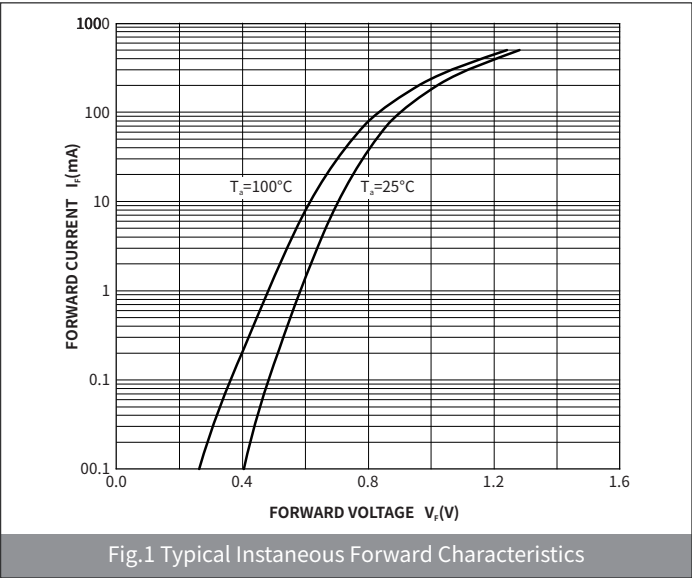
Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                                               | SYMBOL           | UNIT  | VALUE     |
|---------------------------------------------------------|------------------|-------|-----------|
| Maximum repetitive peak reverse voltage                 | $V_{RRM}$        | V     | 70        |
| Reverse Voltage                                         | $V_R$            | V     | 70        |
| Maximum Average Forward Rectified Current               | $I_{F(AV)}$      | mA    | 200       |
| Non-Repetitive peak forward current                     | $I_{FM}$         | mA    | 400       |
| Non-Repetitive Peak forward surge current @ $t_p=1.0ms$ | $I_{FSM}$        | A     | 2.0       |
| Power Dissipation                                       | $P_d$            | mW    | 225       |
| Storage temperature                                     | $T_{stg}$        | °C    | -55 ~+150 |
| Junction temperature                                    | $T_j$            | °C    | -55 ~+150 |
| Typical thermal resistance                              | $R_{\theta J-A}$ | °C /W | 500       |

Electrical Characteristics (Ta=25°C Unless otherwise noted)

| PARAMETER                             | TEST CONDITIONS                                     | SYMBOL      | UNIT    | Min | Type | Max   |
|---------------------------------------|-----------------------------------------------------|-------------|---------|-----|------|-------|
| Reverse Breakdown voltage             | $I_R=100\mu A$                                      | $V_{(BR)R}$ | V       | 70  | —    | —     |
| Maximum instantaneous forward voltage | $I_F=1.0mA$                                         | $V_F$       | V       | —   | —    | 0.715 |
|                                       | $I_F=10mA$                                          |             |         | —   | —    | 0.855 |
|                                       | $I_F=50mA$                                          |             |         | —   | —    | 1.0   |
|                                       | $I_F=150mA$                                         |             |         | —   | —    | 1.25  |
| Reverse Leakage Current               | $V_R=70V$                                           | $I_R$       | $\mu A$ | —   | —    | 2.5   |
| Total capacitance                     | $V_R=0V, f=1MHz$                                    | $C_T$       | pF      | —   | —    | 4.0   |
| Maximum reverse recovery time         | $I_F=I_R=10mA, I_{rr}=0.1\times I_R, R_L=100\Omega$ | $T_{rr}$    | ns      | —   | —    | 4.0   |

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



# BAW56 & BAV70 & BAV99

FAST SWITCHING DIODES

## ● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOT-23  | R1           | 0.008          | 3000      | 45000    | 180000      | 7"            |

## ● Package Outline Dimensions (SOT-23)

| Symbol | Dimensions  |      |          |       |
|--------|-------------|------|----------|-------|
|        | Millimeters |      | Inches   |       |
|        | Min.        | Max. | Min.     | Max.  |
| A      | 0.90        | 1.15 | 0.035    | 0.045 |
| A1     | -           | 0.10 | -        | 0.004 |
| A2     | 0.90        | 1.05 | 0.035    | 0.041 |
| b      | 0.30        | 0.50 | 0.012    | 0.020 |
| c      | 0.10        | 0.20 | 0.004    | 0.008 |
| D      | 2.80        | 3.00 | 0.110    | 0.118 |
| E      | 1.20        | 1.40 | 0.047    | 0.055 |
| E1     | 2.25        | 2.55 | 0.089    | 0.100 |
| e      | 0.950TYP    |      | 0.037TYP |       |
| e1     | 1.80        | 2.00 | 0.071    | 0.079 |
| L      | 0.550REF    |      | 0.022REF |       |
| L1     | 0.30        | 0.50 | 0.012    | 0.020 |
| θ      | -           | 8°   | -        | 8°    |

## ● Suggested Pad Layout

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| J      | 0.75        | 0.85 | 0.030  | 0.033 |
| K      | 0.85        | 0.95 | 0.033  | 0.037 |
| M      | 1.95        | 2.05 | 0.077  | 0.081 |
| N      | 1.85        | 1.95 | 0.073  | 0.077 |