

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

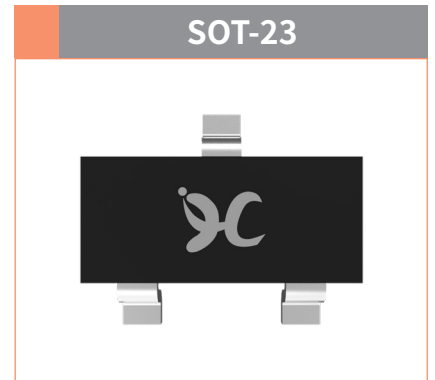
Mechanical Data

- 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

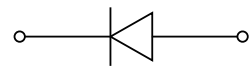
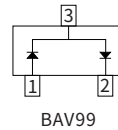
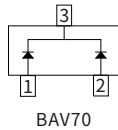
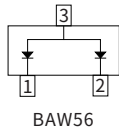
Function Diagram

Reverse Voltage
70 V

Forward Current
0.2 Ampere



Marking:
BAW56:A1
BAV70:A4
BAV99:A7



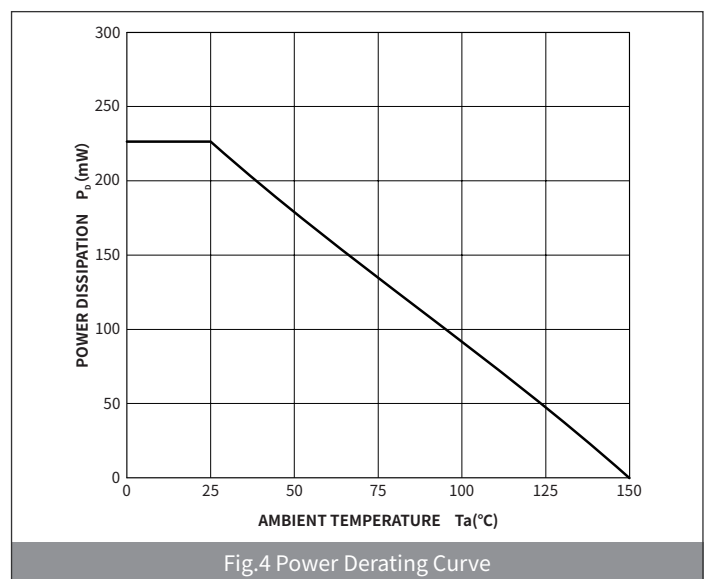
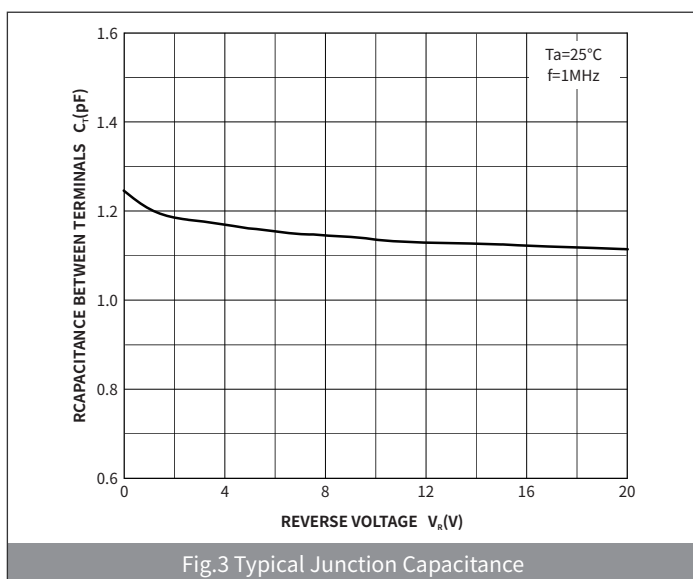
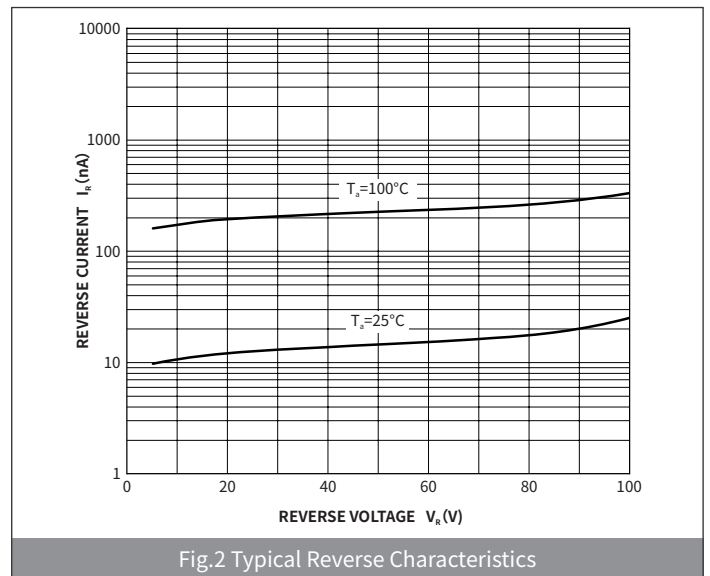
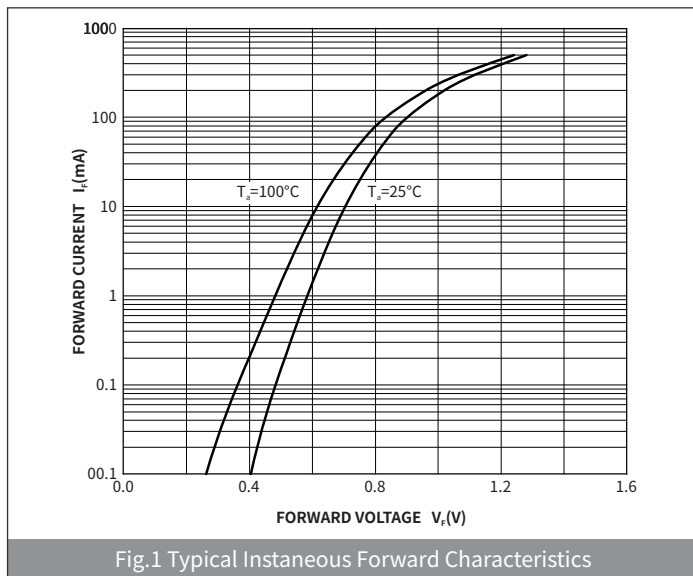
Maximum Ratings (Ta=25°C Unless otherwise specified)

| 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 | μA | — | — | 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)



● 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 |

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