

SOD123 Plastic-Encapsulate Diodes

Small Signal Fast Switching Diodes

Features

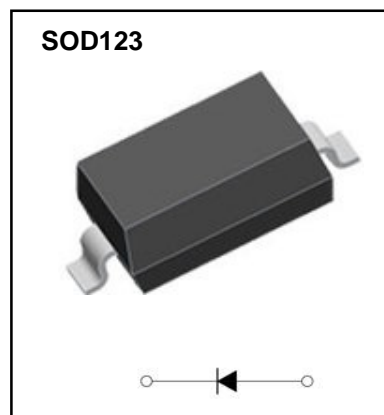
- Low Reverse Current
- Surface Mount Package Ideally Suited for Automatic Insertion
- Fast Switching Speed
- For General Purpose Switching Applications

Applications

- Extreme fast switches

Marking

- BAV19W: A8
- BAV20W: T2
- BAV21W: T3



Limiting Values (Absolute Maximum Rating)

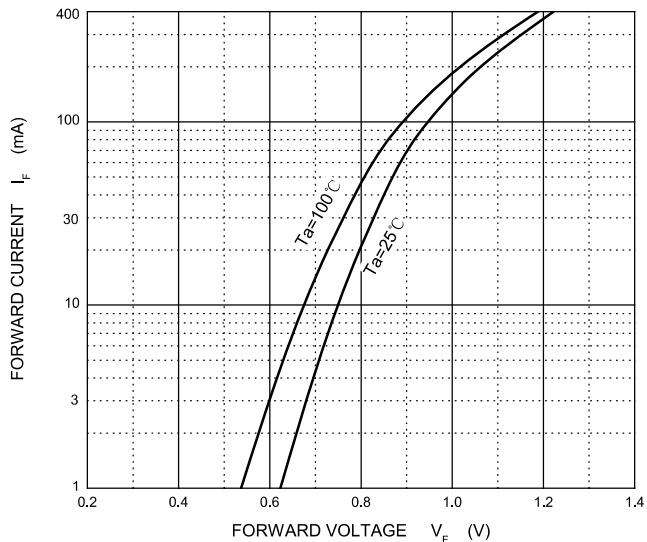
| Symbol | Parameter | Value | | | Unit |
|-----------------|---|----------|--------|--------|------|
| | | BAV19W | BAV20W | BAV21W | |
| V_{RM} | Non-Repetitive Peak Reverse Voltage | 120 | 200 | 250 | V |
| V_{RRM} | Peak Repetitive Reverse Voltage | 100 | 150 | 200 | V |
| V_{RWM} | Working Peak Reverse Voltage | | | | |
| $V_{R(RMS)}$ | RMS Reverse Voltage | 71 | 106 | 141 | V |
| I_O | Average Rectified Output Current | 200 | | | mA |
| I_{FSM} | Non-repetitive Peak Forward Surge Current @ t=8.3ms | 2.0 | | | A |
| P_D | Power Dissipation | 500 | | | mW |
| $R_{\theta JA}$ | Thermal Resistance from Junction to Ambient | 250 | | | °C/W |
| T_j | Junction Temperature | 150 | | | °C |
| T_{stg} | Storage Temperature | -55~+150 | | | °C |

ELECTRICAL CHARACTERISTICS($T_a=25^{\circ}C$ unless otherwise specified)

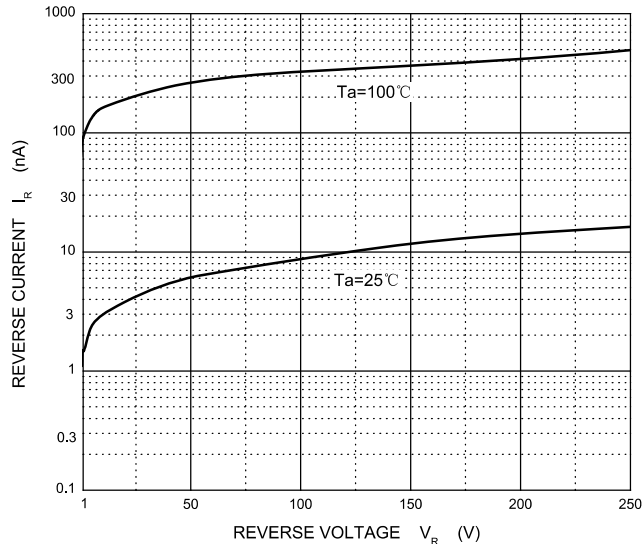
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-----------------------|-----------|---|--------|-----|------|------|
| Reverse current | I_R | $V_R=100V$ | BAV19W | | 0.1 | uA |
| | | $V_R=150V$ | BAV20W | | 0.1 | |
| | | $V_R=200V$ | BAV21W | | 0.1 | |
| Forward voltage | V_F | $I_F=100mA$ | | | 1 | V |
| | | $I_F=200mA$ | | | 1.25 | |
| Total capacitance | C_{tot} | $V_R=0V, f=1MHz$ | | | 5 | pF |
| Reverse recovery time | t_{rr} | $I_F=I_R=30mA, I_{rr}=0.1 \cdot I_R, R_L=100\Omega$ | | | 50 | ns |

Typical Characteristics

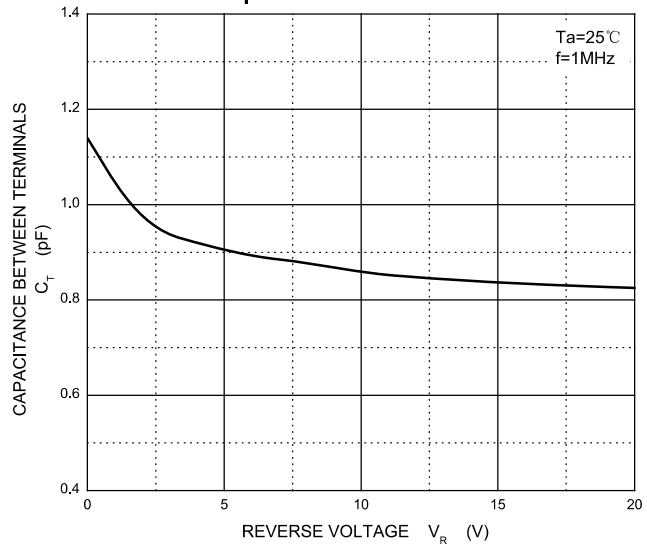
Forward Characteristics



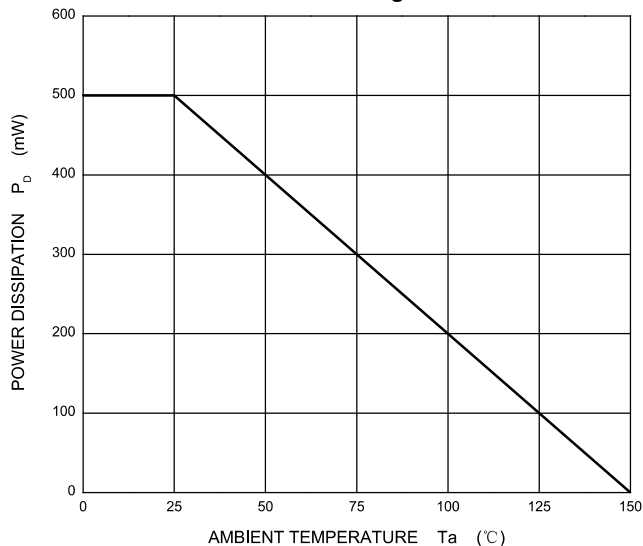
Reverse Characteristics



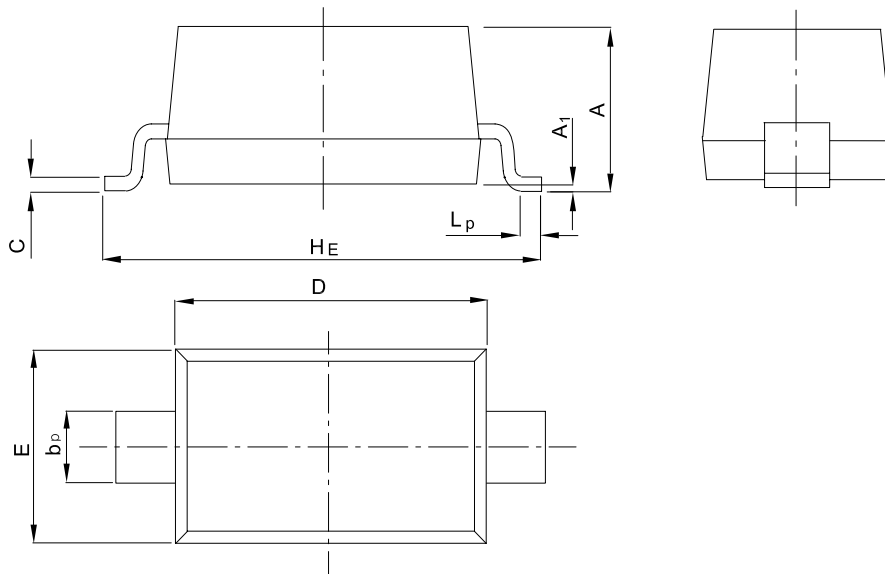
Capacitance Characteristics



Power Derating Curve

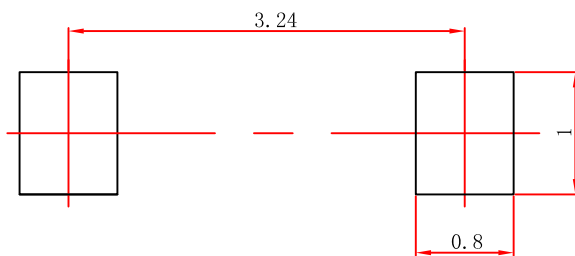


SOD-123 Package Outline Dimensions



| UNIT | A | b _p | C | D | E | H _E | A ₁ | L _p |
|------|--------------|----------------|----------------|--------------|--------------|----------------|----------------|----------------|
| mm | 1.20 0.90 | 0.60 0.50 | 0.135 0.100 | 2.75 2.55 | 1.65 1.55 | 3.85 3.55 | 0.10 0.01 | 0.50 0.20 |

SOD-123 Suggested Pad Layout



Note:

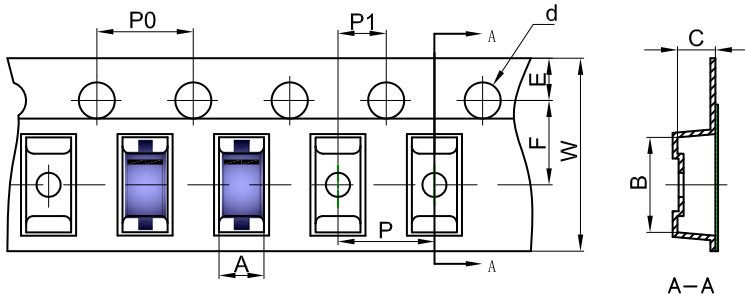
1. Controlling dimension: in millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

NOTICE

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Reel Taping Specifications For Surface Mount Devices-SOD123

SOD-123 Embossed Carrier Tape



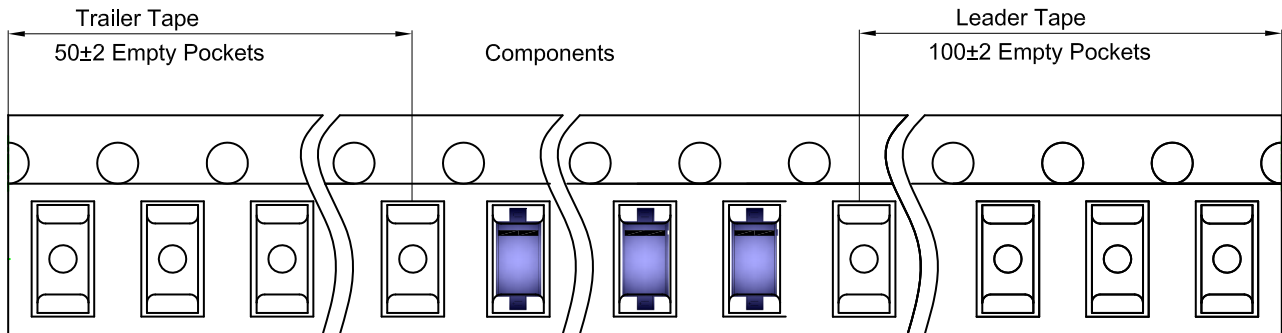
Packaging Description:

SOD-123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

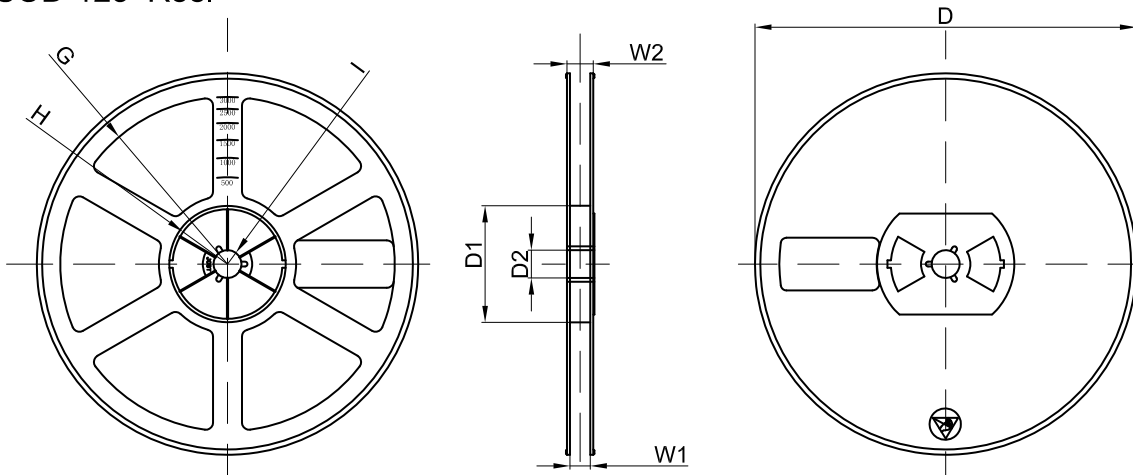
Dimensions are in millimeter

| Pkg type | A | B | C | d | E | F | P0 | P | P1 | W |
|----------|------|------|------|-------|------|------|------|------|------|------|
| SOD-123 | 1.85 | 3.95 | 1.57 | Ø1.55 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |

SOD-123 Tape Leader and Trailer



SOD-123 Reel



Dimensions are in millimeter

| Reel Option | D | D1 | D2 | G | H | I | W1 | W2 |
|-------------|---------|-------|-------|--------|--------|-------|------|-------|
| 7" Dia | Ø178.00 | 54.40 | 13.00 | R78.00 | R25.60 | R6.50 | 9.50 | 12.30 |

| REEL | Reel Size | Box | Box Size(mm) | Carton | Carton Size(mm) | G.W.(kg) |
|----------|-----------|------------|--------------|-------------|-----------------|----------|
| 3000 pcs | 7 inch | 45,000 pcs | 203×203×195 | 180,000 pcs | 438×438×220 | |

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