

FEATURES

Ultra small mold type
Low V_F
High reliability

VOLTAGE RANGE

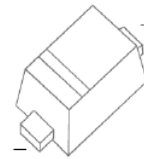
40 Volts

CURRENT

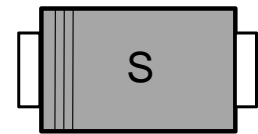
200mA

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: UL 94V-0 rate flame retardant
- * Metallurgically bonded construction
- * Polarity: Color band denotes cathode end
- * Mounting position: Any



SOD-523



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

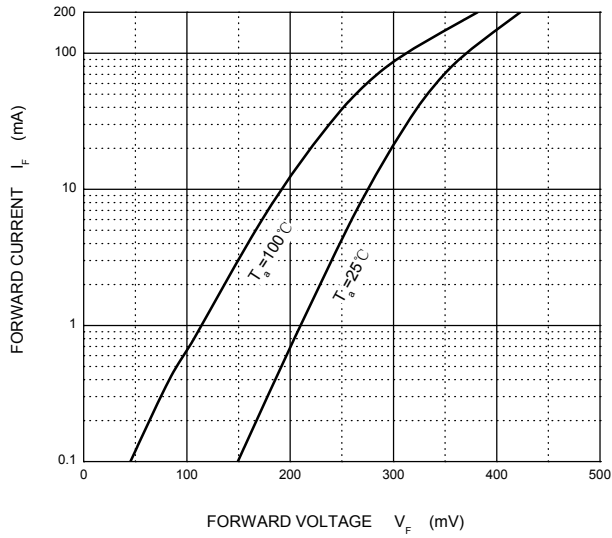
| Symbol | Parameter | Value | Unit |
|-----------------|---|----------|---------------|
| V_{RM} | Non-repetitive peak reverse voltage | 45 | V |
| V_{RRM} | Peak repetitive reverse voltage | 40 | V |
| V_{RWM} | Working peak reverse voltage | | |
| $V_{R(RMS)}$ | RMS reverse voltage | 28 | V |
| I_o | Average rectified output current | 200 | mA |
| I_{FSM} | Non-repetitive peak forward surge current @ $t=8.3ms$ | 1 | A |
| P_D | Power dissipation | 150 | mW |
| $R_{\theta JA}$ | Thermal resistance from junction to ambient | 667 | $^{\circ}C/W$ |
| T_J | Operating Junction Temperature Range | -40~+125 | $^{\circ}C$ |
| T_{stg} | Storage Temperature Range | -55~+150 | $^{\circ}C$ |

Characteristics at Ta = 25°C

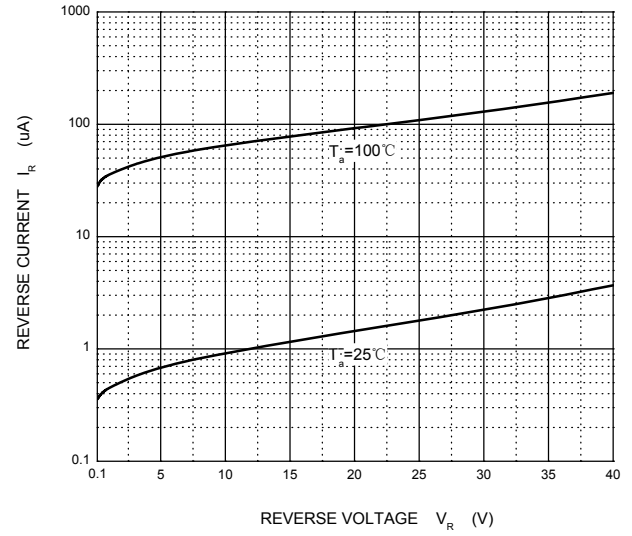
| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|-----------------|------------|-----------------|------|-----|------|---------|
| Reverse voltage | $V_{(BR)}$ | $I_R=0.1mA$ | 40 | | | V |
| Reverse current | I_R | $V_R=10V$ | | | 20 | μA |
| | | $V_R=40V$ | | | 90 | |
| Forward voltage | V_F | $I_F=10mA$ | 0.16 | | 0.3 | V |
| | | $I_F=100mA$ | 0.31 | | 0.45 | |
| | | $I_F=200mA$ | 0.41 | | 0.54 | |

RATING AND CHARACTERISTIC CURVES

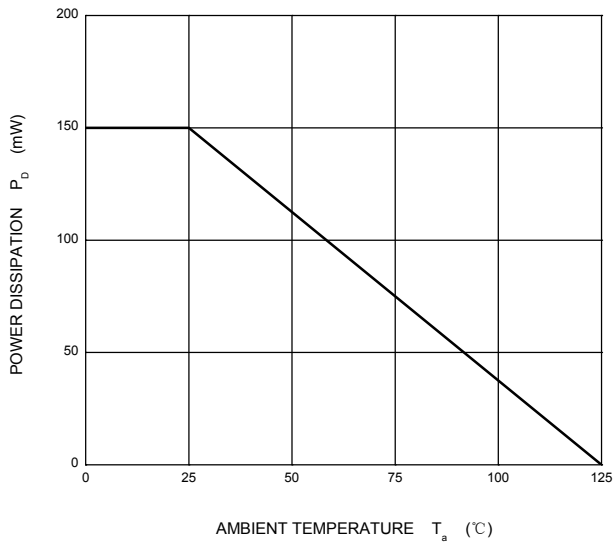
Forward Characteristics



Reverse Characteristics

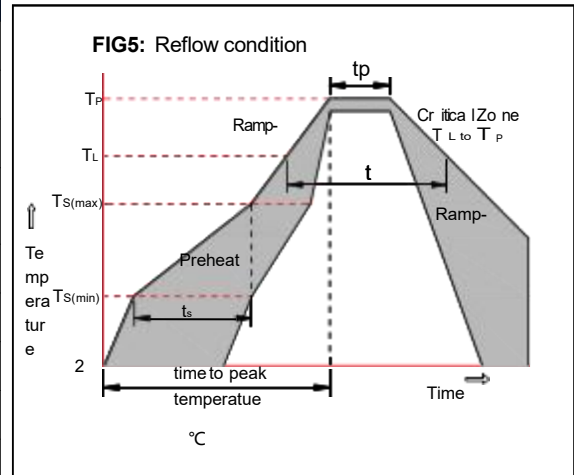


Power Derating Curve



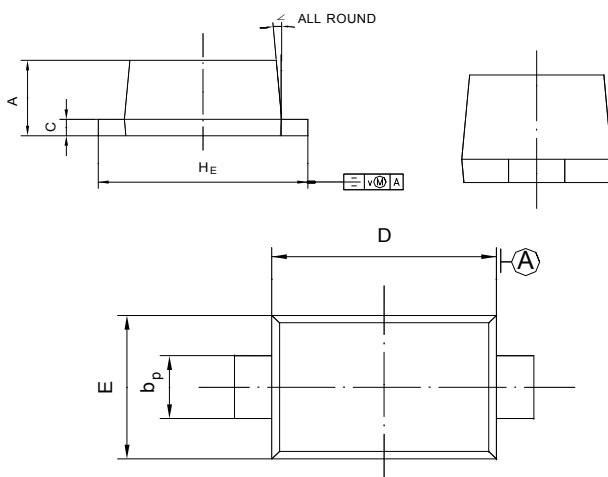
Soldering parameters

| Reflow Condition | | Pb-Free assembly (see as below) |
|---|-----------------------------------|------------------------------------|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150°C |
| | -Temperature Max($T_{s(max)}$) | +200°C |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp (T_L) to peak) | | 3°C/sec. Max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3°C/sec. Max |
| Reflow | -Temperature(T_L)(Liquid us) | +217°C |
| | -Temperature(t_L) | 60-150 secs. |
| Peak Temp (T_P) | | +260(+0/-5)°C |
| Time within 5°C of actual Peak Temp (t_p) | | 30 secs. Max |
| Ramp-down Rate | | 6°C/sec. Max |
| Time 25°C to Peak Temp (T_P) | | 8 min. Max |
| Do not exceed | | +260°C |

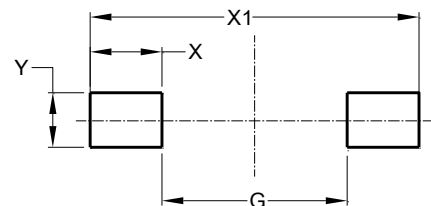


Package Dimensions & Suggested Pad Layout

SOD523

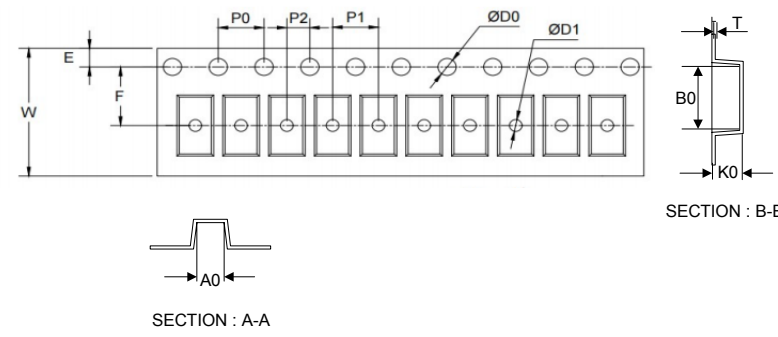
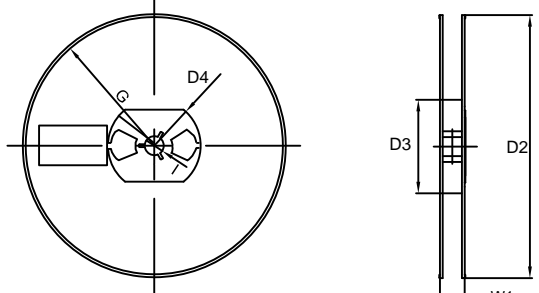


| UNIT | A | b_p | C | D | E | H_E | V | \angle |
|------|--------------|--------------|--------------|--------------|--------------|--------------|-----|----------|
| mm | 0.70 0.50 | 0.40 0.20 | 0.14 0.05 | 1.30 1.10 | 0.90 0.75 | 1.70 1.50 | 0.1 | 5° |



| Dimensions | Value (in mm) |
|------------|---------------|
| G | 0.85 |
| X | 0.70 |
| X1 | 2.25 |
| Y | 0.80 |

Tape & reel specification

| Tape | Symbol | Dimension (mm) | |
|---|---|----------------|-----------|
|  | P0 | 4.00±0.20 | |
| | P1 | 2.00±0.20 | |
| | P2 | 2.00±0.20 | |
| | D0 | 1.55±0.20 | |
| | D1 | 0.50±0.20 | |
| | E | 1.55±0.25 | |
| | F | 3.60±0.20 | |
| | W | 8.00±0.20 | |
| | A0 | 1.30±0.20 | |
| | B0 | 2.35±0.20 | |
| | K0 | 0.95±0.20 | |
| | T | 0.20±0.20 | |
| | 7" Reel | D2 | 177.0±5.0 |
| |  | D3 | 55Min. |
| | | D4 | R24.6±2.0 |
| | | G | R82.0±2.0 |
| I | | 13.0±2.0 | |
| W1 | | 10.20±3.0 | |
| Quantity: 3000PCS | | | |