



A7

VOLTAGE RANGE

1000 Volts

CURRENT

1.0 Ampere

Features

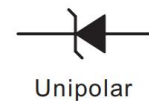


- Glass passivated: chip 50mil
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260°C/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC



Mechanical Data

- Case: JEDEC SOD-123FL mold plastic Body over glass passivated chip
- Terminals: Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.00063ounce, 0.018grams



Unipolar

Maximum Ratings and Electrical Characteristics

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

| TYPE NUMBER | SYMBOLS | A7 | UNITS |
|--|---------------------------|--------------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 1000 | Volts |
| Maximum RMS Voltage | V_{RMS} | 700 | Volts |
| Maximum DC Blocking Voltage | V_{DC} | 1000 | Volts |
| Maximum Average Forward Rectified Current | $I_{(AV)}$ | 1.0 | Amps |
| Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC method) | I_{FSM} | 30 | Amps |
| Maximum Instantaneous Forward Voltage at 1.0A | V_F | 1.1 | Volts |
| Power Dissipation Derate Above at 25°C | P_d | 0.98 | W |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | $T_A = 25^\circ\text{C}$ | 5.0 | μA |
| | $T_A = 125^\circ\text{C}$ | 50 | |
| Maximum Reverse Recovery Time (NOTE3) | T_{RR} | 1000 to 2000 | nS |
| Typical Junction Capacitance (NOTE 1) | C_J | 15 | pF |
| Typical Thermal Resistance (NOTE 2) | $R_{\theta JA}$ | 60 | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Thermal Resistance from Junction to Ambient at 1.8×1.8mm² copper pad areas.
3. Reverse Recovery Test Conditions: $I_f=0.5\text{A}, I_r=1.0\text{A}, I_{rr}=0.25\text{A}$.



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Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

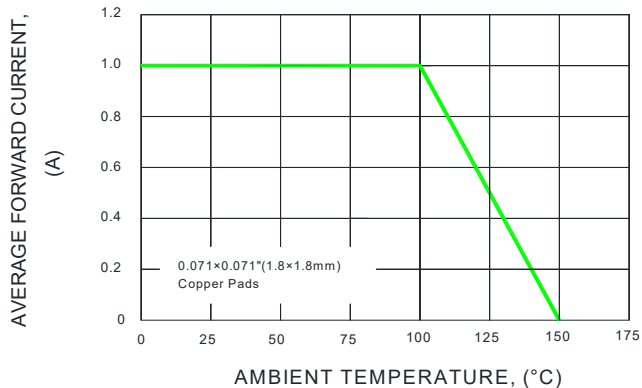


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

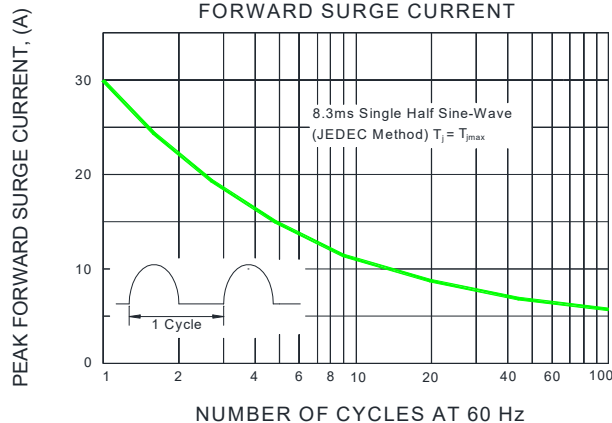


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

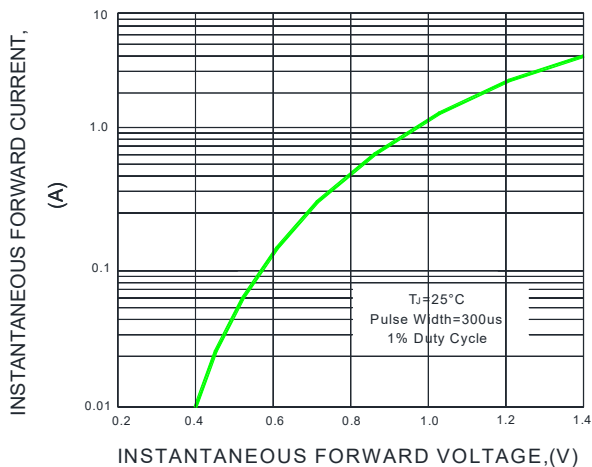


FIG.4-TYPICAL REVERSE CHARACTERISTICS

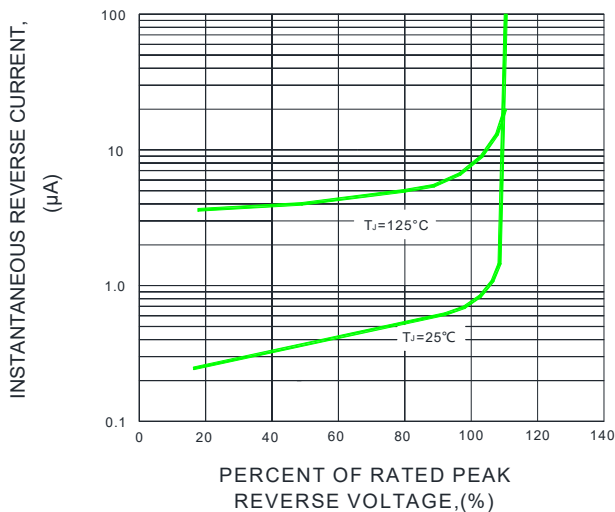
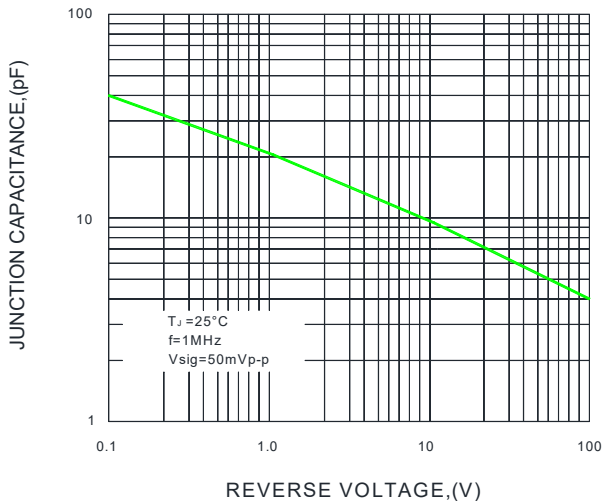


FIG.5-TYPICAL JUNCTION CAPACITANCE





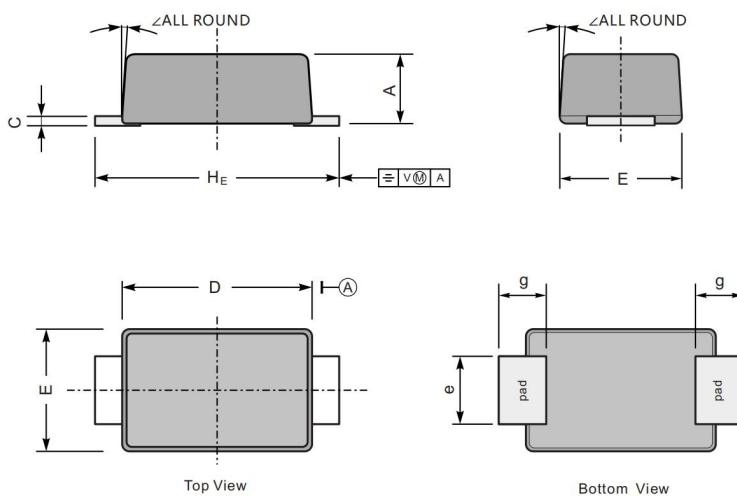
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Package Outline Dimensions in inches (millimeters)

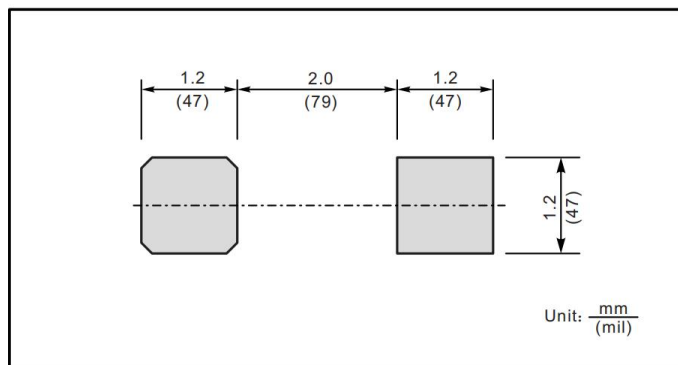
SOD-123FL

Unit: mm



| UNIT | | A | C | D | E | e | g | H _E | \angle |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----------|
| mm | max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8 | 7° |
| | min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5 | |
| mil | max | 43 | 7.9 | 114 | 75 | 43 | 35 | 150 | |
| | min | 35 | 4.7 | 102 | 67 | 31 | 28 | 138 | |

The recommended mounting pad size



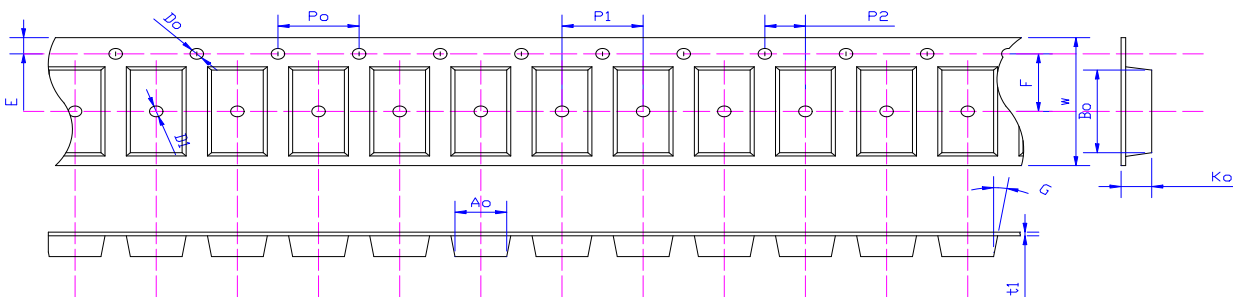


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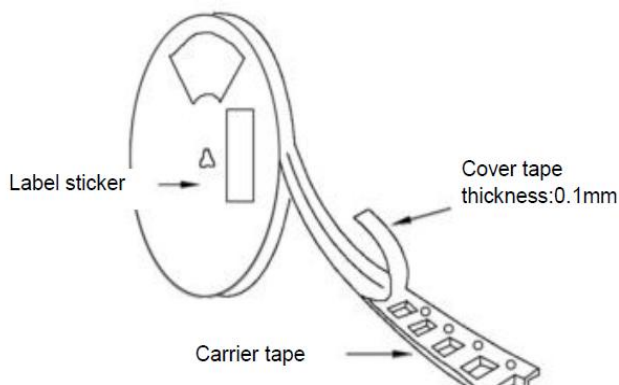
Packing Requirments

- PS black anti-static carrier tape packing



| Specifications | Ao | Bo | Ko | Po | W | t1 |
|----------------|-----------|-----------|-----------|----------|----------|-----------|
| SOD123FL | 2.12±0.10 | 3.95±0.10 | 1.35±0.10 | 4.00±0.1 | 8.0±0.10 | 0.20±0.02 |

- 7 "antistatic plastic reel



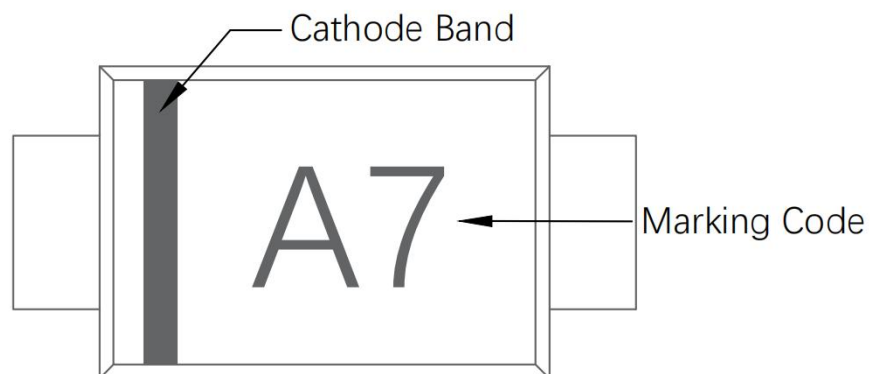
| DEVICE TYPE | 07" Reel | | | |
|-------------|----------------|----------|-------------|------------------|
| | Q'TY/REEL(pcs) | REEL/BOX | BOX/CARTOON | Q'TY/CARTON(pcs) |
| SOD123FL | 3000 | 4 | 16 | 192000 |



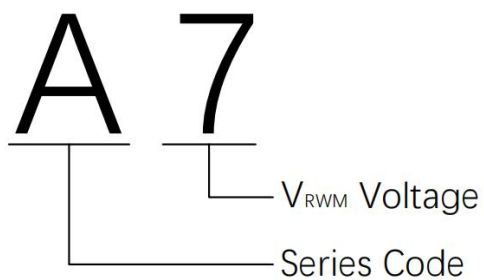
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| | |
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Marking Code



Part Number Code

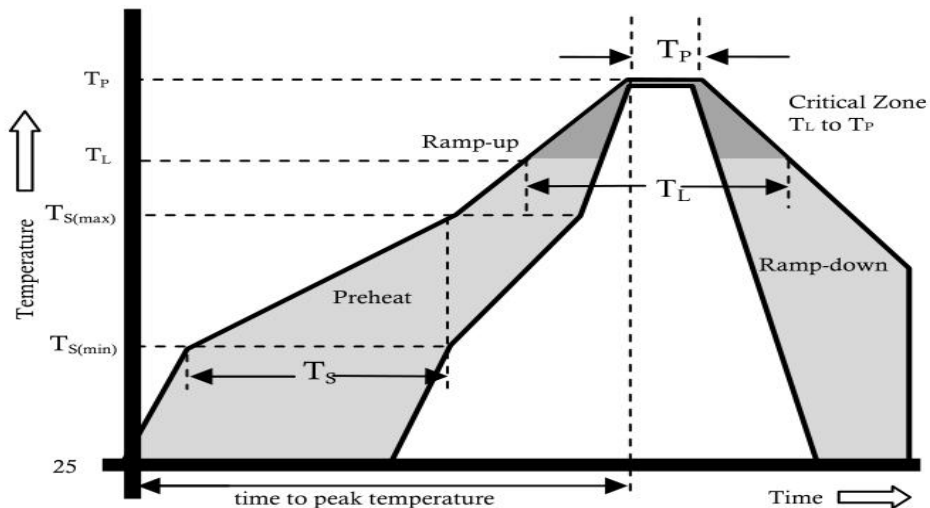




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Reflow Profile



| Reflow Condition | | Pb-Free Assembly |
|--|---------------------------------|------------------|
| Pre Heat | Temperature Min. | +150°C |
| | Temperature Max. | +200°C |
| | Time(Min to Max) | 60-180 secs. |
| Average ramp up rate(Liquidus 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)(Liquidus) | +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) | | 25 secs. |
| Ramp-down Rate | | 6°C/sec. Max. |
| Time 25°C to peak Temp (T_P) | | 8 min. Max. |
| Do not exceed | | +260°C |



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