
Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)



Top View

Maximum Ratings @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|-------------------------------------|---------------------|-------|------|
| Peak Repetitive Reverse Voltage | V _{RRM} | 45 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 40 | V |
| Forward Continuous Current (Note 1) | I _{FM} | 100 | mA |
| Forward Surge Current @ t < 8.3ms | I _{FSM} | 1.0 | A |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 1) | P _D | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 1) | R _{θJA} | 500 | °C/W |
| Operating and Storage Temperature Range (Note 5) | T _J , T _{STG} | -40 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|------|-----|------|----------------------------------|
| Reverse Breakdown Voltage (Note 2) | V _{(BR)R} | 45 | — | — | — | I _R = 100μA |
| Forward Voltage | V _F | — | 370 | 450 | mV | I _F = 10mA |
| Reverse Leakage Current (Note 2) | I _R | — | 0.07 | 1.0 | μA | V _R = 10V |
| Total Capacitance | C _T | — | 6.0 | — | pF | V _R = 10V, f = 1.0MHz |

- Notes:
1. Device mounted on FR-5 PCB 1.0 x 0.75 x 0.062 inch pad layout as shown on Diodes, Inc. suggested pad layout AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>
 2. Short duration pulse test used to minimize self-heating effect.
 3. No purposefully added lead. Halogen and Antimony Free.
 4. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.
 5. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: dP_D/dT_J < 1/R_{θJA}

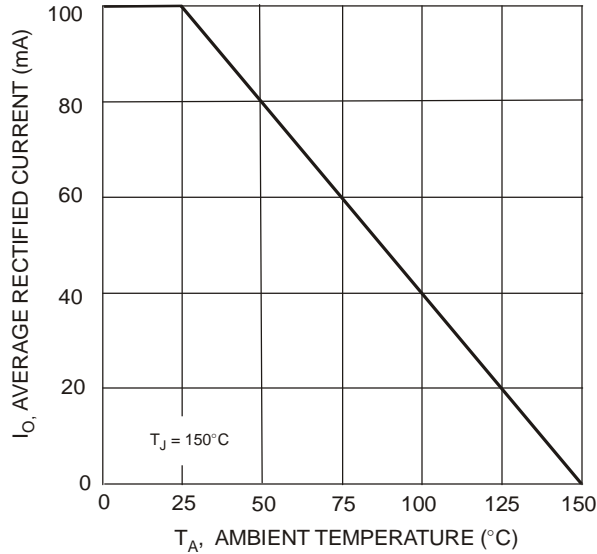


Fig. 1 Forward Current Derating Curve

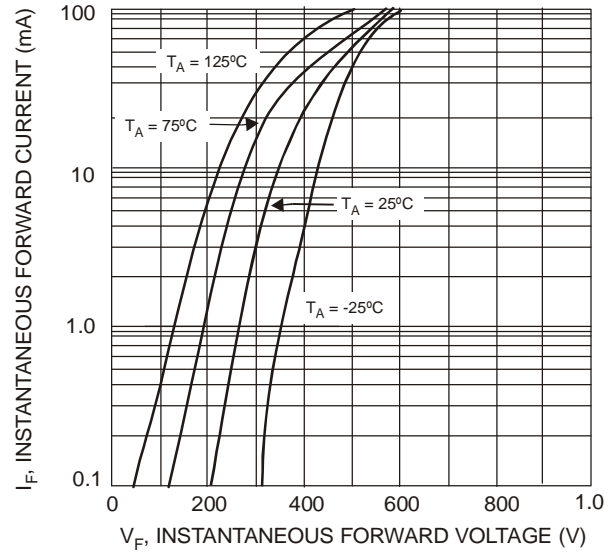


Fig. 2 Typical Forward Characteristics

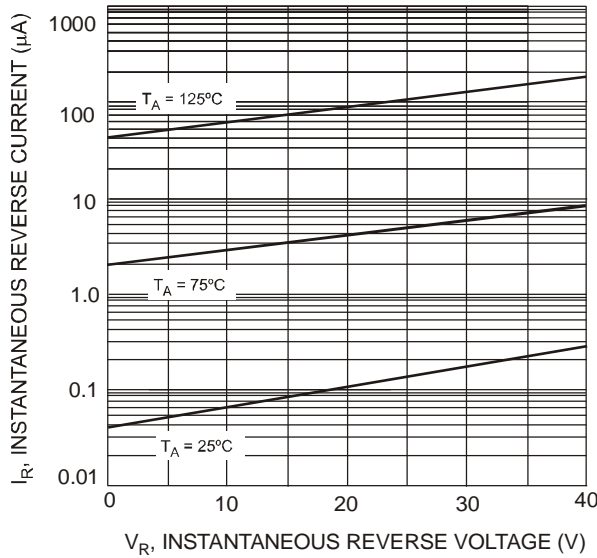


Fig. 3 Typical Reverse Characteristics

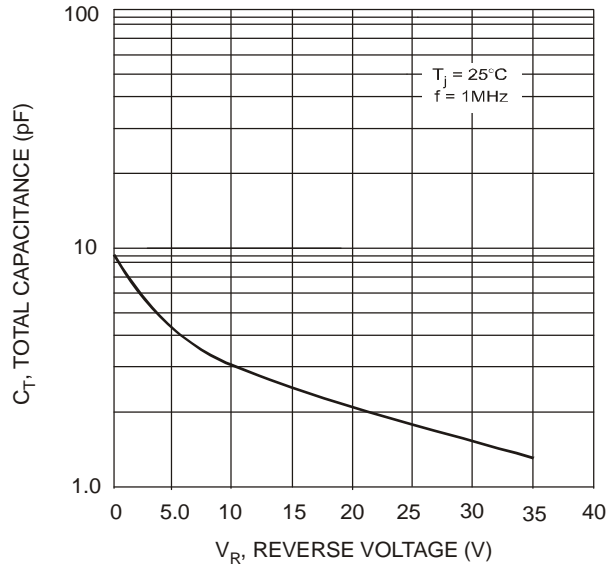


Fig. 4 Total Capacitance vs. Reverse Voltage

Ordering Information (Note 6)

| Part Number | Case | Packaging |
|--------------|---------|------------------|
| SDM10K45-7-F | SOD-323 | 3000/Tape & Reel |

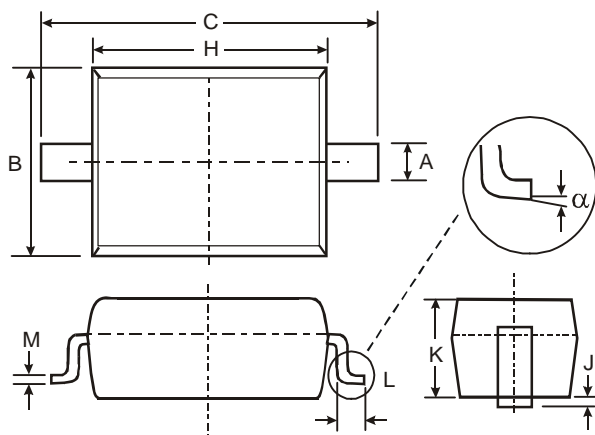
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



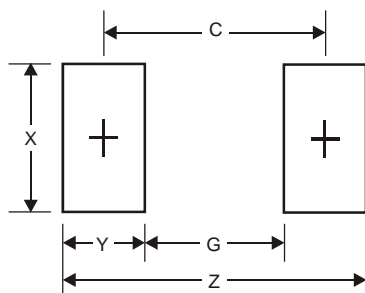
LG = Product Type Marking Code
Cathode band denotes polarity

Package Outline Dimensions



| SOD-323 | | |
|----------------------|------|------|
| Dim | Min | Max |
| A | 0.25 | 0.35 |
| B | 1.20 | 1.40 |
| C | 2.30 | 2.70 |
| H | 1.60 | 1.80 |
| J | 0.00 | 0.10 |
| K | 1.0 | 1.1 |
| L | 0.20 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0° | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 3.75 |
| G | 1.05 |
| X | 0.65 |
| Y | 1.35 |
| C | 2.40 |

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