

## Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, fast switching capability
- 150°C Operating Junction Temperature
- **Lead, Halogen and Antimony Free, RoHS Compliant**
- **"Green" Device (Note 1)**

## Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Leads: Solderable per MIL-STD-202, Method 208
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe)
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.004 grams (approximate)



Top View

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitance load, derate current by 20%.

| Characteristic                                                                                      | Symbol           | Value | Unit |
|-----------------------------------------------------------------------------------------------------|------------------|-------|------|
| Peak Repetitive Reverse Voltage                                                                     | V <sub>RRM</sub> | 60    | V    |
| Working Peak Reverse Voltage                                                                        | V <sub>RWM</sub> |       |      |
| DC Blocking Voltage                                                                                 | V <sub>RM</sub>  |       |      |
| Average Rectified Output Current                                                                    | I <sub>O</sub>   | 500   | mA   |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 15    | A    |

## Thermal Characteristics

| Characteristic                                      | Symbol                            | Value       | Unit |
|-----------------------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance                          | R <sub>θJA</sub>                  | 305         | °C/W |
| Thermal Resistance Junction to Ambient Air (Note 2) |                                   |             |      |
| Thermal Resistance Junction to Ambient Air (Note 3) |                                   |             |      |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

| Characteristic              | Symbol         | Min | Typ            | Max                  | Unit     | Test Condition                                                                                                                                 |
|-----------------------------|----------------|-----|----------------|----------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Forward Voltage (Per Diode) | V <sub>F</sub> | -   | -<br>0.44<br>- | 0.44<br>0.50<br>0.46 | V        | I <sub>F</sub> = 0.25A, T <sub>J</sub> = 25°C<br>I <sub>F</sub> = 0.5A, T <sub>J</sub> = 25°C<br>I <sub>F</sub> = 0.5A, T <sub>J</sub> = 125°C |
| Leakage Current (Note 4)    | I <sub>R</sub> | -   | -<br>-         | 100<br>25            | μA<br>mA | V <sub>R</sub> = 60V, T <sub>J</sub> = 25°C<br>V <sub>R</sub> = 60V, T <sub>J</sub> = 125°C                                                    |

- Notes:
1. No purposefully added lead. Halogen and Antimony Free.
  2. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  3. Part mounted on Polyimide board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  4. Short duration pulse test used to minimize self-heating effect.

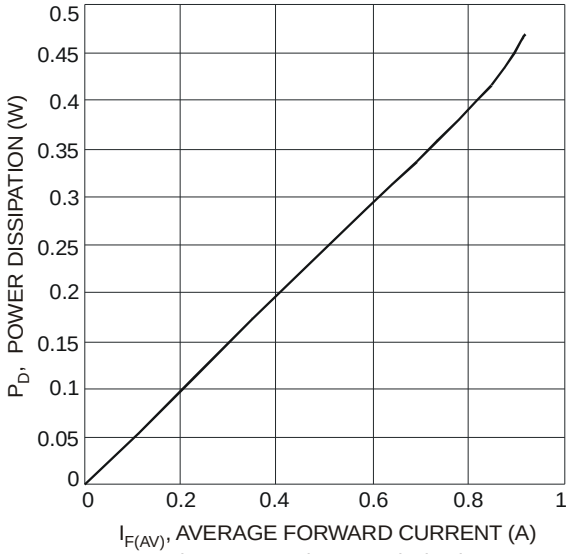


Fig. 1 Forward Power Dissipation

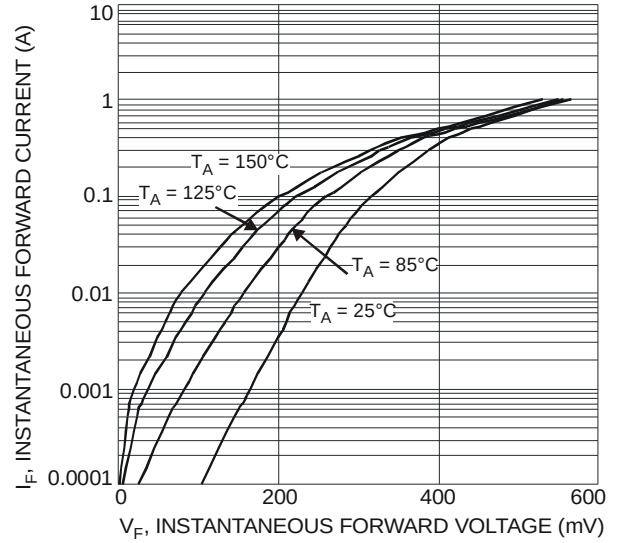


Fig. 2 Typical Forward Characteristics

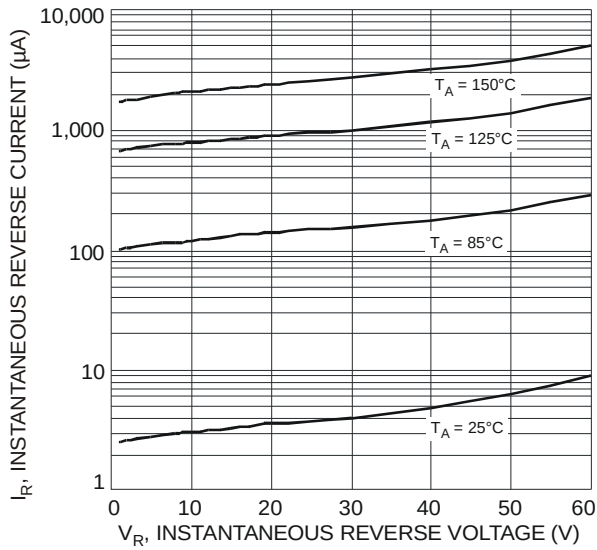


Fig. 3 Typical Reverse Characteristics

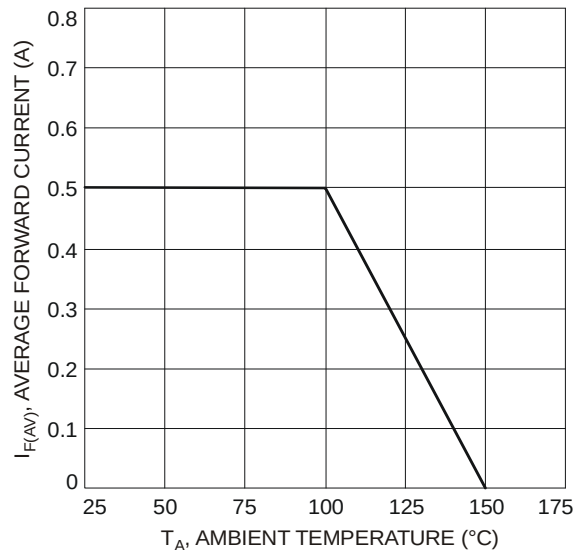


Fig. 4 Forward Current Derating Curve

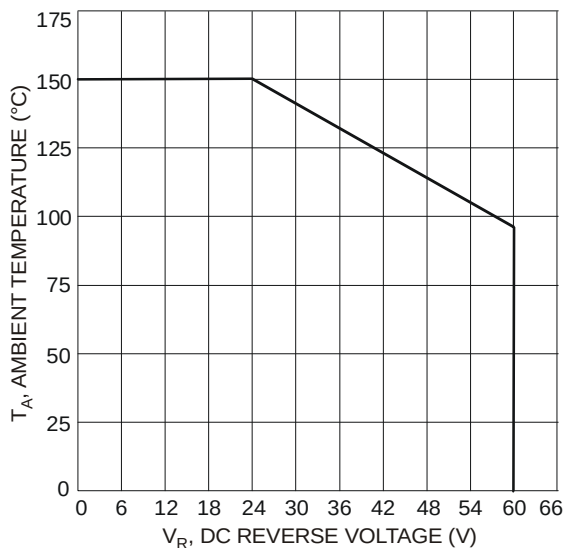


Fig. 5 Operating Temperature Derating

## Ordering Information (Note 5)

| Part Number | Case    | Packaging        |
|-------------|---------|------------------|
| SBR0560S1-7 | SOD-123 | 3000/Tape & Reel |

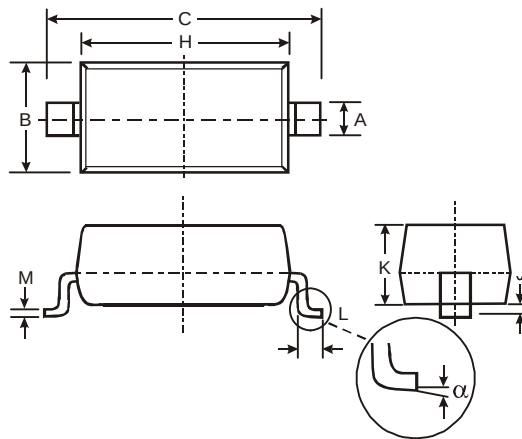
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

## Marking Information



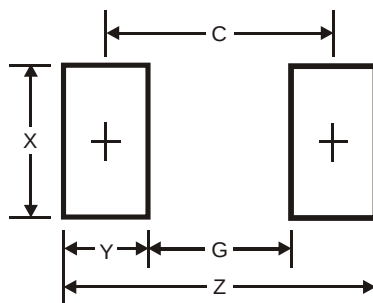
56 = Product Type Marking Code

## Package Outline Dimensions



| SOD-123              |          |      |
|----------------------|----------|------|
| Dim                  | Min      | Max  |
| A                    | 0.55 Typ |      |
| B                    | 1.40     | 1.70 |
| C                    | 3.55     | 3.85 |
| H                    | 2.55     | 2.85 |
| J                    | 0.00     | 0.10 |
| K                    | 1.00     | 1.35 |
| L                    | 0.25     | 0.40 |
| M                    | 0.10     | 0.15 |
| $\alpha$             | 0        | 8°   |
| All Dimensions in mm |          |      |

## Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 4.9           |
| G          | 2.5           |
| X          | 0.7           |
| Y          | 1.2           |
| C          | 3.7           |

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