

## Features

- Very Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- **Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 2, 4 and 5)**

## Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: Cathode Band
- Terminals: Finish – Matte Tin Annealed Over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.004 grams (approximate)



Top View

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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   | $V_{RRM}$    | 30    | V    |
| Working Peak Reverse Voltage  | $V_{RWM}$    |       |      |
| DC Blocking Voltage   | $V_R$        |       |      |
| RMS Reverse Voltage   | $V_{R(RMS)}$ | 21    | V    |
| Average Rectified Output Current  | $I_O$        | 1     | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$    | 9     | A    |

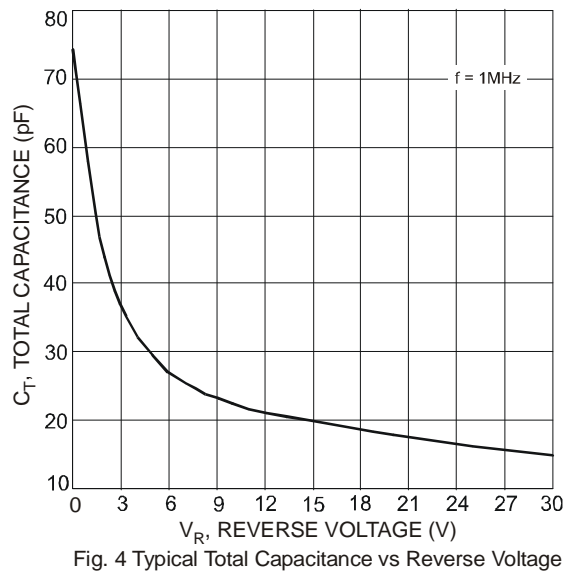
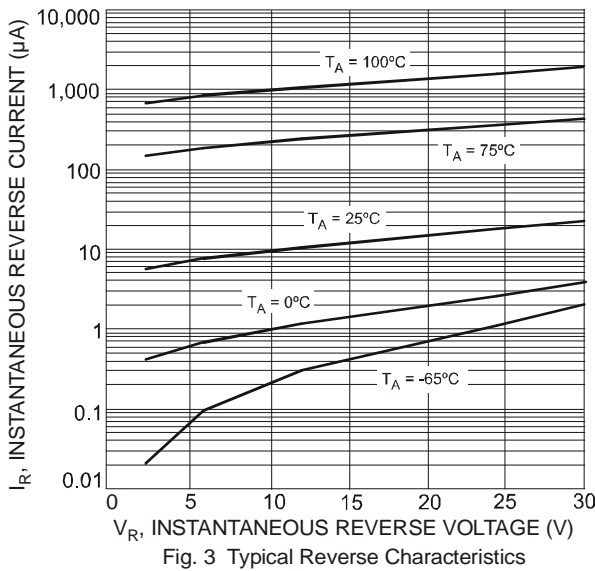
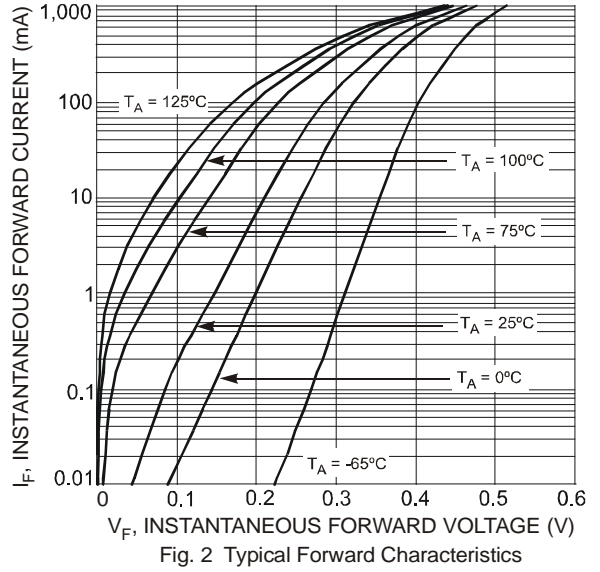
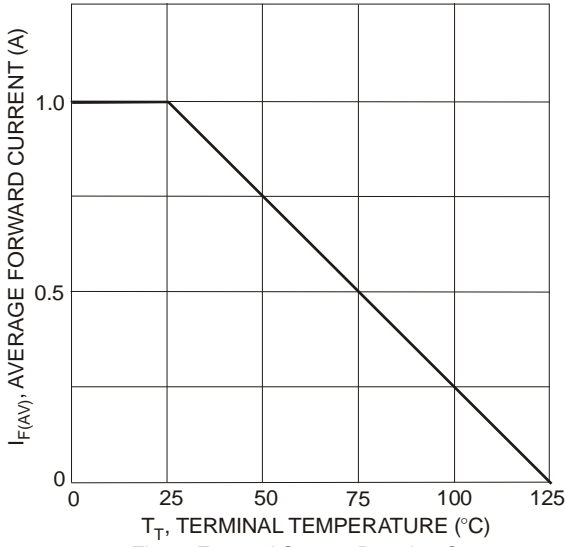
## Thermal Characteristics

| Characteristic  | Symbol          | Value       | Unit                      |
|---|-----------------|-------------|---------------------------|
| Power Dissipation (Note 1)                              | $P_D$           | 200         | mW                        |
| Typical Thermal Resistance Junction to Ambient (Note 1) | $R_{\theta JA}$ | 426         | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range                 | $T_J, T_{STG}$  | -65 to +125 | $^\circ\text{C}$          |

## Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic                     | Symbol      | Min | Typ | Max        | Unit          | Test Conditions                           |
|------------------------------------|-------------|-----|-----|------------|---------------|---|
| Reverse Breakdown Voltage (Note 3) | $V_{(BR)R}$ | 30  | —   | —          | V             | $I_R = 500\mu\text{A}$                    |
| Forward Voltage Drop               | $V_F$       | —   | —   | 360<br>485 | mV            | $I_F = 100\text{mA}$<br>$I_F = 1\text{A}$ |
| Leakage Current (Note 3)           | $I_R$       | —   | —   | 100        | $\mu\text{A}$ | $V_R = 20\text{V}$                        |
| Total Capacitance                  | $C_T$       | —   | 22  | —          | pF            | $f = 1\text{MHz}, V_R = 10\text{VDC}$     |

- Notes:
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Diodes Inc's "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).
  3. Short duration pulse test used to minimize self-heating effect.
  4. No purposefully added lead. Halogen and Antimony Free.
  5. Product manufactured with Green Molding Compound and does not contain Halogens or  $\text{Sb}_2\text{O}_3$  Fire Retardants.

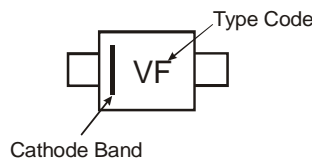


**Ordering Information** (Note 6)

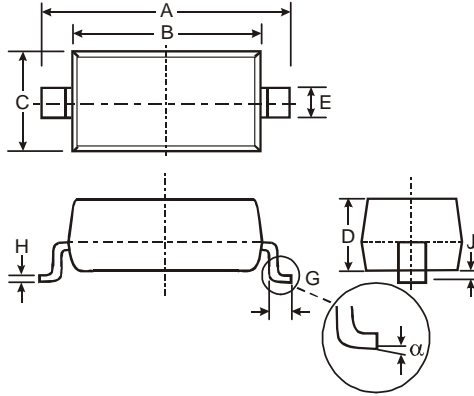
| Part Number  | Case    | Packaging        |
|--------------|---------|------------------|
| SDM100K30L-7 | SOD-323 | 3000/Tape & Reel |

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

**Marking Information**

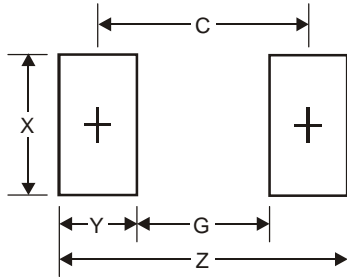


**Package Outline Dimensions**



| SOD-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 2.30         | 2.70 |
| B                    | 1.60         | 1.80 |
| C                    | 1.20         | 1.40 |
| D                    | 1.05 Typical |      |
| E                    | 0.25         | 0.35 |
| G                    | 0.20         | 0.40 |
| H                    | 0.10         | 0.15 |
| J                    | 0.00         | 0.10 |
| 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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