

## Features

- Low Forward Voltage Drop
- Guard Ring Die Construction for Transient Protection
- Ideal for low logic level applications
- Low Capacitance
- **Lead Free by Design/RoHS Compliant (Note 1)**
- **"Green" Device, Note 4 and 5**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound, Note 5. 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 3
- Ordering Information: See Page 3
- Weight: 0.002 grams (approximate)



Top View

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

| Characteristic  | Symbol       | Value | Unit |
|---|--------------|-------|------|
| Peak Reverse Voltage  | $V_{RM}$     | 40    | V    |
| DC Reverse Voltage  | $V_R$        | 30    | V    |
| RMS Reverse Voltage   | $V_{R(RMS)}$ | 21    | V    |
| Average Rectified Current   | $I_O$        | 30    | mA   |
| Non-Repetitive Peak Forward Surge Current @8.3ms Single half sine-wave superimposed on rated load | $I_{FSM}$    | 200   | mA   |

## Thermal Characteristics

| Characteristic                                   | Symbol          | Value       | Unit               |
|--|-----------------|-------------|--------------------|
| Power Dissipation (Note 2)                       | $P_D$           | 150         | mW                 |
| Thermal Resistance, Junction to Ambient (Note 2) | $R_{\theta JA}$ | 667         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range          | $T_J, T_{STG}$  | -40 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) | $V_{(BR)R}$ | 40  | —   | —   | V             | $I_R = 10\mu\text{A}$                |
| Forward Voltage                    | $V_F$       | —   | 290 | 370 | mV            | $I_F = 1\text{mA}$                   |
| Peak Reverse Current (Note 3)      | $I_R$       | —   | —   | 0.5 | $\mu\text{A}$ | $V_R = 30\text{V}$                   |
| Total Capacitance                  | $C_T$       | —   | 2   | —   | pF            | $V_R = 1\text{V}, f = 1.0\text{MHz}$ |

- Notes:
1. No purposefully added lead.
  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. Short duration pulse test used to minimize self-heating effect.
  4. 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).
  5. Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb2O3 Fire Retardants.

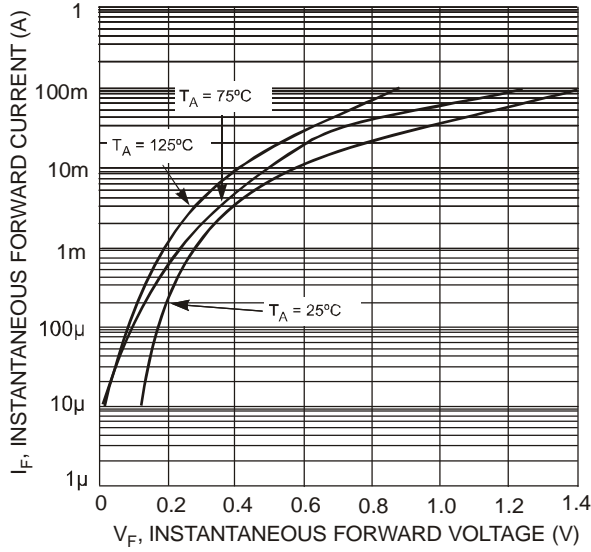


Fig. 1 Typical Forward Characteristics

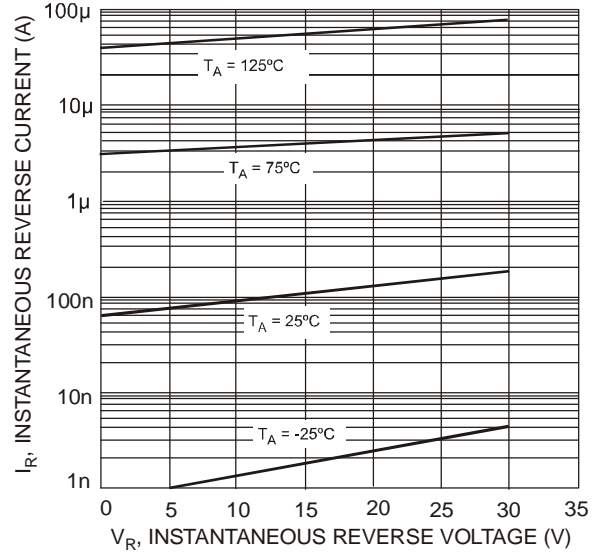


Fig. 2 Typical Reverse Characteristics

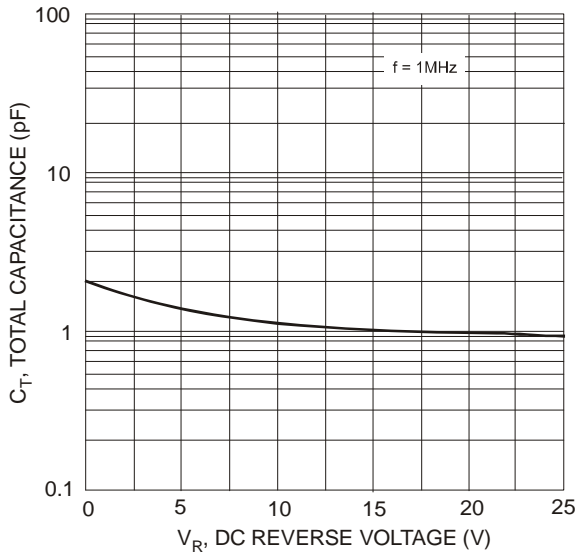


Fig. 3 Total Capacitance vs. Reverse Voltage

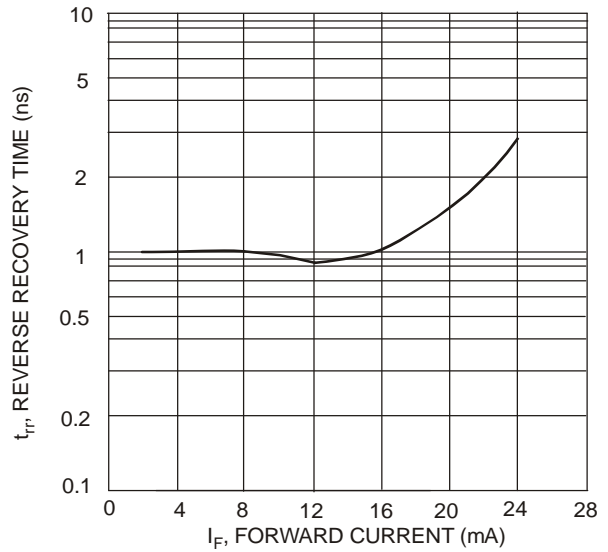


Fig. 4 Typical Reverse Recovery Time Characteristics

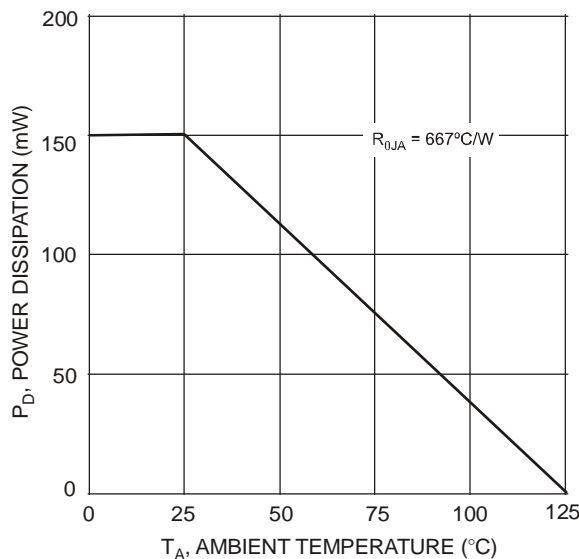


Fig. 5 Power Derating Curve

### Ordering Information (Notes 5 & 6)

| Part Number         | Case    | Packaging        |
|---------------------|---------|------------------|
| SDM03U40-7 (Note 7) | SOD-523 | 3000/Tape & Reel |
| SDM03U40-76K        | SOD-523 | 6000/Tape & Reel |

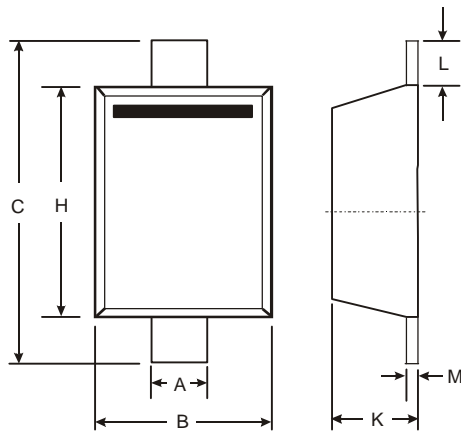
Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
 7. Dispensed in every other cavity of the tape.

### Marking Information



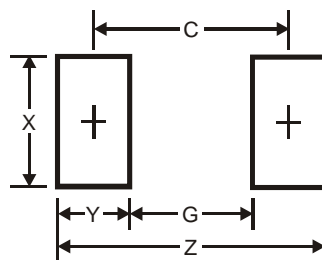
LK = Product Type Marking Code

### Package Outline Dimensions



| SOD-523                     |      |      |
|-----------------------------|------|------|
| Dim                         | Min  | Max  |
| A                           | 0.25 | 0.35 |
| B                           | 0.70 | 0.90 |
| C                           | 1.50 | 1.70 |
| H                           | 1.10 | 1.30 |
| K                           | 0.55 | 0.70 |
| L                           | 0.10 | 0.30 |
| M                           | 0.10 | 0.20 |
| <b>All Dimensions in mm</b> |      |      |

### Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z          | 2.3           |
| G          | 1.1           |
| X          | 0.8           |
| Y          | 0.6           |
| C          | 1.7           |

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