

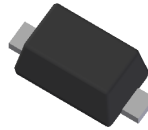
Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOD523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Matte Tin Finish (Lead Free Plating) annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.002 grams (approximate)

SOD523



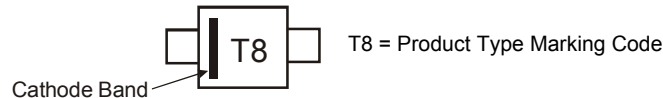
Top View

Ordering Information (Notes 4 & 5)

| Part Number (Note 6) | Case | Packaging |
|----------------------|--------|-------------------|
| 1N4448HWT-7 | SOD523 | 3000/Tape & Reel |
| 1N4448HWT-13 | SOD523 | 10000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>
 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.
 6. Dispensed in every other cavity of the tape.

Marking Information



Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit | |
|---|---------------------|------------|------|---|
| Non-Repetitive Peak Reverse Voltage | V _{RM} | 100 | V | |
| Peak Repetitive Reverse Voltage | V _{RRM} | 80 | V | |
| Working Peak Reverse Voltage | V _{RWM} | | | |
| DC Blocking Voltage | V _R | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 57 | V | |
| Forward Continuous Current | I _{FM} | 250 | mA | |
| Average Rectified Output Current | I _O | 125 | mA | |
| Non-Repetitive Peak Forward Surge Current | | @t = 1.0μs | 2.0 | A |
| | | @t = 1.0s | 1.0 | |

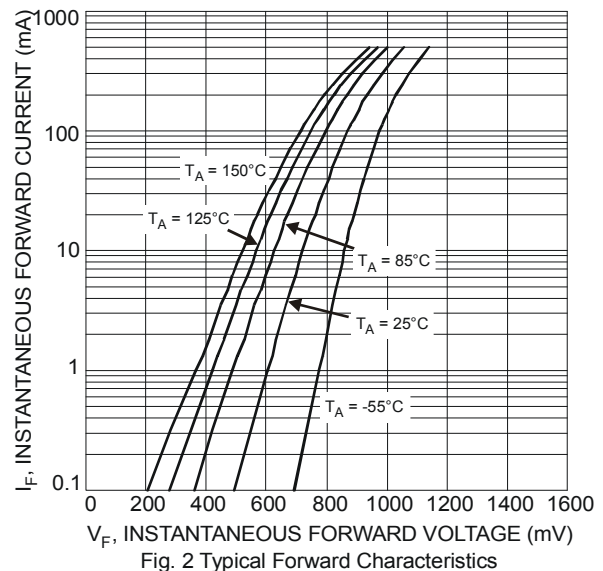
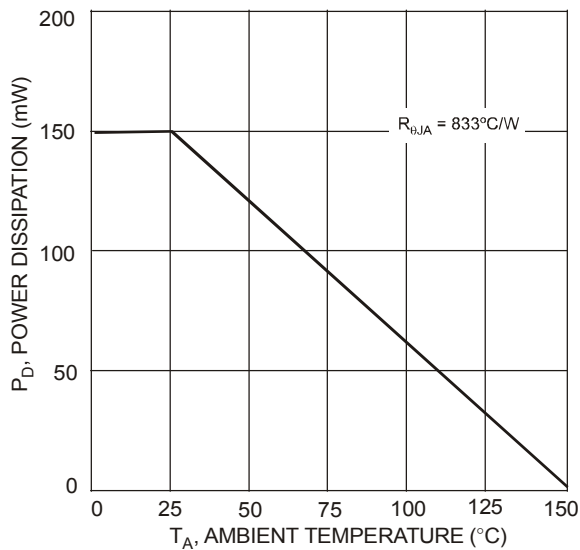
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------------|-----------------------------|
| Power Dissipation (Note 7) | P_D | 150 | mW |
| Thermal Resistance Junction to Ambient (Note 7) | $R_{\theta JA}$ | 833 | $^{\circ}\text{C}/\text{W}$ |
| Operating and Storage Temperature Range | T_J, T_{STG} | -65 to +150 | $^{\circ}\text{C}$ |

Electrical Characteristics (@ $T_A = +25^{\circ}\text{C}$, unless otherwise specified.)

| Characteristic | Symbol | Min | Max | Unit | Test Conditions |
|------------------------------------|-------------|------|------------------------------|--|--|
| Reverse Breakdown Voltage (Note 8) | $V_{(BR)R}$ | 80 | — | V | $I_R = 100\mu\text{A}$ |
| Forward Voltage | V_F | 0.62 | 0.72 0.855 1.0 1.25 | V | $I_F = 5.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 100\text{mA}$ $I_F = 150\text{mA}$ |
| Peak Reverse Current (Note 8) | I_R | — | 100 50 30 25 | nA μA μA nA | $V_R = 80\text{V}$ $V_R = 75\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 25\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 20\text{V}$ |
| Total Capacitance | C_T | — | 3.0 | pF | $V_R = 0.5\text{V}, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{rr} | — | 4.0 | ns | $I_F = I_R = 10\text{mA}$, $t_{rr} = 0.1 \times I_R, R_L = 100\Omega$ |

Notes: 7. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
8. Short duration pulse test used to minimize self-heating effect.



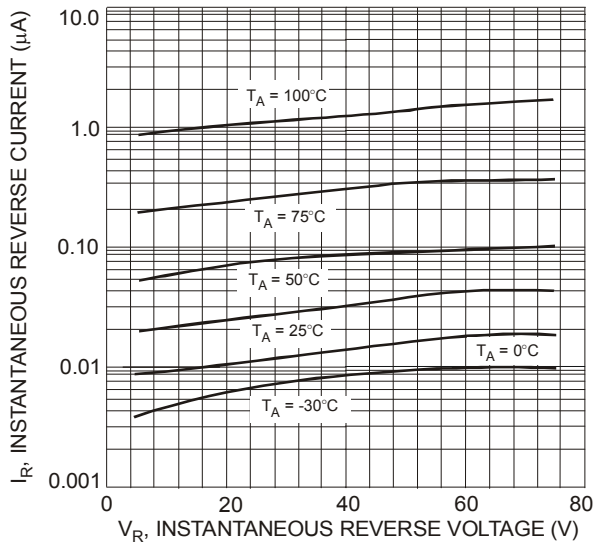


Fig. 3 Typical Reverse Characteristics

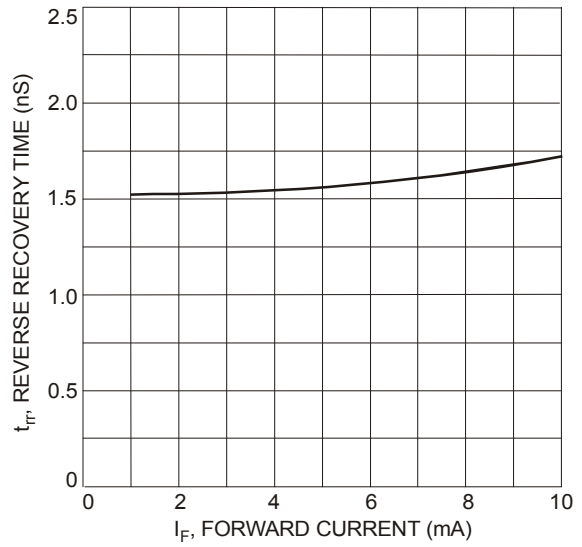
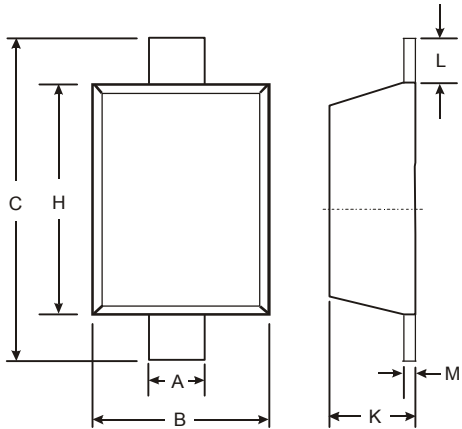


Fig. 4 Reverse Recovery Time vs. Forward Current

Package Outline Dimensions

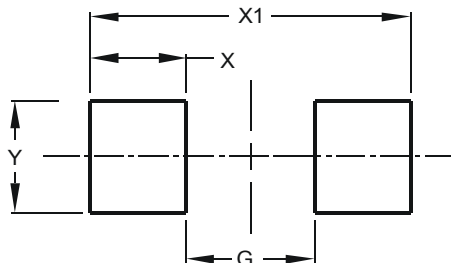
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



| SOD523 | | |
|----------------------|------|------|
| 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 | 0.65 |
| L | 0.10 | 0.30 |
| M | 0.10 | 0.12 |
| All Dimensions in mm | | |

Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| G | 0.80 |
| X | 0.60 |
| X1 | 2.00 |
| Y | 0.70 |

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