

Features

- Fast Switching Speed
- 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: SOD323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Leads: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.004 grams (approximate)

SOD323



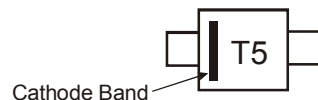
Top View

Ordering Information (Note 4)

| Part Number | Qualification | Case | Packaging |
|----------------|---------------|--------|--------------------|
| 1N4448HWS-7-F | Commercial | SOD323 | 3,000/Tape & Reel |
| 1N4448HWSQ-7-F | Automotive | SOD323 | 3,000/Tape & Reel |
| 1N4448HWS-13-F | Commercial | SOD323 | 10,000/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>

Marking Information



T5 = Product Type Marking Code

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} | 500 | mA |
| Average Rectified Output Current | I _O | 250 | mA |
| Non-Repetitive Peak Forward Surge Current | I _{FSM} | 4.0 | A |
| | | 1.0 | |

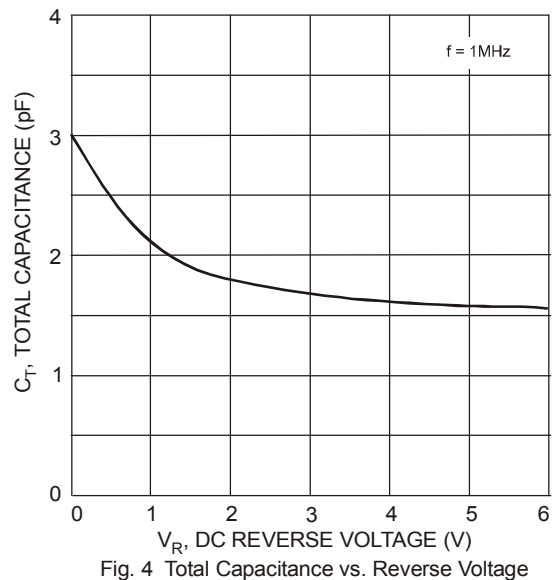
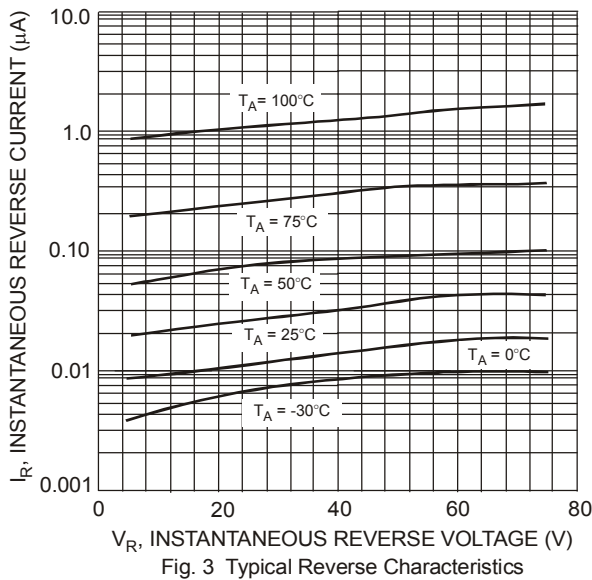
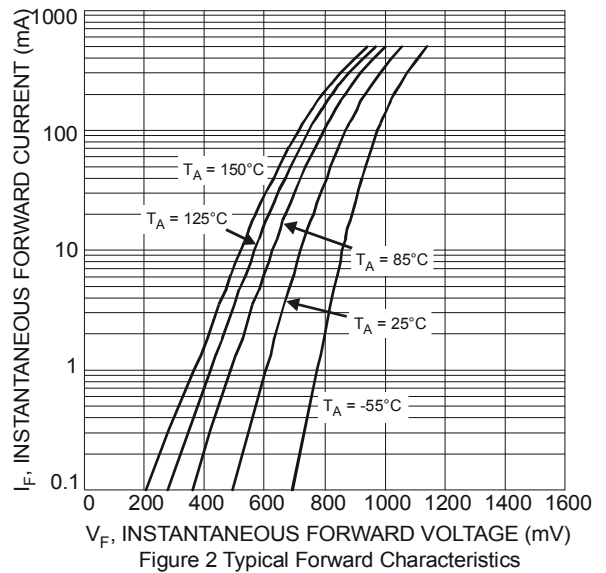
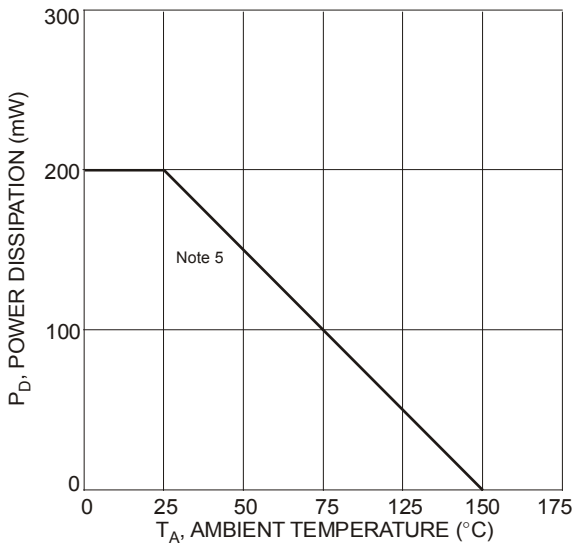
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 200 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

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

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|-------------|------|-------|---------------|---|
| Reverse Breakdown Voltage (Note 6) | $V_{BR(R)}$ | 80 | — | V | $I_R = 100\mu\text{A}$ |
| Forward Voltage | V_{FM} | 0.62 | 0.72 | V | $I_F = 5.0\text{mA}$ |
| | | — | 0.855 | | $I_F = 10\text{mA}$ |
| | | — | 1.0 | | $I_F = 100\text{mA}$ |
| | | — | 1.25 | | $I_F = 150\text{mA}$ |
| Peak Reverse Current (Note 6) | I_{RM} | — | 100 | nA | $V_R = 80\text{V}$ |
| | | — | 50 | μA | $V_R = 75\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 30 | μA | $V_R = 25\text{V}, T_J = +150^\circ\text{C}$ |
| | | — | 25 | nA | $V_R = 20\text{V}$ |
| Total Capacitance | C_T | — | 3.5 | pF | $V_R = 0, f = 1.0\text{MHz}$ |
| Reverse Recovery Time | t_{rr} | — | 4.0 | ns | $I_F = I_R = 10\text{mA}, I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ |

Notes: 5. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.
6. Short duration pulse test used to minimize self-heating effect.



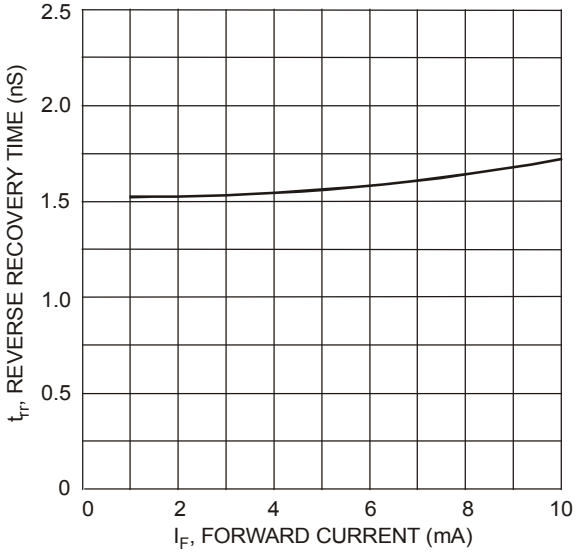
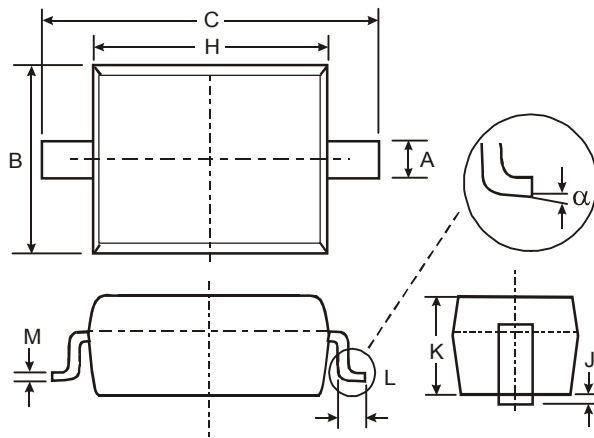


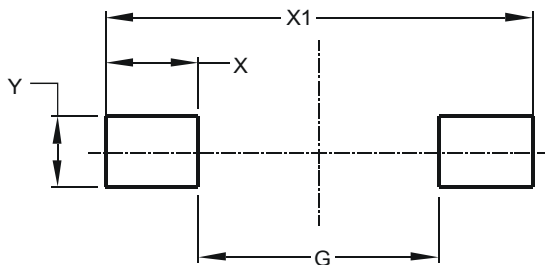
Fig. 5 Reverse Recovery Time vs. Forward Current

Package Outline Dimensions



| SOD323 | | |
|----------------------|------|------|
| 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) |
|------------|---------------|
| G | 1.520 |
| X | 0.590 |
| X1 | 2.700 |
| Y | 0.450 |

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