

## 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



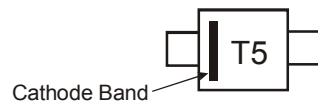
Top View

## 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](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<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                            | Symbol              | Value | Unit |
|---|---------------------|-------|------|
| Non-Repetitive Peak Reverse Voltage       | V <sub>RM</sub>     | 100   | V    |
| Peak Repetitive Reverse Voltage           | V <sub>RRM</sub>    | 80    | V    |
| Working Peak Reverse Voltage              | V <sub>RWM</sub>    |       |      |
| DC Blocking Voltage                       | V <sub>R</sub>      |       |      |
| RMS Reverse Voltage                       | V <sub>R(RMS)</sub> | 57    | V    |
| Forward Continuous Current                | I <sub>FM</sub>     | 500   | mA   |
| Average Rectified Output Current          | I <sub>O</sub>      | 250   | mA   |
| Non-Repetitive Peak Forward Surge Current | I <sub>FSM</sub>    | 4.0   | A    |
|   |                     | 1.0   |      |

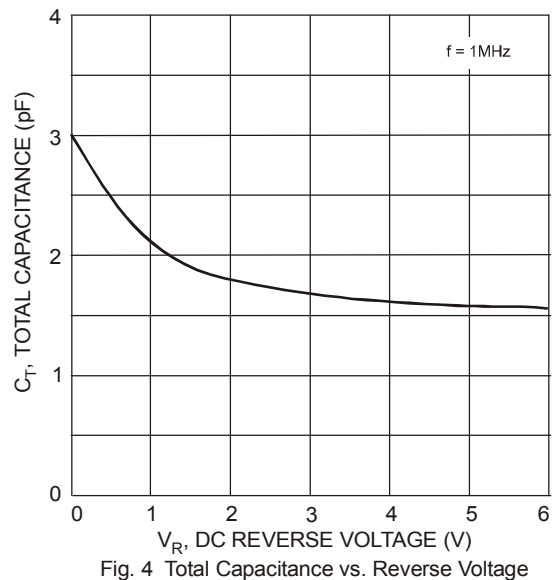
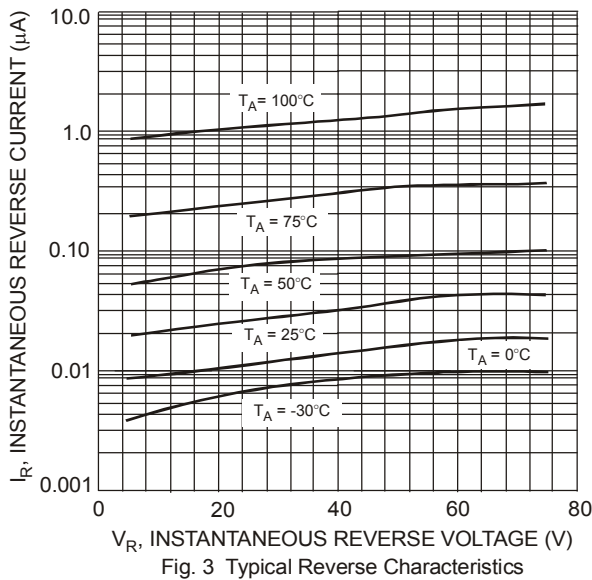
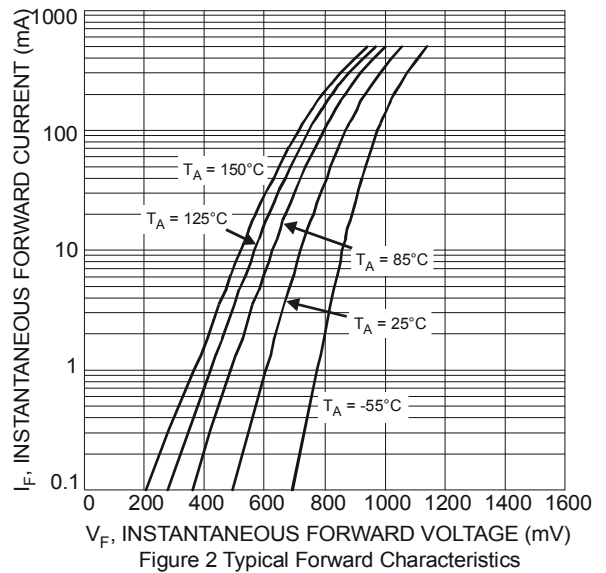
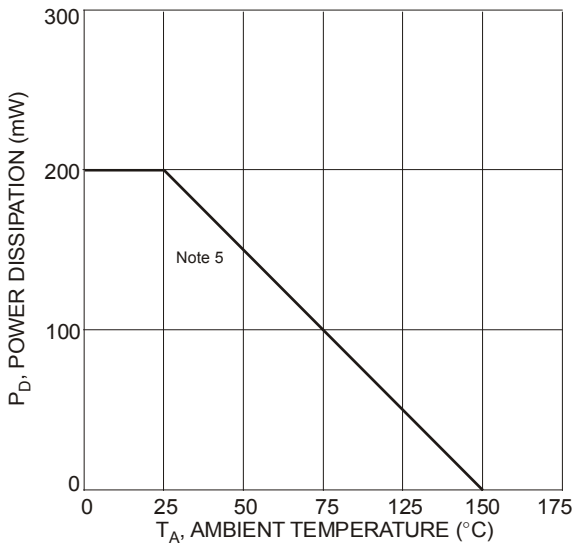
## Thermal Characteristics

| Characteristic                                      | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 5)                          | P <sub>D</sub>                    | 200         | mW   |
| Thermal Resistance Junction to Ambient Air (Note 5) | R <sub>θJA</sub>                  | 625         | °C/W |
| Operating and Storage Temperature Range             | T <sub>J</sub> , T <sub>STG</sub> | -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    | $\mu\text{A}$ | $V_R = 75\text{V}, T_J = +150^\circ\text{C}$                        |
|                                    |             |      | 30    | $\mu\text{A}$ | $V_R = 25\text{V}, T_J = +150^\circ\text{C}$                        |
|                                    |             |      | 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.



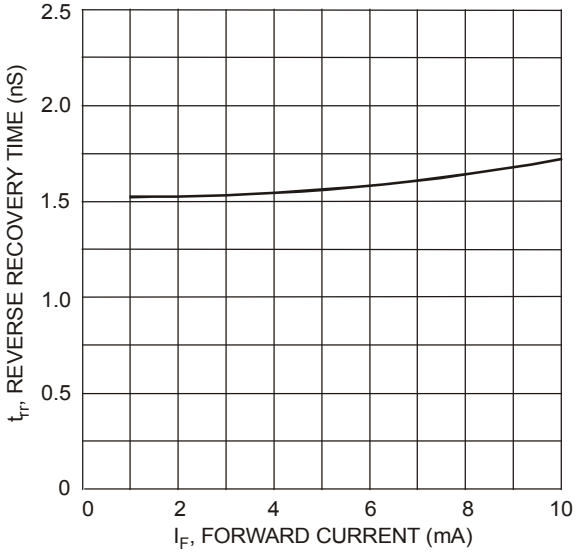
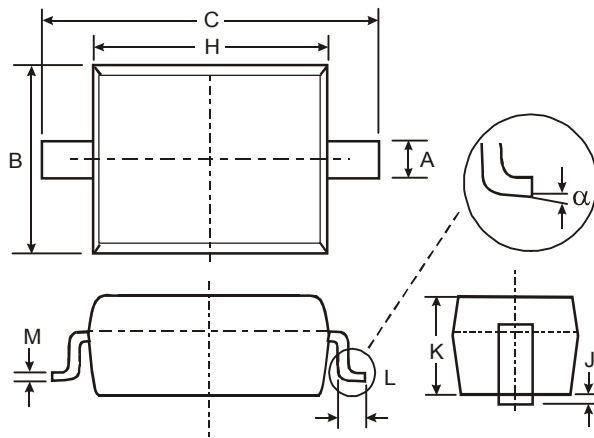


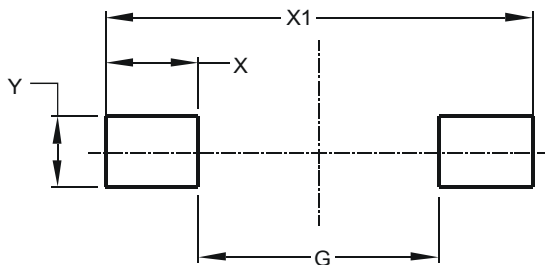
Fig. 5 Reverse Recovery Time vs. Forward Current

**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 |
| $\alpha$             | 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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