

## Features

- Fast Switching Speed
- Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## 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



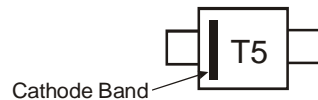
Top View

## Ordering Information (Note 3)

| 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 purposefully added lead.
  2. Diodes Inc.'s "Green" Policy can be found on our website at <http://www.diodes.com>
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



T5 = Product Type Marking Code

**Maximum Ratings** @ $T_A = 25^\circ\text{C}$  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 | $I_{FSM}$    | @ $t = 1.0\mu\text{s}$ | 4.0  | A |
|   |              | @ $t = 1.0\text{s}$    | 1.0  |   |

**Thermal Characteristics**

| Characteristic                                      | Symbol          | Value       | Unit               |
|---|-----------------|-------------|--------------------|
| Power Dissipation (Note 4)                          | $P_D$           | 200         | mW                 |
| Thermal Resistance Junction to Ambient Air (Note 4) | $R_{\theta JA}$ | 625         | $^\circ\text{C/W}$ |
| 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 Condition  |
|------------------------------------|-------------|------|-------|---------------|---|
| Reverse Breakdown Voltage (Note 5) | $V_{BR(R)}$ | 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 5)      | $I_{RM}$    | —    | 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            | $I_F = I_R = 10\text{mA}$ ,<br>$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ |

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

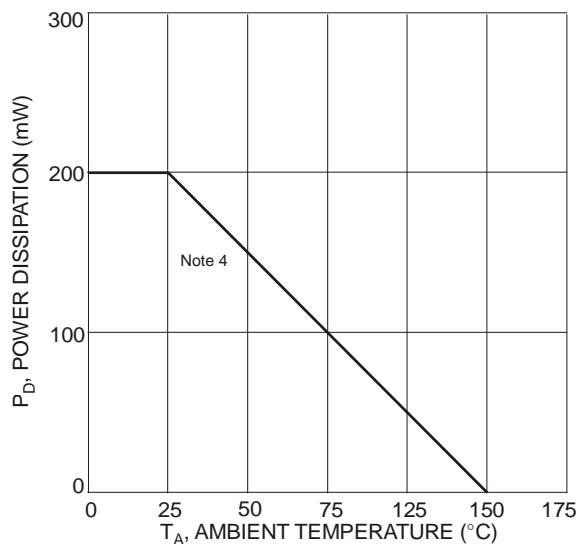


Fig. 1 Power Derating Curve

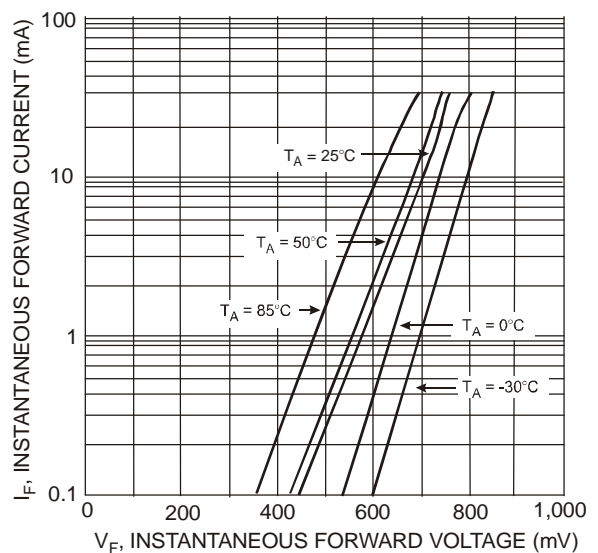


Fig. 2 Typical Forward Characteristics

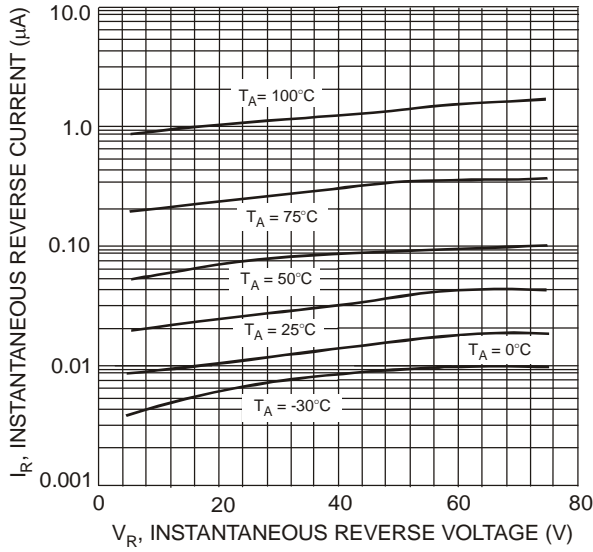


Fig. 3 Typical Reverse Characteristics

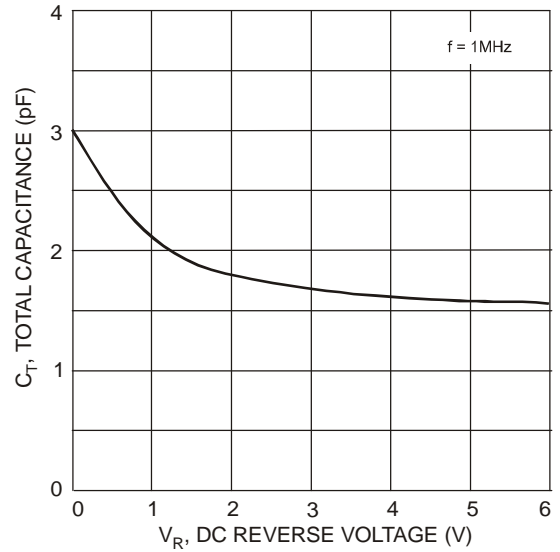


Fig. 4 Total Capacitance vs. Reverse Voltage

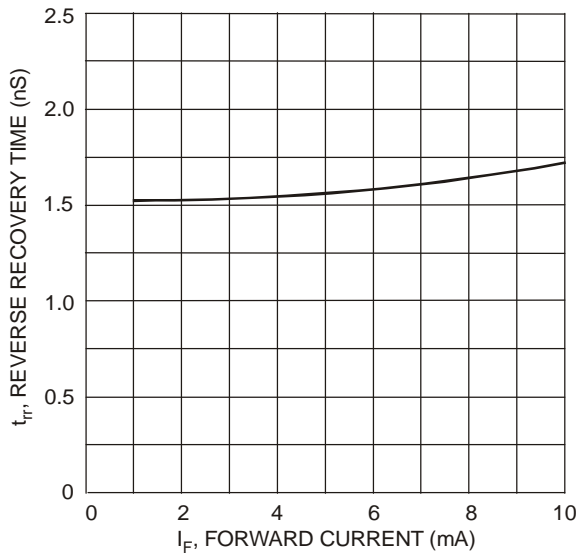
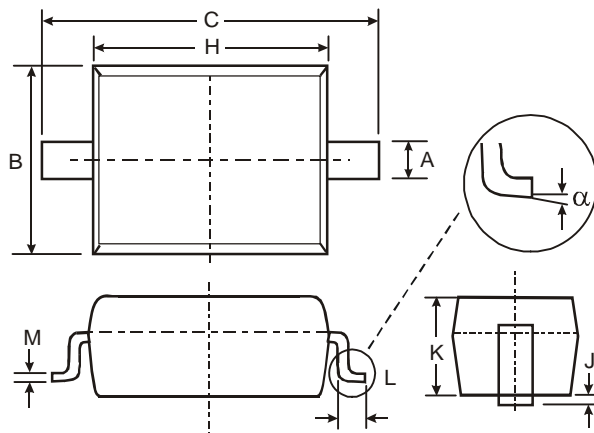


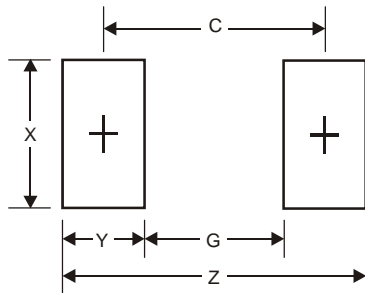
Fig. 5 Reverse Recovery Time vs. Forward Current

## 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) |
|------------|---------------|
| Z          | 3.75          |
| G          | 1.05          |
| X          | 0.65          |
| Y          | 1.35          |
| C          | 2.40          |

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#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.