

Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automated Insertion
- 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: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.01 grams (approximate)

SOD-123



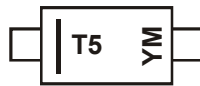
Top View

Ordering Information (Note 4)

| Part Number | Case | Packaging |
|-------------|---------|------------------|
| 1N4448W-7-F | SOD-123 | 3000/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
 YM = Date Code Marking
 Y = Year (ex: N = 2002)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Code | J | K | L | M | N | P | R | S | T | U | V | W | X | Y | Z | A | B | C |
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | | | | | | |
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D | | | | | | |

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} | 75 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _R | | |
| RMS Reverse Voltage | V _{R(RMS)} | 53 | 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 = 1.0μs | 4.0 |
| | | @t = 1.0s | 1.0 |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 400 | mW |
| Thermal Resistance Junction to Ambient Air (Note 5) | R _{θJA} | 315 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Max | Unit | Test Condition |
|------------------------------------|--------------------|------|-------|------|--|
| Reverse Breakdown Voltage (Note 6) | V _{(BR)R} | 75 | — | V | I _R = 10μA |
| Forward Voltage | V _{FM} | 0.62 | 0.72 | V | I _F = 5.0mA |
| | | — | 0.855 | | I _F = 10mA |
| | | — | 1.0 | | I _F = 100mA |
| | | — | 1.25 | | I _F = 150mA |
| Peak Reverse Current (Note 6) | I _{RM} | — | 2.5 | μA | V _R = 75V |
| | | — | 50 | μA | V _R = 75V, T _J = +150°C |
| | | — | 30 | μA | V _R = 25V, T _J = +150°C |
| | | — | 25 | nA | V _R = 20V |
| Total Capacitance | C _T | — | 4.0 | pF | V _R = 0, f = 1.0MHz |
| Reverse Recovery Time | t _{rr} | — | 4.0 | ns | I _F = I _R = 10mA, I _{rr} = 0.1 x I _R , R _L = 100Ω |

Notes: 5. Part mounted on FR-4 PC board with minimum 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.

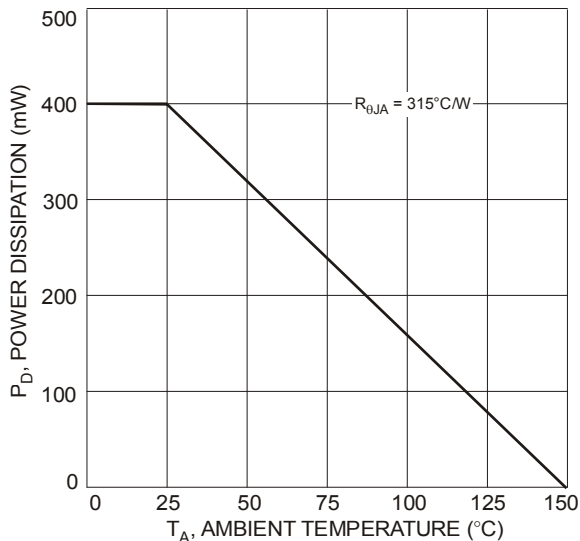


Fig. 1 Power Derating Curve

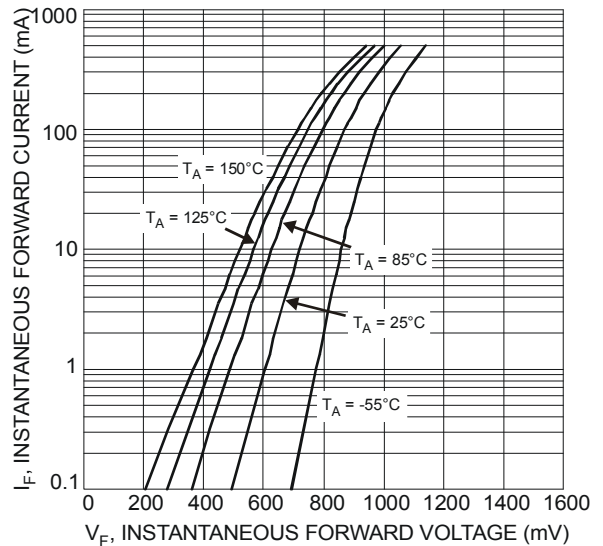


Figure 2 Typical Forward Characteristics

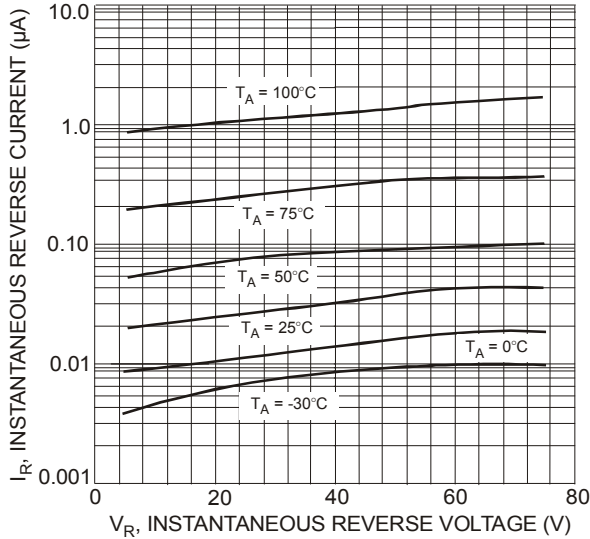


Fig. 3 Typical Reverse Characteristics

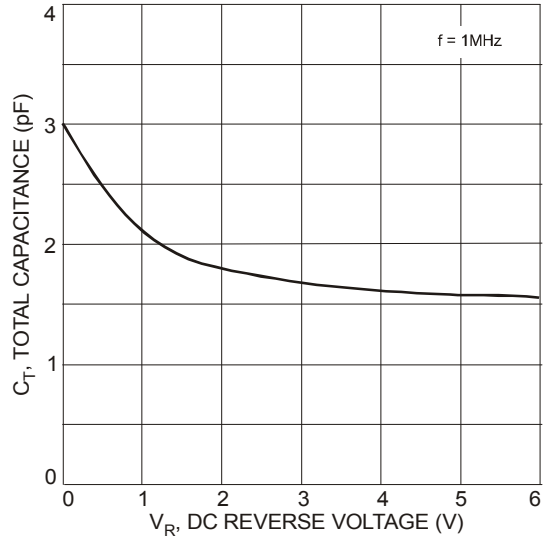


Fig. 4 Total Capacitance vs. Reverse Voltage

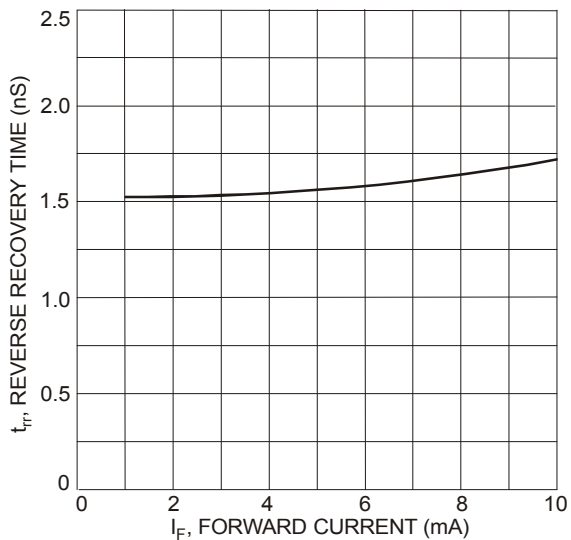
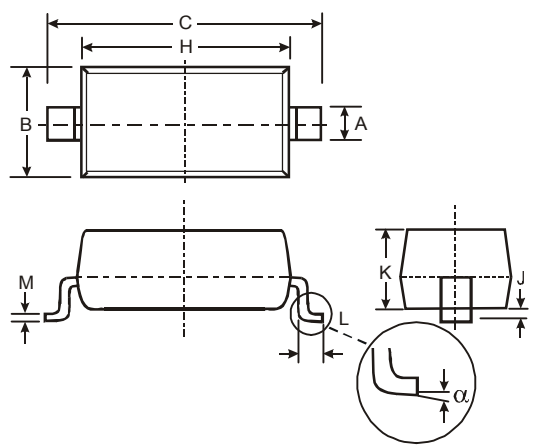


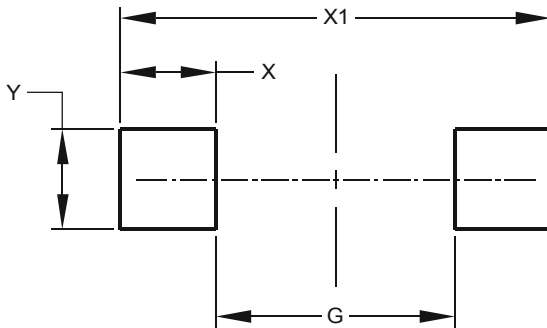
Fig. 5 Reverse Recovery Time vs. Forward Current

Package Outline Dimensions



| SOD-123 | | |
|----------------------|----------|-----------|
| Dim | Min | Max |
| A | 0.55 Typ | |
| B | 1.40 | 1.70 |
| C | 3.55 | 3.85 |
| H | 2.55 | 2.85 |
| J | 0.00 | 0.10 |
| K | 1.00 | 1.35 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.15 |
| α | 0 | 8° |
| All Dimensions in mm | | |

Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| G | 2.250 |
| X | 0.900 |
| X1 | 4.050 |
| Y | 0.950 |

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