

Features

- Fast Switching Speed
- Very 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)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

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: Finish - Matte Tin Annealed over Alloy 42 Leadframe.
Solderable per MIL-STD-202, Method 208 Ⓔ
- Weight: 0.0014 grams (Approximate)

SOD523



Top View



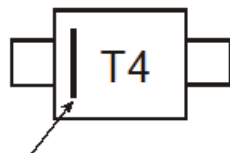
Device Schematic

Ordering Information (Notes 4 & 5)

| Part Number | Compliance | Case | Packaging |
|----------------------|------------|--------|--------------------|
| 1N4148WT-7 (Note 6) | Standard | SOD523 | 3,000/Tape & Reel |
| 1N4148WTQ-7 (Note 6) | Automotive | SOD523 | 3,000/Tape & Reel |
| 1N4148WT-13 | Standard | SOD523 | 10,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3).compliant.
 2. See <https://www.diodes.com/quality/lead-free/> 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. Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q101 and standard products are electrically and thermally the same, except where specified. For more information, please refer to <https://www.diodes.com/quality/>.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.
 6. Dispensed in every other cavity of the tape.

Marking Information



Cathode Band

T4 = 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 |
| Reverse Voltage | V _R | 80 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 53 | V |
| Forward Continuous Current | I _{FM} | 250 | mA |
| Average Rectified Output Current | I _O | 125 | mA |
| Non-Repetitive Peak Forward Surge Current | I _{FSM} | 2.0 1.0 | A |
| | | @ t = 1.0µs | |
| | | @ t = 100ms | |

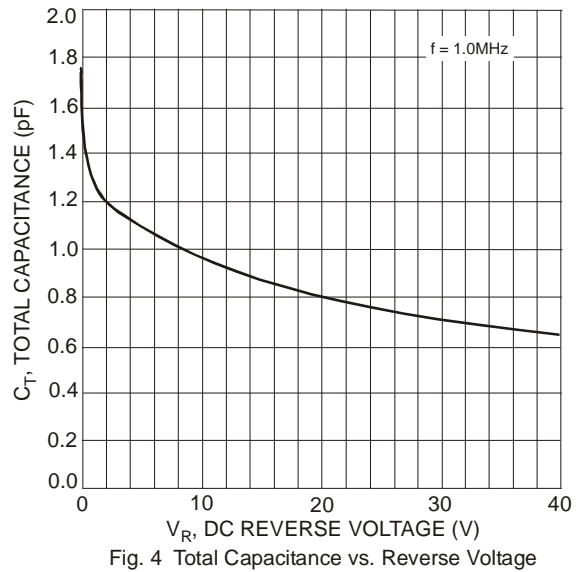
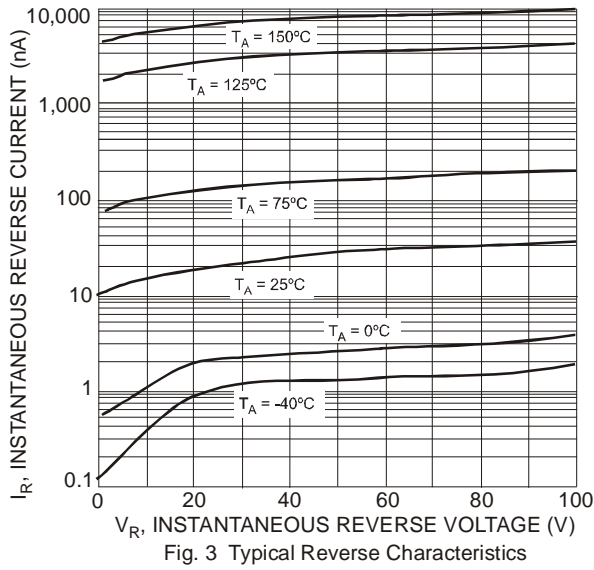
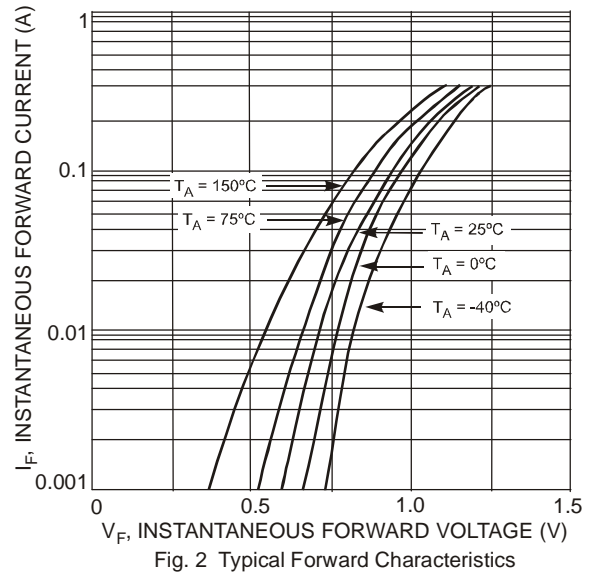
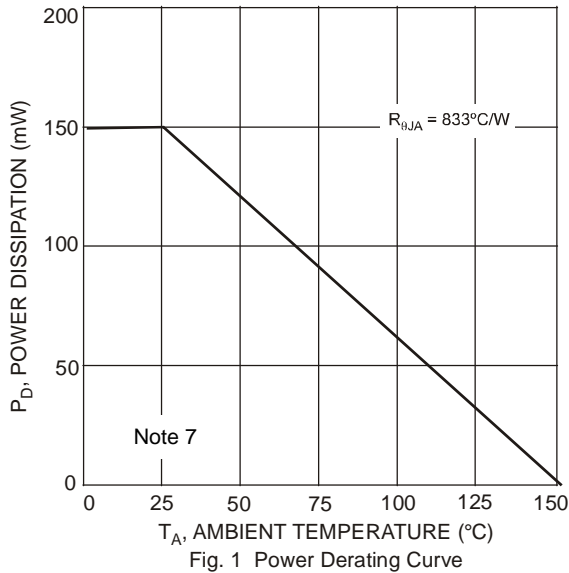
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Power Dissipation (Note 7) | P _D | 150 | mW |
| Thermal Resistance Junction to Ambient Air (Note 7) | R _{θJA} | 833 | °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 Conditions |
|------------------------------------|--------------------|-----|-------------------------------|----------------------|--|
| Reverse Breakdown Voltage (Note 8) | V _{(BR)R} | 75 | — | V | I _R = 1.0µA |
| Forward Voltage | V _F | — | 0.715 0.855 1.0 1.25 | V | I _F = 1.0mA I _F = 10mA I _F = 50mA I _F = 150mA |
| Peak Reverse Current (Note 8) | I _R | — | 1.0 50 30 25 | µA µA µA nA | V _R = 75V V _R = 75V, T _J = +150°C V _R = 25V, T _J = +150°C V _R = 20V |
| Total Capacitance | C _T | — | 2.0 | 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 |

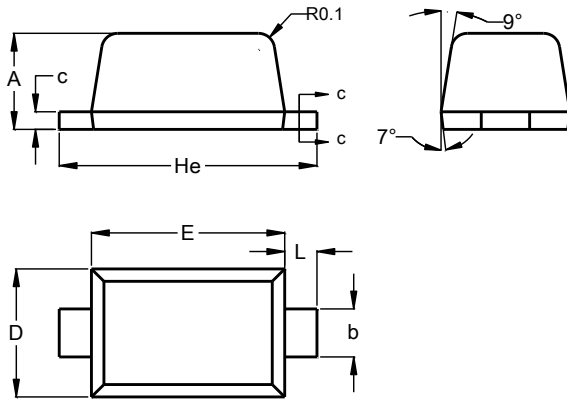
- Notes:
- Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
 - Short duration pulse test used to minimize self-heating effect.



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523

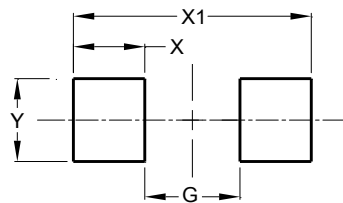


| SOD523 | | |
|-----------------------------|------|------|
| Dim | Min | Max |
| A | 0.55 | 0.65 |
| b | 0.26 | 0.34 |
| c | 0.11 | 0.17 |
| D | 0.75 | 0.85 |
| E | 1.15 | 1.25 |
| He | 1.55 | 1.65 |
| L | 0.10 | 0.30 |
| All Dimensions in mm | | |

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD523



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

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