

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



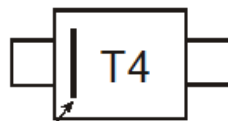
Device Schematic

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 @ t = 1.0µs @ t = 100ms	I _{FSM}	2.0 1.0	A

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.

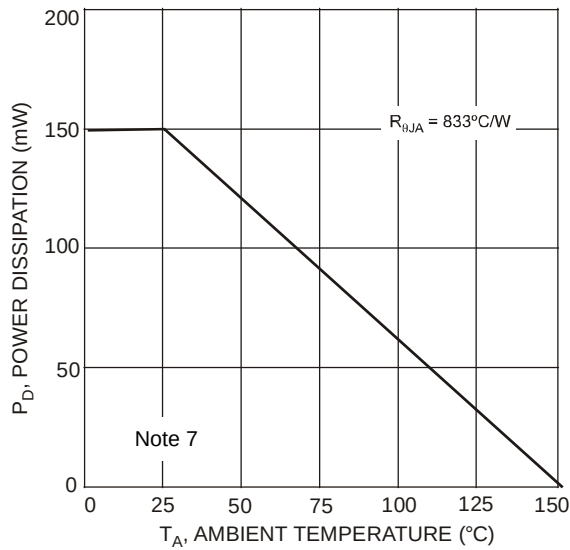


Fig. 1 Power Derating Curve

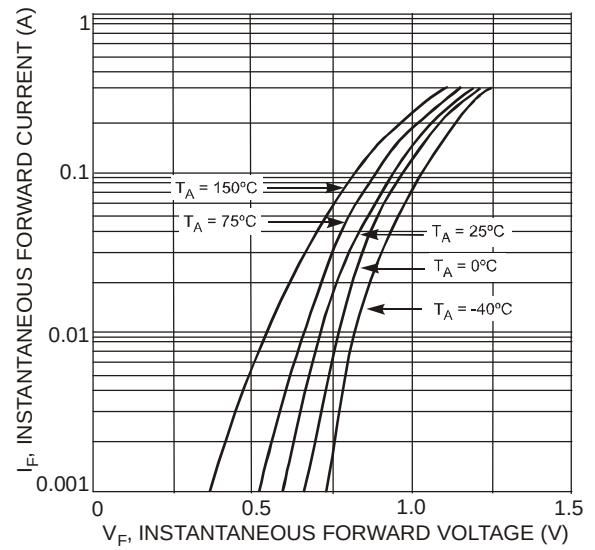


Fig. 2 Typical Forward Characteristics

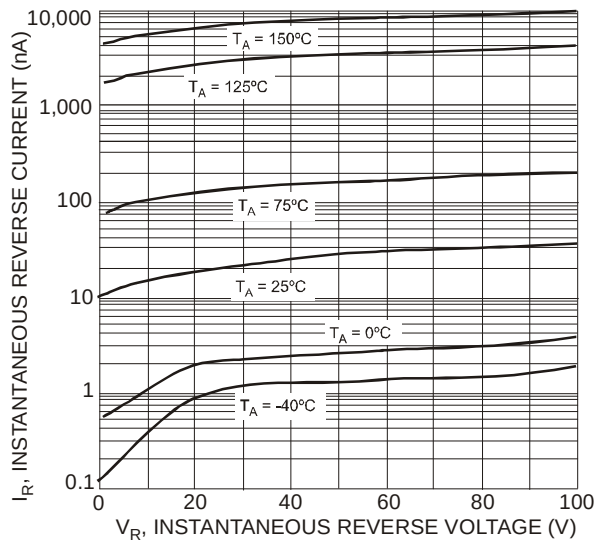


Fig. 3 Typical Reverse Characteristics

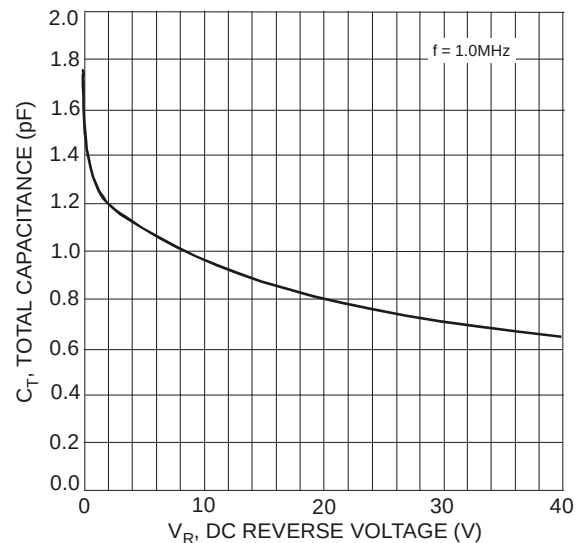
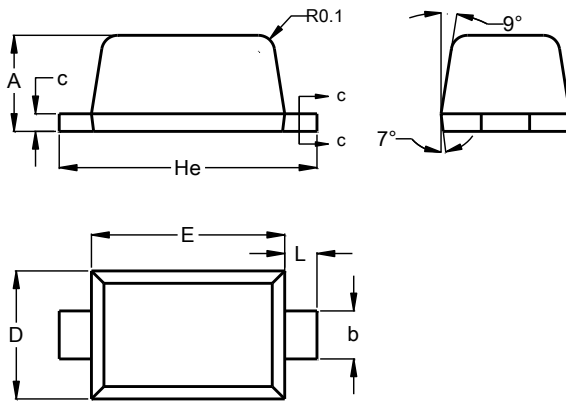


Fig. 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

SOD523

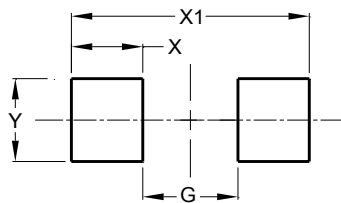


SOD523		
Dim	Min	Max
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

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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