

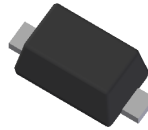
## Features

- Fast Switching Speed
- Ultra-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: 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: Matte Tin Finish (Lead Free Plating) annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Weight: 0.002 grams (approximate)

SOD523



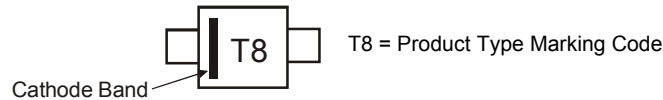
Top View

## Ordering Information (Notes 4 & 5)

Part Number (Note 6)	Case	Packaging
1N4448HWT-7	SOD523	3000/Tape & Reel
1N4448HWT-13	SOD523	10000/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>
  5. Product manufactured with date code 0627 (week 27, 2006) and newer are built with Green Molding Compound. Product manufactured prior to date code 0627 are built with Non-Green Molding Compound and may contain Halogens or Sb<sub>2</sub>O<sub>3</sub> Fire Retardants.
  6. Dispensed in every other cavity of the tape.

## Marking Information



## 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>	250	mA
Average Rectified Output Current	I <sub>O</sub>	125	mA
Non-Repetitive Peak Forward Surge Current	@t = 1.0µs	I <sub>FSM</sub>	2.0
		@t = 1.0s	1.0

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 7)	$P_D$	150	mW
Thermal Resistance Junction to Ambient (Note 7)	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
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 Conditions
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	80	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	$V_F$	0.62	0.72 0.855 1.0 1.25	V	$I_F = 5.0\text{mA}$ $I_F = 10\text{mA}$ $I_F = 100\text{mA}$ $I_F = 150\text{mA}$
Peak Reverse Current (Note 8)	$I_R$	—	100 50 30 25	nA $\mu\text{A}$ $\mu\text{A}$ nA	$V_R = 80\text{V}$ $V_R = 75\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 25\text{V}, T_J = +150^{\circ}\text{C}$ $V_R = 20\text{V}$
Total Capacitance	$C_T$	—	3.0	pF	$V_R = 0.5\text{V}, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	4.0	ns	$I_F = I_R = 10\text{mA}$ , $t_{rr} = 0.1 \times I_R, R_L = 100\Omega$

Notes: 7. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
8. Short duration pulse test used to minimize self-heating effect.

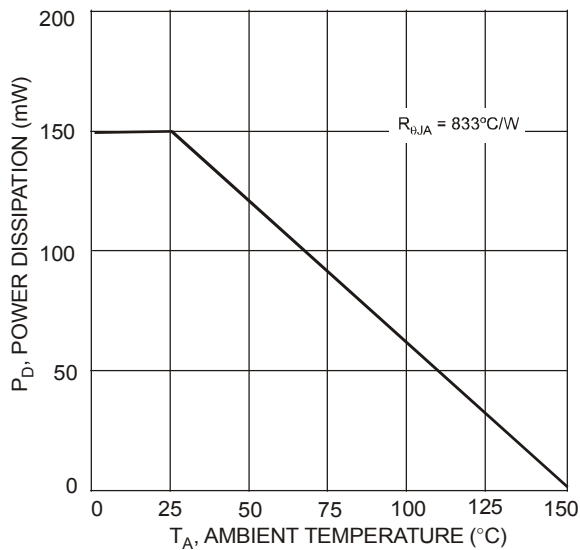


Fig. 1 Power Derating Curve

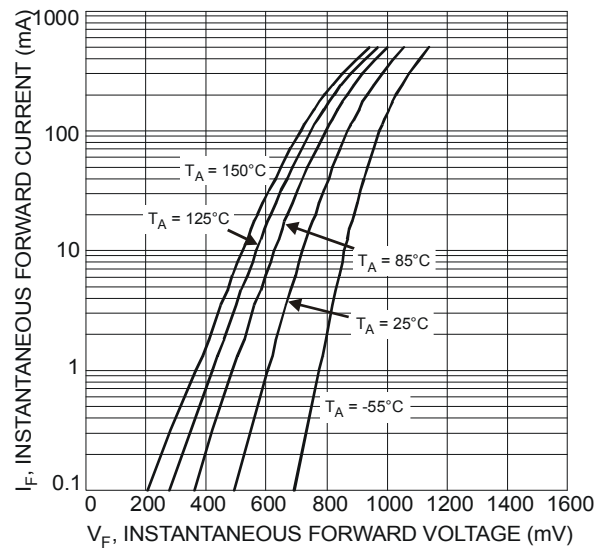


Fig. 2 Typical Forward Characteristics

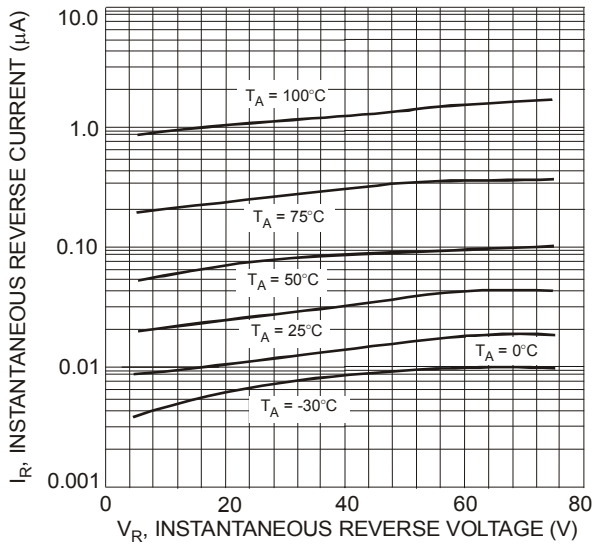


Fig. 3 Typical Reverse Characteristics

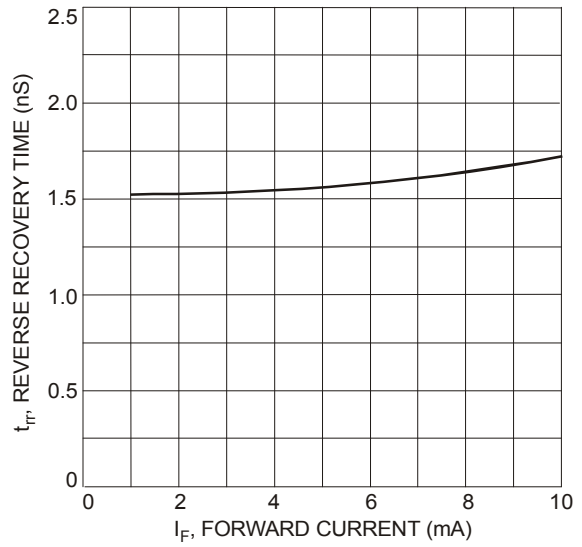
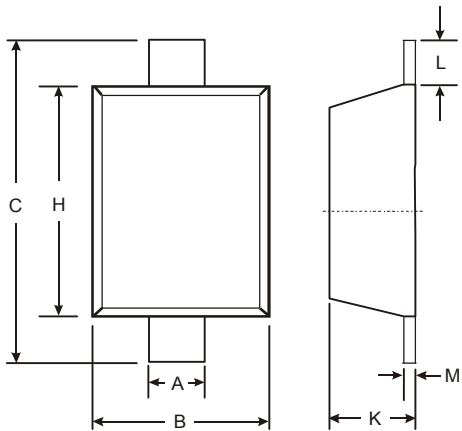


Fig. 4 Reverse Recovery Time vs. Forward Current

## Package Outline Dimensions

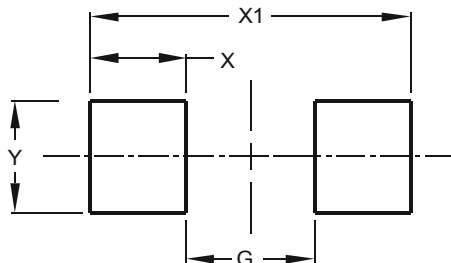
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



SOD523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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

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