

## Features

- Fast Switching Speed
- Small Surface Mount Package
- For General Purpose Switching Applications
- **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**

## 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
- Terminals: Matte Tin Finish Annealed Over Alloy 42 Leadframe  
(Lead-Free Plating). Solderable per MIL-STD-202, Method 208 **e3**
- Polarity: Cathode Band
- Weight: 0.006 grams (Approximate)

SOD323



Top View

## Ordering Information (Note 4)

Part Number	Compliance	Case	Packaging
1N4148WS-7-F	Standard	SOD323	3,000/Tape & Reel
1N4148WSQ-7-F	Automotive	SOD323	3,000/Tape & Reel
1N4148WS-13-F	Standard	SOD323	10,000/Tape & Reel
BAV16WS-7-F	Standard	SOD323	3,000/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>.

## Marking Information



XX = Product Type Marking Code, T4

## Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Non-Repetitive Peak Reverse Voltage (Note 6)	V <sub>RM</sub>	100	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	75	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	53	V
Forward Continuous Current	I <sub>FM</sub>	300	mA
Average Rectified Output Current	I <sub>O</sub>	150	mA
Non-Repetitive Peak Forward Surge Current @ t = 1.0μs @ t = 1.0s	I <sub>FSM</sub>	2.0 1.0	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 5)	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient Air (Note 5)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	75	—	V	I <sub>R</sub> = 1.0μA
Forward Voltage	V <sub>FM</sub>	—	0.715 0.855 1.0 1.25	V	I <sub>F</sub> = 1.0mA I <sub>F</sub> = 10mA I <sub>F</sub> = 50mA I <sub>F</sub> = 150mA
Peak Reverse Current (Note 6)	I <sub>RM</sub>	—	1.0 50 30 25	μA μA μA nA	V <sub>R</sub> = 75V V <sub>R</sub> = 75V, T <sub>J</sub> = +150°C V <sub>R</sub> = 25V, T <sub>J</sub> = +150°C V <sub>R</sub> = 20V
Total Capacitance	C <sub>T</sub>	—	2.0	pF	V <sub>R</sub> = 0, f = 1.0MHz
Reverse Recovery Time	t <sub>rr</sub>	—	4.0	ns	I <sub>F</sub> = I <sub>R</sub> = 10mA, I <sub>rr</sub> = 0.1 x I <sub>R</sub> , R <sub>L</sub> = 100Ω

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

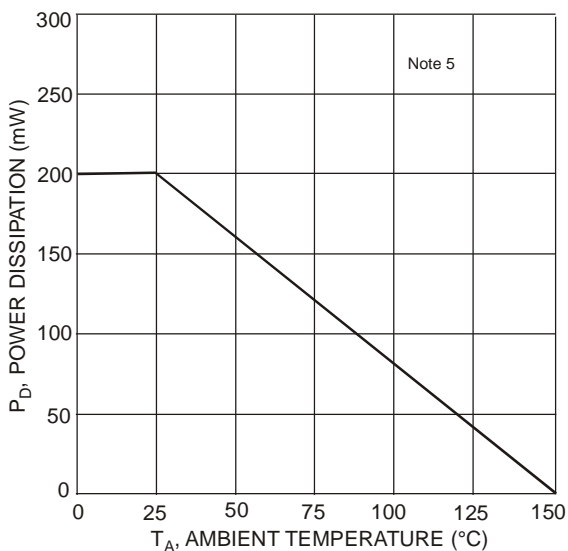


Fig. 1 Power Derating Curve

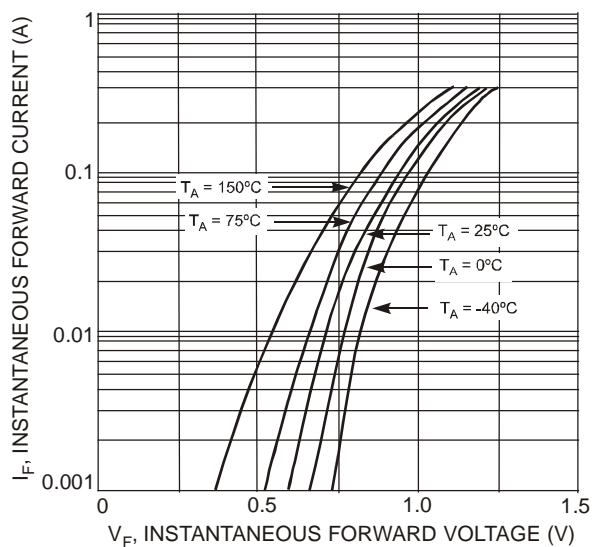


Fig. 2 Typical Forward Characteristics

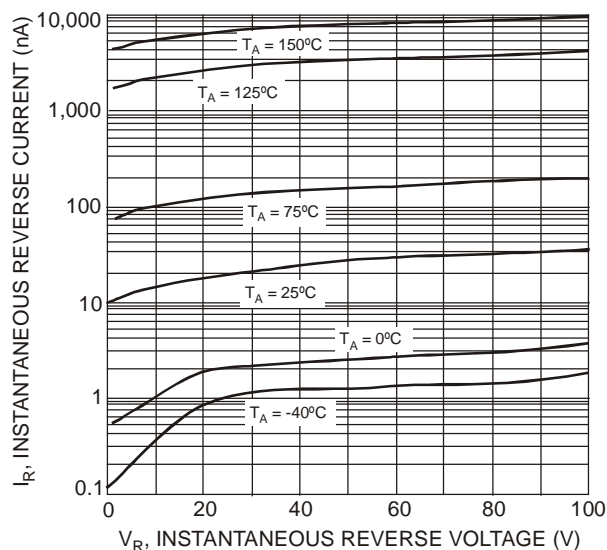


Fig. 3 Typical Reverse Characteristics

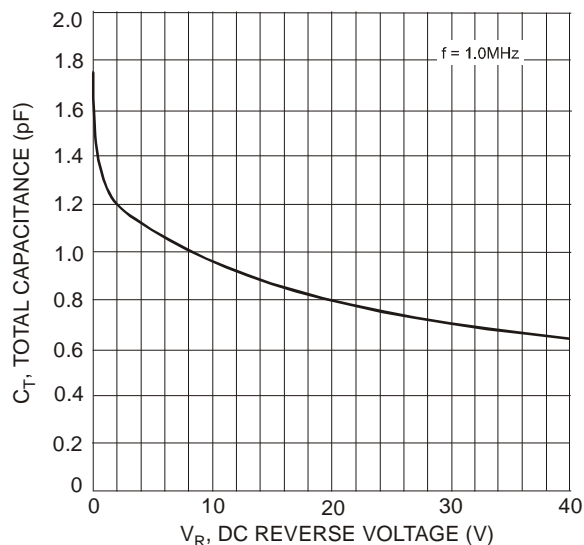


Fig. 4 Typical Total Capacitance vs. Reverse Voltage

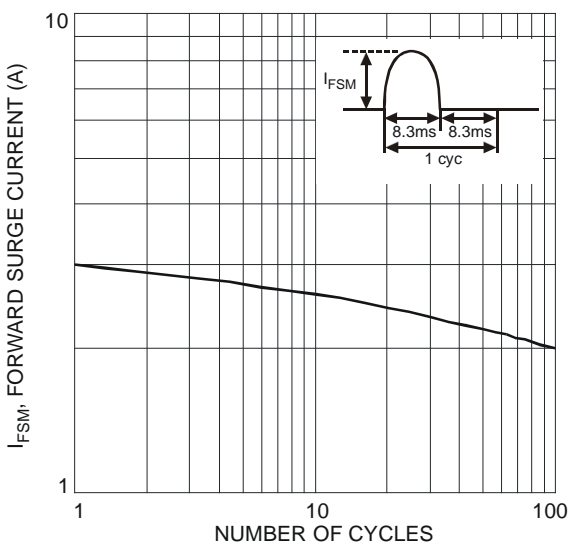


Fig. 5 Maximum Non-Repetitive Surge Current

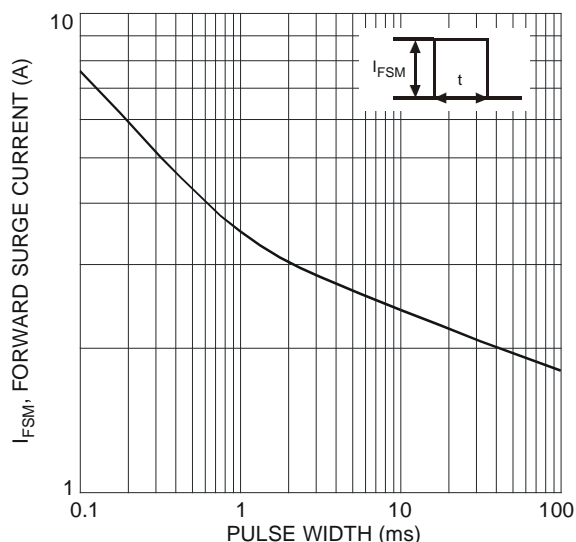
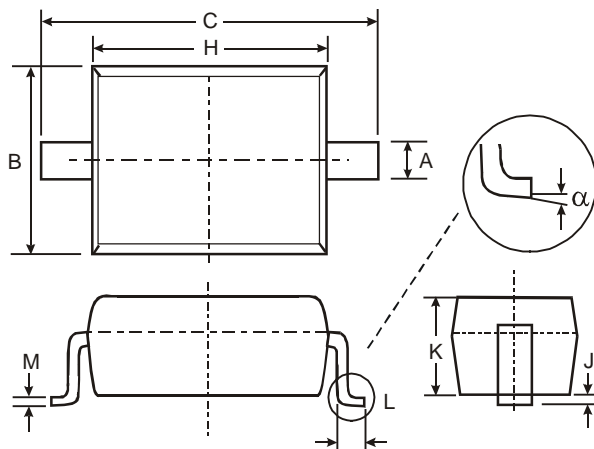


Fig. 6 Maximum Non-Repetitive Surge Current

## Package Outline Dimensions

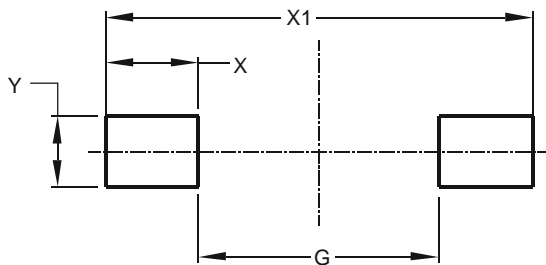
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



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

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



Dimensions	Value (in mm)
G	1.520
X	0.590
X1	2.700
Y	0.450

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