

## Features

- Fast Switching Speed
- Ultra-Small Surface Mount Package
- For General Purpose Switching Applications
- High Conductance
- **Lead Free/RoHS Compliant (Note 3)**
- **"Green" Device (Note 4)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic, "Green" Molding Compound (Note 4). 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
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.006 grams (approximate)

SOD-323



TOP VIEW

## Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit	
Non-Repetitive Peak Reverse Voltage (Note 2)	$V_{RM}$	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	$I_{FM}$	300	mA	
Average Rectified Output Current	$I_O$	150	mA	
Non-Repetitive Peak Forward Surge Current		@ $t = 1.0\mu\text{s}$	2.0	A
		@ $t = 1.0\text{s}$	1.0	

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	$^\circ\text{C}/\text{W}$
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 Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	75	—	V	$I_R = 1.0\mu\text{A}$
Forward Voltage	$V_{FM}$	—	0.715	V	$I_F = 1.0\text{mA}$
			0.855		$I_F = 10\text{mA}$
			1.0		$I_F = 50\text{mA}$
			1.25		$I_F = 150\text{mA}$
Peak Reverse Current (Note 2)	$I_{RM}$	—	1.0	$\mu\text{A}$	$V_R = 75\text{V}$
			50	$\mu\text{A}$	$V_R = 75\text{V}, T_J = 150^\circ\text{C}$
			30	$\mu\text{A}$	$V_R = 25\text{V}, T_J = 150^\circ\text{C}$
			25	nA	$V_R = 20\text{V}$
Total Capacitance	$C_T$	—	2.0	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	$t_{rr}$	—	4.0	ns	$I_F = I_R = 10\text{mA}$ , $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$

- Notes:
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added lead.
  4. Product manufactured with Data Code VD (week 50, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code VD are built with Non-Green Molding Compound and may contain Halogens or  $\text{Sb}_2\text{O}_3$  Fire Retardants.

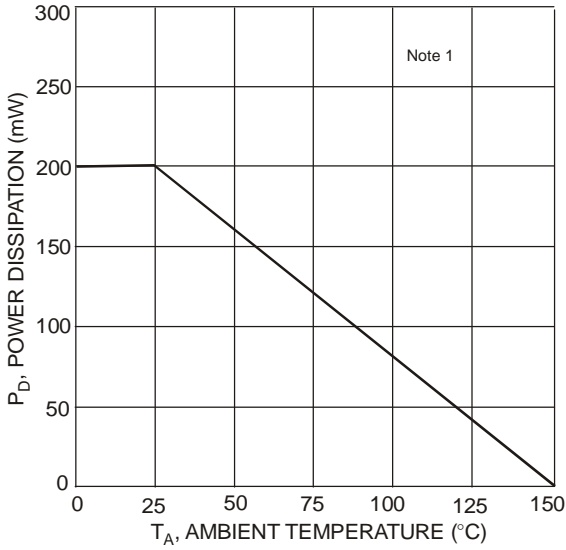


Fig. 1 Power Derating Curve

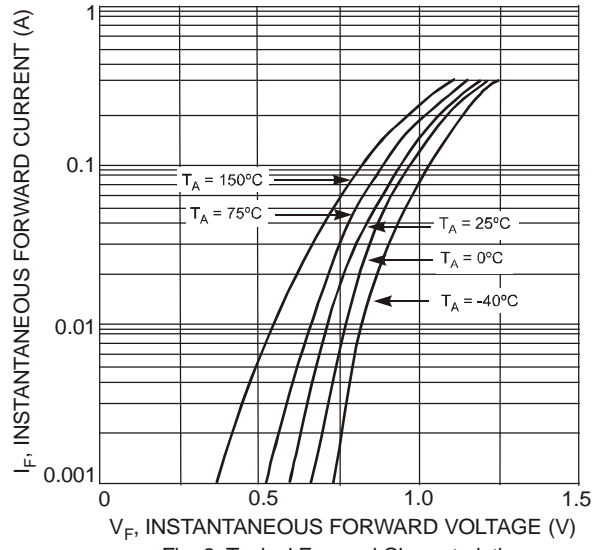


Fig. 2 Typical Forward Characteristics

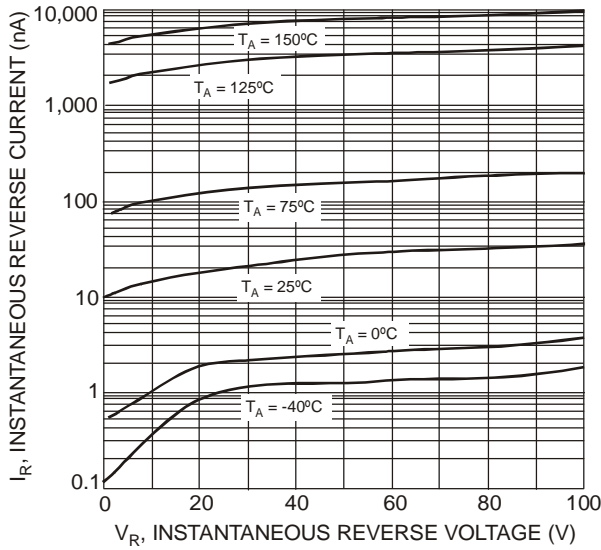


Fig. 3 Typical Reverse Characteristics

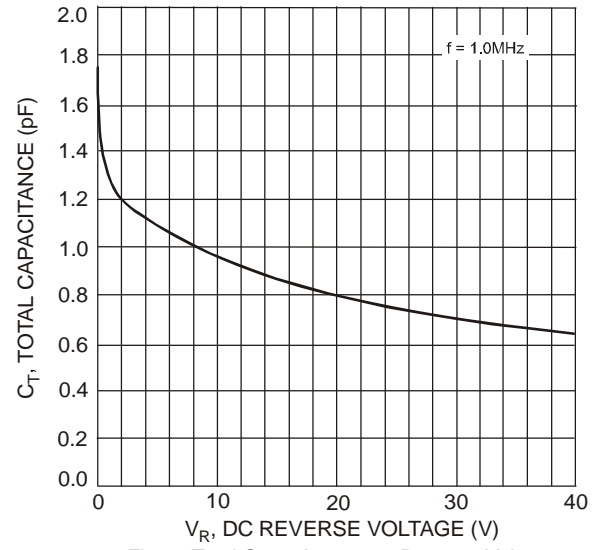


Fig. 4 Total Capacitance vs. Reverse Voltage

**Ordering Information** (Note 5)

Part Number	Case	Packaging
1N4148WS-7-F	SOD-323	3,000/Tape & Reel
1N4148WS-13-F	SOD-323	10,000/Tape & Reel
BAV16WS-7-F	SOD-323	3,000/Tape & Reel

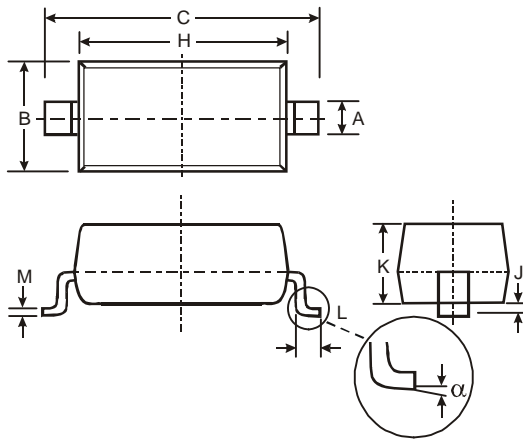
Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



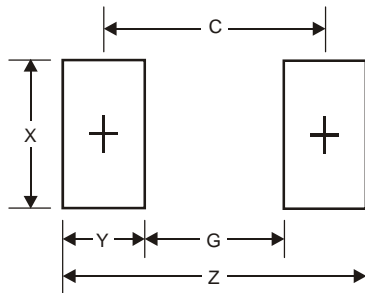
XX = Product Type Marking Code, T4 or T6

**Package Outline Dimensions**



SOD-323		
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**



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

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