

## Features

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- **Lead Free By Design/RoHS Compliant (Note 3)**
- **"Green" Device (Note 4)**

## Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Rating Classification 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Polarity: Cathode Band
- Terminals: Finish - Matte Tin Annealed Over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 2
- Ordering Information: See Page 2
- Weight: 0.004 grams (approximate)



Top View

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

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	40	V
Working Peak Reverse Voltage	$V_{RWM}$		
DC Blocking Voltage	$V_R$		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current	$I_O$	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	3	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	$P_D$	235	mW
Typical Thermal Resistance Junction to Ambient (Note 1)	$R_{\theta JA}$	426	$^\circ\text{C/W}$
Operating and Storage Temperature Range	$T_J, T_{STG}$	-40 to +125	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 2)	$V_{(BR)R}$	40	—	—	V	$I_R = 1\text{mA}$
Forward Voltage	$V_F$	—	542	0.62	V	$I_F = 1\text{A}$
Reverse Current (Note 2)	$I_R$	—	2.0	50	$\mu\text{A}$	$V_R = 40\text{V}$
Total Capacitance	$C_T$	—	125	—	pF	$V_R = 0\text{V}, f = 1.0\text{MHz}$
		—	20	—	pF	$V_R = 10\text{V}, f = 1.0\text{MHz}$

- Notes:
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
  2. Short duration pulse test used to minimize self-heating effect.
  3. No purposefully added Lead.
  4. Diodes Inc.'s "Green" policy can be found on our website at [http://www.diodes.com/products/lead\\_free/index.php](http://www.diodes.com/products/lead_free/index.php).

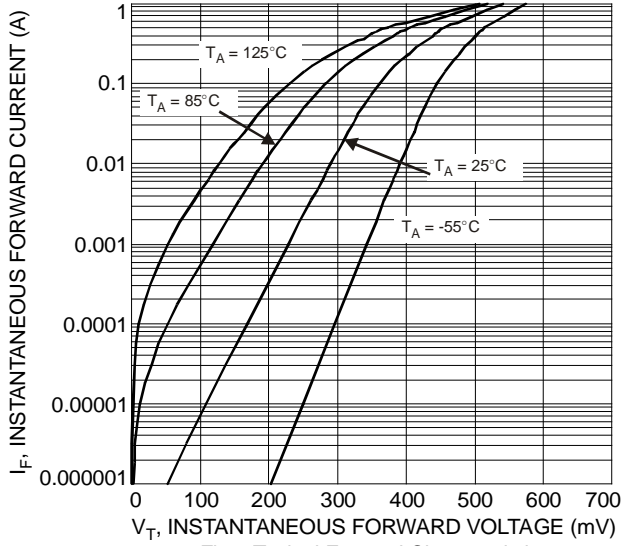


Fig. 1 Typical Forward Characteristics

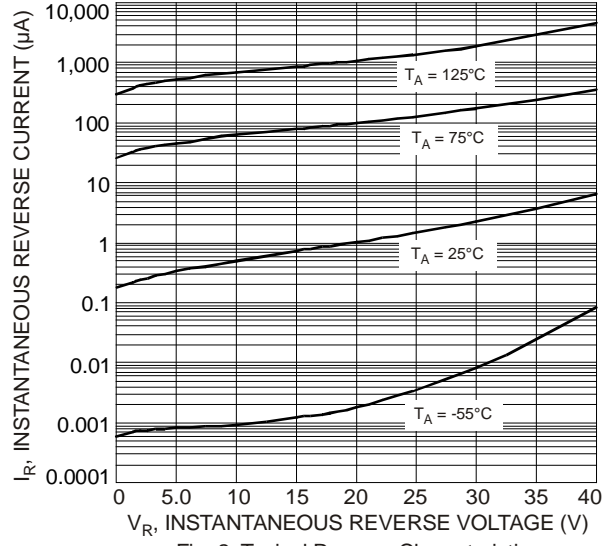


Fig. 2 Typical Reverse Characteristics

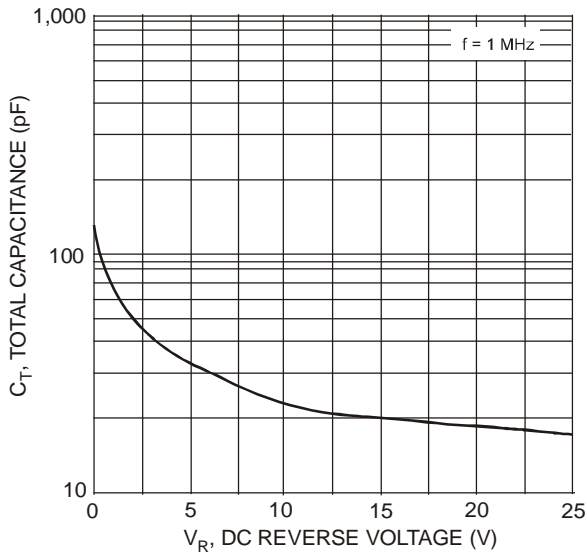


Fig. 3 Total Capacitance vs. Reverse Voltage

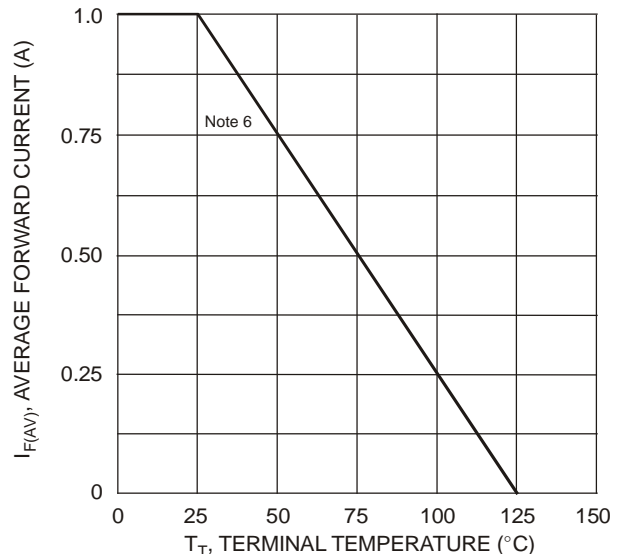


Fig. 4 Forward Current Derating Curve

**Ordering Information** (Note 5)

Part Number	Case	Packaging
B140WS-7	SOD-323	3000/Tape & Reel

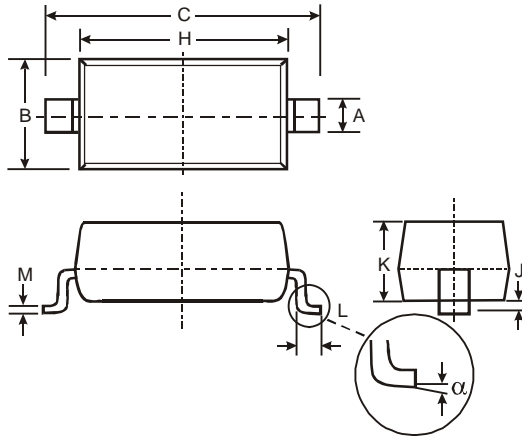
- Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.  
6.  $d P_{TDT} / d T_J < 1/R_{\theta JA}$

**Marking Information**



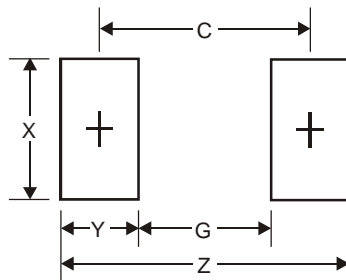
SF = Product Type Marking Code

**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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