

## Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, fast switching capability
- 150°C Operating Junction Temperature
- **Lead Free/RoHS Compliant (Note 1)**
- **“Green” Device (Note 2)**

## Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic, “Green” Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Weight: 0.004 grams (approximate)



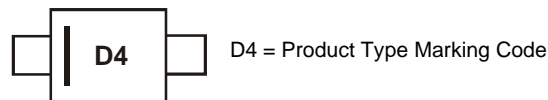
Top View

## Ordering Information (Note 3)

Part Number	Case	Packaging
SBR1A40S3-7	SOD-323	3000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
  2. Diodes Inc.'s “Green” policy can be found on our website at <http://www.diodes.com>.
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information



### 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	$V_{RM}$		
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current $T_C = 65^\circ\text{C}$	$I_O$	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	20	A

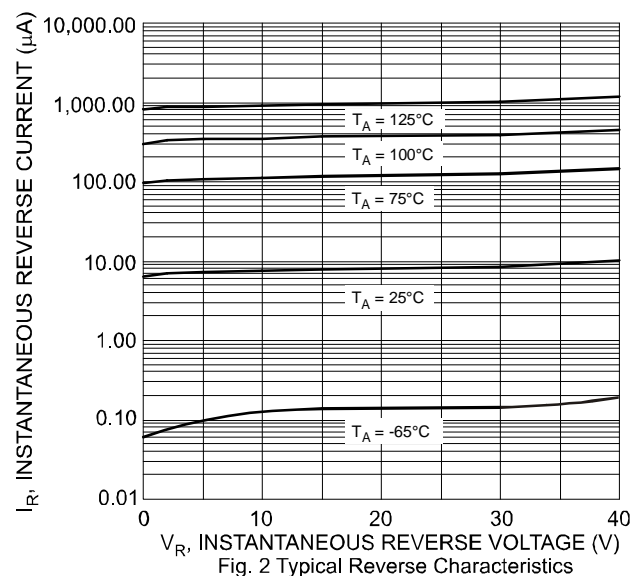
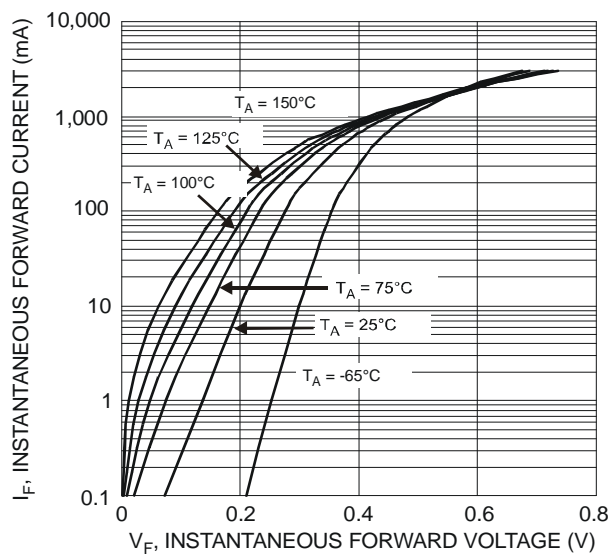
### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance			
Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	473	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	407	$^\circ\text{C/W}$
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	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	40	-	-	V	$I_R = 100\mu\text{A}$
Forward Voltage Drop	$V_F$	-	-	0.55	V	$I_F = 1\text{A}, T_J = 25^\circ\text{C}$
Leakage Current (Note 6)	$I_R$	-	10	100	$\mu\text{A}$	$V_R = 40\text{V}, T_J = 25^\circ\text{C}$
Junction Capacitance	$C_J$	-	55	-	pF	$V_R = 4.0\text{V}, f = 1\text{MHz}$

- Notes:
- FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
  - Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com>.
  - Short duration pulse test used to minimize self-heating effect.



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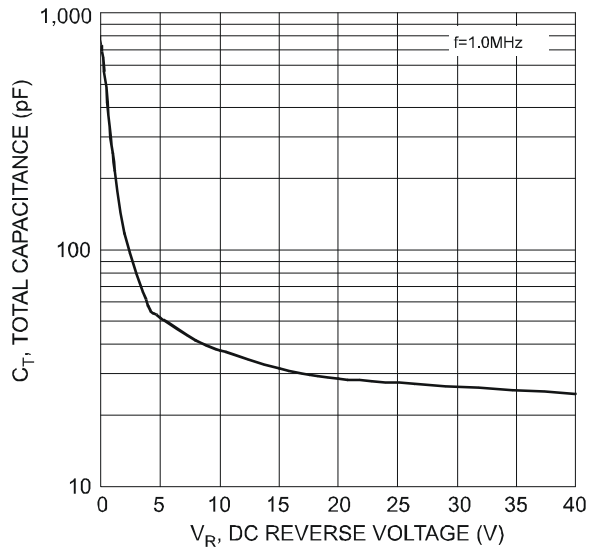


Fig. 3 Total Capacitance vs. Reverse Voltage

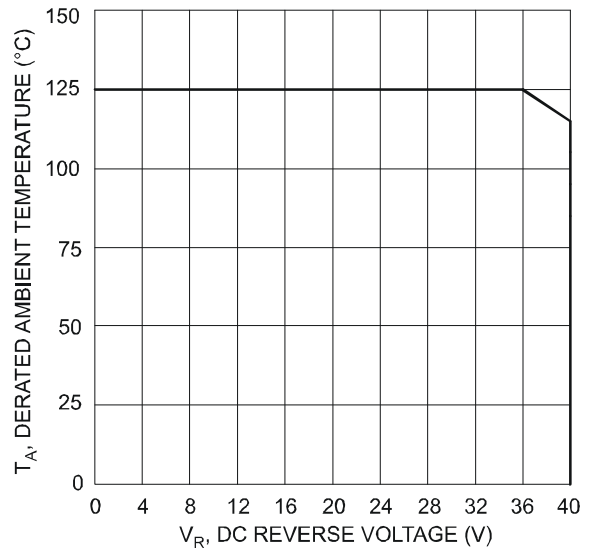
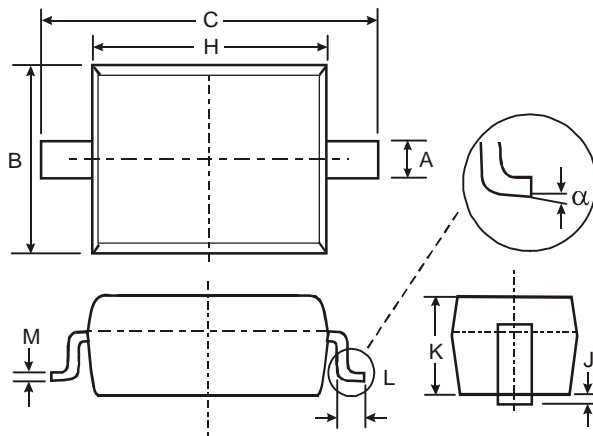


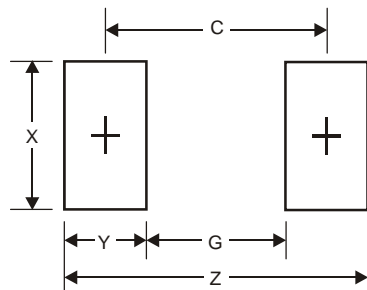
Fig. 4 Operating Temperature Derating

**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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