

Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier SBR® Technology
- Soft, fast switching Capability
- +150°C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet ([SBR1A40S3Q](#))**

Mechanical Data

- Case: SOD323
- 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 **(e3)**
- Weight: 0.004 grams (Approximate)



Top View

Ordering Information (Note 4)

Part Number	Case	Packaging
SBR1A40S3-7	SOD323	3000/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 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



D4 = Product Type Marking Code

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive 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	$R_{\theta JA}$	473	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	407	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient (Note 6)			
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 7)	$V_{(BR)R}$	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 7)	I_R	-	10	100	μA	$V_R = 40\text{V}, T_J = +25^\circ\text{C}$
Junction Capacitance	C_J	-	55	-	pF	$V_R = 4.0\text{V}, f = 1\text{MHz}$

Notes: 5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
 6. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
 7. Short duration pulse test used to minimize self-heating effect.

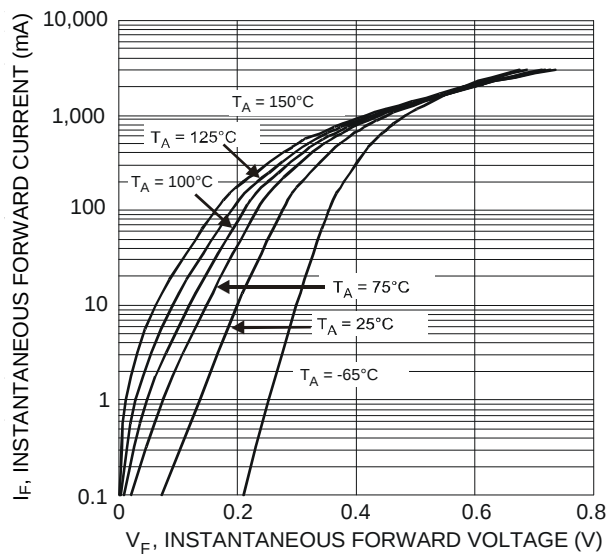


Fig. 1 Typical Forward Characteristics

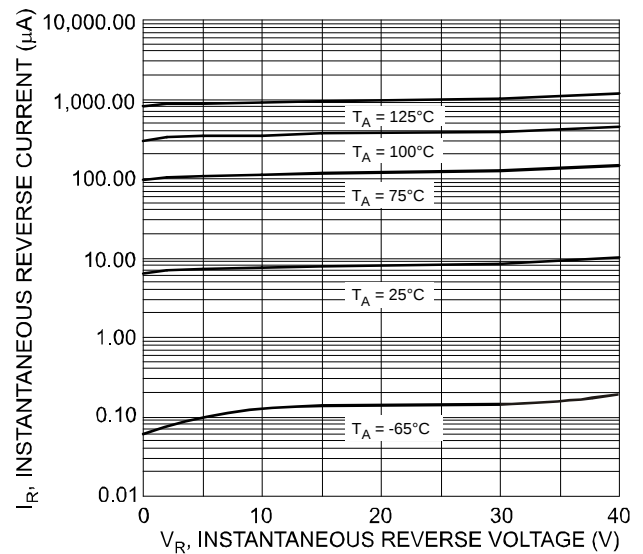


Fig. 2 Typical Reverse Characteristics

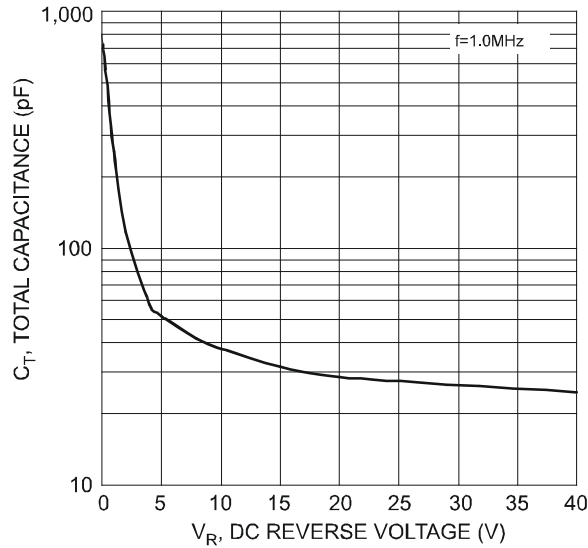


Fig. 3 Total Capacitance vs. Reverse Voltage

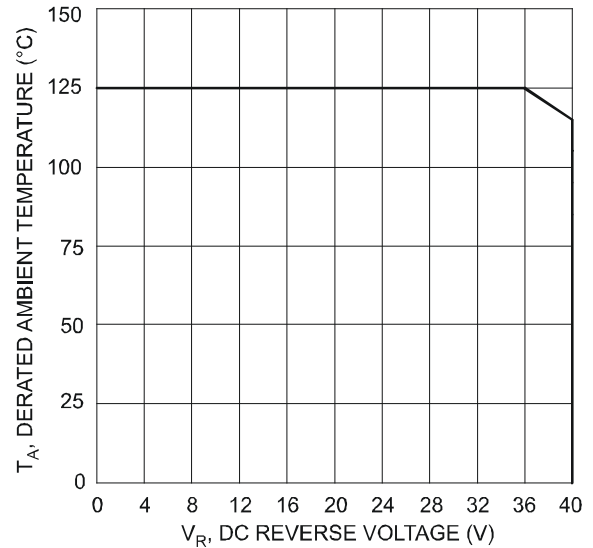
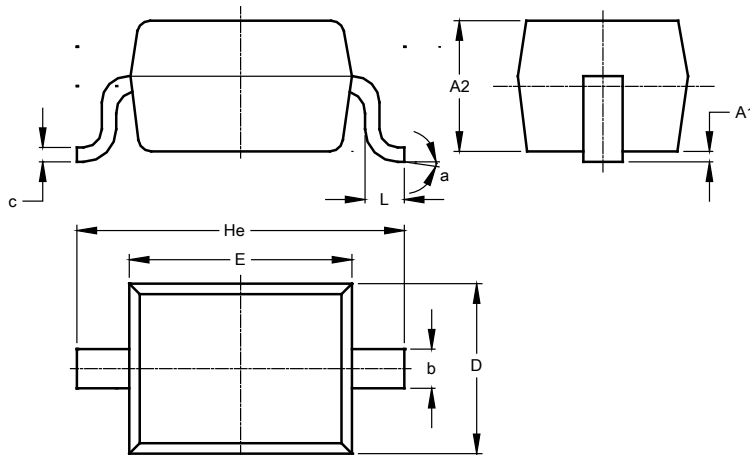


Fig. 4 Operating Temperature Derating

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323

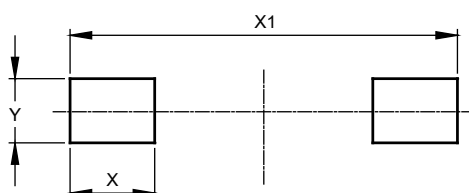


SOD323			
Dim	Min	Max	Typ
A1	--	0.10	0.05
A2	1.00	1.10	1.05
b	0.25	0.35	0.30
c	0.10	0.15	0.11
D	1.20	1.40	1.30
E	1.60	1.80	1.70
He	2.30	2.70	2.50
L	0.20	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323



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

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