NEW PRODUCT

SBR140S3

1A SBR®
SUPER BARRIER RECTIFIER

Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, fast switching capability
- 150ºC Operating Junction Temperature
- **Lead Free/RoHS Compliant (Note 1)**
- **"Green" Device (Note 3)**

Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic, "Green" Molding Compound.
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.004 grams (approximate)

Top View

Maximum Ratings @T_A = 25°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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{RM}	40	V
RMS Reverse Voltage	$V_{R(RMS)}$	28	V
Average Rectified Output Current T_C=65°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 2) Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$ $R_{\theta jA}$	473 407	ºC/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	ºC

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 4)	$V_{(BR)R}$	40	-	-	V	I_R = 200µA
Forward Voltage Drop	V_F	-	0.41 0.35 0.46 0.42	0.45 0.38 0.49 0.45	V	I_F = 700mA, T_J = 25ºC I_F = 700mA, T_J = 150ºC I_F = 1A, T_J = 25ºC I_F = 1A, T_J = 150ºC
Leakage Current (Note 4)	I_R	-	8 3 10 4	15 9 30 12	µA mA µA mA	V_R = 10V, T_J = 25ºC V_R = 10V, T_J = 150ºC V_R = 40V, T_J = 25ºC V_R = 40V, T_J = 150ºC

Notes:
1. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Note 7.*
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
3. Diodes Inc.'s "Green" policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
4. Short duration pulse test used to minimize self-heating effect.
5. Polymide PCB, 2 oz. Copper, minimum recommended pad layout pad layout per http://www.diodes.com/datasheets/ap02001.pdf.

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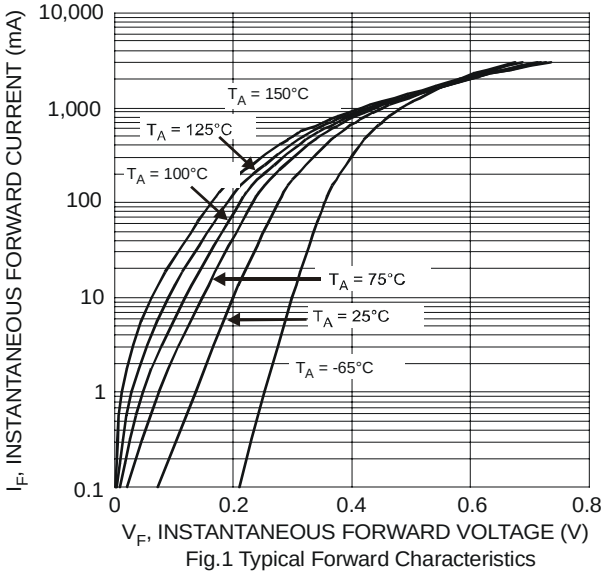

Fig.1 Typical Forward Characteristics

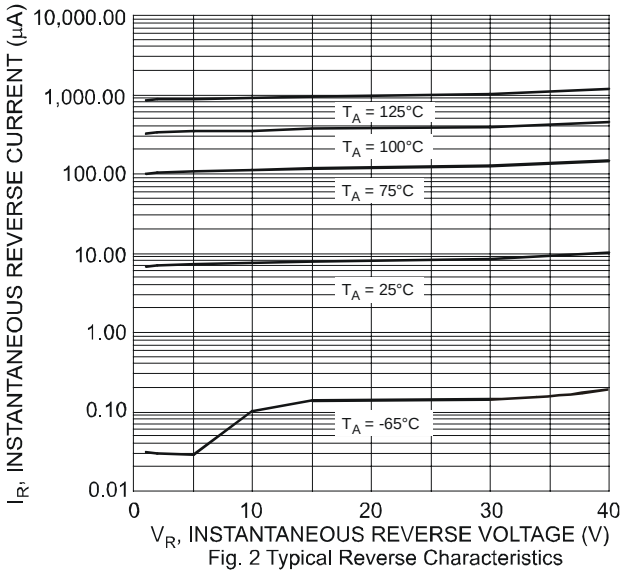

Fig. 2 Typical Reverse Characteristics

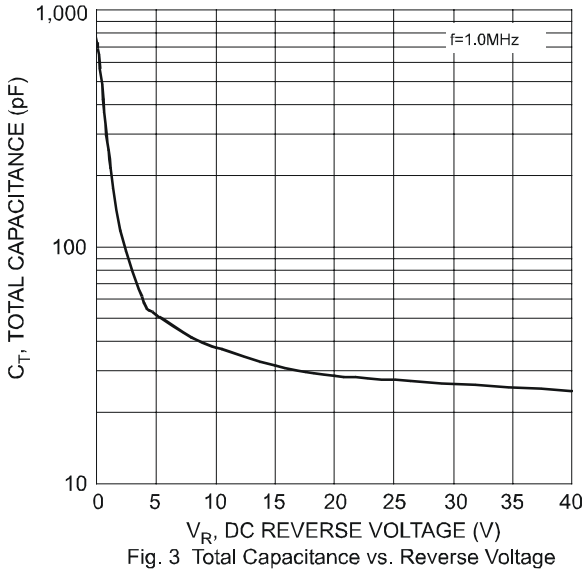

Fig. 3 Total Capacitance vs. Reverse Voltage

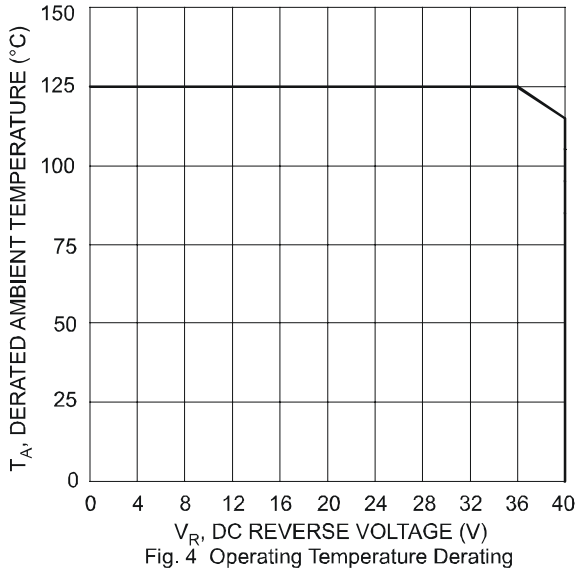

Fig. 4 Operating Temperature Derating

Ordering Information (Note 6)

Part Number	Case	Packaging
SBR140S3-7	SOD-323	3000/Tape & Reel

Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

D4 = Product Type Marking Code

SBR is a registered trademark of Diodes Incorporated.

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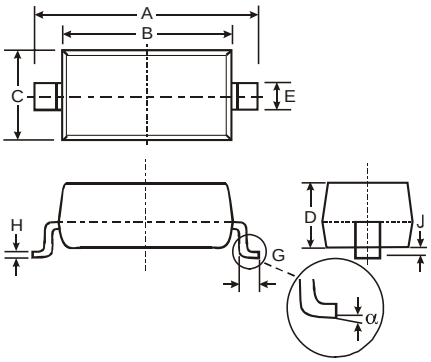
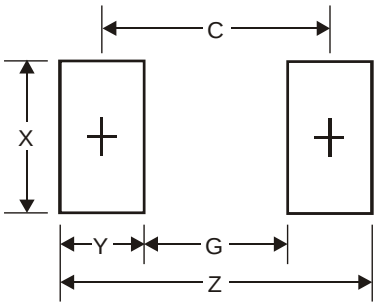
Package Outline Dimensions



SOD-323		
Dim	**Min**	**Max**
A	2.30	2.70
B	1.60	1.80
C	1.20	1.40
D	1.05 Typical	
E	0.25	0.35
G	0.20	0.40
H	0.10	0.15
J	0.00	0.10
α	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