



**THE DATASHEET OF  
SBR140S3-7**



## 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 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<sub>A</sub> = 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	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	28	V
Average Rectified Output Current T <sub>C</sub> =65°C	I <sub>O</sub>	1	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	20	A

## Thermal Characteristics

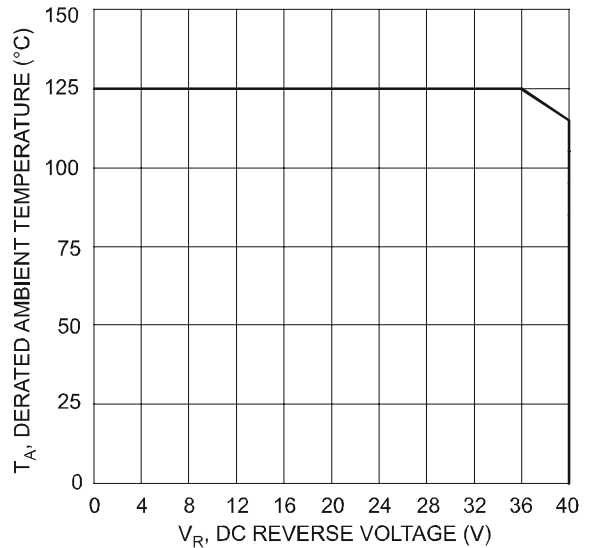
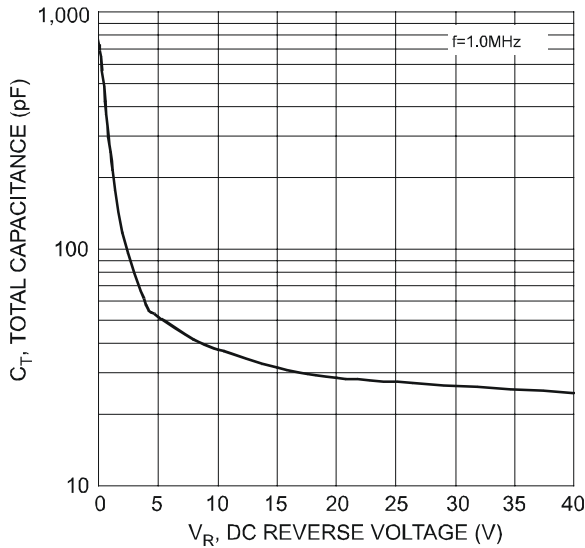
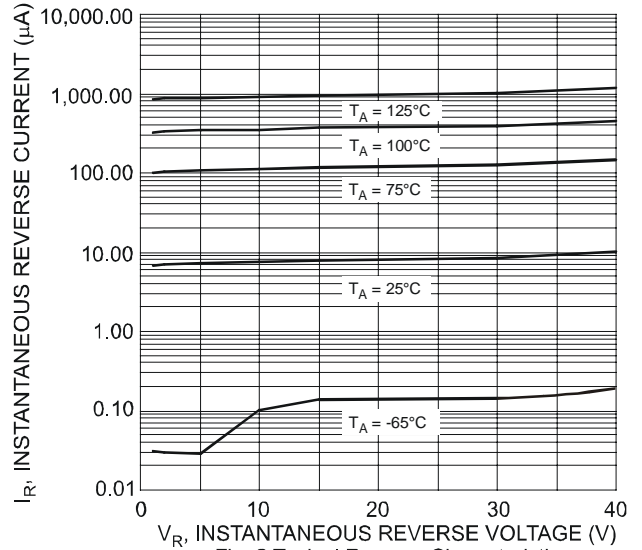
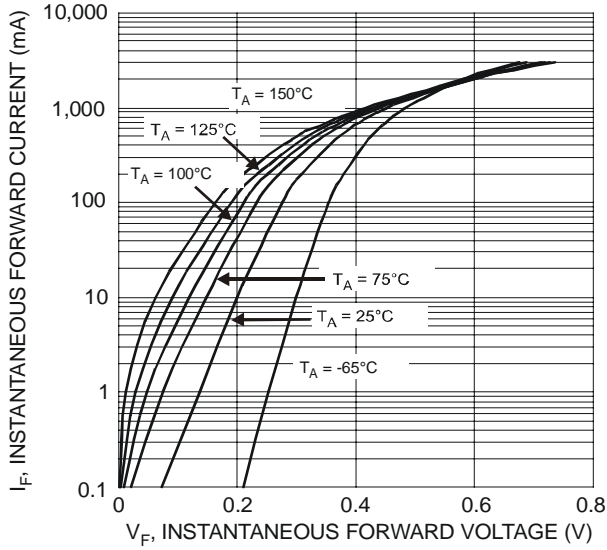
Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance	R <sub>θJA</sub>	473	°C/W
Thermal Resistance Junction to Ambient (Note 2)	R <sub>θJA</sub>	407	
Thermal Resistance Junction to Ambient (Note 5)			
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
Reverse Breakdown Voltage (Note 4)	V <sub>(BR)R</sub>	40	-	-	V	I <sub>R</sub> = 200μA	
Forward Voltage Drop	V <sub>F</sub>	-	0.41	0.45	V	I <sub>F</sub> = 700mA, T <sub>J</sub> = 25°C	
			0.35	0.38		I <sub>F</sub> = 700mA, T <sub>J</sub> = 150°C	
			0.46	0.49		I <sub>F</sub> = 1A, T <sub>J</sub> = 25°C	
			0.42	0.45		I <sub>F</sub> = 1A, T <sub>J</sub> = 150°C	
Leakage Current (Note 4)	I <sub>R</sub>	-	8	15	μA	V <sub>R</sub> = 10V, T <sub>J</sub> = 25°C	
			3	9		mA	V <sub>R</sub> = 10V, T <sub>J</sub> = 150°C
			10	30		μA	V <sub>R</sub> = 40V, T <sub>J</sub> = 25°C
			4	12		mA	V <sub>R</sub> = 40V, T <sub>J</sub> = 150°C

- 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](http://www.diodes.com/products/lead_free/index.php).
  4. Short duration pulse test used to minimize self-heating effect.
  5. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.

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**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>.

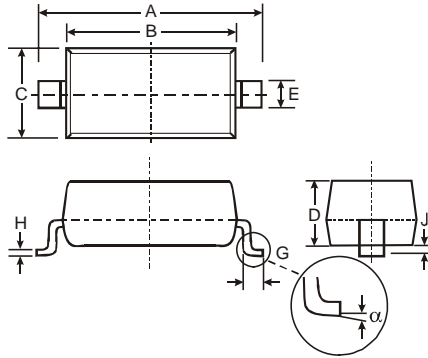
**Marking Information**



D4 = Product Type Marking Code

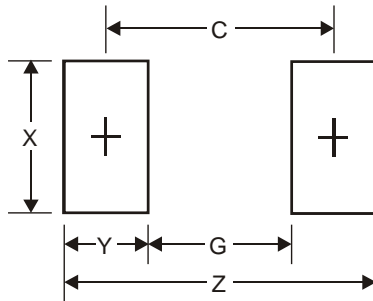
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**Package Outline Dimensions**



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

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