

**1A SBR[®]
Super Barrier Rectifier**
NEW PRODUCT
Features

- Low Forward Voltage Drop
- Low Reverse Leakage
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Super Barrier Design
- Soft, fast switching capability
- 150°C Operating Junction Temperature
- Molded Plastic SOD-323
- **Lead Free/RoHS Compliant (Note 1)**
- **“Green” Device (Note 3)**

Mechanical Data

- Case Material: Molded Plastic, “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Matte Tin Finish annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking: See Page 3
- Ordering Information: See Page 3

Maximum Ratings @ T_A = 25°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 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
Maximum Thermal Resistance Thermal Resistance Junction to Ambient (Note 2) Thermal Resistance Junction to Ambient (Note 5)	R _{θJA} R _{θJA}	473 407	°C/W
Operating and Storage Temperature Range	T _j , T _{STG}	-65 to +150	°C

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 = 200 μA
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 = 25°C I _F = 700mA, T _j = 150°C I _F = 1A, T _j = 25°C I _F = 1A, T _j = 150°C
Leakage Current (Note 4)	I _R	-	8 3 10 4	15 9 30 12	μA mA μA mA	V _R = 10V, T _j = 25 °C V _R = 10V, T _j = 150 °C V _R = 40V, T _j = 25 °C V _R = 40V, T _j = 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.
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>.

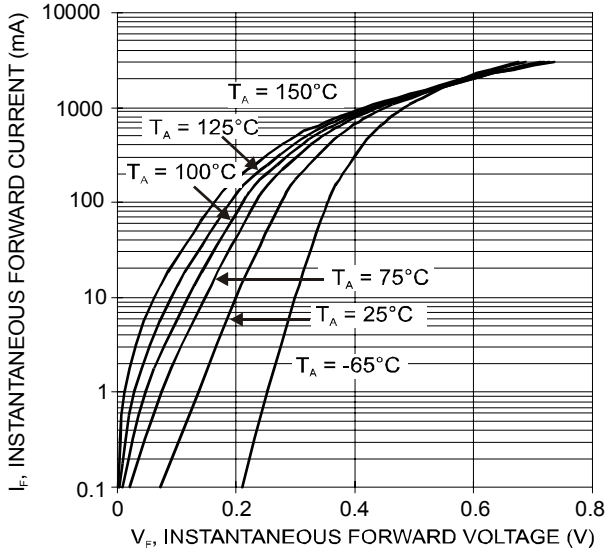


Fig. 1 Typical Forward Characteristics

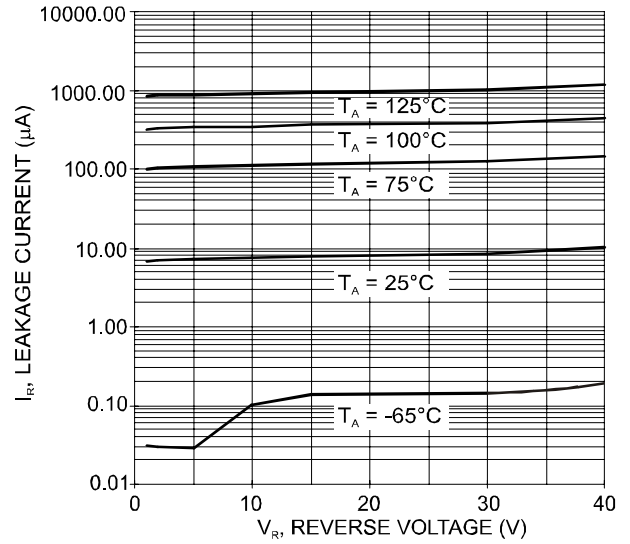


Fig. 2 Typical Reverse Characteristics

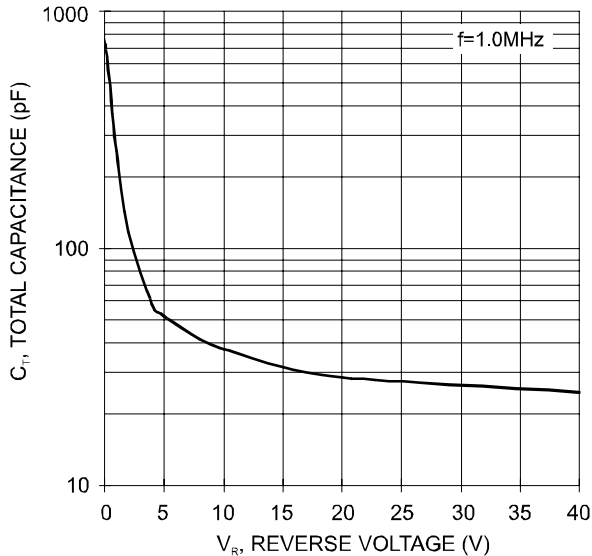


Fig. 3 Typical Total Capacitance

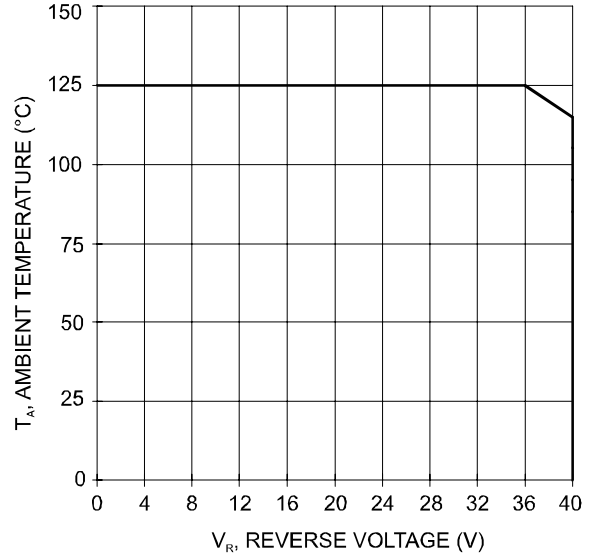
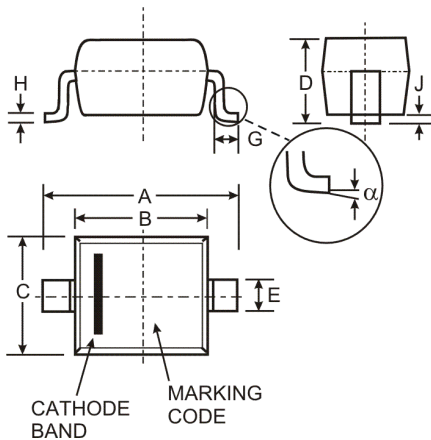




Fig. 4 V_R vs T_A

Package Outline Drawing



SOD-323		
Dim	Min	Max
A	2.30	2.70
B	1.60	1.80
C	1.20	1.40
D	1.00	1.10
E	0.25	0.35
G	0.20	0.40
H	0.10	0.15
J	0.05 Typical	
α	0°	8°
All Dimensions in mm		

Marking, Polarity, Weight & Ordering Information

	Case Style	Marking	Weight
SBR140S3			0.004g (approx.)

Ordering Information	Marking Code
SBR140S3-7 3,000 pieces/Tape and Reel	D4 = Product Type Marking Code

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