NEW PRODUCT

SBR1A40S1

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 2)**

Mechanical Data

- Case: SOD123
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Leads: Matte Tin Finish annealed over Alloy 42 leadframe (Lead Free Plating) Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Weight: 0.004 grams (approximate)

Top View

Ordering Information (Note 3)

Part Number	Case	Packaging
SBR1A40S1-7	SOD123	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

D 4 = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: X = 2010)
M = Month (ex: 9 = September)

Date Code Key

Year	2010	2011	2012	2013	2014	2015	2016
Code	X	Y	Z	A	B	C	D

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

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Maximum Ratings @T_A = 25℃ 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
Average Rectified Output Current T_C = 65℃	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) 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
Power Dissipation (Note 7) 	PD $R_{\theta JC}$	320 147	mW ºC/W

Electrical Characteristics @T_A = 25℃ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V_F	-	-	0.52	V	I_F = 1A, T_J = 25ºC
		-	0.44	0.50		I_F = 1A, T_J = 125ºC
Leakage Current (Note 6)	I_R	-	18	200	μA	V_R = 40V, T_J = 25ºC
		-	4	-	mA	V_R = 40V, T_J = 100ºC

Notes: 4. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.
5. Polymide PCB, 2 oz. Copper, minimum recommended pad layout pad layout per http://www.diodes.com.
6. Short duration pulse test used to minimize self-heating effect.
7. Device mounted on FR-4 substate,1"*1",2oz, copper,singie-sided,PC boards.

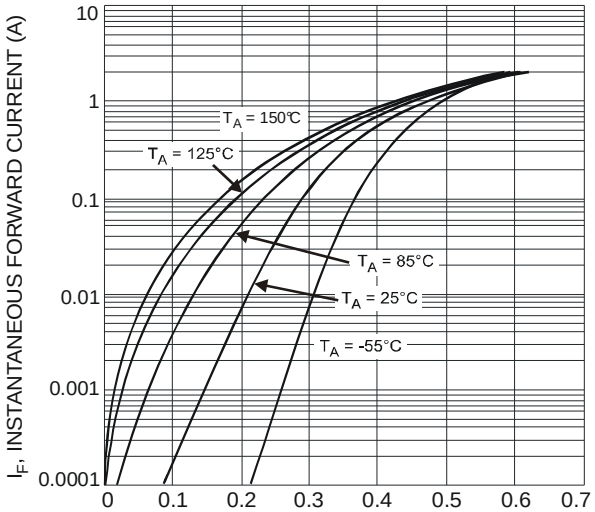

Fig.1 Typical Forward Characteristics

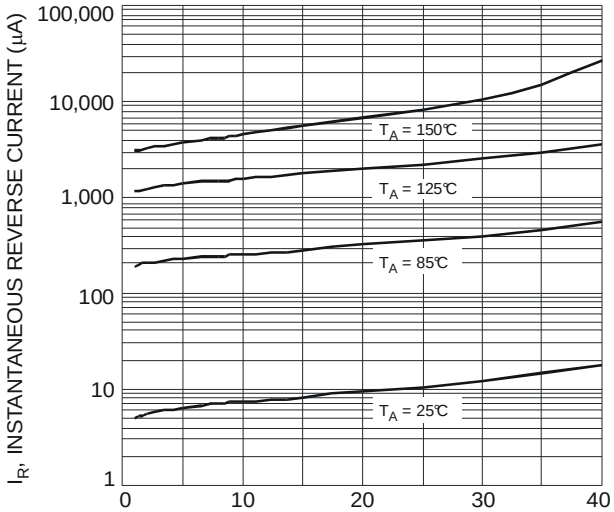

Fig. 2 Typical Reverse Characteristics

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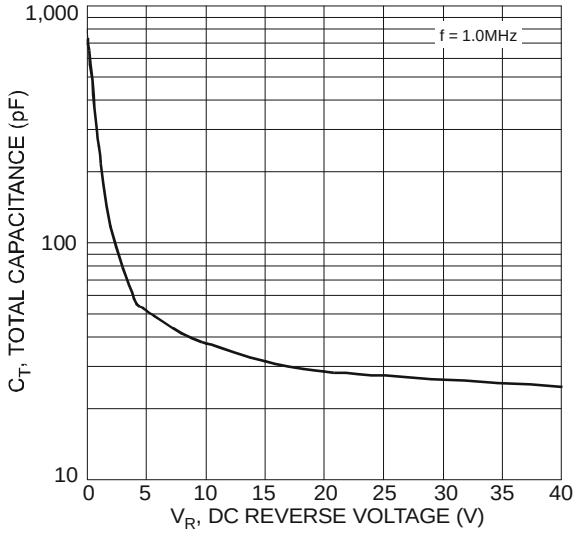

Fig. 3 Total Capacitance vs. Reverse Voltage

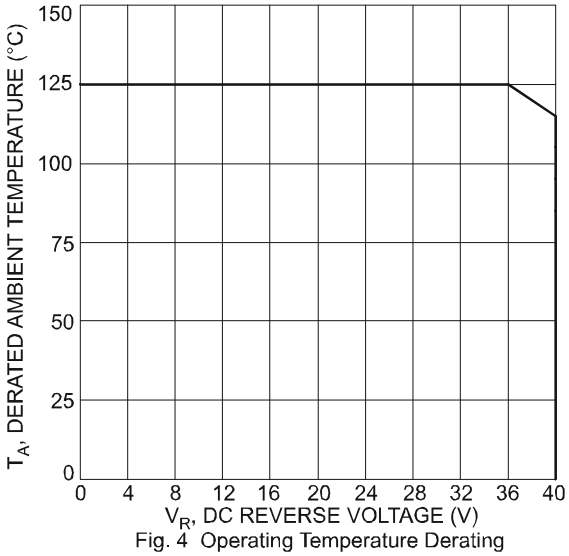

Fig. 4 Operating Temperature Derating

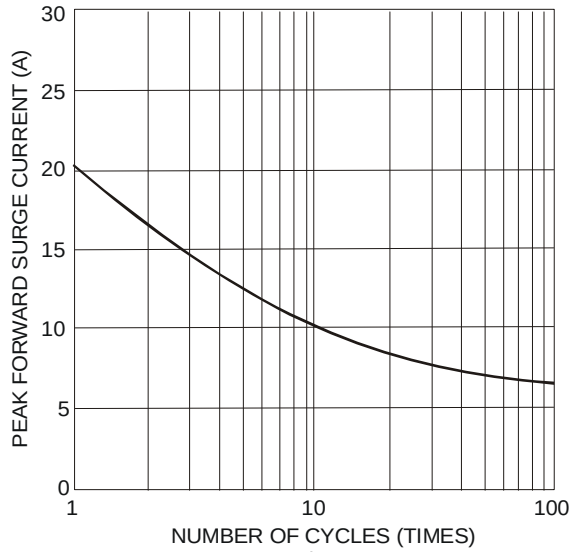

Fig. 5

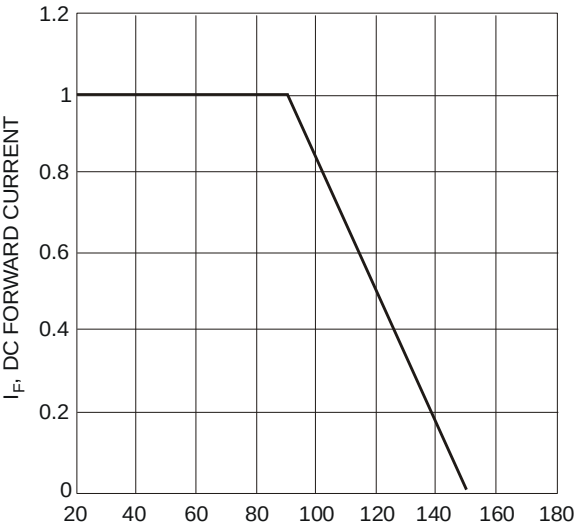

Fig. 7 DC Forward Current Derating

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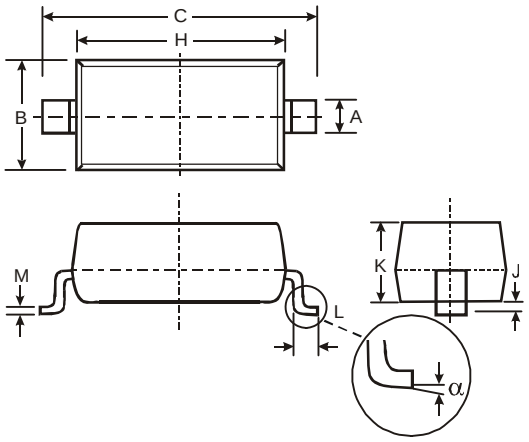
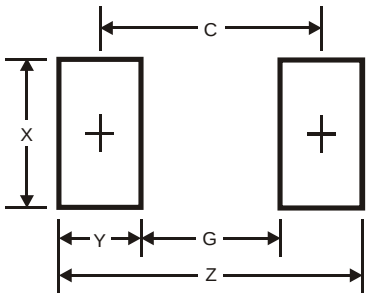
Package Outline Dimensions



SOD123		
Dim	**Min**	**Max**
A	0.55 Typ	
B	1.40	1.70
C	3.55	3.85
H	2.55	2.85
J	0.00	0.10
K	1.00	1.35
L	0.25	0.40
M	0.10	0.15
α	0	8°
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	4.9
G	2.5
X	0.7
Y	1.2
C	3.7

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