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[Diodes Incorporated](#)
[SBR1U200P1-7](#)

For any questions, you can email us directly:

sales@integrated-circuit.com



SBR1U200P1

1.0A SBR®

SURFACE MOUNT SUPER BARRIER RECTIFIER
PowerDI®123

Features

- Ultra Low Forward Voltage Drop
- Low Leakage Current
- Superior Reverse Avalanche Capability
- Excellent High Temperature Stability
- Patented Interlocking Clip Design for High Surge Current Capacity
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 150°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **"Green" Molding Compound (No Br, Sb)**

Mechanical Data

- Case: PowerDI®123
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Polarity Indicator: Cathode Band
- Terminals: Finish - Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.018 grams (approximate)



Top View

Maximum Ratings @ $T_A = 25^\circ\text{C}$ 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_{RRM}		
Working Peak Reverse Voltage	V_{RWM}	200	V
DC Blocking Voltage	V_{RM}		
Average Rectified Output Current (See Figure 1)	I_O	1.0	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	40	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction to Ambient (Note 2)	R_{0JA}	217	°C/W
Maximum Thermal Resistance Junction to Ambient (Note 3)	R_{0JA}	138	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	°C

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V_F	-	0.75 0.60	0.82 0.68	V	$I_F = 1.0\text{A}, T_J = 25^\circ\text{C}$ $I_F = 1.0\text{A}, T_J = 125^\circ\text{C}$
Reverse Current (Note 4)	I_R	-	-	50	μA	$V_R = 200\text{V}, T_J = 25^\circ\text{C}$
Reverse Recovery Time	t_{rr}	-	-	25	ns	$I_F = 0.5\text{A}, I_R = 1\text{A},$ $I_{RR} = 0.25\text{A},$

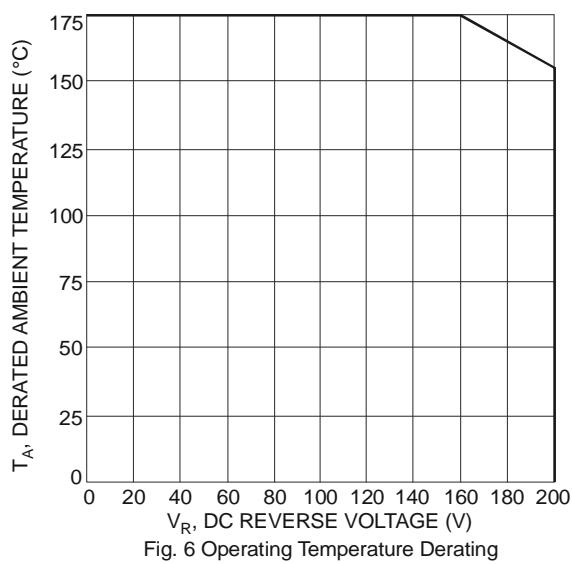
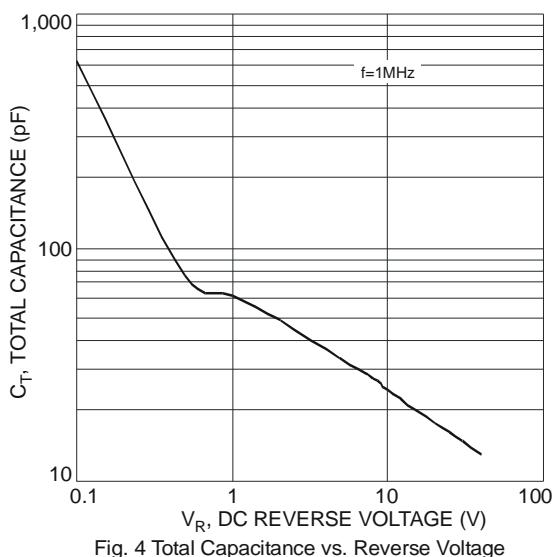
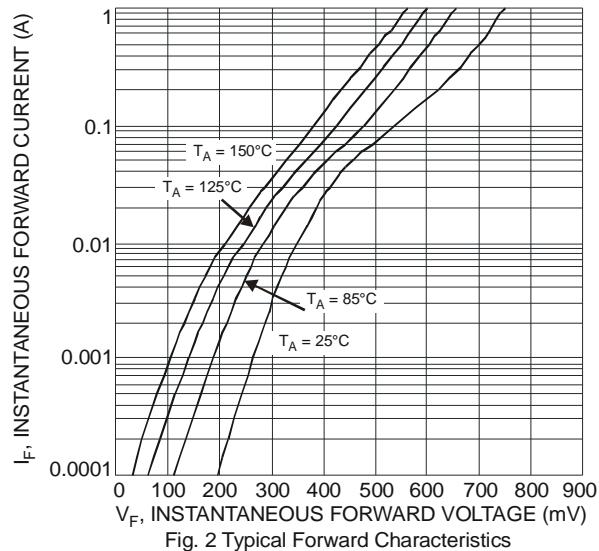
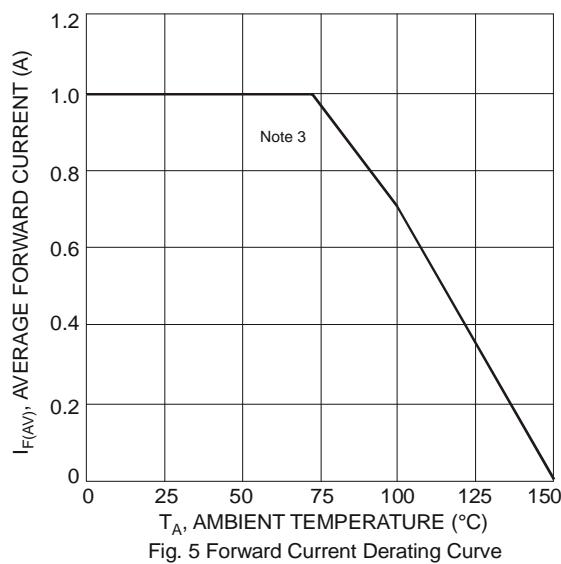
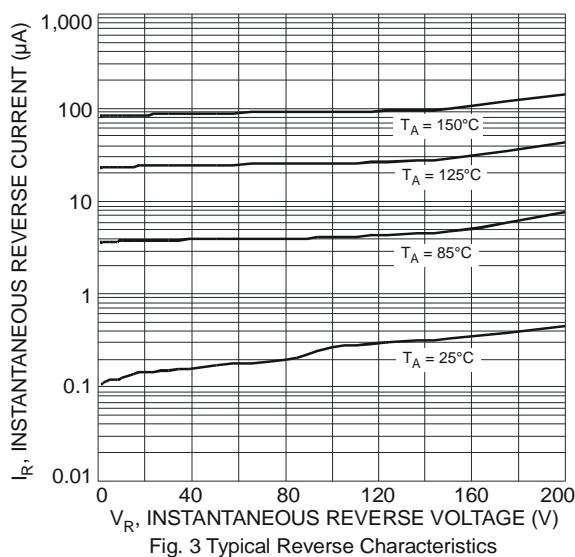
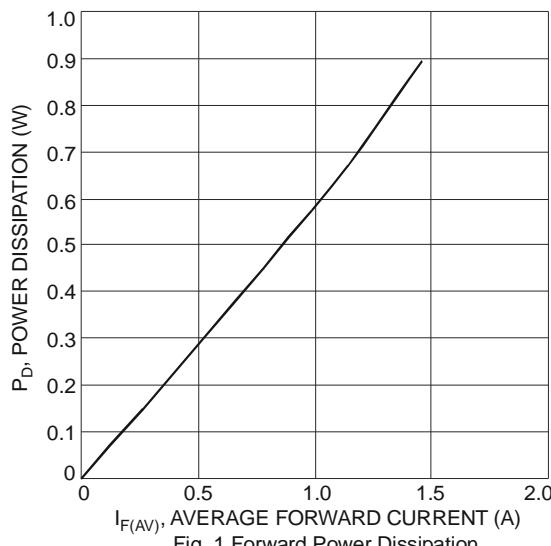
Notes:

1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
3. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
4. Short duration pulse test used to minimize self-heating effect.

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SBR1U200P1
Document number: DS32093 Rev. 2 - 2

2 of 4
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SBR1U200P1

Ordering Information (Note 5)

Part Number	Case	Packaging
SBR1U200P1-7	PowerDI®123	3000/Tape & Reel

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information

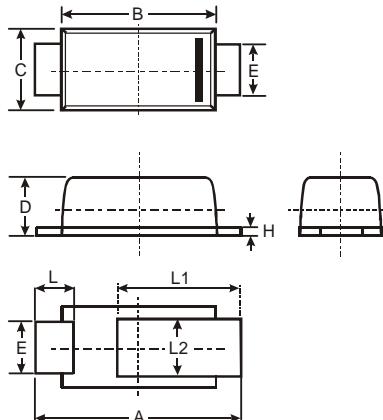


SDC = Product Type Marking Code
YM = Date Code Marking
Y = Year (ex: X = 2010)
M = Month (ex: 9 = September)

Date Code Key

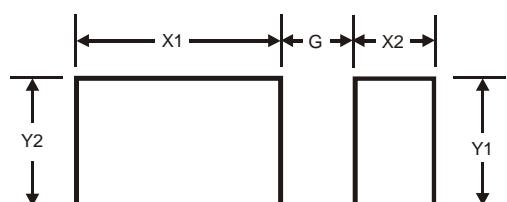
Year	2009	2010	2011	2012	2013	2014	2015					
Code	W	X	Y	Z	A	B	C					
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Package Outline Dimensions



PowerDI®123			
Dim	Min	Max	Typ
A	3.50	3.90	3.70
B	2.60	3.00	2.80
C	1.63	1.93	1.78
D	0.93	1.00	0.98
E	0.85	1.25	1.00
H	0.15	0.25	0.20
L	0.55	0.75	0.65
L1	1.80	2.20	2.00
L2	0.95	1.25	1.10
All Dimensions in mm			

Suggested Pad Layout



Dimensions	Value (in mm)
G	1.0
X1	2.2
X2	0.9
Y1	1.4
Y2	1.4

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2. support or sustain life and whose failure to perform when properly used in accordance with instructions for use provided in the labeling can be reasonably expected to result in significant injury to the user.

B. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or to affect its safety or effectiveness.

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SBR1U200P1
Document number: DS32093 Rev. 2 - 2

4 of 4
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August 2010
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