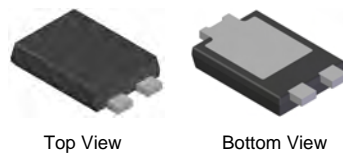


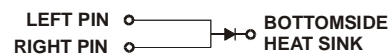
## Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- 175°C Operating Junction Temperature
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **“Green” Molding Compound (No Br, Sb)**



## Mechanical Data

- Case: PowerDI<sup>®</sup>5
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.093 grams (approximate)



**Note:** Pins Left & Right must be electrically connected at the printed circuit board.

## 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>	200	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current (See Figure 1)	I <sub>O</sub>	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	180	A

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance Junction to Ambient (Note 2)	R <sub>θJA</sub>	77	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +175	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	-	0.75	0.82	V	I <sub>F</sub> = 5A, T <sub>J</sub> = 25°C
		-	0.62	0.67		I <sub>F</sub> = 5A, T <sub>J</sub> = 125°C
		-	0.83	0.88		I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C
Leakage Current (Note 5)	I <sub>R</sub>	-	-	0.1	mA	V <sub>R</sub> = 200V, T <sub>J</sub> = 25°C
		-	0.18	10		V <sub>R</sub> = 200V, T <sub>J</sub> = 125°C

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).
  2. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
  3. Short duration pulse test used to minimize self-heating effect.

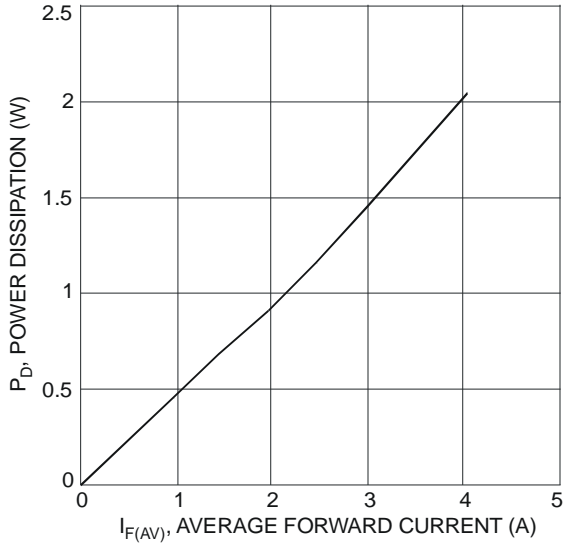


Fig. 1 Forward Power Dissipation

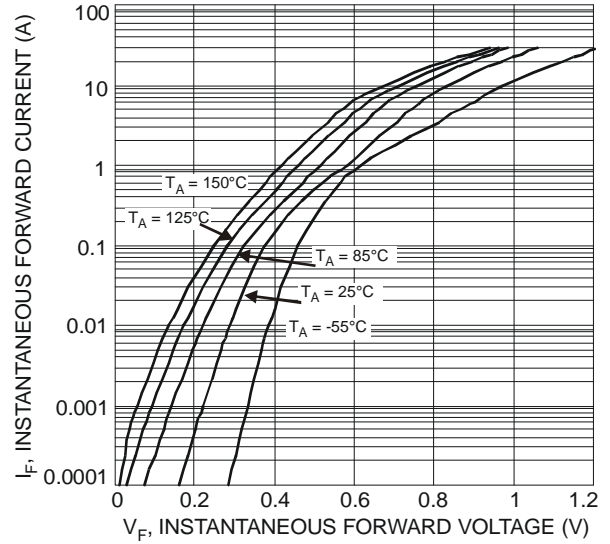


Fig. 2 Typical Forward Characteristics

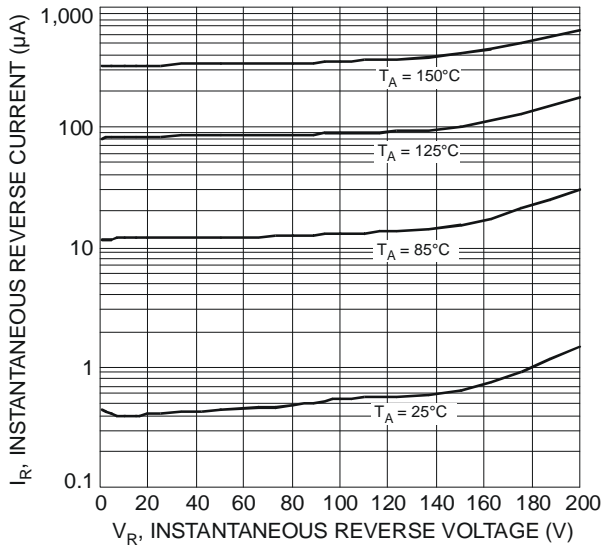


Fig. 3 Typical Reverse Characteristics

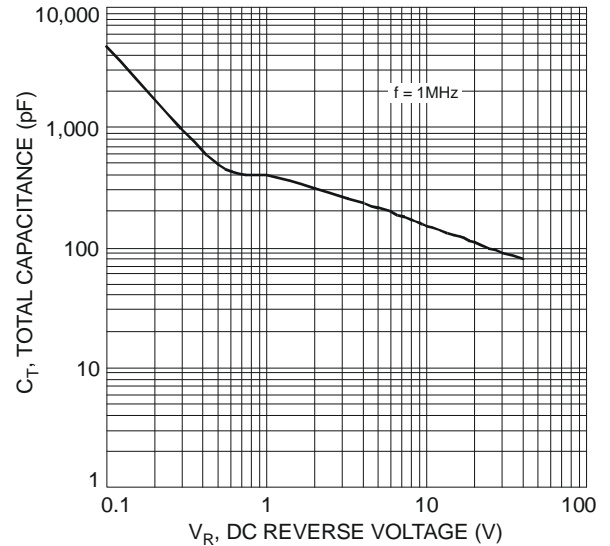


Fig. 4 Total Capacitance vs. Reverse Voltage

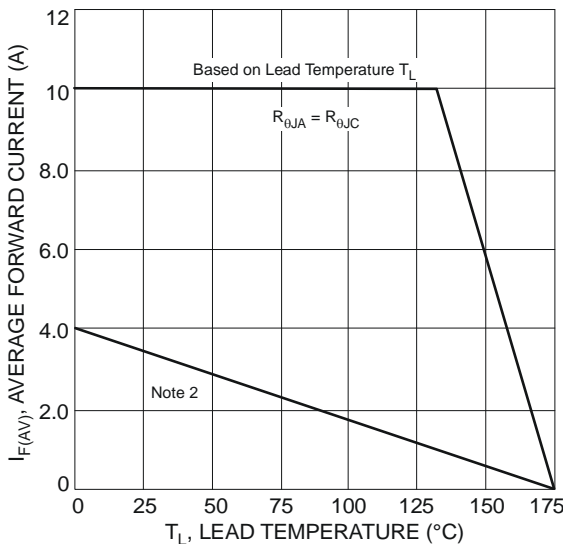


Fig. 5 Forward Current Derating Curve

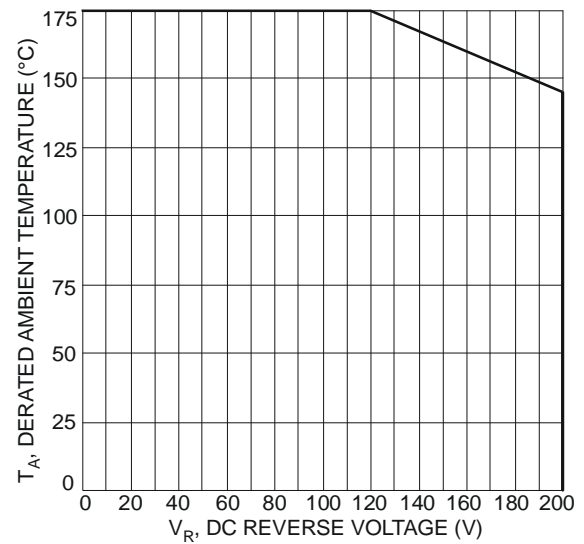
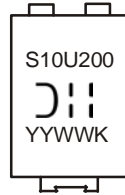


Fig. 6 Operating Temperature Derating

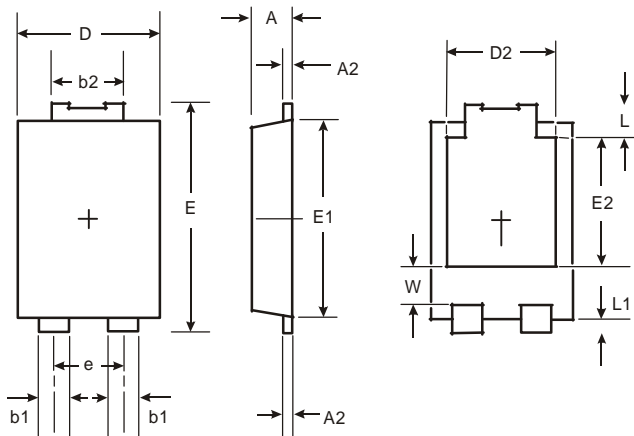
**Ordering Information** (Note 4)

Part Number	Case	Packaging
SBR10U200P5-13	PowerDI <sup>®</sup> 5	5000/Tape & Reel

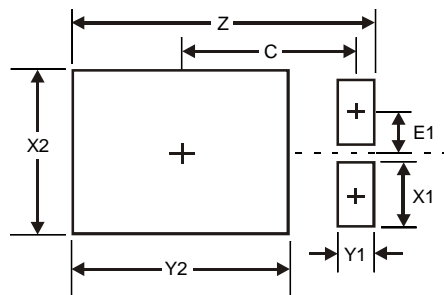
Notes: 4. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**


S10U200 = Product Type Marking Code  
 DII = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 08 for 2008)  
 WW = Week Code 01 to 52  
 K = Factory Designator

**Package Outline Dimensions**


PowerDI <sup>®</sup> 5		
Dim	Min	Max
A	1.05	1.15
A2	0.33	0.43
b1	0.80	0.99
b2	1.70	1.88
D	3.90	4.05
D2	3.054 Typ	
E	6.40	6.60
e	1.84 Typ	
E1	5.30	5.45
E2	3.549 Typ	
L	0.75	0.95
L1	0.50	0.65
W	1.10	1.41
All Dimensions in mm		

**Suggested Pad Layout**


Dimensions	Value (in mm)
Z	6.6
X1	1.4
X2	3.6
Y1	0.8
Y2	4.7
C	3.87
E1	0.9

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SBR10U200P5

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March 2009

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