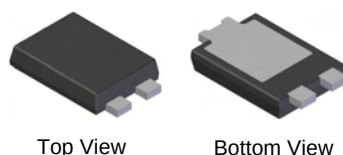


Features

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- 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[®]5
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 ^(e3)
- Polarity: See Diagram
- Weight: 0.093 grams (approximate)



LEFT PIN ○
RIGHT PIN ○

○ → BOTTOMSIDE
HEAT SINK

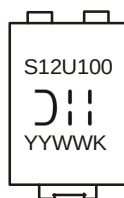
Note: Pins Left & Right must be electrically connected at the printed circuit board.

Ordering Information (Note 2)

Part Number	Case	Packaging
SBR12U100P5-13	PowerDI [®] 5	5000/Tape & Reel

Notes: 1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
2. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



S12U100 = Product Type Marking Code
 D = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 08 for 2008)
 WW = Week Code (01 - 53)
 K = Factory Designator

Maximum Ratings @T_A = 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 _{RRM}	100	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current (See Figure 1)	I _O	12	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	250	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 3) T _A = 25°C	R _{θJA}	27	°C/W
Typical Thermal Resistance Junction to Lead	R _{θJL}	3	°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
Forward Voltage Drop	V _F	-	0.49	-	V	I _F = 5A, T _J = 25°C
			-	0.51		I _F = 5A, T _J = 125°C
			-	0.71		I _F = 12A, T _J = 25°C
Leakage Current (Note 4)	I _R	-	-	0.25	mA	V _R = 100V, T _J = 25°C
			11	40		V _R = 100V, T _J = 125°C

Notes: 3. Device mounted on Polyimide PCB with 16x recommended pad layout.
 4. Short duration pulse test used to minimize self-heating effect.

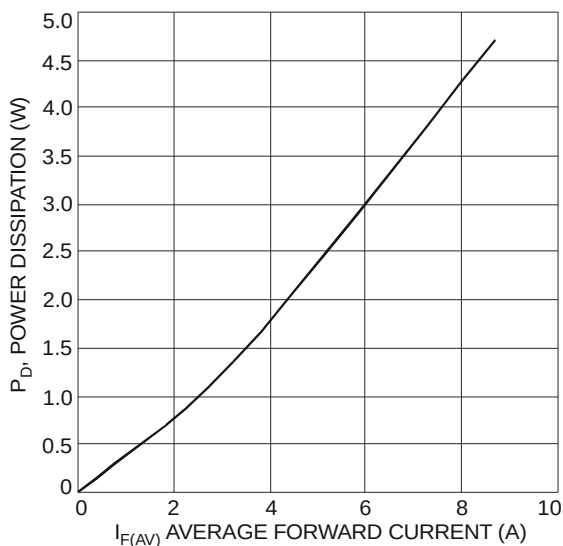


Fig. 1 Forward Power Dissipation

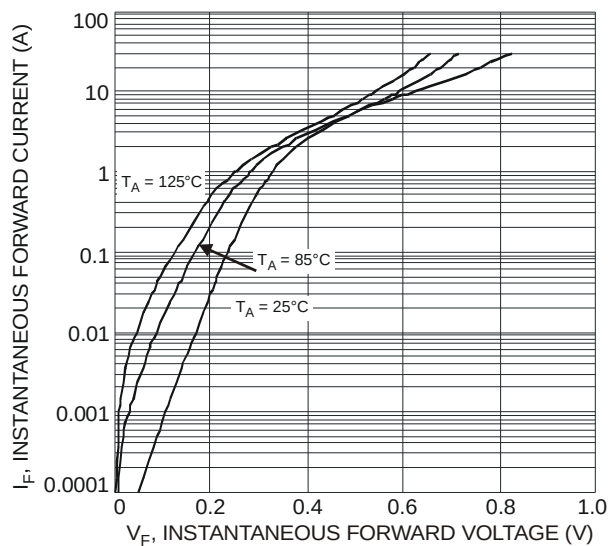
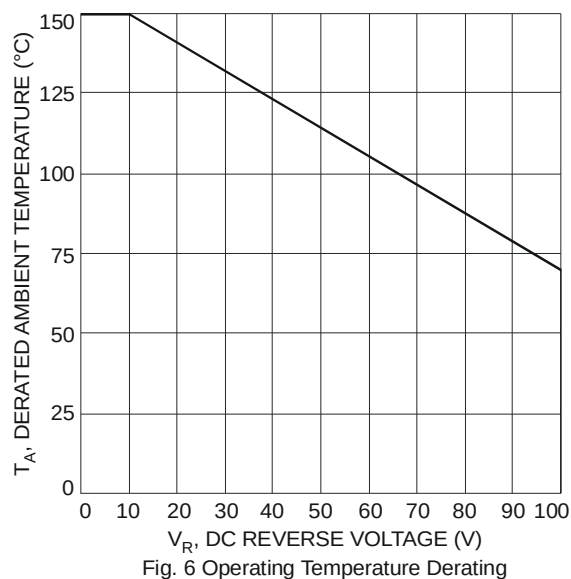
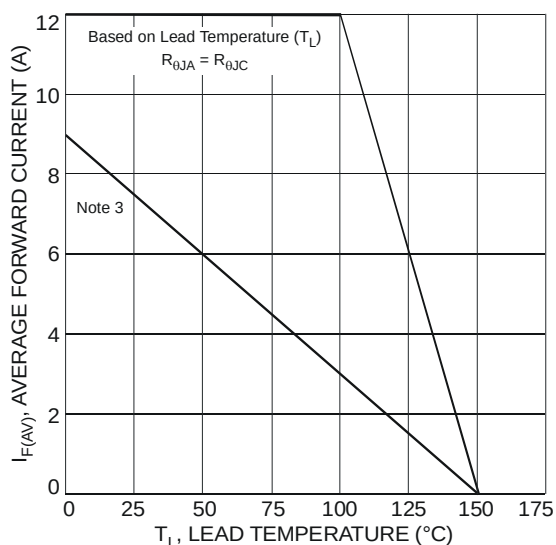
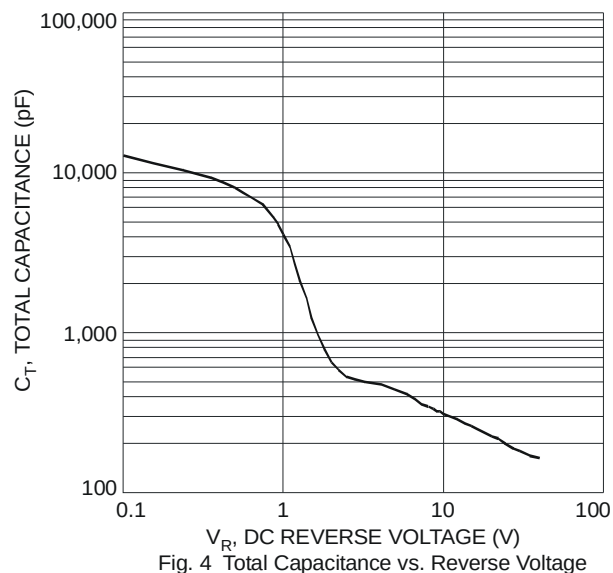
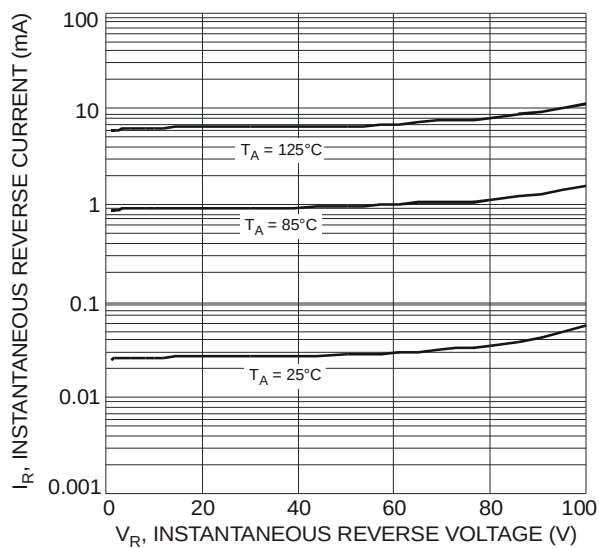
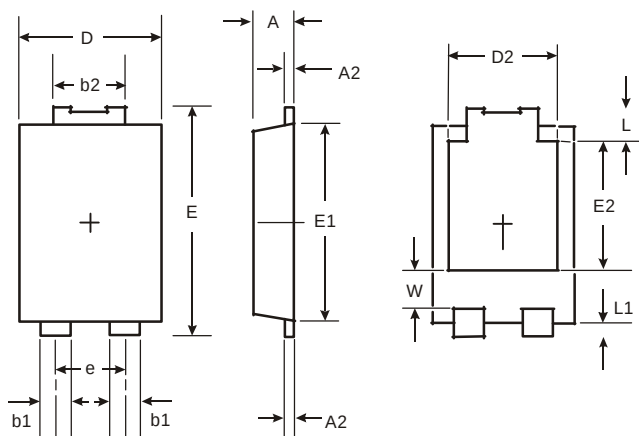


Fig. 2 Typical Forward Characteristics

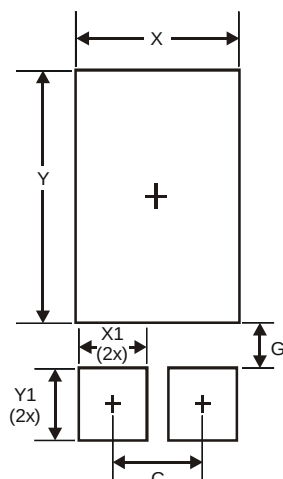


Package Outline Dimensions



PowerDI [®] 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)
C	1.840
G	0.852
X	3.360
X1	1.390
Y	4.860
Y1	1.400

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December 2010
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Электрон
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