

Product Summary

V_{RRM} (V)	I_O (A)	TRR (Typ) (nS)	V_F (V)	I_R (mA)
300	8	30	0.90	0.05

Description and Applications

The SBR8U300P5 uses patented SBR technology which offers ultra low V_F , excellent high temperature stability and soft switching characteristics for reduced EMI.

Packaged in the compact patented PowerDI-5 package, this product also offers excellent thermal efficiency and high surge current handling capability.

- DC – DC Converters
- High Frequency Rectification
- Telecom Power Supply

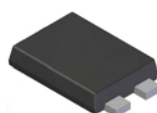
Features and Benefits

- Ultra Low Forward Voltage Drop
- Excellent High Temperature Stability
- Patented Interlocking Clip Design for High Surge Current Capacity
- 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)**

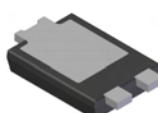
Mechanical Data

- Case: POWERDI®5
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 ②
- Weight: 0.093grams (approximate)

POWERDI®5



Top View



Bottom View

LEFT PIN ○
 RIGHT PIN ○

○ → BOTTOMSIDE
 HEAT SINK

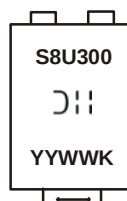
Note: Pins Left & Right must be electrically connected at the printed circuit board.

Ordering Information (Note 2)

Part Number	Case	Packaging
SBR8U300P5-13	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



S8U300 = Product Type Marking Code
 DII = Manufacturers' code marking
 K = Factory designator
 YYWW = Date Code Marking
 YY = Last two digits of year (ex: 10 for 2010)
 WW = Week code (01 to 53)

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}	300	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current (See Figure 1)	I _O	8	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	280	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 3)	R _{θJA}	30	°C/W
Typical Thermal Resistance Junction to Case (Note 3)	R _{θJC}	4	
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V _F	-	0.77	-	V	I _F = 5A, T _J = 25°C
		-	-	0.90		I _F = 8A, T _J = 25°C
		-	0.66	0.76		I _F = 8A, T _J = 125°C
Leakage Current (Note 4)	I _R	-	-	50	μA	V _R = 300V, T _J = 25 °C
		-	-	10	mA	V _R = 300V, T _J = 125 °C
Reverse Recovery Time	t _{rr}	-	30	-	nS	I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A
Junction Capacitance	C _J	-	30	-	pF	V _R = 4.0V, 1MHz

Notes: 3. Device mounted on Polymide substrate PC board. 16 x MRP layout.
 4. Short duration pulse test used to minimize self-heating effect.

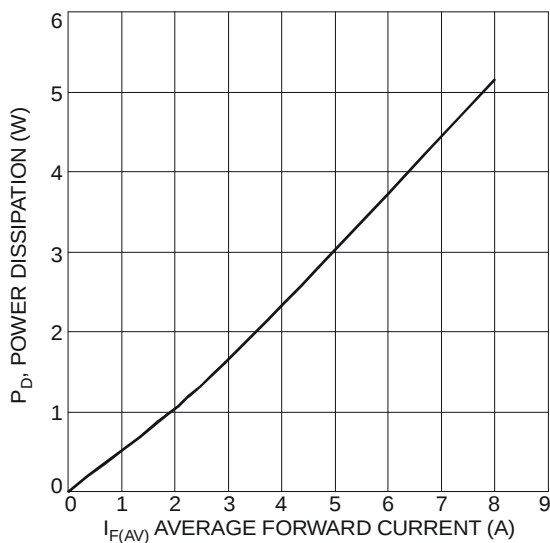


Fig. 1 Forward Power Dissipation

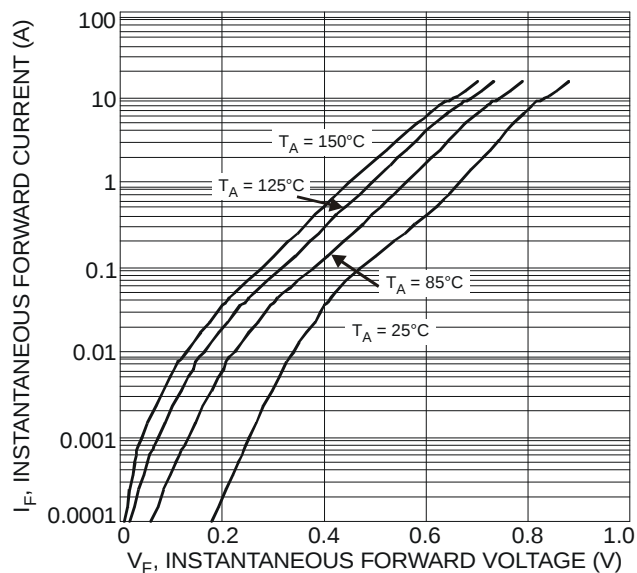


Fig. 2 Typical Forward Characteristics

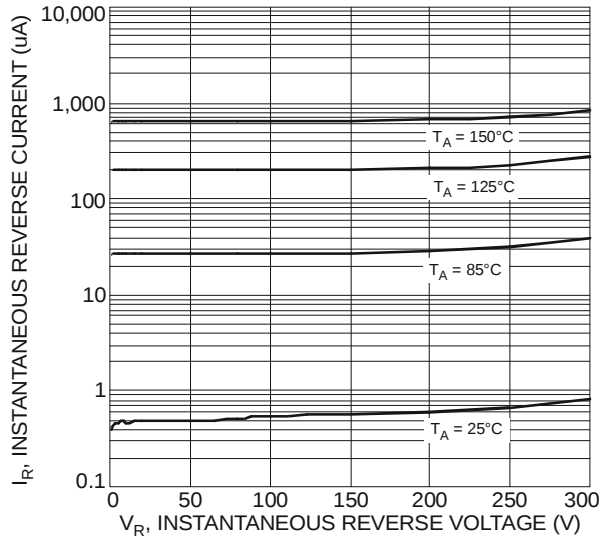


Fig. 3 Typical Reverse Characteristics

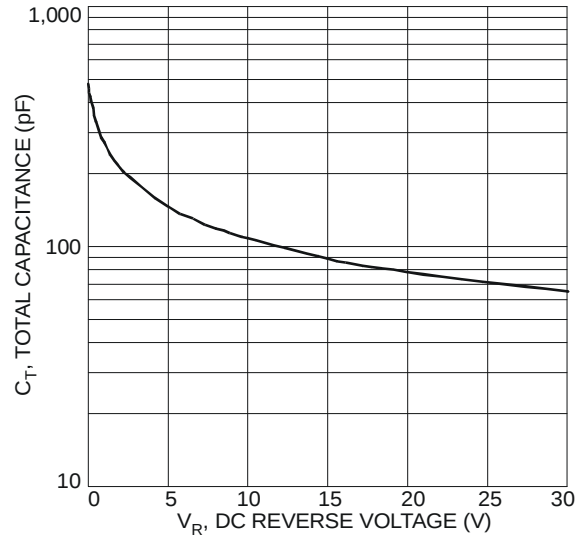


Fig. 4 Total Capacitance vs. Reverse Voltage

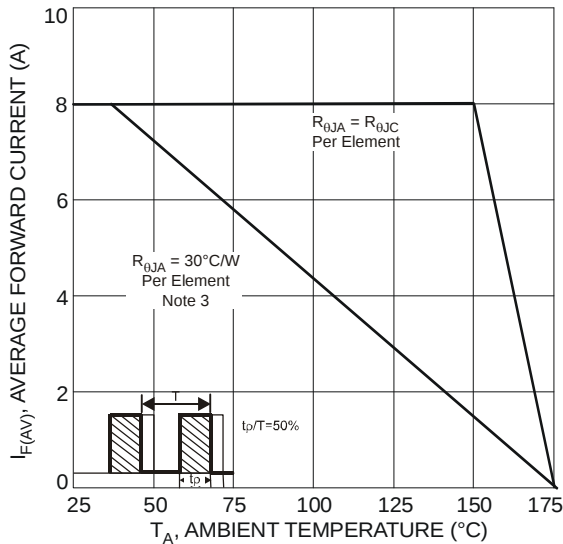


Fig. 5 Forward Current Derating Curve

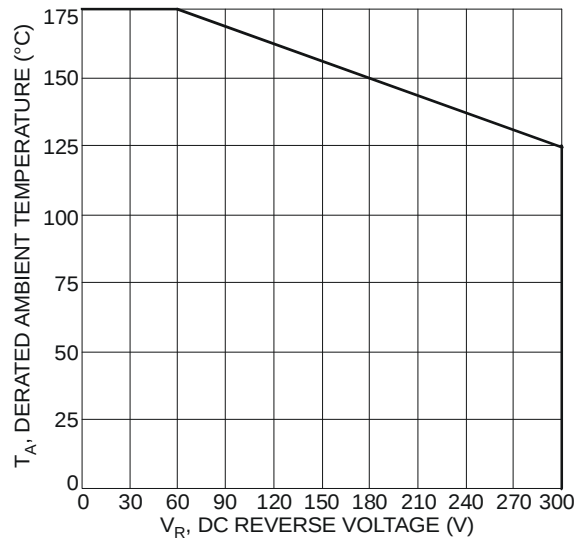
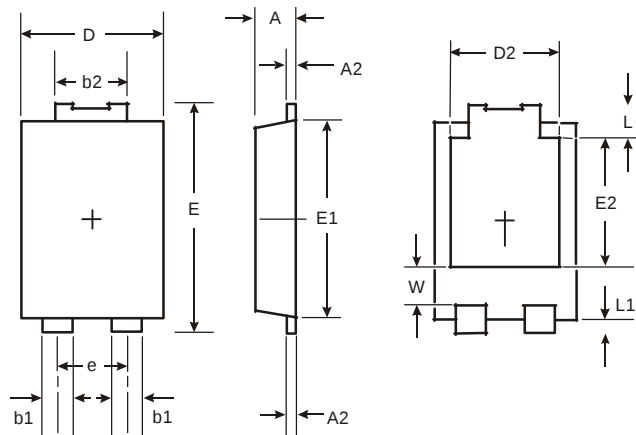


Fig. 6 Operating Temperature Derating

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		

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SBR8U300P5

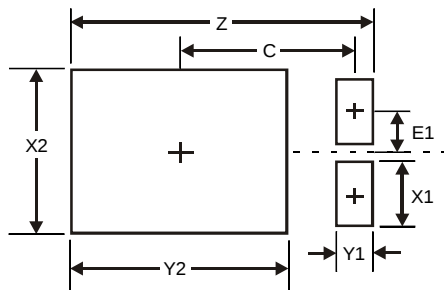
Document number: DS32111 Rev. 3 - 2

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October 2011
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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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