

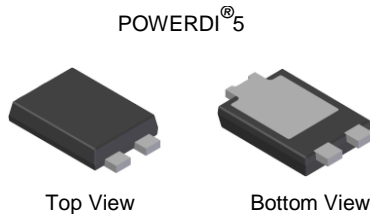
## Product Summary

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (mA)
60	8	0.55	0.092

## Description and Applications

The SBR8A60P5 uses patented SBR technology offering low VF, 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
- DC-AC Inverters
- AC-DC Power Supplies



## Features and Benefits

- 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 (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: POWERDI<sup>®5</sup>
- Case Material: Molded Plastic, "Green" Molding Compound; 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 (E3)
- Polarity: See Below
- Weight: 0.093 grams (Approximate)



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

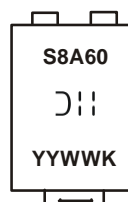
## Ordering Information (Note 4)

Part Number	Case	Packaging
SBR8A60P5-13	POWERDI <sup>®5</sup>	5,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information

POWERDI<sup>®5</sup>



S8A60 = Product Type Marking Code  
 = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 15 for 2015)  
 WW = Week Code (01 - 53)  
 K = Factory Designator

### 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>	60	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current @T <sub>C</sub> = +140°C	I <sub>O</sub>	8	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	160	A

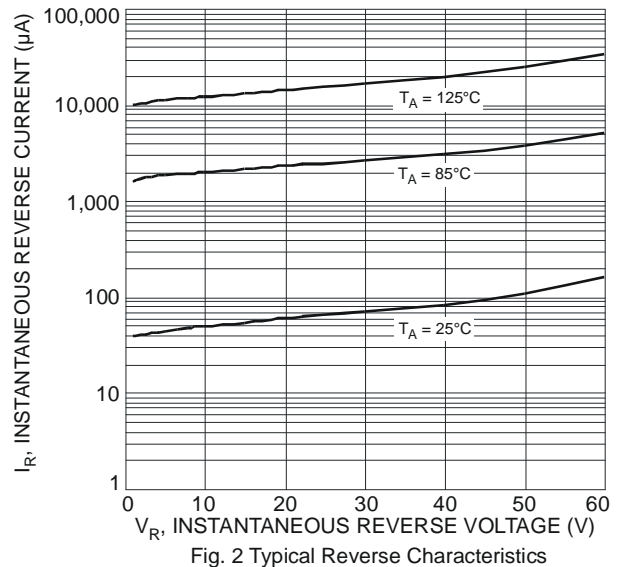
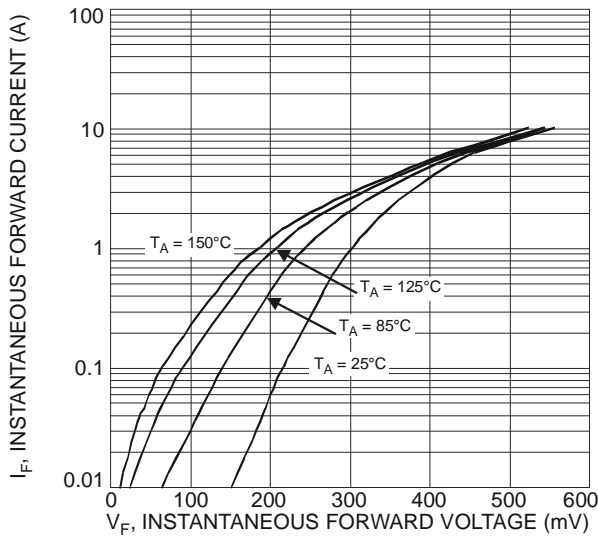
### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJC</sub>	5	°C/W
Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	37	
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>	-	0.46	-	V	I <sub>F</sub> = 5A, T <sub>J</sub> = +25°C
		-	0.55	0.62		I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C
Leakage Current (Note 6)	I <sub>R</sub>	-	0.092	0.5	mA	V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C
		-	-	100		V <sub>R</sub> = 60V, T <sub>J</sub> = +125°C

Notes: 5. Device mounted on Polymide 20cm X 20cm copper PC board.  
6. Short duration pulse test used to minimize self-heating effect.



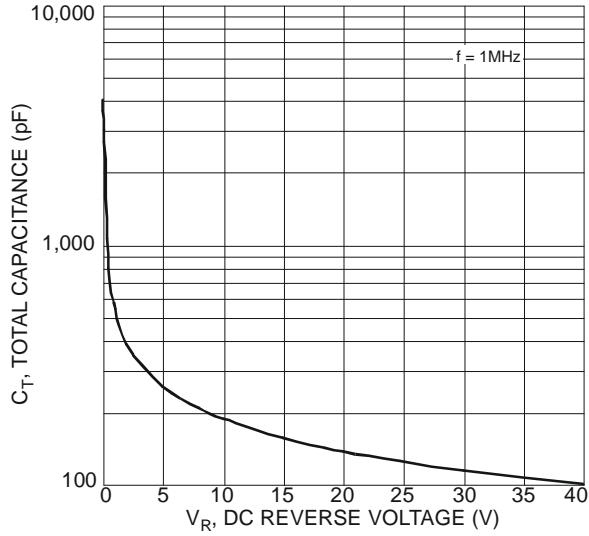


Fig. 3 Total Capacitance vs. Reverse Voltage

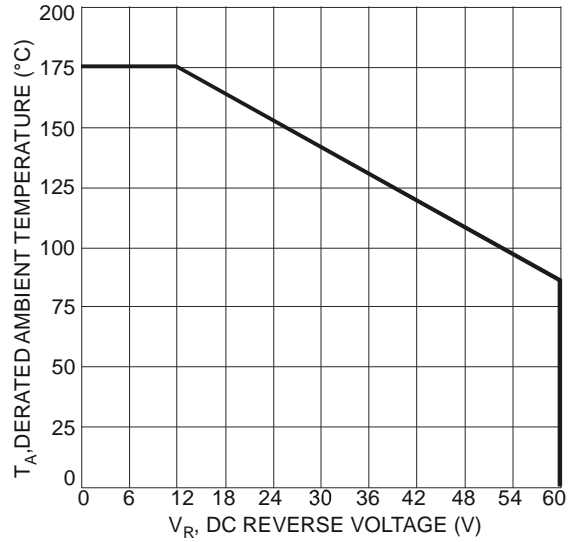


Fig. 4 Operating Temperature Derating

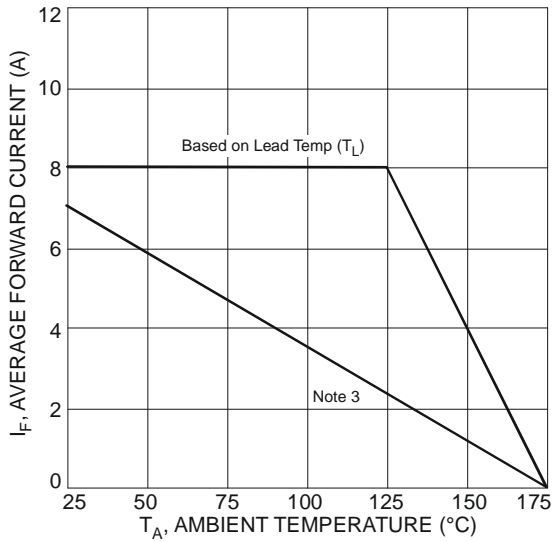
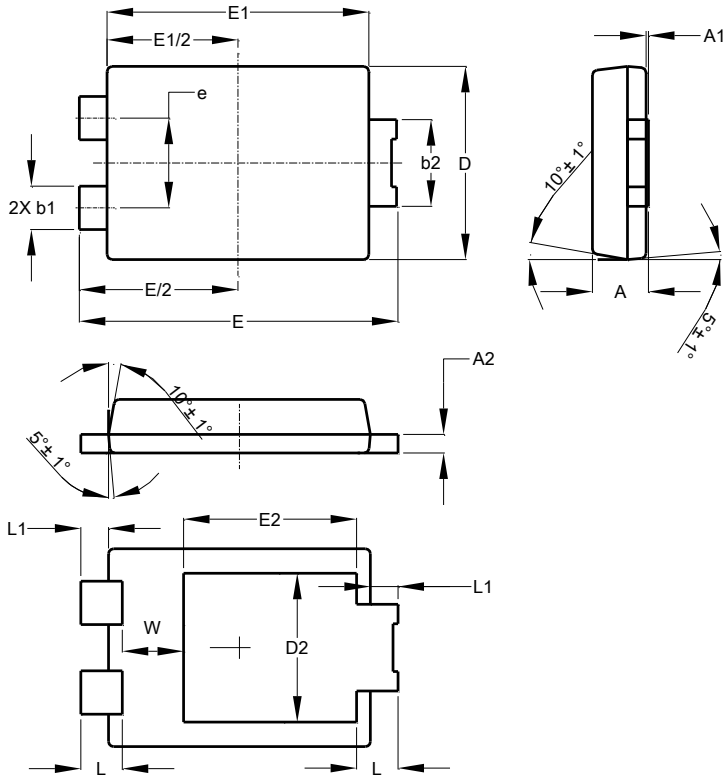


Fig. 5 Forward Current Derating Curve

## Package Outline Dimensions

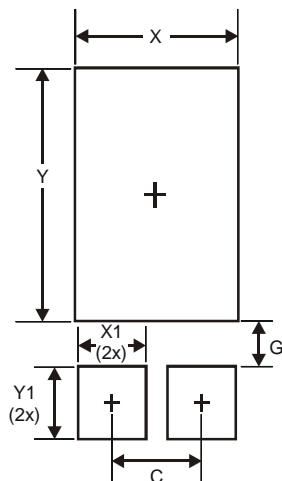
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



POWERDI <sup>®</sup> 5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	-	-	3.054
E	6.40	6.60	6.504
e	-	-	1.84
E1	5.30	5.45	5.37
E2	-	-	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest version.



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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