

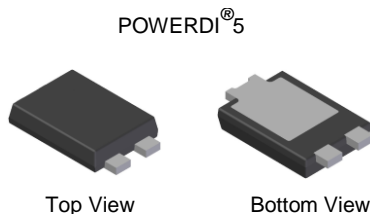
Product Summary

| V _{RRM} (V) | I _O (A) | V _F (V) | I _R (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

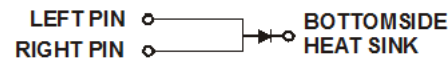


Features and Benefits

- 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^{®5}
- 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.

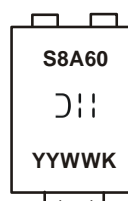
Ordering Information (Note 4)

| Part Number | Case | Packaging |
|--------------|-----------------------|-------------------|
| SBR8A60P5-13 | POWERDI ^{®5} | 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 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^{®5}



S8A60 = Product Type Marking Code
 DII = 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_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} | 60 | V |
| Working Peak Reverse Voltage | V _{RWM} | | |
| DC Blocking Voltage | V _{RM} | | |
| Average Rectified Output Current @T _C = +140°C | I _O | 8 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 160 | A |

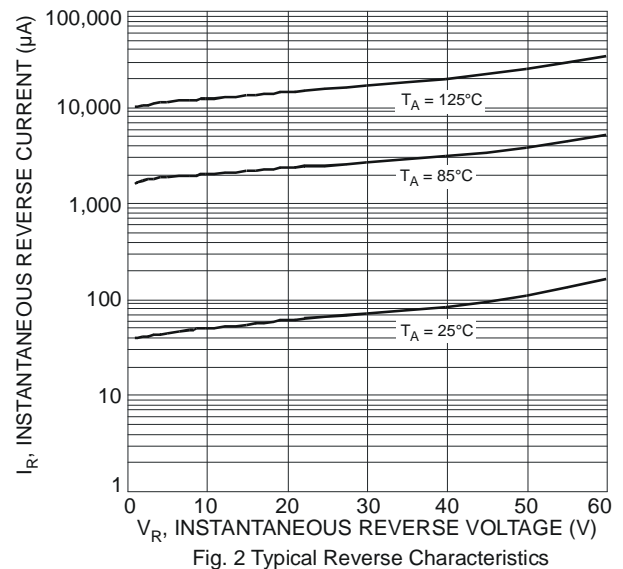
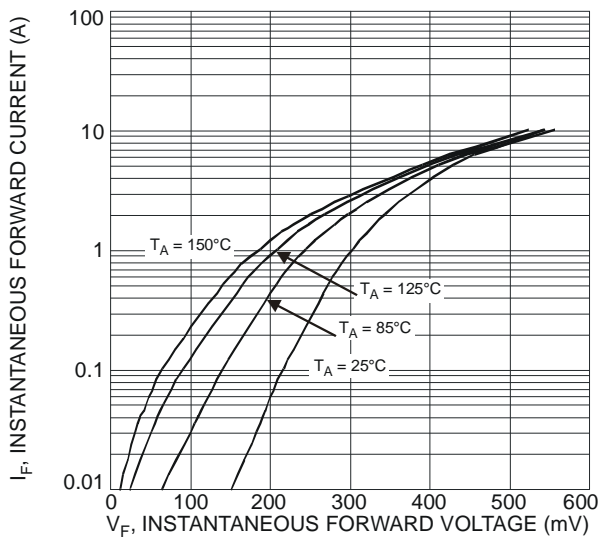
Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Thermal Resistance Junction to Ambient (Note 5) | R _{θJC} | 5 | °C/W |
| Thermal Resistance Junction to Ambient (Note 5) | R _{θJA} | 37 | |
| 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 | - | 0.46 | - | V | I _F = 5A, T _J = +25°C |
| | | - | 0.55 | 0.62 | | I _F = 8A, T _J = +25°C |
| Leakage Current (Note 6) | I _R | - | 0.092 | 0.5 | mA | V _R = 60V, T _J = +25°C |
| | | - | - | 100 | | V _R = 60V, T _J = +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.



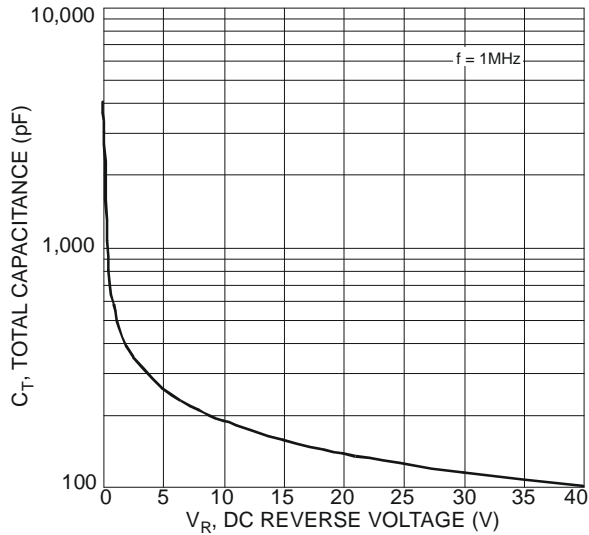


Fig. 3 Total Capacitance vs. Reverse Voltage

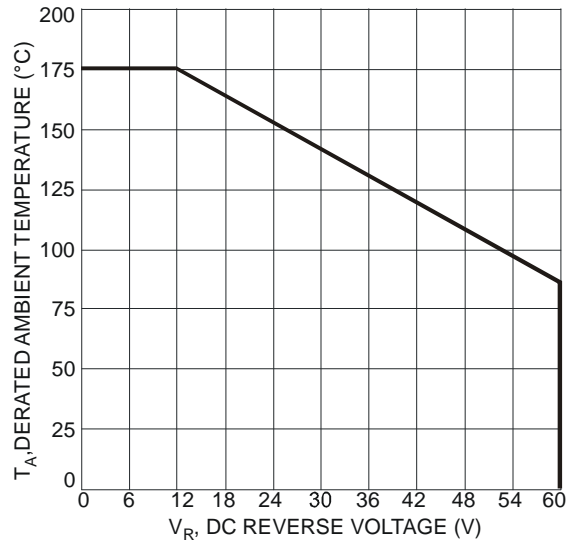


Fig. 4 Operating Temperature Derating

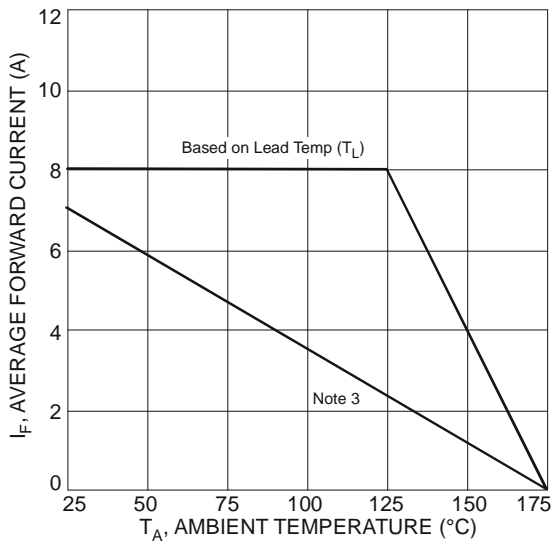
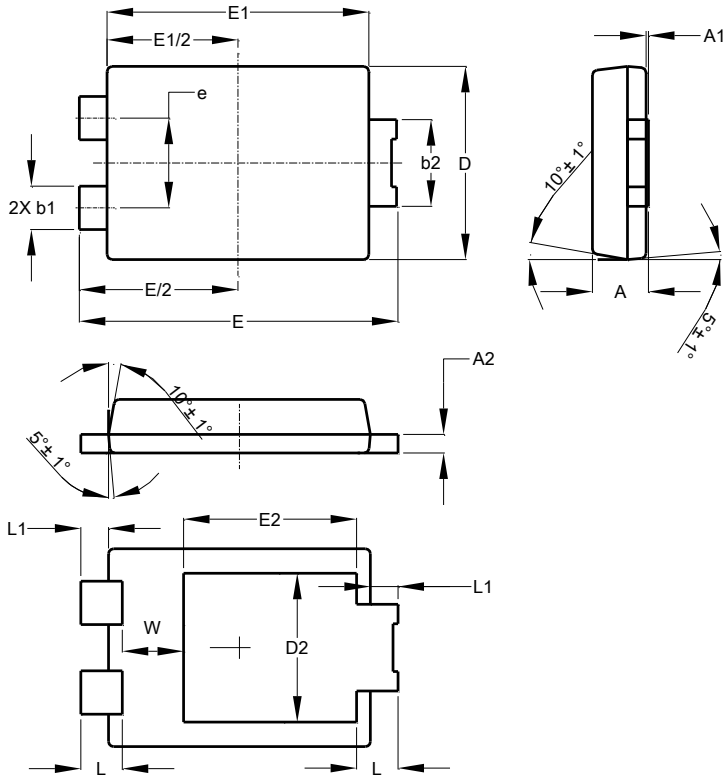


Fig. 5 Forward Current Derating Curve

Package Outline Dimensions

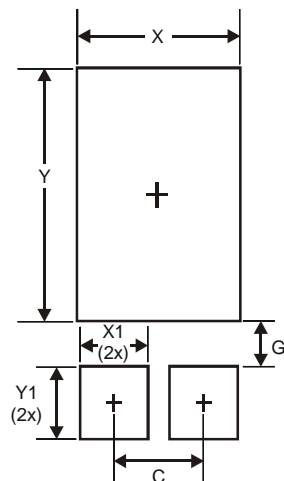
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



| POWERDI [®] 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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