

**Product Summary** (@ T<sub>A</sub> = +25°C)

| V <sub>RRM</sub> (V) | I <sub>O</sub> (A) | V <sub>F</sub> Max (V) | I <sub>R</sub> Max (mA) |
|----------------------|--------------------|------------------------|-------------------------|
| 60                   | 8                  | 0.54                   | 0.2                     |

**Features and Benefits**

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

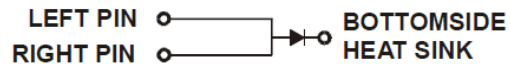
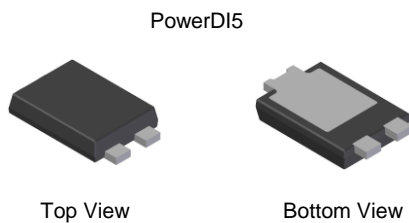
**Description and Applications**

Packaged in the compact thermally efficient PowerDI<sup>®</sup>5, the SDT8A60VP5 provides very low V<sub>F</sub> and excellent reverse leakage stability at high temperatures. It is ideal for use as a rectifier, freewheel diode or blocking diode in:

- DC-DC Converters
- AC-DC Adaptors

**Mechanical Data**

- Case: PowerDI5
- 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 ③
- Terminal Connections: See Diagram Below
- Weight: 0.093 grams (Approximate)



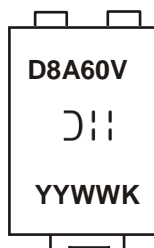
**Note:** Pins Left & Right must be electrically connected at the printed circuit board.

**Ordering Information** (Note 4)

| Part Number             | Case     | Packaging         |
|-------------------------|----------|-------------------|
| SDT8A60VP5-7            | PowerDI5 | 1,500/Tape & Reel |
| SDT8A60VP5-7D (Note 5)  | PowerDI5 | 1,500/Tape & Reel |
| SDT8A60VP5-13           | PowerDI5 | 5,000/Tape & Reel |
| SDT8A60VP5-13D (Note 5) | PowerDI5 | 5,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
  5. PowerDI5 available in 5k quantity on 13-inch reel & 12mm tape, part number suffix "13D"; Diodes Incorporated also provides 12mm tape with 7-inch reel, part number suffix "7D".

**Marking Information**



⤴⤵ = Manufacturers' Marking  
 D8A60V = Product Type Marking Code  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 19 = 2019)  
 WW = Week Code (01 to 53)  
 K = Factory Designator

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic   | Symbol           | Value | Unit |
|--|------------------|-------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | V <sub>RRM</sub> | 60    | V    |
| Average Rectified Output Current   | I <sub>O</sub>   | 8     | A    |
| Non-Repetitive Peak Forward Surge Current 8.3ms  | I <sub>FSM</sub> | 140   | A    |

**Thermal Characteristics**

| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Ambient (Note 6) | R <sub>θJA</sub>                  | 88          | °C/W |
| Typical Thermal Resistance Junction to Ambient (Note 7) | R <sub>θJA</sub>                  | 18          | °C/W |
| Typical Thermal Resistance Junction to Case (Note 6)    | R <sub>θJC</sub>                  | 9           | °C/W |
| Typical Thermal Resistance Junction to Case (Note 7)    | R <sub>θJC</sub>                  | 3           | °C/W |
| Operating and Storage Temperature Range                 | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °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> | —   | 0.48<br>0.40 | 0.54<br>0.50 | V    | I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C   |
| Leakage Current (Note 8) | I <sub>R</sub> | —   | 0.02<br>10   | 0.2<br>50    | mA   | V <sub>R</sub> = 60V, T <sub>J</sub> = +25°C<br>V <sub>R</sub> = 60V, T <sub>J</sub> = +125°C |

- Notes:
- 6. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
  - 7. 2inch\*2inch Al board.
  - 8. Short duration pulse test used to minimize self-heating effect.

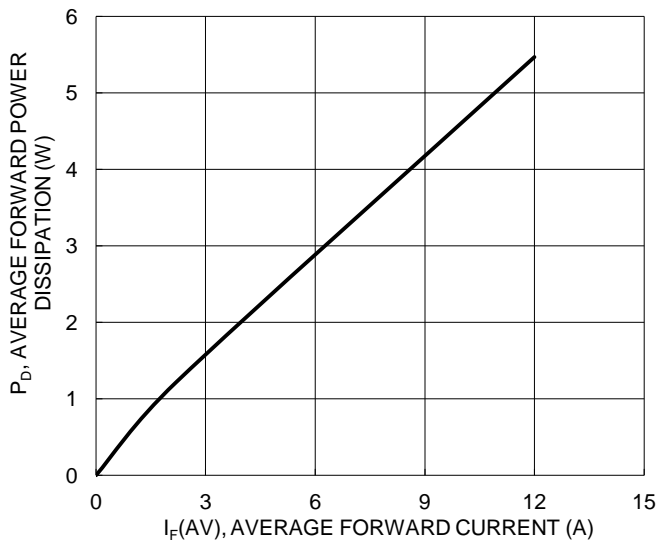


Figure 1. Forward Power Dissipation

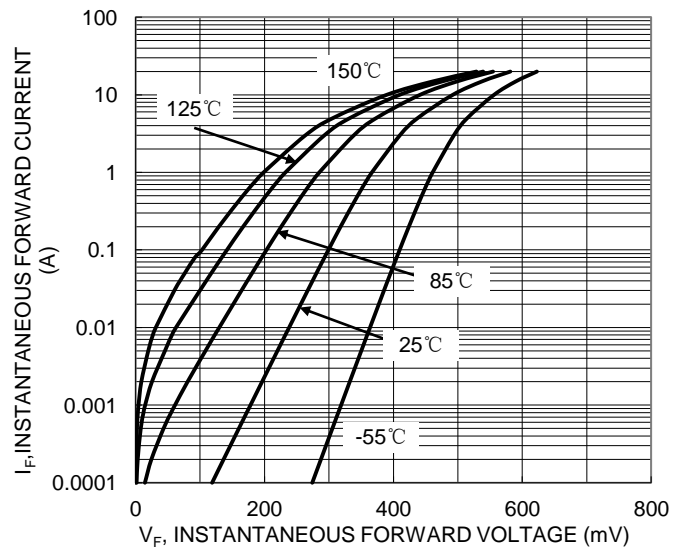


Figure 2. Typical Forward Characteristics

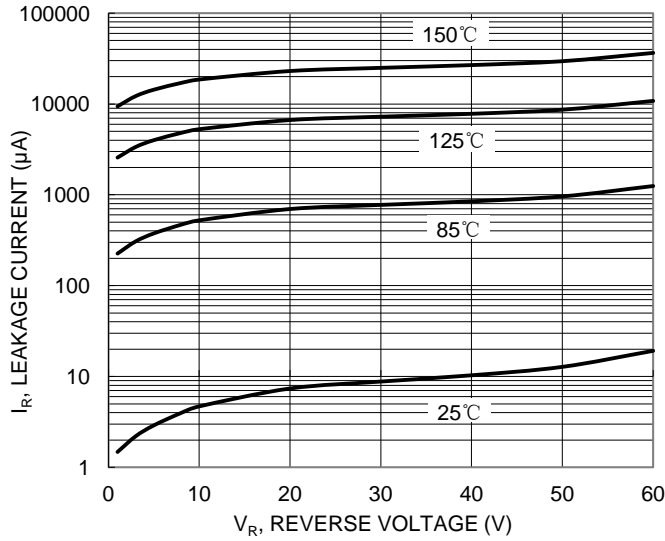


Figure 3. Typical Reverse Characteristics

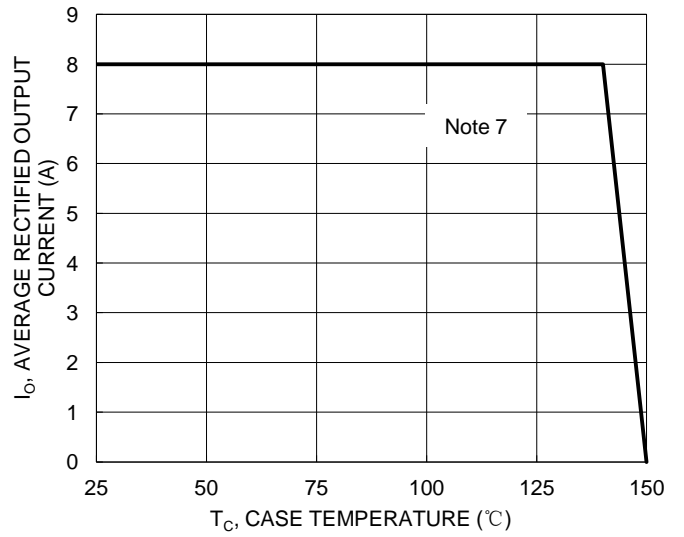


Figure 4. DC Forward Current Derating

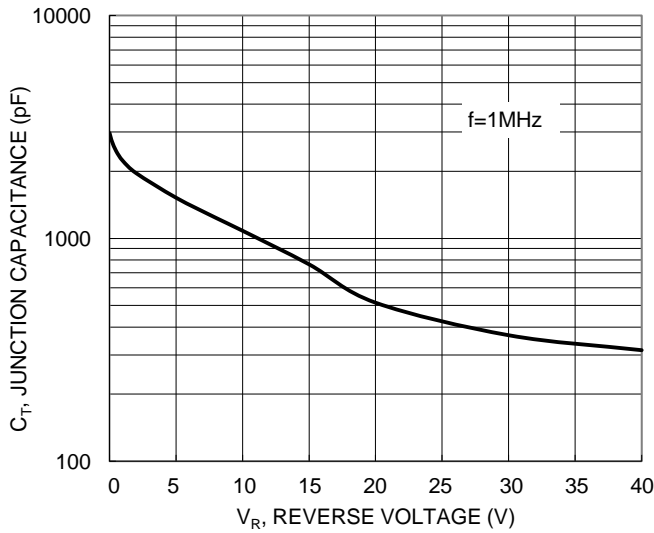


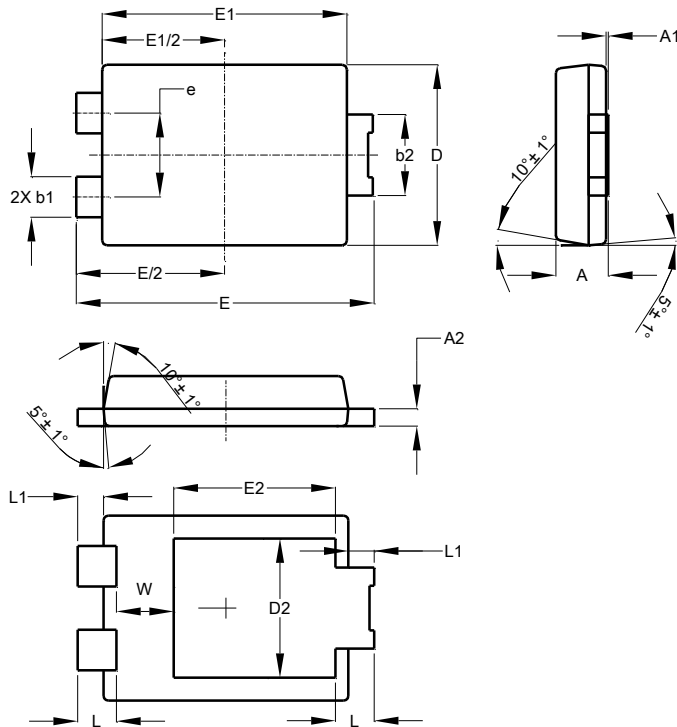
Figure 5. Typical Junction Capacitance

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

NEW PRODUCT

**PowerDI5**



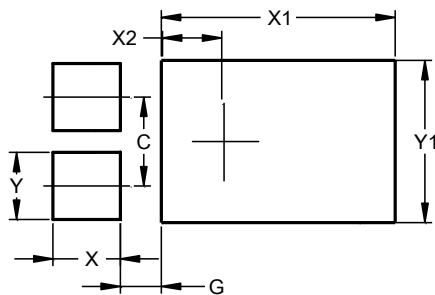
| PowerDI5 |      |      |       |
|----------|------|------|-------|
| Dim      | Min  | Max  | Typ   |
| A        | 1.05 | 1.15 | 1.10  |
| A1       | 0.00 | 0.05 | --    |
| A2       | 0.33 | 0.43 | 0.381 |
| b1       | 0.80 | 0.99 | 0.89  |
| b2       | 1.70 | 1.88 | 1.78  |
| D        | 3.90 | 4.05 | 3.966 |
| D2       | --   | --   | 3.054 |
| E        | 6.40 | 6.60 | 6.51  |
| 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 <http://www.diodes.com/package-outlines.html> for the latest version.

**PowerDI5**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 1.840         |
| G          | 0.852         |
| X          | 1.400         |
| X1         | 4.860         |
| X2         | 1.310         |
| Y          | 1.390         |
| Y1         | 3.360         |

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