

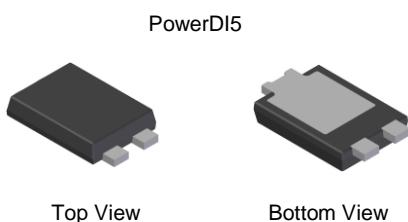
## Product Summary (@ $T_A = +25^\circ\text{C}$ )

| $V_{RRM}$ (V) | $I_o$ (A) | $V_F(\text{MAX})$ (V) | $I_{R(\text{MAX})}$ (mA) |
|---------------|-----------|-----------------------|--------------------------|
| 100           | 8         | 0.7                   | 0.1                      |

## Description and Applications

Packaged in the compact thermally efficient PowerDI<sup>®</sup>5 package, the SDT8A100P5 provides very low  $V_F$  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

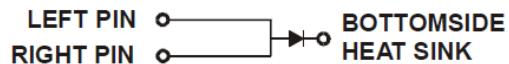


## Features and Benefits

- Low Forward Voltage Drop
- Excellent High Temperature Stability
- Soft, Fast Switching Capability
- $+150^\circ\text{C}$  Operating Junction Temperature
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An Automotive-Compliant Part is Available Under Separate Datasheet (SDT8A100P5Q)**

## 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
- Terminal Connections: See Diagram Below
- Weight: 0.093 grams (Approximate)



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

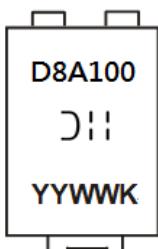
## Ordering Information (Note 4)

| Part Number             | Case     | Packaging         |
|-------------------------|----------|-------------------|
| SDT8A100P5-7            | PowerDI5 | 1,500/Tape & Reel |
| SDT8A100P5-7D (Note 5)  | PowerDI5 | 1,500/Tape & Reel |
| SDT8A100P5-13           | PowerDI5 | 5,000/Tape & Reel |
| SDT8A100P5-13D (Note 5) | PowerDI5 | 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 <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



DII = Manufacturers' Marking  
D8A100 = Product Type Marking Code  
YYWW = Date Code Marking  
YY = Last Two Digits of Year (ex: 17 = 2017)  
WW = Week Code (01 to 53)  
K = Factory Designator

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic                                  | Symbol    | Value | Unit |
|---|-----------|-------|------|
| Peak Repetitive Reverse Voltage                 |           |       |      |
| Working Peak Reverse Voltage                    | $V_{RRM}$ | 100   | V    |
| DC Blocking Voltage                             |           |       |      |
| Average Rectified Output Current                | $I_O$     | 8     | A    |
| Non-Repetitive Peak Forward Surge Current 8.3mS | $I_{FSM}$ | 150   | A    |

**Thermal Characteristics**

| Characteristic  | Symbol          | Value       | Unit                      |
|---|-----------------|-------------|---------------------------|
| Typical Thermal Resistance Junction to Ambient (Note 6) | $R_{\theta JA}$ | 88          | $^\circ\text{C}/\text{W}$ |
| Typical Thermal Resistance Junction to Ambient (Note 7) | $R_{\theta JA}$ | 18          | $^\circ\text{C}/\text{W}$ |
| Typical Thermal Resistance Junction to Case (Note 6)    | $R_{\theta JC}$ | 9           | $^\circ\text{C}/\text{W}$ |
| Typical Thermal Resistance Junction to Case (Note 7)    | $R_{\theta JC}$ | 3           | $^\circ\text{C}/\text{W}$ |
| Operating and Storage Temperature Range                 | $T_J, T_{STG}$  | -55 to +150 | $^\circ\text{C}$          |

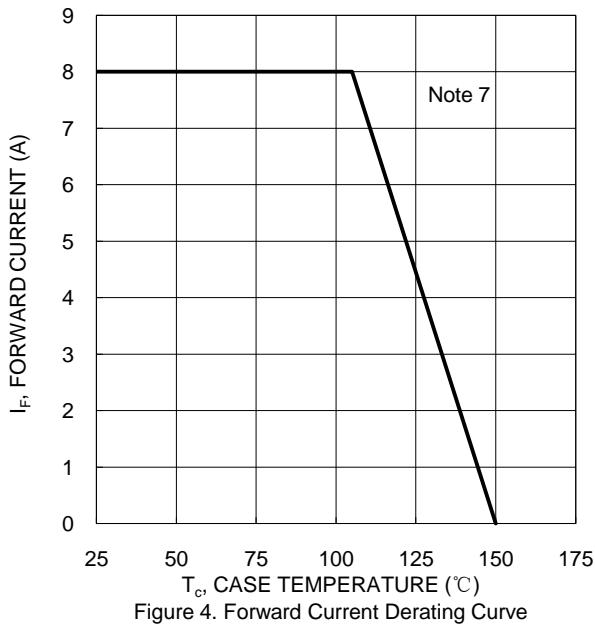
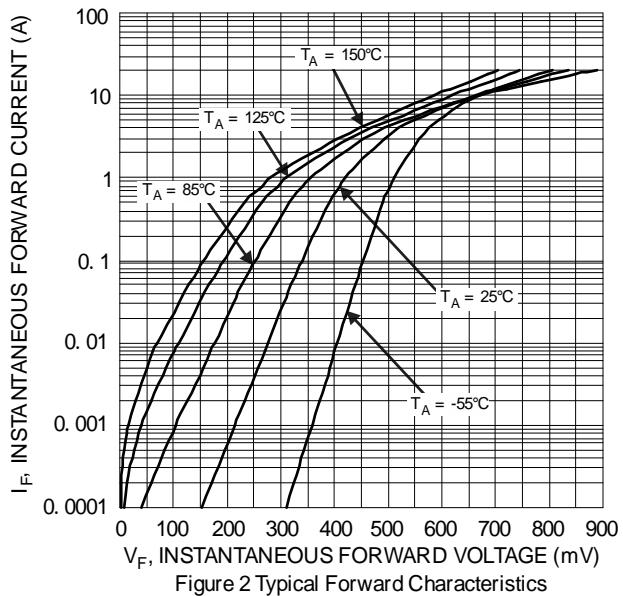
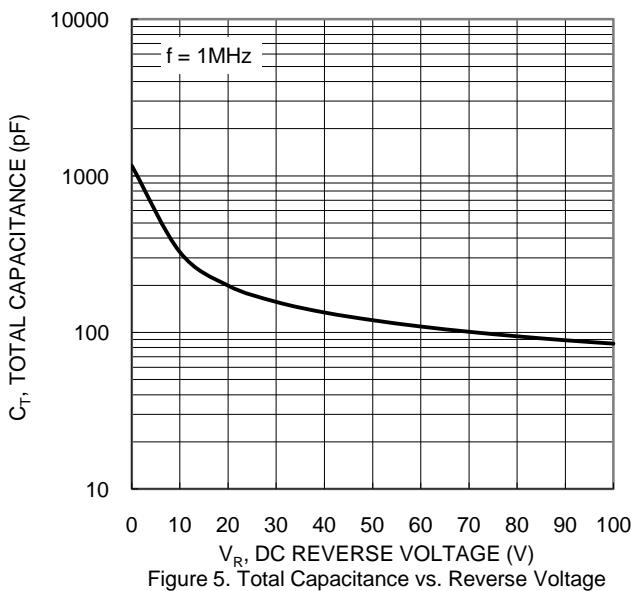
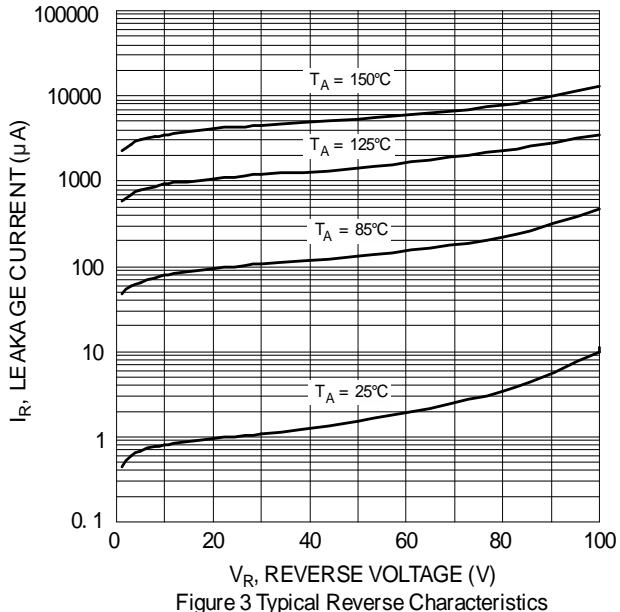
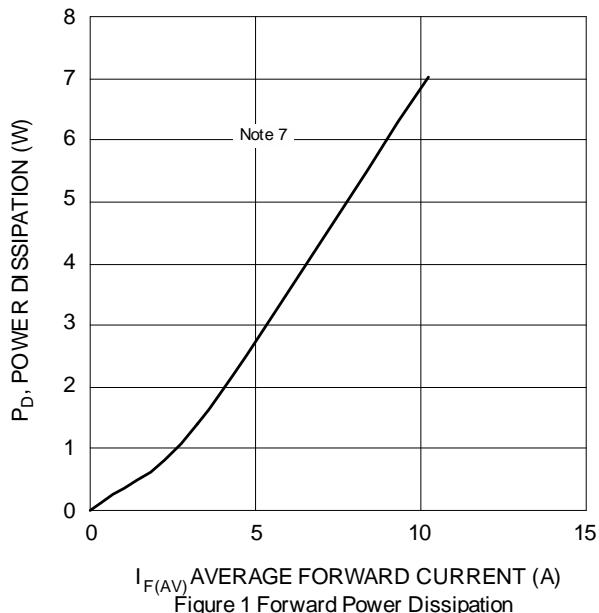
**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic           | Symbol | Min | Typ | Max          | Unit | Test Condition  |
|--------------------------|--------|-----|-----|--------------|------|---|
| Forward Voltage Drop     | $V_F$  | —   | —   | 0.70<br>0.66 | V    | $I_F = 8\text{A}, T_J = +25^\circ\text{C}$<br>$I_F = 8\text{A}, T_J = +125^\circ\text{C}$     |
| Leakage Current (Note 8) | $I_R$  | —   | —   | 0.1<br>20    | mA   | $V_R = 100\text{V}, T_J = +25^\circ\text{C}$<br>$V_R = 100\text{V}, T_J = +125^\circ\text{C}$ |

Notes: 6. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.

7. Aluminum 2inch x 2inch substrate PCB.

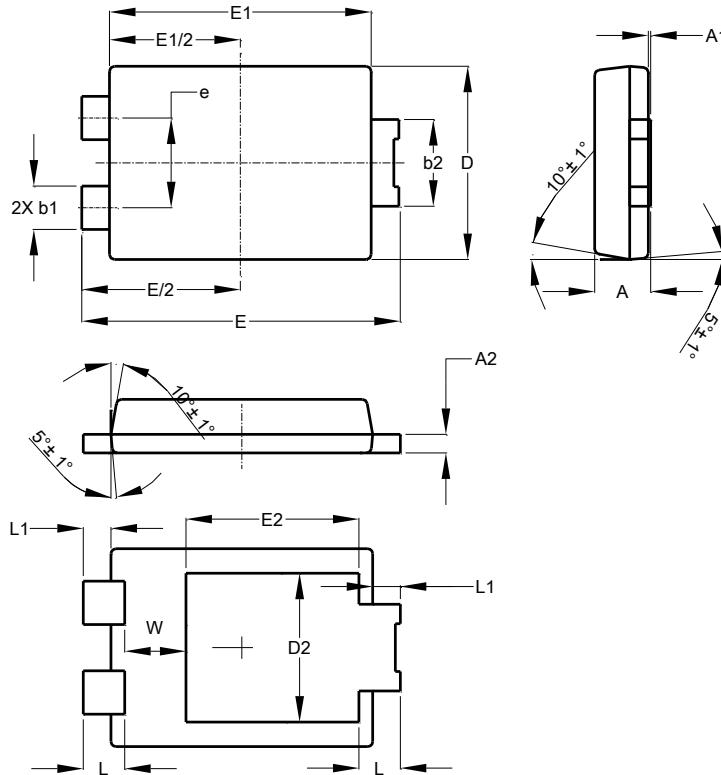
8. Short duration pulse test used to minimize self-heating effect.



## Package Outline Dimensions

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

PowerDI5



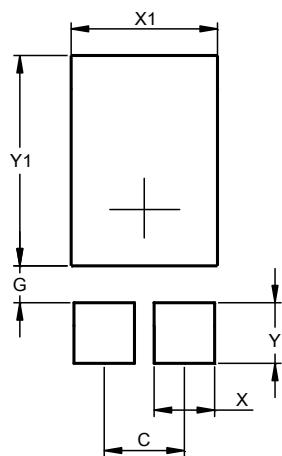
| PowerDI5  |      |      |       |
|-----------|------|------|-------|
| Dim       | Min  | Max  | Typ   |
| <b>A</b>  | 1.05 | 1.15 | 1.10  |
| <b>A1</b> | 0.00 | 0.05 | --    |
| <b>A2</b> | 0.33 | 0.43 | 0.381 |
| <b>b1</b> | 0.80 | 0.99 | 0.89  |
| <b>b2</b> | 1.70 | 1.88 | 1.78  |
| <b>D</b>  | 3.90 | 4.05 | 3.966 |
| <b>D2</b> | --   | --   | 3.054 |
| <b>E</b>  | 6.40 | 6.60 | 6.504 |
| <b>e</b>  | --   | --   | 1.84  |
| <b>E1</b> | 5.30 | 5.45 | 5.37  |
| <b>E2</b> | --   | --   | 3.549 |
| <b>L</b>  | 0.75 | 0.95 | 0.85  |
| <b>L1</b> | 0.50 | 0.65 | 0.57  |
| <b>W</b>  | 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) |
|------------|---------------|
| <b>C</b>   | 1.840         |
| <b>G</b>   | 0.852         |
| <b>X</b>   | 1.390         |
| <b>X1</b>  | 3.360         |
| <b>Y</b>   | 1.400         |
| <b>Y1</b>  | 4.860         |

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