

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

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>Fmax</sub> (V)	I <sub>Rmax</sub> (μA)
800	5	0.99	10

**Description**

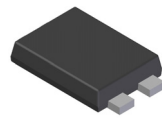
5.0 A Glass Passivated Rectifier in PowerDI<sup>®</sup>5 package, offers high surge current capability and low leakage current, lead free finish and RoHS compliant, "Green" device.

**Features and Benefits**

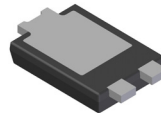
- Glass Passivated Die Construction
- Low Leakage Current
- **Lead Free Finish/RoHS Compliant (Note 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

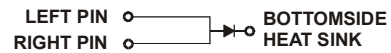
- Case: PowerDI<sup>®</sup>5
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208<sup>Ⓐ</sup>
- Polarity: See Diagram
- Weight: 0.096 grams (approximate)



Top View



Bottom View



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

**Ordering Information** (Note 4)

Part Number	Case	Packaging
PDR5K-13	PowerDI <sup>®</sup> 5	5000/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**



- R5K = Product Type Marking Code
- ⌋⌋⌋ = Manufacturers' code marking
- YYWW = Date code marking
- YY = Last two digits of year (ex: 13 for 2013)
- WW = Week code 01 to 52
- 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	PDR5K	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	800	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Average Rectified Output Current	I <sub>O</sub>	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	200	A

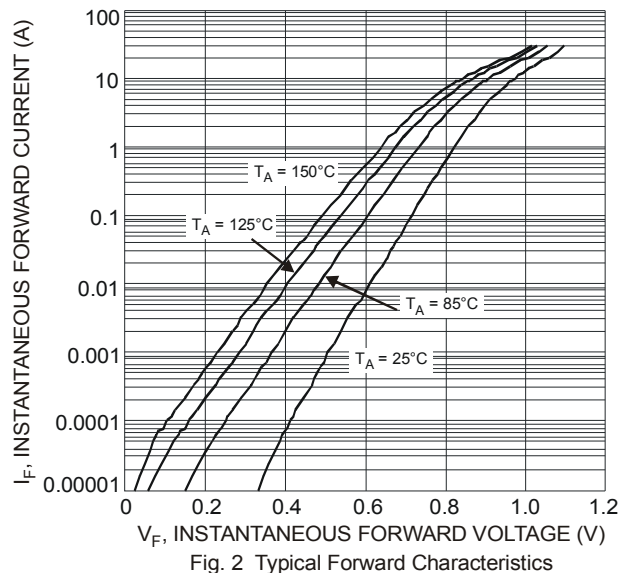
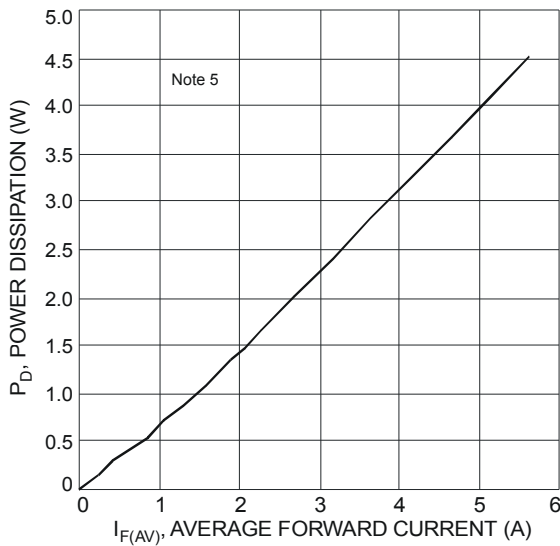
**Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	3	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R <sub>θJA</sub>	28	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +155	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V <sub>F</sub>	—	0.91	0.99 0.87	V	I <sub>F</sub> = 5A, T <sub>S</sub> = +25°C I <sub>F</sub> = 5A, T <sub>S</sub> = +125°C
Reverse Leakage Current (Note 6)	I <sub>R</sub>	—	—	10 0.3	μA mA	V <sub>R</sub> = 800V, T <sub>J</sub> = +25°C V <sub>R</sub> = 800V, T <sub>J</sub> = +125°C
Typical Reverse Recovery Time	t <sub>rr</sub>	—	3	—	μs	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A

Notes: 5. Device mounted on Polyimide PCB, with 16X recommended pad layout.  
6. Short duration pulse test used to minimize self-heating effect.



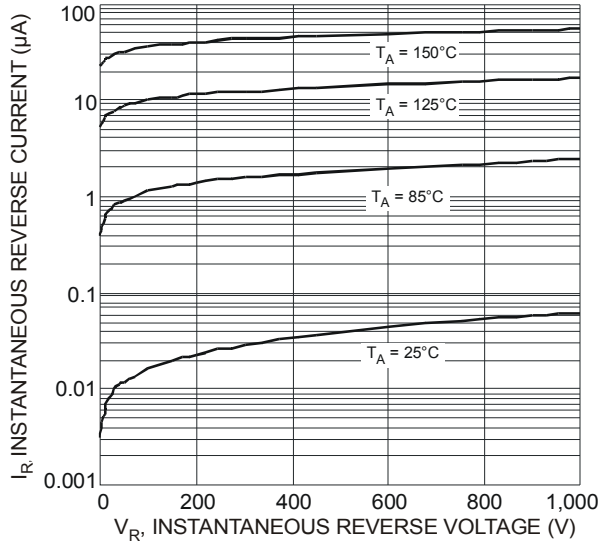


Fig. 3 Typical Reverse Characteristics

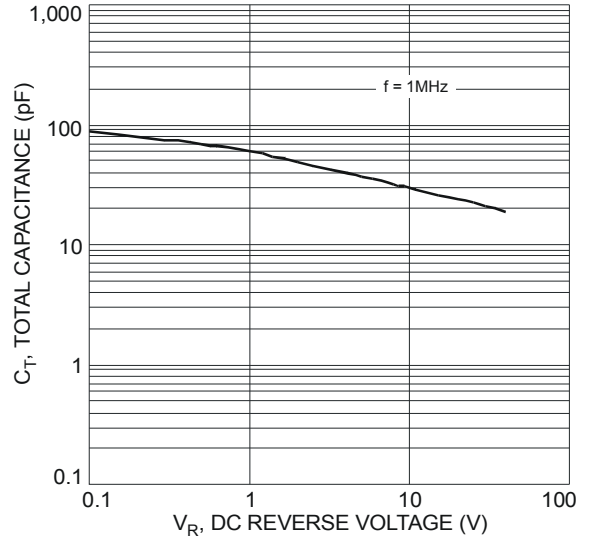


Fig. 4 Total Capacitance vs. Reverse Voltage

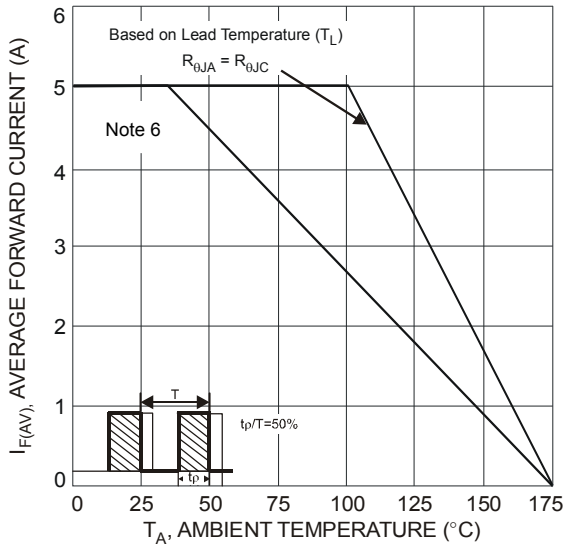


Fig. 5 Forward Current Derating Curve

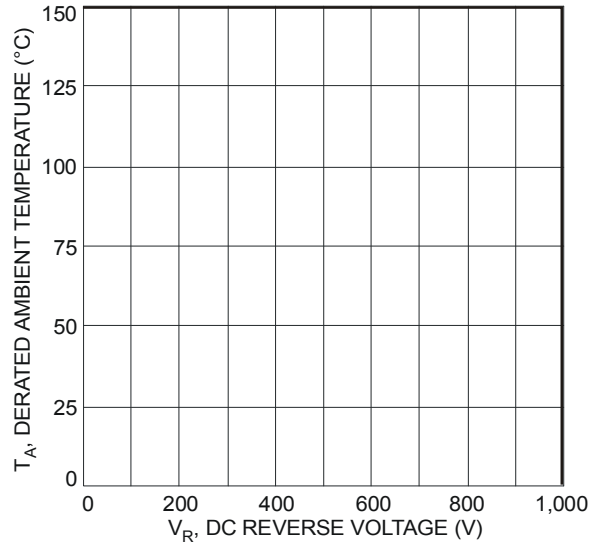
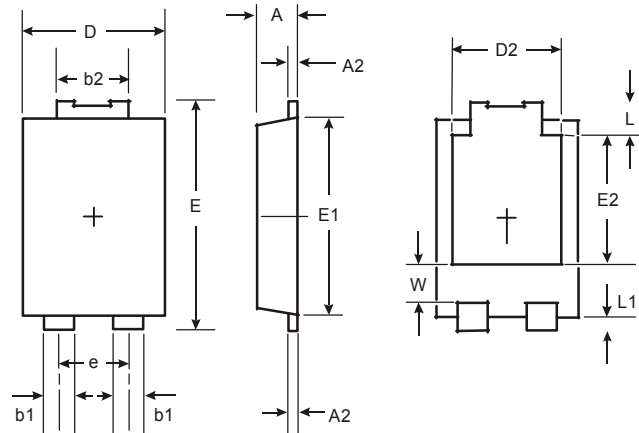


Fig. 6 Operating Temperature Derating

**Package Outline Dimensions**

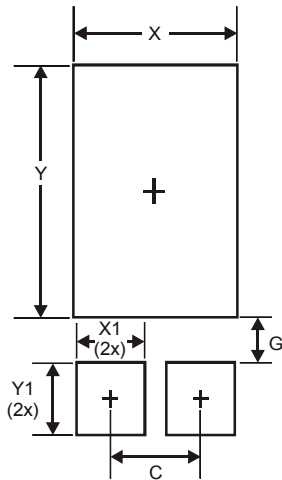
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



PowerDI <sup>®</sup> 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		

## Suggested Pad Layout

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



Dimensions	Value (in mm)
<b>C</b>	1.840
<b>G</b>	0.852
<b>X</b>	3.360
<b>X1</b>	1.390
<b>Y</b>	4.860
<b>Y1</b>	1.400

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PDR5K

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