

**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 (μA)
800	5	1.2	10

**Description**

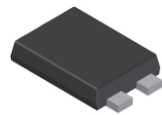
PDR5KF, a 5.0A Glass Passivated Rectifier in our thermally efficient PowerDI<sup>®</sup>5 package, offers high-surge current capability, low-leakage current and fast reverse recovery time.

**Features and Benefits**

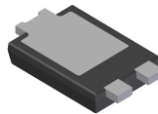
- Glass Passivated Die Construction for High Reliability
- Low Leakage Current Saves Power in Battery-Powered Applications
- Fast Reverse Recovery Speed Provides High Efficiency in Switching Applications
- Large Exposed Heat Sink on Device Underside Provides Good Heat-Sinking to Support High Power Dissipation
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

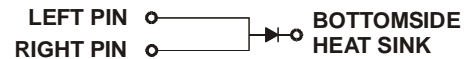
- Case: PowerDI5
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 <sup>(3)</sup>
- Polarity: See Diagram
- 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	Compliance	Case	Packaging
PDR5KF-13	Commercial	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 <http://www.diodes.com/products/packages.html>.

**Marking Information**


- R5KF = Product Type Marking Code
- D11 = Manufacturers' Code Marking
- YYWW = Date Code Marking
- YY = Last Two Digits of Year (ex: 17 for 2017)
- WW = Week Code (01 to 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 capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>R</sub> RM V <sub>R</sub> WMM V <sub>R</sub>	800	V
Average Rectified Output Current @T <sub>A</sub> = +60°C	I <sub>O</sub>	5	A
Peak Repetitive Reverse Surge Voltage (Note 5)	V <sub>R</sub> SMM	1,050	V
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>F</sub> SM	200	A

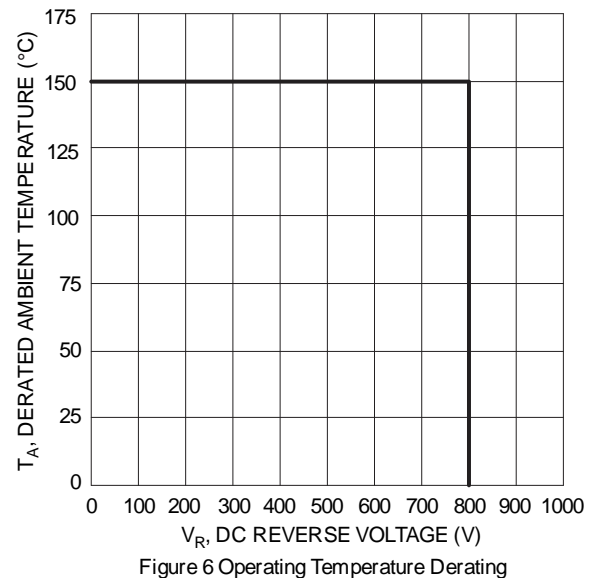
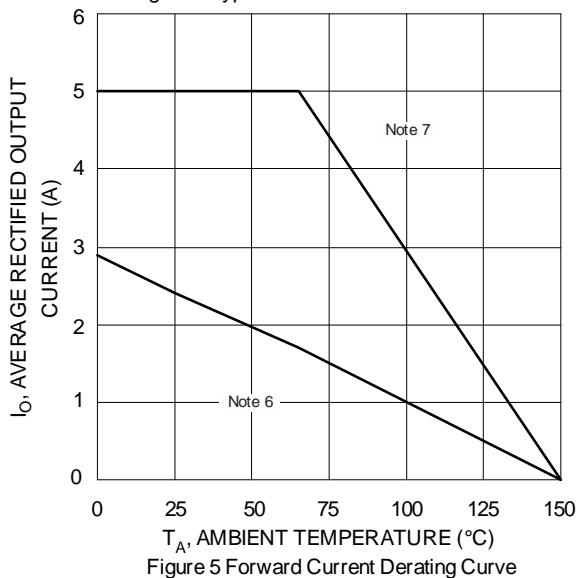
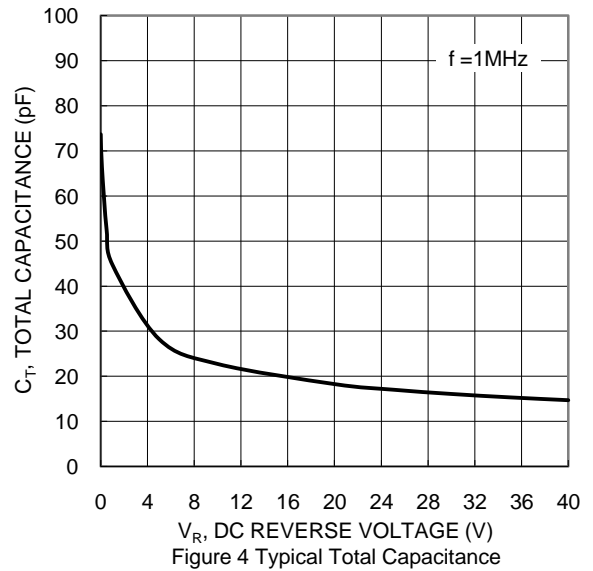
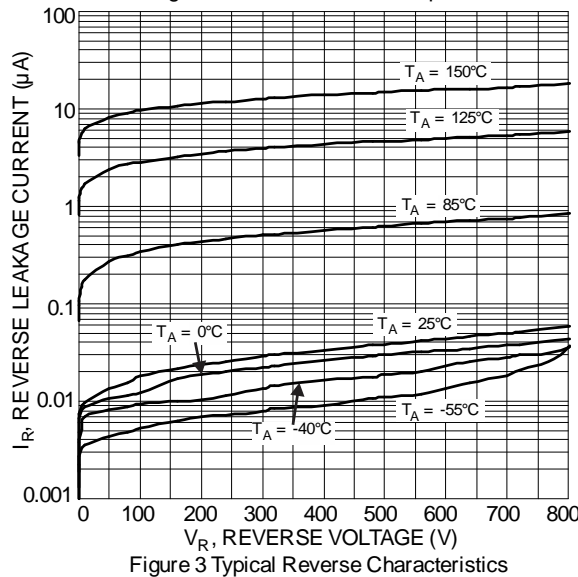
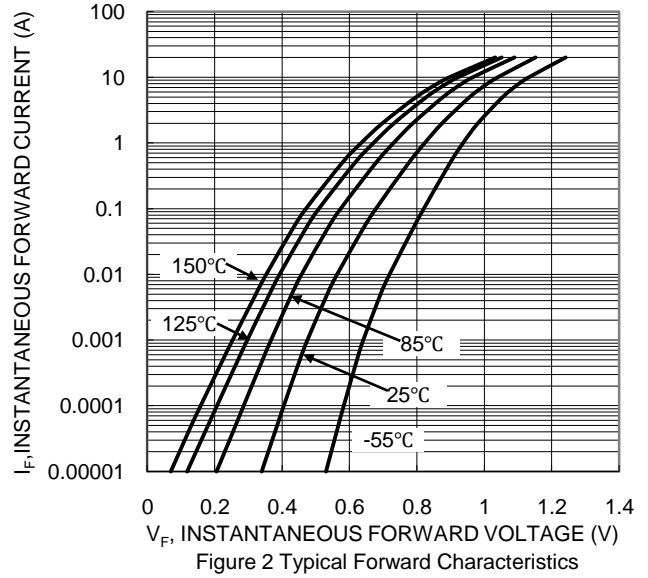
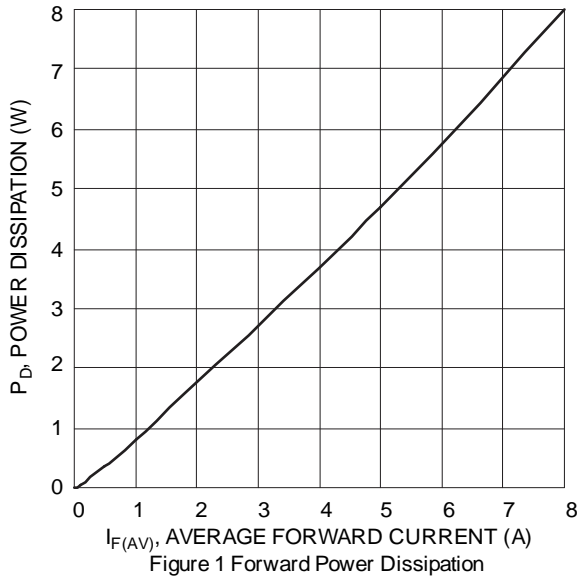
### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Lead (Note 7)	R <sub>θ</sub> JL	2.2	°C/W
Typical Thermal Resistance Junction to Lead (Note 6)	R <sub>θ</sub> JL	9.5	°C/W
Typical Thermal Resistance Junction to Ambient (Note 7)	R <sub>θ</sub> JA	24.5	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	R <sub>θ</sub> JA	77	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V <sub>(BR)</sub> R	800	—	—	V	I <sub>R</sub> = 10μA
Forward Voltage	V <sub>F</sub>	—	0.96	1.2	V	I <sub>F</sub> = 5A, T <sub>S</sub> = +25°C
Reverse Leakage Current (Note 8)	I <sub>R</sub>	—	0.04 0.006	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
Reverse Recovery Time	t <sub>RR</sub>	—	318	500	ns	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>RR</sub> = 0.25A
Total Capacitance	C <sub>T</sub>	—	30	—	pF	V <sub>R</sub> = 4.0V <sub>DC</sub> , f = 1MHz

- Notes:
5. Per IEC61000-4-5 surge standard, 1.2/50μs voltage impulse, 2Ω source impedance, 8x20μs surge current.
  6. Device mounted on FR-4 PC board, 2oz copper trace weight, with 1x recommended pad layout. Please refer to our website <http://www.diodes.com/package-outlines.html> for the latest revision.
  7. Device mounted on 2 inch by 2 inch Alumina substrate PC board.
  8. Short duration pulse test used to minimize the self-heating effect.



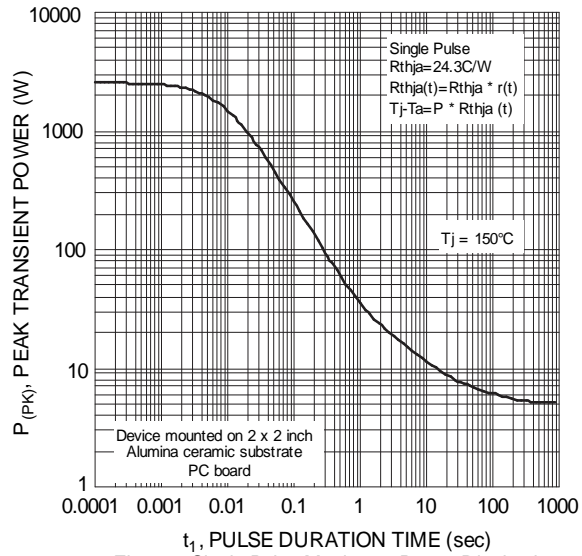
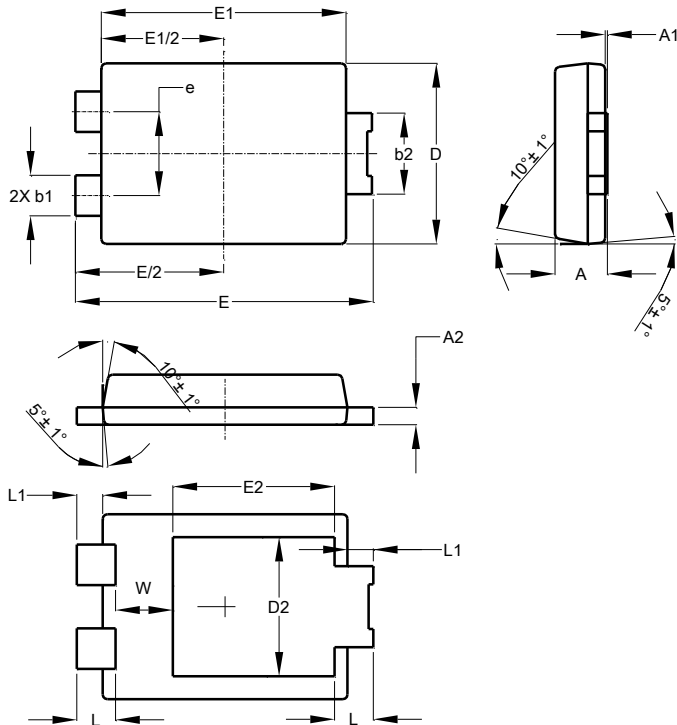


Figure 7 Single Pulse Maximum Power Dissipation

**Package Outline Dimensions**

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

**PowerDI5**

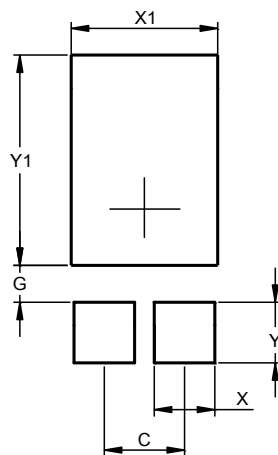


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.504
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

**Suggested Pad Layout**

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

**PowerDI5**



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

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