

Product Summary @T_A = +25°C

V _{RRM} (V)	I _o (A)	V _{Fmax} (V)	I _{Rmax} (μA)
800	5	0.99	10

Description

5.0 A Glass Passivated Rectifier in PowerDI[®]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

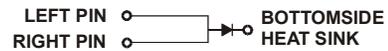
- Case: PowerDI[®]5
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208[Ⓐ]
- Polarity: See Diagram
- 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 [®] 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 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_A = +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 _{RRM}	800	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current	I _O	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	200	A

Thermal Characteristics

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

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	V _F	—	0.91	0.99 0.87	V	I _F = 5A, T _S = +25°C I _F = 5A, T _S = +125°C
Reverse Leakage Current (Note 6)	I _R	—	—	10 0.3	μA mA	V _R = 800V, T _J = +25°C V _R = 800V, T _J = +125°C
Typical Reverse Recovery Time	t _{rr}	—	3	—	μs	I _F = 0.5A, I _R = 1.0A, I _{rr} = 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.

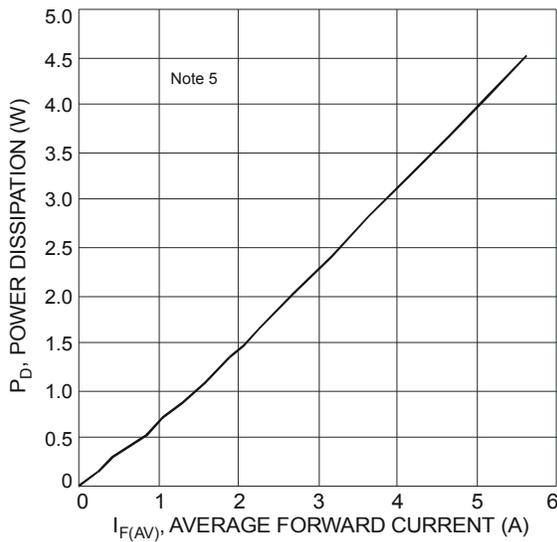


Fig. 1 Forward Power Dissipation

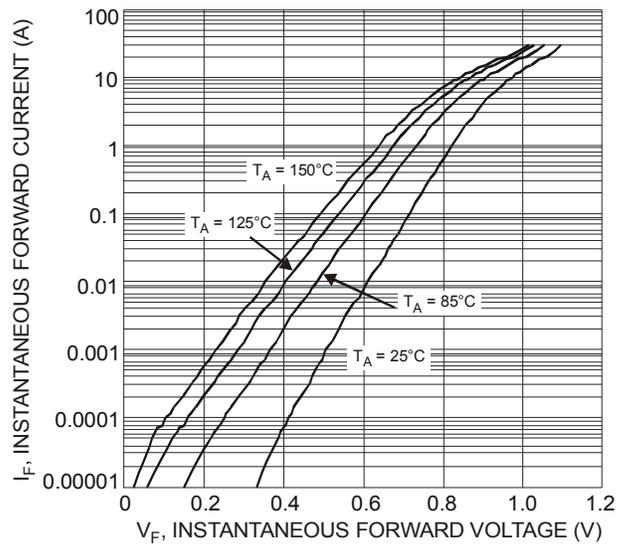


Fig. 2 Typical Forward Characteristics

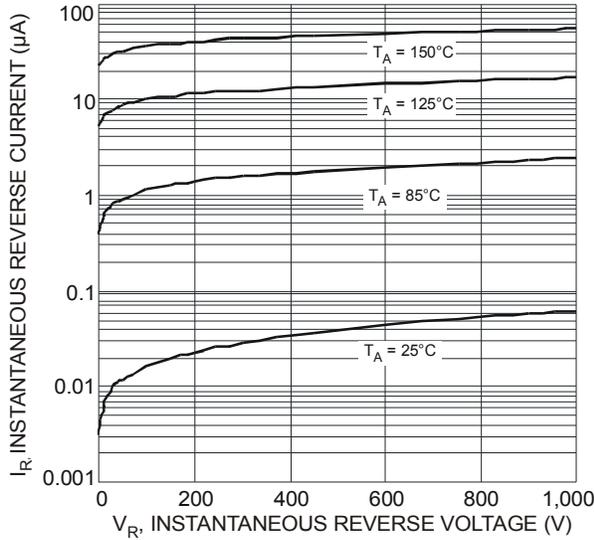


Fig. 3 Typical Reverse Characteristics

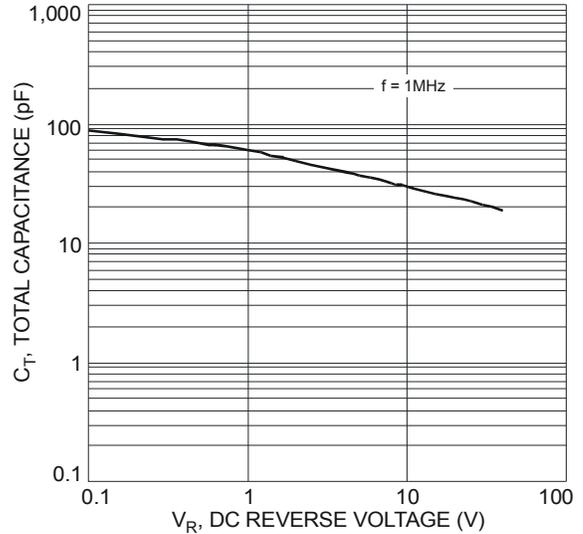


Fig. 4 Total Capacitance vs. Reverse Voltage

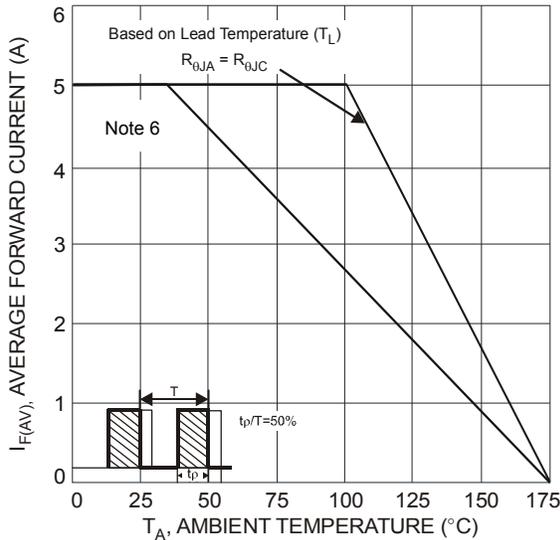


Fig. 5 Forward Current Derating Curve

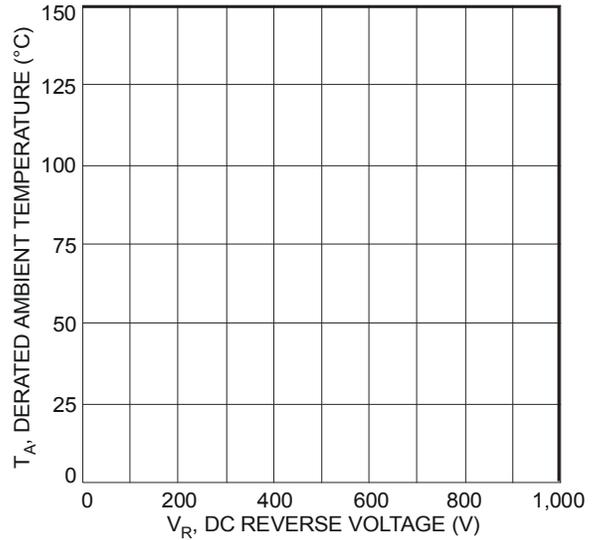
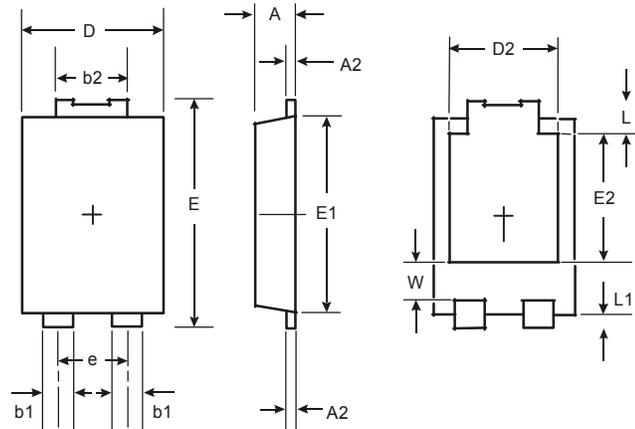


Fig. 6 Operating Temperature Derating

Package Outline Dimensions

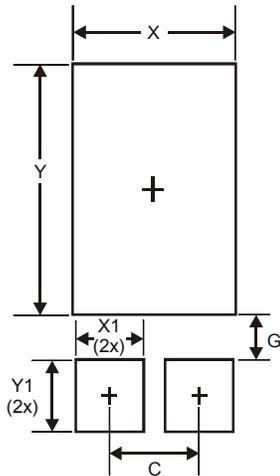
Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for the latest version.



PowerDI [®] 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)
C	1.840
G	0.852
X	3.360
X1	1.390
Y	4.860
Y1	1.400

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PDR5K

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