

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)
800	5	1.2	10

Description

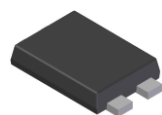
PDR5KF, a 5.0A Glass Passivated Rectifier in our thermally efficient PowerDI[®]5 package, offers high-surge current capability, low-leakage current and fast reverse recovery time.

Features and Benefits

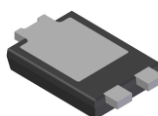
- Glass Passivated Die Construction for High Reliability
- Low Leakage Current Saves Power in Battery-Powered Applications
- Fast Reverse Recovery Speed provides High Efficiency in Switching Applications
- Large Exposed Heat Sink on Device Underside Provides Good Heat-Sinking to Support High Power Dissipation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

Mechanical Data

- Case: 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 ③
- Polarity: See Diagram
- Weight: 0.096 grams (Approximate)



Top View



Bottom View

LEFT PIN ○ ○ RIGHT PIN ○ BOTTOMSIDE
 HEAT SINK

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	POWERDI [®] 5	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 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
 Δ = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 15 for 2015)
 WW = Week Code (01 to 53)
 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	Value	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
Peak Repetitive Reverse Surge Voltage (Note 5)	V _{RSM}	1,050	V
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	250	A

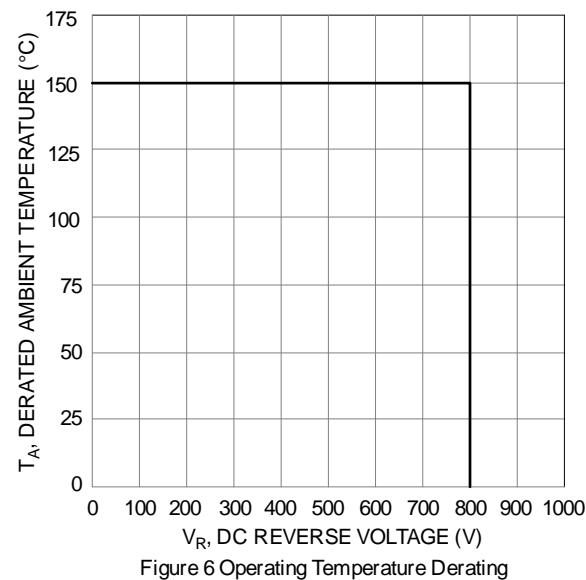
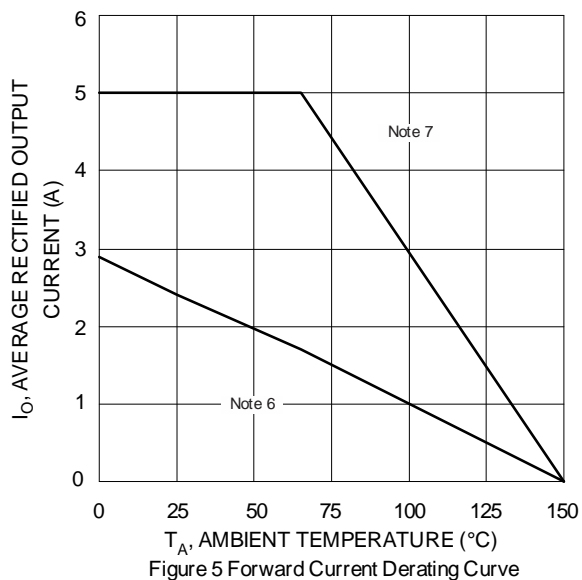
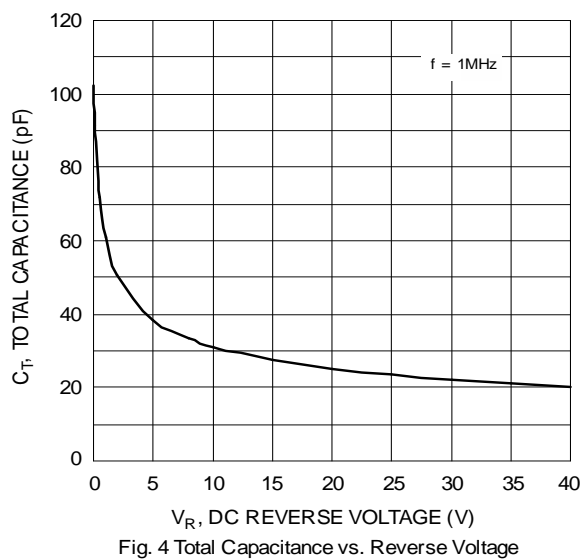
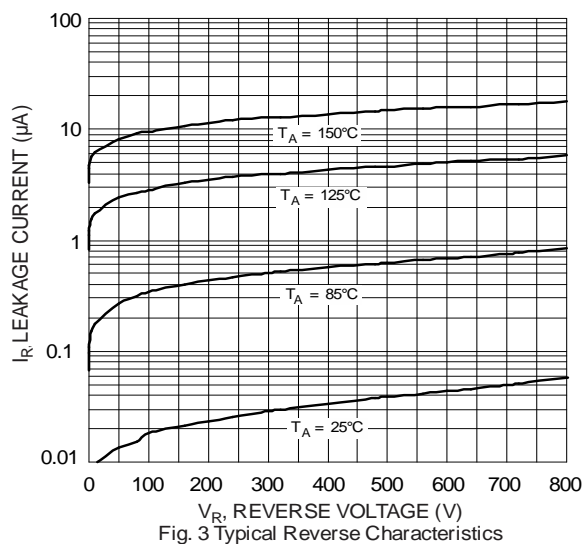
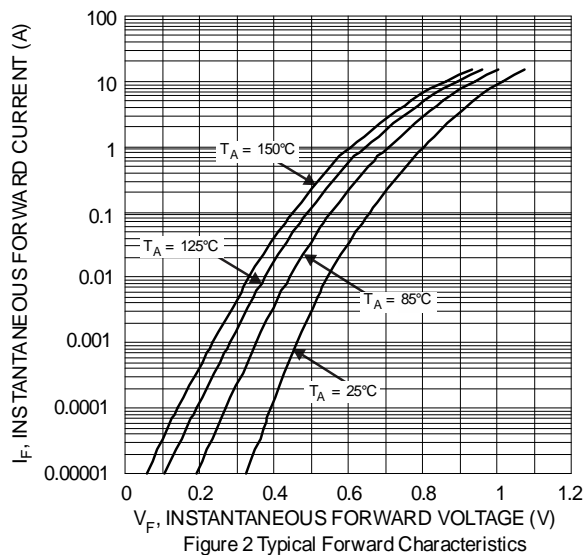
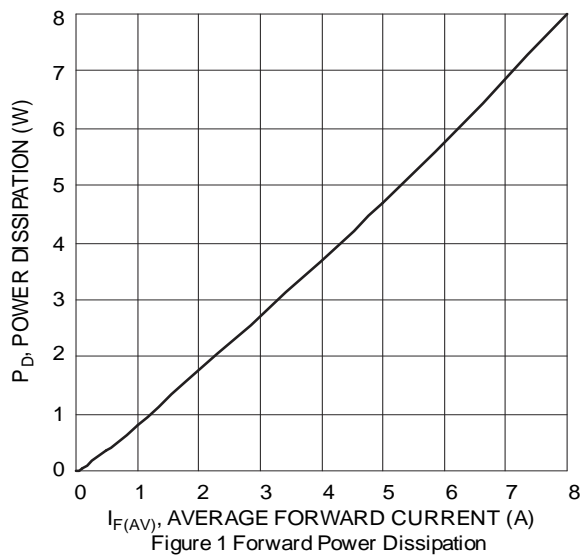
Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Lead (Note 7)	R _{θJL}	2.2	°C/W
Typical Thermal Resistance Junction to Lead (Note 6)	R _{θJL}	9.5	°C/W
Typical Thermal Resistance Junction to Ambient (Note 7)	R _{θJA}	24.5	°C/W
Typical Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	77	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V _{(BR)R}	800	—	—	V	I _R = 10μA
Forward Voltage	V _F	—	0.95	1.2	V	I _F = 5A, T _S = +25°C
Reverse Leakage Current (Note 8)	I _R	—	0.06 0.006	10 0.3	μA mA	V _R = 800V, T _J = +25°C V _R = 800V, T _J = +125°C
Reverse Recovery Time	t _{RR}	—	300	500	ns	I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A

- Notes:
- Per IEC61000-4-5 surge standard, 1.2/50μs voltage impulse, 20ohm source impedance, 8x20μs surge current.
 - Device mounted on FR-4 PC board, 2oz copper trace weight, with 1x recommended pad layout. Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for the latest revision.
 - Device mounted on 2 inch by 2 inch Alumina substrate PC board.
 - Short duration pulse test used to minimize the self-heating effect.



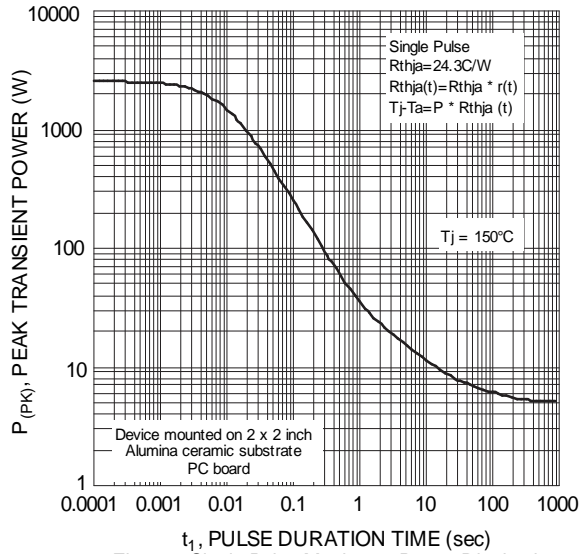
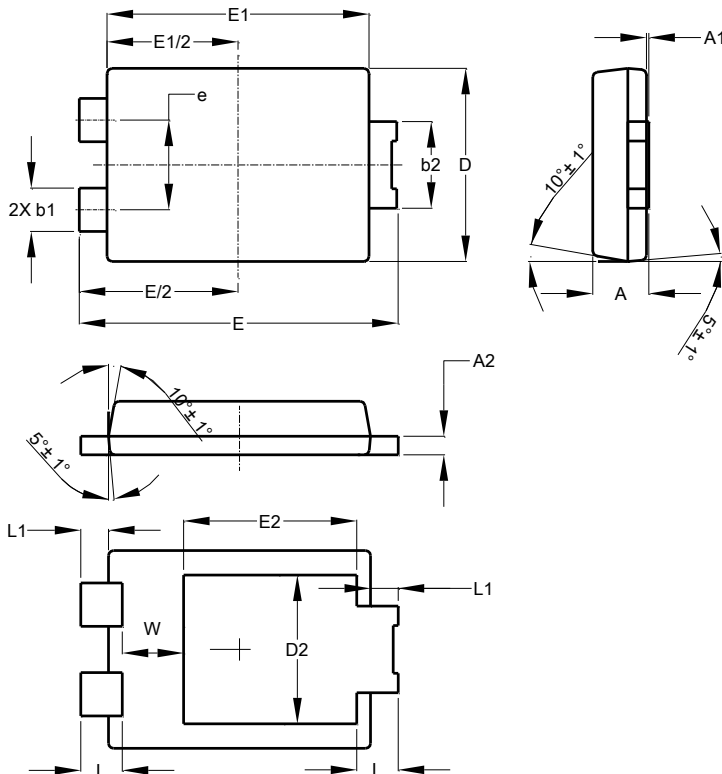


Figure 7 Single Pulse Maximum Power Dissipation

Package Outline Dimensions

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

POWERDI® 5

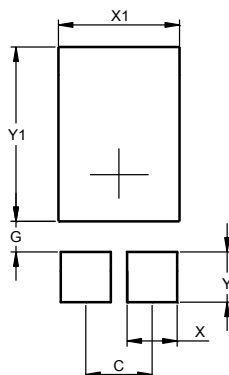


POWERDI® 5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	-	-	3.054
E	6.40	6.60	6.504
e	-	-	1.84
E1	5.30	5.45	5.37
E2	-	-	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

Suggested Pad Layout

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

POWERDI[®]5



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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