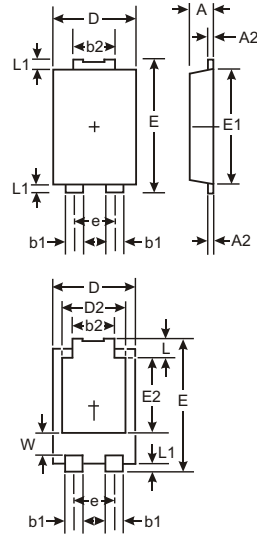


**Features**

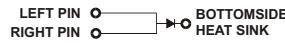
- Glass Passivated Die Construction
- Low Leakage Current
- Lead Free Finish, RoHS Compliant (Note 1)**
- "Green" Molding Compound (No Br, Sb)**
- Qualified to AEC-Q101 Standards for High Reliability**

**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-020C
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram
- Marking: See Page 3
- Weight: 0.096 grams (approximate)



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	3.05 NOM	
E	6.40	6.60
e	1.84 NOM	
E1	5.30	5.45
E2	3.55 NOM	
L	0.75	0.95
L1	0.50	0.65
W	1.20	1.50
<b>All Dimensions in mm</b>		



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

**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>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	400	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	283	V
Average Rectified Output Current (See also figure 4)	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>	100	A

**Thermal Characteristics**

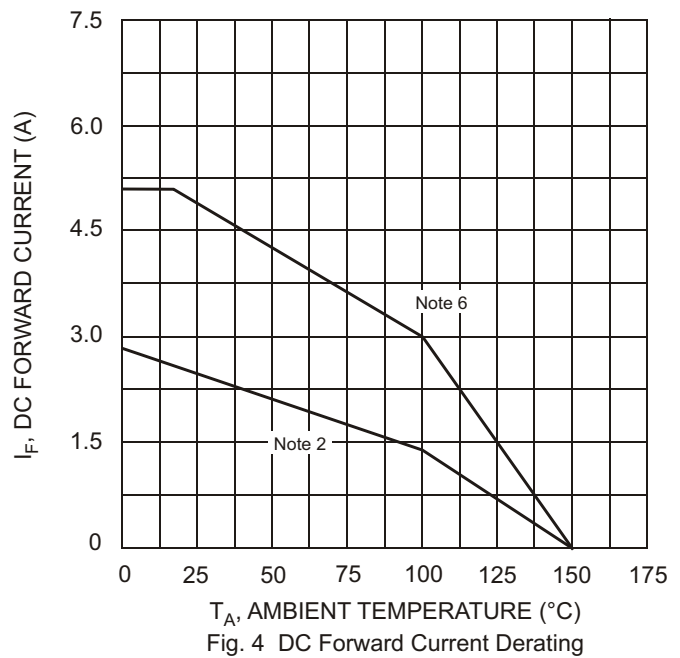
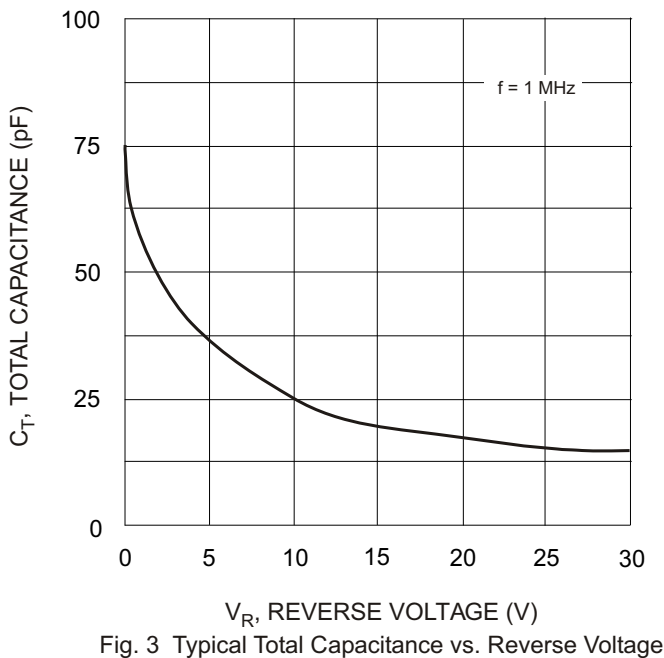
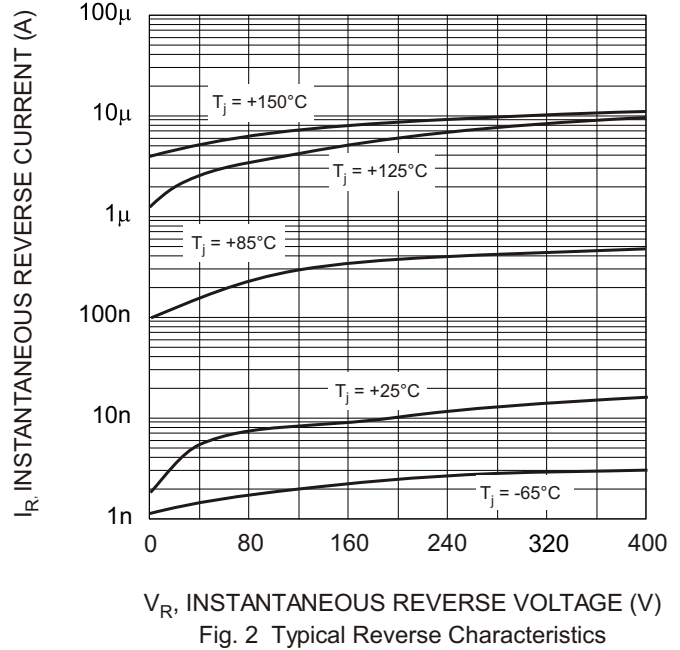
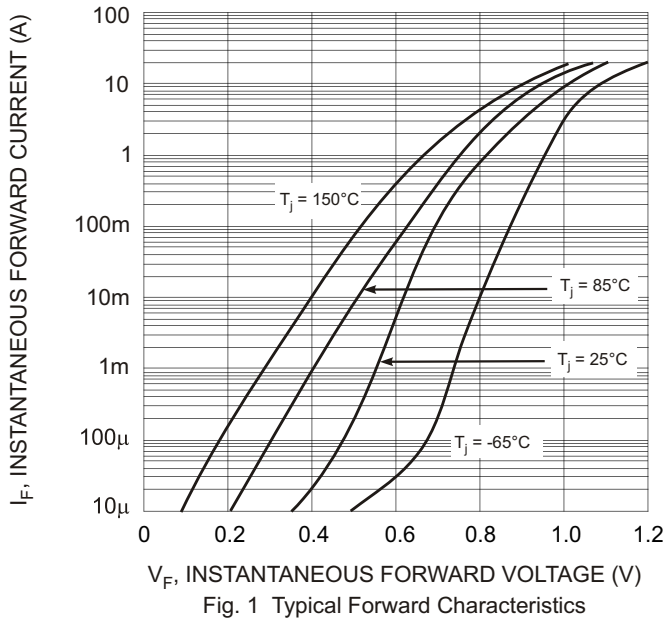
Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	R <sub>JS</sub>		1.5	C/W
Thermal Resistance Junction to Ambient Air (Note 2)	R <sub>JA</sub>	75		C/W
Thermal Resistance Junction to Ambient Air (Note 3)	R <sub>JA</sub>	65		C/W
Thermal Resistance Junction to Ambient Air (Note 4)	R <sub>JA</sub>	45		C/W
Operating Temperature Range	T <sub>J</sub>		-65 to +150	C
Storage Temperature Range	T <sub>STG</sub>		-65 to +150	C

- Notes:
- RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
  - FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>. T<sub>A</sub> = 25 C
  - Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>. T<sub>A</sub> = 25 C
  - Polymide PCB, 2 oz. Copper. Cathode pad dimensions 9.4 mm x 7.2 mm. Anode pad dimensions 2.7 mm x 1.6 mm. T<sub>A</sub> = 25 C

## Electrical Characteristics @ $T_A = 25\text{ C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	400			V	$I_R = 10\text{ A}$
Forward Voltage	$V_F$		0.92	1.15	V	$I_F = 5\text{ A}, T_S = 25\text{ C}$
Reverse Leakage Current (Note 5)	$I_R$		0.02 9	10 250	A	$T_S = 25\text{ C}, V_R = 400\text{ V}$ $T_S = 125\text{ C}, V_R = 400\text{ V}$
Reverse Recovery Time	$t_{rr}$		3.3		s	$I_F = 0.5\text{ A}, I_R = 1.0\text{ A}, I_{rr} = 0.25\text{ A}$

- Notes:
- FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  $T_A = 25\text{ C}$
  - Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.  $T_A = 25\text{ C}$
  - Polymide PCB, 2 oz. Copper. Cathode pad dimensions 9.4 mm x 7.2 mm. Anode pad dimensions 2.7 mm x 1.6 mm.  $T_A = 25\text{ C}$
  - Short duration test pulse used to minimize self-heating effect.
  - Polymide PCB, 2 oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 3.0mm.



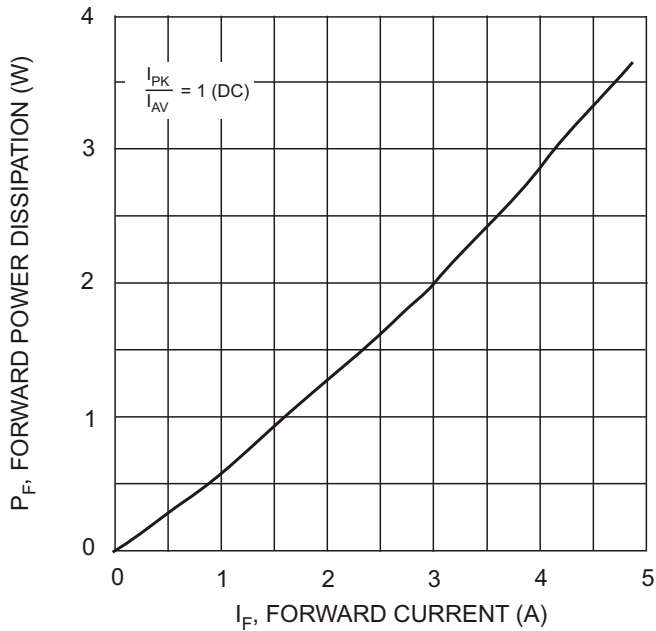


Fig. 5 Forward Power Dissipation

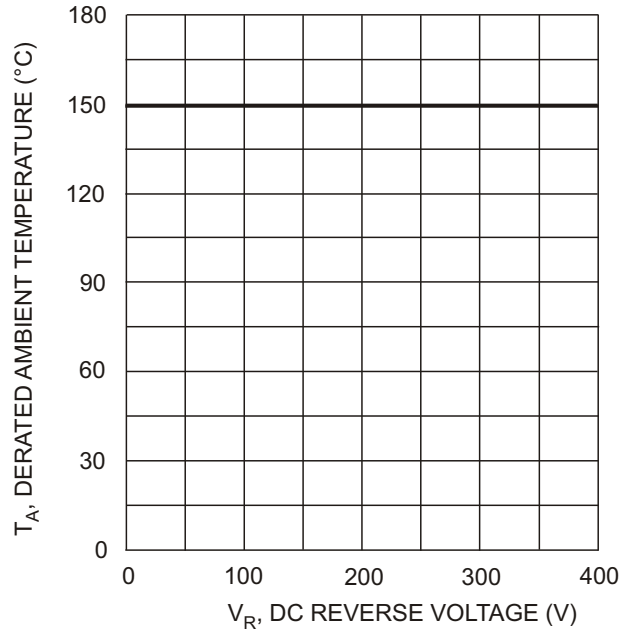


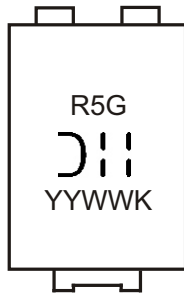
Fig. 6 Operating Temperature Derating

**Ordering Information** (Note 7)

Device	Packaging	Shipping
PDR5G-13	PowerDI 5	5000/Tape & Reel

Notes: 7. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Marking Information**



R5G = Product type marking code  
 Ⓜ:| = Manufacturers' code marking  
 YYWW = Date code marking  
 YY = Last two digits of year ex: 05 for 2005  
 WW = Week code 01 to 52  
 K = Factory Designator

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