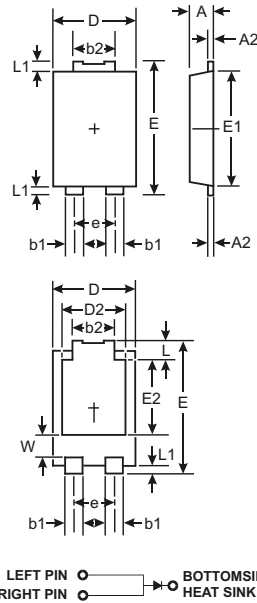


Features

- 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)



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

| 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 |
| All Dimensions in mm | | |

Maximum Ratings @ T_A = 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 _{RRM} V _{RWM} V _R | 400 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 283 | V |
| Average Rectified Output Current (See also figure 4) | I _O | 5 | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load | I _{FSM} | 100 | A |

Thermal Characteristics

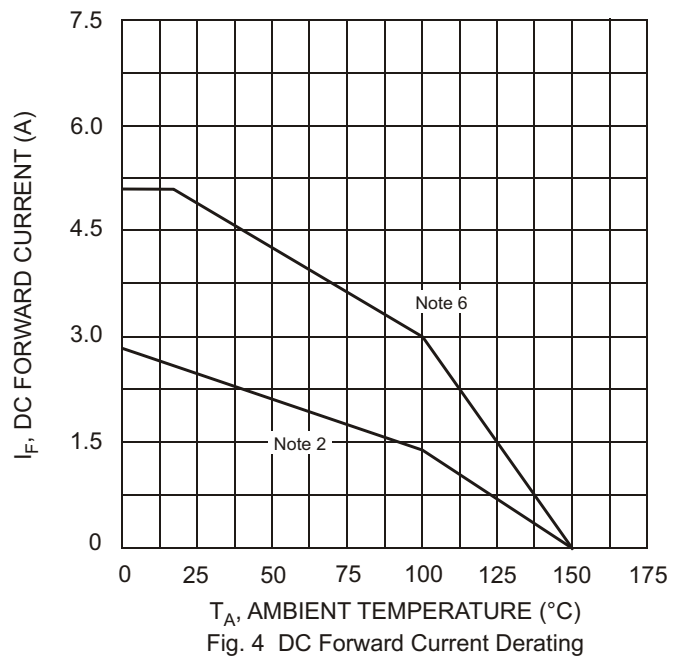
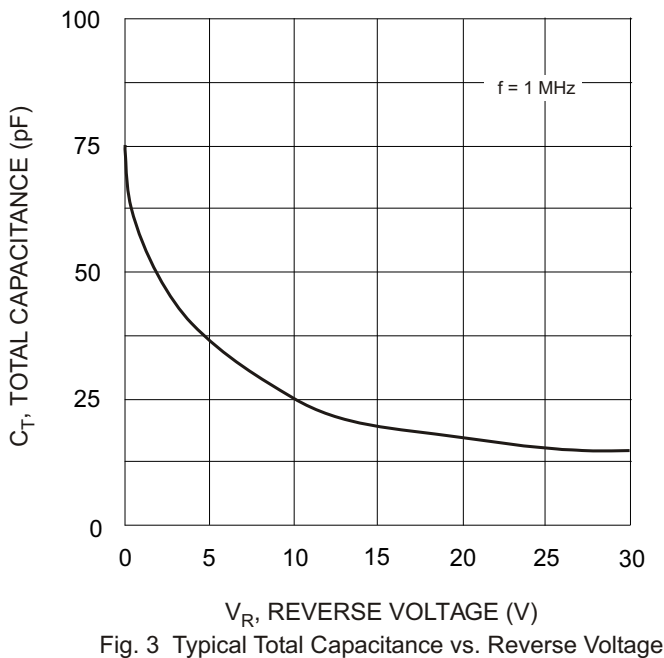
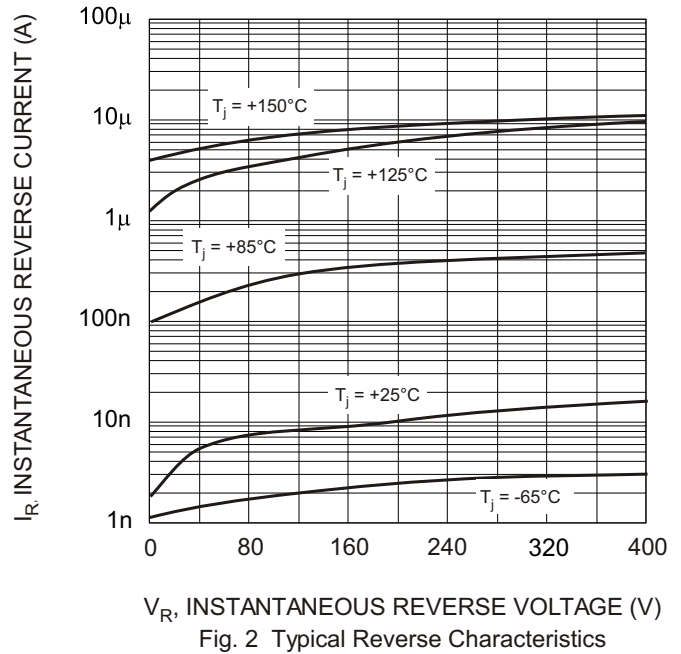
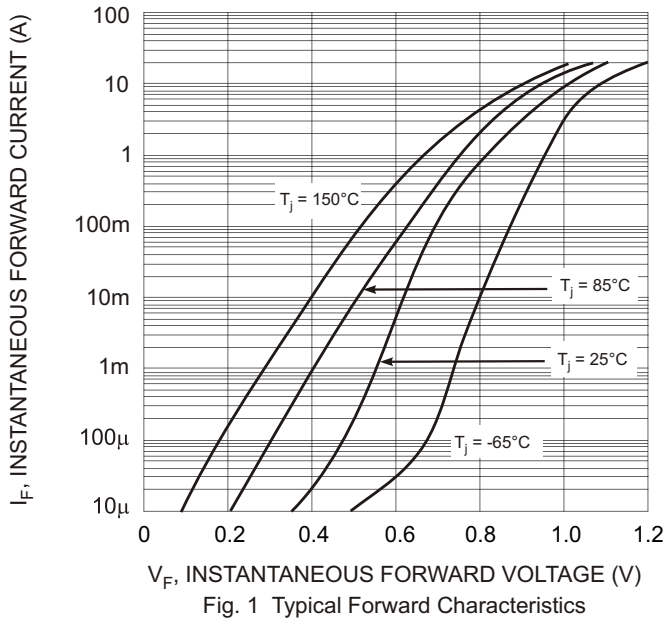
| Characteristic | Symbol | Typ | Max | Unit |
|---|------------------|-----|-------------|------|
| Thermal Resistance Junction to Soldering Point | R _{JS} | | 1.5 | C/W |
| Thermal Resistance Junction to Ambient Air (Note 2) | R _{JA} | 75 | | C/W |
| Thermal Resistance Junction to Ambient Air (Note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

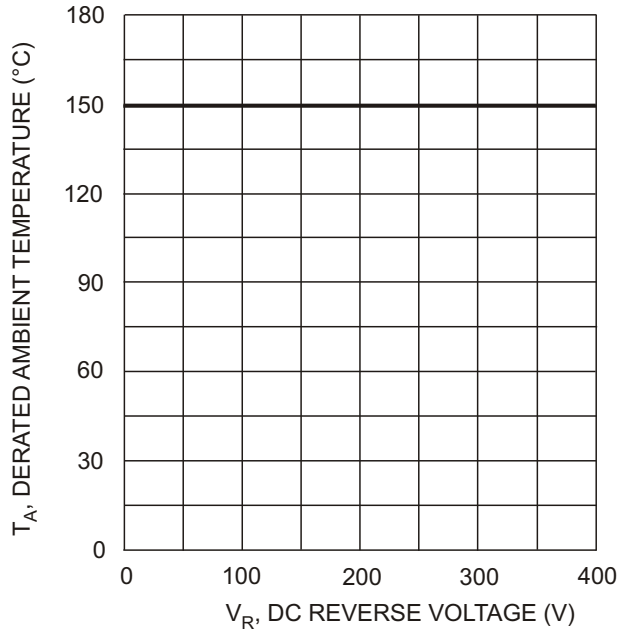
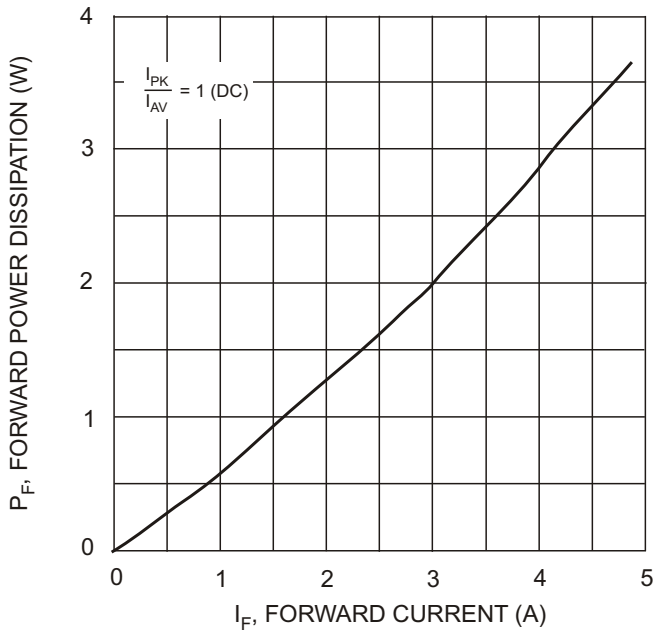
- Notes:
- RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
 - FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>. T_A = 25 C
 - Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>. T_A = 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_A = 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.



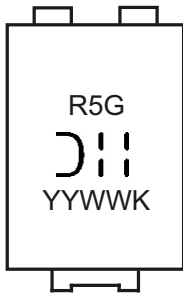


Ordering Information (Note 7)

| 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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