PDR3G

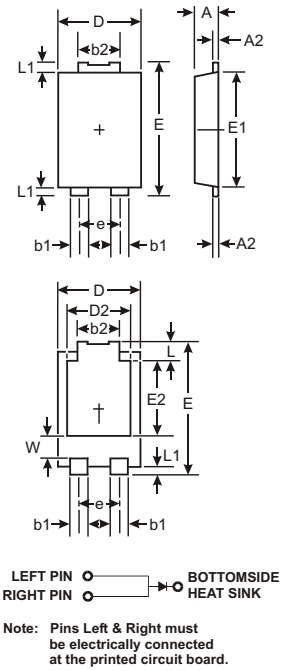
3A GLASS PASSIVATED RECTIFIER
PowerDI™5

Features

- Glass Passivated Die Construction
- Low Leakage Current
- High Forward Surge Current Capability
- **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: 0.095 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	3	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	$R_{\theta JS}$	—	2.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	75	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	65	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	45	—	°C/W
Operating Temperature Range	T_j	-65 to +150		°C
Storage Temperature Range	T_{STG}	-65 to +150		°C

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

Electrical Characteristics @ $T_A = 25°C$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	400	—	—	V	$I_R = 10\mu A$
Forward Voltage	V_F	—	0.92	1.15	V	$I_F = 3A$, $T_S = 25°C$
Reverse Leakage Current (Note 5)	I_R	— —	0.015 6	10 250	μA	$T_S = 25°C$, $V_R = 400V$ $T_S = 125°C$, $V_R = 400V$
Reverse Recovery Time	t_{rr}	—	3.0	—	μs	$I_F = 0.5A$, $I_R = 1.0A$, $I_{rr} = 0.25A$

Notes: 5. Short duration test pulse used to minimize self-heating effect.

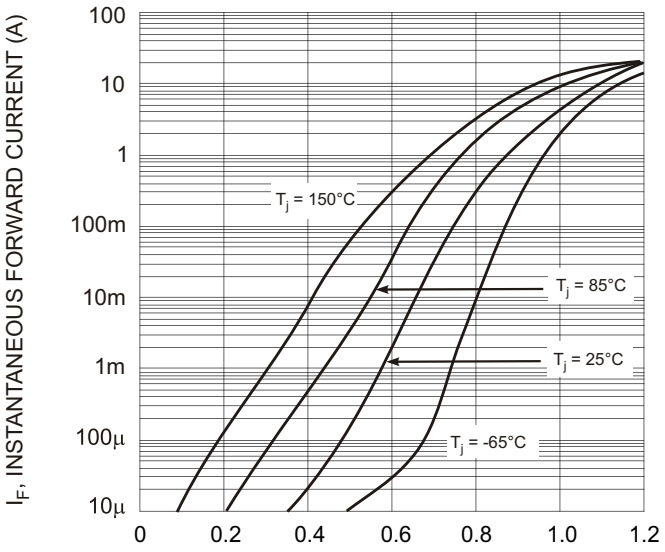


Fig. 1 Typical Forward Characteristics

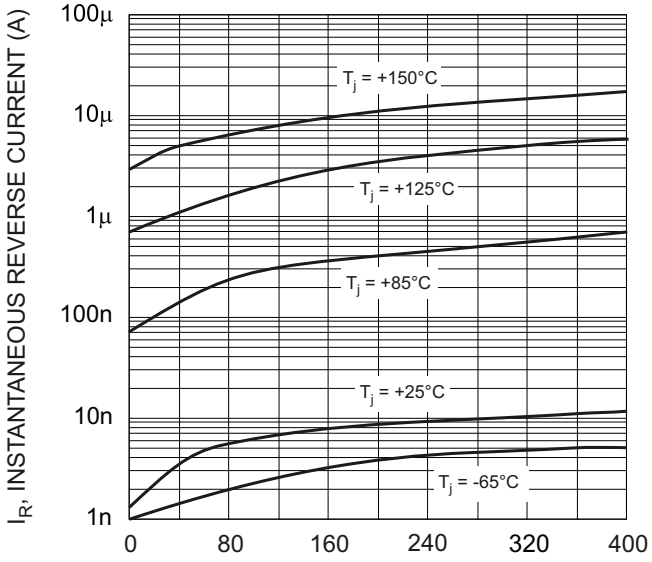


Fig. 2 Typical Reverse Characteristics

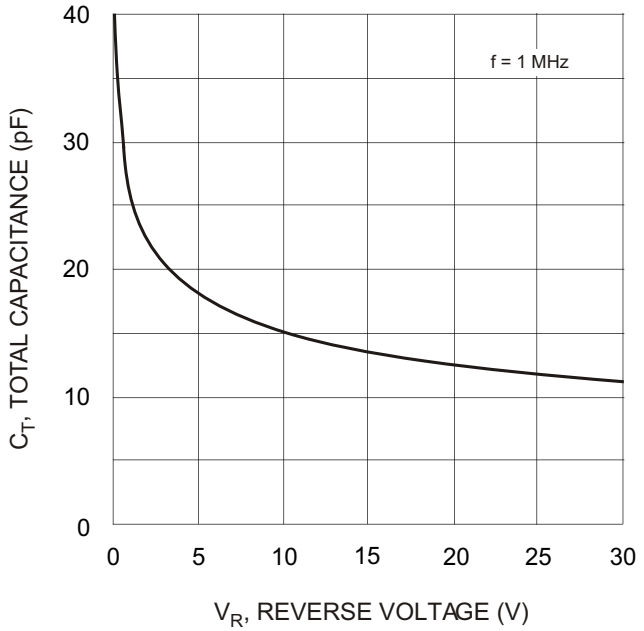


Fig. 3 Typical Total Capacitance vs. Reverse Voltage

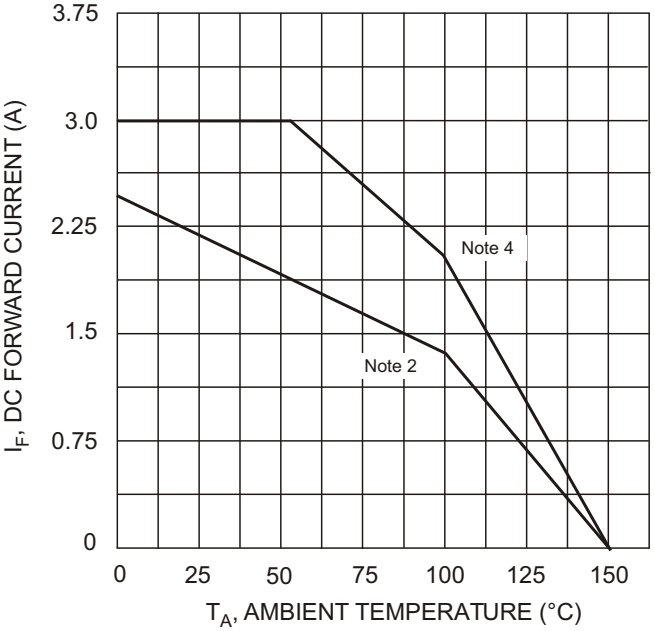


Fig. 4 DC Forward Current Derating

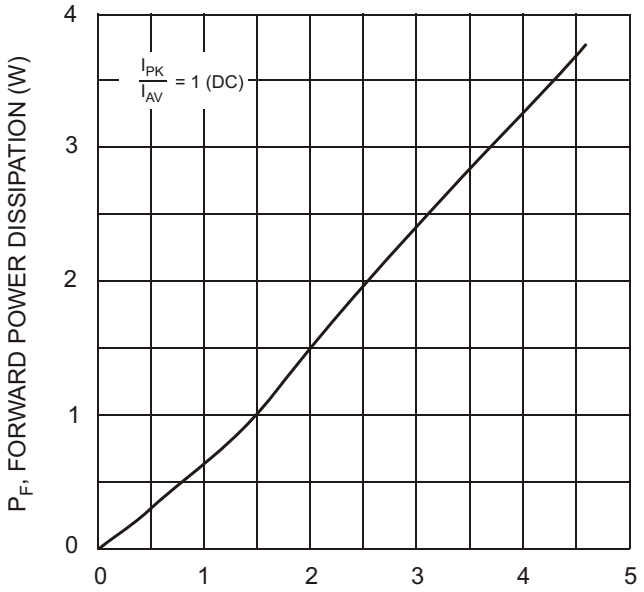


Fig. 5 Forward Power Dissipation

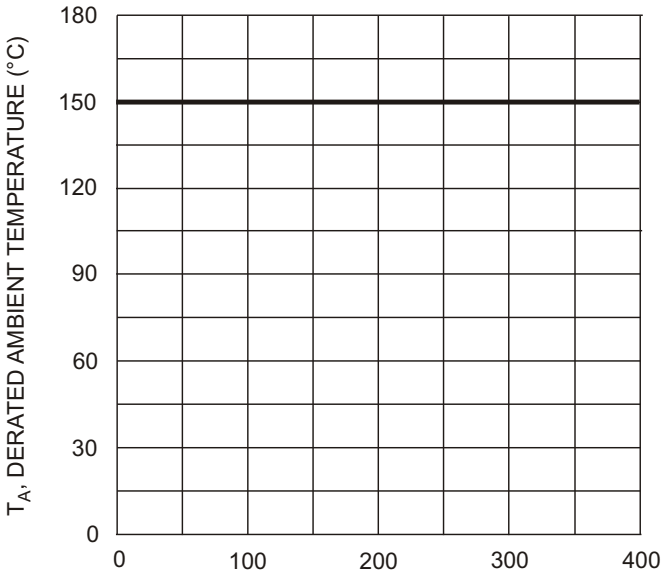


Fig. 6 Operating Temperature Derating

Ordering Information (Note 6)

Device	Packaging	Shipping
PDR3G-13	PowerDI™5	5000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

R3G = 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