

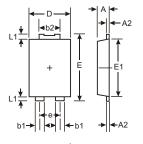
# 3A GLASS PASSIVATED RECTIFIER PowerDI ™5

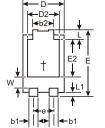
#### **Features**

- 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<sup>™</sup>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 @3
- Polarity: See DiagramMarking: See Page 3
- Weight: 0.095 grams (approximate)





RIGHT PIN O BOTTOMSIDE

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

PowerDI <sup>™</sup> 5				
Dim	Min	Max		
Α	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		
е	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<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)	Io	3	А
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I <sub>FSM</sub>	100	А

## **Thermal Characteristics**

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	R <sub>0</sub> JS	_	2.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{ heta JA}$	75	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{ heta JA}$	65	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{ heta JA}$	45	_	°C/W
Operating Temperature Range	Tj	-65 to +150		°C
Storage Temperature Range	T <sub>STG</sub>	-65	°C	

Notes

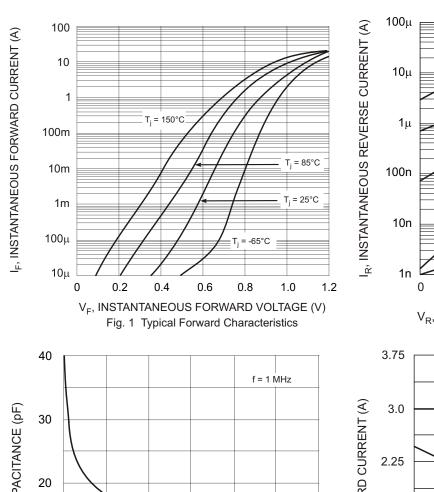
- 1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.
- 2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf. TA = 25°C
- $3. \ \ Polymide\ PCB, 2\ oz.\ Copper,\ minimum\ recommended\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



## Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	V <sub>(BR)R</sub>	400	_	_	V	$I_R = 10\mu A$
Forward Voltage	V <sub>F</sub>	_	0.92	1.15	V	I <sub>F</sub> = 3A, T <sub>S</sub> = 25°C
Reverse Leakage Current (Note 5)	I <sub>R</sub>	_	0.015 6	10 250	μА	T <sub>S</sub> = 25°C, V <sub>R</sub> = 400V T <sub>S</sub> = 125°C, V <sub>R</sub> = 400V
Reverse Recovery Time	t <sub>rr</sub>	_	3.0	_	μS	I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>rr</sub> = 0.25A

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



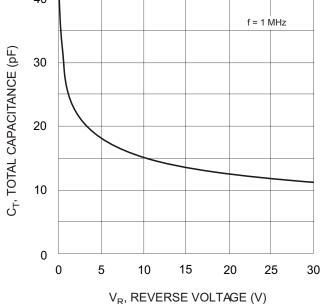
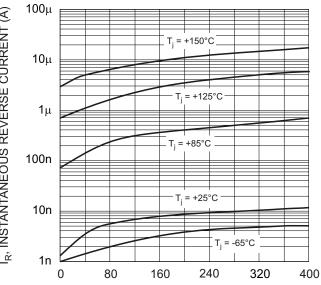


Fig. 3 Typical Total Capacitance vs. Reverse Voltage



V<sub>R</sub>, INSTANTANEOUS REVERSE VOLTAGE (V) Fig. 2 Typical Reverse Characteristics

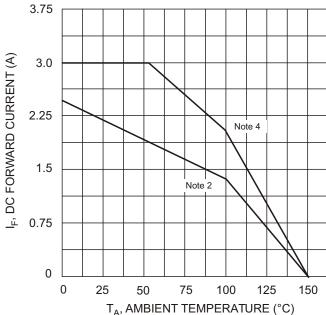
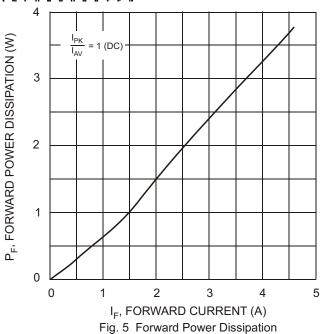
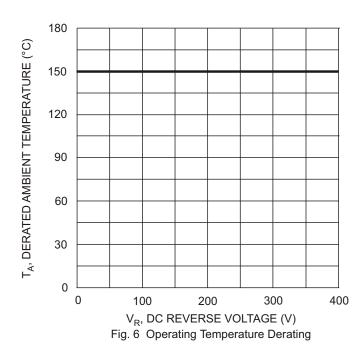


Fig. 4 DC Forward Current Derating







## Ordering Information (Note 6)

Device	Packaging	Shipping
PDR3G-13	PowerDI <sup>™</sup> 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

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