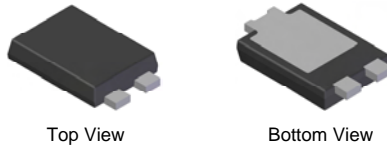





4A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER
PowerDI®5
Features

- Lower Forward Voltage Drop than Ultrafast Rectifiers
- Very Low Leakage Current
- Soft Recovery Characteristics: Softness Factor (t_b/t_a) ≥ 1 (see figure 8)
- Highly Stable Oxide Passivated Junction
- 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-020D
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (E3)
- Polarity: See Diagram
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.095 grams (approximate)

LEFT PIN  RIGHT PIN  BOTTOMSIDE HEAT SINK 

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

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}	200	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
RMS Reverse Voltage	V _{R(RMS)}	141	V
Average Rectified Output Current (See also figure 5)	I _O	4	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 _{θJS}	—	3.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	R _{θJA}	80	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)	R _{θJA}	65	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 4)	R _{θJA}	45	—	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +175		°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}	200	—	—	V	I _R = 5μA
Forward Voltage	V _F	—	0.76	0.82	V	I _F = 3A, T _S = 25°C
		—	—	0.59		I _F = 3A, T _S = 150°C
		—	0.785	0.84		I _F = 4A, T _S = 25°C
		—	0.61	0.64		I _F = 4A, T _S = 150°C
		—	0.84	0.89		I _F = 8A, T _S = 25°C
		—	0.68	0.75		I _F = 8A, T _S = 150°C
Reverse Leakage Current (Note 5)	I _R	—	0.2	1	μA	T _S = 25°C, V _R = 200V
		—	0.8	4	mA	T _S = 150°C, V _R = 200V
Reverse Recovery Time	t _{rr}	—	—	25	ns	I _F = 0.5A, I _R = 1.0A I _{RR} = 0.25A (see Figure 8)

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see *EU Directive 2002/95/EC Annex Notes*.
 2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 3. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 4. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
 5. Short duration test pulse used to minimize self-heating effect.

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PDS4200H

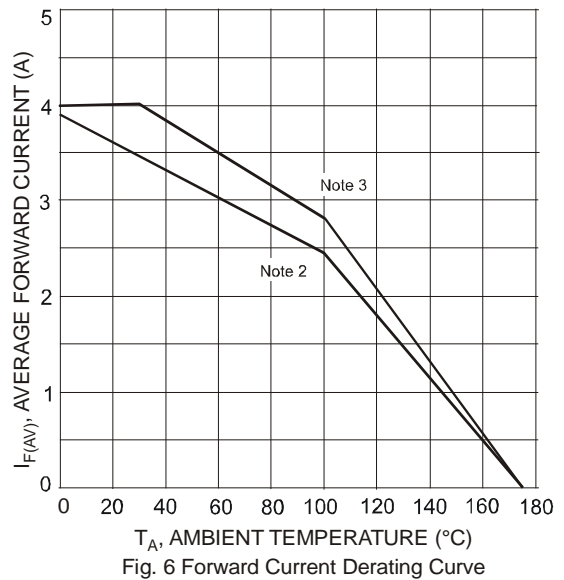
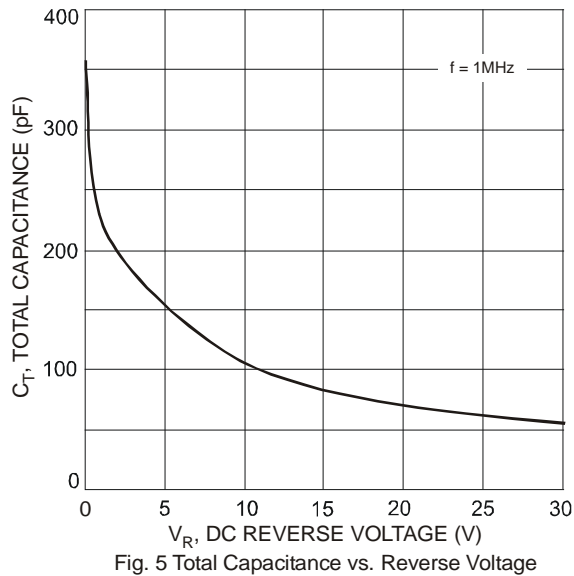
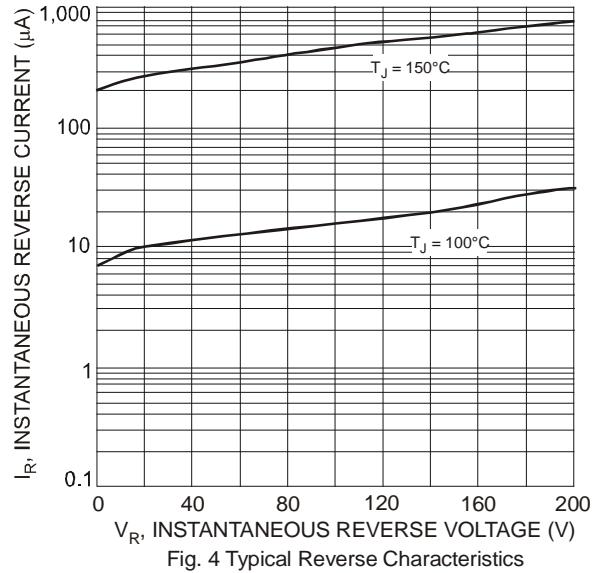
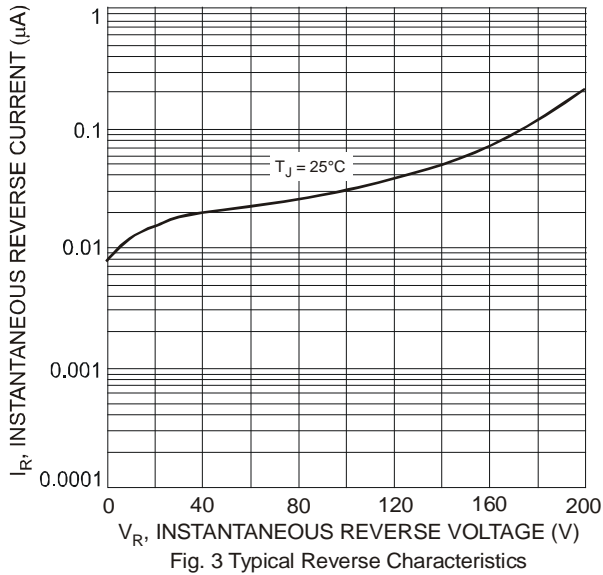
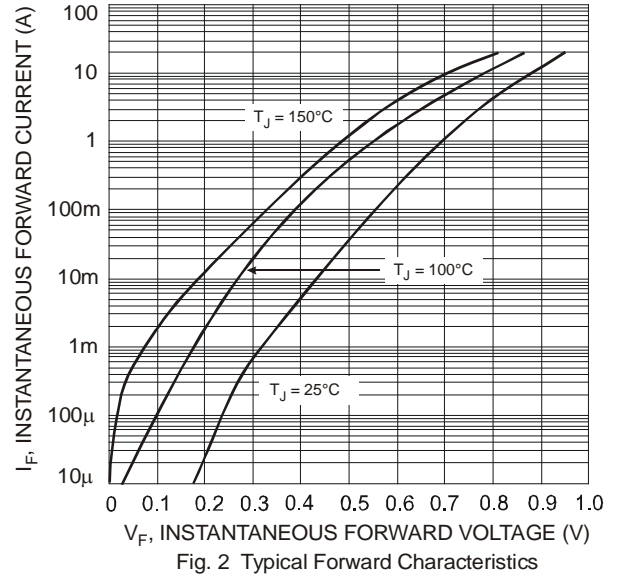
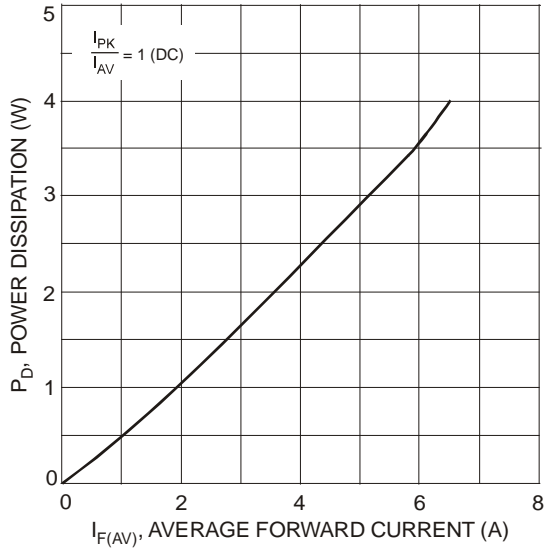
Document number: DS30596 Rev. 8 - 2

1 of 4

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2 of 4

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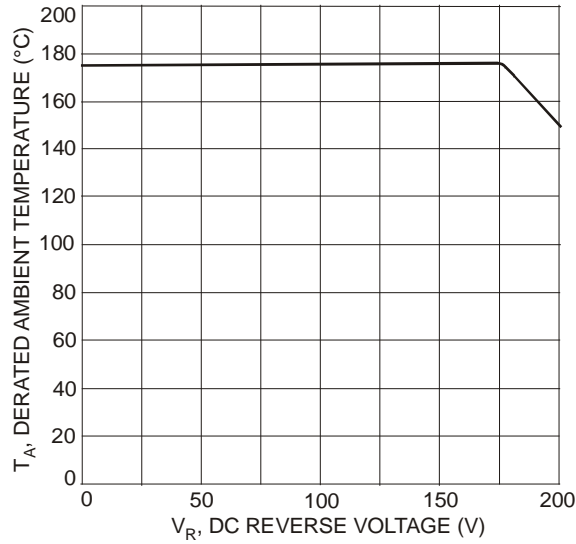


Fig. 7 Operating Temperature Derating

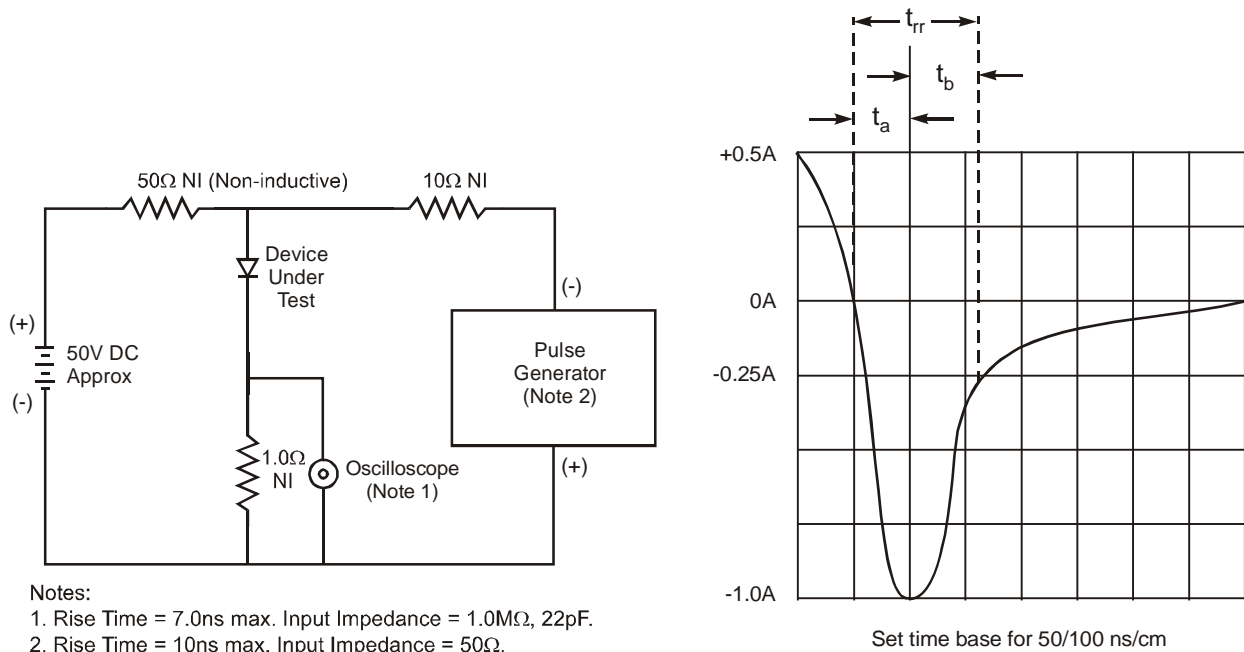


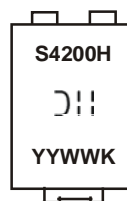
Fig. 8 Reverse Recovery Time Characteristic and Test Circuit

Ordering Information (Note 6)

Part Number	Case	Packaging
PDS4200H-13	PowerDI [®] 5	5000/Tape & Reel

Notes: 6. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

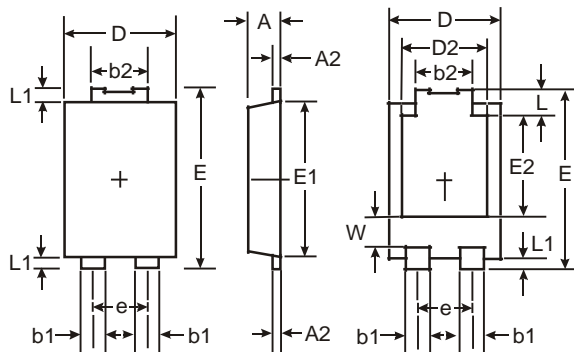
Marking Information



S4200H = Product type marking code
 DII = Manufacturers' code marking
 YYWW = Date code marking
 YY = Last two digits of year ex: 06 for 2006
 WW = Week code 01 to 52
 K = Factory Designator

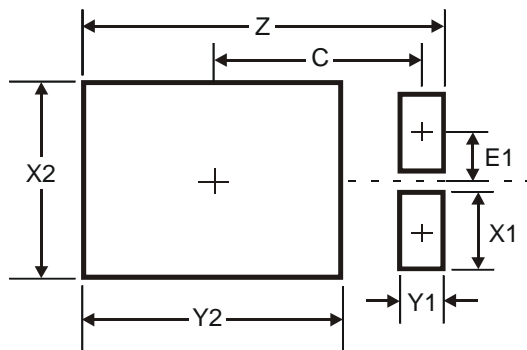
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Package Outline Dimensions



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		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	6.6
X1	1.4
X2	3.6
Y1	0.8
Y2	4.7
C	3.87
E1	0.9

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