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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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**4A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER
POWERDI**

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _{F(MAX)} (V)	I _{R(MAX)} (μA)
200	4	0.84	1


Features and Benefits

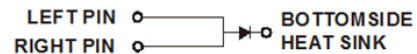
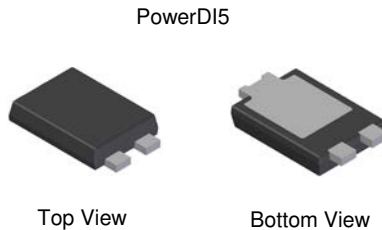
- Lower Forward Voltage Drop than Ultrafast Rectifiers
- Very Low Leakage Current
- Soft Recovery Characteristics: Softness Factor (t_B/t_A) ≥ 1 (See Figure 8)
- Highly Stable Oxide Passivated Junction
- High Forward Surge Current Capability
- **Lead-Free Finish & RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**
- **PPAP Capable (Note 4)**

Applications

- SMPS
- DC-DC Converter
- Freewheeling Diodes
- AC-DC

Mechanical Data

- Case: PowerDI5
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe.
Solderable per MIL-STD-202, Method 208 
- Polarity: See Diagram
- Weight: 0.095 grams (Approximate)



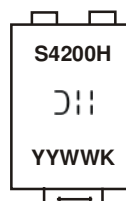
Note: Pins Left & Right must be electrically connected at the printed circuit board.


Ordering Information (Note 5)

Part Number	Compliance	Case	Packaging
PDS4200HQ-13	Automotive	PowerDI5	5,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
 2. See http://www.diodes.com/quality/lead_free.html for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
 3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
 4. Automotive products are AEC-Q101 qualified and are PPAP capable. Refer to http://www.diodes.com/product_compliance_definitions.html.
 5. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

Marking Information



S4200H = Product Type Marking Code
 = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 16 for 2016)
 WW = Week Code (01 to 53)
 K = Factory Designator

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	200	V
RMS Reverse Voltage	V _{R(RMS)}	141	V
Average Rectified Output Current	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 6)	R _{θJA}	80	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 7)	R _{θJA}	65	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 8)	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 9)	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 9)	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:
6. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
 7. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
 8. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
 9. Short duration test pulse used to minimize self-heating effect.

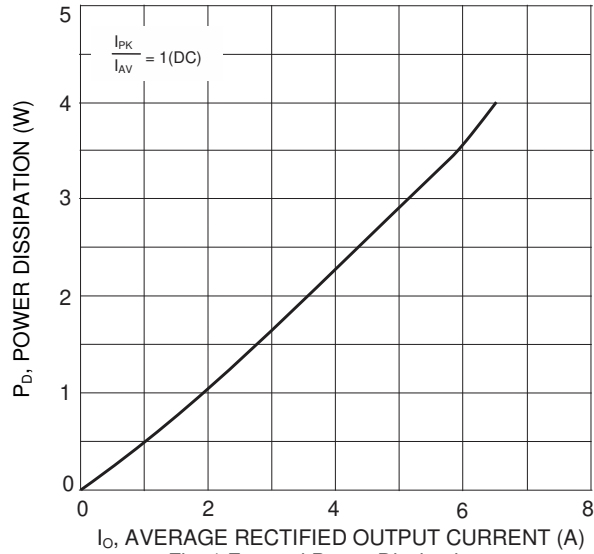


Fig. 1 Forward Power Dissipation

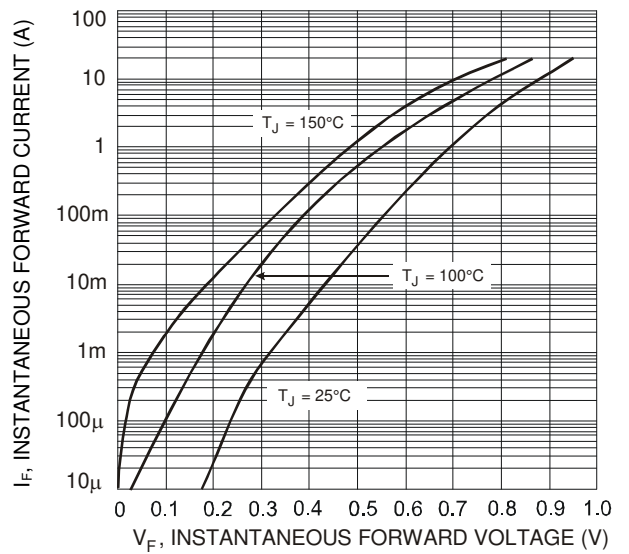


Fig. 2 Typical Forward Characteristics

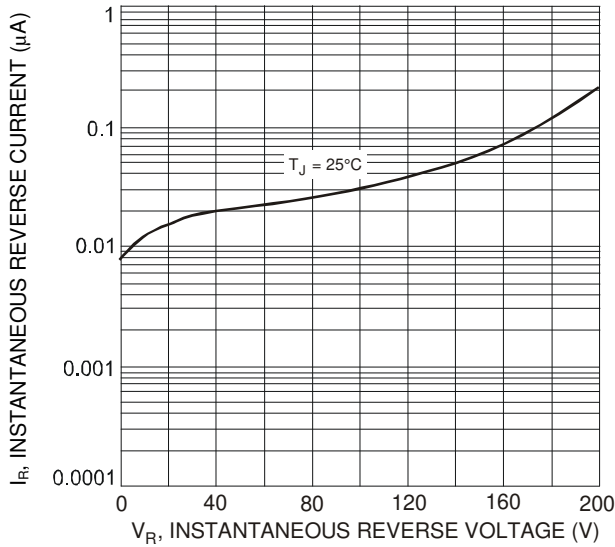


Fig. 3 Typical Reverse Characteristics

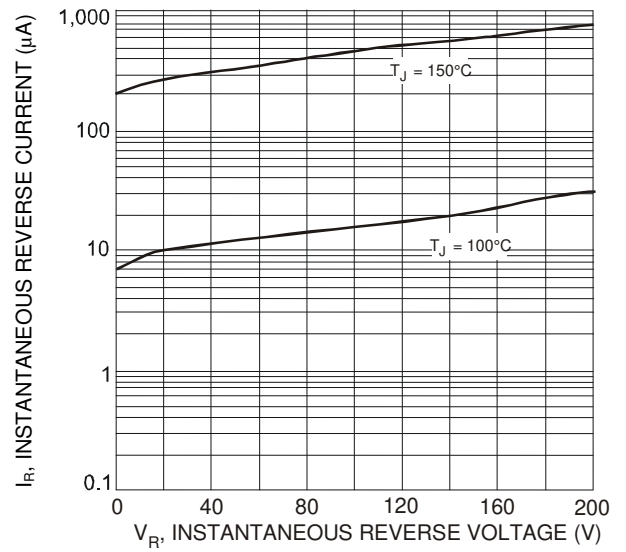


Fig. 4 Typical Reverse Characteristics

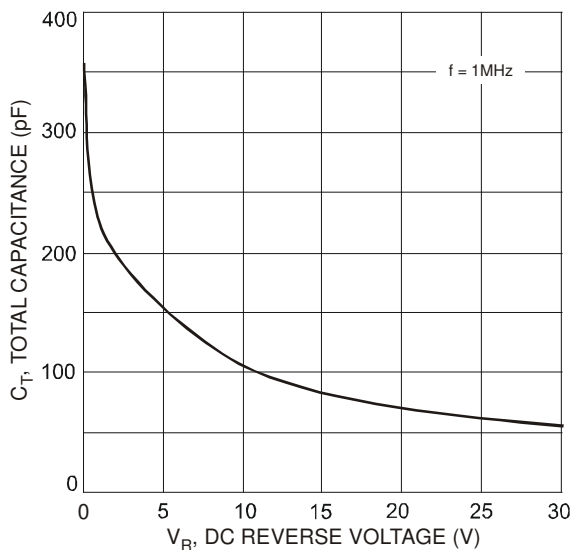


Fig. 5 Total Capacitance vs. Reverse Voltage

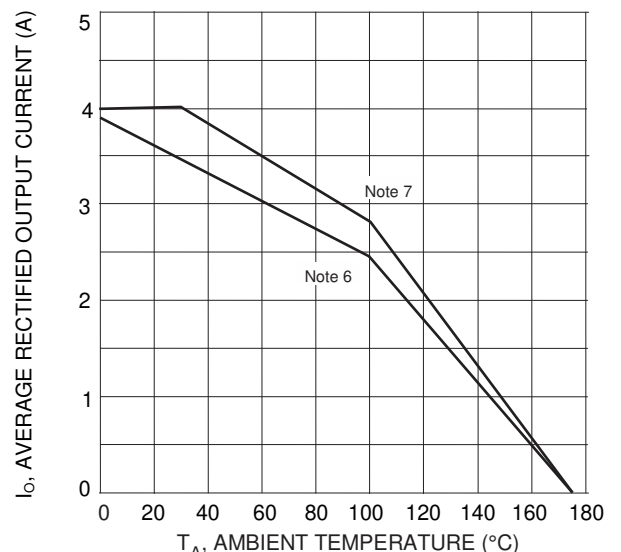


Fig. 6 Forward Current Derating Curve

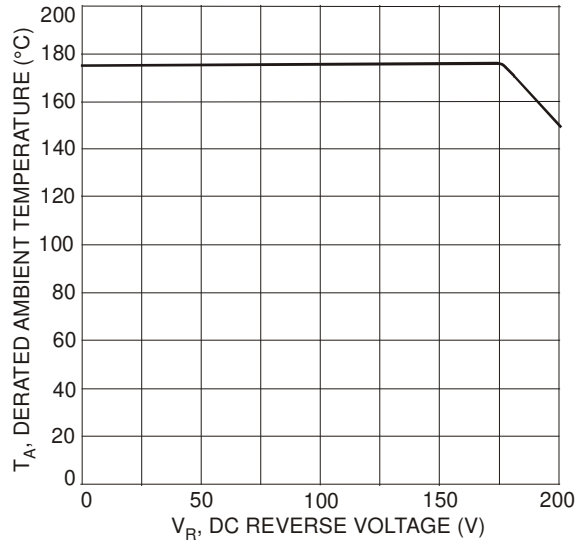
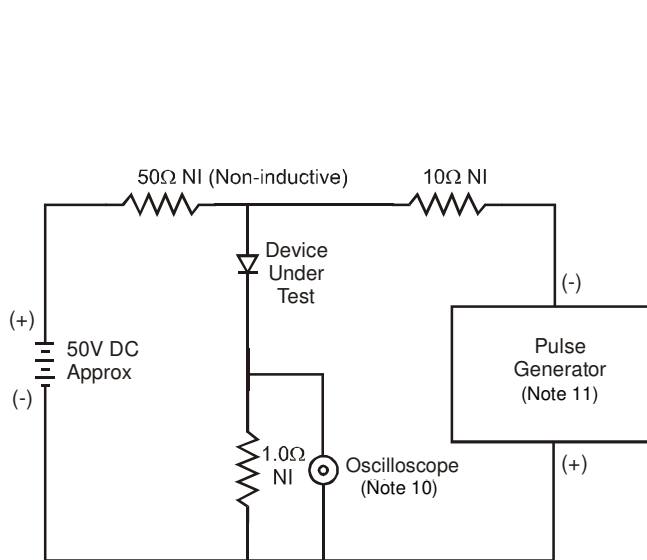


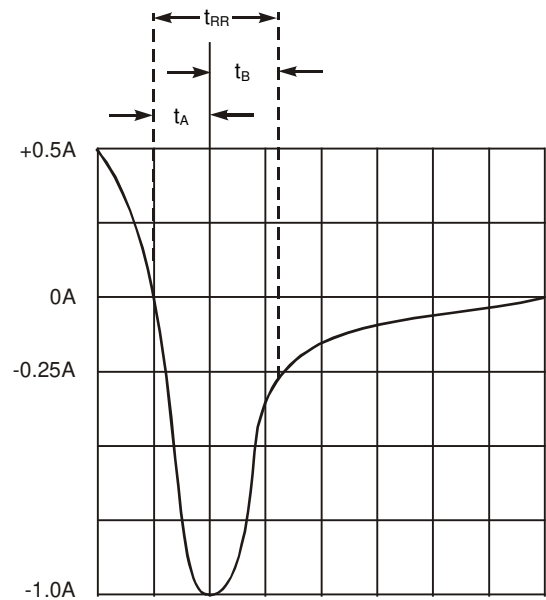
Fig. 7 Operating Temperature Derating



Notes:

10. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.

11. Rise Time = 10ns max. Input Impedance = 50Ω.



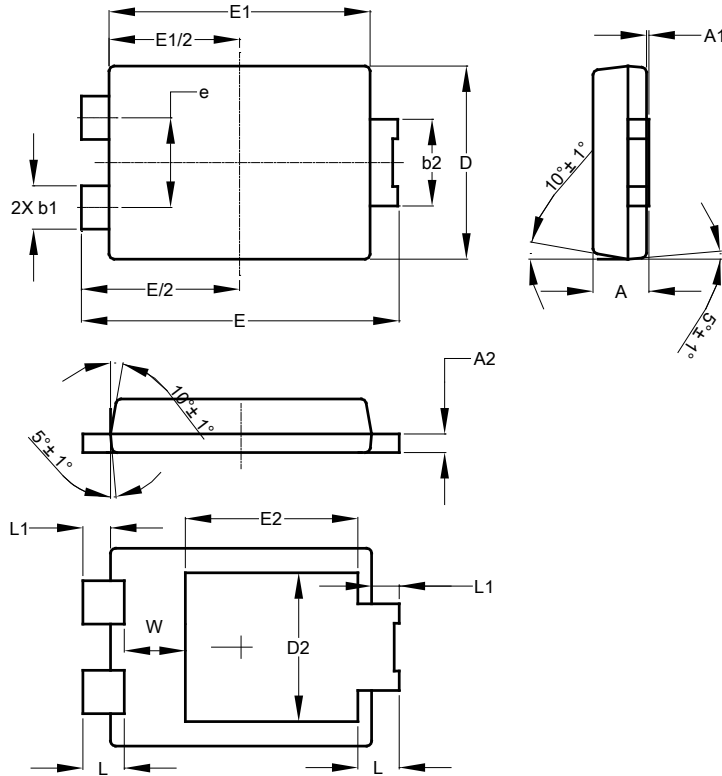
Set time base for 50/100 ns/cm

Fig. 8 Reverse Recovery Time Characteristic and Test Circuit

Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

PowerDI5

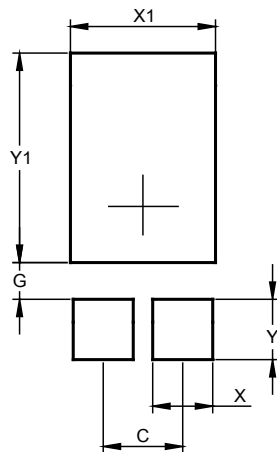


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.504
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

PowerDI5



Dimensions	Value (in mm)
C	1.840
G	0.852
X	1.390
X1	3.360
Y	1.400
Y1	4.860

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