



PDS5100H

5A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER POWERDI®5

Features

- Guard Ring Die Construction for Transient Protection
- High Maximum Junction Temperature
- Very Low Leakage Current
- Highly Stable Oxide Passivated Junction
- Low Forward Voltage Drop
- 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

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 @3
- Polarity: See Diagram
- Weight: 0.096 grams (approximate)

POWERDI5





BOTTOMSIDE RIGHT PIN O-

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

Ordering Information (Note 4)

Part Number	Case	Packaging
PDS5100H-13	POWERDI5	5000/Tape & Reel
PDS5100HQ-13	POWERDI5	5000/Tape & Reel
PDS5100H-7	POWERDI5	1500/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 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 + CI) and <1000ppm antimony compounds.
- 4. For packaging details, go to our website at http://www.diodes.com.

Marking Information



S5100H = Product type marking code The Manufacturers' code marking YYWW = Date code marking YY = Last two digits of year (ex: 04 for 2004) WW = Week code (01 - 53) K = Factory Designator



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 Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	100	V
RMS Reverse Voltage	V _{R(RMS)}	71	V
Average Rectified Output Current (See also figure 5)	lo	5	Α
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I _{FSM}	250	А

Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Typical Power Dissipation (Note 7)	PD	2.5	-	W
Thermal Resistance Junction to Case (Note 9)	$R_{ heta JC}$	=	5	°C/W
Thermal Resistance Junction to Soldering Point	$R_{ heta JS}$	_	2.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 5) T _A = +25°C	$R_{ heta JA}$	85	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 6) T _A = +25°C	$R_{ heta JA}$	70	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 7) T _A = +25°C	$R_{ heta JA}$	45	_	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 t	0 +175	°C

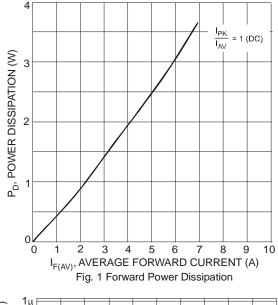
Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

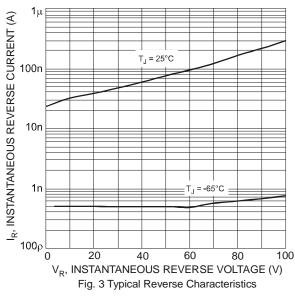
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V _{(BR)R}	100	_	_	V	$I_R = 3.5 \mu A$
		_	0.67	0.71	V	$I_F = 5A, T_S = +25^{\circ}C$
Forward Voltage	V _F	_	0.55	0.58		$I_F = 5A, T_S = +125$ °C
Forward Vollage		_	0.75	0.80		$I_F = 10A, T_S = +25^{\circ}C$
		_	0.62	0.66		$I_F = 10A, T_S = +125^{\circ}C$
Reverse Leakage Current (Note 8)	1-	_	0.3	3.5	μΑ	$T_S = +25^{\circ}C, V_R = 100V$
	IR	_	0.5	4.5	mΑ	$T_S = +125^{\circ}C, V_R = 100V$

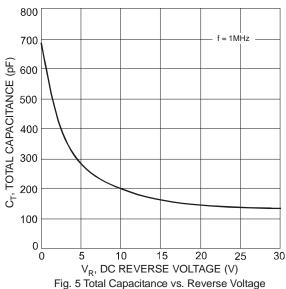
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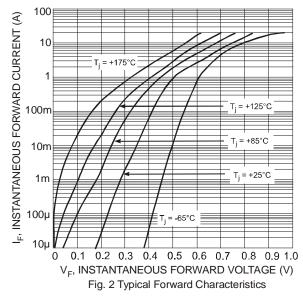
- 5. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.
- 6. Polymide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com.
- 7. Polymide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm. 8. Short duration pulse test used to minimize self-heating effect.
- 9. Device mounted on Polymide 10cm x 10cm copper PC board,

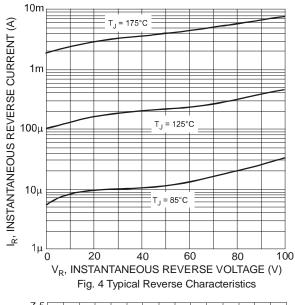


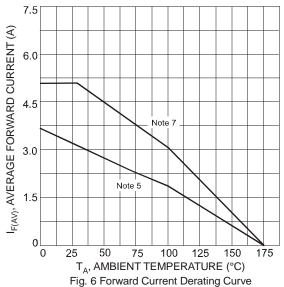




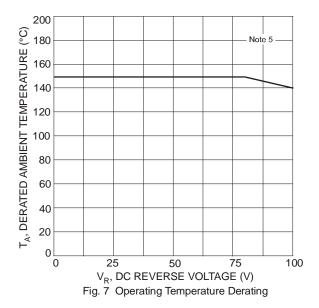






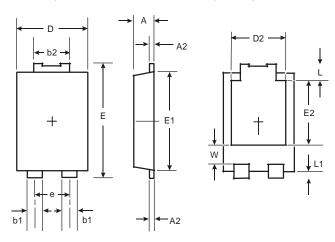






Package Outline Dimensions

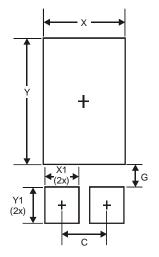
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for latest version.



POWERDI5			
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	3.054 Typ		
Е	6.40	6.60	
е	1.84 Typ		
E1	5.30	5.45	
E2	3.549 Typ		
L	0.75	0.95	
L1	0.50	0.65	
W	1.10	1.41	
All Dimensions in mm			

Suggested Pad Layout

Please see AP02001 at http://www.diodes.com/datasheets/ap02001.pdf for the latest version.



Dimensions	Value (in mm)
С	1.840
G	0.852
Х	3.360
X1	1.390
Υ	4.860
Y1	1.400



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