

PDS3100

3A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER PowerDI5

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Reverse Leakage Current
- 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
- An Automotive-Compliant Part is Available Under Separate Datasheet (PDS3100Q)

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-020
- Terminals: Finish Matte Tin Annealed over Copper Leadframe;
 Solderable per MIL-STD-202, Method 208@3
- Polarity: See Diagram
- Weight: 0.093 grams (Approximate)

PowerDI5





LEFT PIN OBOTTOMSIDE RIGHT PIN OBOTTOMSIDE

Top View

Bottom View

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

Ordering Information (Note 4)

Part Number	Case	Packaging		
PDS3100-13	PowerDI5	5000/Tape & Reel		
PDS3100-7	PowerDI5	1500/Tape & Reel		

Notes:

- 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
- 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. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

PowerDI5



S3100 = Product Type Marking Code

| | = Manufacturers' Code Marking

YYWW = Date Code Marking

YY = Last Two Digits of Year (ex: 17 for 2017)

WW = Week Code (01 to 53)

K = Factory Designator

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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 _{RM} V _{RWM} V _R	100	V
RMS Reverse Voltage	V _{R(RMS)}	70	V
Average Rectified Output Current	lo	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	90	А

Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{ heta JS}$	_	6.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 5) T _A = +25°C	$R_{\theta JA}$	95	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 6) T _A = +25°C	$R_{\theta JA}$	70	_	°C/W
Thermal Resistance Junction to Ambient Air (Note 7) T _A = +25°C	$R_{\theta JA}$	50	_	°C/W
Operating Temperature Range	TJ	-65 to	+150	°C
Storage Temperature Range	T _{STG}	-65 to	+175	°C

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

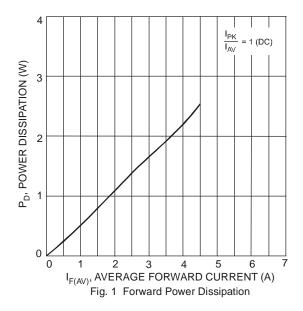
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	100	_	_	>	$I_R = 0.2mA$
	V _F	_	0.71	0.76	V	$I_F = 3A, T_J = +25^{\circ}C$
		_	0.61	0.65		$I_F = 3A, T_J = +100$ °C
Forward Voltage		_	0.57	0.61		$I_F = 3A, T_J = +125$ °C
Forward Voltage		_	0.78	0.84		I _F = 6A, T _J = +25°C
		_	0.68	0.75		$I_F = 6A, T_J = +100$ °C
		_	0.64	0.68		I _F = 6A, T _J = +125°C
	I _R	_	2	100	μΑ	$T_J = +25^{\circ}C, V_R = 100V$
Reverse Current (Note 8)			0.4	5	mA	$T_J = +100$ °C, $V_R = 100$ V
		_	2	20	mΑ	$T_J = +125$ °C, $V_R = 100$ V

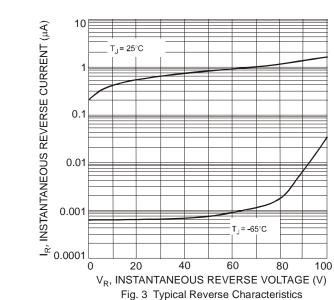
Notes:

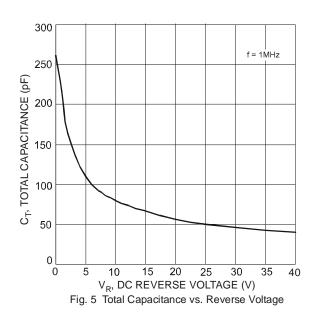
- 5. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
- C. Polymide PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
 Polymide PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com/package-outlines.html.
 Polymide PCB, 2oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
 Short duration pulse test used to minimize self-heating effect.

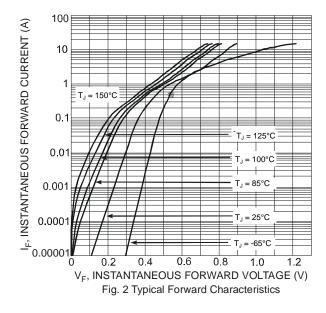
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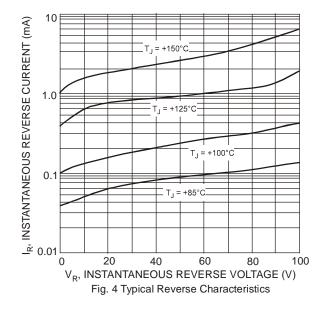


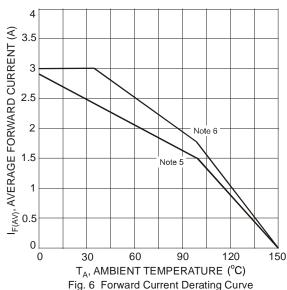




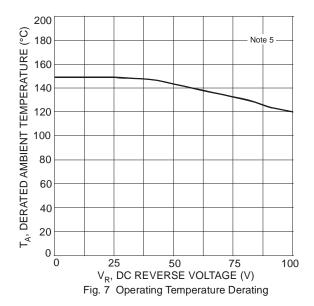






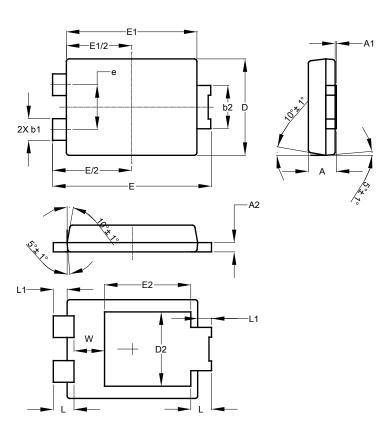






Package Outline Dimensions

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

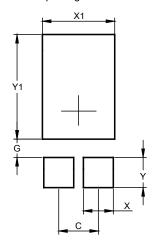


PowerDI5					
Dim	Min	Max	Тур		
Α	1.05	1.15	1.10		
A1	0.00	0.05			
A2	0.33	0.43	0.381		
b1	0.80	0.99	0.89		
b2	1.70	1.88	1.78		
D	3.90	4.05	3.966		
D2			3.054		
Е	6.40	6.60	6.504		
е			1.84		
E1	5.30	5.45	5.37		
E2			3.549		
L	0.75	0.95	0.85		
L1	0.50	0.65	0.57		
W	1.10	1.41	1.255		
All Dimensions in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



Suggested Pad Layout

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



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

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