



PDS1045

10A SCHOTTKY BARRIER RECTIFIER

Features

- Guard Ring Die Construction for Transient Protection
- Very Low Forward Voltage Drop
- High Forward Surge Current Capability
- For use in low voltage, high frequency inverters, freewheeling, and polarity protection applications
- 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: 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 (9)
- Polarity: See Diagram
- Weight: 0.096 grams (Approximate)



Ordering Information (Note 4)

	Part Number	Case	Packaging	
	PDS1045-13	POWERDI [®] 5	5,000/Tape & Reel	
Notes: 1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.				

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. For packaging details, go to our website at http://www.diodes.com/products/packages.html.

Marking Information

POWERDI[®]5



S1045 = Product Type Marking Code) | | = Manufacturer's Code Marking YYWW = Date Code Marking YY = Last Two Digits of Year (ex: 15 for 2015) 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	45	V
RMS Reverse Voltage	V _{R(RMS)}	32	V
Average Rectified Output Current	lo	10	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	275	А

Thermal Characteristics

Characteristic	Symbol	Тур	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	_	0.8	°C/W
Thermal Resistance Junction to Ambient Air (Note 5) $T_A = +25^{\circ}C$	$R_{\theta JA}$	85		°C/W
Thermal Resistance Junction to Ambient Air (Note 6) $T_A = +25^{\circ}C$	$R_{\theta JA}$	65		°C/W
Thermal Resistance Junction to Ambient Air (Note 7) $T_A = +25^{\circ}C$	$R_{\theta JA}$	50	—	°C/W
$\begin{array}{llllllllllllllllllllllllllllllllllll$	TJ	-65 to +125 -65 to +150		°C
Storage Temperature Range	T _{STG}	-65 to	+150	°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}	45	_	_	V	I _R = 600μA
		—	0.40	0.45	v	$I_F = 5A, T_S = +25^{\circ}C$
Forward Voltage	VF		0.45	0.51		I _F = 10A, T _S = +25°C
	• F	—	0.29	0.35		I _F = 5A, T _S = +125°C
			0.37	0.43		I _F = 10A, T _S = +125°C
		_	0.03	0.3	mA	$T_{S} = +25^{\circ}C, V_{R} = 35V$
Reverse Leakage Current (Note 8)	1-	_	10	25		$T_{S} = +100^{\circ}C, V_{R} = 35V$
ILEVEISE LEARAGE GUITEIL (14018 0)	IR		0.1	0.6		T _S = +25°C, V _R = 45V
		_	65	150		T _S = +125°C, V _R = 45V

Notes: 5. FR-4 PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com.

6. Polyimide PCB, 2oz. Copper, minimum recommended pad layout per http://www.diodes.com.

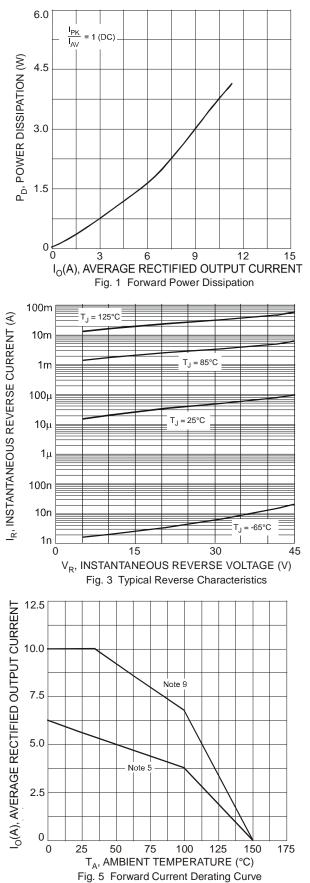
7. Polyimide PCB, 2oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.

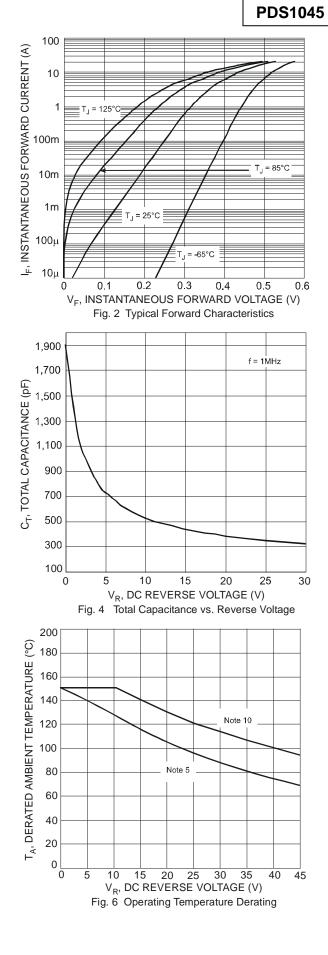
8. Short duration pulse test used to minimize self-heating effect.

9. Polyimide PCB, 2oz. Copper. Cathode pad dimensions 16.0mm x 12.4mm. Anode pad dimensions 4.7mm x 2.7mm.

10. Devices mounted such that R_{0JA} @ 19°C/W.





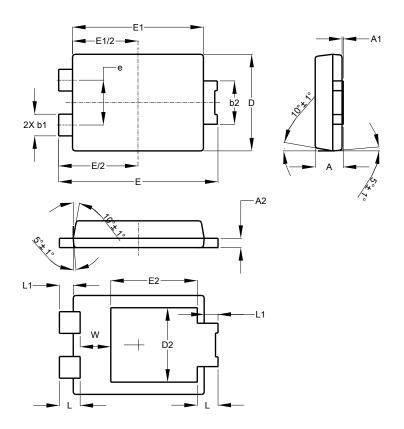


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Package Outline Dimensions

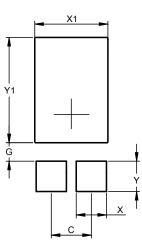
Please see AP02002 at http://www.diodes.com/datasheets/ap02002.pdf for the latest version.



	DOWE				
POWERDI [®] 5					
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		
E	6.40	6.60	6.504		
e			1.84		
E1	5.30	5.45	5.37		
E2	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 AP02001 at http://www.diodes.com/datasheets/ap02001.pdf 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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