

**12A DUAL LOW VF SCHOTTKY BARRIER RECTIFIER
POWERDI®**

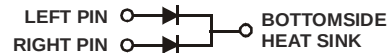
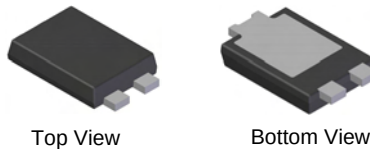
Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Forward Voltage Drop
- Low Reverse Leakage Current
- For Use in Low Voltage, High Frequency Inverters, OR'ing, and Polarity Protection Applications
- High Forward Surge Current Capability
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

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: 0.096 grams (approximate)

POWERDI5



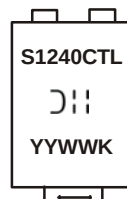
Note: Pins Left & Right must be electrically connected at the printed circuit board.

Ordering Information (Note 4)

Part Number	Case	Packaging
PDS1240CTL-13	POWERDI5	5000/Tape & Reel
PDS1240CTL-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 + Cl) and <1000ppm antimony compounds.
 4. For packaging details, go to our website at <http://www.diodes.com>.

Marking Information



S1240CTL = Product type marking code
DII = Manufacturers' code marking
YYWW = Date code marking
YY = Last digit of year (ex: 10 for 2010)
WW = Week code (01 - 53)
K = Factory Designator Code

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}	40	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current (See also Figure 5)	I _O	6	A
per element total device		12	
Non-Repetitive Peak Forward Surge Current, per element 8.3ms Single half sine-wave Superimposed on Rated Load	I _{FSM}	150	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	R _{θJS}	—	2.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 5)	R _{θJA}	95	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 6)	R _{θJA}	75	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 7)	R _{θJA}	50	—	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150		°C

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 8)	V _{(BR)R}	40	—	—	V	I _R = 500μA
Forward Voltage Per Element	V _F	—	—	0.52	V	I _F = 6A, T _J = +25°C
		—	—	0.45		I _F = 6A, T _J = +100°C
Reverse Leakage Current (Note 8) Per Element	I _R	—	—	350	μA	V _R = 40V, T _J = +25°C
		—	—	20	mA	V _R = 40V, T _J = +100°C

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

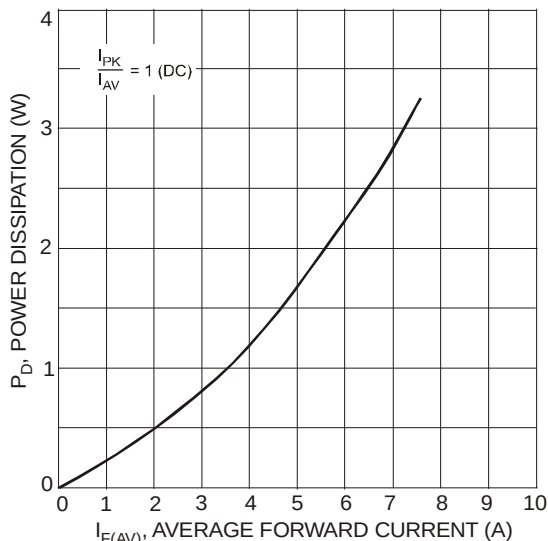


Fig. 1 Forward Power Dissipation, Per Element

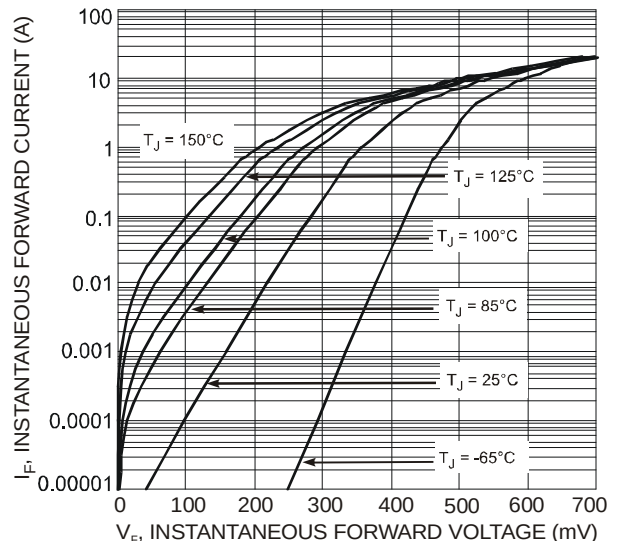


Fig. 2 Typical Forward Characteristics, Per Element

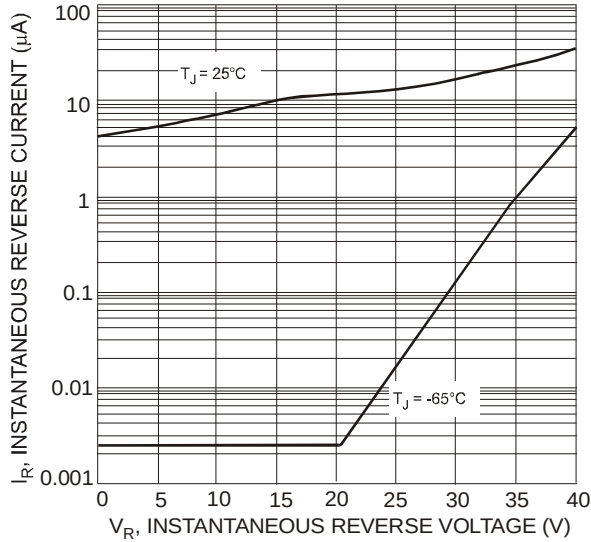


Fig. 3 Typical Reverse Characteristics, Per Element

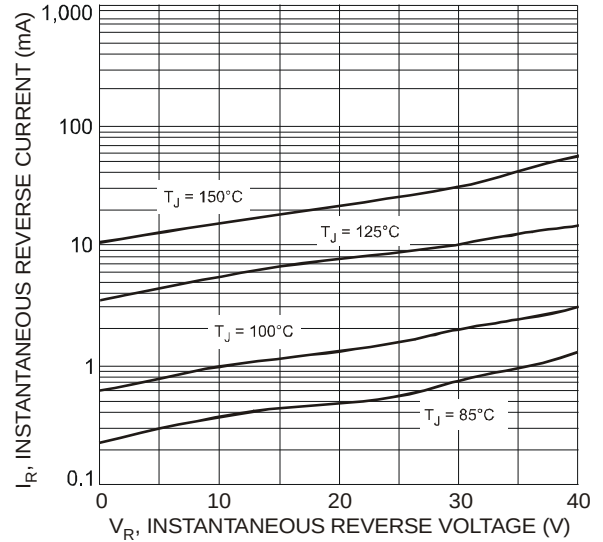


Fig. 4 Typical Reverse Characteristics, Per Element

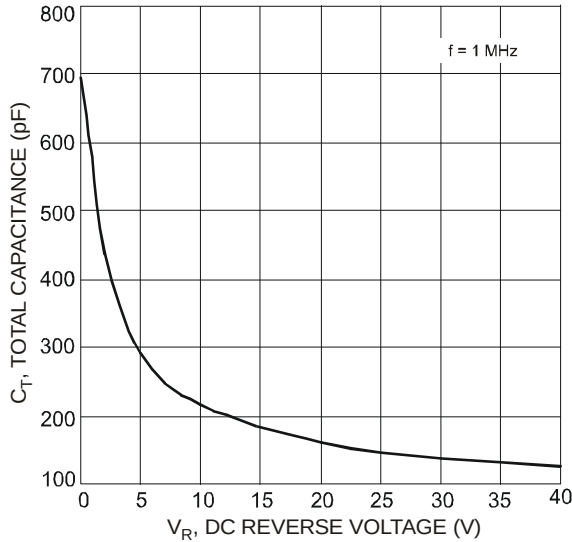


Fig. 5 Total Capacitance vs. Reverse Voltage, Per Element

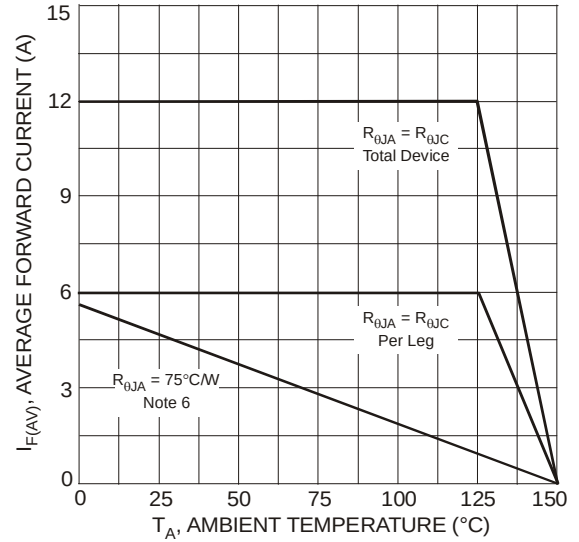


Fig. 6 Forward Current Derating Curve

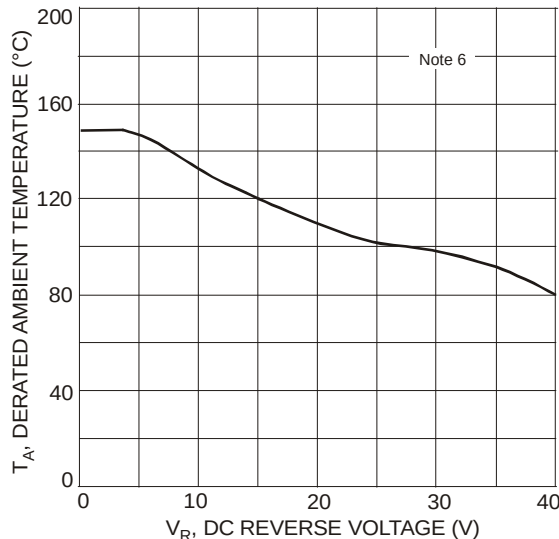
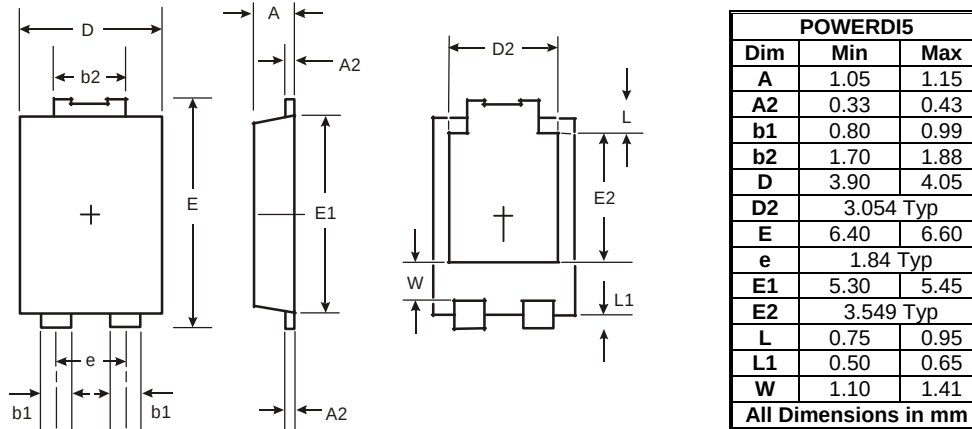


Fig. 7 Operating Temperature Derating, Per Element

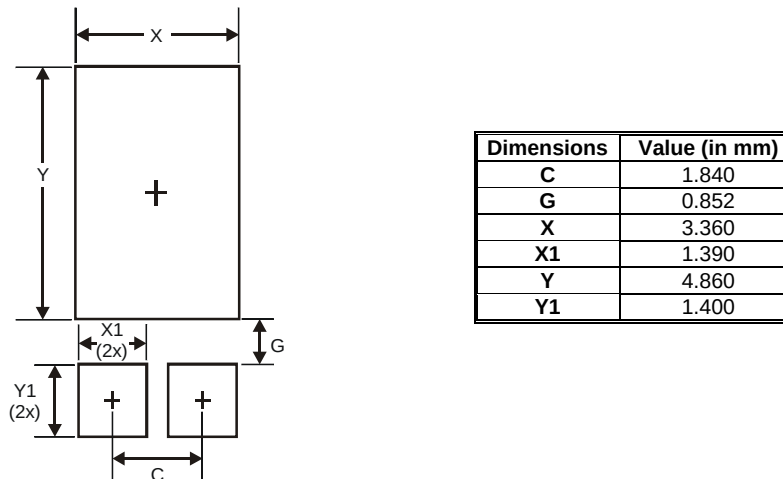
Package Outline Dimensions

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



Suggested Pad Layout

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



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