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ELECTRONICS

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Jameco Part Number 1541343

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 (Note 1)

"Green" Molding Compound (No Br, Sb)

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

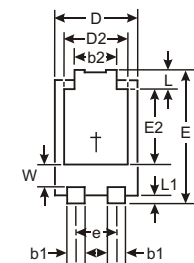
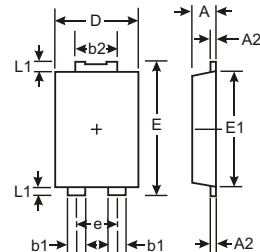
Moisture Sensitivity: Level 1 per J-STD-020C

Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)

Polarity: See Diagram

Marking: See Page 3

Weight: 0.096 grams (approximate)



LEFT PIN ○ RIGHT PIN ○ BOTTOMSIDE HEAT SINK

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

PowerDI 5		
Dim	Min	Max
A	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	3.05 NOM	
E	6.40	6.60
e	1.84 NOM	
E1	5.30	5.45
E2	3.55 NOM	
L	0.75	0.95
L1	0.50	0.65
W	1.20	1.50
All Dimensions in mm		

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	100	V
RMS Reverse Voltage	V _{R(RMS)}	71	V
Average Rectified Output Current (See also figure 5)	I _O	5	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I _{FSM}	250	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	R _{JS}		2.0	C/W
Thermal Resistance Junction to Ambient Air (Note 2) T _A = 25 °C	R _{JA}	85		C/W
Thermal Resistance Junction to Ambient Air (Note 3) T _A = 25 °C	R _{JA}	70		C/W
Thermal Resistance Junction to Ambient Air (Note 4) T _A = 25 °C	R _{JA}	45		C/W
Operating Temperature Range	T _J	-65 to +175		°C
Storage Temperature Range	T _{STG}	-65 to +175		°C

- Notes:
- RoHS revision 13.2.2003. High Temperature Solder Exemption Applied, see *EU Directive Annex Note 7*.
 - FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 - Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
 - Polymide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.

Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	100			V	$I_R = 3.5\text{ A}$
Forward Voltage	V_F		0.67 0.55 0.75 0.62	0.71 0.58 0.80 0.66	V	$I_F = 5\text{ A}, T_S = 25^\circ\text{C}$ $I_F = 5\text{ A}, T_S = 125^\circ\text{C}$ $I_F = 10\text{ A}, T_S = 25^\circ\text{C}$ $I_F = 10\text{ A}, T_S = 125^\circ\text{C}$
Reverse Leakage Current (Note 5)	I_R		0.3 0.5	3.5 4.5	A mA	$T_S = 25^\circ\text{C}, V_R = 100\text{V}$ $T_S = 125^\circ\text{C}, V_R = 100\text{V}$

Notes: 5. Short duration test pulse used to minimize self-heating effect.

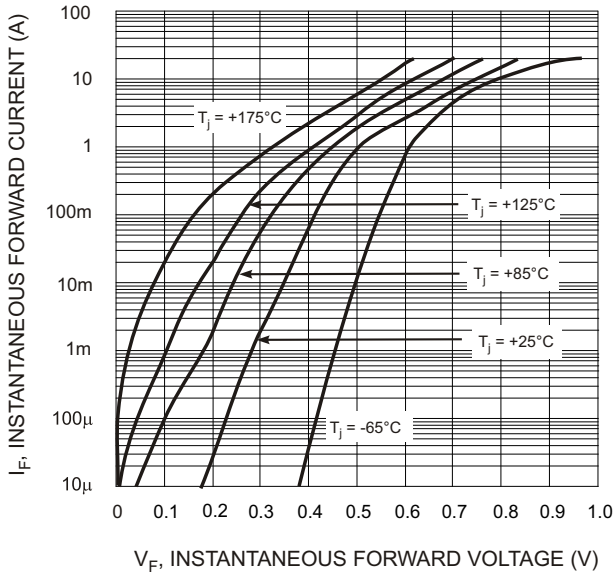


Fig. 1 Typical Forward Characteristics

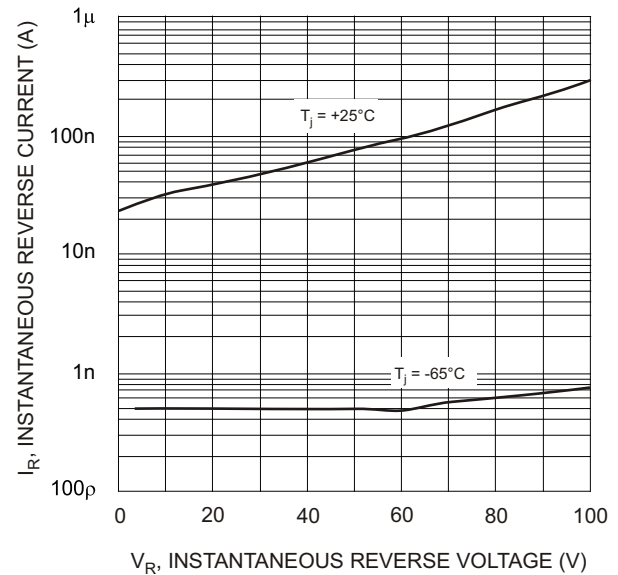


Fig. 2 Typical Reverse Characteristics

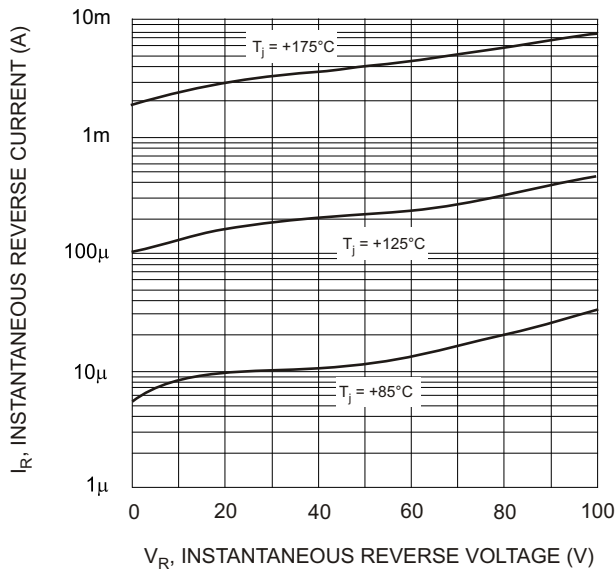


Fig. 3 Typical Reverse Characteristics

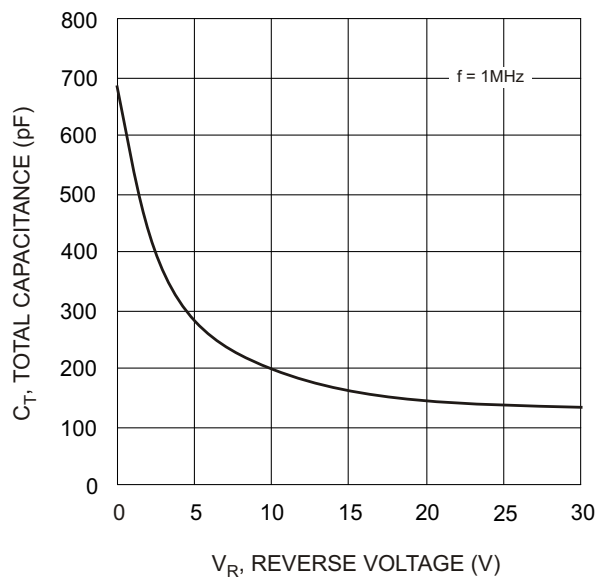
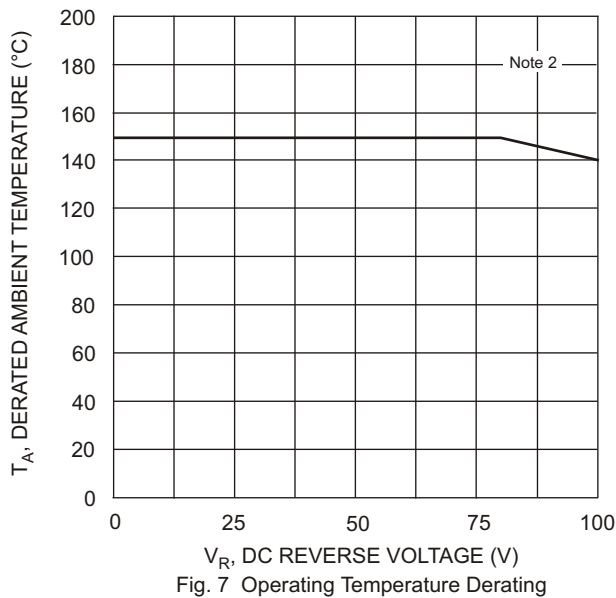
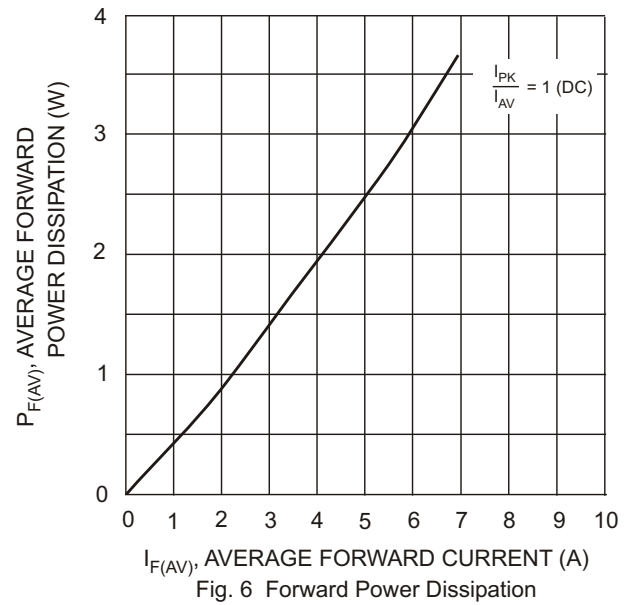
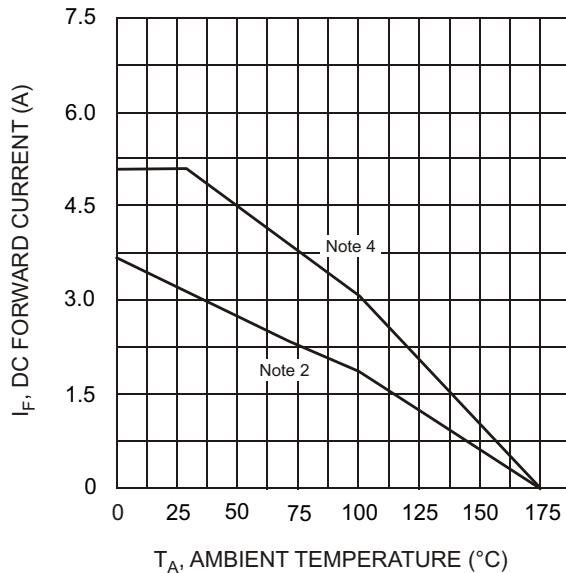


Fig. 4 Typical Total Capacitance vs. Reverse Voltage



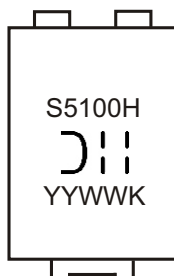
Ordering Information (Note 6)

Device	Packaging	Shipping
PDS5100H-13	PowerDI 5	5000/Tape & Reel

Notes:

- FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
- Polymide PCB, 2 oz. Copper, minimum recommended pad layout per <http://www.diodes.com/datasheets/ap02001.pdf>.
- Polymide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
- Short duration test pulse used to minimize self-heating effect.
- For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



S5100H = Product type marking code
 J||| = Manufacturers' code marking
 YYWW = Date code marking
 YY = Last two digits of year ex: 04 for 2004
 WW = Week code 01 to 52
 K = Factory Designator

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