
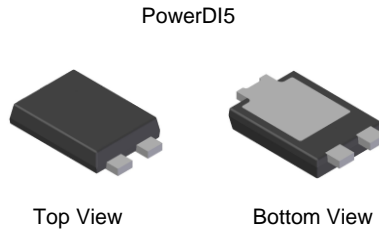





Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Reverse Leakage Current
- For Use in High-Frequency Inverters, Free Wheeling, 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)**
- This part is qualified to JEDEC standards (as references in AEC-Q) for High Reliability.
<https://www.diodes.com/quality/product-definitions/>
- An automotive-compliant part is available under separate datasheet ([PDS760Q](#))

Mechanical Data

- Package: PowerDI[®]5
- Package 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)



LEFT PIN  RIGHT PIN   BOTTOMSIDE HEAT SINK

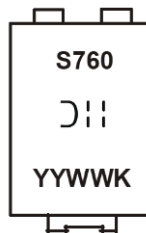
Note: Pins Left & Right must be electrically connected at the printed circuit board.


Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
PDS760-13	PowerDI5	5000	Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
 2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

Marking Information



S760 = Product Type Marking Code
 = Manufacturer's Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 24 for 2024)
 WW = Week Code (01 to 53)
 K = Factory Designator

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	60	V
RMS Reverse Voltage	V _{R(RMS)}	42	V
Average Rectified Output Current	I _O	7	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	275	A

Thermal Characteristics

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	R _{θJS}	—	1.5	°C/W
Thermal Resistance Junction to Ambient Air (Note 5) T _A = +25°C	R _{θJA}	85	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 6) T _A = +25°C	R _{θJA}	70	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 7) T _A = +25°C	R _{θJA}	45	—	°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}	60	—	—	V	I _R = 0.2mA
Forward Voltage	V _F	—	0.48	0.54	V	I _F = 3.5A, T _S = +25°C
		—	0.41	0.47		I _F = 3.5A, T _S = +125°C
		—	0.56	0.62		I _F = 7A, T _S = +25°C
		—	0.50	0.56		I _F = 7A, T _S = +125°C
Reverse Leakage Current (Note 8)	I _R	—	6	200	μA	T _S = +25°C, V _R = 60V
		—	4	20	mA	T _S = +125°C, V _R = 60V

- Notes:
- FR-4 PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>. The heat generated must be less than thermal conductivity from junction-to-ambient: $dP_D / dT_J < 1 / R_{\theta JA}$.
 - Polymide PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>. The heat generated must be less than thermal conductivity from junction-to-ambient: $dP_D / dT_J < 1 / R_{\theta JA}$.
 - Polymide PCB, 2oz. copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm. The heat generated must be less than thermal conductivity from junction-to-ambient: $dP_D / dT_J < 1 / R_{\theta JA}$.
 - Short duration pulse test used to minimize self-heating effect.

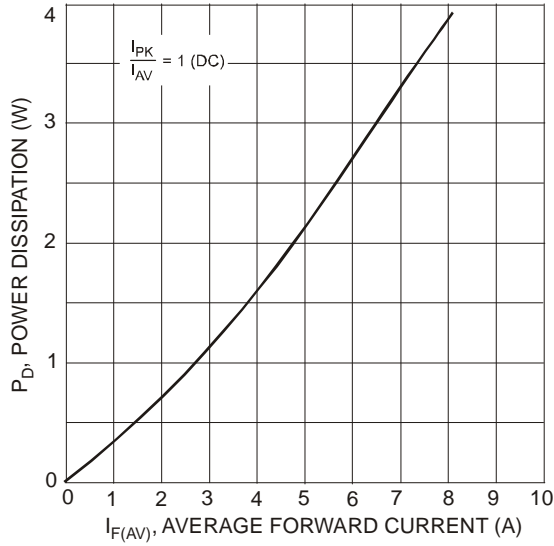


Fig. 1 Forward Power Dissipation

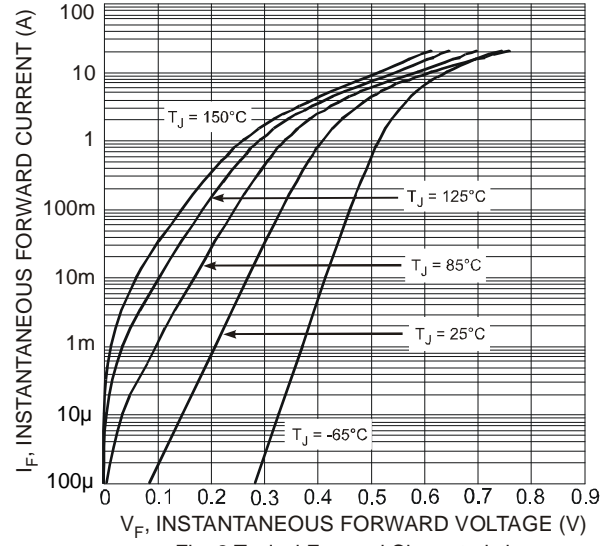


Fig. 2 Typical Forward Characteristics

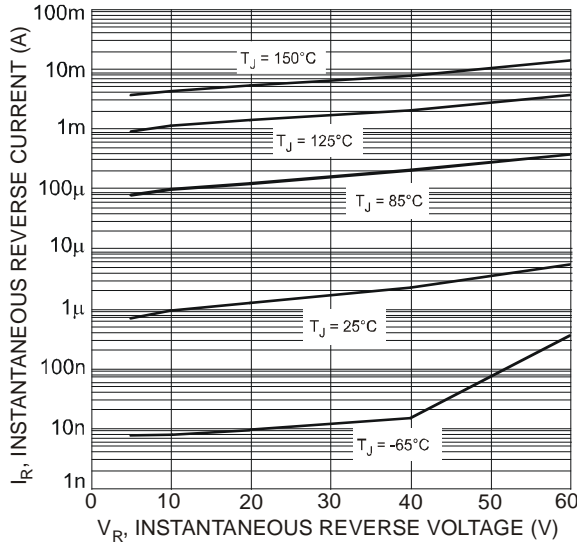


Fig. 3 Typical Reverse Characteristics

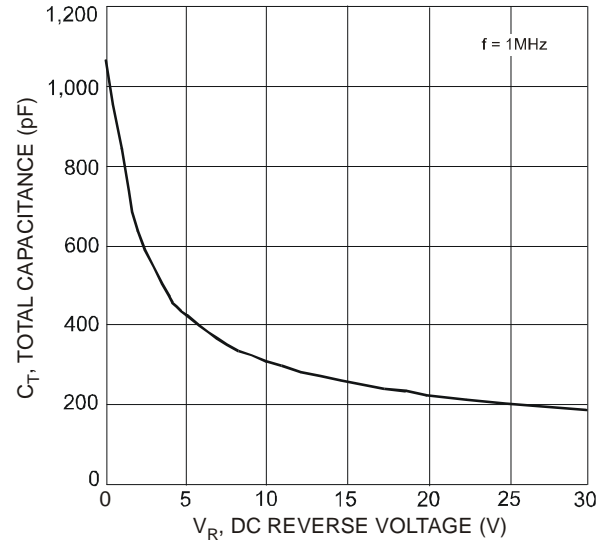


Fig. 4 Total Capacitance vs. Reverse Voltage

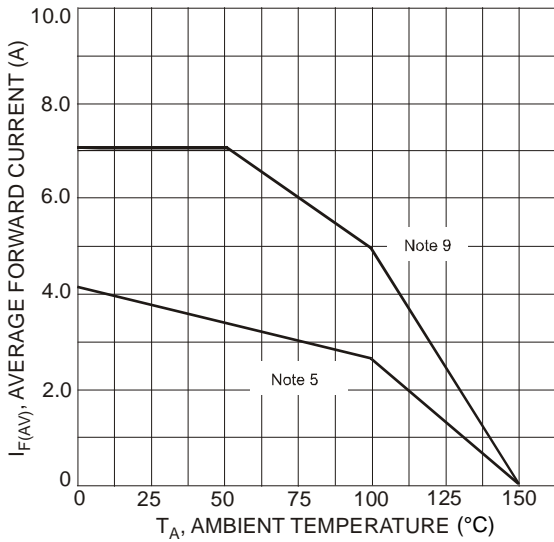


Fig. 5 Forward Current Derating Curve

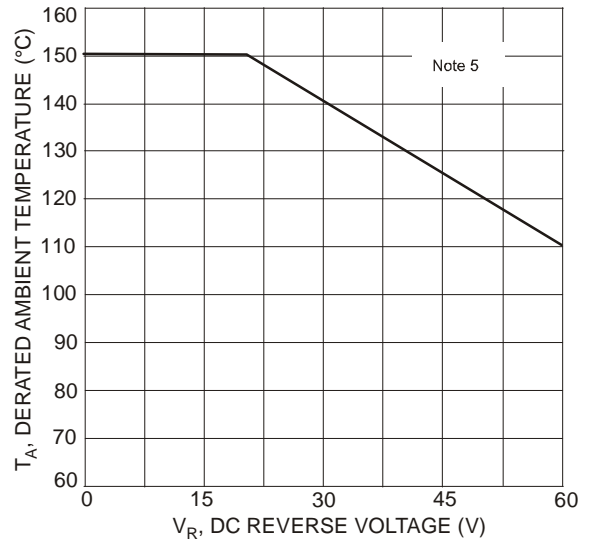


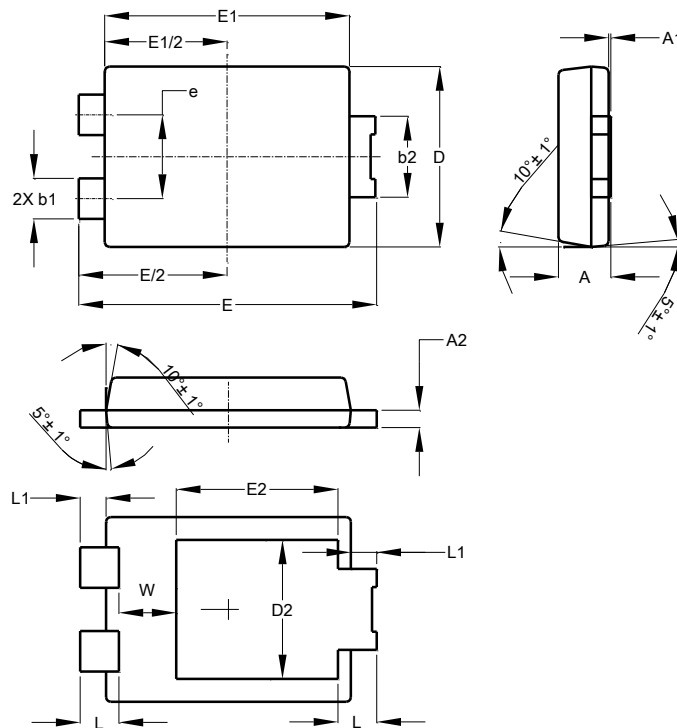
Fig. 6 Operating Temperature Derating

Note: 9. Polyimide PCB, 2oz. copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 3.0mm.

Package Outline Dimensions

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

PowerDI5

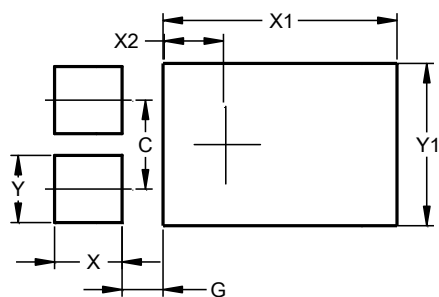


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.51
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

Suggested Pad Layout

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

PowerDI5



Dimensions	Value (in mm)
C	1.840
G	0.852
X	1.400
X1	4.860
X2	1.310
Y	1.390
Y1	3.360

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