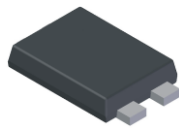


**Product Summary** (@T<sub>A</sub> = +25°C)

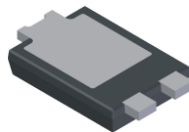
V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> Max (V)	I <sub>R</sub> Max (μA)
400	3	1.25	10

**Description**

PDU340, a 3.0A Glass Passivated Ultra-Fast Recovery Rectifier in our thermally efficient PowerDI<sup>®</sup>5 package, offers ultra-fast recovery time for high efficiency, high forward surge current for use in high-frequency inverters, freewheeling and polarity protection application.



Top View



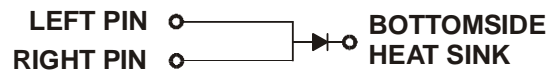
Bottom View

**Features and Benefits**

- Glass Passivated Die Construction
- Ultra-Fast Recovery Time for High Efficiency
- High Maximum Junction Temperature
- For Use in High Frequency Inverters, Freewheeling, 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 <sup>Ⓔ</sup>
- Weight: 0.096 grams (Approximate)



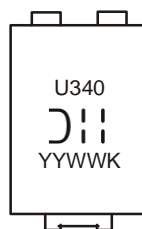
**Note:** Pins Left & Right must be electrically connected at the printed circuit board.

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
PDU340-13	Commercial	PowerDI5	5,000/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/quality/lead\\_free.html](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**



U340 = Product type marking code  
 Ⓜ = Manufacturers' code marking  
 YYWW = Date code marking  
 YY = Last digit of year ex: 06 for 2006  
 WW = Week code 01 to 52  
 K = Factory Designator

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , 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	$V_{RRM}$ $V_{RWM}$ $V_R$	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	283	V
Average Rectified Output Current (See Figure 4)	$I_O$	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	55	A

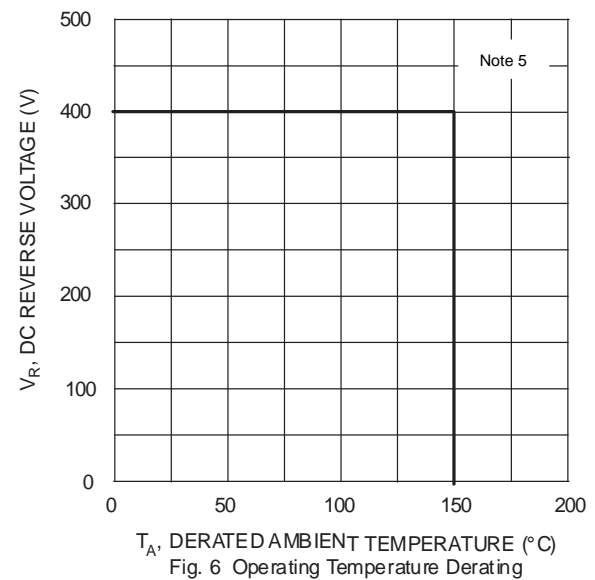
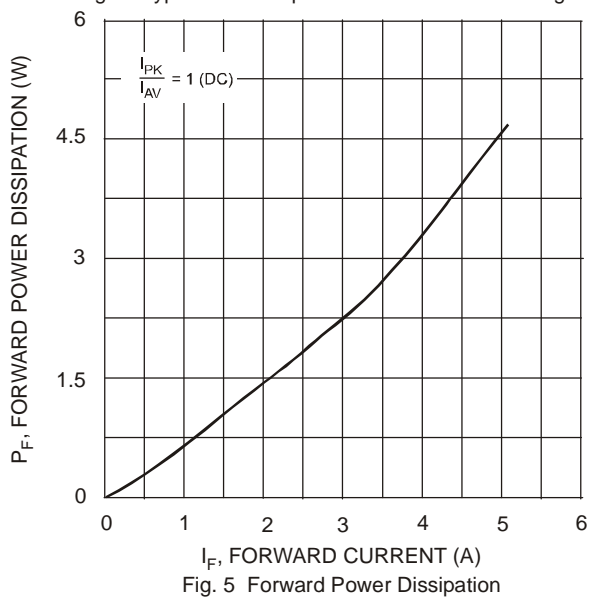
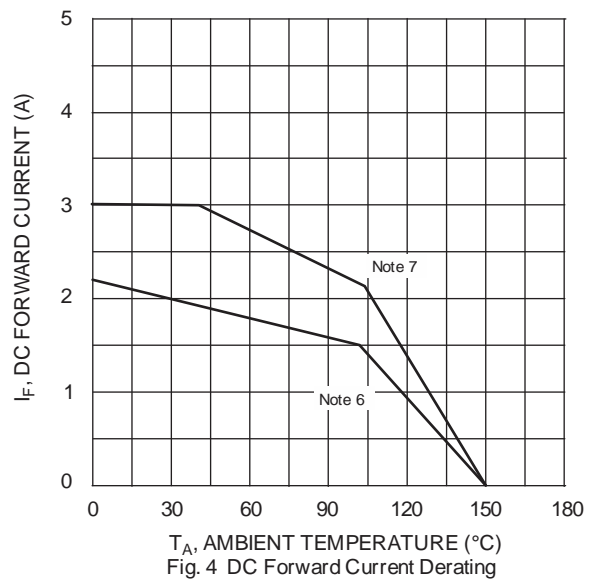
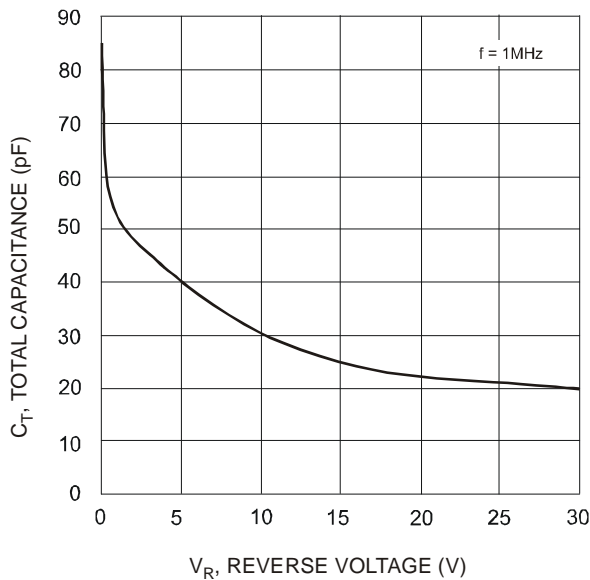
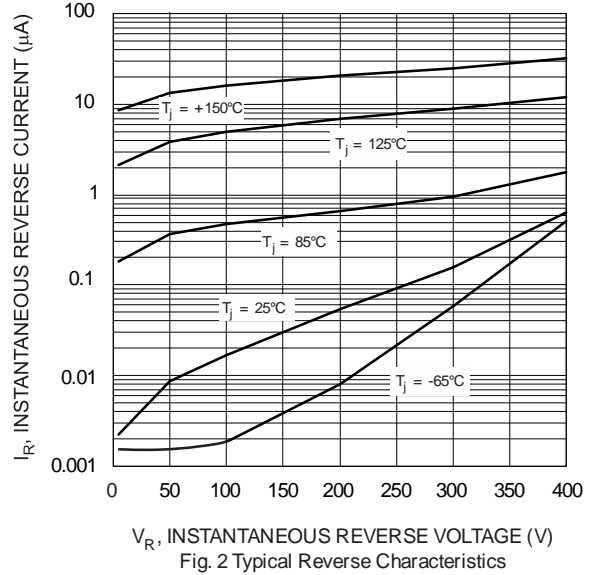
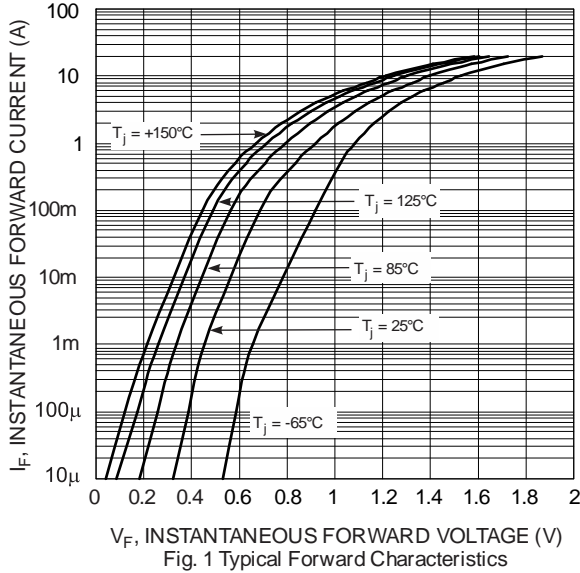
**Thermal Characteristics**

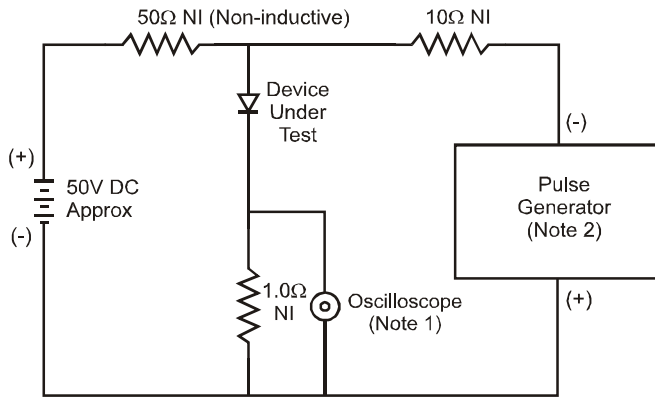
Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	—	5	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 5)	$T_A = +25^\circ\text{C}$ $R_{\theta JA}$	100	—	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 6)	$T_A = +25^\circ\text{C}$ $R_{\theta JA}$	60	—	$^\circ\text{C/W}$
Thermal Resistance Junction to Ambient Air (Note 7)	$T_A = +25^\circ\text{C}$ $R_{\theta JA}$	40	—	$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	-65 to +150		$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +150		$^\circ\text{C}$

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

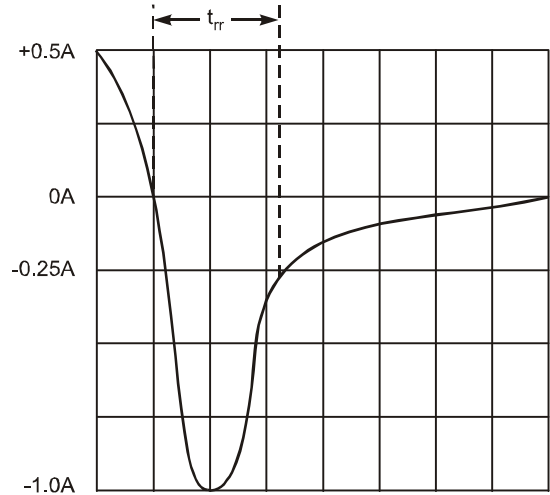
Characteristic	Symbol	Value	Unit	Test Condition
Minimum Reverse Breakdown Voltage (Note 8)	$V_{(BR)R}$	400	V	$I_R = 10\mu\text{A}$
Maximum Forward Voltage	$V_{FM}$	1.25 1.05 1.28 1.08	V	$I_F = 3\text{A}, T_S = +25^\circ\text{C}$ $I_F = 3\text{A}, T_S = +150^\circ\text{C}$ $I_F = 4\text{A}, T_S = +25^\circ\text{C}$ $I_F = 4\text{A}, T_S = +150^\circ\text{C}$
Maximum Reverse Leakage Current (Note 8)	$I_{RM}$	10 250	$\mu\text{A}$	$T_S = +25^\circ\text{C}, V_R = 400\text{V}$ $T_S = +150^\circ\text{C}, V_R = 400\text{V}$
Maximum Reverse Recovery Time	$t_{RR}$	50	ns	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$ (See Figure 7)

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





- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.

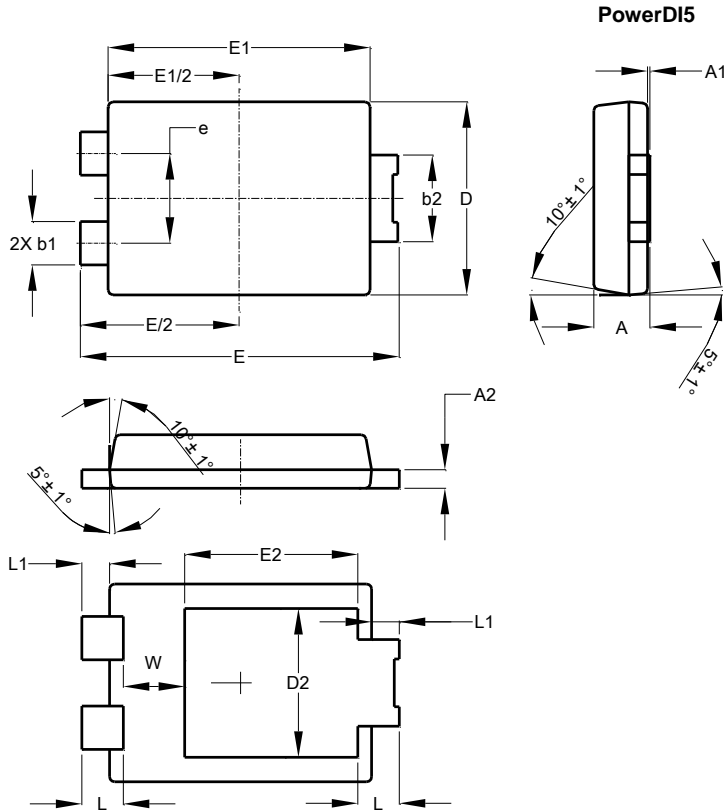


Set time base for 50/100 ns/cm

Fig. 7 Reverse Recovery Time Characteristic and Test Circuit

## Package Outline Dimensions

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

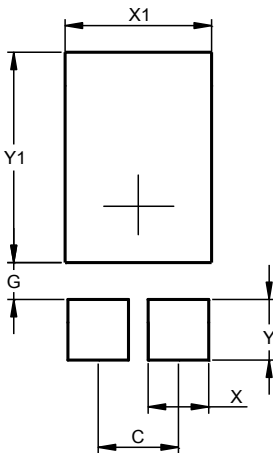


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.504
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

## 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	1.390
X1	3.360
Y	1.400
Y1	4.860

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