

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F Max (V)	I _R Max (μA)
600	10	1.35	8


Description

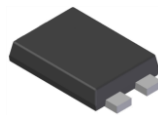
The DTH1006P5, a 10A glass passivated rectifier in our thermally efficient PowerDI[®]5 package, offers high-surge current capability, low-leakage current and fast reverse-recovery time.

Features and Benefits

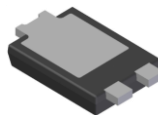
- Glass Passivated Die Construction for High Reliability
- Low-Forward Voltage Drop
- Soft, Hyper-Fast Switching Capability
- Large Exposed Heatsink on Device Underside Provides Good Heat-Sinking to Support High Power Dissipation
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](mailto:contact@diodes.com) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

Mechanical Data

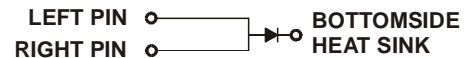
- Package: PowerDI5
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe. Solderable per MIL-STD-202, Method 208 
- Polarity: See Diagram
- Weight: 0.096 grams (Approximate)



Top View



Bottom View



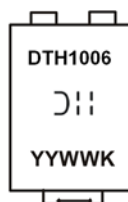
Note: Pins Left & Right must be electrically connected at the printed circuit board.


Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DTH1006P5-7	PowerDI5	1500	Tape & Reel
DTH1006P5-13	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



DTH1006 = Product Type Marking Code
 = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 25 for 2025)
 WW = Week Code (01 to 53)
 K = Factory Designator

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	600	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current	I _O	10	A
Non-Repetitive Peak Forward Surge Current	I _{FSM}	120	A
8.3ms Single Half Sine Wave Superimposed on Rated Load			

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5)	R _{θJC}	7	°C/W
Typical Thermal Resistance Junction to Ambient (Note 5)	R _{θJA}	80	°C/W
Operating and Storage Temperature Range (Note 6)	T _J , T _{STG}	-55 to +150	°C

Notes: 5. Device mounted on FR-4 PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.
6. The heat generated must be less than the thermal conductivity from junction to case: $dP_D/dT_J < 1/R_{\theta JC}$ or junction to ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage	V _{(BR)R}	600	—	—	V	I _R = 8μA
Forward Voltage	V _F	—	1.1	1.35	V	I _F = 10A, T _S = +25°C
Reverse Leakage Current	I _R	—	0.6 16	8 200	μA	V _R = 600V, T _J = +25°C V _R = 600V, T _J = +125°C
Reverse-Recovery Time	t _{RR}	—	35	—	ns	I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A
Total Capacitance	C _T	—	75	—	pF	V _R = 4.0V _{DC} , f = 1MHz

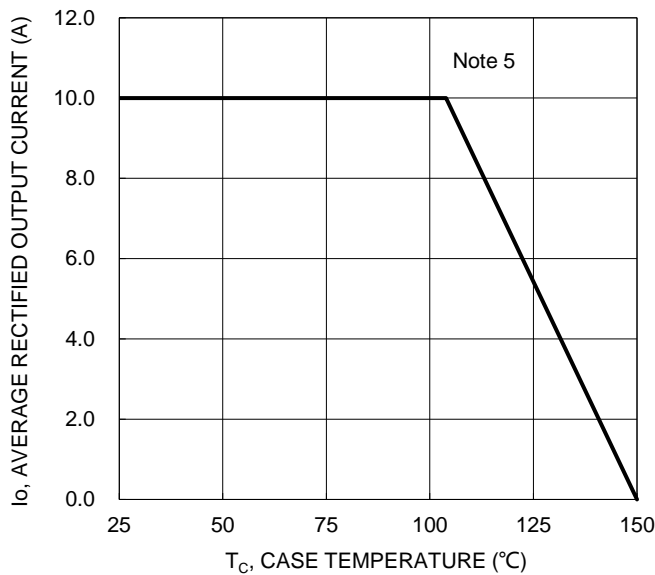


Figure 1. DC Forward Current Derating

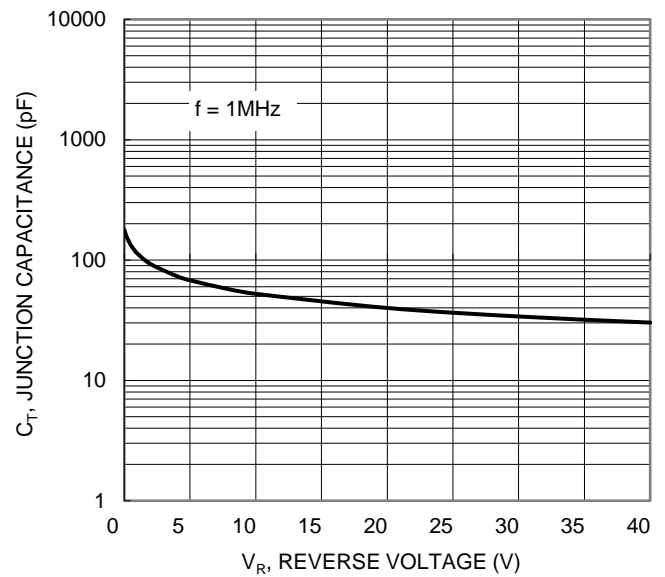


Figure 2. Typical Junction Capacitance

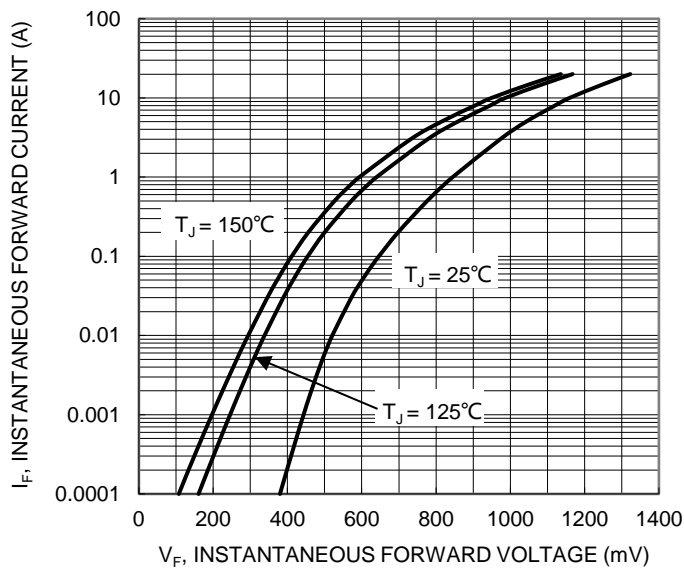


Figure 3. Typical Forward Characteristics

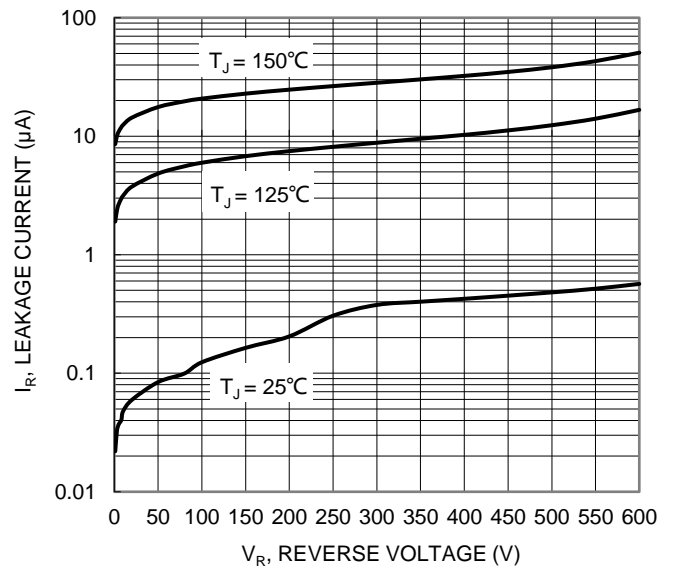


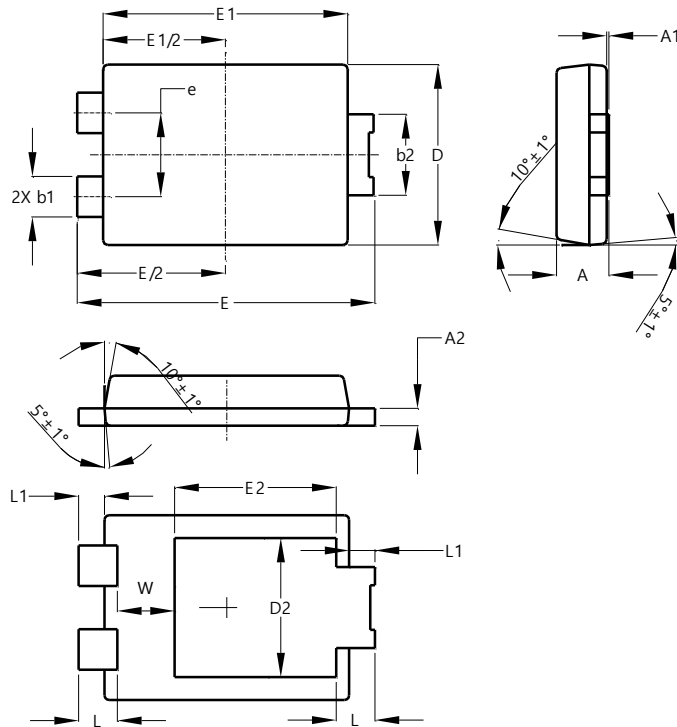
Figure 4. Typical Reverse Characteristics

Note: 5. Device mounted on FR-4 PCB, 2oz. copper, minimum recommended pad layout per <http://www.diodes.com/package-outlines.html>.

Package Outline Dimensions

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

PowerDI5

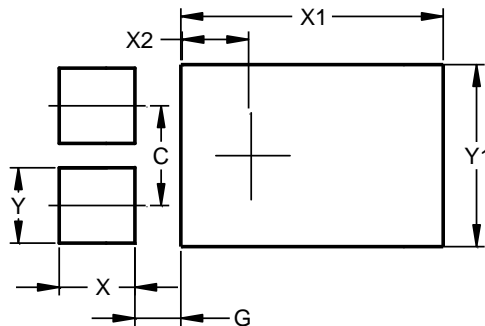


PowerDI5			
Dim	Min	Max	Typ
A	1.05	1.15	1.10
A1	0.00	0.05	--
A2	0.33	0.43	0.381
b1	0.80	0.99	0.89
b2	1.70	1.88	1.78
D	3.90	4.05	3.966
D2	--	--	3.054
E	6.40	6.60	6.51
e	--	--	1.84
E1	5.30	5.45	5.37
E2	--	--	3.549
L	0.75	0.95	0.85
L1	0.50	0.65	0.57
W	1.10	1.41	1.255
All Dimensions in mm			

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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