

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	t _{RR} (ns)
1000	8	2.0	5	85

Description and Applications

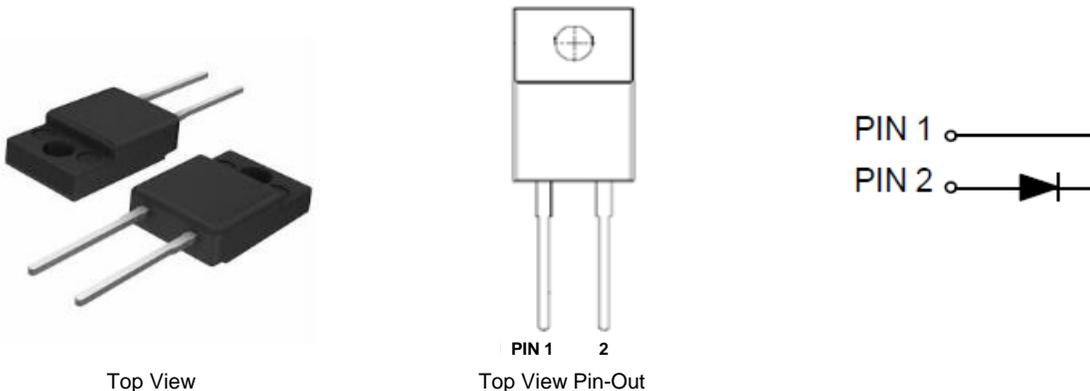
The hyper-fast DTH810FP is suitable for rectification and freewheeling for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunication applications.

Features and Benefits

- Soft, Hyper-Fast Switching Capability
- Glass Passivated Die Construction
- Specially Suited for Discontinuous or Critical Mode
- Power Factor Correction
- High Reliability and Efficiency
- Low-Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **An automotive-compliant part is available under separate datasheet ([DTH810FPQ](#))**

Mechanical Data

- Package: ITO220AC
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish — Matte Tin Annealed over Copper Lead-Frame. Solderable per MIL-STD-202, Method 208 [Ⓔ]
- Polarity: See Diagram
- Weight: 1.522 grams (Approximate)

ITO220AC (Type WX)

Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DTH810FP	ITO220AC (Type WX)	50 Pieces	Tube

- 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

ITO220AC (Type WX)



DTH810FP = Product Type Marking Code
 DTH = Manufacturers' Code Marking
 YYWW = Date Code Marking
 YY = Last Two Digits of Year (ex: 25 for 2025)
 WW = Week Code (01 to 53)

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	V _{RRM}	1000	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current @T _C = +95°C	I _O	8	A
Non-Repetitive Peak Forward Surge Current 10ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	80	A
Maximum Mounting Torque	T _{OR}	0.5	N.m

Thermal Characteristics

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

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V _{(BR)R}	1000	—	—	V	I _R = 5μA
Forward Voltage (Note 7)	V _F	—	1.4	2.0	V	I _F = 8A, T _J = +25°C I _F = 8A, T _J = +125°C
Reverse Leakage Current (Note 6)	I _R	—	20	5	μA	V _R = 1000V, T _J = +25°C V _R = 1000V, T _J = +125°C
Reverse-Recovery Time	t _{RR}	—	65	85	ns	V _R = 30V, I _F = 1A, dI _F /dt = -50A/μs V _R = 30V, I _F = 1A, dI _F /dt = -100A/μs
Reverse-Recovery Current	I _{RM}	—	13	—	A	V _R = 400V, I _F = 8A, dI _F /dt = -200A/μs
Total Capacitance	C _J	—	40	—	pF	V _R = 4V _{DC} , f = 1MHz

Notes: 5. The unit mounted on fin type heatsink (100mm x 75mm x 27mm).
 6. Short duration pulse test used to minimize self-heating effect.
 7. 300μs pulse width, 2% duty cycle.

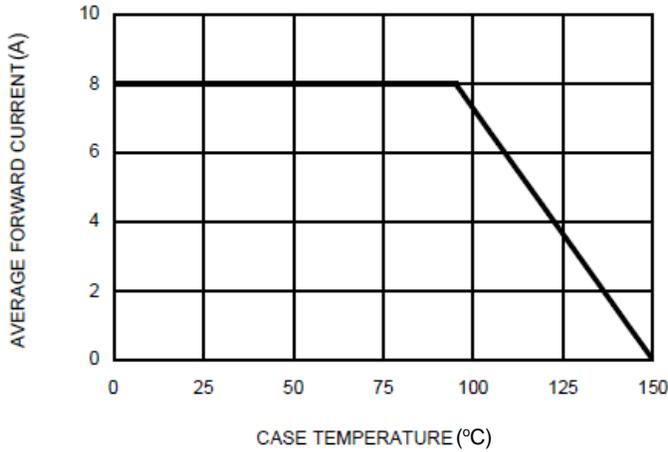


Fig. 1 FORWARD CURRENT DERATING CURVE

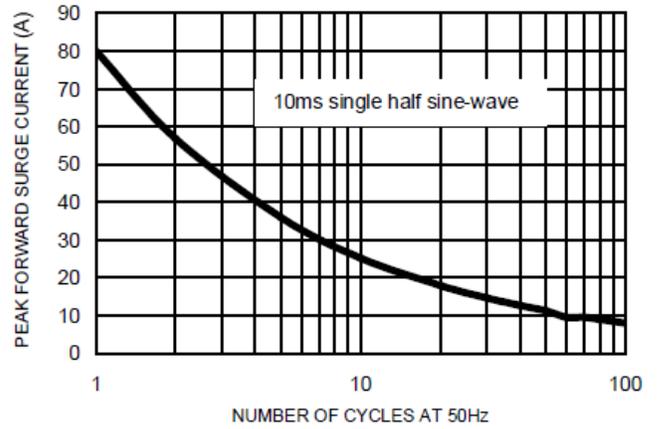


Fig. 2 MAXIMUM NON-REPETITIVE SURGE CURRENT

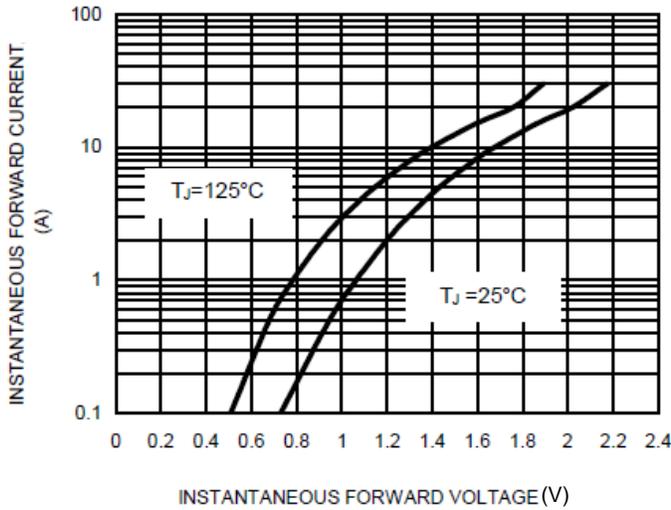


Fig. 3 TYPICAL FORWARD CHARACTERISTICS

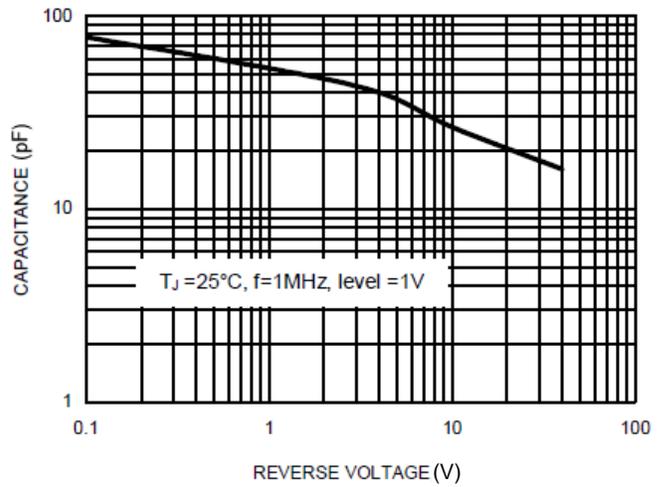


Fig. 4 TYPICAL TOTAL CAPACITANCE

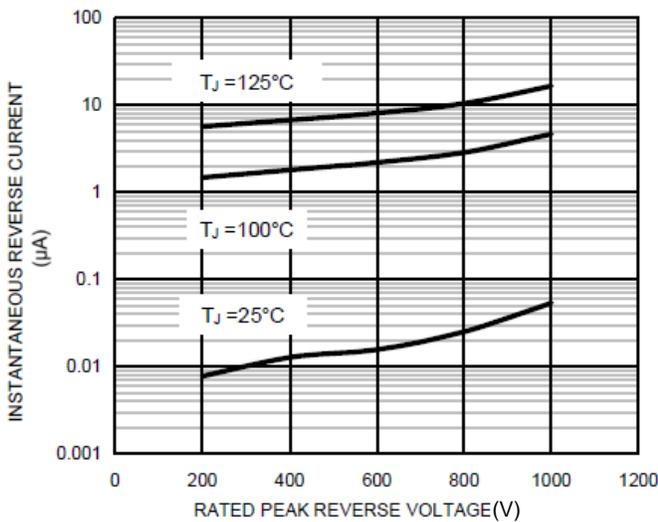
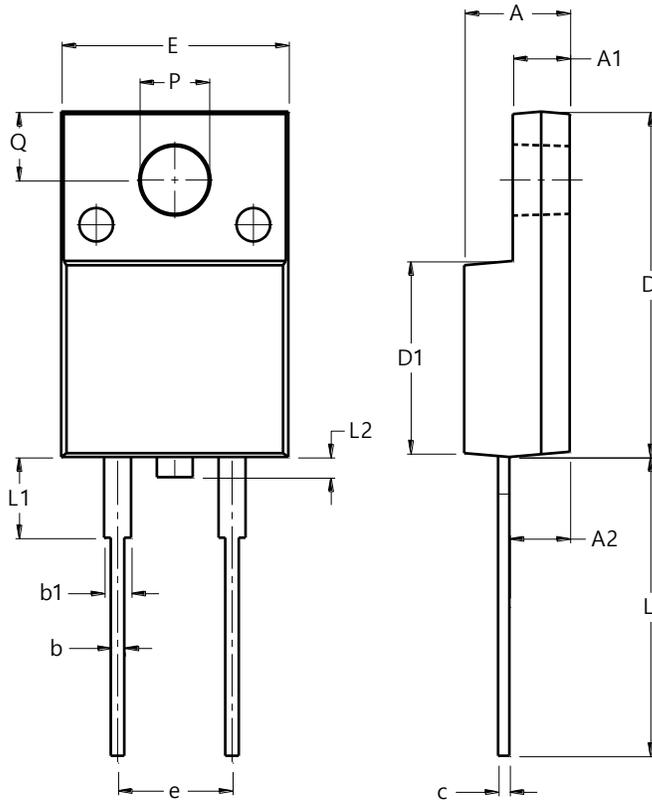


Fig. 5 TYPICAL REVERSE CHARACTERISTICS

Package Outline Dimensions

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

ITO220AC (Type WX)



ITO220AC (Type WX)		
Dim	Min	Max
A	4.46	4.87
A1	2.48	2.80
A2	2.50	2.80
b	0.50	0.80
b1	1.15	1.70
c	0.45	0.70
D	14.95	15.95
D1	8.50	8.80
E	10.00	10.40
e	4.95	5.25
L	13.00	13.70
L1	3.30	3.90
L2	0.00	1.27
Q	2.76	3.36
PØ	3.00	3.30
All Dimensions in mm		

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