

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

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μA)	t <sub>RR</sub> (ns)
1000	8	2.0	5	85

**Description and Applications**

The hyper-fast DTH810FPQ is suitable for rectification and freewheeling for SMPS, LED lighting, adaptors, battery chargers, home appliances, office equipment, and telecommunication applications.

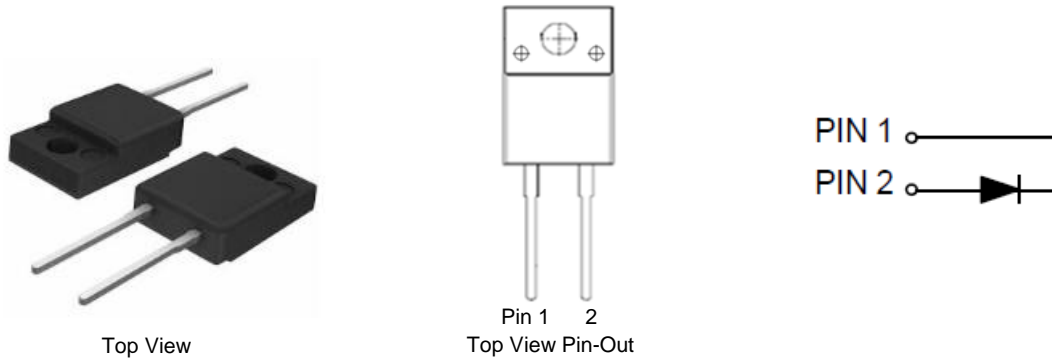
**Features and Benefits**

- Soft, Hyper-Fast Switching Capability
- Glass Passivated Die Construction
- Specially Suited for Discontinuous or Critical Mode
- Power Factor Corrections
- High Reliability and Efficiency
- Low-Forward Voltage Drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The DTH810FPQ is suitable for automotive applications requiring specific change control; this part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**  
<https://www.diodes.com/quality/product-definitions/>

**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<sup>(3)</sup>
- Polarity: See Diagram
- Weight: 1.522 grams (Approximate)

ITO220AC (Type WX-NC)



**Ordering Information** (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DTH810FPQ	ITO220AC (Type WX-NC)	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-NC)

DTH810FP = Product Type Marking Code  
 ⌋⌋⌋ = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 24 for 2024)  
 WW = Week Code (01 to 53)

## Maximum Ratings (@ T<sub>A</sub> = +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 <sub>RRM</sub>	1000	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>R</sub>		
Average Rectified Output Current @T <sub>C</sub> = +95°C	I <sub>O</sub>	8	A
Non-Repetitive Peak Forward Surge Current 10ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	80	A
Maximum Mounting Torque	T <sub>OR</sub>	0.5	N.m
ESD Rating	Human Body Model	2	kV
	Charged-Device Model	1	

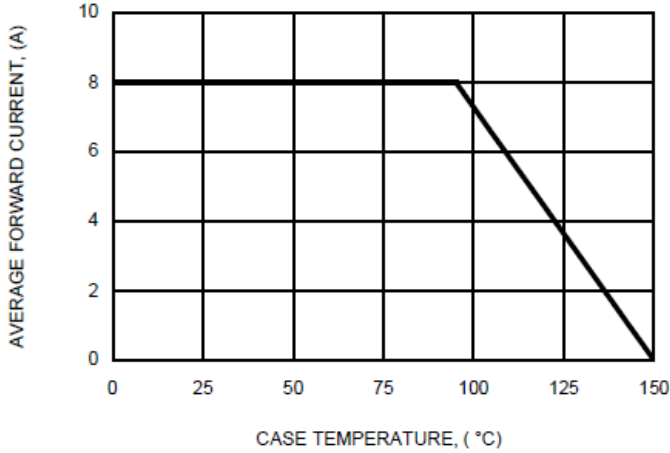
## Thermal Characteristics

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

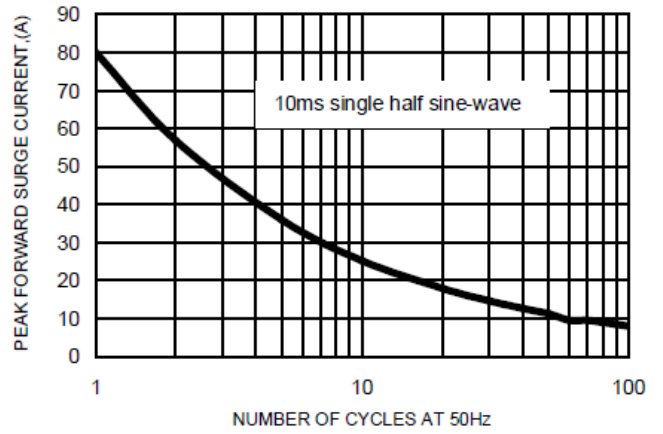
## Electrical Characteristics (@ T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	1000	—	—	V	I <sub>R</sub> = 5μA
Forward Voltage (Note 7)	V <sub>F</sub>	—	—	2.0	V	I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C
		—	1.4	1.8		I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C
Reverse Leakage Current (Note 6)	I <sub>R</sub>	—	—	5	μA	V <sub>R</sub> = 1000V, T <sub>J</sub> = +25°C
		—	20	—		V <sub>R</sub> = 1000V, T <sub>J</sub> = +125°C
Reverse Recovery Time	t <sub>RR</sub>	—	65	85	ns	V <sub>R</sub> = 30V, I <sub>F</sub> = 1A, dI <sub>F</sub> /dt = -50A/μs
		—	48	65		V <sub>R</sub> = 30V, I <sub>F</sub> = 1A, dI <sub>F</sub> /dt = -100A/μs
Reverse Recovery Current	I <sub>RM</sub>	—	13	—	A	V <sub>R</sub> = 400V, I <sub>F</sub> = 8A, dI <sub>F</sub> /dt = -200A/μs
Total Capacitance	C <sub>J</sub>	—	40	—	pF	V <sub>R</sub> = 4V <sub>DC</sub> , f = 1MHz

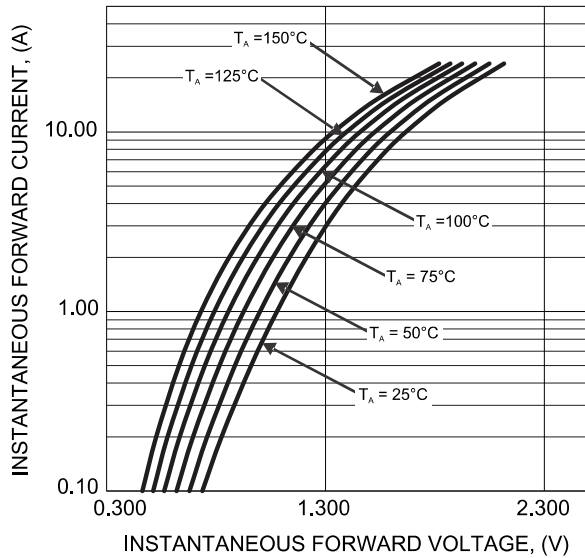
Notes:  
 5. The unit mounted on fin type heatsink (100mm X 75mm X 27mm).  
 6. Short duration pulse test used to minimize self-heating effect.  
 7. 300μs pulse width, 2% duty cycle.



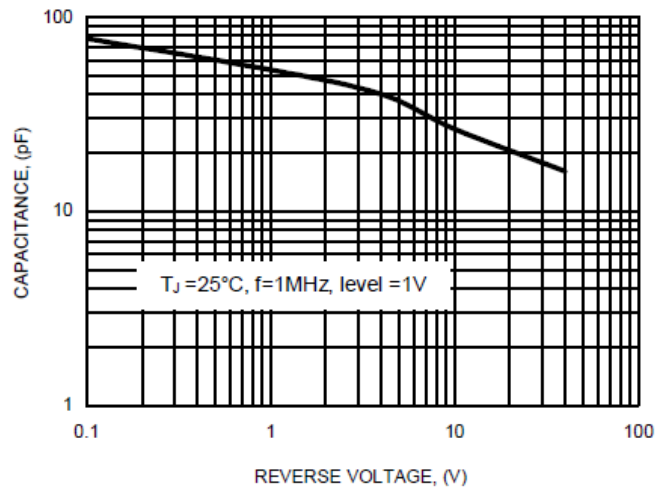
**Fig. 1 FORWARD CURRENT DERATING CURVE**



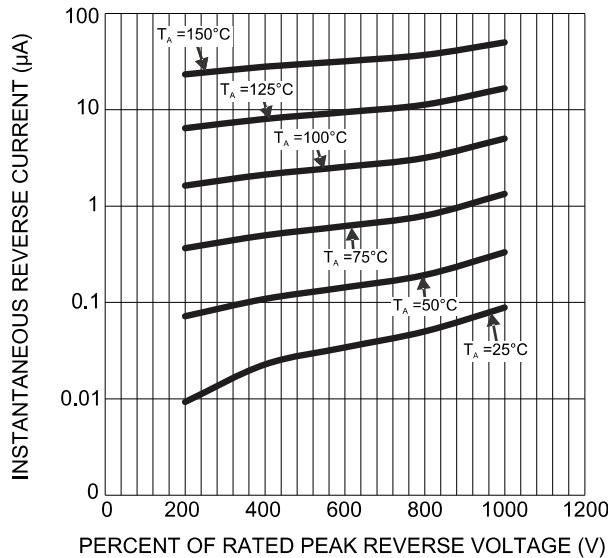
**Fig. 2 MAXIMUM NON-REPETITIVE SURGE CURRENT**



**Fig. 3 TYPICAL FORWARD CHARACTERISTICS**



**Fig. 4 TYPICAL TOTAL CAPACITANCE**

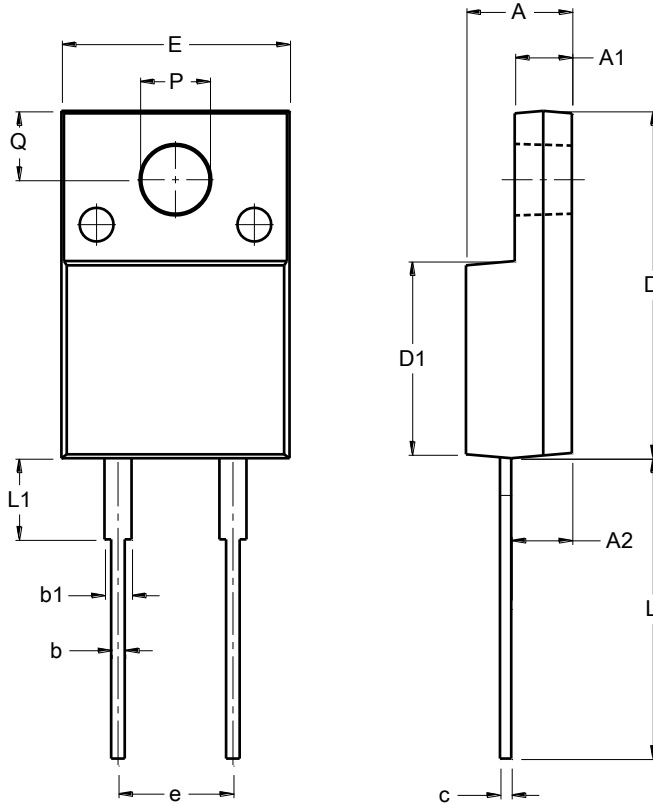


**Fig. 5 TYPICAL REVERSE CHARACTERISTICS**

**Package Outline Dimensions**

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

**ITO220AC (Type WX-NC)**



ITO220AC (Type WX-NC)		
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
Q	2.76	3.36
PØ	3.00	3.30
All Dimensions in mm		

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