

**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

**Features and Benefits**

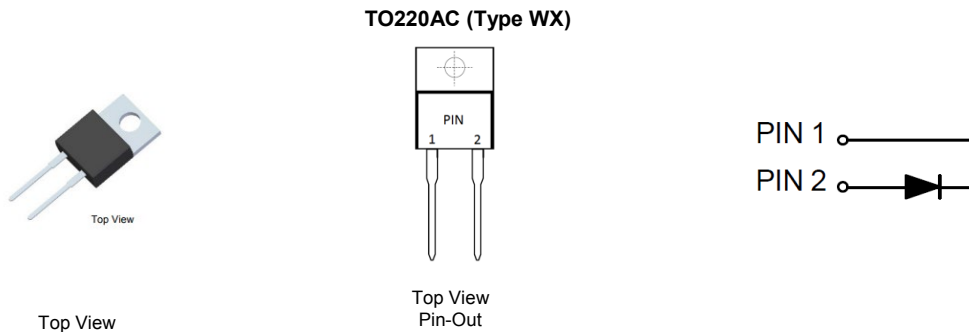
- Soft, Hyper fast switching capability
- Glass Passivated Die Construction
- Specially suited for critical mode Power Factor Corrections
- High-reliability and efficiency
- Low forward voltage drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, 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/>**

**Description and Applications**

Suitable for rectification and freewheeling for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunication applications.

**Mechanical Data**

- Case: TO-220AC (Type WX)
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish—Matte Tin Plated Leads Solderable per MIL-STD-202, Method 208 @3
- Polarity: See Diagram

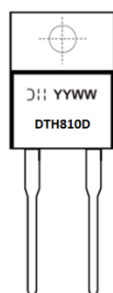

**Ordering Information** (Note 4)

Part Number	Qualification	Case	Packaging
DTH810D	Commercial	TO-220AC(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

TO-220AC



DTH810D = Product Type Marking Code  
 DTH = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 20 for 2020)  
 WW = Week Code (01 - 53)

## Maximum Ratings (@ T<sub>A</sub> = 25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>R</sub>	1000	V
Average Rectified Output Current, @TC=+120°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

## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Note 5 & 6)	R <sub>θJC</sub>	2	°C/W
Typical Thermal Resistance Junction to Lead (Note 5 & 6)	R <sub>θJL</sub>	3	°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 & 8)	V <sub>F</sub>	—	1.32	2.0	V	I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C
Reverse Leakage Current (Note 6)	I <sub>R</sub>	—	20	5	μA	V <sub>R</sub> = 1000V, T <sub>J</sub> = +25°C 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 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. Thermal resistance test performed in accordance with JESD-51.  
 6. The R<sub>θJL</sub> is measured at PIN 2; R<sub>θJC</sub> is measured at the top center of the body.  
 7. Short duration pulse test used to minimize self-heating effect.  
 8. 300μS pulse width, 2% duty cycle.

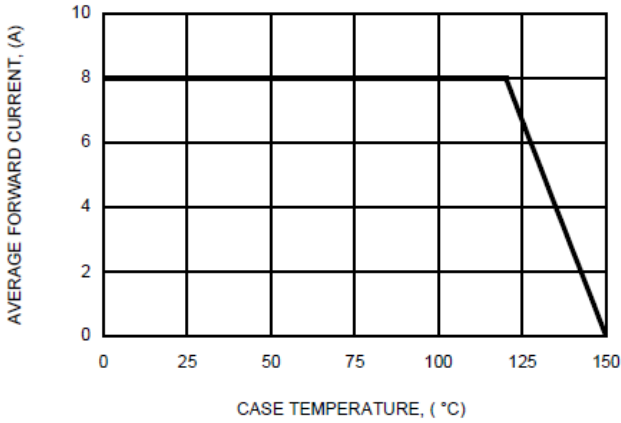


Fig. 1 FORWARD CURRENT DERATING CURVE

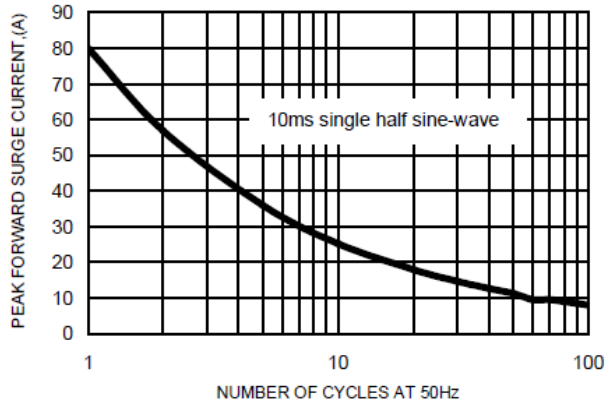


Fig. 2 MAXIMUM NON-REPETITIVE SURGE CURRENT

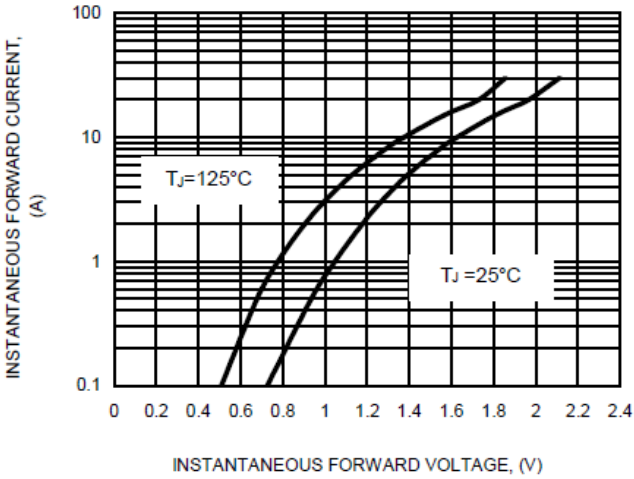


Fig. 3 TYPICAL FORWARD CHARACTERISTICS

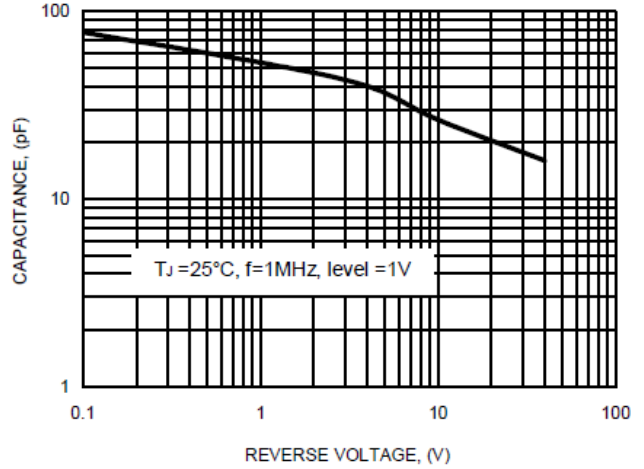


Fig. 4 TYPICAL TOTAL CAPACITANCE

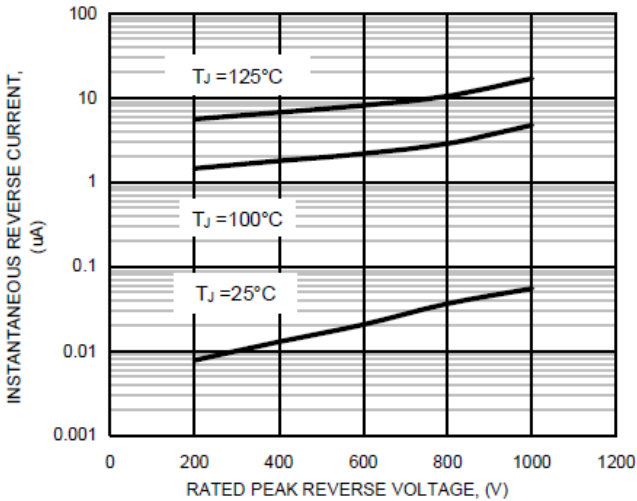
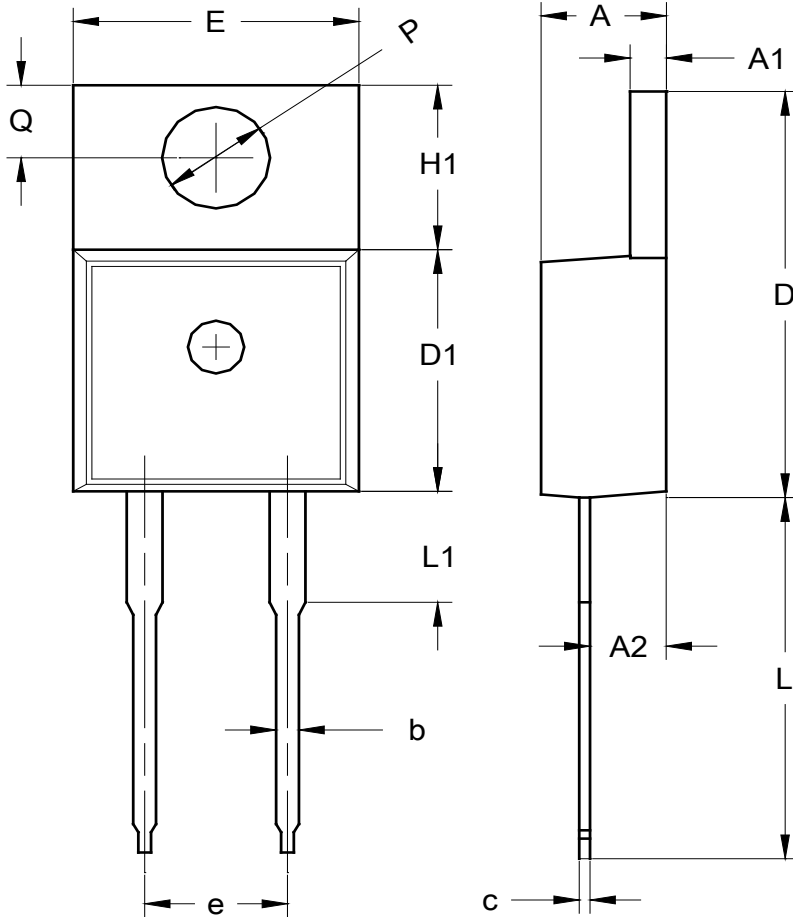


Fig. 5 TYPICAL REVERSE CHARACTERISTICS

**Package Outline Dimensions**

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



TO220AC (Type WX)		
Dim	Min	Typ
A	3.56	4.83
A1	1.14	1.40
A2	2.03	2.92
b	0.51	1.14
c	0.30	0.64
D	14.40	15.20
D1	8.26	9.28
E	9.65	10.67
e	4.83	5.33
H1	5.84	6.86
L	12.70	14.73
L1	--	4.20
P $\varnothing$	3.53	4.09
Q	2.54	3.43
All Dimensions in mm		

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