

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

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

Features and Benefits

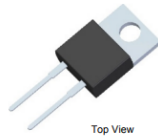
- Soft, hyper fast switching capability
- Glass passivated die construction
- Specially suited for critical mode power factor corrections
- High reliability and efficiency
- Low forward voltage drop
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **The DTH810DQ is suitable for automotive applications requiring specific change control. The part is AEC-Q101 qualified, PPAP capable, and manufactured in IATF 16949 certified facilities.**

<https://www.diodes.com/quality/product-definitions/>

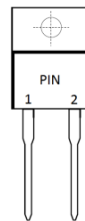
Mechanical Data

- Package: TO220AC (Type WX)
- Package 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 [Ⓔ]
- Polarity: See Diagram

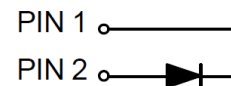
TO220AC (Type WX)



Top View



Top View
Pin-Out



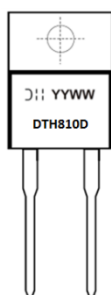
Ordering Information (Note 4)

Orderable Part Number	Package	Packing	
		Qty.	Carrier
DTH810DQ	TO220AC (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: 24 for 2024)
 WW = Week Code (01 - 53)

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage DC Blocking Voltage	V _{RRM} V _R	1000	V
Average Rectified Output Current @T _C =+120°C	I _O	8	A
Non-Repetitive Peak Forward Surge Current 10ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	80	A
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 & 6)	R _{θJC}	2	°C/W
Typical Thermal Resistance Junction to Lead (Note 5 & 6)	R _{θJL}	3	°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 & 8)	V _F	—	—	2.0	V	I _F = 8A, T _J = +25°C I _F = 8A, T _J = +125°C
Reverse Leakage Current (Note 6)	I _R	—	—	5	μA mA	V _R = 1000V, T _J = +25°C V _R = 1000V, T _J = +125°C
		—	20	—		
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
		—	48	65		
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. Thermal resistance test performed in accordance with JESD-51.
 6. The R_{θJL} is measured at PIN 2; R_{θJC} 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.

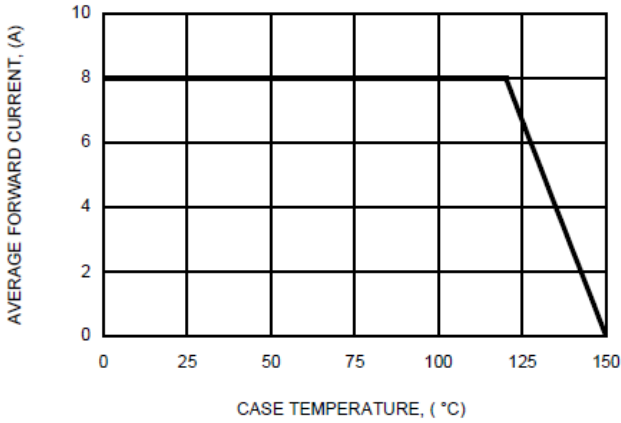


Fig. 1 FORWARD CURRENT DERATING CURVE

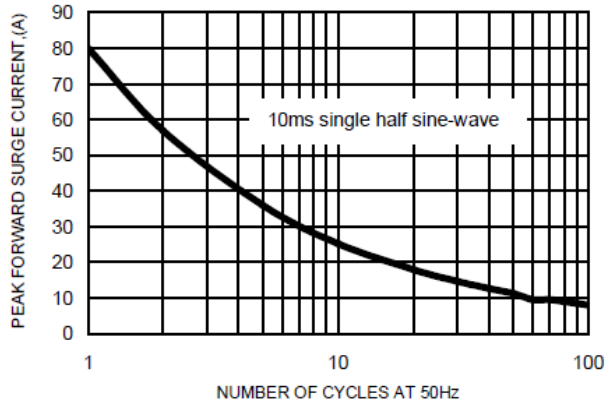


Fig. 2 MAXIMUM NON-REPETITIVE SURGE CURRENT

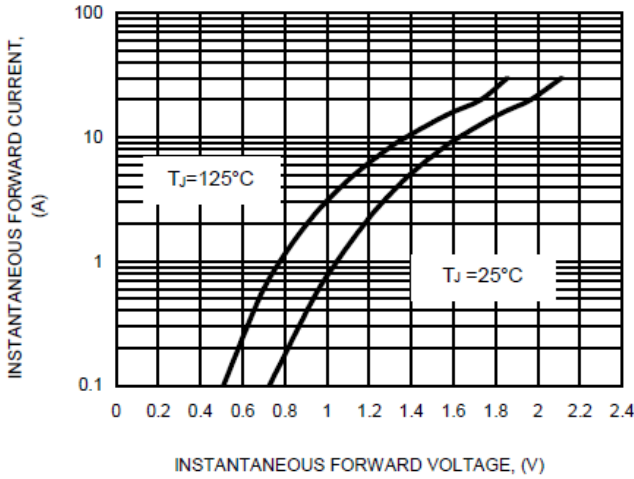


Fig. 3 TYPICAL FORWARD CHARACTERISTICS

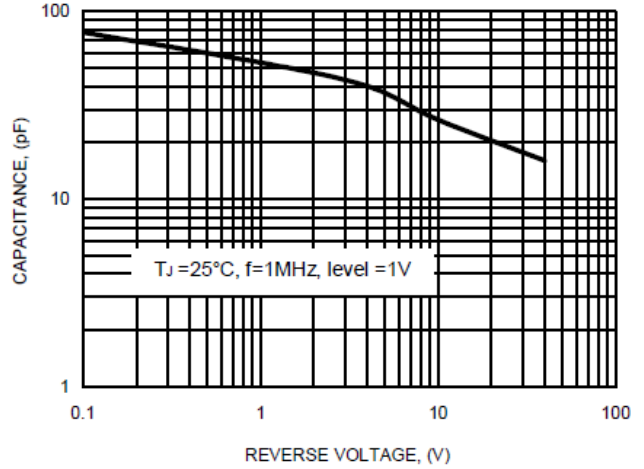


Fig. 4 TYPICAL TOTAL CAPACITANCE

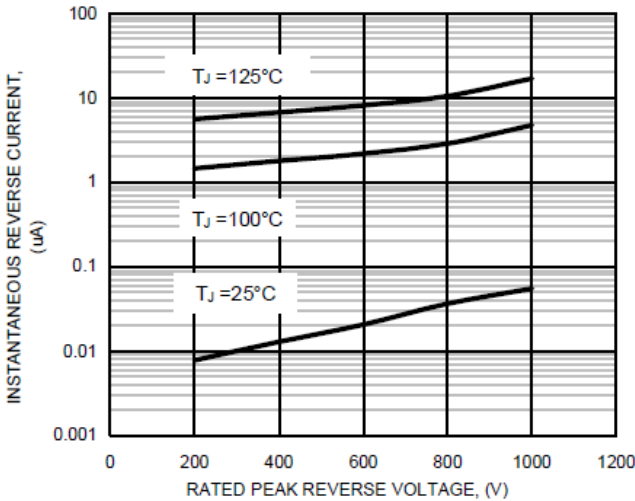
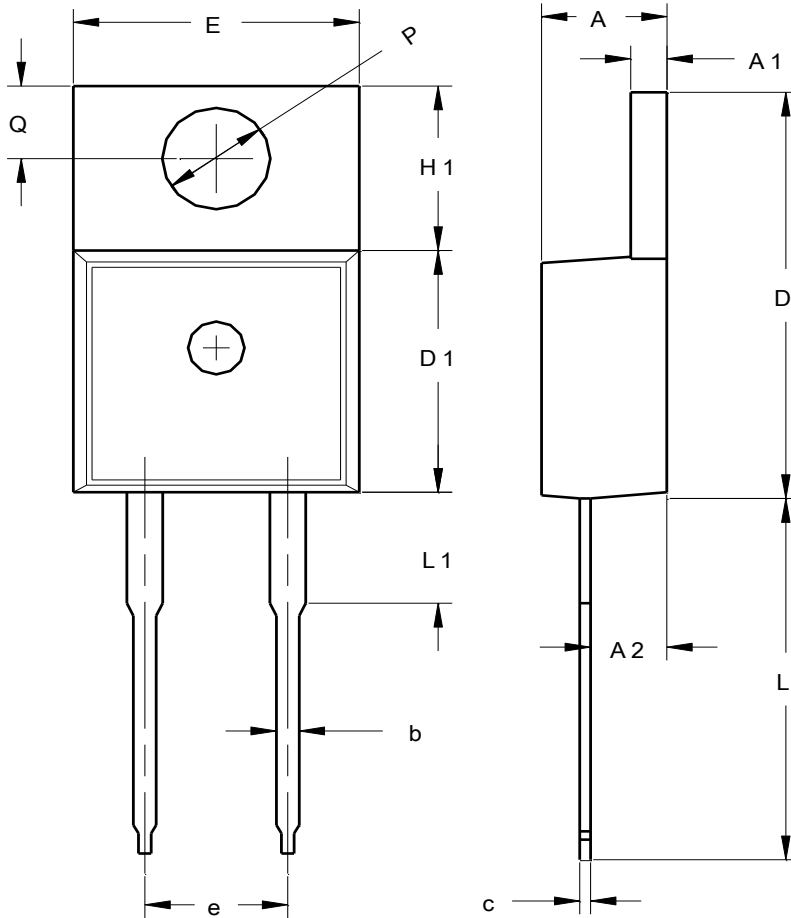


Fig. 5 TYPICAL REVERSE CHARACTERISTICS

Package Outline Dimensions

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

TO220AC (Type WX)



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
PØ	3.53	4.09
Q	2.54	3.43
All Dimensions in mm		

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