

### 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)
600	8	3.4	15	18

### Features and Benefits

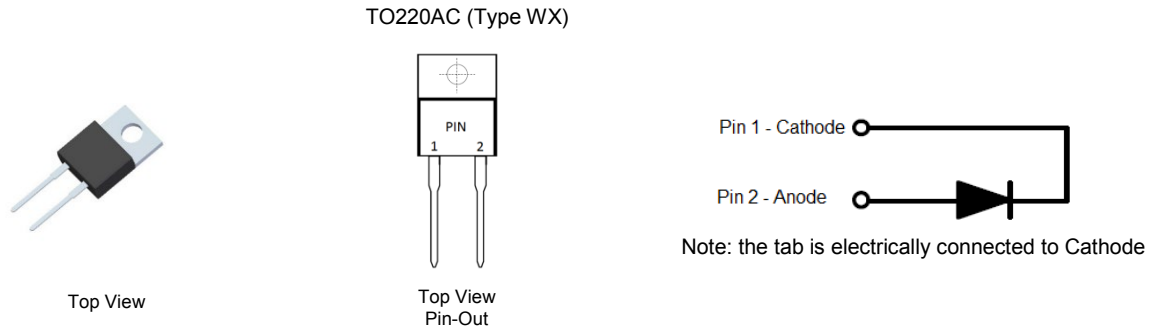
- Soft, Hyper Fast Switching Capability
- Glass Passivated Die Construction
- Especially Suited for Continuous Mode Power Factor Corrections
- High-Reliability and Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen- and Antimony-Free. "Green" Device (Note 3)**
- **For automotive 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: TO220AC
- 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 <sup>Ⓔ</sup>
- Polarity: See Diagram
- Weight: 2.24 grams (Approximate)



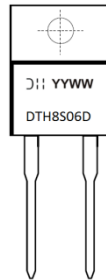
### Ordering Information (Note 4)

Part Number	Qualification	Case	Packaging
DTH8S06D	Commercial	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

TO220AC (Type WX)



DTH8S06D = Product Type Marking Code  
 Ⓜ = Manufacturers' Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 20 for 2020)  
 WW = Week Code (01 to 53)

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

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	600	V
Average Rectified Output Current	I <sub>O</sub>	8	A
Reverse Recovery Time, I <sub>F</sub> = 0.5A, I <sub>RR</sub> = 0.25A, I <sub>R</sub> = 1.0A	t <sub>RR</sub>	21	ns
Non-Repetitive Peak Forward Surge Current, t <sub>p</sub> = 1ms (Note 9)	I <sub>FSM</sub>	150	A
Non-Repetitive Peak Forward Surge Current, t <sub>p</sub> = 10ms (Note 9)		70	

## Thermal Characteristics

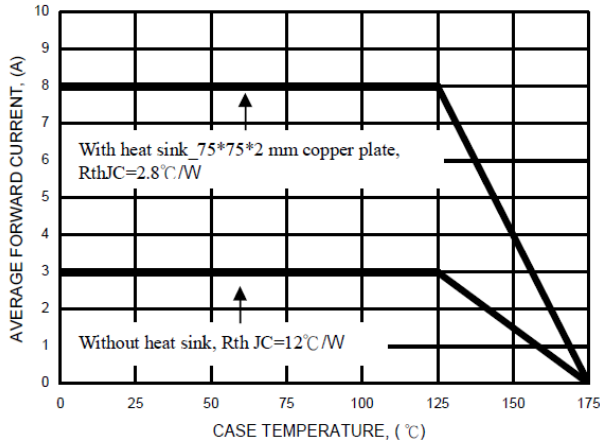
Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Notes 5, 6, 9)	R <sub>θJA</sub>	7.0	°C/W
Typical Thermal Resistance Junction to Case (Notes 5, 6, 9)	R <sub>θJC</sub>	2.8	°C/W
Typical Thermal Resistance Junction to Lead (Notes 5, 6, 9)	R <sub>θJL</sub>	3.5	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +175	°C

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

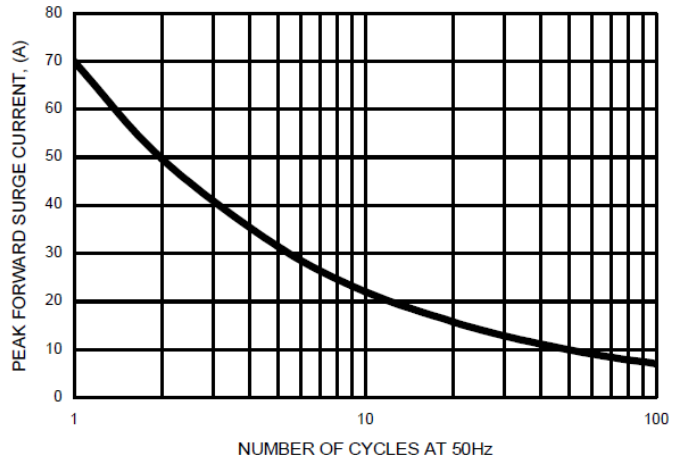
Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage (Note 8)	V <sub>F</sub>	—	—	3.4	V	I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C
Reverse Leakage Current (Note 7)	I <sub>R</sub>	—	—	15 200	μA	V <sub>R</sub> = 600V, T <sub>J</sub> = +25°C V <sub>R</sub> = 600V, T <sub>J</sub> = +125°C
Reverse Recovery Time (Note 9)	t <sub>RR</sub>	—	12	18	ns	I <sub>F</sub> = 1A, dI <sub>F</sub> /dt = -200A/μs, V <sub>R</sub> = 30V
Reverse Recovery Current, @ T <sub>J</sub> = +25°C (Note 9)	I <sub>RM</sub>	—	1.8	2.2 6.0	A	I <sub>F</sub> = 8A, dI <sub>F</sub> /dt = -200A/μs, V <sub>R</sub> = 200V
Reverse Recovery Current, @ T <sub>J</sub> = +125°C (Note 9)			5			
Reverse Recovery Charge, @ T <sub>J</sub> = +25°C (Note 9)	Q <sub>RR</sub>	—	60	—	nC	I <sub>F</sub> = 8A, dI <sub>F</sub> /dt = -200A/μs, V <sub>R</sub> = 200V
Reverse Recovery Charge, @ T <sub>J</sub> = +125°C (Note 9)			220			

- 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.
  9. Guaranteed by design.

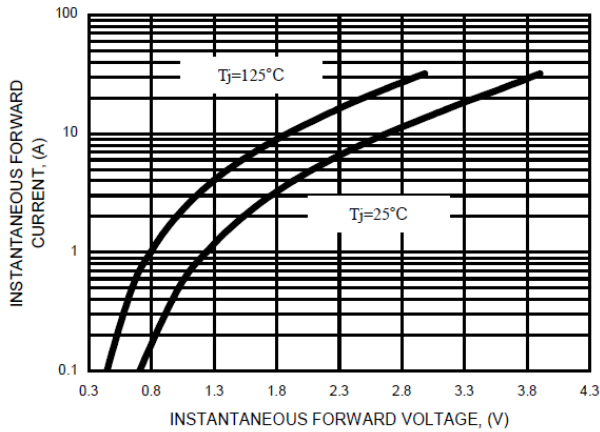
**FIG.1- FORWARD CURRENT DERATING CURVE**



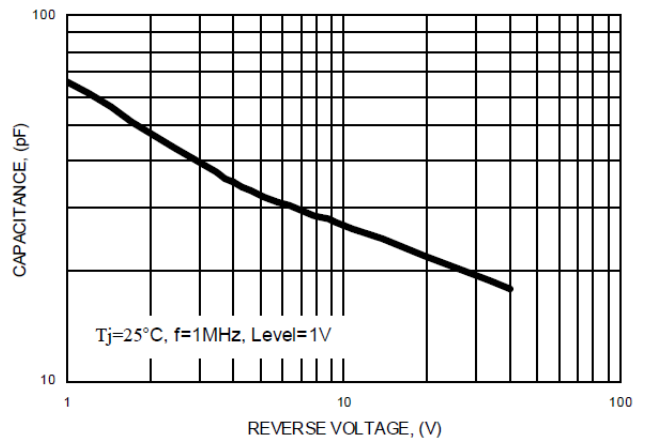
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



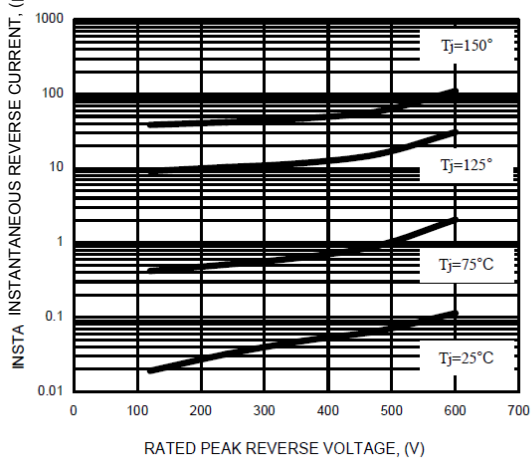
**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4 - TYPICAL TOTAL CAPACITANCE**



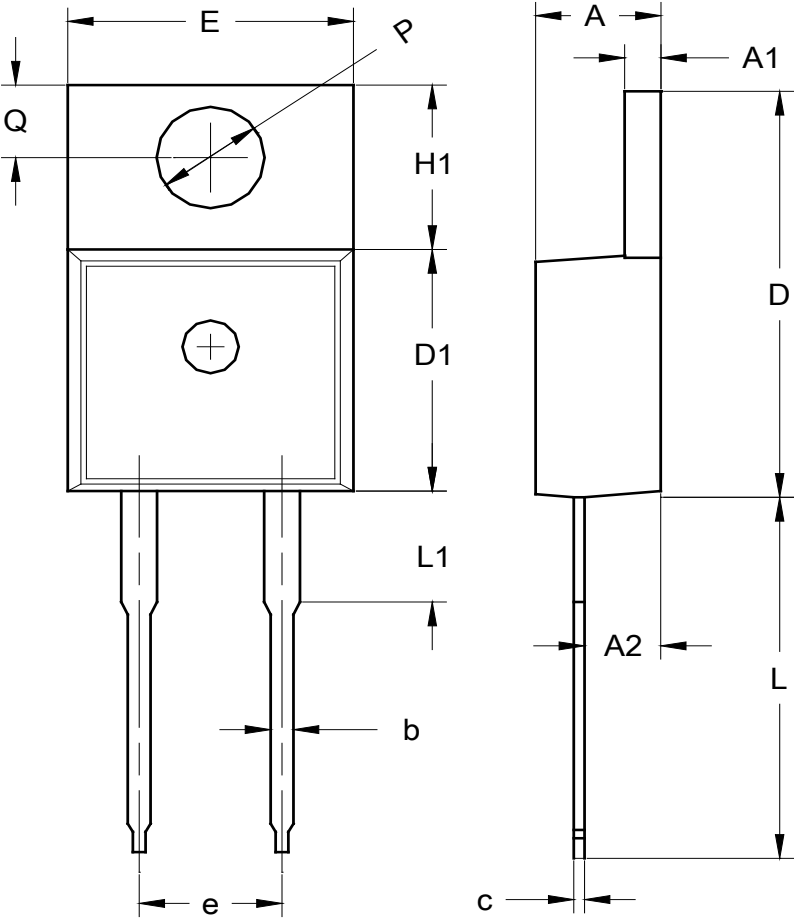
**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



**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
P $\varnothing$	3.53	4.09
Q	2.54	3.43
All Dimensions in mm		

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance.

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