

**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                  | 1.30               | 8                   | 70                   |

**Features and Benefits**

- Soft, Hyper-Fast Switching Capability
- 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)**
- **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/>**

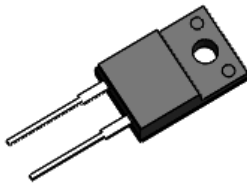
**Description and Applications**

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

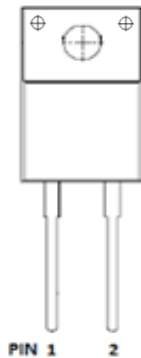
**Mechanical Data**

- 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 ③
- Polarity: See Diagram
- Weight: 1.522 grams (Approximate)

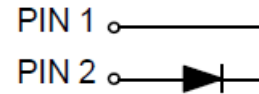
ITO220AC (Type WX)



Top View



Top View Pin-Out


**Ordering Information** (Note 4)

| Part Number | Qualification | Package            | Packing   |         |
|-------------|---------------|--------------------|-----------|---------|
|             |               |                    | Qty.      | Carrier |
| DTH8L06FP   | Commercial    | 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)



DTH8L06FP = Product Type Marking Code  
 J||| = Manufacturers' Code Marking  
 YYWW = Date Code Marking  
 YY = Last Two Digits of Year (ex: 22 for 2022)  
 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> | 600   | V                |
| Working Peak Reverse Voltage  | V <sub>RWM</sub> |       |                  |
| DC Blocking Voltage   | V <sub>R</sub>   |       |                  |
| Average Rectified Output Current  | I <sub>O</sub>   | 8     | A                |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub> | 120   | A                |
| I <sup>2</sup> t Rating for Fusing (3ms ≤ t ≤ 8.3ms)  | I <sup>2</sup> t | 60    | A <sup>2</sup> s |
| Maximum Mounting Torque   | Tor              | 0.5   | N·m              |

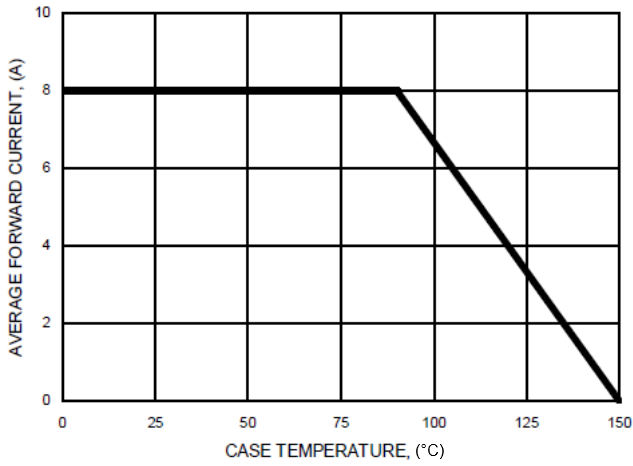
## Thermal Characteristics

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Case (Note 5) | R <sub>θJC</sub>                  | 9           | °C/W |
| Typical Thermal Resistance Junction to Lead (Note 5) | R <sub>θJL</sub>                  | 10          | °C/W |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

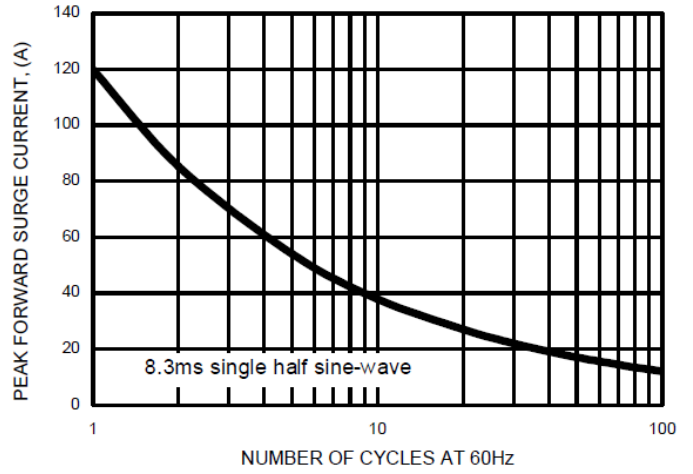
## Electrical Characteristics (@ T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                     | Symbol             | Min | Typ          | Max          | Unit     | Test Condition  |
|------------------------------------|--------------------|-----|--------------|--------------|----------|---|
| Reverse Breakdown Voltage (Note 6) | V <sub>(BR)R</sub> | 600 | —            | —            | V        | I <sub>R</sub> = 20μA   |
| Forward Voltage (Note 7)           | V <sub>F</sub>     | —   | 1.15<br>0.94 | 1.30<br>1.05 | V        | I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C<br>I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C     |
| Reverse Leakage Current (Note 6)   | I <sub>R</sub>     | —   | 0.1<br>50    | 8<br>—       | μA<br>mA | V <sub>R</sub> = 600V, T <sub>J</sub> = +25°C<br>V <sub>R</sub> = 600V, T <sub>J</sub> = +125°C |
| Reverse Recovery Time              | t <sub>RR</sub>    | —   | 47           | 70           | ns       | I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>RR</sub> = 0.25A                           |

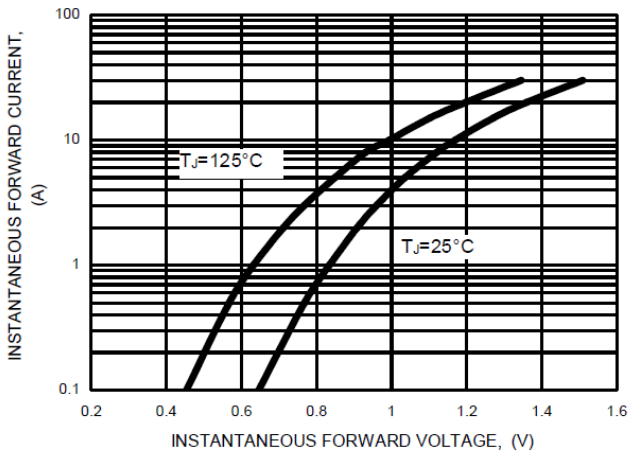
Notes: 5. The unit mounted on fin type heatsink (50.1mm x 50.2mm x 22mm).  
 6. Short duration pulse test used to minimize self-heating effect.  
 7. 300μs pulse width, 2% duty cycle.



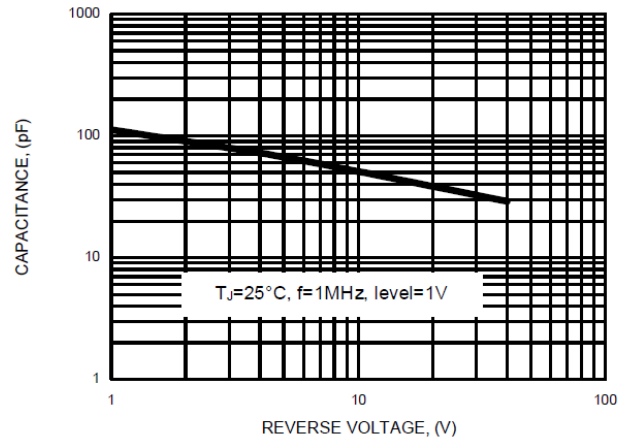
**FIG.1- FORWARD CURRENT DERATING CURVE**



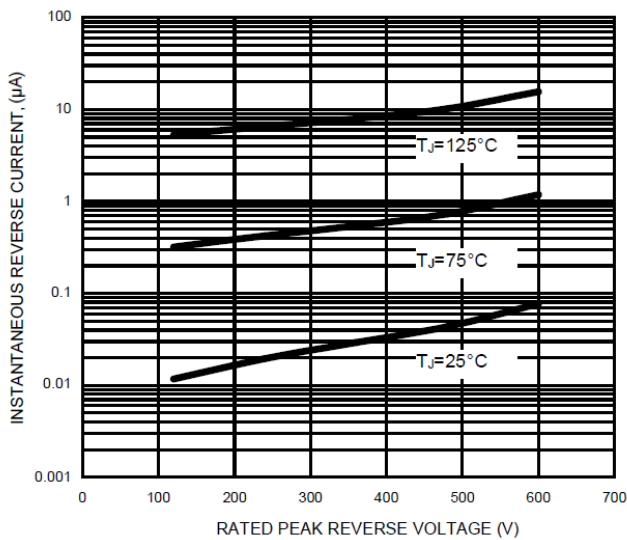
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



**FIG.3- TYPICAL FORWARD CHARACTERISTICS**



**FIG.4- TYPICAL JUNCTION CAPACITANCE**

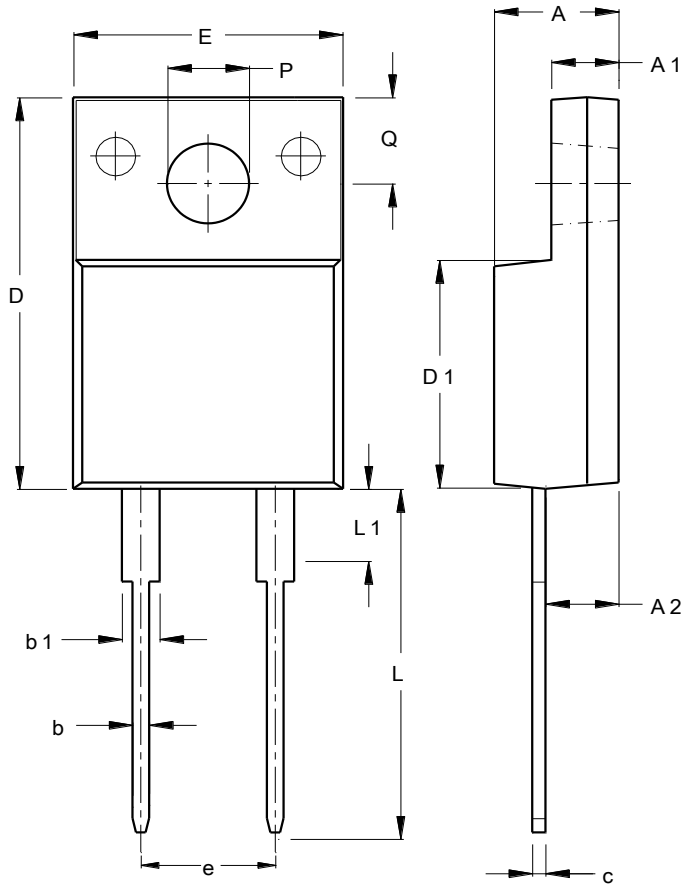


**FIG.5- TYPICAL REVERSE CHARACTERISTICS**

**Package Outline Dimensions**

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

**ITO220AC (Type WX)**



| ITO220AC<br>(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  |
| Q                           | 2.76  | 3.36  |
| PØ                          | 3.00  | 3.30  |
| <b>All Dimensions in mm</b> |       |       |

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