

**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
- Glass Passivated Die Construction
- Especially Suited for Discontinuous or Critical Conduction 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 DTH8L06FPQ 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/>

**Description and Applications**

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

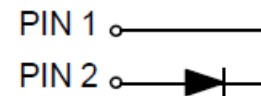
ITO220AC (Type WX-NC)



Top View



Top View Pin-Out


**Ordering Information** (Note 4)

| Part Number | Package               | Packing   |         |
|-------------|-----------------------|-----------|---------|
|             |                       | Qty.      | Carrier |
| DTH8L06FPQ  | 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)



DTH8L06FP = Product Type Marking Code  
 DII = 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>     | 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   | T <sub>or</sub>      | 0.5   | N·m              |
| ESD Rating  | Human Body Model     | 4     | kV               |
|   | Charged Device Model | 1     |                  |

## Thermal Characteristics

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance Junction to Case (Note 5) | R <sub>θJC</sub>                  | 4.5         | °C/W |
| Typical Thermal Resistance Junction to Lead (Note 5) | R <sub>θJL</sub>                  | 5           | °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> = 8μA  |
| Forward Voltage (Note 7)           | V <sub>F</sub>     | —   | 1.15 | 1.30 | V    | I <sub>F</sub> = 8A, T <sub>J</sub> = +25°C                           |
|                                    |                    | —   | 0.94 | 1.05 |      | I <sub>F</sub> = 8A, T <sub>J</sub> = +125°C                          |
| Reverse Leakage Current (Note 6)   | I <sub>R</sub>     | —   | 0.1  | 8    | μA   | V <sub>R</sub> = 600V, T <sub>J</sub> = +25°C                         |
|                                    |                    | —   | 50   | —    |      | V <sub>R</sub> = 600V, T <sub>J</sub> = +150°C                        |
| Reverse-Recovery Time              | t <sub>RR</sub>    | —   | —    | 70   | ns   | I <sub>F</sub> = 0.5A, I <sub>R</sub> = 1.0A, I <sub>RR</sub> = 0.25A |
| Total Capacitance                  | C <sub>T</sub>     | —   | 130  | —    | pF   | V <sub>R</sub> = 1V, f = 1MHz   |

Notes: 5. Thermal resistance test performed in accordance with JESD-51. The R<sub>θJL</sub> is measured at pin 2; R<sub>θJC</sub> is measured at the top center of the body.  
 The device is mounted on fin type heatsink (32mm × 85mm × 24mm).  
 6. Short duration pulse test used to minimize self-heating effect.  
 7. 300μs pulse width, 2% duty cycle.

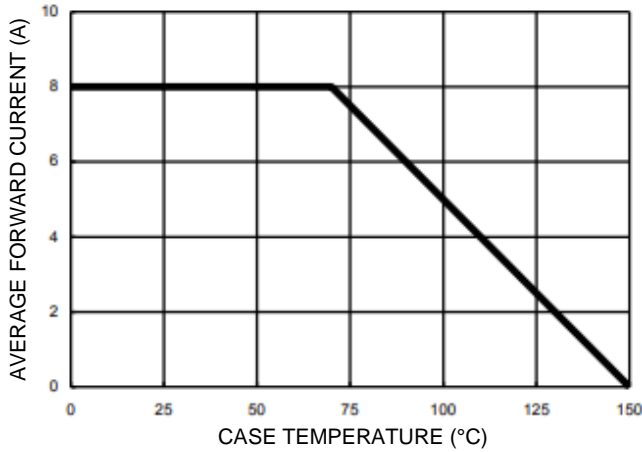


Figure 1. Forward Current Derating Curve

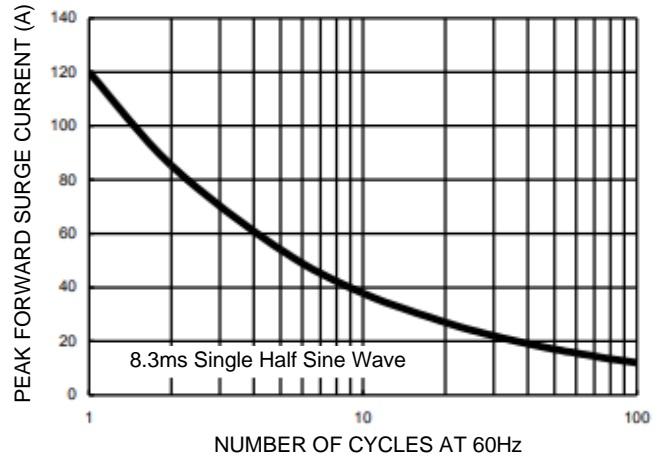


Figure 2. Maximum Non-Repetitive Surge Current

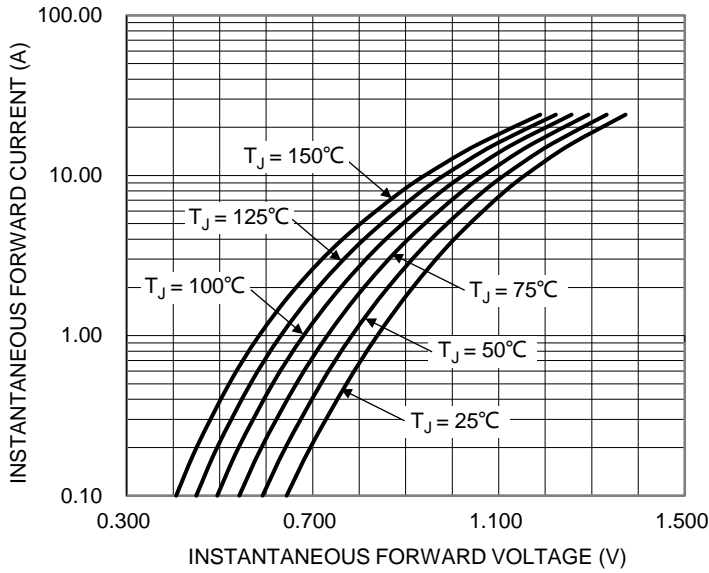


Figure 3. Typical Forward Characteristics

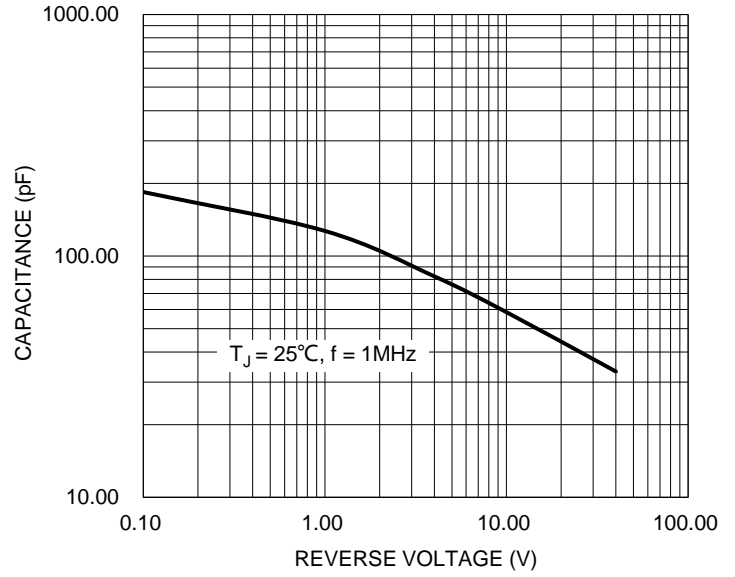


Figure 4. Typical Total Capacitance

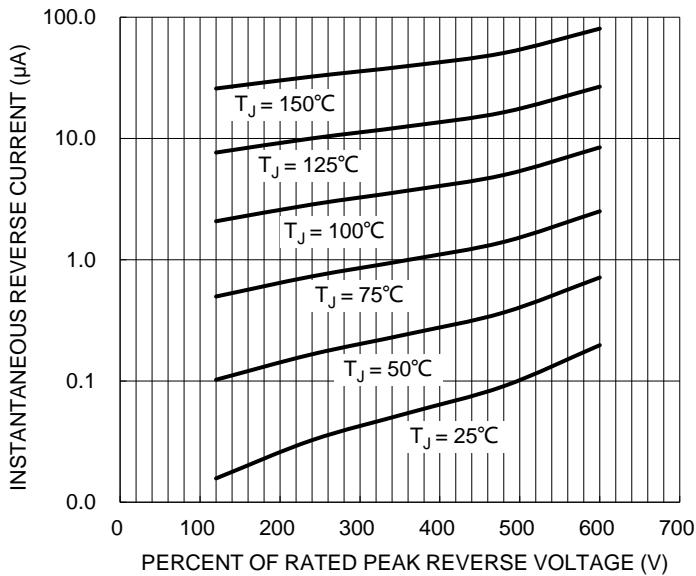
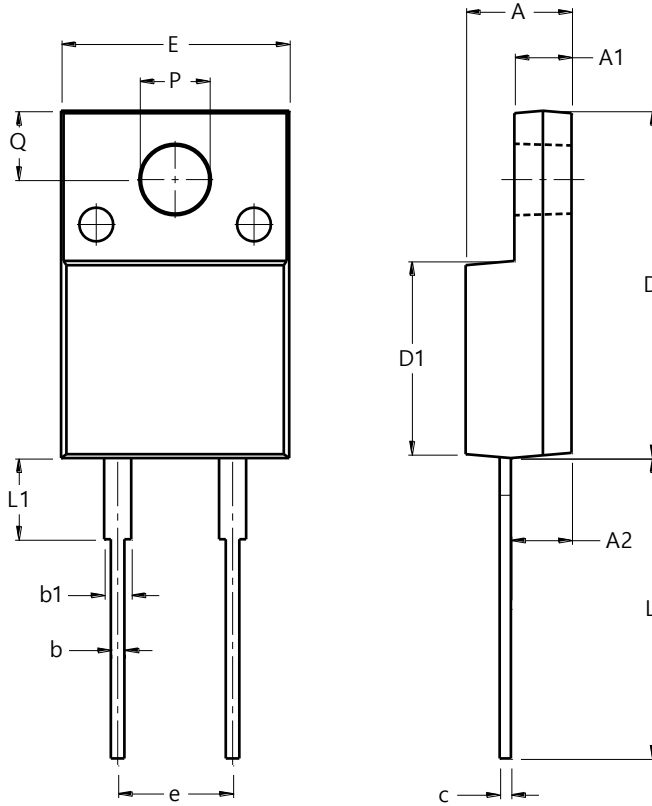


Figure 5. Typical Reverse Characteristics

**Package Outline Dimensions**

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

**ITO220AC (Type WX-NC)**



| ITO220AC<br>(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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