

Product Summary (@T_A = +25°C)

V _{RRM} (V)	I _O (A)	V _F (V)	I _R (μA)	t _{RR} (ns)
600	15	2.9	45	30

Features and Benefits

- Glass Passivated Die Construction
- Soft, Hyper-Fast Switching Capability
- Especially Suited for Continuous-Conduction Mode Power Factor Correction
- High Reliability and Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The DTH1506FPQ 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

Use in high-frequency rectifier of switching mode, power supplies, inverters, freewheeling diodes, DC/DC converters.

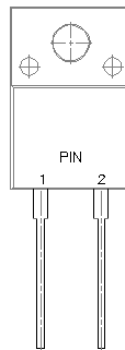
Mechanical Data

- 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: 1.5 grams (Approximate)

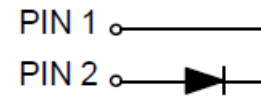
ITO220AC (Type WX-NC)



Top View



Top View Pin-Out


Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DTH1506FPQ	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)



DTH1506FP = Product Type Marking Code
 DTH = Manufacturer's Marking Code
 YYWW = Date Marking Code
 YY = Last Two Digits of Year (ex: 24 for 2024)
 WW = Week Code (01 to 53)

Maximum Ratings (@T_A = +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 _{RRM}	600	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _R		
Average Rectified Output Current @ T _C = +90°C	I _O	15	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine Wave Superimposed on Rated Load	I _{FSM}	120	A
Non-Repetitive Avalanche Energy @ L = 15mH	E _{AS}	21.7	mJ
ESD Rating	Human Body Model	2	kV
	Charged Device Model	1	

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Case (Notes 5, 6)	R _{θJC}	6.0	°C/W
Typical Thermal Resistance Junction to Lead (Notes 5, 6)	R _{θJL}	3.0	°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 7)	V _{(BR)R}	600	—	—	V	I _R = 45μA
Forward Voltage (Note 8)	V _F	—	2.1	2.9	V	I _F = 15A, T _J = +25°C
		—	1.5	—	V	I _F = 15A, T _J = +125°C
Reverse Leakage Current (Note 7)	I _R	—	0.2	45	μA	V _R = 600V, T _J = +25°C
		—	30	600	μA	V _R = 600V, T _J = +125°C
Reverse-Recovery Time	t _{RR}	—	—	30	ns	I _F = 0.5A, I _R = 1.0A, I _{RR} = 0.25A
Reverse-Recovery Current, T _J = +125°C	I _{RM}	—	8.5	—	A	I _F = 15A, V _R = 400V, df/dt = 200A/μs
Reverse-Recovery Charge, T _J = +125°C	Q _{RR}	—	455	—	nC	I _F = 15A, V _R = 400V, df/dt = 200A/μs

- Notes:
5. Thermal resistance test performed in accordance with JESD-51. R_{θJL} is measured at the PIN 2. R_{θJC} is measured at the top center of body.
 6. The heat generated must be less than the thermal conductivity from junction to case: dP_D/dT_J < 1/R_{θJC} or junction to ambient: dP_D/dT_J < 1/R_{θJA}.
 7. Short duration pulse test used to minimize self-heating effect.
 8. 300μs pulse width, 2% duty cycle.

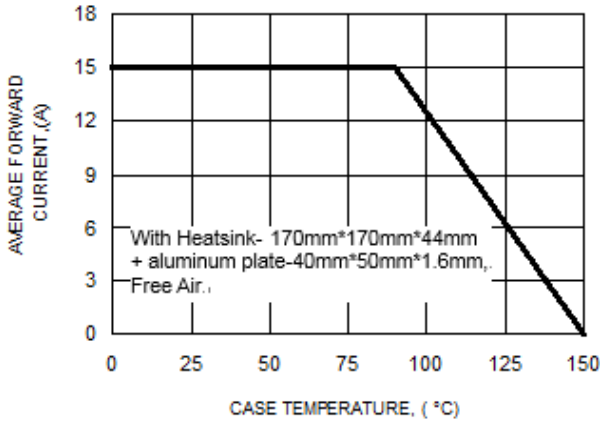


Figure 1. Forward Current Derating Curve

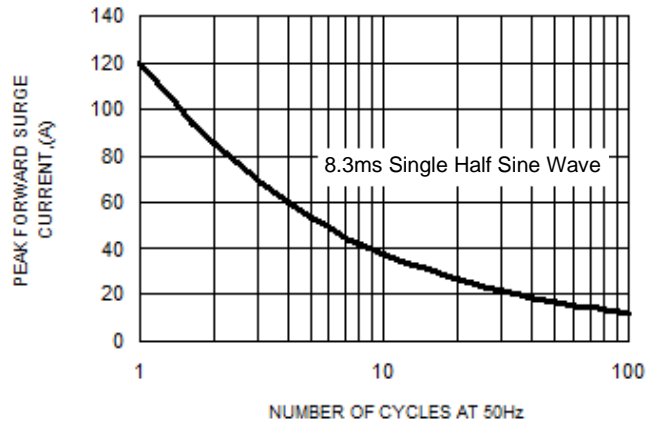


Figure 2. Maximum Non-Repetitive Surge Current

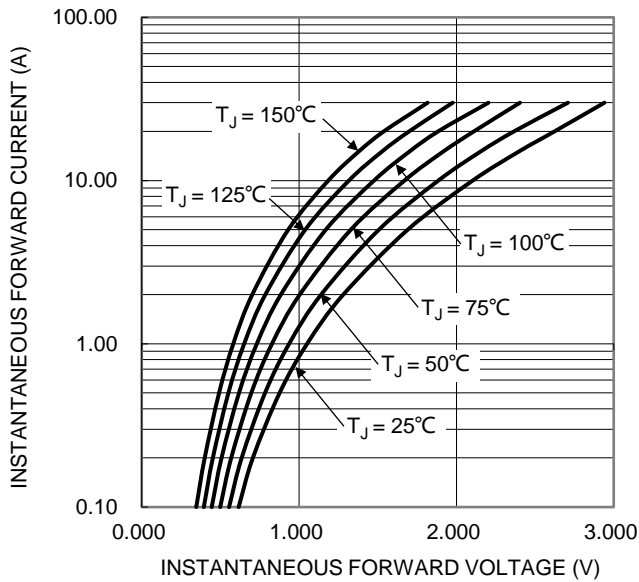


Figure 3. Typical Forward Characteristics

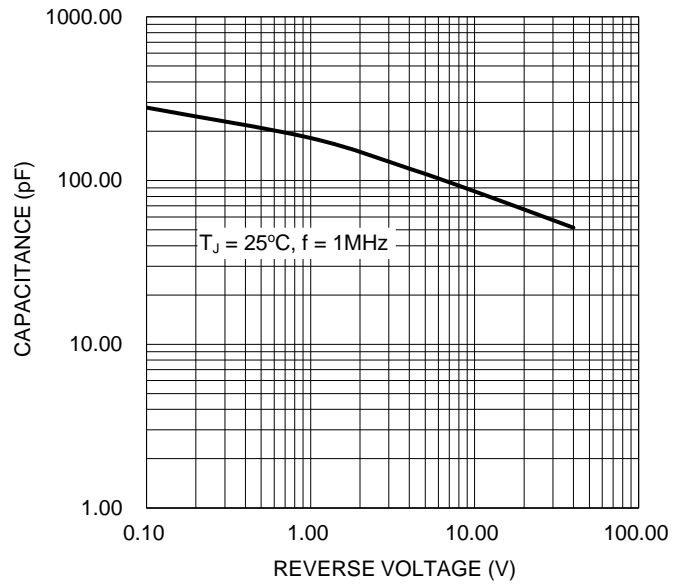


Figure 4. Typical Junction Capacitance

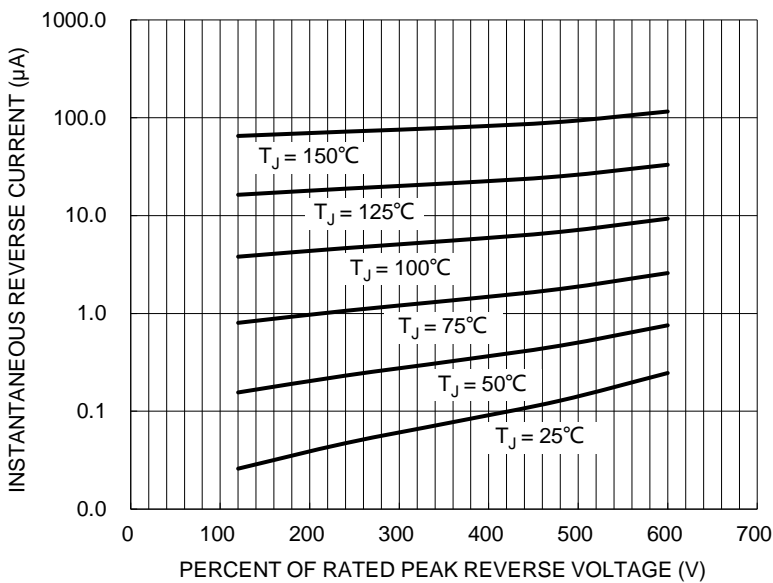
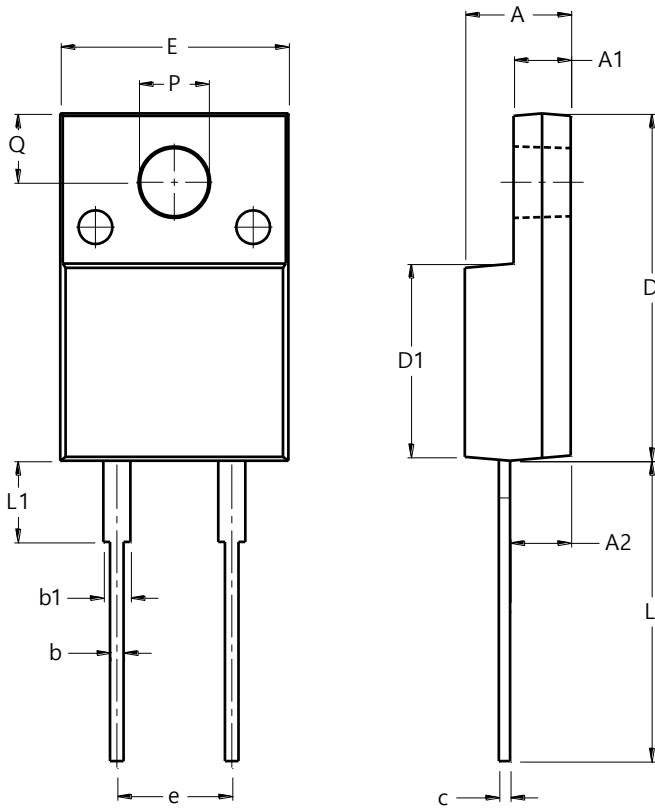


Figure 5. Typical Reverse Characteristics

Package Outline Dimensions

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

ITO220AC (Type WX-NC)



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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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