8A HYPER-FAST EPITAXIAL RECTIFIER

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (µA)	t_{RR} (ns)
600	8	2.9	30	25

Features and Benefits

- Soft, Hyper-Fast Switching Capability
- Glass Passivated Die Construction
- 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 DTH8E06FPQ 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

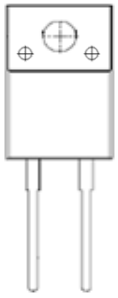
Suitable for rectification and freewheeling for SMPS, LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunication applications.

Mechanical Data

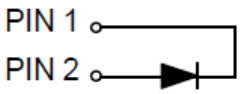
- Package: ITO220AC
- Package Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Terminals: Finish – Matte Tin Plated Leads Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Diagram
- Weight: 1.522 grams (Approximate)

ITO220AC (Type WX-NC)

Top View



Top View Pinout



Ordering Information (Note 4)

Part Number	Package	Packing	
		Qty.	Carrier
DTH8E06FPQ	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)

DTH8E06FP = Product Type Marking Code
= 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_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Peak Repetitive Reverse Voltage		V_{RRM}	600	V
Average Rectified Output Current		I_O	8	A
Non Repetitive Avalanche Energy, L = 15mH		E_{AS}	21.7	mJ
Peak Forward Surge Current, t_P = 1ms, Single Half Sine Wave Peak Forward Surge Current, t_P = 10ms, Single Half Sine Wave		I_{FSM}	250 125	A
ESD Rating	Human Body Model Charged Device Model	HBM CDM	4 1	kV

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance Junction to Ambient (Note 5)	$R_{\theta JA}$	16	°C/W
Typical Thermal Resistance Junction to Case (Notes 5 & 6)	$R_{\theta JC}$	7	°C/W
Typical Thermal Resistance Junction to Lead (Notes 5 & 6)	$R_{\theta JL}$	6	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +175	°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 = 30µA
Forward Voltage (Note 8)	V_F	—	— 1.4	2.9 1.8	V	I_F = 8A, T_J = +25°C I_F = 8A, T_J = +125°C
Reverse Leakage Current (Note 7)	I_R	— —	— 35	30 400	µA	V_R = 600V, T_J = +25°C V_R = 600V, T_J = +125°C
Reverse-Recovery Time (Note 9)	t_{RR}	— —	— —	25 45	ns	I_F = 0.5A, I_{RR} = 0.25A, I_R = 1A I_F = 1A, dI_F/dt = -50A/µs, V_R = 30V
Reverse-Recovery Current, @T_J = +125°C (Note 9)	I_{RM}	—	5.5	7.2	A	I_F = 8A, dI_F/dt = -200A/µs, V_R = 400V
Reverse-Recovery Charge, @T_J = +125°C (Note 9)	Q_{RR}	—	200	—	nC	I_F = 8A, dI_F/dt = -200A/µs, V_R = 400V

Notes:
5. Thermal resistance test performed in accordance with JESD-51. The $R_{\theta JL}$ is measured at pin 2; $R_{\theta JC}$ is measured at the top center of the body.
6. The $R_{\theta JL}$ is measured at pin 2; $R_{\theta JC}$ is measured at the top center of the body. The unit mounted on fin type heatsink 44mm*30mm*23.8mm.
7. Short duration pulse test used to minimize self-heating effect.
8. 300µs pulse width, 2% duty cycle.
9. Guaranteed by design.

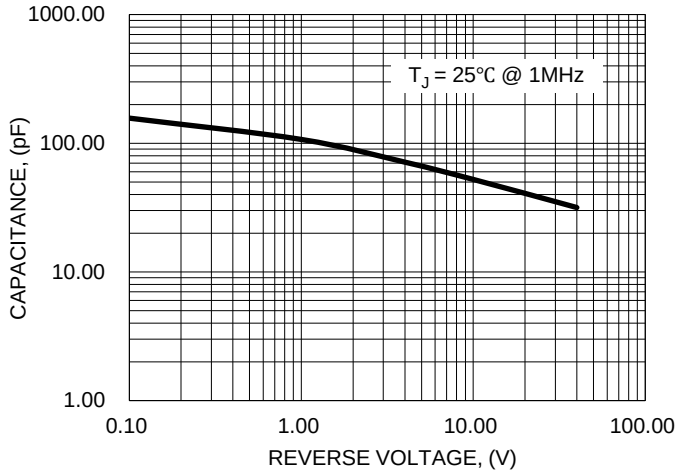


Figure 1. Typical Total Capacitance

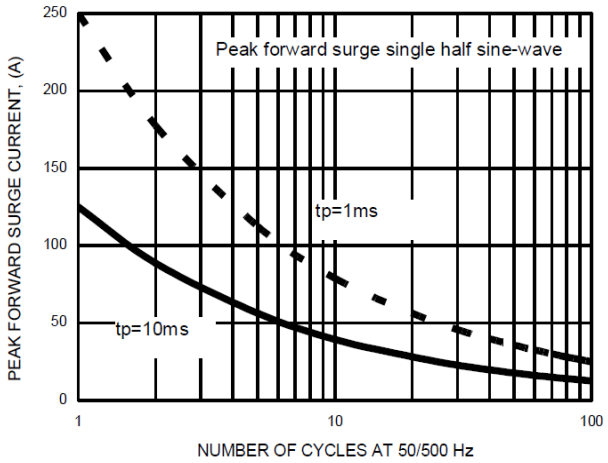


Figure 2. Maximum Non-Repetitive Surge Current

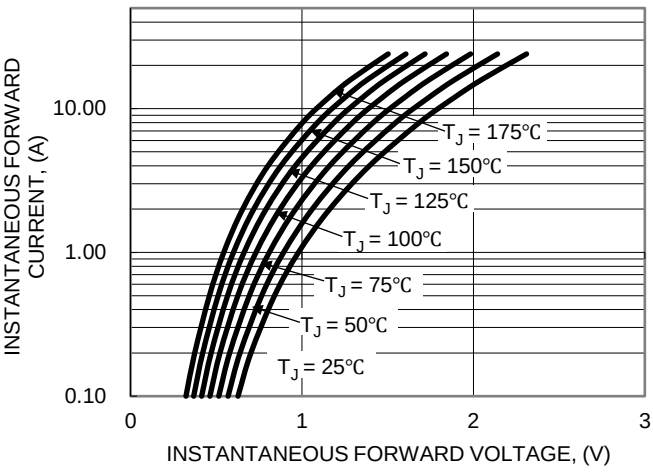


Figure 3. Typical Forward Characteristics

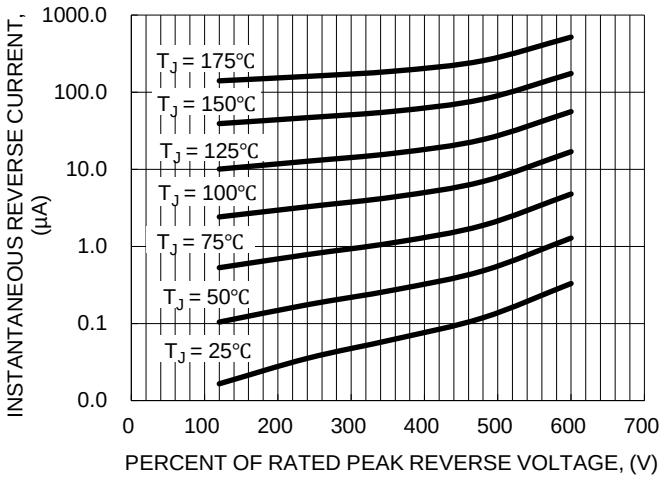
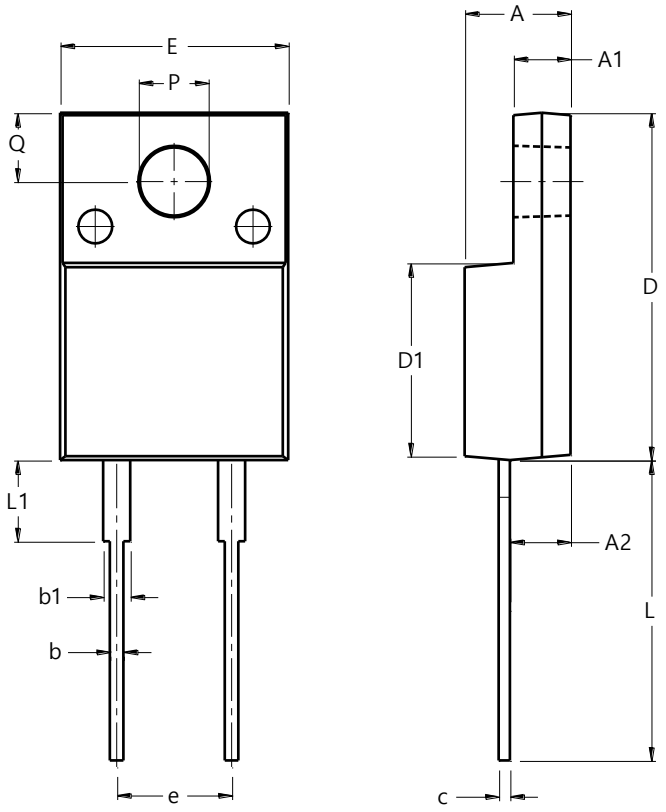


Figure 4. Typical Reverse Characteristics

Package Outline Dimensions

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

ITO220AC (Type WX-NC)



ITO220AC (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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