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## 8A 600V Ultrafast Recovery Rectifier

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### Major ratings and characteristics

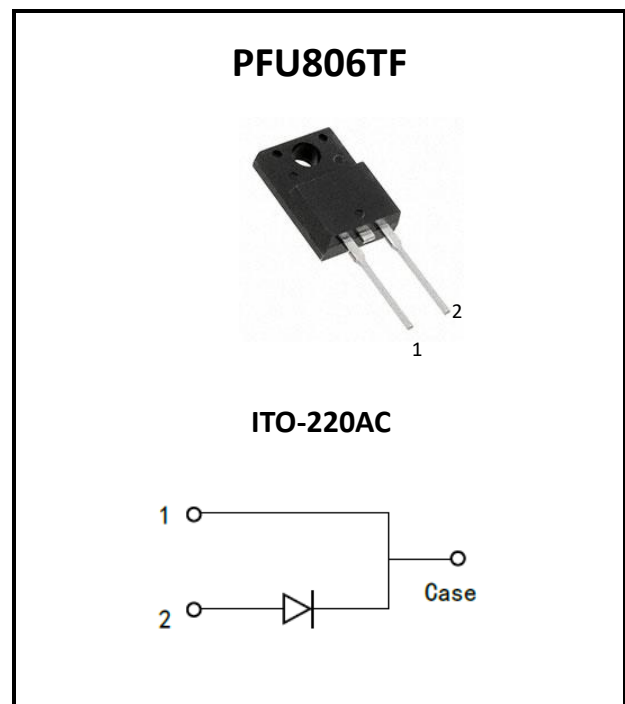
Characteristics	Values	Units
$I_O$	8	A
$V_{RRM}$ (V)	600	V
$T_{rr}$ (ns)	25	ns
$T_{J, max.}$	175	°C

### Features

- Higher efficiency
- Soft, Hyper fast switching capability
- Reliable High Temperature Operation
- 175°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

### Typical Applications

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



## 1. Characteristics

### Maximum Ratings Characteristics, at $T_A = 25^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	Values	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	600	Volts
Average Rectified Output Current	$I_F$	8	Amps
Non-Repetitive Forward Surge Current, sine half wave $T_C=25^\circ\text{C}$ , $t_p=8.3\text{ms}$	$I_{FSM}$	70	Amps
Operating and Storage Temperature Range	$T_J, T_{STG}$	- 55 to +175	$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5	$^\circ\text{C} / \text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	16	$^\circ\text{C} / \text{W}$

### Electrical Characteristics , at $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristics	Test Conditions	Symbol	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	$I_R=0.05\text{mA}$ , $T_J=25^\circ\text{C}$	$V_{(BR)R}^*$	600	---	---	Volts
Forward Voltage	$I_F=8\text{A}$ , $T_J = 25^\circ\text{C}$	$V_F^*$	---	---	2.9	Volts
	$I_F=8\text{A}$ , $T_J = 125^\circ\text{C}$ ,		---	1.4	1.8	
Reverse Current	$V_R=600\text{V}$ , $T_J = 25^\circ\text{C}$	$I_R^*$	---	---	30	$\mu\text{A}$
	$V_R=600\text{V}$ , $T_J = 125^\circ\text{C}$		---	35	400	

\* Pulse width < 300  $\mu\text{s}$ , Duty cycle < 2%

### Dynamic electrical characteristics

Parameter	Symbol	Typ.	Max.	Units
Reverse recovery time $I_F=0.5\text{A}$ , $I_{rr}=0.25\text{A}$ , $I_R=1.0\text{A}$	$T_{rr}$	---	25	nS
Reverse Recovery Charge $I_F = 8\text{A}$ , $di_F/dt = -200\text{A}/\mu\text{s}$ , $V_R = 400\text{V}$	$Q_{RR}$	150	---	nC



2. Characteristics Curves

Ratings and Characteristics Curves, at  $T_A = 25^\circ\text{C}$  unless otherwise specified

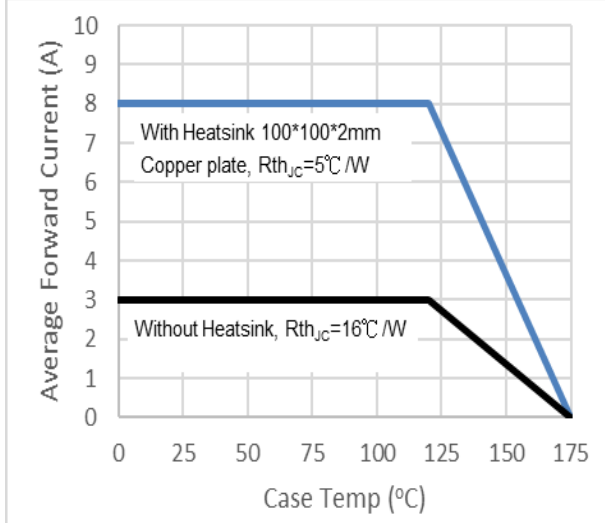


Fig. 1: Forward Current Derating Curve

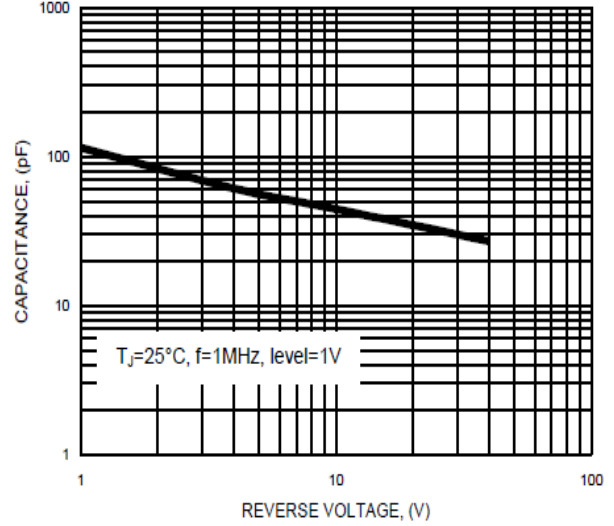


Fig. 2: Typical Junction Capacitance

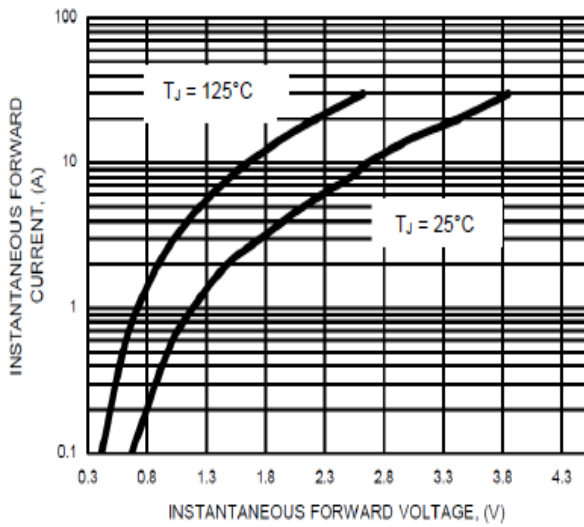


Fig. 3: Typical Forward Voltage

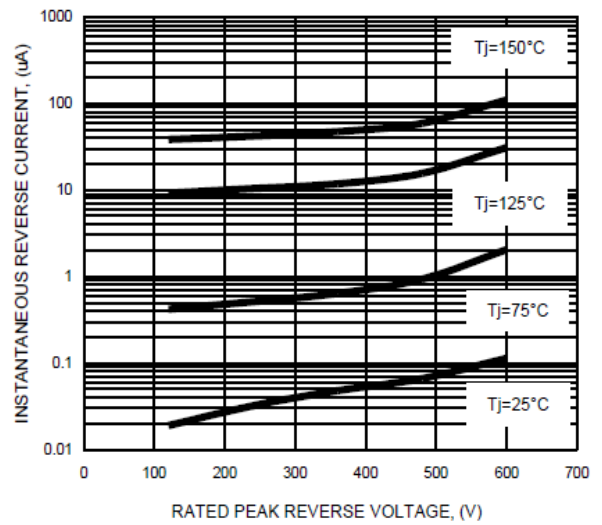
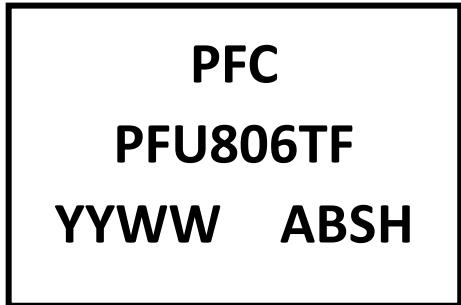


Fig. 4: Typical Reverse Current



3. Marking information

Top Marking Rule

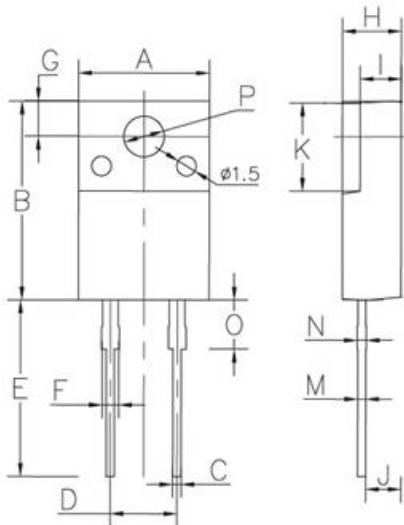


PFU806TF = Product Type Marking Code  
 YYWW = Date Code  
 YY = Last two digits of year  
 WW = Week code  
 AB = Assembly code  
 S = Series Number  
 H = Halogen Free (N/A = common molding compound)

4. Package information

Package Outline Dimensions    millimeters

ITO-220AC



Dim.	Min.	Max.
A	-----	10.50
B	14.70	15.40
C	0.40	0.80
D	4.80	5.40
E	13.10	13.90
F	1.10	1.45
G	2.60	3.00
H	4.30	4.70
I	2.90	3.30
J	2.50	2.90
K	6.30	7.10
M	0.40	0.80
N	0.40	0.80
O	-----	4.00
P	2.90	3.50

All Dimension in millimeter



**5. Ordering information**

Part Number	Package	Delivery mode
PFU806TF	ITO-220AC	50 pieces / tube

Note: For Halogen Free molding compound, add "H" suffix to part number above.

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.06 ounces (1.7grams) - ITO-220AC
- Mounting Torque : Recommended 4~5 kg-cm.

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