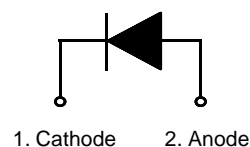
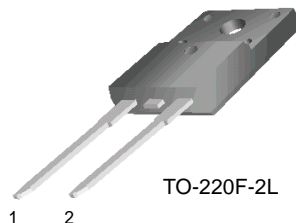


## FFPF06UP20S

### Features

- Ultrafast with soft recovery  
(@  $I_F = 1A$ ), < 35ns
- Reverse Voltage, 200V
- Forward Voltage (@  $T_C = 100^\circ C$ ), < 1V
- Enhanced Avalanche Energy



### Applications

- Power switching circuits
- Output rectifiers
- Freewheeling diodes
- Switching mode power supply

## Ultrafast Rectifier

### Absolute Maximum Ratings $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ C$	6	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	60	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	- 65 to +150	$^\circ C$

### Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	4.5	$^\circ C/W$

### Electrical Characteristics $T_C=25^\circ C$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Units	
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 6A$ $I_F = 6A$	$T_C = 25^\circ C$	-	-	1.1	V
		$T_C = 100^\circ C$	-	-	1.15	
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ C$	-	-	100	$\mu A$
		$T_C = 100^\circ C$	-	-	500	
$t_{rr}$	Reverse Recovery Time	-	31	-	ns	
$I_{rr}$	Reverse Recovery Current	-	1.6	-	A	
$Q_{rr}$	Reverse Recovery Charge ( $I_F = 6A, di/dt = 200A/\mu s$ )	-	24.8	-	nC	
$t_{rr}$	Maximum Reverse Recovery Time ( $I_F = 1A, di/dt = 100A/\mu s$ )	-	-	35	ns	
$W_{AVL}$	Avalanche Energy (L=40mH)	5	-	-	mJ	

\* Pulse Test: Pulse Width=300 $\mu s$ , Duty Cycle=2%

# Typical Characteristics

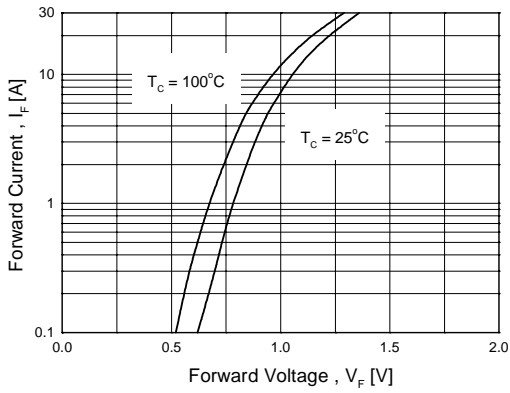


Figure 1. Typical Forward Voltage Drop vs. Forward Current

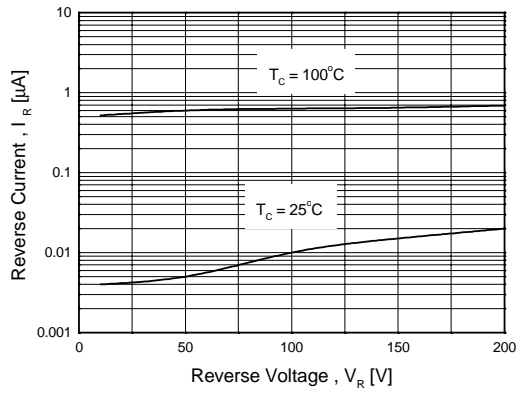


Figure 2. Typical Reverse Current vs. Reverse Voltage

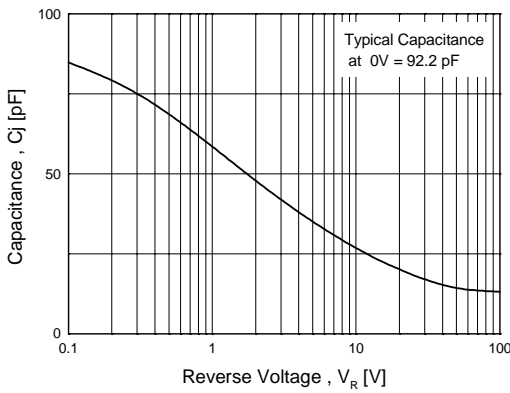


Figure 3. Typical Junction Capacitance

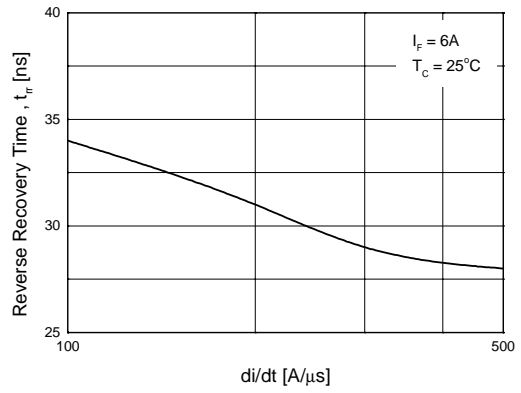


Figure 4. Typical Reverse Recovery Time vs. di/dt

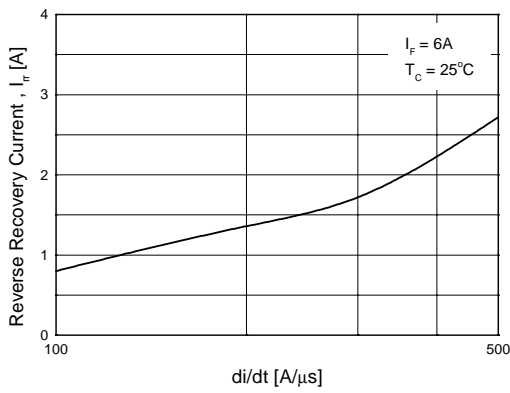


Figure 5. Typical Reverse Recovery Current vs. di/dt

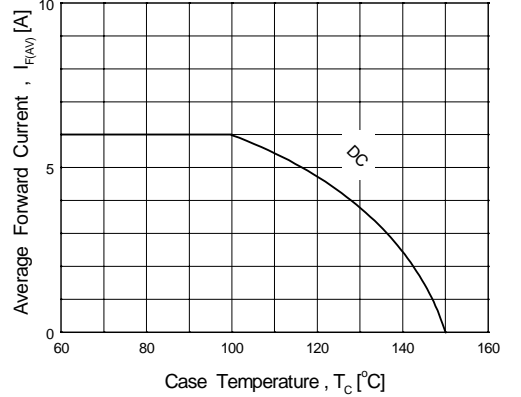
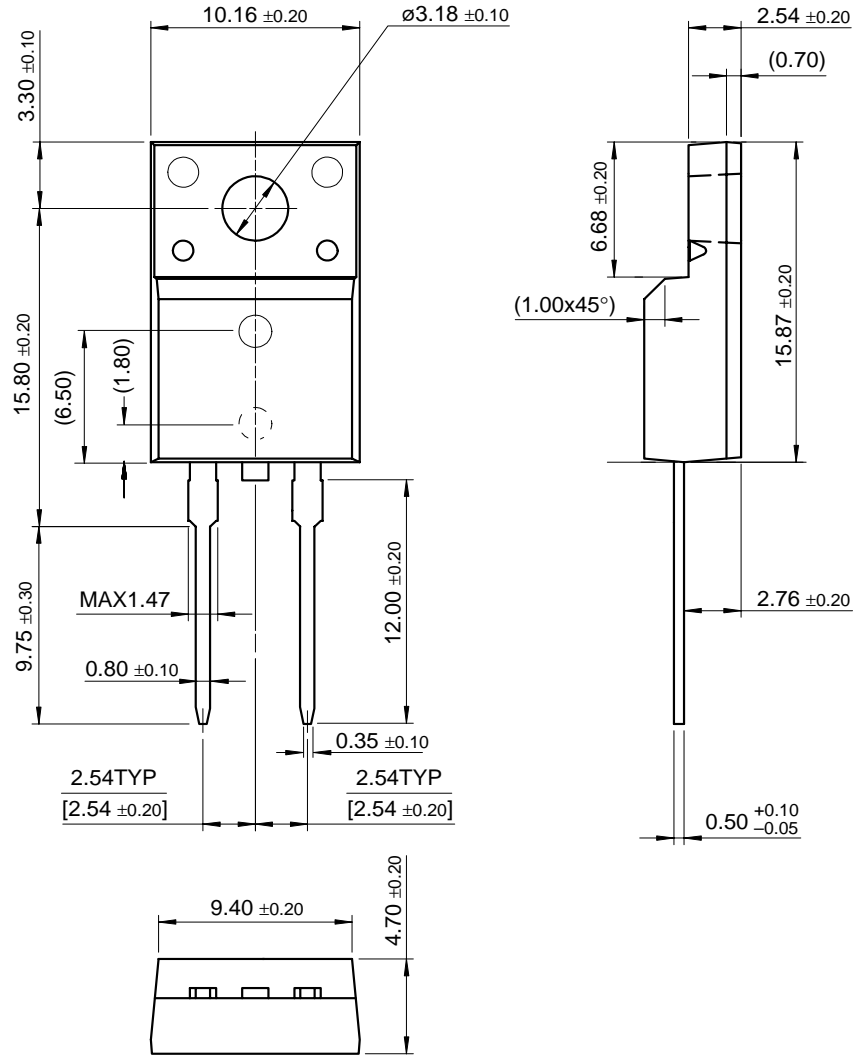


Figure 6. Forward Current Derating Curve

# Package Dimensions

## TO-220F-2L

FFPF06UP20S



Dimensions in Millimeters

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