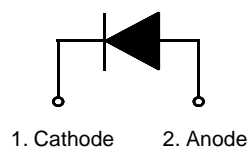
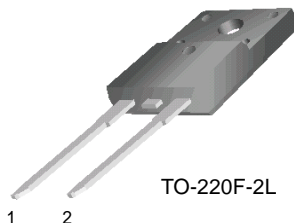


## FFPF10UP60S

### Features

- Ultrafast with soft recovery  
(@  $I_F = 1A$ ), < 40ns
- Reverse Voltage, 600V
- Forward Voltage (@  $T_C = 60^\circ C$ ), < 2V
- Enhanced Avalanche Energy



### Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits

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

Symbol	Parameter	Value	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 60^\circ C$	10	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	50	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	- 65 to +150	$^\circ C$

### Thermal Characteristics

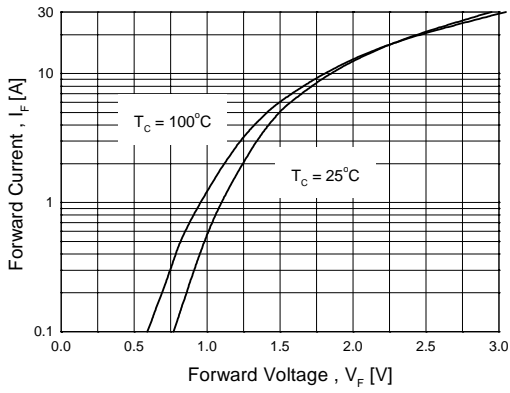
Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	4.5	$^\circ C/W$

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

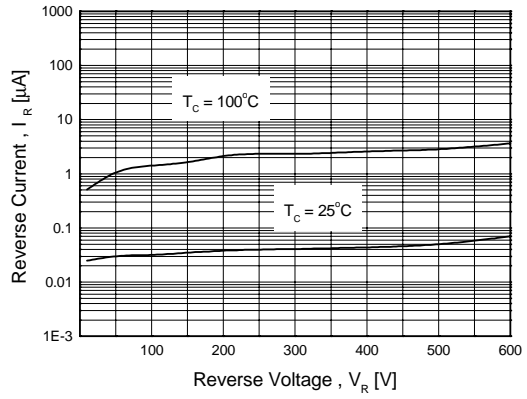
Symbol	Parameter	Min.	Typ.	Max.	Units	
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 10A$ $I_F = 10A$	$T_C = 25^\circ C$	-	-	2.2	V
		$T_C = 100^\circ C$	-	-	2.0	
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ C$	-	-	100	$\mu A$
		$T_C = 100^\circ C$	-	-	500	
$t_{rr}$	Reverse Recovery Time	-	34	40	ns	
$I_{rr}$	Reverse Recovery Current	-	1.0	1.5	A	
$Q_{rr}$	Reverse Recovery Charge ( $I_F = 1A, di/dt = 100A/\mu s$ )	-	17	30	nC	
$t_{rr}$	Maximum Reverse Recovery Time ( $I_F = 10A, di/dt = 200A/\mu s$ )	-	58	-	ns	
$W_{AVL}$	Avalanche Energy (L=40mH)	20	-	-	mJ	

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

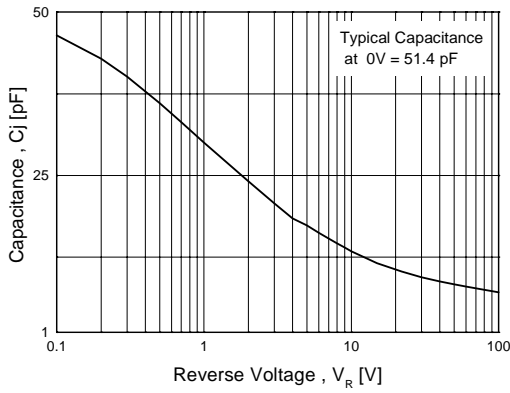
# Typical Characteristics



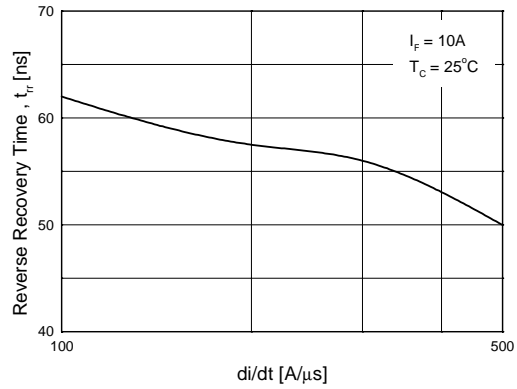
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



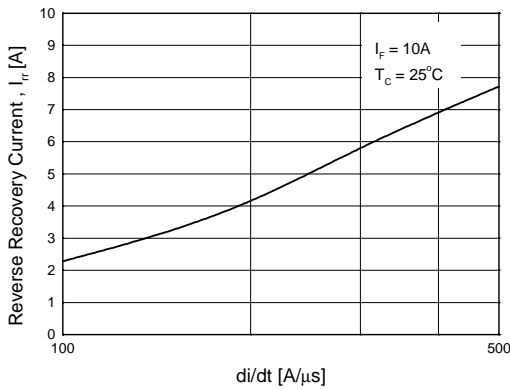
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



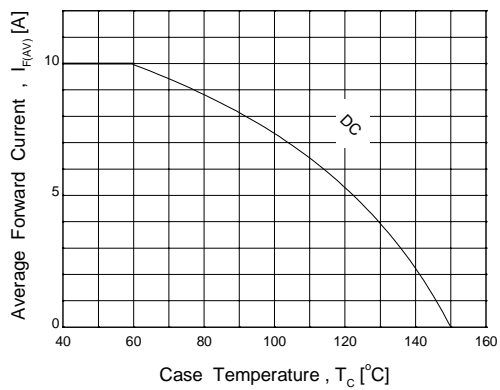
**Figure 3. Typical Junction Capacitance**



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



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

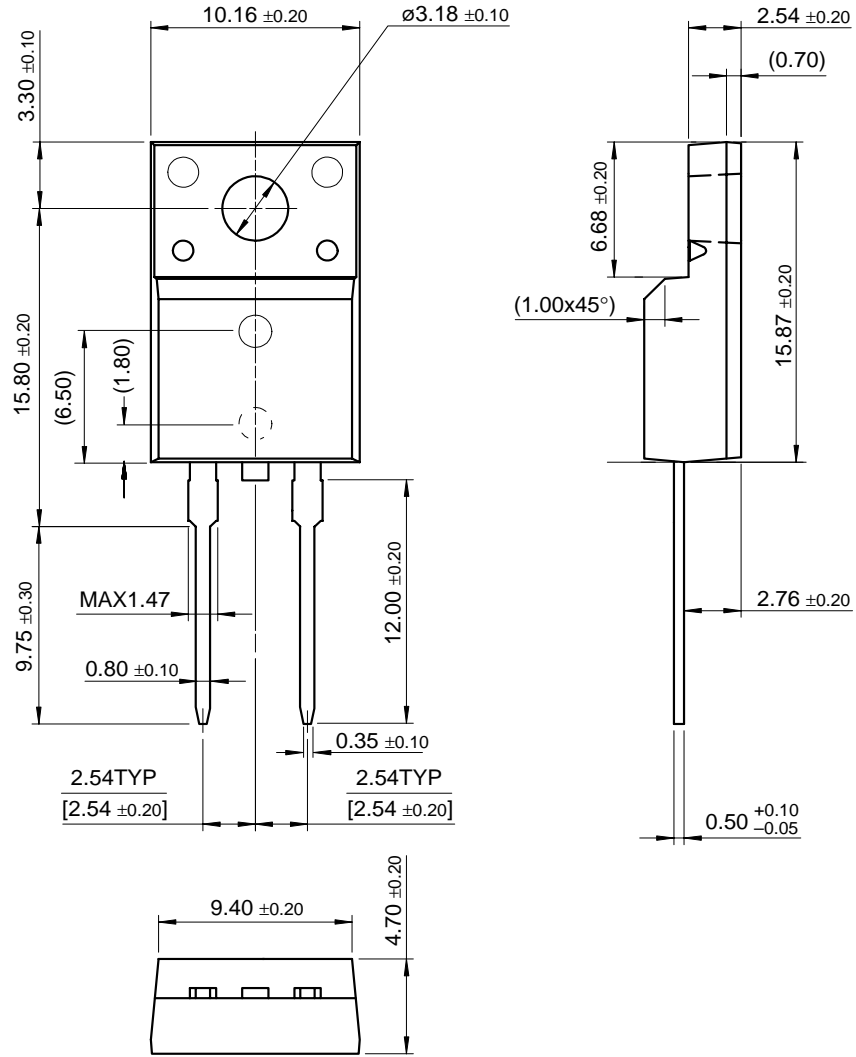


**Figure 6. Forward Current Derating Curve**

# Package Dimensions

## TO-220F-2L

FFPF10UP60S



Dimensions in Millimeters

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