

# FFPF06UP20S

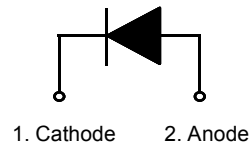
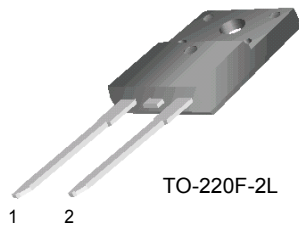
## Ultrafast Rectifier

### Features

- Ultrafast with soft recovery  
(@  $I_F = 1A$ ), < 35ns
- Reverse Voltage, 200V
- Forward Voltage (@  $T_C = 100^\circ C$ ), < 1.1V
- Enhanced Avalanche Energy

### Applications

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



### Absolute Maximum Ratings (per diode) $T_a = 25^\circ C$ 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 $T_a = 25^\circ C$ unless otherwise noted

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

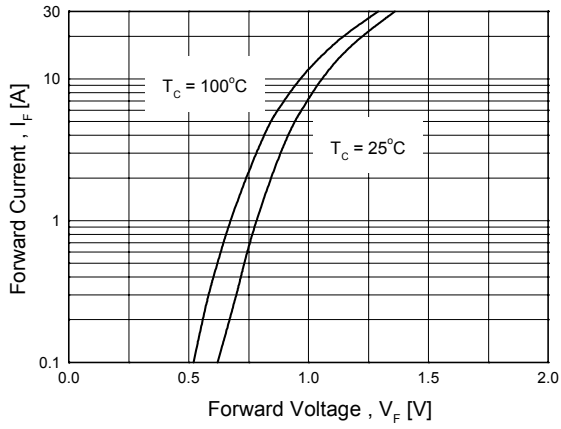
## Electrical Characteristics (per diode) $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Units
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 6\text{A}$ $I_F = 6\text{A}$	- -	- -	1.15 1.10	V
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	- -	- -	100 500	$\mu\text{A}$
$t_{rr}$ $I_{rr}$ $Q_{rr}$	Reverse Recovery Time Reverse Recovery Current Reverse Recovery Charge ( $I_F = 6\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	- - -	31 1.6 24.8	- - -	ns A nC
$t_{rr}$	Maximum Reverse Recovery Time ( $I_F = 1\text{A}$ , $di/dt = 100\text{A}/\mu\text{s}$ )	-	-	35	ns
$W_{AVL}$	Avalanche Energy (L=40mH)	5	-	-	mJ

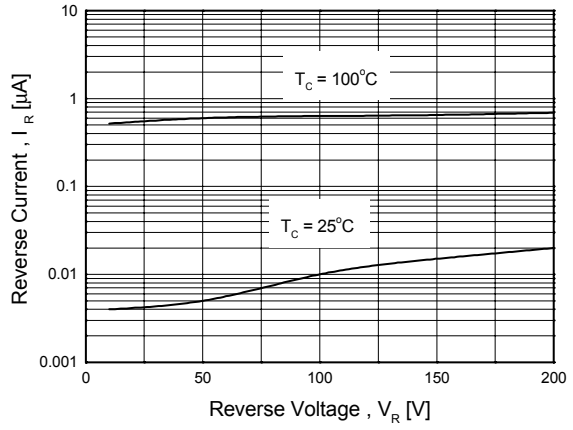
\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%

### Typical Performance Characteristics

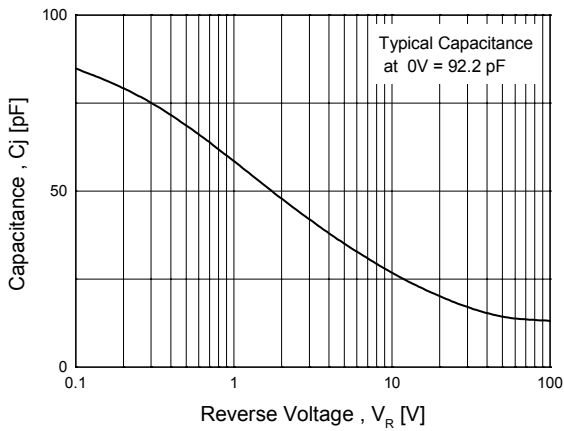
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



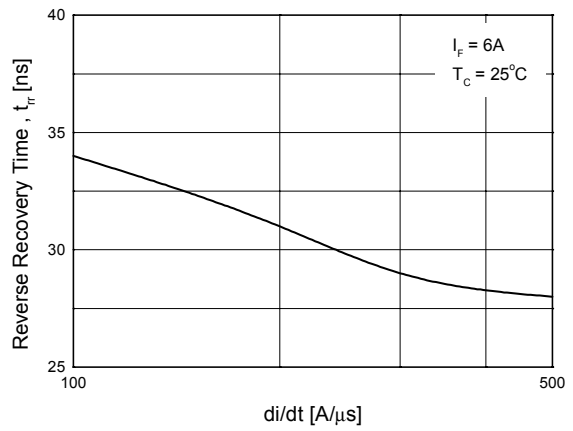
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



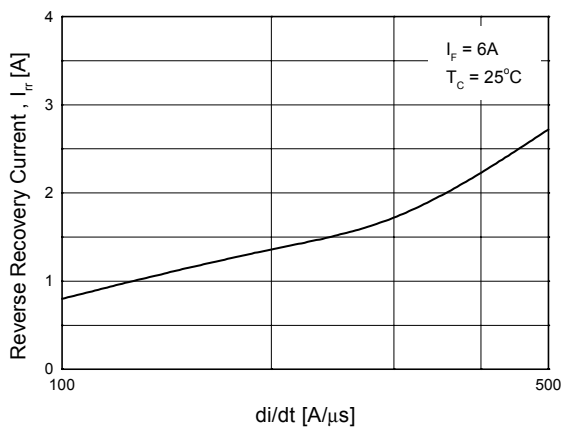
**Figure 3. Typical Junction Capacitance**



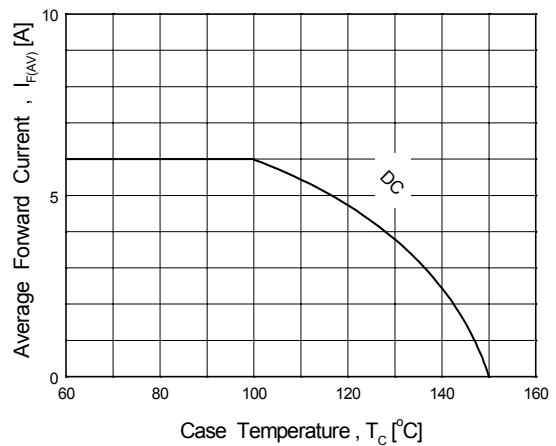
**Figure 4. Typical Reverse Recovery Time vs. di/dt**



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

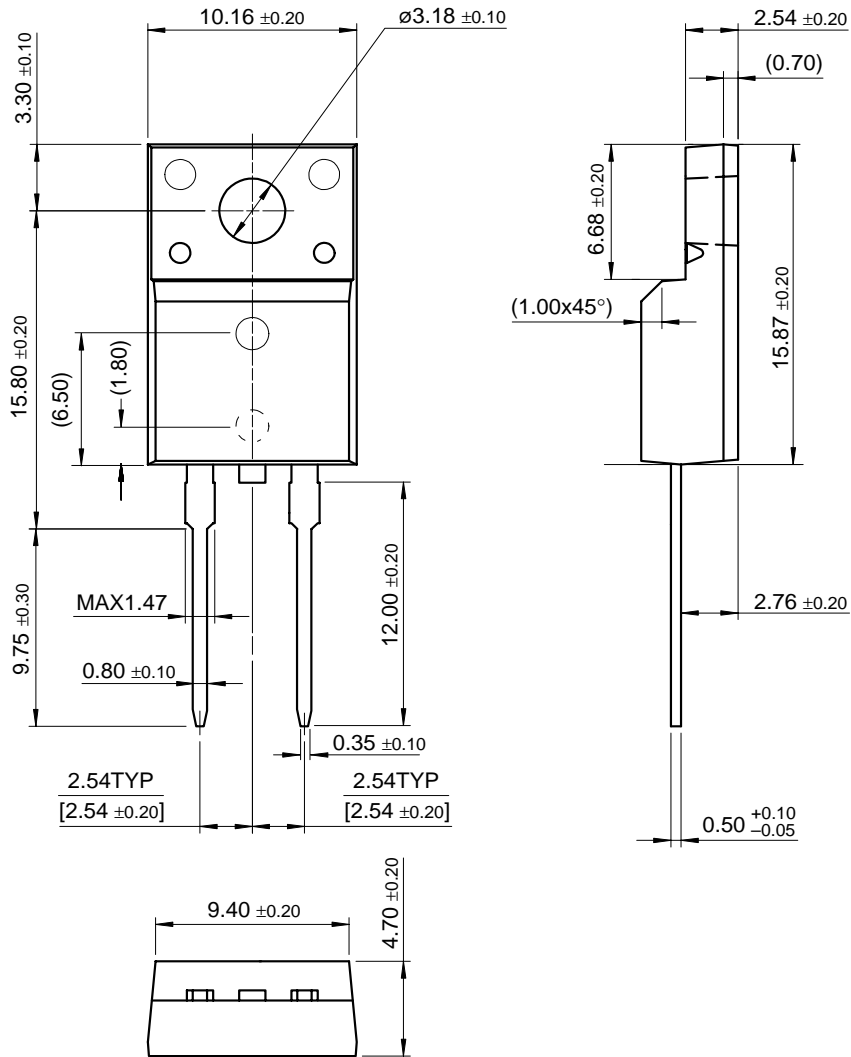


**Figure 6. Forward Current Derating Curve**



Mechanical Dimensions

TO-220F-2L



Dimensions in Millimeters

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.

Rev. I15

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## FFPF06UP20S

6.0A/200V UltraFast Rectifier

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### Features

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[Product status/pricing/packaging](#)

**BUY**

Product	Product status	Pb-free Status	Pricing*	Package type	Leads	Packing method	Package Marking Convention**
FFPF06UP20STU	Full Production		\$0.45	<a href="#">TO-220F</a>	2	RAIL	Line 1: \$Y (Fairchild logo) &Z (Asm. Plant Code) &4 (4-Digit Date Code)

\* Fairchild 1,000 piece Budgetary Pricing

\*\* A sample button will appear if the part is available through Fairchild's on-line samples program. If there is no sample button, please

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