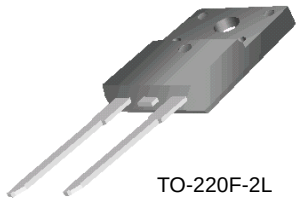
FAIRCHILD
SEMICONDUCTOR®

FFPF10UP20S

Features

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



TO-220F-2L

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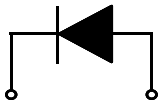


1. Cathode 2. Anode

Applications

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

Ultrafast Rectifier

Absolute Maximum Ratings T_C=25°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°C	10	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	100	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	°C

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	4.3	°C/W

Electrical Characteristics T_C=25 °C unless otherwise noted

Symbol	Parameter		Min.	Typ.	Max.	Units
V_{FM} *	Maximum Instantaneous Forward Voltage					V
	I_F = 10A	T_C = 25 °C	-	-	1.1	
	I_F = 10A	T_C = 100 °C	-	-	1.15	
I_{RM} *	Maximum Instantaneous Reverse Current					µA
	@ rated V_R	T_C = 25 °C	-	-	100	
		T_C = 100 °C	-	-	500	
t_{rr}	Reverse Recovery Time		-	32	-	ns
I_{rr}	Reverse Recovery Current		-	1.65	-	A
Q_{rr}	Reverse Recovery Charge		-	26.4	-	nC
	(I_F =10A, di/dt = 200A/µs)					
t_{rr}	Maximum Reverse Recovery Time		-	-	35	ns
	(I_F =1A, di/dt = 100A/µs)					
W_{AVL}	Avalanche Energy (L=40mH)		5	-	-	mJ

* Pulse Test: Pulse Width=300µs, Duty Cycle=2%

Typical Characteristics

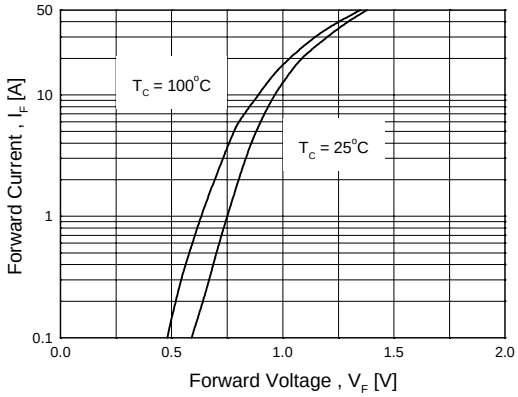


Figure 1. Typical Forward Voltage Drop vs. Forward Current

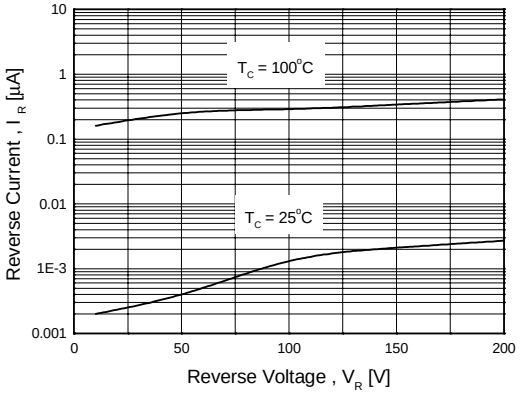


Figure 2. Typical Reverse Current vs. Reverse Voltage

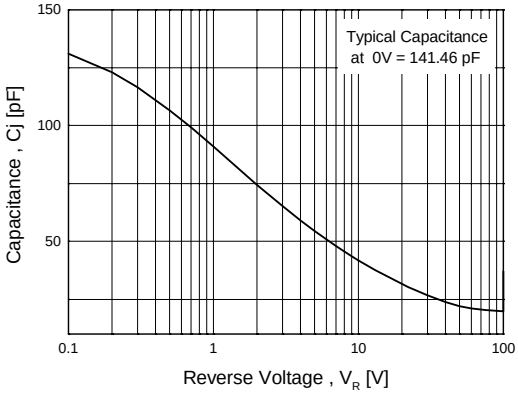


Figure 3. Typical Junction Capacitance

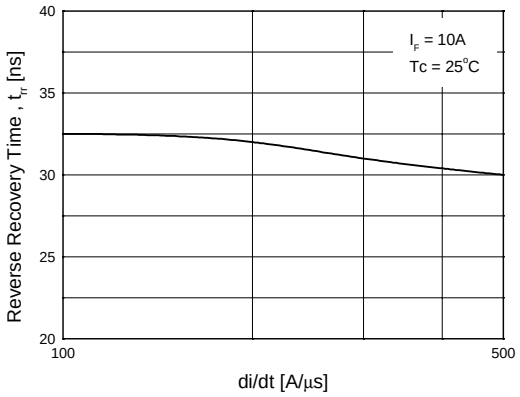


Figure 4. Typical Reverse Recovery Time vs. di/dt

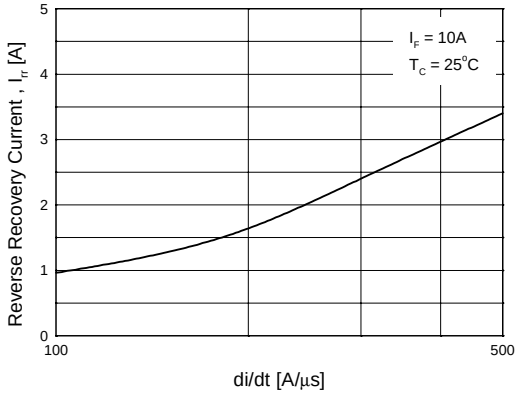


Figure 5. Typical Reverse Recovery Current vs. di/dt

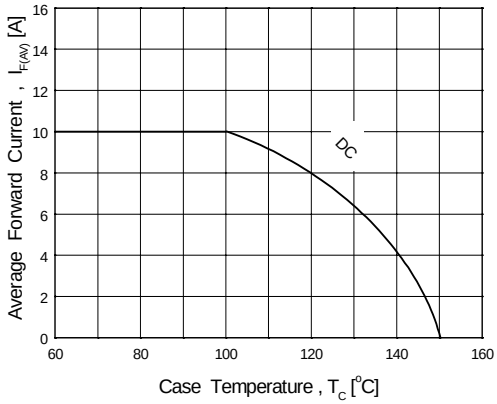
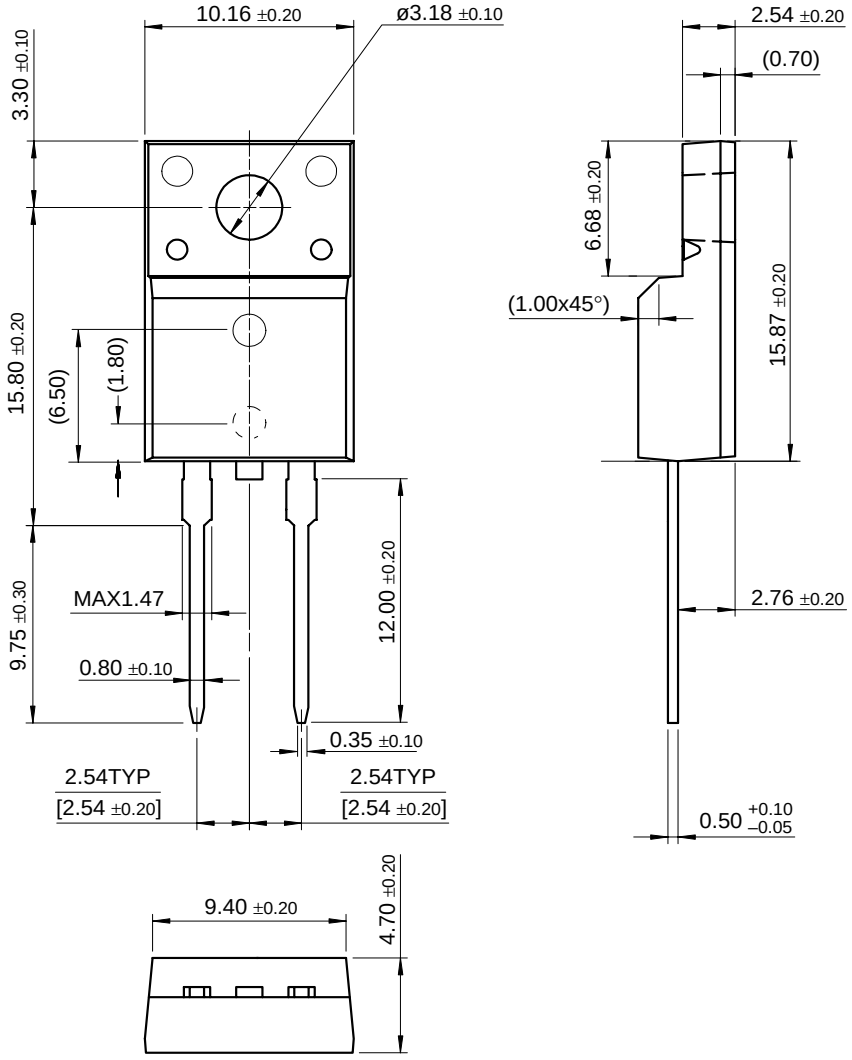


Figure 6. Forward Current Derating Curve

Package Dimensions

TO-220F-2L



Dimensions in Millimeters

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