FAIRCHILD
SEMICONDUCTOR®

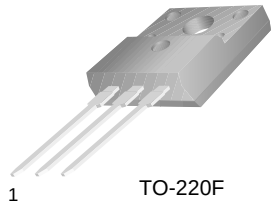
FFPF20UP30DN
Ultrafast Recovery Power Rectifier

Features

- Ultrafast with Soft Recovery : < 45ns
- High Reverse Voltage : V_{RRM} = 300V
- Avalanche Energy Rated
- Planar Construction

Applications

- General purpose
- Switching Mode Power Supply
- Free-wheeling diode for motor application
- Power switching circuits



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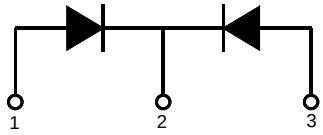
TO-220F
1.Anode 2.Cathode 3.Anode



1. Anode 2. Cathode 3. Anode

Absolute Maximum Ratings (per diode) T_a = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	300	V
V_{RWM}	Working Peak Reverse Voltage	300	V
V_R	DC Blocking Voltage	300	V
$I_{F(AV)}$	Average Rectified Forward Current @ T_C = 125°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 T_a = 25°C unless otherwise noted

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	4.0	°C/W

Electrical Characteristics (per diode) T_a = 25°C unless otherwise noted

Symbol	Parameter		Min.	Typ.	Max.	Units
V_{FM} *	I_F = 10A I_F = 10A	T_C = 25 °C T_C = 150 °C	- -	- -	1.3 1.2	V V
I_{RM} *	V_R = 300V V_R = 300V	T_C = 25 °C T_C = 150 °C	- -	- -	100 500	μA μA
t_{rr}	I_F =1A, di/dt = 100A/μs, V_{CC} = 30V I_F =10A, di/dt = 200A/μs, V_{CC} = 195V	T_C = 25 °C T_C = 25 °C	- -	- -	35 45	ns ns
t_a t_b Q_{rr}	I_F =10A, di/dt = 200A/μs, V_{CC} = 195V	T_C = 25 °C T_C = 25 °C T_C = 25 °C	- - -	11 13 20	- - -	ns ns nC
W_{AVL}	Avalanche Energy (L = 20mH)		20	-	-	mJ

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

Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop

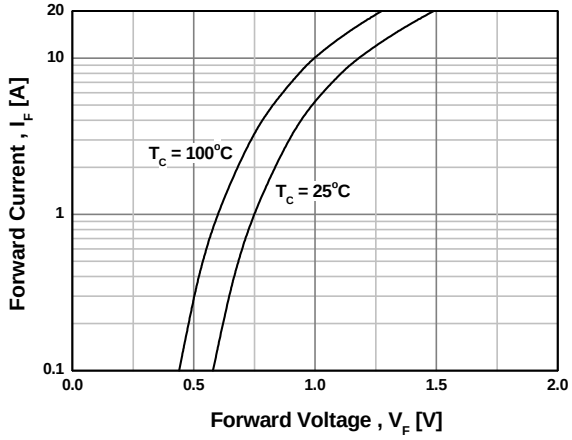


Figure 2. Typical Reverse Current

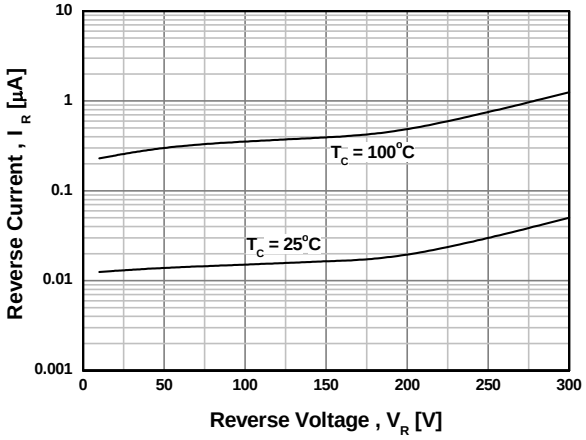


Figure 3. Typical Junction Capacitance

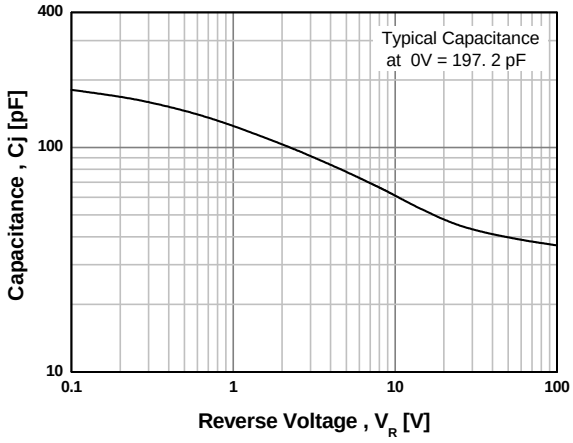


Figure 4. Typical Reverse Recovery Time

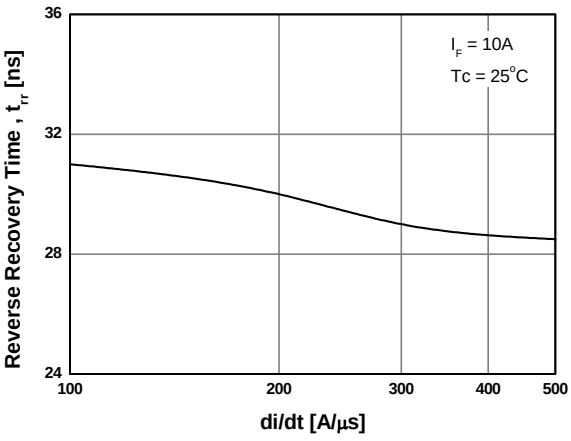


Figure 5. Typical Reverse Recovery Current

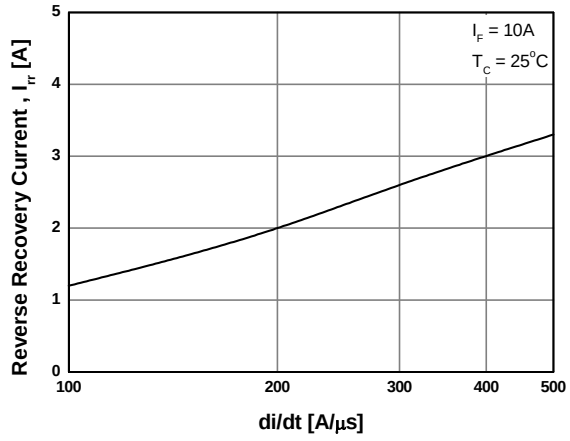
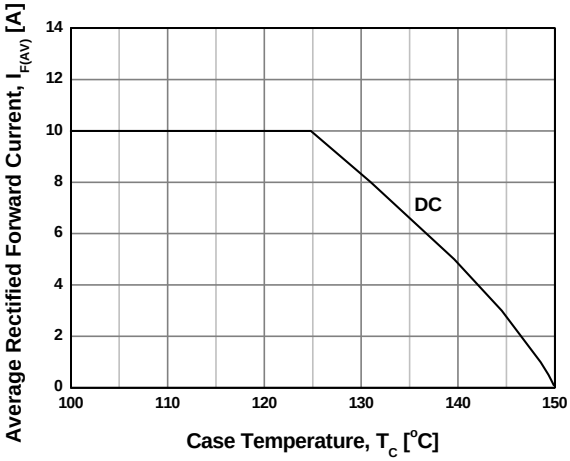
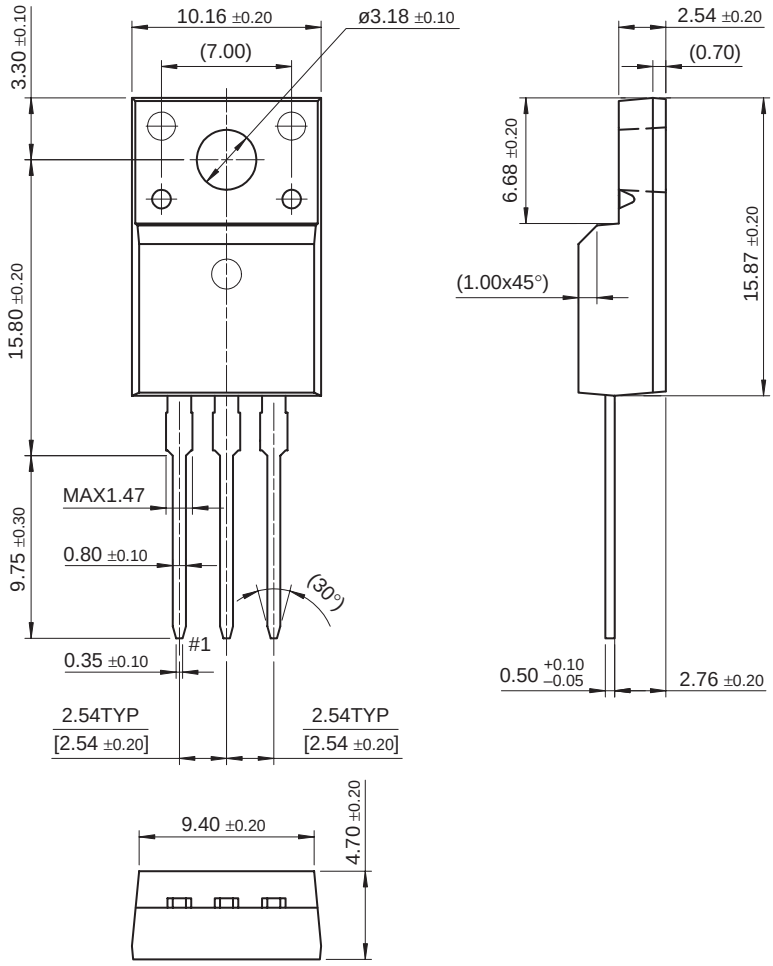


Figure 6. Forward Current Deration Curve



Package Demensions

TO-220F



Dimensions in Millimeters

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