FAIRCHILD SEMICONDUCTOR™

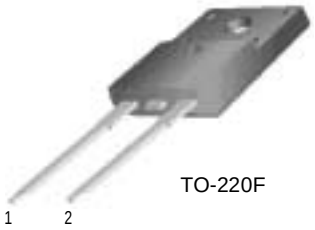
FFPF20U40S

Features

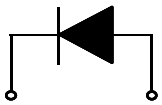
- Ultrafast with soft recovery
- Low forward voltage

Applications

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



TO-220F



1. Cathode 2. Anode

ULTRA FAST RECOVERY RECTIFIER

Absolute Maximum Ratings T_C=25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	400	V
$I_{F(AV)}$	Average Rectified Forward Current @ T_C = 100°C	20	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	200	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	2.0	°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 = 20A	T_C = 25 °C	-	-	1.4	
	I_F = 20A	T_C = 100 °C	-	-	1.3	
I_{RM} *	Maximum Instantaneous Reverse Current					µA
	@ rated V_R	T_C = 25 °C	-	-	50	
		T_C = 100 °C	-	-	500	
t_{rr}	Maximum Reverse Recovery Time		-	-	50	ns
I_{rr}	Maximum Reverse Recovery Current		-	-	5.5	A
Q_{rr}	Maximum Reverse Recovery Charge (I_F =20A, di/dt = 200A/µs)		-	-	138	nC
W_{AVL}	Avalanche Energy		1.0	-	-	mJ

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

Typical Characteristics

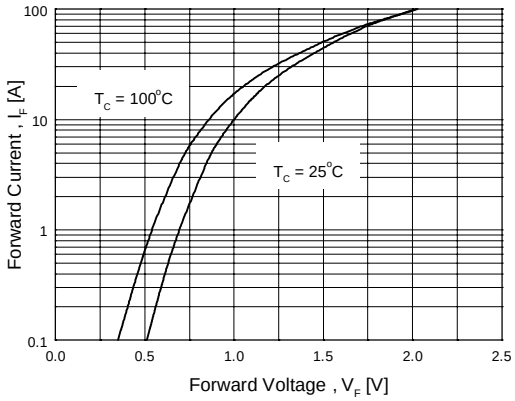


Figure 1. Typical Forward Voltage Drop vs. Forward Current

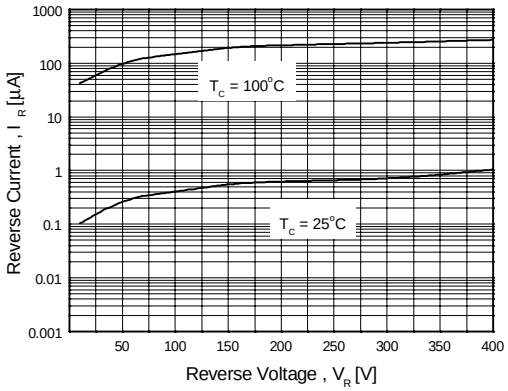


Figure 2. Typical Reverse Current vs. Reverse Voltage

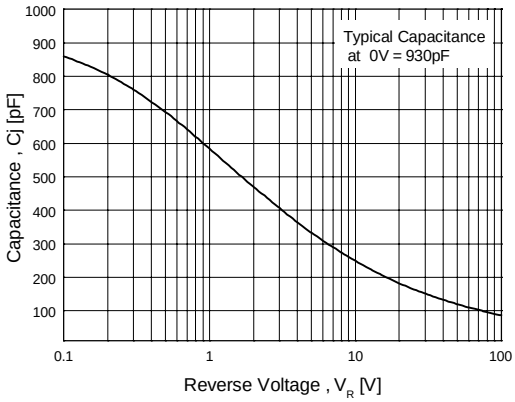


Figure 3. Typical Junction Capacitance

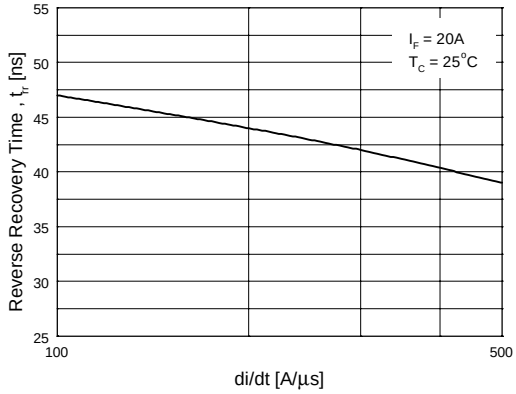


Figure 4. Typical Reverse Recovery Time vs. di/dt

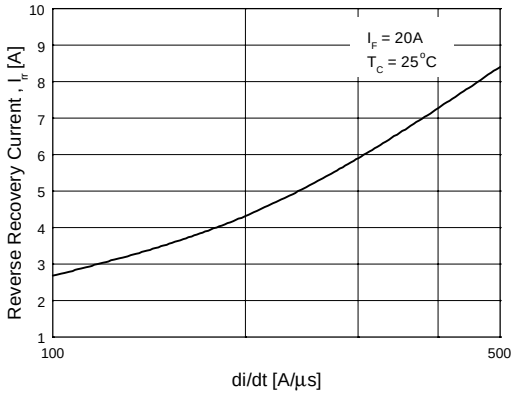


Figure 5. Typical Reverse Recovery Current vs. di/dt

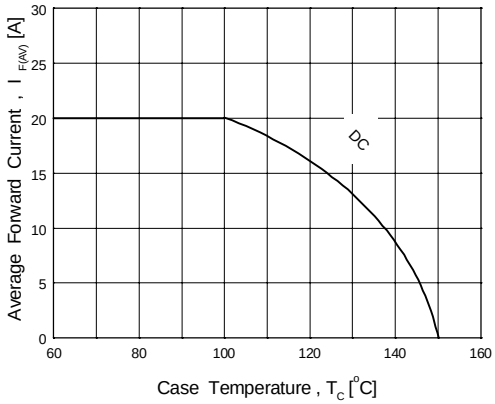
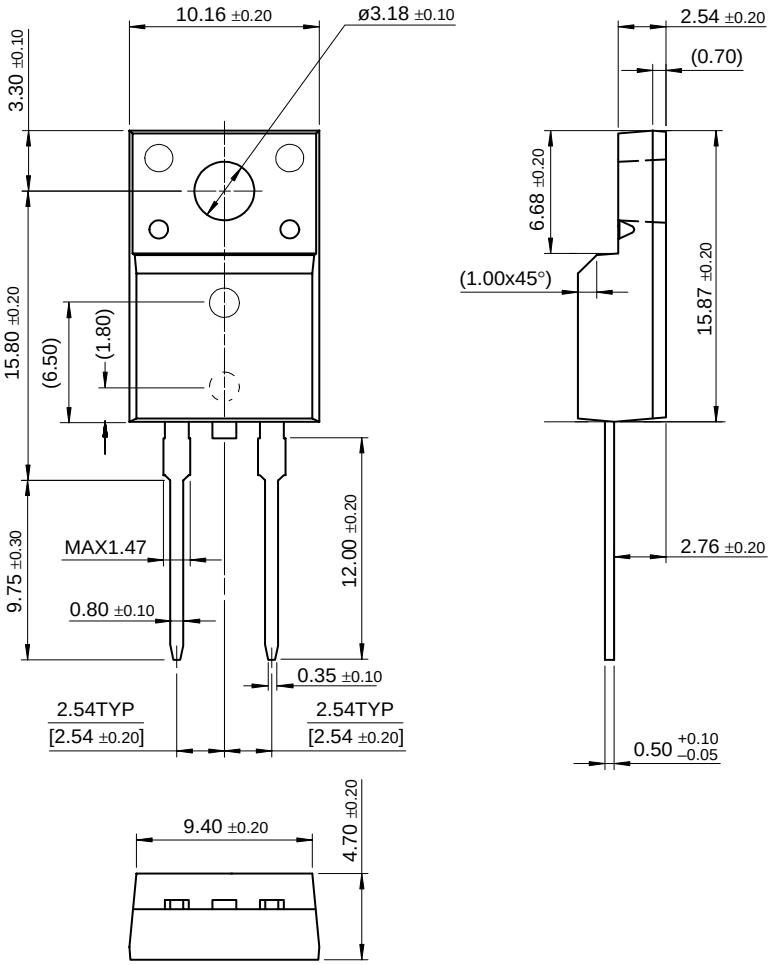


Figure 6. Forward Current Derating Curve

Package Dimensions

TO-220F 2L



Dimensions in Millimeters

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