FAIRCHILD SEMICONDUCTOR™

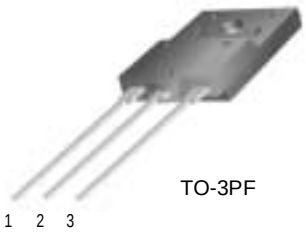
FFAF10U120DN

Features

- High voltage and high reliability
- High speed switching
- Low forward voltage

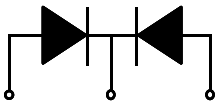
Applications

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



TO-3PF

1 2 3



1. Anode 2.Cathode 3. Anode

ULTRA FAST RECOVERY POWER RECTIFIER

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

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	1200	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	60	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	1.5	°C/W

Electrical Characteristics (per diode) 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	-	-	3.5	
	I_F = 10A	T_C = 100 °C	-	-	3.2	
I_{RM} *	Maximum Instantaneous Reverse Current					μA
	@ rated V_R	T_C = 25 °C	-	-	10	
		T_C = 100 °C	-	-	800	
t_{rr}	Maximum Reverse Recovery Time		-	-	100	ns
I_{rr}	Maximum Reverse Recovery Current		-	-	8	A
Q_{rr}	Maximum Reverse Recovery Charge (I_F =10A, di/dt = 200A/μs)		-	-	360	nC
W_{AVL}	Avalanche Energy		1.0	-	-	mJ

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

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Typical Characteristics

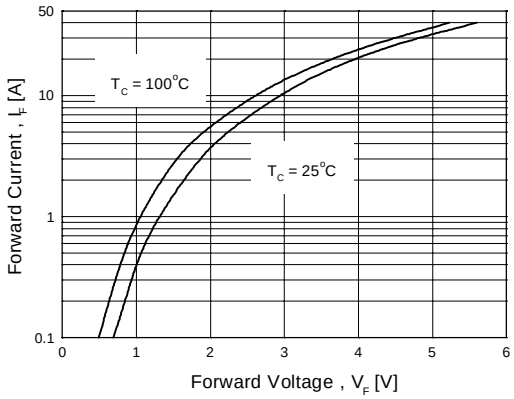


Figure 1. Typical Forward Voltage Drop vs. Forward Current

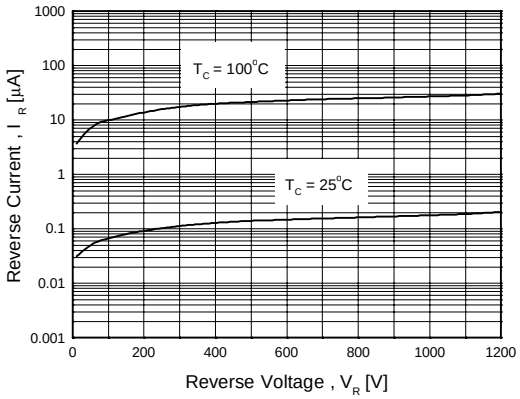


Figure 2. Typical Reverse Current vs. Reverse Voltage

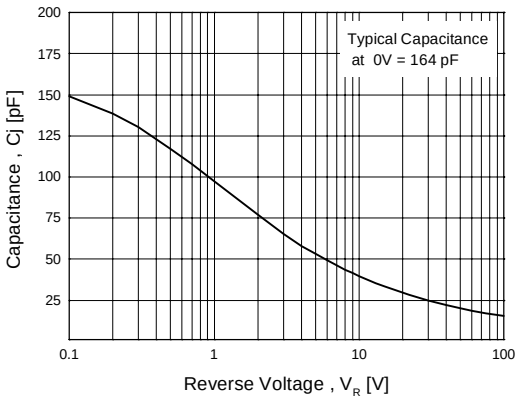


Figure 3. Typical Junction Capacitance

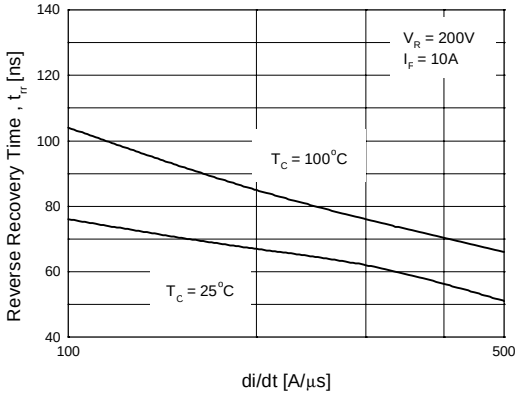


Figure 4. Typical Reverse Recovery Time vs. di/dt

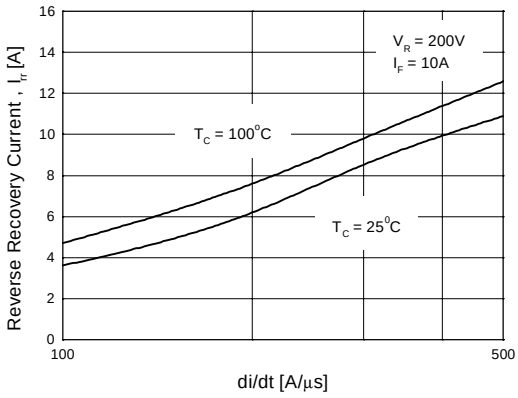


Figure 5. Typical Reverse Recovery Current vs. di/dt

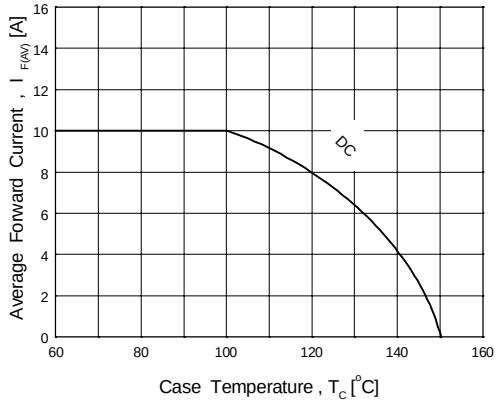
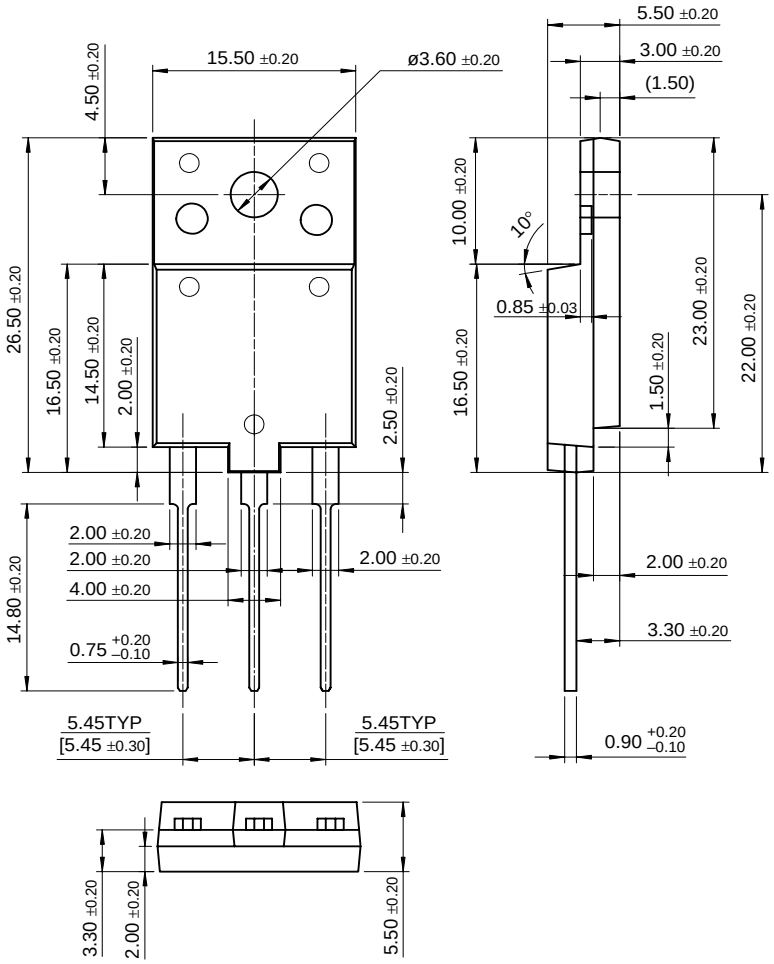


Figure 6. Forward Current Derating Curve

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Package Dimensions

TO-3PF



Dimensions in Millimeters

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