

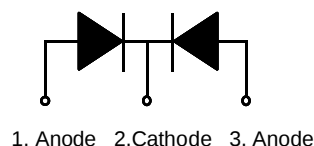
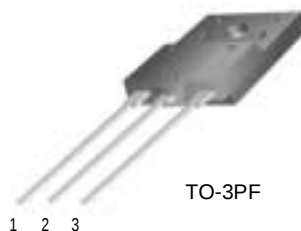
FFAF10U120DN

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



ULTRA FAST RECOVERY POWER RECTIFIER

Absolute Maximum Ratings (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	1200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	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	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.5	$^\circ\text{C/W}$

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

Symbol	Parameter	Min.	Typ.	Max.	Units
V_{FM}^*	Maximum Instantaneous Forward Voltage				V
	$I_F = 10\text{A}$	-	-	3.5	
	$I_F = 10\text{A}$	-	-	3.2	
I_{RM}^*	Maximum Instantaneous Reverse Current				μA
	@ rated V_R				
	$T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	- -	- -	10 800	
t_{rr}	Maximum Reverse Recovery Time	-	-	100	ns
I_{rr}	Maximum Reverse Recovery Current	-	-	8	A
Q_{rr}	Maximum Reverse Recovery Charge ($I_F = 10\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)	-	-	360	nC
W_{AVL}	Avalanche Energy	1.0	-	-	mJ

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

Typical Characteristics

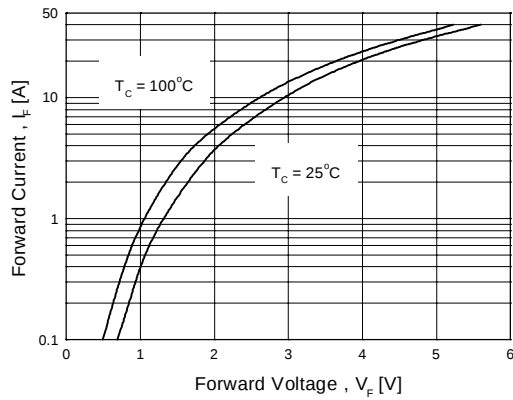


Figure 1. Typical Forward Voltage Drop vs. Forward Current

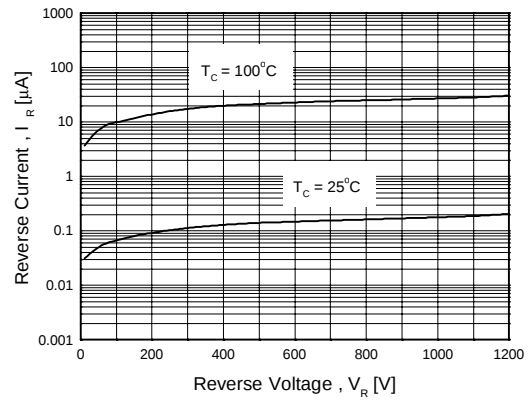


Figure 2. Typical Reverse Current vs. Reverse Voltage

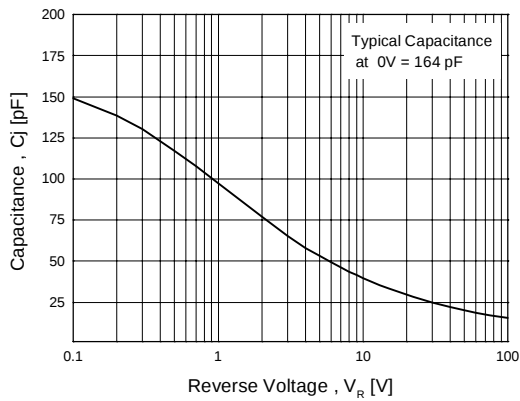


Figure 3. Typical Junction Capacitance

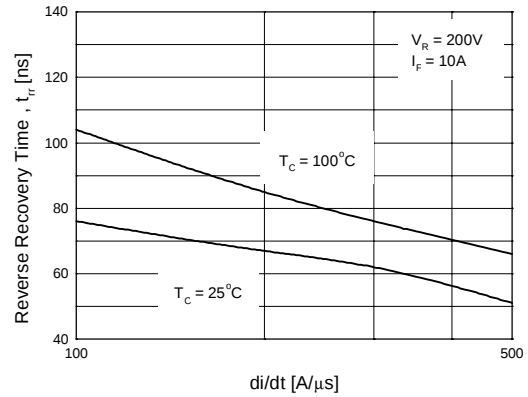


Figure 4. Typical Reverse Recovery Time vs. di/dt

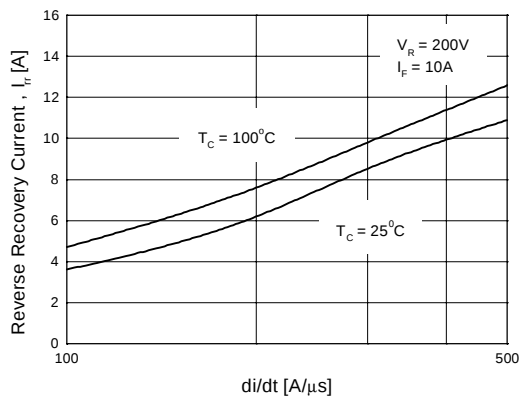


Figure 5. Typical Reverse Recovery Current vs. di/dt

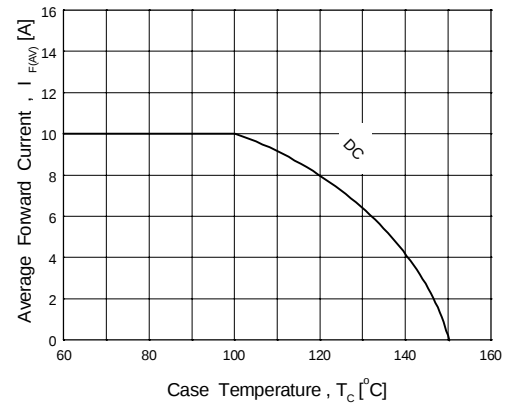


Figure 6. Forward Current Derating Curve

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Technical drawing of a mechanical part, showing three views: Front View, Side View, and Top View. All dimensions are in millimeters (mm).

Front View Dimensions:

- Overall Width: 15.50 ± 0.20
- Overall Height: 26.50 ± 0.20
- Top Flange Height: 4.50 ± 0.20
- Central Slot Height: 14.50 ± 0.20
- Slot Width: 2.00 ± 0.20
- Bottom Flange Height: 2.50 ± 0.20
- Pin Diameter: $\varnothing 3.60 \pm 0.20$
- Pin Spacing (Center-to-Center): 2.00 ± 0.20
- Pin Length (from bottom flange): 14.80 ± 0.20
- Pin Tip Diameter: $0.75^{+0.20}_{-0.10}$
- Pin Tip Length (from bottom flange): 4.00 ± 0.20
- Pin Tip Width: 2.00 ± 0.20
- Material/Finish: 5.45TYP [5.45 ± 0.30]

Side View Dimensions:

- Overall Width: 5.50 ± 0.20
- Overall Height: 22.00 ± 0.20
- Top Flange Height: 3.00 ± 0.20
- Slot Height: 10.00 ± 0.20
- Slot Width: 0.85 ± 0.03
- Slot Angle: 10°
- Bottom Flange Height: 1.50 ± 0.20
- Pin Length (from bottom flange): 16.50 ± 0.20
- Pin Tip Diameter: $0.90^{+0.20}_{-0.10}$
- Pin Tip Length (from bottom flange): 3.30 ± 0.20
- Pin Tip Width: 2.00 ± 0.20
- Material/Finish: 5.45TYP [5.45 ± 0.30]

Top View Dimensions:

- Overall Width: 5.50 ± 0.20
- Overall Depth: 14.80 ± 0.20
- Pin Spacing (Center-to-Center): 2.00 ± 0.20
- Pin Tip Diameter: $0.75^{+0.20}_{-0.10}$
- Pin Tip Length (from bottom flange): 4.00 ± 0.20
- Pin Tip Width: 2.00 ± 0.20
- Material/Finish: 5.45TYP [5.45 ± 0.30]

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