

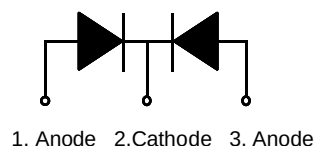
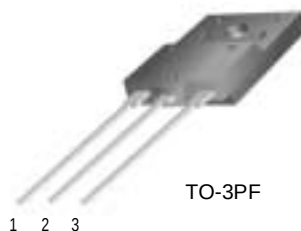
FFAF10U120DN

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	
	$T_C = 25^\circ\text{C}$	-	-	3.2	
I_{RM}^*	Maximum Instantaneous Reverse Current				μA
	@ rated V_R				
	$T_C = 25^\circ\text{C}$	-	-	10	
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

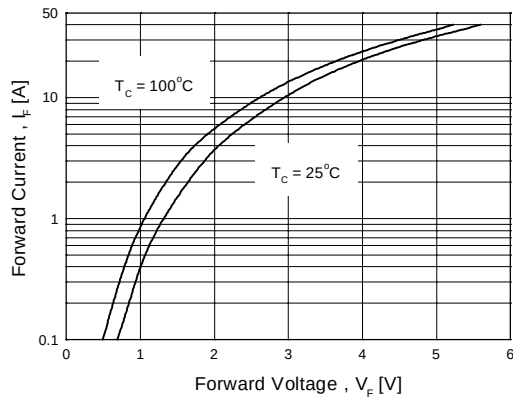


Figure 1. Typical Forward Voltage Drop vs. Forward Current

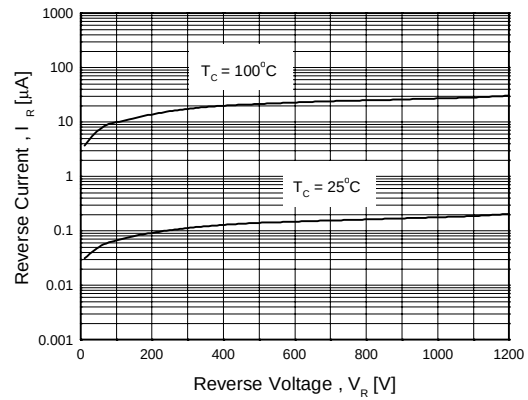


Figure 2. Typical Reverse Current vs. Reverse Voltage

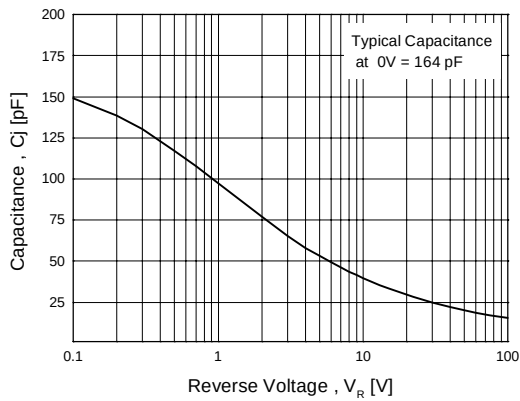


Figure 3. Typical Junction Capacitance

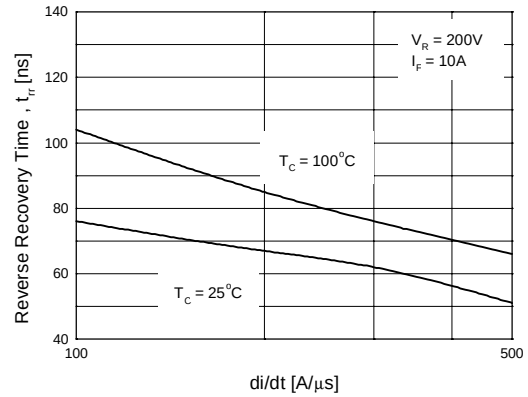


Figure 4. Typical Reverse Recovery Time vs. di/dt

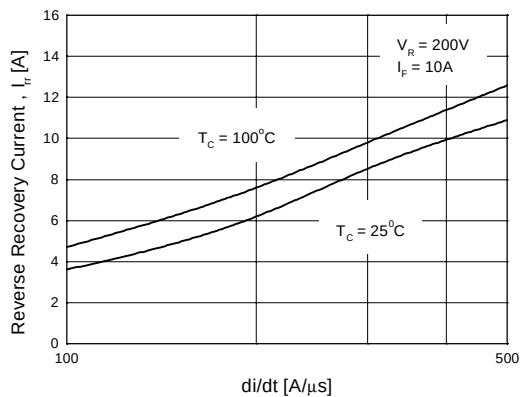


Figure 5. Typical Reverse Recovery Current vs. di/dt

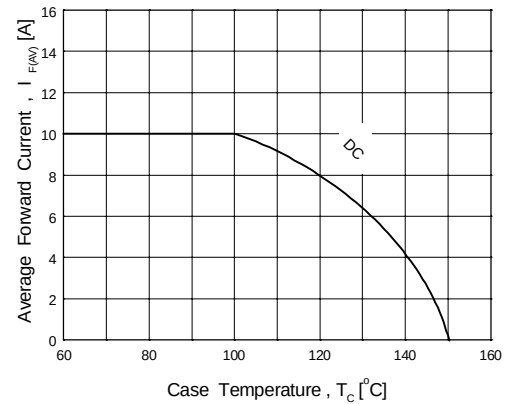


Figure 6. Forward Current Derating Curve

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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 Section Height: 4.50 ± 0.20
- Central Slot Width: 2.00 ± 0.20
- Slot Depth: 2.50 ± 0.20
- Pin Diameter: $\varnothing 3.60 \pm 0.20$
- Pin Spacing (Center-to-Center): 4.00 ± 0.20
- Pin Length (from slot bottom): 14.80 ± 0.20
- Pin Tip Tolerance: $+0.20 / -0.10$
- Bottom Section Width: $5.45 \text{ TYP} [5.45 \pm 0.30]$

Side View Dimensions:

- Overall Height: 23.00 ± 0.20
- Top Section Height: 3.00 ± 0.20
- Chamfer Angle: 10°
- Chamfer Width: 0.85 ± 0.03
- Bottom Section Height: 1.50 ± 0.20
- Pin Diameter: $\varnothing 3.60 \pm 0.20$
- Pin Spacing (Center-to-Center): 4.00 ± 0.20
- Pin Length (from bottom): 16.50 ± 0.20
- Pin Tip Tolerance: $+0.20 / -0.10$

Top View Dimensions:

- Overall Width: $5.45 \text{ TYP} [5.45 \pm 0.30]$
- Overall Height: $5.45 \text{ TYP} [5.45 \pm 0.30]$
- Pin Spacing (Center-to-Center): 4.00 ± 0.20
- Pin Diameter: $\varnothing 3.60 \pm 0.20$
- Pin Length (from top): 3.30 ± 0.20
- Pin Tip Tolerance: $+0.20 / -0.10$

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Rev. F, September 2000

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