

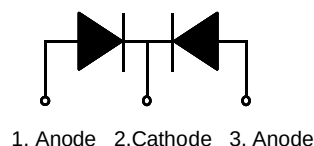
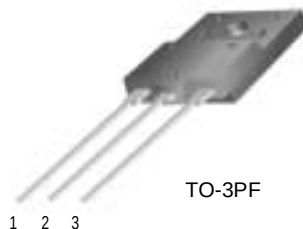
FFAF30U60DN

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	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	30	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	180	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	0.8	$^\circ\text{C/W}$

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 $I_F = 30\text{A}$ $I_F = 30\text{A}$	-	-	2.3	V
				2.1	
I_{RM}^*	Maximum Instantaneous Reverse Current @ rated V_R	-	-	15	μA
				150	
t_{rr}	Maximum Reverse Recovery Time	-	-	90	ns
I_{rr}	Maximum Reverse Recovery Current	-	-	8	A
Q_{rr}	Maximum Reverse Recovery Charge ($I_F=30\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)	-	-	360	nC
W_{AVL}	Avalanche Energy	1.0	-	-	mJ

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

Typical Characteristics

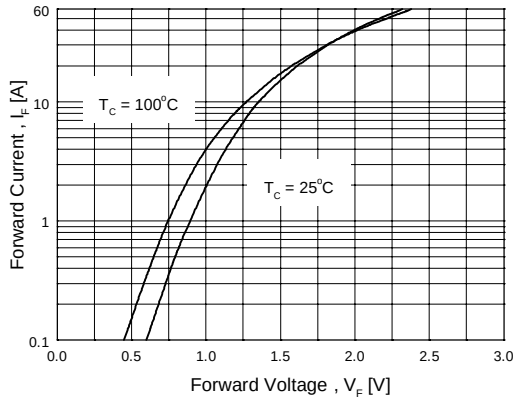


Figure 1. Typical Forward Voltage Drop vs. Forward Current

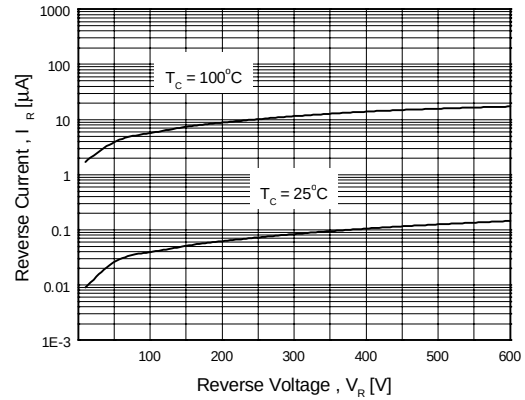


Figure 2. Typical Reverse Current vs. Reverse Voltage

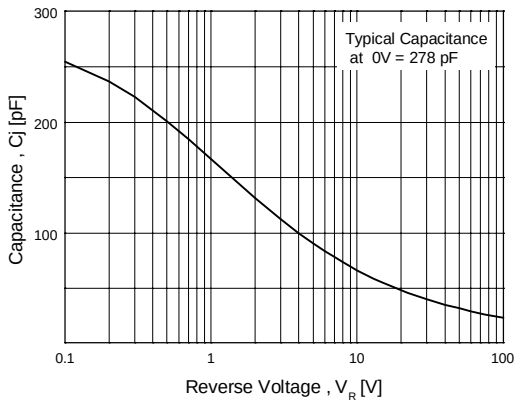


Figure 3. Typical Junction Capacitance

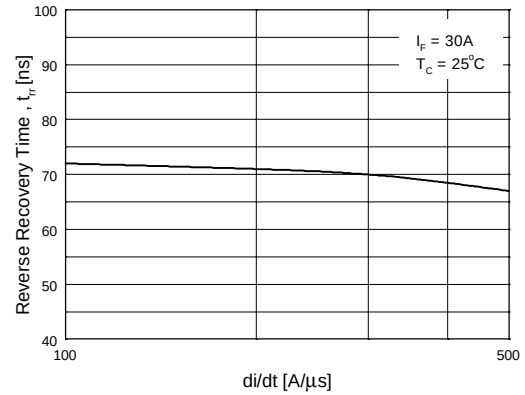


Figure 4. Typical Reverse Recovery Time vs. di/dt

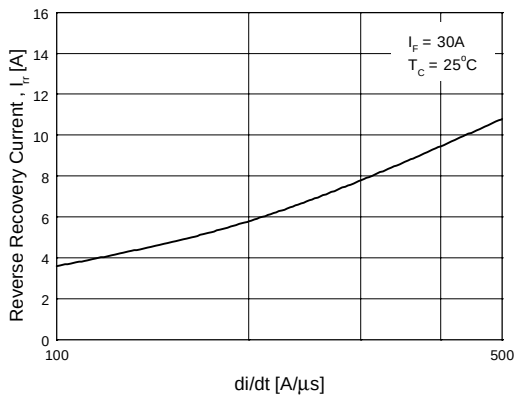


Figure 5. Typical Reverse Recovery Current vs. di/dt

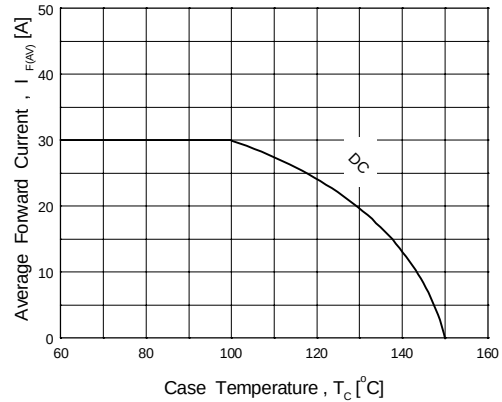


Figure 6. Forward Current Derating Curve

FFAF30U60DN

Technical drawing of a mechanical part, showing three views: front view, side view, and top view. Dimensions are given in millimeters (mm) with tolerances.

Front View Dimensions:

- Overall width: 15.50 ± 0.20
- Overall height: 26.50 ± 0.20
- Top section height: 4.50 ± 0.20
- Central slot height: 14.50 ± 0.20
- Slot width: 2.00 ± 0.20
- Pin diameter: $\varnothing 3.60 \pm 0.20$
- Pin length (from slot bottom): 2.50 ± 0.20
- Pin length (from base): 14.80 ± 0.20
- Pin diameter at base: $0.75^{+0.20}_{-0.10}$
- Pin length (from base to top of pin): 2.00 ± 0.20
- Pin length (from base to bottom of pin): 4.00 ± 0.20
- Pin length (from base to top of pin): 2.00 ± 0.20

Side View Dimensions:

- Overall height: 22.00 ± 0.20
- Top section height: 5.50 ± 0.20
- Section width: 3.00 ± 0.20
- Section width: (1.50)
- Chamfer angle: 10°
- Chamfer length: 0.85 ± 0.03
- Section width: 1.50 ± 0.20
- Section width: 2.00 ± 0.20
- Section width: 3.30 ± 0.20
- Section width: $0.90^{+0.20}_{-0.10}$

Top View Dimensions:

- Overall width: 14.80 ± 0.20
- Overall height: 5.45 ± 0.30
- Section width: 3.30 ± 0.20
- Section width: 2.00 ± 0.20
- Section width: 5.50 ± 0.20

Material and Surface Finish:

- Material: 5.45 TYP
- Surface finish: $[5.45 \pm 0.30]$

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