

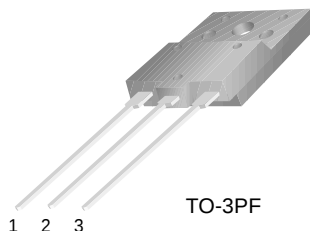
FFAF10U20DN

Features

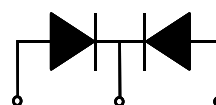
- Ultrafast with soft recovery
- Low forward voltage

Applications

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



TO-3PF



1. Anode 2. Cathode 3. Anode

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	200	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	100	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	4.0	$^\circ\text{C/W}$

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
	$I_F = 10\text{A}$			1.2	
	$T_C = 25^\circ\text{C}$	-	-		
I_{RM}^*	Maximum Instantaneous Reverse Current				μA
	@ rated V_R			10	
	$T_C = 25^\circ\text{C}$	-	-		
t_{rr}	Maximum Reverse Recovery Time	-	-	35	ns
I_{rr}	Maximum Reverse Recovery Current	-	-	2.5	A
Q_{rr}	Maximum Reverse Recovery Charge ($I_F=10\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)	-	-	45	nC
W_{AVL}	Avalanche Energy	0.5	-	-	mJ

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

Typical Characteristics

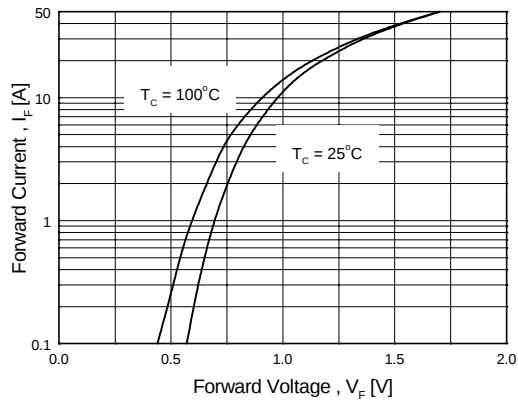


Figure 1. Typical Forward Voltage Drop vs. Forward Current

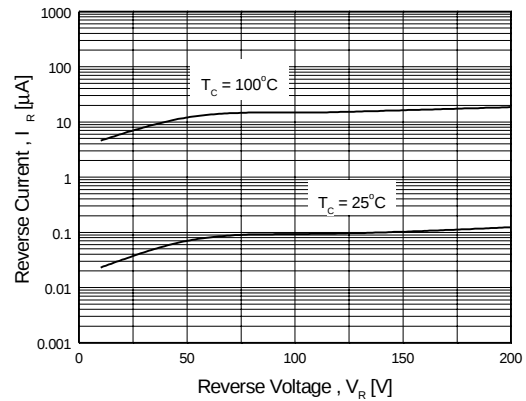


Figure 2. Typical Reverse Current vs. Reverse Voltage

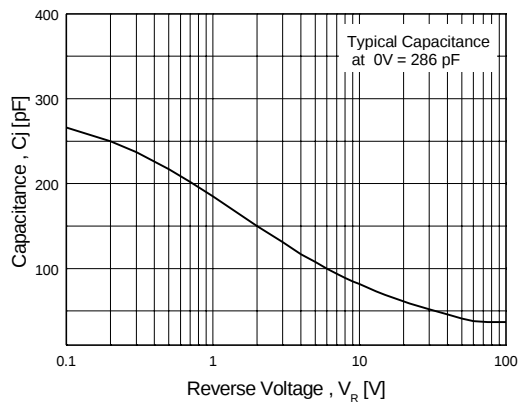


Figure 3. Typical Junction Capacitance

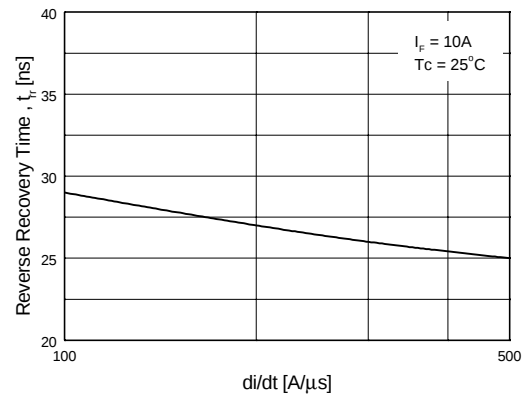


Figure 4. Typical Reverse Recovery Time vs. di/dt

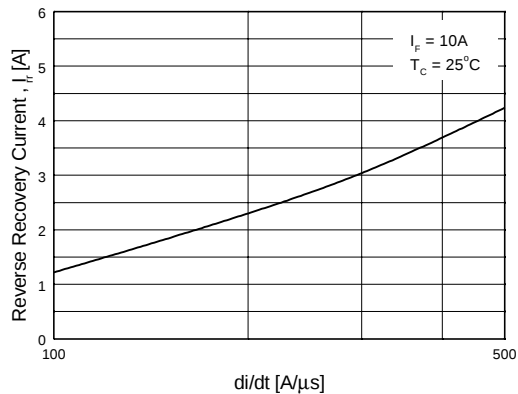


Figure 5. Typical Reverse Recovery Current vs. di/dt

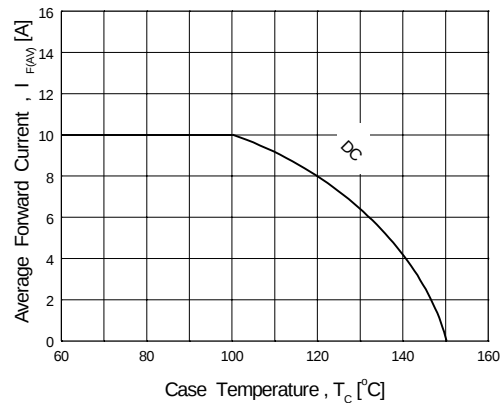


Figure 6. Forward Current Derating Curve

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

Front View Dimensions:

- Overall width: 15.50 ± 0.20
- Overall height: 26.50 ± 0.20
- Top flange height: 4.50 ± 0.20
- Central hole diameter: $\varnothing 3.60 \pm 0.20$
- Distance from top edge to center of central hole: 16.50 ± 0.20
- Distance from top edge to center of side holes: 14.50 ± 0.20
- Distance between side holes: 2.00 ± 0.20
- Bottom flange height: 2.50 ± 0.20
- Distance from bottom edge to center of central hole: 14.80 ± 0.20
- Distance from bottom edge to center of side holes: 10.00 ± 0.20
- Distance between side holes at bottom: 2.00 ± 0.20
- Distance from bottom edge to center of central hole (alternative): $0.75^{+0.20}_{-0.10}$
- Material specification: 5.45TYP [5.45 ± 0.30]

Side View Dimensions:

- Overall height: 22.00 ± 0.20
- Top flange height: 5.50 ± 0.20
- Distance from top edge to center of central hole: 10.00 ± 0.20
- Chamfer angle: 10°
- Distance from top edge to center of side holes: 8.50 ± 0.03
- Distance between side holes: 1.50 ± 0.20
- Bottom flange height: 2.00 ± 0.20
- Distance from bottom edge to center of central hole: $0.90^{+0.20}_{-0.10}$
- Material specification: 5.45TYP [5.45 ± 0.30]

Top View Dimensions:

- Overall width: 5.50 ± 0.20
- Distance from top edge to center of central hole: 3.30 ± 0.20
- Distance from top edge to center of side holes: 2.00 ± 0.20

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