



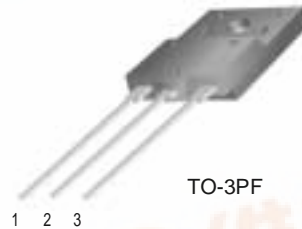
## FFAF10U40DN

### Features

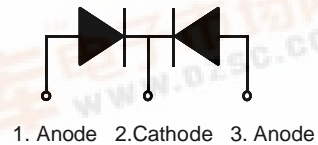
- Ultrafast with soft recovery
- Low forward voltage

### Applications

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



TO-3PF



## 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	400	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	$^\circ\text{C}$

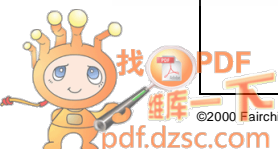
### Thermal Characteristics

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
	$I_F = 10\text{A}$			1.4	
	$T_C = 25^\circ\text{C}$	-	-		
$I_{RM}^*$	Maximum Instantaneous Reverse Current				$\mu\text{A}$
	@ rated $V_R$			30	
	$T_C = 25^\circ\text{C}$	-	-		
$t_{rr}$	Maximum Reverse Recovery Time	-	-	50	ns
$I_{rr}$	Maximum Reverse Recovery Current	-	-	4.5	A
$Q_{rr}$	Maximum Reverse Recovery Charge ( $I_F=10\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	-	-	113	nC
$W_{AVL}$	Avalanche Energy	1.0	-	-	mJ

\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%



## Typical Characteristics

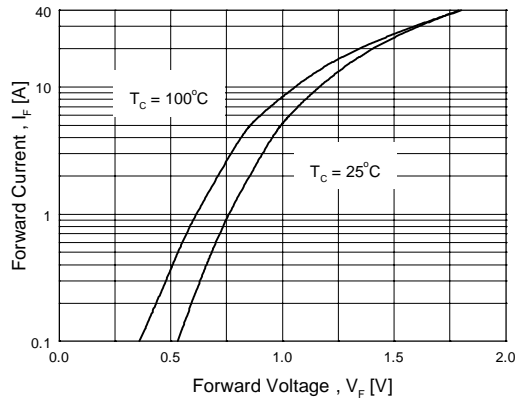


Figure 1. Typical Forward Voltage Drop vs. Forward Current

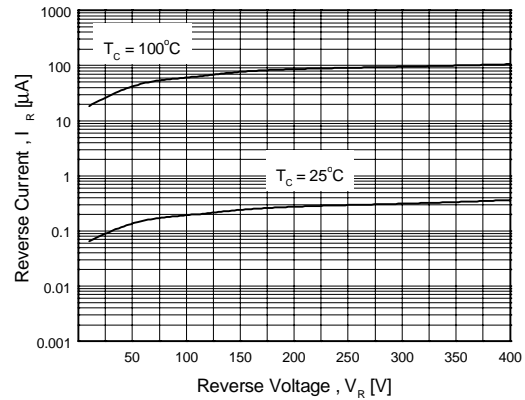


Figure 2. Typical Reverse Current vs. Reverse Voltage

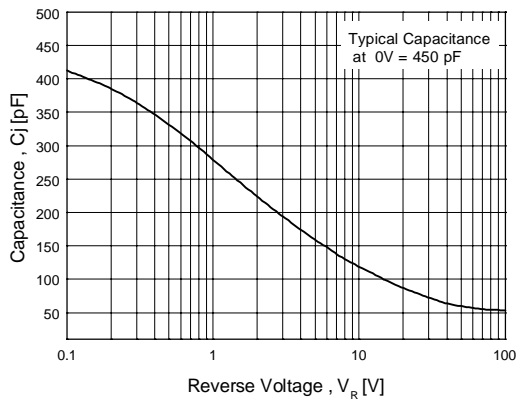


Figure 3. Typical Junction Capacitance

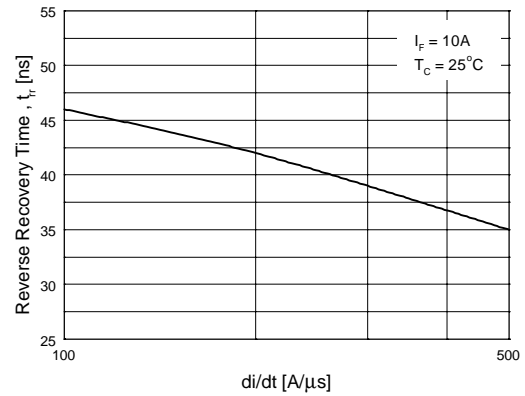


Figure 4. Typical Reverse Recovery Time vs.  $di/dt$

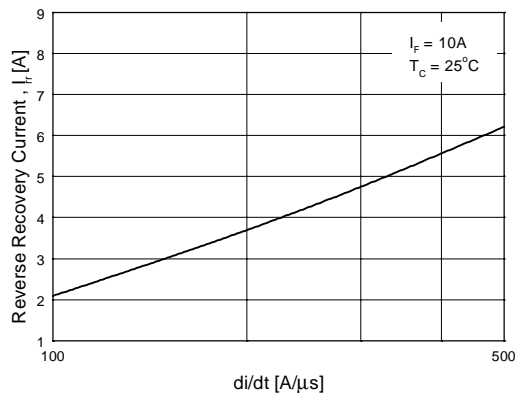


Figure 5. Typical Reverse Recovery Current vs.  $di/dt$

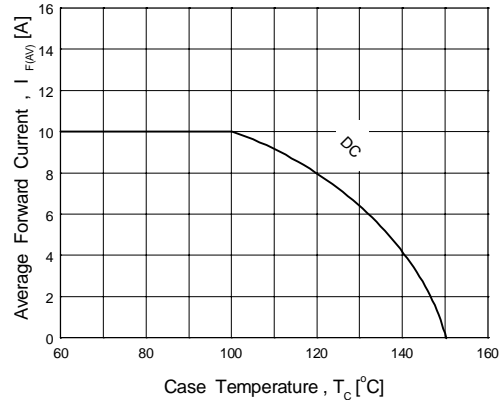


Figure 6. Forward Current Derating Curve

## FFAF10U40DN

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

**Front View Dimensions:**

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

**Side View Dimensions:**

- Overall Height:  $22.00 \pm 0.20$
- Top Flange Height:  $5.50 \pm 0.20$
- Central Slot Width:  $2.00 \pm 0.20$
- Slot Depth:  $2.50 \pm 0.20$
- Pin Diameter:  $\varnothing 3.60 \pm 0.20$
- Pin Spacing (Center-to-Center):  $15.50 \pm 0.20$
- Pin Length (from slot bottom):  $14.80 \pm 0.20$
- Pin Diameter (from slot bottom):  $2.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $2.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $4.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $0.75^{+0.20}_{-0.10}$
- Material Specification:  $5.45\text{TYP}$  [ $5.45 \pm 0.30$ ]

**Top View Dimensions:**

- Overall Width:  $5.45\text{TYP}$  [ $5.45 \pm 0.30$ ]
- Overall Depth:  $3.30 \pm 0.20$
- Pin Spacing (Center-to-Center):  $15.50 \pm 0.20$
- Pin Length (from slot bottom):  $14.80 \pm 0.20$
- Pin Diameter (from slot bottom):  $2.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $2.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $4.00 \pm 0.20$
- Pin Diameter (from slot bottom):  $0.75^{+0.20}_{-0.10}$
- Material Specification:  $5.45\text{TYP}$  [ $5.45 \pm 0.30$ ]

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