



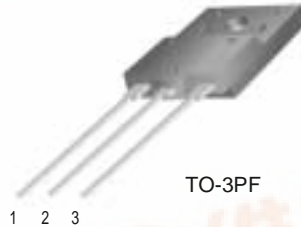
## FFAF20U20DN

### Features

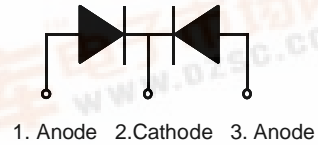
- Ultrafast with soft recovery
- Low forward voltage

### 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	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	20	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	200	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	- 65 to +150	$^\circ\text{C}$

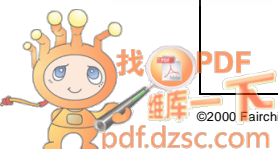
### Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	2.1	$^\circ\text{C}/\text{W}$

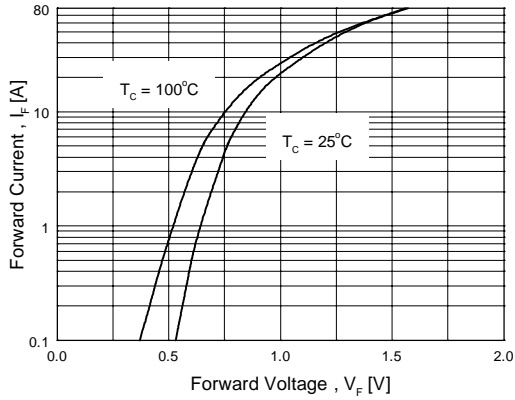
### Electrical Characteristics (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Units
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 20\text{A}$ $I_F = 20\text{A}$	$T_C = 25^\circ\text{C}$	-	1.2	V
		$T_C = 100^\circ\text{C}$	-	1.0	
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ\text{C}$	-	20	$\mu\text{A}$
		$T_C = 100^\circ\text{C}$	-	200	
$t_{rr}$	Maximum Reverse Recovery Time	-	-	40	ns
$I_{rr}$	Maximum Reverse Recovery Current	-	-	4.0	A
$Q_{rr}$	Maximum Reverse Recovery Charge ( $I_F = 20\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	-	-	80	nC
$W_{AVL}$	Avalanche Energy	0.5	-	-	mJ

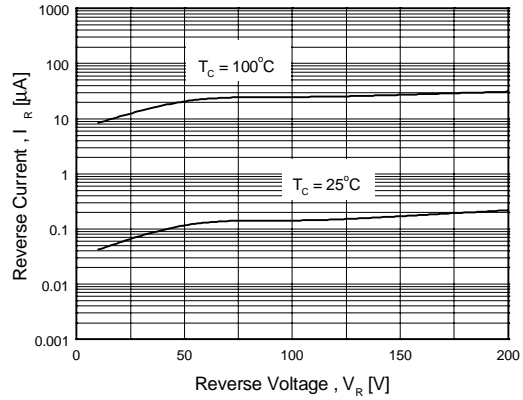
\* Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle=2%



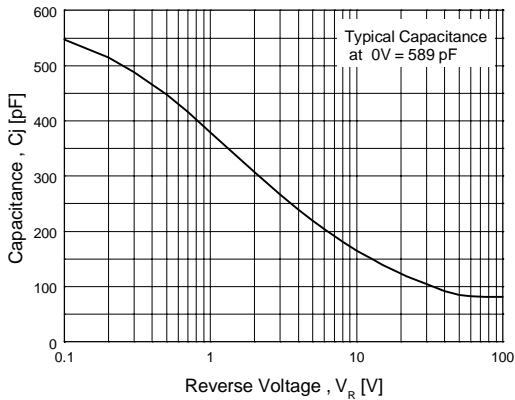
# Typical Characteristics



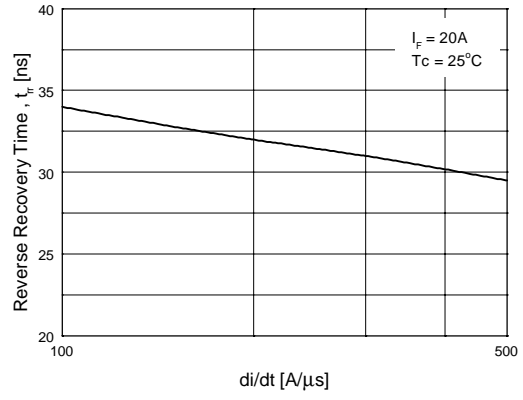
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



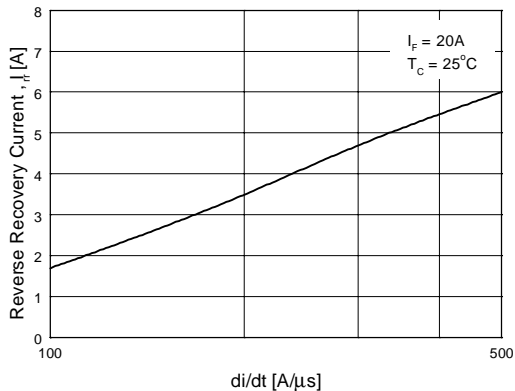
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



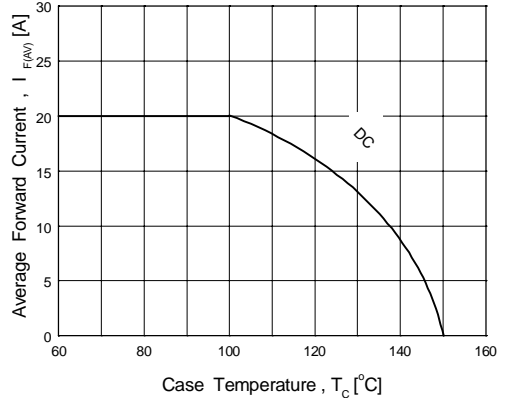
**Figure 3. Typical Junction Capacitance**



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



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

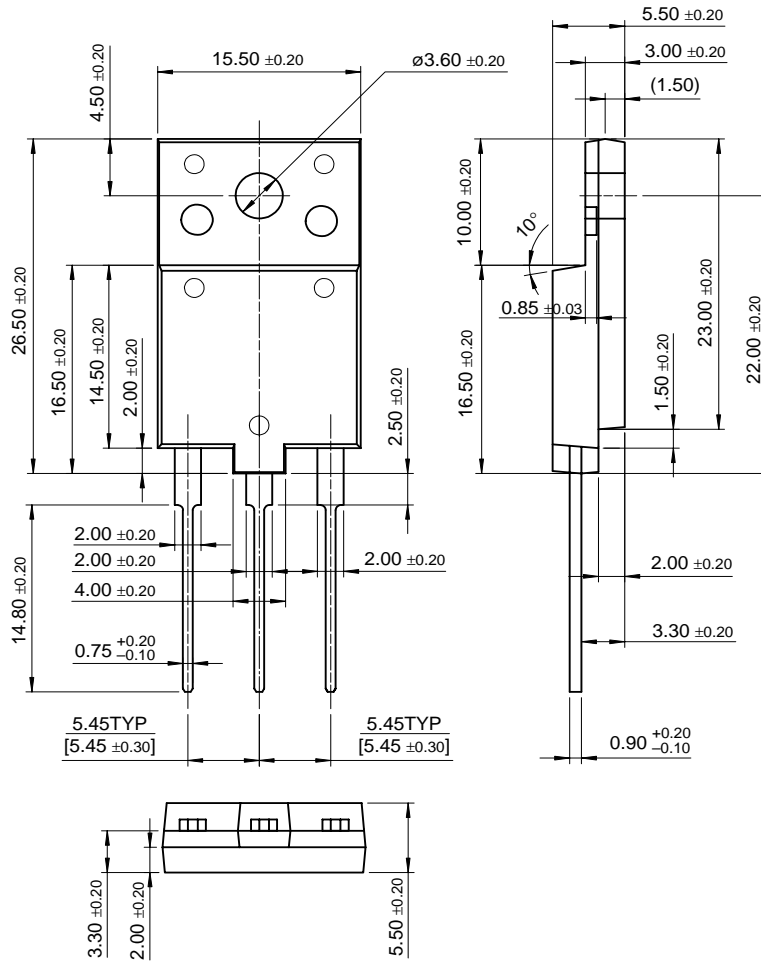


**Figure 6. Forward Current Derating Curve**

# Package Dimensions

## TO-3PF

FFAF20U20DN



Dimensions in Millimeters

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CoolFET™	GTO™	QT Optoelectronics™	
CROSSVOLT™	HiSeC™	Quiet Series™	
DOME™	ISOPLANAR™	SuperSOT™-3	
E <sup>2</sup> CMOS™	MICROWIRE™	SuperSOT™-6	
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