

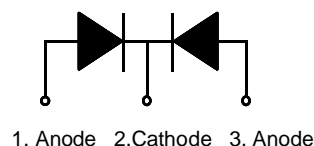
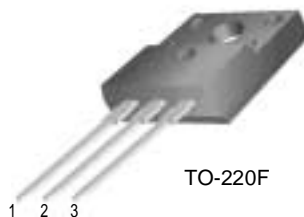
FFPF04U40DN

Features

- Ultrafast with soft recovery
- Low forward voltage

Applications

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



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 @ $T_C = 100^\circ\text{C}$	4	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	40	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	10	$^\circ\text{C}/\text{W}$

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 $I_F = 4\text{A}$ $I_F = 4\text{A}$	$T_C = 25^\circ\text{C}$	-	-	1.4	V
		$T_C = 100^\circ\text{C}$	-	-	1.3	
I_{RM}^*	Maximum Instantaneous Reverse Current @ rated V_R	$T_C = 25^\circ\text{C}$	-	-	10	μA
		$T_C = 100^\circ\text{C}$	-	-	100	
t_{rr}	Maximum Reverse Recovery Time	-	-	45	ns	
I_{rr}	Maximum Reverse Recovery Current	-	-	3.0	A	
Q_{rr}	Maximum Reverse Recovery Charge ($I_F = 4\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)	-	-	68	nC	
W_{AVL}	Avalanche Energy	1.0	-	-	mJ	

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

Typical Characteristics

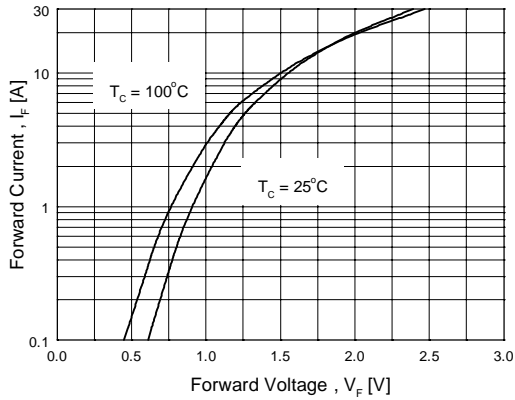


Figure 1. Typical Forward Voltage Drop vs. Forward Current

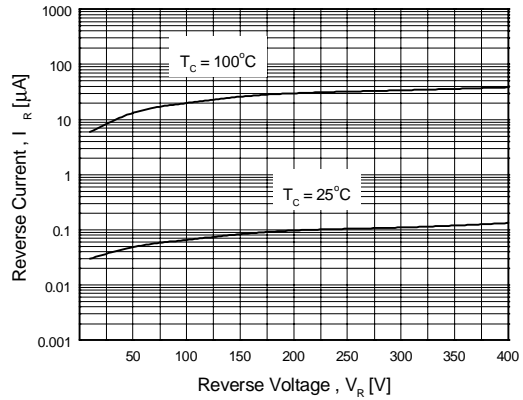


Figure 2. Typical Reverse Current vs. Reverse Voltage

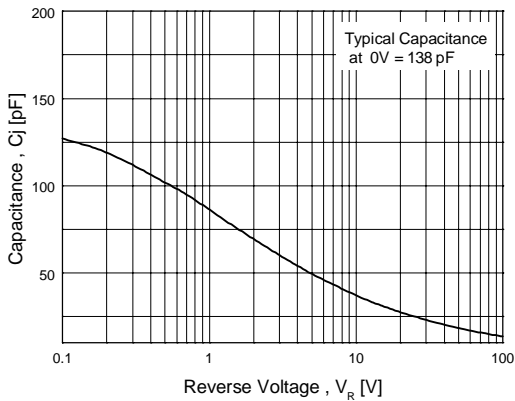


Figure 3. Typical Junction Capacitance

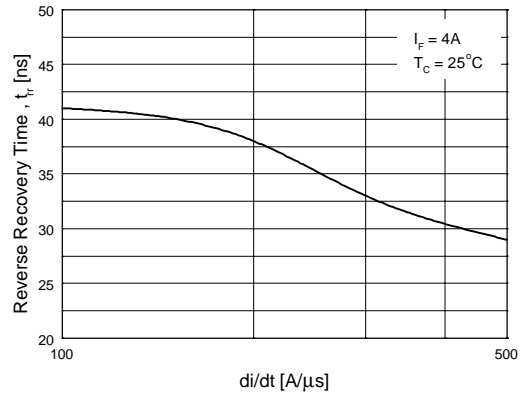


Figure 4. Typical Reverse Recovery Time vs. di/dt

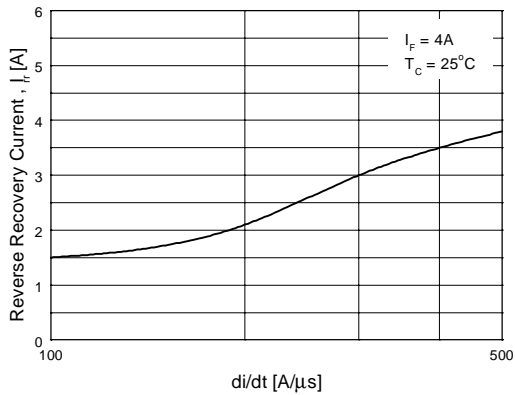


Figure 5. Typical Reverse Recovery Current vs. di/dt

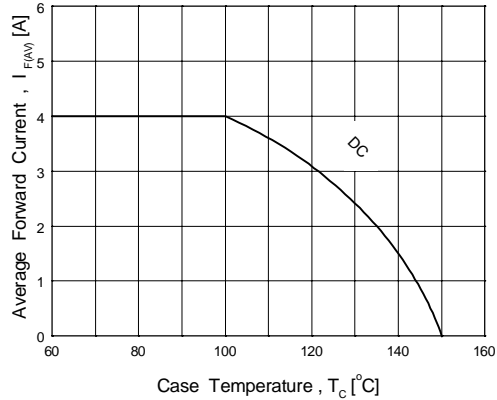
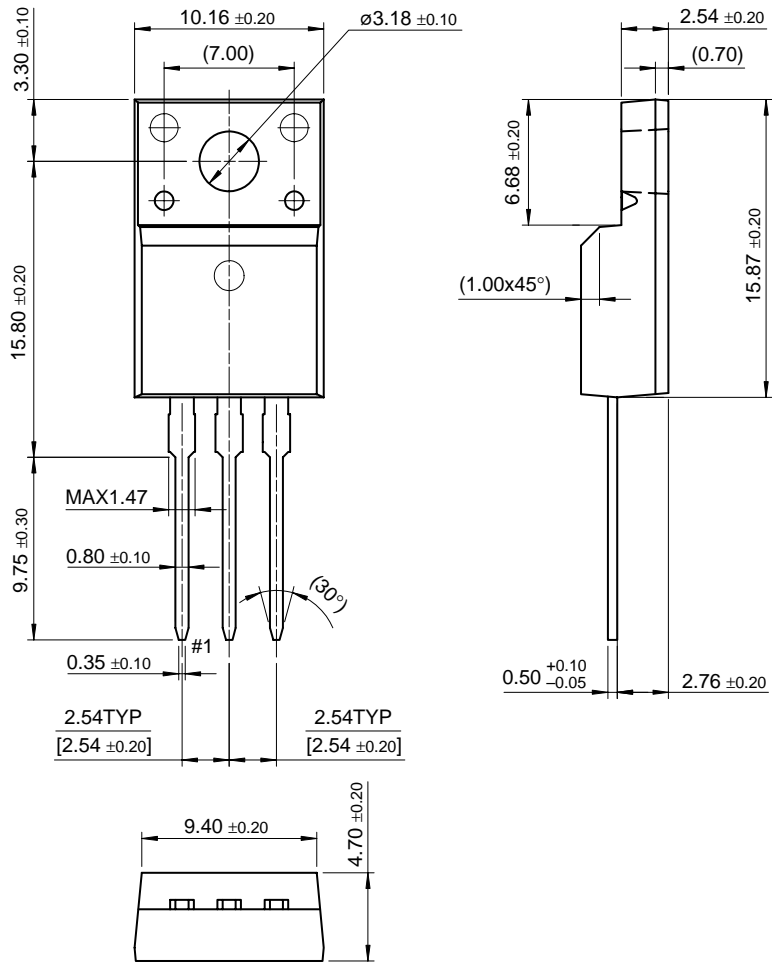


Figure 6. Forward Current Derating Curve

Package Dimensions

TO-220F

FFPF04U40DN



Dimensions in Millimeters

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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FFPF04U40DN
4.0A/400V Ultra Fast Recovery Rectifier

Contents

[Features](#) | [Applications](#) | [Product status/pricing/packaging](#)

Features

- Ultrafast with Soft Recovery
- Low Forward Voltage

[back to top](#)

Applications

- Power Switching Circuits
- Output rectifiers
- Freewheeling Diodes
- Switching Mode Power Supply

[back to top](#)

Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
FFPF04U40DNTU	Full Production	\$0.62	TO-220F	3	RAIL

* 1,000 piece Budgetary Pricing

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