

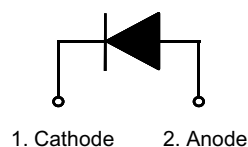
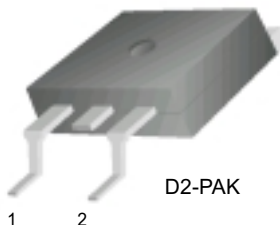
## FFB05U120S

### 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 $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	1200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	5	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	30	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	3.4	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Min.	Typ.	Max.	Units	
$V_{FM}^*$	Maximum Instantaneous Forward Voltage $I_F = 5\text{A}$	$T_C = 25^\circ\text{C}$	-	-	3.5	V
		$T_C = 100^\circ\text{C}$	-	-	3.2	
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ\text{C}$	-	-	5	$\mu\text{A}$
		$T_C = 100^\circ\text{C}$	-	-	600	
$t_{rr}$	Maximum Reverse Recovery Time	-	-	100	ns	
$I_{rr}$	Maximum Reverse Recovery Current	-	-	7	A	
$Q_{rr}$	Maximum Reverse Recovery Charge ( $I_F = 5\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	-	-	280	nC	
$W_{AVL}$	Avalanche Energy	1.0	-	-	mJ	

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

# Typical Characteristics

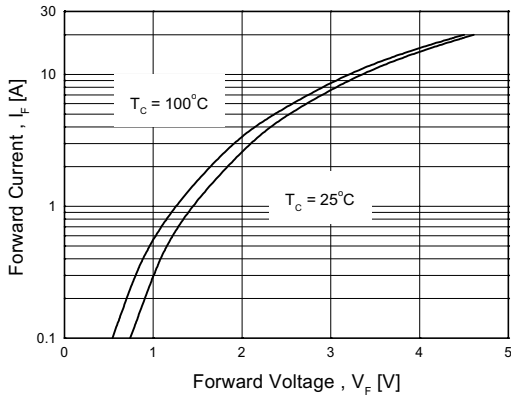


Figure 1. Typical Forward Voltage Drop vs. Forward Current

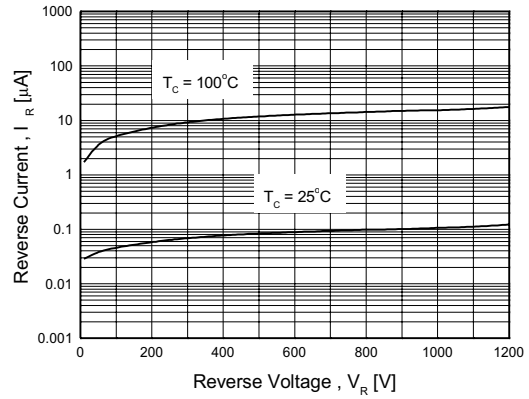


Figure 2. Typical Reverse Current vs. Reverse Voltage

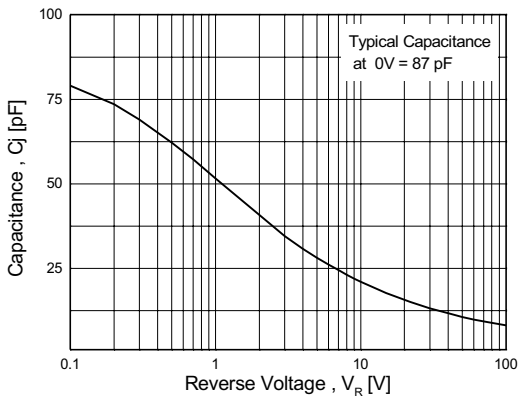


Figure 3. Typical Junction Capacitance

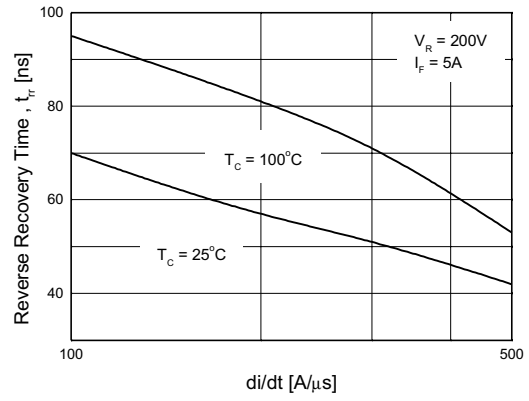


Figure 4. Typical Reverse Recovery Time vs. di/dt

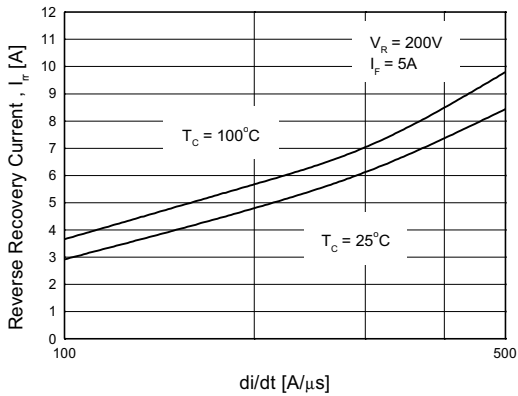


Figure 5. Typical Reverse Recovery Current vs. di/dt

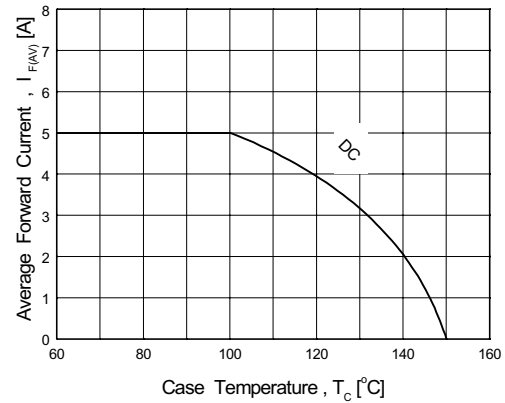
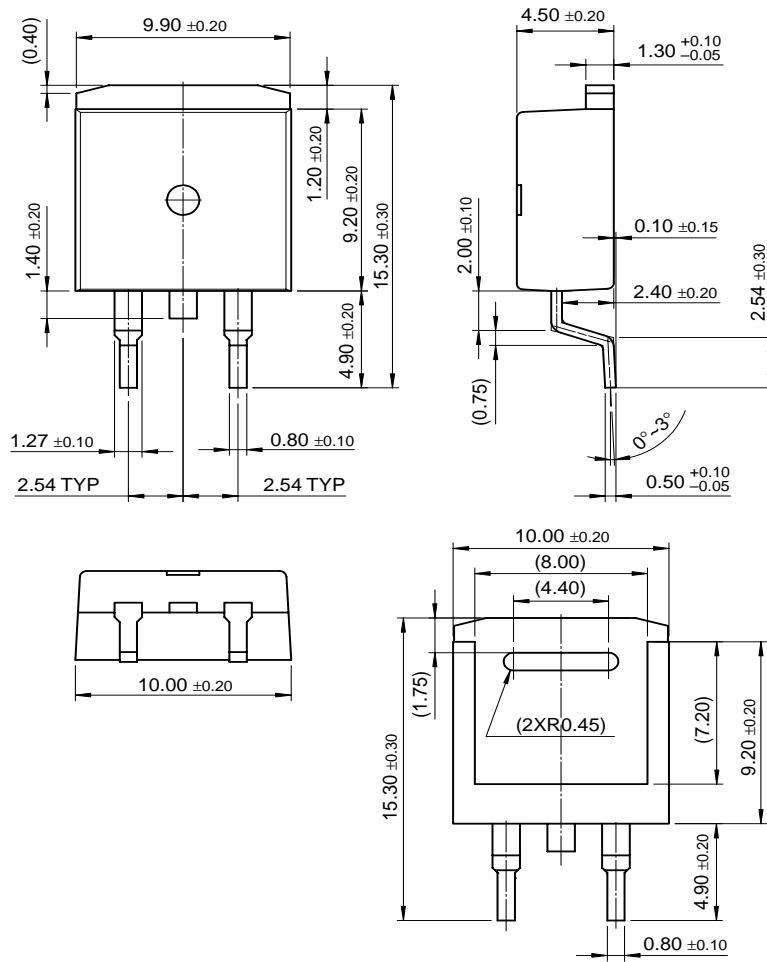


Figure 6. Forward Current Derating Curve

# Package Dimensions

FFB05U120S

## D<sup>2</sup>-PAK



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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FFB05U120S

5.0A/1200V Ultra Fast Recovery Rectifier

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Features

- High Voltage and High Reliability
- High Speed Switching
- Low Forward Voltage

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Applications

- General Purpose
- Switching Mode Power Supply
- Free Wheeling Diode for Motor Application
- Power Switching Circuit

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
FFB05U120STM	Full Production	\$0.96	TO-263(D2PAK)	2	TAPE REEL

\* 1,000 piece Budgetary Pricing

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