



**THE DATASHEET OF
FFB05U120STM**



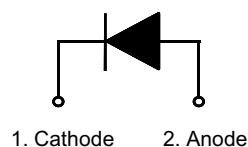
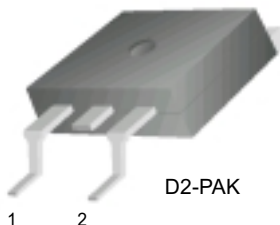
FFB05U120S

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	μA
		$T_C = 100^\circ\text{C}$	-	-	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 μs , Duty Cycle=2%

Typical Characteristics

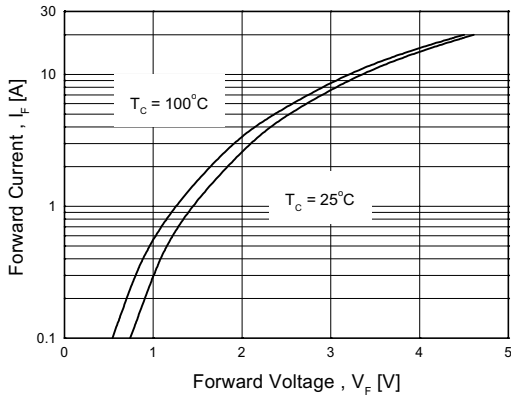


Figure 1. Typical Forward Voltage Drop vs. Forward Current

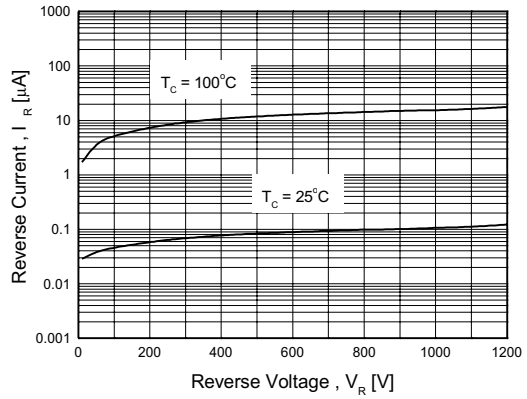


Figure 2. Typical Reverse Current vs. Reverse Voltage

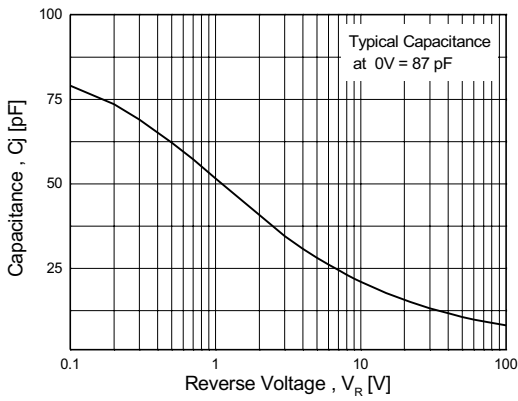


Figure 3. Typical Junction Capacitance

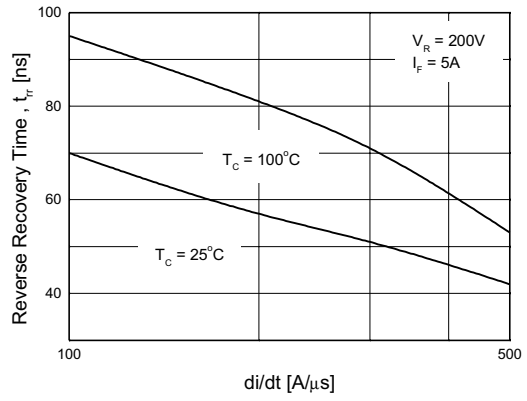


Figure 4. Typical Reverse Recovery Time vs. di/dt

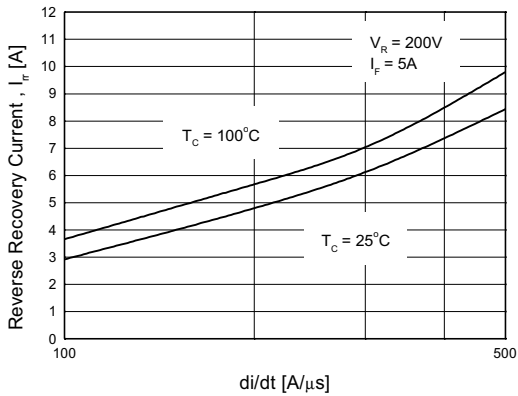


Figure 5. Typical Reverse Recovery Current vs. di/dt

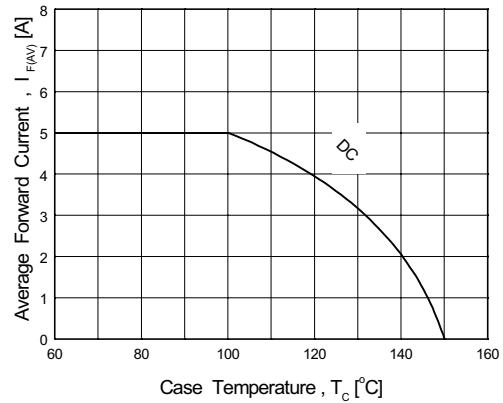
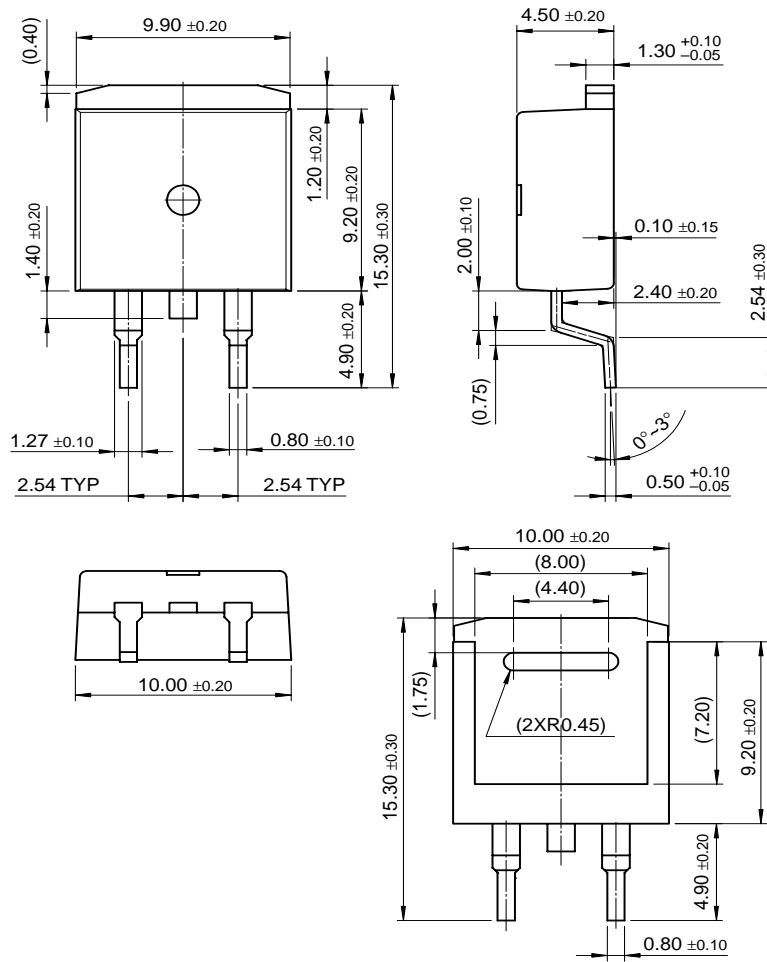


Figure 6. Forward Current Derating Curve

Package Dimensions

FFB05U120S

D²-PAK



Dimensions in Millimeters

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