

## FFA40U60DN

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

Symbol	Parameter	Value	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	40	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	240	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	0.7	$^\circ\text{C}/\text{W}$

### 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 $I_F = 40\text{A}$ $I_F = 40\text{A}$	$T_C = 25^\circ\text{C}$	-	-	2.1	V
		$T_C = 100^\circ\text{C}$	-	-	1.9	
$I_{RM}^*$	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	-	-	110	ns	
$I_{rr}$	Maximum Reverse Recovery Current	-	-	10	A	
$Q_{rr}$	Maximum Reverse Recovery Charge ( $I_F = 40\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )	-	-	550	nC	
$W_{AVL}$	Avalanche Energy	1.0	-	-	mJ	

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

# Typical Characteristics

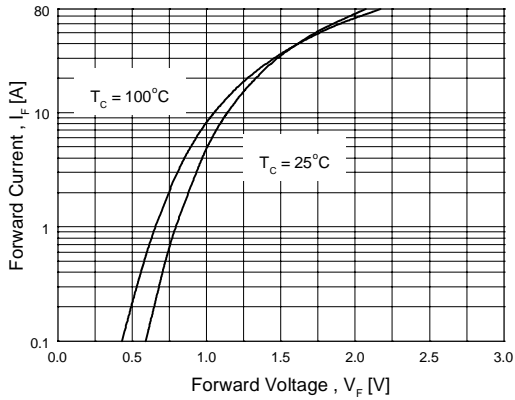


Figure 1. Typical Forward Voltage Drop vs. Forward Current

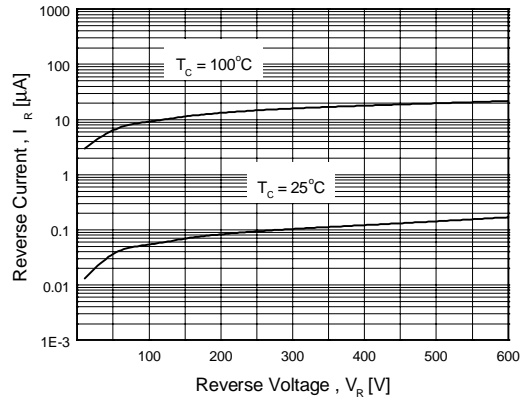


Figure 2. Typical Reverse Current vs. Reverse Voltage

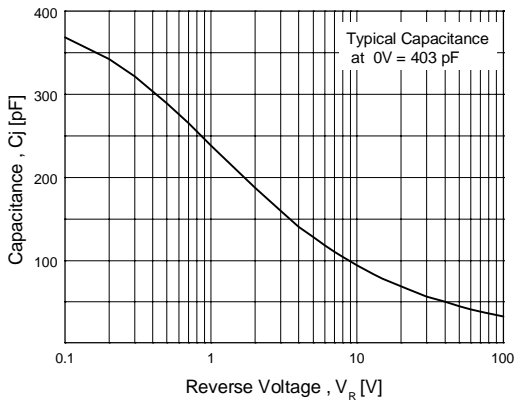


Figure 3. Typical Junction Capacitance

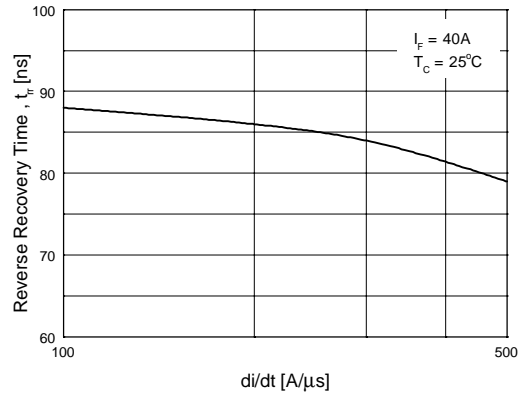


Figure 4. Typical Reverse Recovery Time vs. di/dt

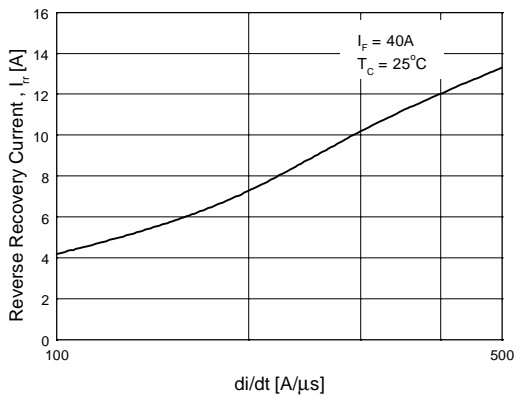


Figure 5. Typical Reverse Recovery Current vs. di/dt

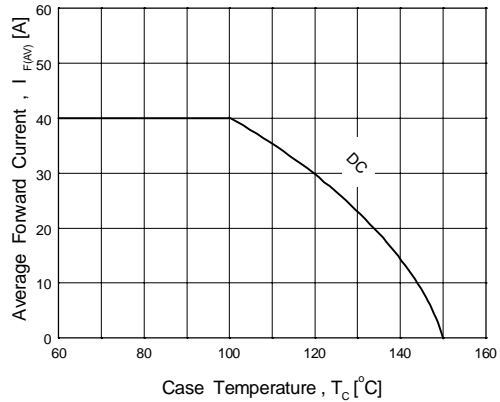
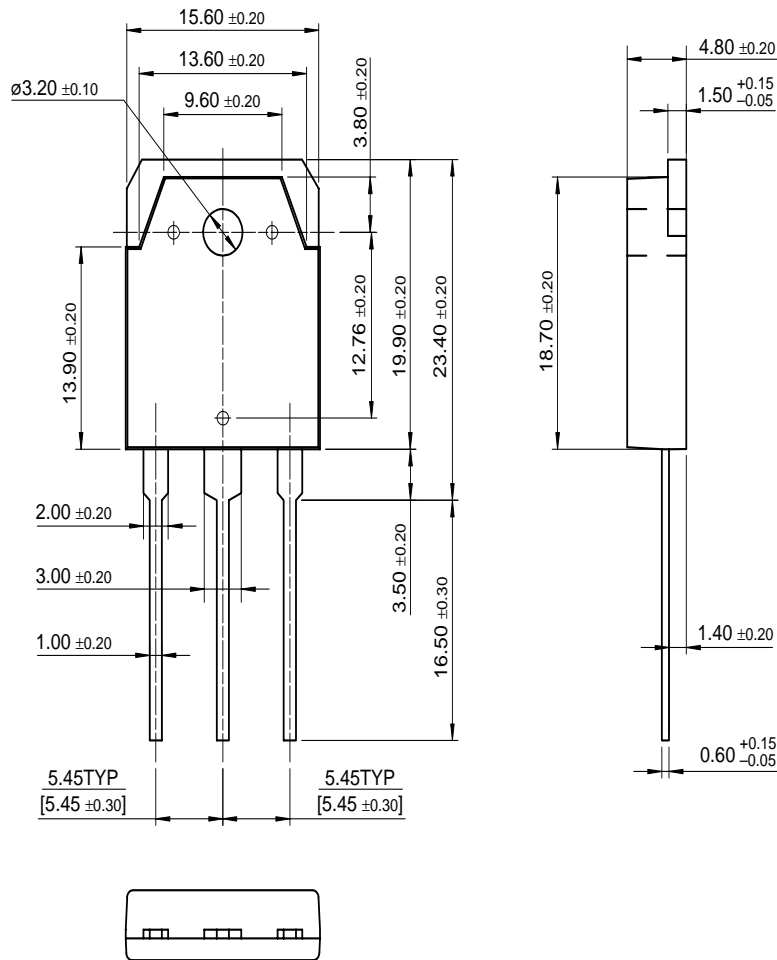


Figure 6. Forward Current Derating Curve

# Package Dimensions

## TO-3P

FFA40U60DN



Dimensions in Millimeters

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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.
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FFA40U60DN  
40A/600V Ultra Fast Recovery Rectifier

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- 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
FFA40U60DNTU	Full Production	\$2.16	TO-3P	3	RAIL

\* 1,000 piece Budgetary Pricing

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