

# FFA60UP60DN

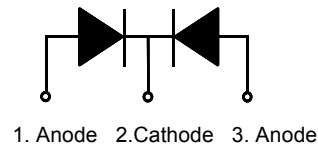
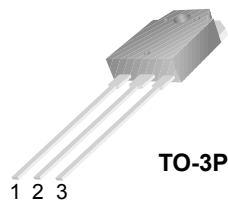
## Ultrafast Recovery Power Rectifier

### Features

- High voltage and high reliability
- High speed switching
- Low forward voltage

### Applications

- General purpose
- Switched mode power supply
- Free-wheeling diode for motor application
- Power switching Circuits



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

Symbol	Parameter	Value	Units
$V_{RRM}$	Maximum Repetitive Reverse Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 80^\circ\text{C}$	30	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	180	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	1.03	$^\circ\text{C/W}$

### 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 $I_F = 30\text{A}$			2.3 2.1	V V
$I_{RM}^*$	Maximum Instantaneous Reverse Current @ rated $V_R$			15 150	$\mu\text{A}$ $\mu\text{A}$
$t_{rr}$	Maximum Reverse Recovery Time ( $I_F = 1\text{A}$ , $di/dt = 100\text{A}/\mu\text{s}$ )			70	nS
$t_{rr}$ $t_{rr}$ $I_{rr}$ $Q_{rr}$	Maximum Reverse Recovery Time ( $I_F = 30\text{A}$ , $di/dt = 200\text{A}/\mu\text{s}$ )			90 150 8 360	nS nS A nC
$W_{AVL}$	Avalanche Energy ( $L = 40\text{mH}$ )	20			mJ

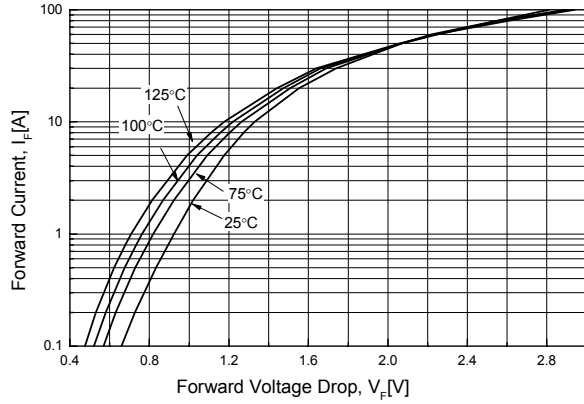
\* Pulse Test: Pulse Width =  $300\mu\text{s}$ , Duty Cycle = 2%

### Package Marking and Ordering Information

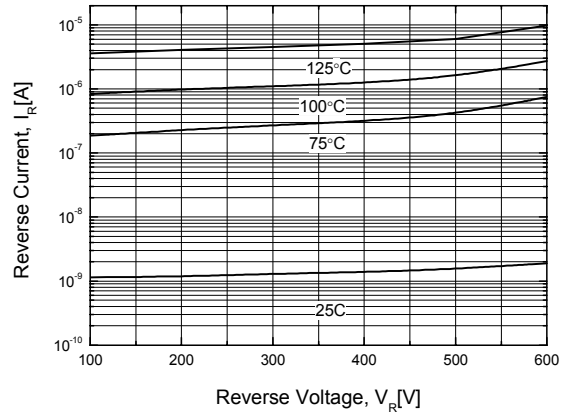
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F60UP60DN	FFA60UP60DN	TO-3P	-	-	30

## Typical Performance Characteristics

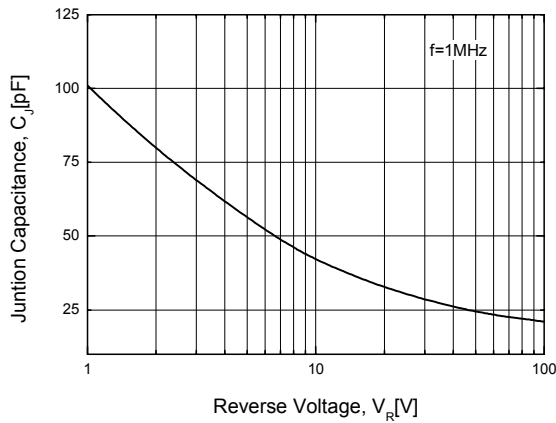
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



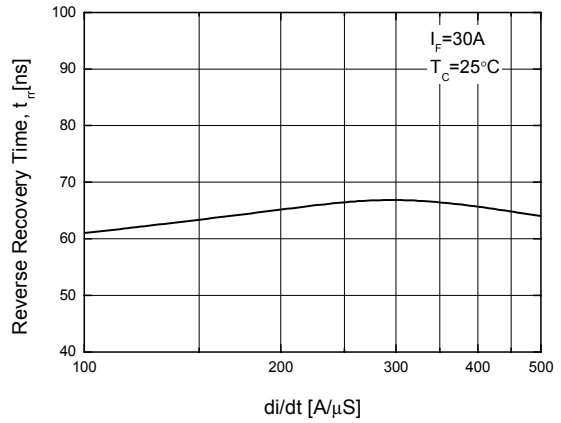
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



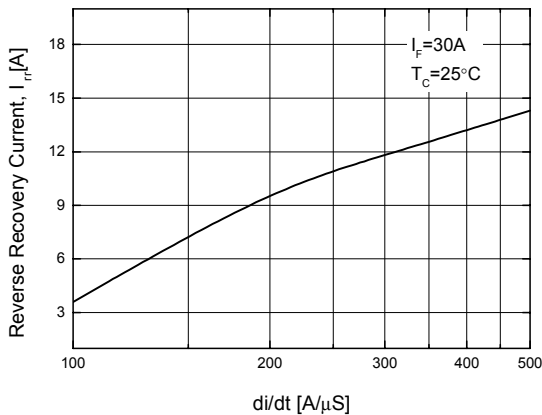
**Figure 3. Typical Junction Capacitance**



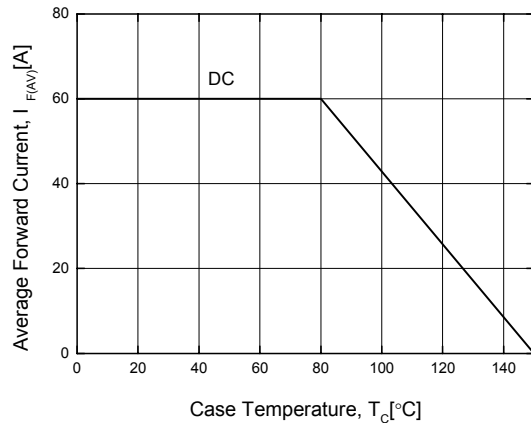
**Figure 4. Typical Reverse Recovery Time vs. di/dt**



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

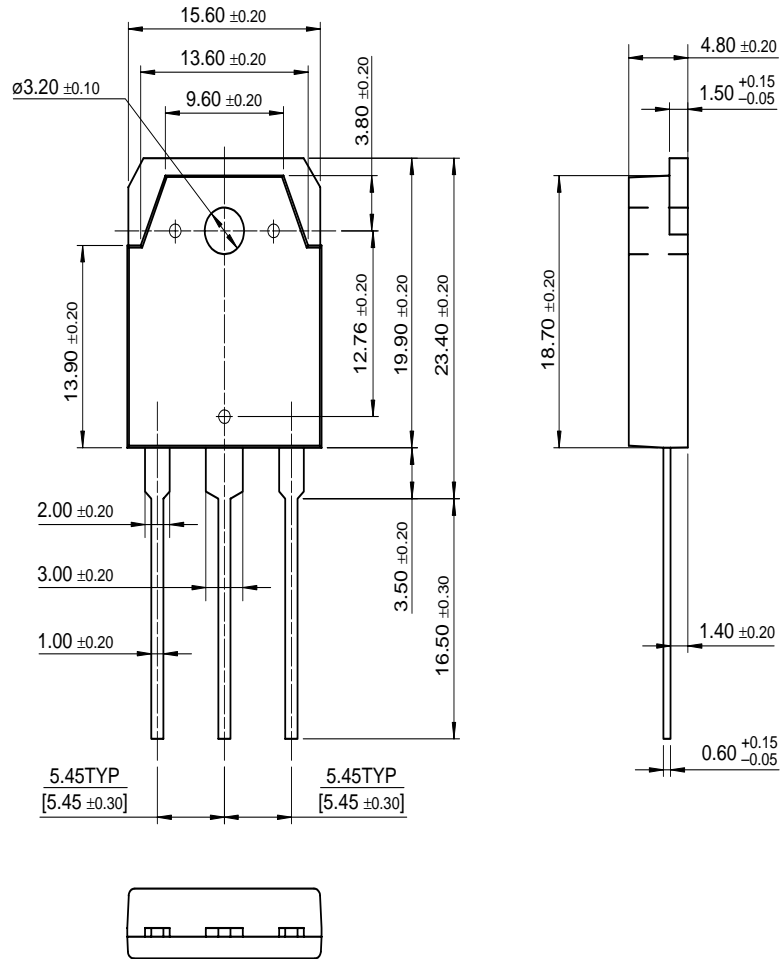


**Figure 6. Forward Current Derating Curve**



Mechanical Dimensions

TO-3P



Dimensions in Millimeters

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CROSSVOLT™	GTO™	MICROWIRE™	Quiet Series™	UHC™
DOME™	HiSeC™	MSX™	RapidConfigure™	UltraFET®
EcoSPARK™	I <sup>2</sup> C™	MSXPro™	RapidConnect™	UniFET™
E <sup>2</sup> C MOS™	i-Lo™	OCX™	μSerDes™	VCX™
EnSigna™	ImpliedDisconnect™	OCXPro™	SILENT SWITCHER®	Wire™
FACT™	IntelliMAX™	OPTOLOGIC®	SMART START™	
FACT Quiet Series™		OPTOPLANAR™	SPM™	
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