



# FFPF30UA60S

## Features

- Ultrafast Recovery  $t_{rr} = 90 \text{ ns}$  (@  $I_F = 30 \text{ A}$ )
- Max Forward Voltage,  $V_F = 2.2 \text{ V}$  (@  $T_C = 25^\circ\text{C}$ )
- 600 V Reverse Voltage and High Reliability
- Avalanche Energy Rated
- RoHS Compliant

## 30 A, 600 V, Ultrafast II Diode

The FFPF30UA60S is a ultrafast II diode with low forward voltage drop. This device is intended for use as freewheeling and clamping diodes in a variety of switching power supplies and other power switching applications. It is specially suited for use in switching power supplies and industrial application.

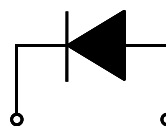
## Applications

- Boost Diode in PFC and Switching Mode Power Supply
- Welding, UPS and Motor Control Application

## Pin Assignments



1. Cathode 2. Anode



1. Cathode 2. Anode

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

Symbol	Parameter	Rating	Unit
$V_{RRM}$	Peak Repetitive Reverse Voltage	600	V
$V_{RWM}$	Working Peak Reverse Voltage	600	V
$V_R$	DC Blocking Voltage	600	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 43^\circ\text{C}$	30	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	180	A
$T_J, T_{STG}$	Operating and Storage Temperature Range	-65 to +150	$^\circ\text{C}$

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

Symbol	Parameter	Rating	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	2.5	$^\circ\text{C/W}$

## Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F30UA60S	FFPF30UA60S	TO220F	-	-	50

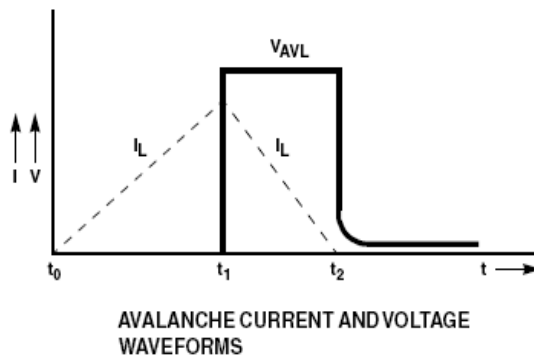
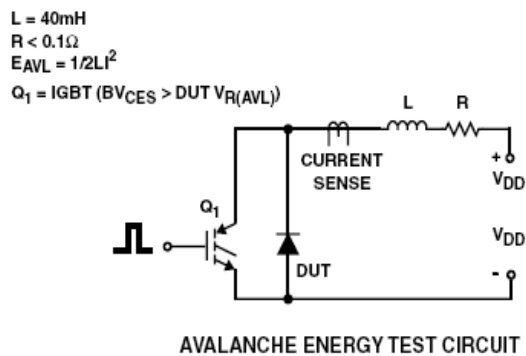
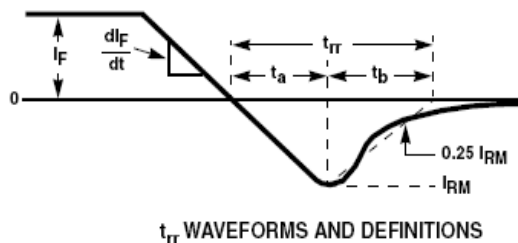
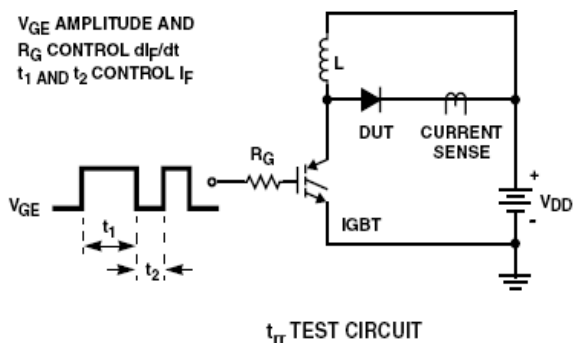
**Electrical Characteristics**  $T_C=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Unit
$V_{F1}$	$I_F = 30\text{ A}$ $I_F = 30\text{ A}$	-	-	2.2 2.0	V
$I_{R1}$	$V_R = 600\text{ V}$ $V_R = 600\text{ V}$	-	-	100 150	$\mu\text{A}$
$t_{rr}$	$I_F = 30\text{ A}, di/dt = 200\text{ A}/\mu\text{s}$	-	-	90	ns
$I_{rr}$		-	-	8	A
$Q_{rr}$		-	-	360	nC
$W_{AVL}$	Avalanche Energy ( $L = 40\text{ mH}$ )	20	-	-	mJ

**Notes:**

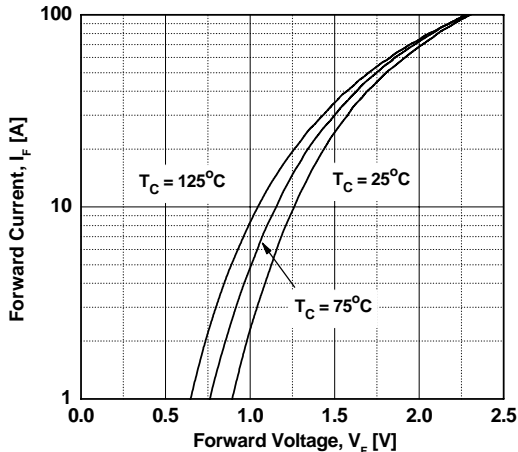
1: Pulse: Test Pulse width = 300 $\mu\text{s}$ , Duty Cycle = 2%

**Test Circuit and Waveforms**

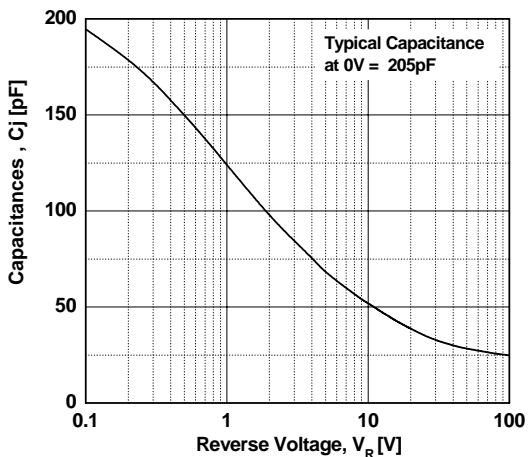


## Typical Performance Characteristics

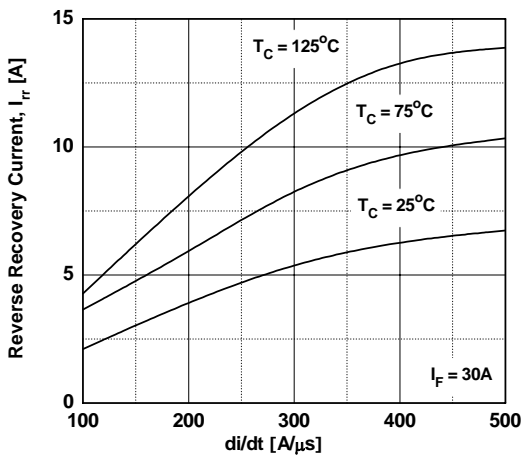
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



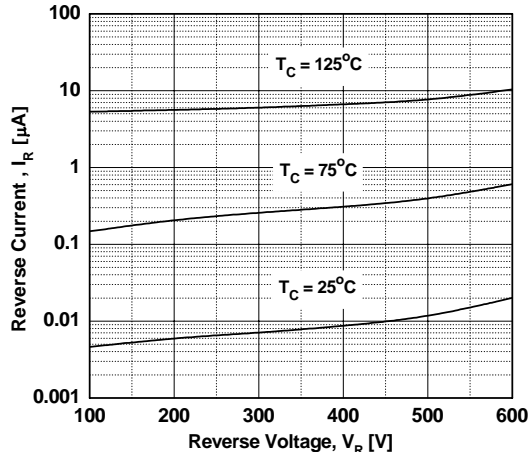
**Figure 3. Typical Junction Capacitance**



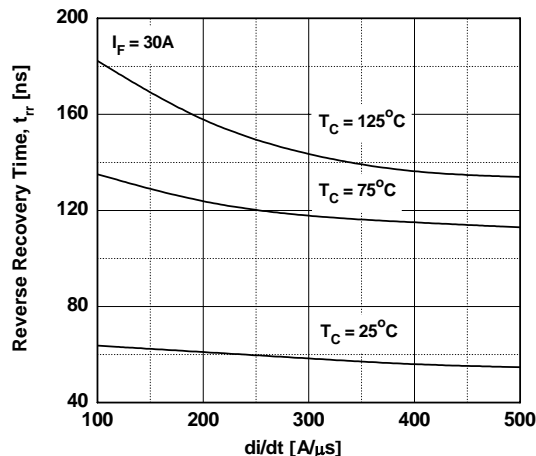
**Figure 5. Typical Reverse Recovery Current vs. di/dt**



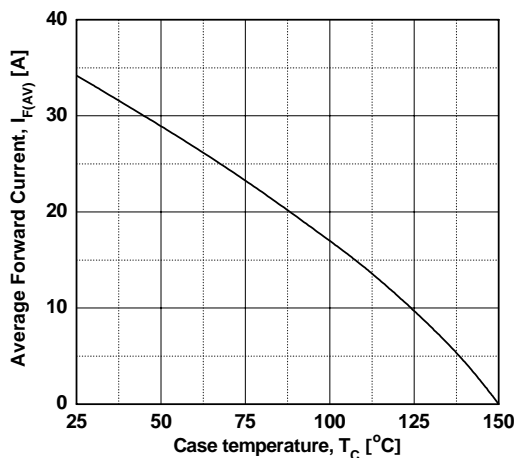
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



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



**Figure 6. Forward Current Derating Curve**












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| BitSiC™   | Global Power Resource™                         | Programmable Active Droop™  | TinyBuck™   |
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