



FFA60UA60DN

Features

- Ultrafast Switching, $t_{rr} < 90$ ns
- Max Forward Voltage, $V_F < 2.2$ V
- High Reverse Voltage and High Reliability
- Avalanche Energy Rated
- RoHS Compliant

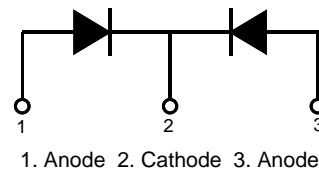
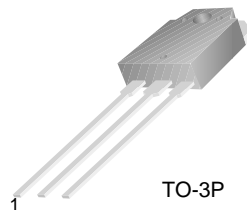
60 A, 600 V Ultrafast Diode

The FFA60UA60DN is an Ultrafast Diode with low forward voltage drop and rugged UIS capability. 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 applications as welder and UPS application.

Applications

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

Pin Assignments



Absolute Maximum Ratings

Per leg at $T_C=25^\circ\text{C}$ 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 @ $T_C = 95^\circ\text{C}$	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

Per leg at $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Rating	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.3	$^\circ\text{C/W}$

Package Marking and Ordering Information

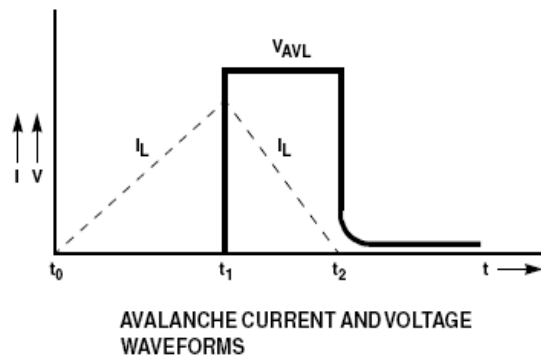
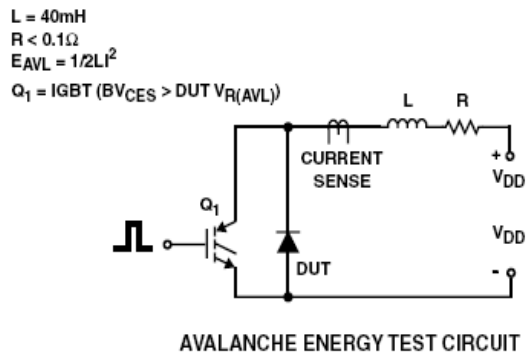
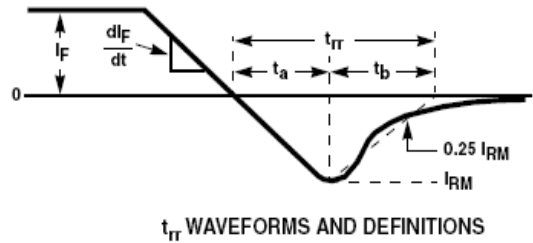
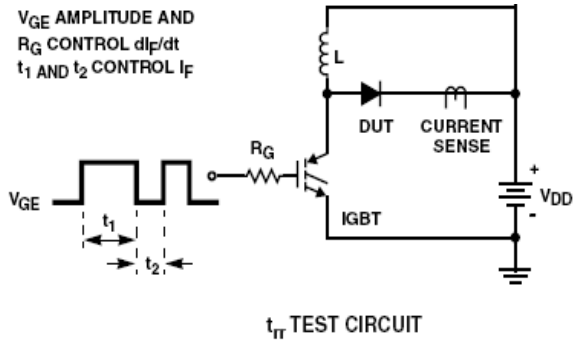
Device Marking	Device	Package	Reel Size	Tape Width	Quantity
F60UA60DN	FFA60UA60DN	TO3P	-	-	30

Electrical Characteristics Per leg at $T_C=25^\circ\text{C}$ 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	μA
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 μs , Duty Cycle = 2%

Test Circuit and Waveforms



Typical Performance Characteristics

Figure 1. Typical Forward Voltage Drop vs. Forward Current

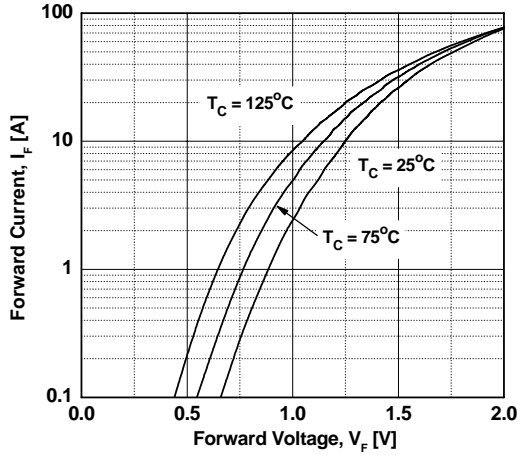


Figure 3. Typical Junction Capacitance

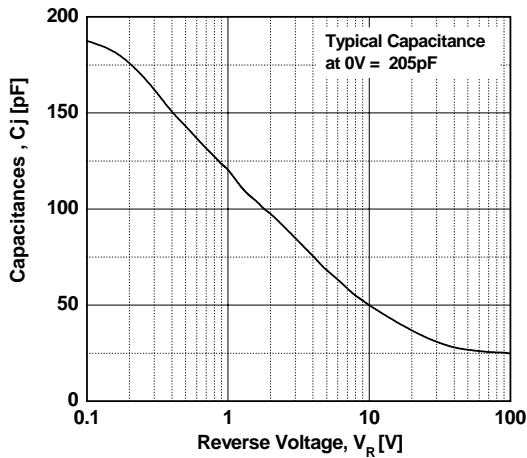


Figure 5. Typical Reverse Recovery Current vs. di/dt

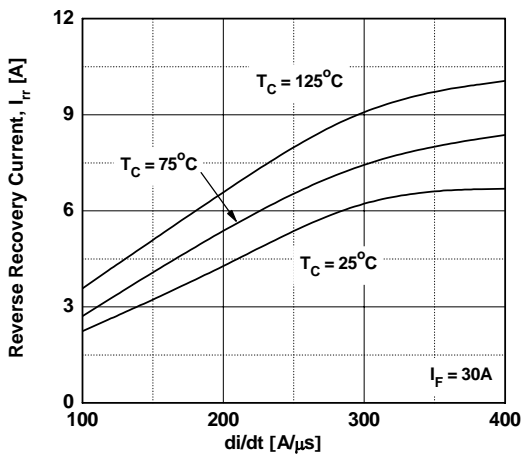


Figure 2. Typical Reverse Current vs. Reverse Voltage

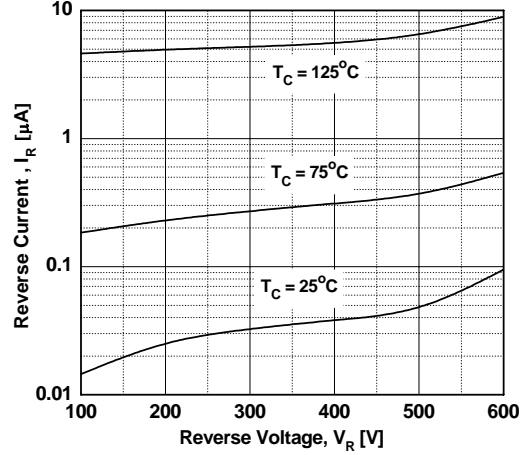


Figure 4. Typical Reverse Recovery Time vs. di/dt

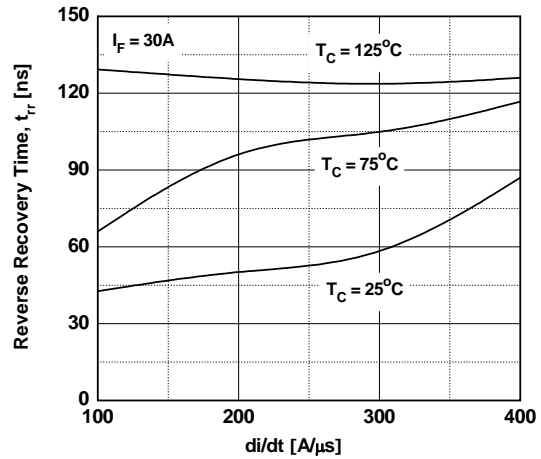
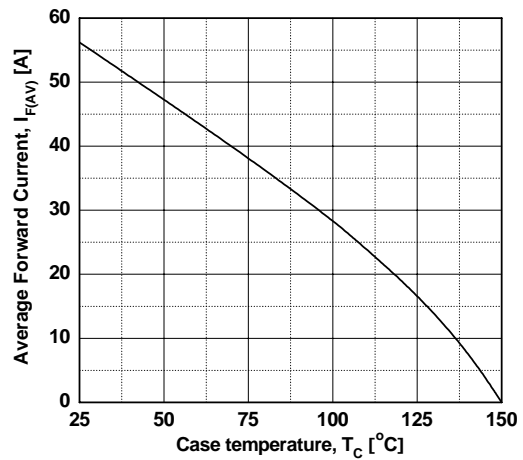
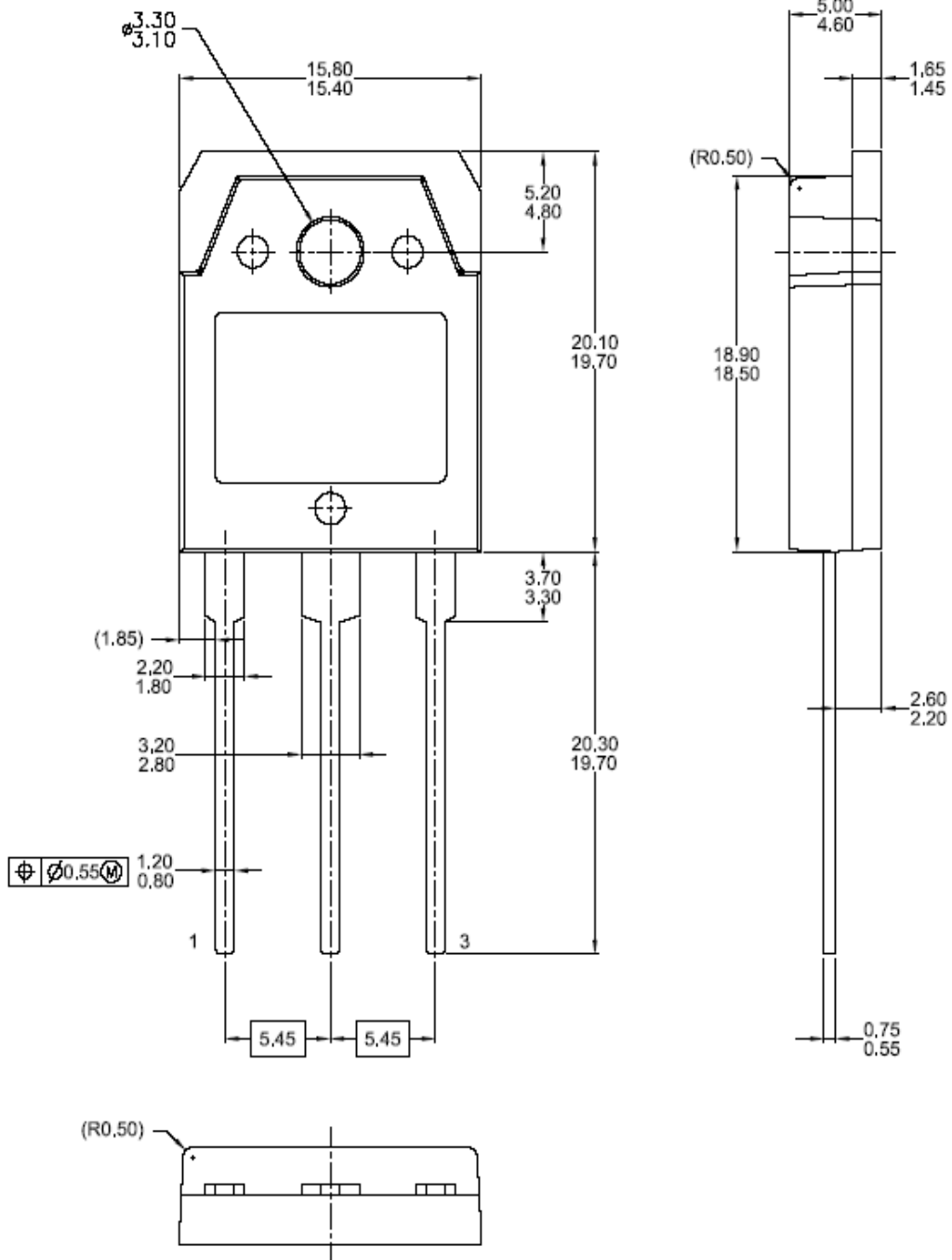


Figure 6. Forward Current Derating Curve



Mechanical Dimensions

TO-3P



Dimensions in Millimeters



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