

Pb Free Plating Product

## FFA60UP20DNTU



60Ampere,200Volt Planar Passivation Ultra Fast Recovery Rectifiers

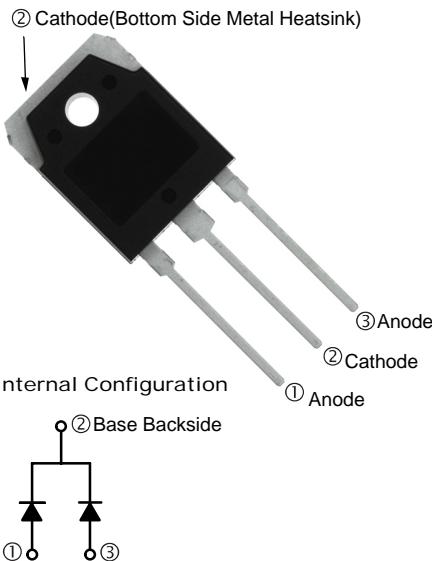
**APPLICATION**

- Freewheeling, Snubber, Clamp
- Inversion Welder
- PFC
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- UPS

**PRODUCT FEATURE**

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Leakage Current

## TO-3PB(TO-3PN)

**GENERAL DESCRIPTION**

FFA60UP20DNTU using lastest FRED FAB process(planar passivation chip) with ultrafast and soft recovery characteristic.

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

Symbol	Parameter	Value	Unit
$V_{RRM}$	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	30	A
$I_{FSM}$	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	300	A
$T_J, T_{STG}$	Operating Junction and Storage Temperature	-65 to +150	°C

**Thermal Characteristics**

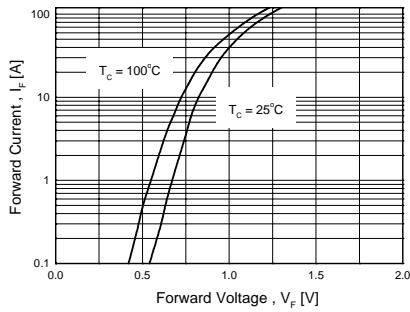
Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.4	°C/W

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

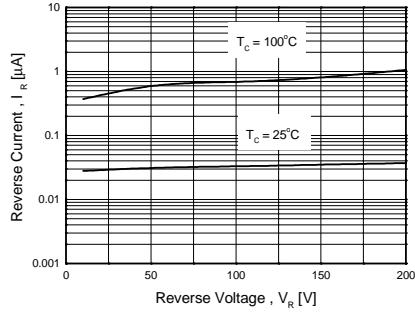
Symbol	Parameter	Min.	Typ.	Max.	Unit
$V_F$ *	Maximum Instantaneous Forward Voltage $I_F = 30 \text{ A}$ $I_F = 30 \text{ A}$	$T_C = 25^\circ\text{C}$ -	-	1.15 1.0	V
$I_R$ *	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	- -	10 100	μA
$t_{rr}$ $I_{rr}$ $Q_{rr}$	Reverse Recovery Time Reverse Recovery Current Reverse Recovery Charge ( $I_F = 30 \text{ A}$ , $dI/dt = 200 \text{ A}/\mu\text{s}$ )	- - -	32 2.4 38.4	- - -	ns A nC
$t_{rr}$	Maximum Reverse Recovery Time ( $I_F = 1 \text{ A}$ , $dI/dt = 100 \text{ A}/\mu\text{s}$ )	-	-	40	ns
$W_{AVL}$	Avalanche Energy ( $L = 40 \text{ mH}$ )	2	-	-	mJ

\*Pulse Test: Pulse Width=300 μs, Duty Cycle=2%

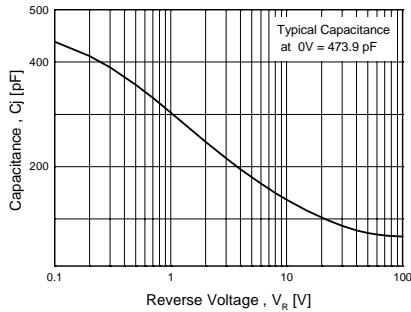
### Typical Characteristics



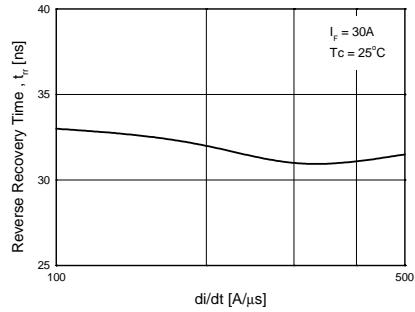
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



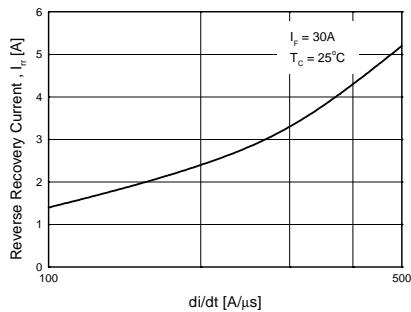
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



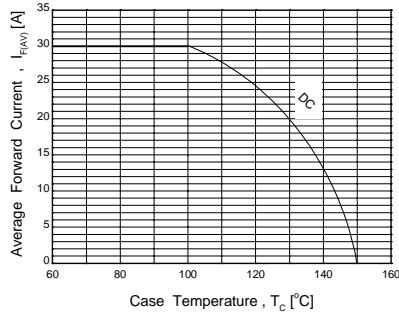
**Figure 3. Typical Junction Capacitance**



**Figure 4. Typical Reverse Recovery Time vs.  $\text{di}/\text{dt}$**



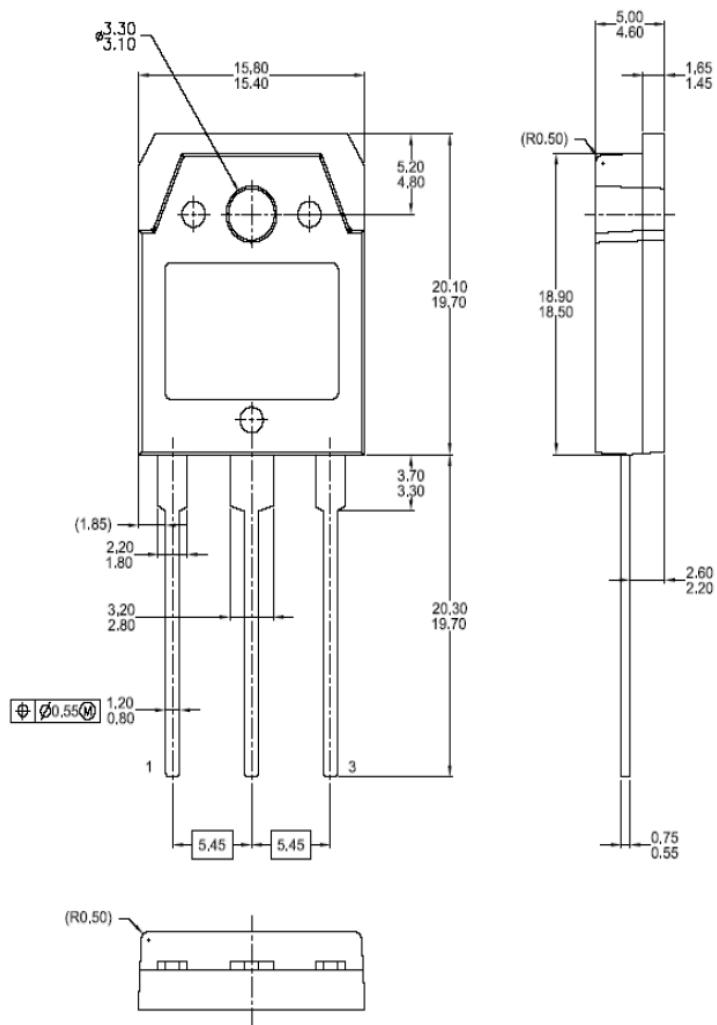
**Figure 5. Typical Reverse Recovery Current vs.  $\text{di}/\text{dt}$**



**Figure 6. Forward Current Derating Curve**

**Mechanical Dimensions**

TO-3PB(TO-3PN)



Dimensions in Millimeters