

Pb Free Plating Product

## FFA60UP20DN



60Ampere,200Volt Planar Passivation Ultra Fast Recovery Rectifiers

<p><b>APPLICATION</b></p> <ul style="list-style-type: none"> <li>Freewheeling, Snubber, Clamp</li> <li>Inversion Welder</li> <li>PFC</li> <li>Plating Power Supply</li> <li>Ultrasonic Cleaner and Welder</li> <li>Converter &amp; Chopper</li> <li>UPS</li> </ul>	<p><b>TO-3PB(TO-3PN)</b></p>
<p><b>PRODUCT FEATURE</b></p> <ul style="list-style-type: none"> <li>Ultrafast Recovery Time</li> <li>Soft Recovery Characteristics</li> <li>Low Recovery Loss</li> <li>Low Forward Voltage</li> <li>High Surge Current Capability</li> <li>Low Leakage Current</li> </ul>	

### GENERAL DESCRIPTION

FFA60UP20DN using latest 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	$^\circ\text{C}$

### Thermal Characteristics

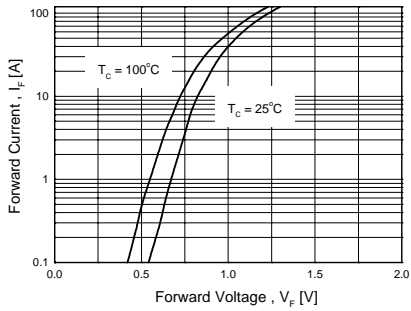
Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	1.4	$^\circ\text{C}/\text{W}$

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

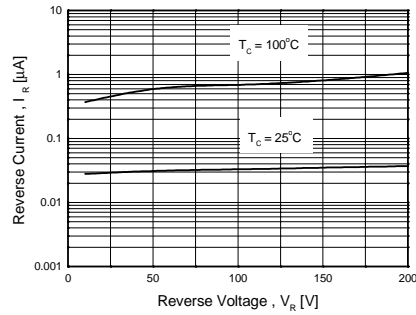
Symbol	Parameter	Min.	Typ.	Max.	Unit	
$V_F^*$	Maximum Instantaneous Forward Voltage $I_F = 30\text{ A}$	$T_C = 25^\circ\text{C}$	-	-	1.15	V
		$T_C = 100^\circ\text{C}$	-	-	1.0	
$I_R^*$	Maximum Instantaneous Reverse Current @ rated $V_R$	$T_C = 25^\circ\text{C}$	-	-	10	$\mu\text{A}$
		$T_C = 100^\circ\text{C}$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

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

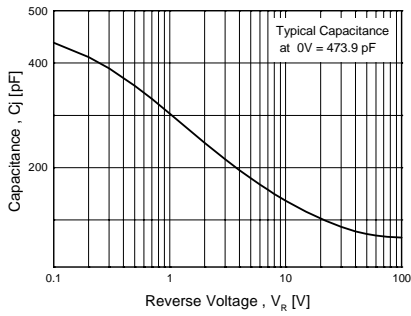
**Typical Characteristics**



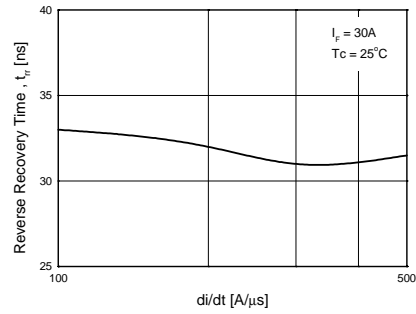
**Figure 1. Typical Forward Voltage Drop vs. Forward Current**



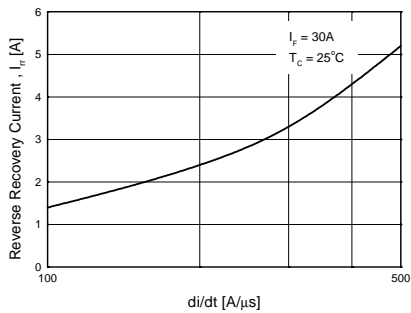
**Figure 2. Typical Reverse Current vs. Reverse Voltage**



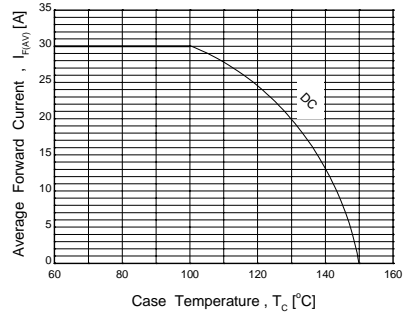
**Figure 3. Typical Junction Capacitance**



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



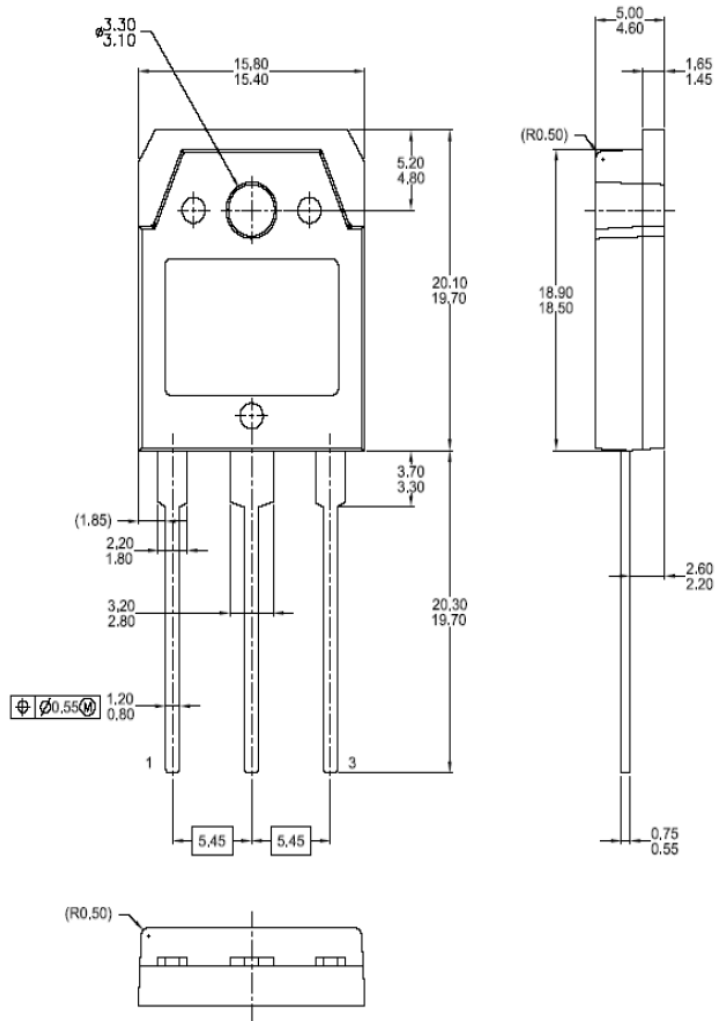
**Figure 5. Typical Reverse Recovery Current vs. di/dt**



**Figure 6. Forward Current Derating Curve**

**Mechanical Dimensions**

**TO-3PB(TO-3PN)**



Dimensions in Millimeters