

Pb Free Plating Product

F60UP20DN



60Ampere,200Volt Planar Passivation Ultra Fast Recovery Rectifiers

<p>APPLICATION</p> <ul style="list-style-type: none"> g Freewheeling, Snubber, Clamp g Inversion Welder g PFC g Plating Power Supply g Ultrasonic Cleaner and Welder g Converter & Chopper g UPS 	<p>TO-3PB(TO-3PN)</p> <p>② Cathode(Bottom Side Metal Heatsink)</p> <p>③ Anode</p> <p>② Cathode</p> <p>① Anode</p> <p>Internal Configuration</p> <p>② Base Backside</p>
<p>PRODUCT FEATURE</p> <ul style="list-style-type: none"> g Ultrafast Recovery Time g Soft Recovery Characteristics g Low Recovery Loss g Low Forward Voltage g High Surge Current Capability g Low Leakage Current 	

GENERAL DESCRIPTION

F60UP20DN using latest FRED FAB process(planar passivation chip) with ultrafast and soft recovery characteristic.

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

Symbol	Parameter	Value	Unit
V_{RRM}	Peak Repetitive Reverse Voltage	200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100\text{ C}$	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_{JC}	Maximum Thermal Resistance, Junction to Case	1.4	C/W

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

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

*Pulse Test: Pulse Width=300 μ s, Duty Cycle 2%

Typical Characteristics

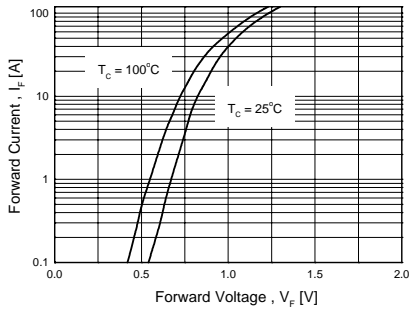


Figure 1. Typical Forward Voltage Drop vs. Forward Current

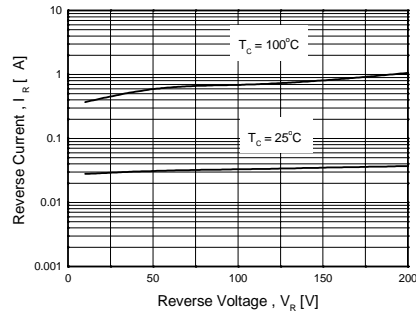


Figure 2. Typical Reverse Current vs. Reverse Voltage

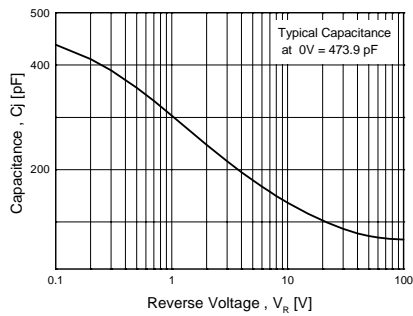


Figure 3. Typical Junction Capacitance

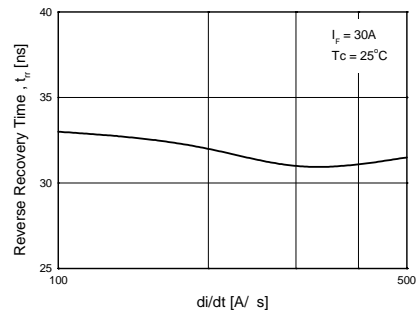


Figure 4. Typical Reverse Recovery Time vs. di/dt

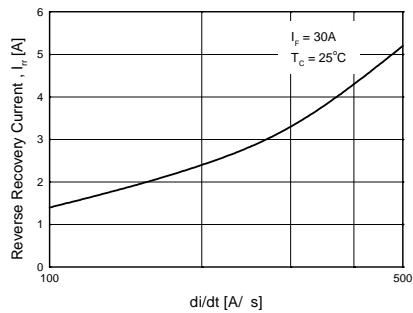


Figure 5. Typical Reverse Recovery Current vs. di/dt

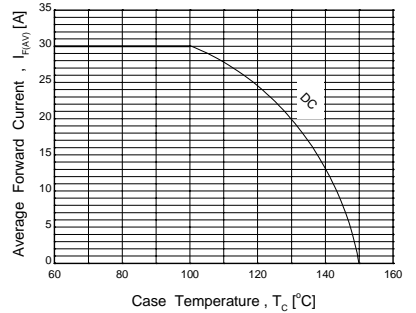
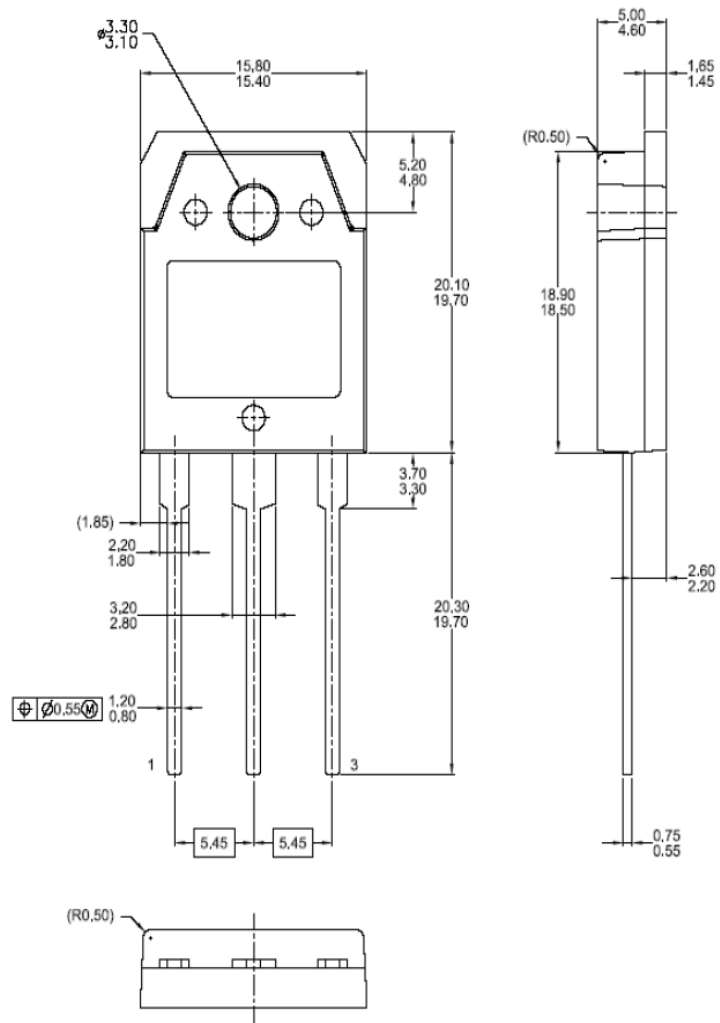


Figure 6. Forward Current Derating Curve

Mechanical Dimensions

TO-3PB(TO-3PN)



Dimensions in Millimeters