Pb Free Plating Product

F60UP20DN

60Ampere,200Volt Planar Passivation Ultra Fast Recovery Rectifiers

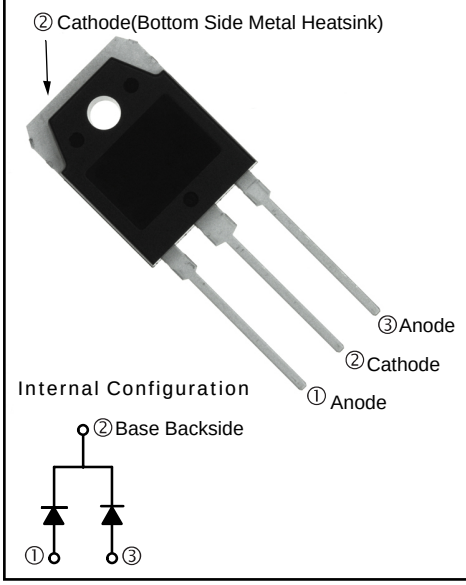
APPLICATION

- 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

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

Absolute Maximum Ratings (per diode) T_C=25°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°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 °C unless otherwise noted

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

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

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Typical Characteristics

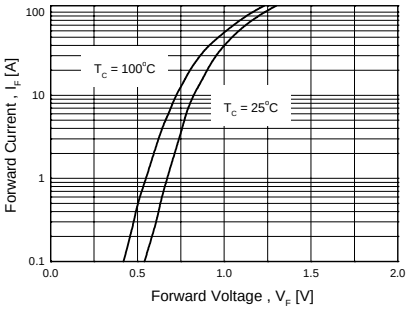

Figure 1. Typical Forward Voltage Drop vs. Forward Current

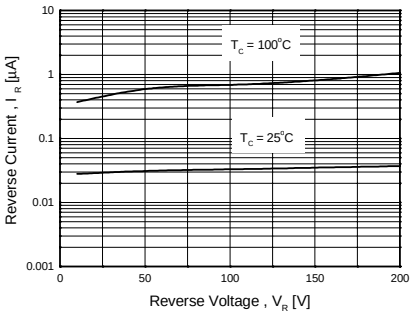

Figure 2. Typical Reverse Current vs. Reverse Voltage

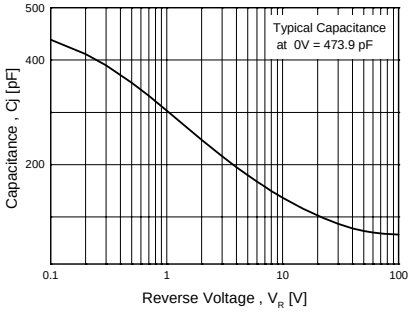

Figure 3. Typical Junction Capacitance

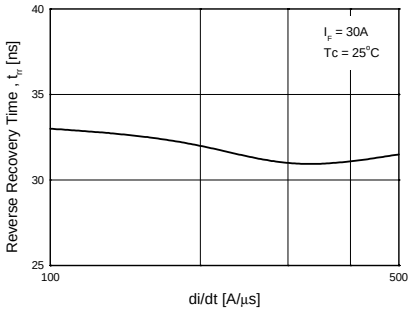

Figure 4. Typical Reverse Recovery Time vs. di/dt

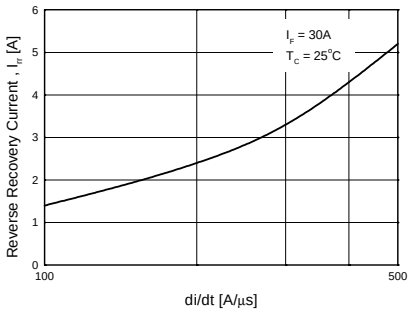

Figure 5. Typical Reverse Recovery Current vs. di/dt

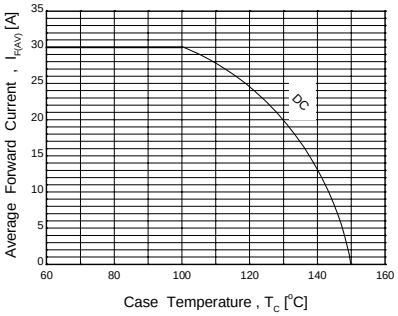

Figure 6. Forward Current Derating Curve

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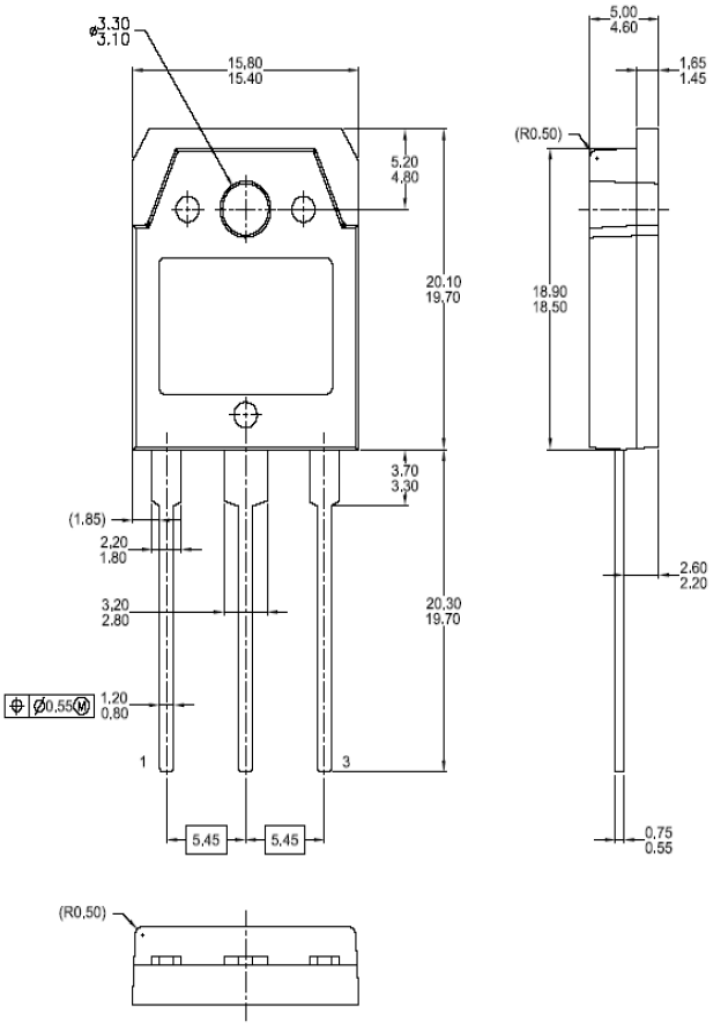
Mechanical Dimensions

TO-3PB(TO-3PN)



Dimensions in Millimeters

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