Pb Free Plating Product

# F60UP30DN

60Amperes,300Volts Dual Common Cathode Ultra Fast Recovery Rectifiers

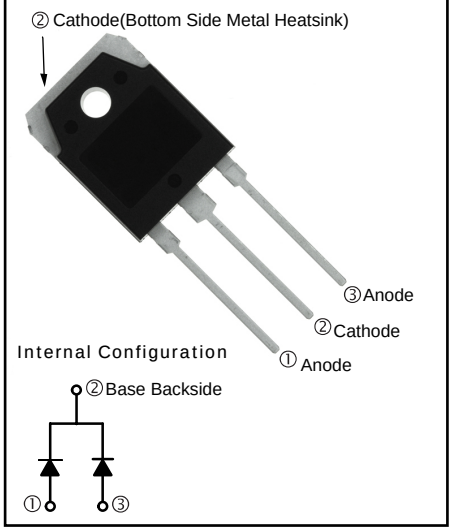
## APPLICATION

- 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

F60UP30DN using the lastest FRED FAB process(planar passivation chip) with ultrafast and soft recovery characteristic.

**Absolute Maximum Ratings**

| Parameter | Symbol | Test Conditions | Values | Units |
|---|---|---|---|---|
| Repetitive peak reverse voltage | $V_{RRM}$ | | 300 | V |
| Continuous forward current | $I_{F(AV)}$ | Tc =110°C | 60 | A |
| Single pulse forward current | $I_{FSM}$ | Tc =25°C | 600 | |
| Maximum repetitive forward current | $I_{FRM}$ | Square wave, 20kHZ | 150 | |
| Operating junction | Tj | | 175 | °C |
| Storage temperatures | Tstg | | -55 to +175 | °C |

**Electrical characteristics (Ta=25°C unless otherwise specified)**

| Parameter | Symbol | Test Conditions | Min | Typ. | Max. | Units |
|---|---|---|---|---|---|---|
| Breakdown voltage Blocking voltage | $V_{BR}$, $V_R$ | $I_R$=100μA | 300 | | | V |
| Forward voltage (Per Diode) | $V_F$ | $I_F$=30A | | 0.96 | 1.20 | |
| | | $I_F$=30A, Tj =125°C | | 0.85 | 1.00 | |
| Reverse leakage current(Per Diode) | $I_R$ | $V_R$= $V_{RRM}$ | | | 10 | μA |
| | | Tj=150°C, $V_R$=300V | | | 100 | |
| Reverse recovery time(Per Diode) | $t_{rr}$ | $I_F$=0.5A, $I_R$=1A, $I_{RR}$=0.25A | | 35 | 45 | ns |
| | | $I_F$=1A,$V_R$=30V, di/*dt* =200A/us | | 26 | 40 | |

## Thermal characteristics

| Paramter | Symbol | Typ | Units |
|---|---|---|---|
| Junction-to-Case | $R_{\theta JC}$ | 0.8 | ℃/W |

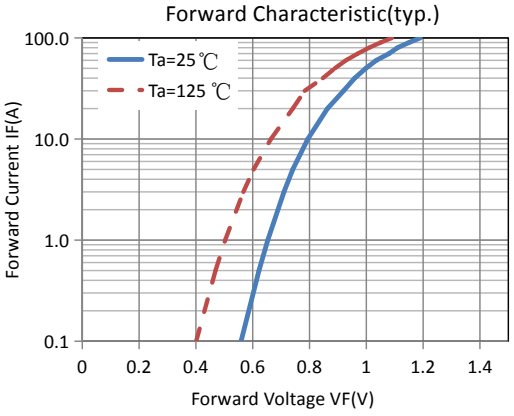


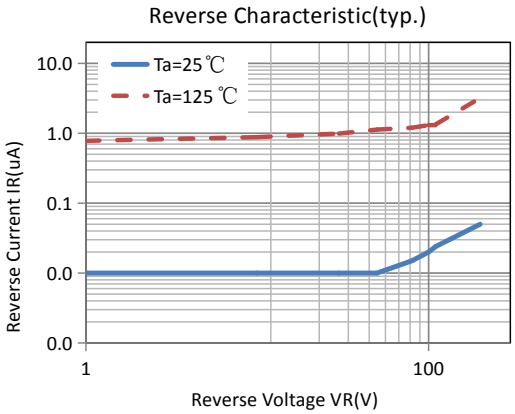
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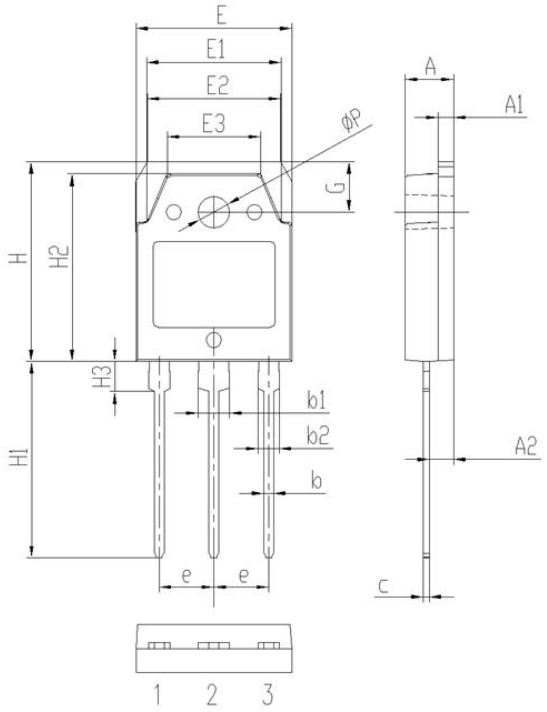
## Electrical performance (typical)




## Package Information

**TO-3PB PACKAGE**




| Symbol | Dimensions(millimeters) | |
|---|---|---|
| | Min. | Max. |
| A | 4.60 | 5.00 |
| A1 | 1.30 | 1.70 |
| A2 | 2.20 | 2.60 |
| b | 0.80 | 1.20 |
| b1 | 2.90 | 3.30 |
| b2 | 1.90 | 2.30 |
| c | 0.40 | 0.80 |
| e | 5.25 | 5.65 |
| E | 15.3 | 15.7 |
| E1 | 13.2 | 13.6 |
| E2 | 13.1 | 13.5 |
| E3 | 9.10 | 9.50 |
| H | 19.7 | 20.1 |
| H1 | 19.1 | 20.1 |
| H2 | 18.3 | 18.7 |
| H3 | 2.80 | 3.20 |
| G | 4.80 | 5.20 |
| ΦP | 3.00 | 3.40 |



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