

Pb Free Plating Product

## 30ATU06



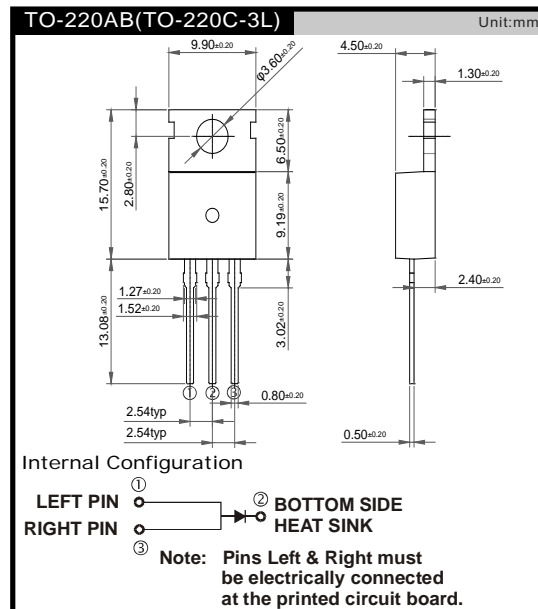
30.0 Amperes, 600Volts SwitchMode Single Fast Recovery Epitaxial Diode

### 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



### GENERAL DESCRIPTION

30ATU06 using the latest FRED FAB process(planar passivation pellet) with ultrafast and soft recovery characteristics.

| Absolute Maximum Ratings           |             |                           |             |                  |
|------------------------------------|-------------|---------------------------|-------------|------------------|
| Parameter                          | Symbol      | Test Conditions           | Values      | Units            |
| Repetitive peak reverse voltage    | $V_{RRM}$   |                           | 600         | V                |
| Continuous forward current         | $I_{F(AV)}$ | $T_c = 110^\circ\text{C}$ | 30          | A                |
| Single pulse forward current       | $I_{FSM}$   | $T_c = 25^\circ\text{C}$  | 240         |                  |
| Maximum repetitive forward current | $I_{FRM}$   | Square wave, 20kHz        | 60          |                  |
| Operating junction                 | $T_j$       |                           | 175         | $^\circ\text{C}$ |
| Storage temperatures               | $T_{stg}$   |                           | -55 to +175 | $^\circ\text{C}$ |

| Electrical characteristics (Ta=25°C unless otherwise specified) |               |                                  |     |      |      |         |
|---|---------------|----------------------------------|-----|------|------|---------|
| Parameter   | Symbol        | Test Conditions                  | Min | Typ. | Max. | Units   |
| Breakdown voltage<br>Blocking voltage                           | $V_{BR}, V_R$ | $I_R=100\mu A$                   | 600 |      |      | V       |
| Forward voltage<br>(Per Diode)                                  | $V_F$         | $I_F=30A$                        |     | 1.30 | 1.60 |         |
|   |               | $I_F=30A, T_j=125^\circ C$       |     | 1.05 | 1.40 |         |
| Reverse leakage current(Per Diode)                              | $I_R$         | $V_R=V_{RRM}$                    |     |      | 20   | $\mu A$ |
|   |               | $T_j=150^\circ C, V_R=600V$      |     |      | 200  |         |
| Reverse recovery time(Per Diode)                                | $t_{rr}$      | $I_F=0.5A, I_R=1A, I_{RR}=0.25A$ |     | 38   | 50   | ns      |
|   |               | $I_F=1A, V_R=30V, di/dt=200A/us$ |     | 28   | 35   |         |

### Thermal characteristics

| Paramter         | Symbol          | Typ  | Units        |
|------------------|-----------------|------|--------------|
| Junction-to-Case | $R_{\theta JC}$ | 1.50 | $^\circ C/W$ |

### Electrical performance (typic)

