

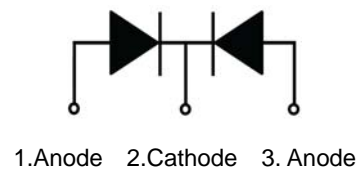
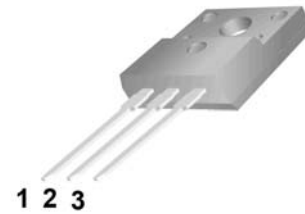
TO-220F



### MBR3040FCT-MBR30200FCT

#### Features:

- Low power loss, high efficiency.  
High surge capacity
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications.
- Metal silicon junction, majority carrier conduction.
- High current Capability, low forward voltage drop.
- Guard ring for over voltage protection.



#### Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter  | Symbol                  | MBR 3040 FCT | MBR 3045 FCT | MBR 3050 FCT | MBR 3060 FCT | MBR 3080 FCT | MBR 3090 FCT | MBR 30100 FCT | MBR 30150 FCT | MBR 30200 FCT | Unit |
|--|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|------|
| Maximum Recurrent Peak Reverse Voltage   | $V_{RRM}$               | 40           | 45           | 50           | 60           | 80           | 90           | 100           | 150           | 200           | V    |
| Maximum RMS Voltage  | $V_{RMS}$               | 28           | 31.5         | 35           | 42           | 56           | 63           | 70            | 105           | 140           |      |
| Maximum DC Blocking Voltage  | $V_{R(DC)}$             | 40           | 45           | 50           | 60           | 80           | 90           | 100           | 150           | 200           |      |
| Maximum Average Forward Current  | $I_{F(AV)}$             | 30           |              |              |              |              |              |               |               |               | A    |
| Peak Forward Surge Current:8.3ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$               | 275          |              |              |              |              |              |               |               |               |      |
| Maximum Forward Voltage at 15A per leg   | $V_F$                   | 0.7          |              | 0.75         |              |              | 0.85         |               | 0.95          |               | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage  | $T_j=25^\circ\text{C}$  | $I_R$        | 0.1          |              |              |              |              |               |               |               | mA   |
|  | $T_j=125^\circ\text{C}$ |              | 20           |              |              |              |              |               |               |               |      |
| Maximum Operating Junction Temperature   | $T_j$                   | 150          |              |              |              | 175          |              |               |               |               | °C   |
| Storage Temperature  | $T_{stg}$               | -55~+150     |              |              |              | -65~+175     |              |               |               |               |      |
| Typical Thermal Resistance   | $R_{\theta JC}$         | 1.4          |              |              |              |              |              |               |               |               | °C/W |

### Typical Characteristics

#### RATING AND CHARACTERISTIC CURVES

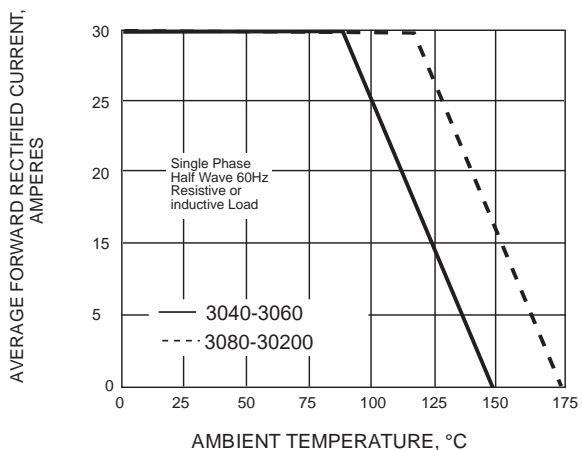


Fig.1 FORWARD CURRENT ERATING CURVE

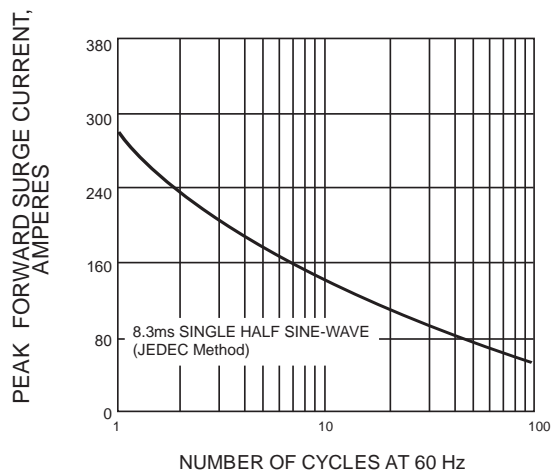


Fig.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

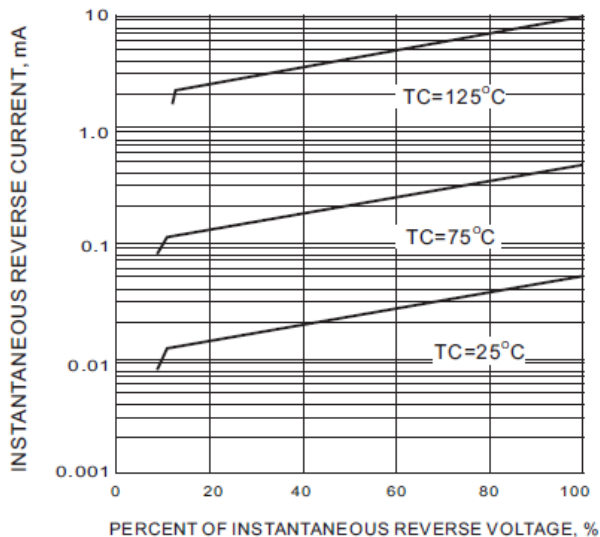


Fig.3 TYPICAL REVERSE CHARACTERISTIC

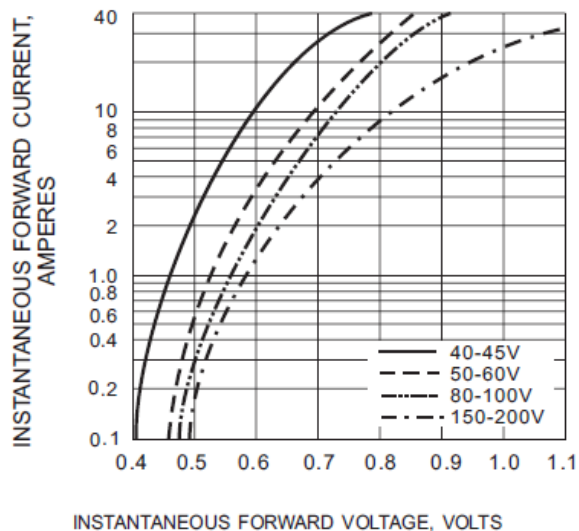
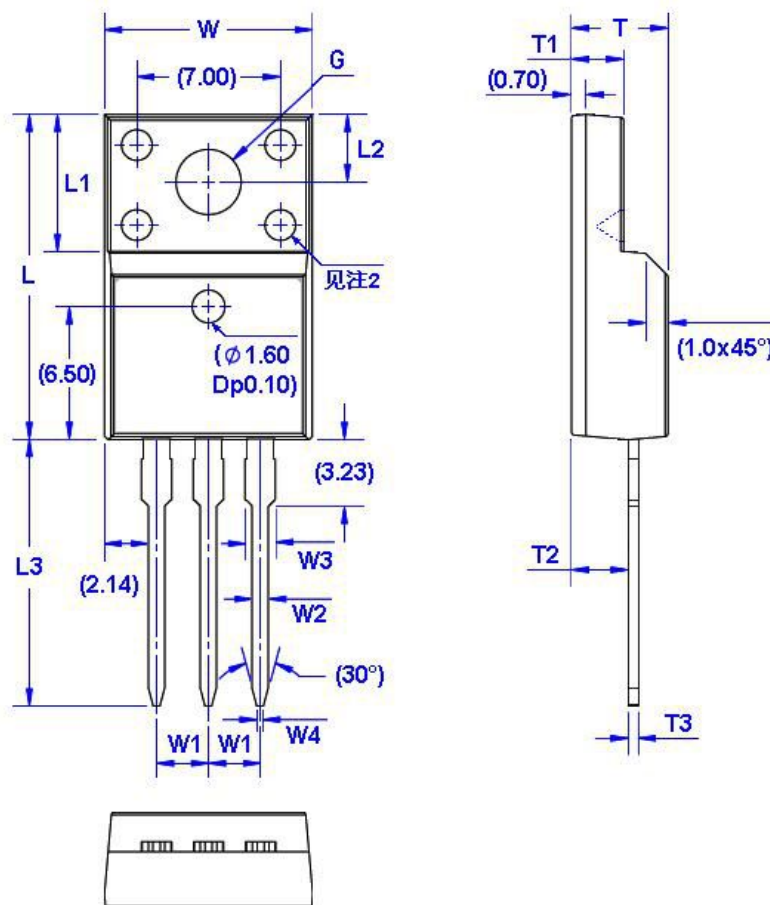


Fig.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC

**Package Dimension**

TO-220F

Unit: mm



| Symbol | Size       |       | Symbol | Size  |       | Symbol | Size  |       | Symbol      | Size |      |
|--------|------------|-------|--------|-------|-------|--------|-------|-------|-------------|------|------|
|        | Min        | Max   |        | Min   | Max   |        | Min   | Max   |             | Min  | Max  |
| W      | 9.96       | 10.36 | W4     | 0.25  | 0.45  | L3     | 12.78 | 13.18 | T3          | 0.45 | 0.60 |
| W1     | 2.54 (TYP) |       | L      | 15.67 | 16.07 | T      | 4.50  | 4.90  | G( $\Phi$ ) | 3.08 | 3.28 |
| W2     | 0.70       | 0.90  | L1     | 6.48  | 6.88  | T1     | 2.34  | 2.74  |             |      |      |
| W3     | 1.24       | 1.47  | L2     | 3.20  | 3.40  | T2     | 2.56  | 2.96  |             |      |      |