

**VOLTAGE RANGE: 30 - 100 V**  
**CURRENT: 30 A**

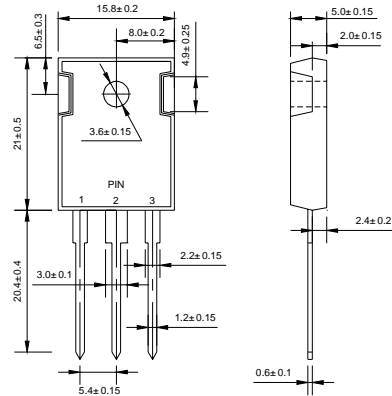
### Features

- ◇ 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 capacity, low forward voltage drop.
- ◇ Guard ring for over voltage protection.

### Mechanical Data

- ◇ Case: JEDEC TO-3P, molded plastic body
- ◇ Terminals: Solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Position: Any
- ◇ Weight: 0.223 ounce, 6.3 grams

### TO-3P(TO-247AD)



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

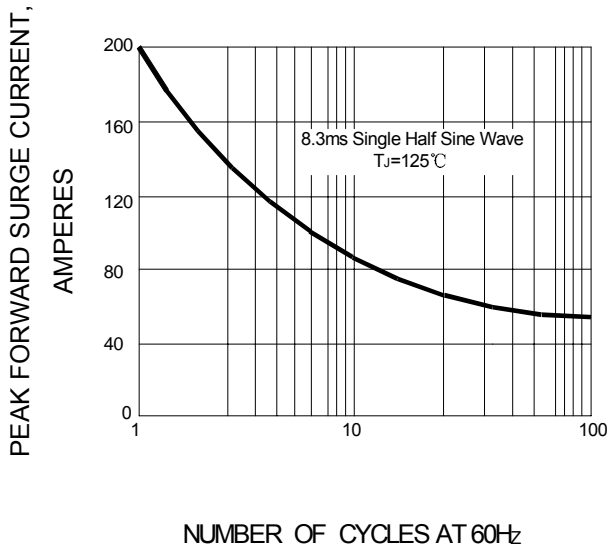
|                                                                                    |                 | MBR 3030PT      | MBR 3035PT | MBR 3040PT | MBR 3045PT | MBR 3050PT | MBR 3060PT | MBR 3080PT | MBR 30100PT | UNITS              |
|------------------------------------------------------------------------------------|-----------------|-----------------|------------|------------|------------|------------|------------|------------|-------------|--------------------|
| Maximum recurrent peak reverse voltage                                             | $V_{RRM}$       | 30              | 35         | 40         | 45         | 50         | 60         | 80         | 100         | V                  |
| Maximum RMS Voltage                                                                | $V_{RMS}$       | 21              | 25         | 28         | 32         | 35         | 42         | 56         | 70          | V                  |
| Maximum DC blocking voltage                                                        | $V_{DC}$        | 30              | 35         | 40         | 45         | 50         | 60         | 80         | 100         | V                  |
| Maximum average forward total device rectified current @ $T_C = 105^\circ\text{C}$ | $I_{F(AV)}$     | 30              |            |            |            |            |            |            |             | A                  |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load  | $I_{FSM}$       | 200             |            |            |            |            |            |            |             | A                  |
| Maximum forward voltage (Note 1)                                                   | $V_F$           | -               |            |            |            | 0.80       |            | 0.85       |             | V                  |
| ( $I_F=15\text{A}, T_C=25^\circ\text{C}$ )                                         |                 |                 |            |            |            | 0.70       |            | 0.65       |             |                    |
| ( $I_F=15\text{A}, T_C=125^\circ\text{C}$ )                                        |                 |                 |            |            |            | 0.95       |            | 0.95       |             |                    |
| ( $I_F=30\text{A}, T_C=25^\circ\text{C}$ )                                         |                 |                 |            |            |            | 0.85       |            | 0.75       |             |                    |
| Maximum reverse current at rated DC blocking voltage                               | $I_R$           | 1.0             |            |            |            |            |            | 0.2        |             | mA                 |
| @ $T_C=125^\circ\text{C}$                                                          |                 | 60              |            |            |            |            |            | 40         |             |                    |
| Maximum thermal resistance (Note 2)                                                | $R_{\theta JC}$ | 6.8             |            |            |            |            |            | 4.4        |             | $^\circ\text{C/W}$ |
| Operating junction temperature range                                               | $T_J$           | - 55 ---- + 150 |            |            |            |            |            |            |             | $^\circ\text{C}$   |
| Storage temperature range                                                          | $T_{STG}$       | - 55 ---- + 150 |            |            |            |            |            |            |             | $^\circ\text{C}$   |

NOTE: 1. Pulse test: 300µs pulse width, 1% duty cycle.

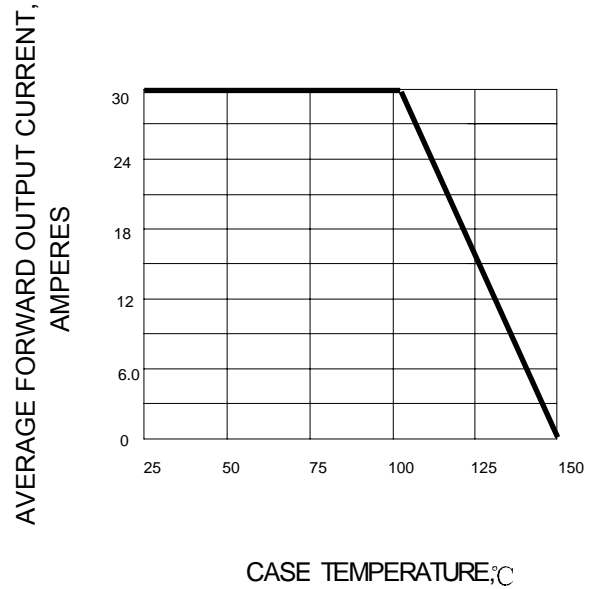
2. Thermal resistance from junction to case.

### Ratings AND Characteristic Curves

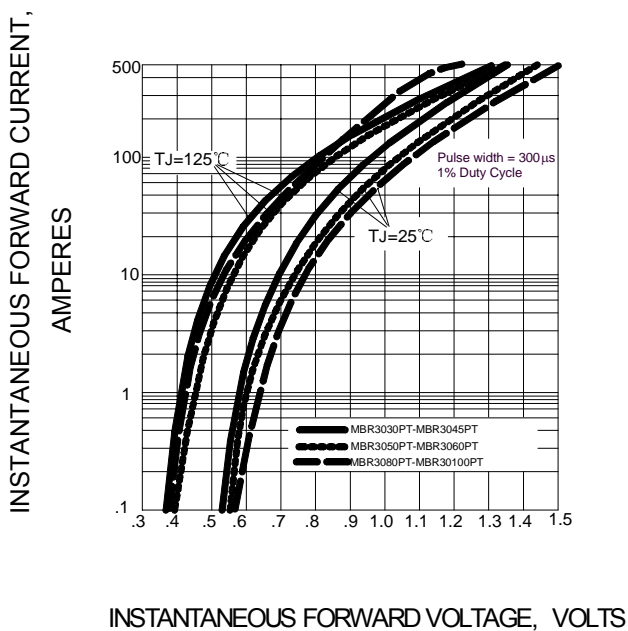
**FIG.1 – PEAK FORWARD SURGE CURRENT**



**FIG.2 – FORWARD DERATING CURVE**



**FIG.3 – TYPICAL FORWARD CHARACTERISTIC**



**FIG.4 – TYPICAL REVERSE CHARACTERISTIC**

