

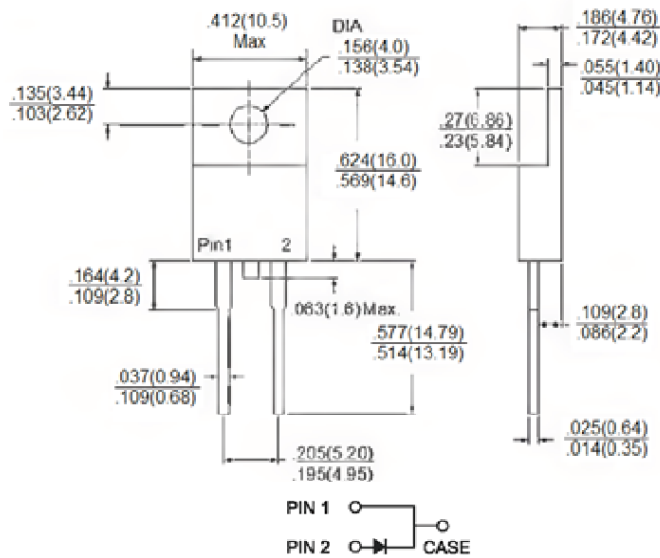


### Features

- ◇ UL Recognized File # E-326243
- ◇ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ◇ Metal silicon junction, majority carrier conduction
- ◇ Low power loss, high efficiency
- ◇ High current capability, low forward voltage drop
- ◇ High surge capability
- ◇ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ◇ Guard-ring for overvoltage protection
- ◇ High temperature soldering guaranteed: 260°C/10 seconds, 0.25"(6.35mm) from case
- ◇ Green compound with suffix "G" on packing code & prefix "G" on datecode

### Mechanical Data

- ◇ Cases: JEDEC TO-220AC molded plastic body
- ◇ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Mounting position: Any
- ◇ Mounting torque: 5 in. - lbs, max
- ◇ Weight: 1.88 grams



### Dimensions in inches and (millimeters)



### Marking Diagram

- MBR10XX = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

### Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number   | Symbol          | MBR 1035      | MBR 1045     | MBR 1050 | MBR 1060     | MBR 1090 | MBR 10100 | MBR 10150 | MBR 10200 | Units        |
|---|-----------------|---------------|--------------|----------|--------------|----------|-----------|-----------|-----------|--------------|
| Maximum Recurrent Peak Reverse Voltage  | $V_{RRM}$       | 35            | 45           | 50       | 60           | 90       | 100       | 150       | 200       | V            |
| Maximum RMS Voltage   | $V_{RMS}$       | 24            | 31           | 35       | 42           | 63       | 70        | 105       | 140       | V            |
| Maximum DC Blocking Voltage   | $V_{DC}$        | 35            | 45           | 50       | 60           | 90       | 100       | 150       | 200       | V            |
| Maximum Average Forward Rectified Current at $T_C=125^\circ C$  | $I_{F(AV)}$     | 10            |              |          |              |          |           |           |           | A            |
| Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at $T_C=125^\circ C$                           | $I_{FRM}$       | 20            |              |          |              |          |           |           |           | A            |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)            | $I_{FSM}$       | 150           |              |          |              |          |           |           |           | A            |
| Peak Repetitive Reverse Surge Current (Note 1)  | $I_{RRM}$       | 1.0           | 0.5          |          |              |          |           |           | A         |              |
| Maximum Instantaneous Forward Voltage at: (Note 2)<br>$I_F=10A, T_A=25^\circ C$<br>$I_F=10A, T_A=125^\circ C$ | $V_F$           | 0.70<br>0.57  | 0.80<br>0.70 |          | 0.85<br>0.71 |          | 1.05<br>- |           | V         |              |
| Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage @ $T_A=25^\circ C$<br>@ $T_A=125^\circ C$  | $I_R$           | 0.1           |              |          |              |          |           |           |           | mA<br>mA     |
| Voltage Rate of Change (Rated $V_R$ )   | $dV/dt$         | 10,000        |              |          |              |          |           |           |           | V/us         |
| Typical Junction Capacitance  | $C_j$           | 500           |              |          |              |          |           |           |           | pF           |
| Maximum Typical Thermal Resistance  | $R_{\theta JC}$ | 3             |              |          |              |          |           |           |           | $^\circ C/W$ |
| Operating Junction Temperature Range  | $T_J$           | - 65 to + 150 |              |          |              |          |           |           |           | $^\circ C$   |
| Storage Temperature Range   | $T_{STG}$       | - 65 to + 175 |              |          |              |          |           |           |           | $^\circ C$   |

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

## RATINGS AND CHARACTERISTIC CURVES (MBR1035 THRU MBR10200)

