

**DESCRIPTION**

The MBR1040\_10200 is available in  
TO-220-2 Package.

| $V_{RRM}$ | $I_{(AV)}$ | $V_F$ |
|-----------|------------|-------|
| 40V~200V  | 10A        | 0.55V |
|           |            | 0.70V |
|           |            | 0.85V |
|           |            | 0.95V |

**MECHANICAL DATA**

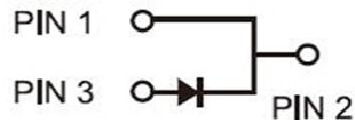
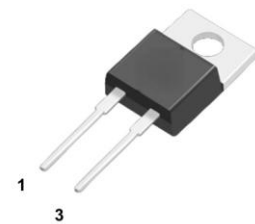
- Case: Molded plastic body
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Polarity symbol marking on body
- Mounting Position: Any

**ORDERING INFORMATION**

| Package Type                             | Part Number                     |
|------------------------------------------|---------------------------------|
| TO-220-2                                 | MBR1040                         |
|                                          | MBR1045                         |
|                                          | MBR1060                         |
|                                          | MBR10100                        |
|                                          | MBR10150                        |
|                                          | MBR10200                        |
| Note                                     | SPQ: 50pcs/Tube<br>1,000pcs/Box |
| AiT provides all RoHS Compliant Products |                                 |

**FEATURE**

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Construction utilizes void-free molded plastic technique
- Low reverse leakage
- High forward surge current capability
- High temperature soldering guaranteed 250°C/10 seconds at terminals

**PIN DESCRIPTION**



## ABSOLUTE MAXIMUM RATINGS

T<sub>A</sub>=25°C, unless otherwise specified

| Parameter                                                                          | Symbol            | MBR1040     | MBR1045 | MBR1060 | MBR10100 | MBR10150 | MBR10200 | Unit |
|------------------------------------------------------------------------------------|-------------------|-------------|---------|---------|----------|----------|----------|------|
| Maximum Repetitive Peak Reverse Voltage                                            | V <sub>RRM</sub>  | 40          | 45      | 60      | 100      | 150      | 200      | V    |
| Working Peak Reverse Voltage                                                       | V <sub>RW</sub>   | 28          | 31.5    | 42      | 70       | 105      | 140      | V    |
| Maximum DC Blocking Voltage                                                        | V <sub>DC</sub>   | 40          | 45      | 60      | 100      | 150      | 200      | V    |
| Maximum average forward rectified current at T <sub>C</sub> =110°C                 | I <sub>(AV)</sub> | 10          |         |         |          |          |          | A    |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | I <sub>FSM</sub>  | 150         |         |         |          |          |          | A    |
| Operating Temperature Range                                                        | T <sub>J</sub>    | -55 ~ + 150 |         |         |          |          |          | °C   |
| Storage Temperature Range                                                          | T <sub>STG</sub>  | -55 ~ + 150 |         |         |          |          |          | °C   |
| Typical Thermal Capacitance                                                        | R <sub>θJC</sub>  | 3.5         |         |         |          |          |          | °C/W |

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C, unless otherwise specified

| Parameter                                                | Symbol                | MBR1040        | MBR1045 | MBR1060 | MBR10100 | MBR10150 | MBR10200 | Unit |
|----------------------------------------------------------|-----------------------|----------------|---------|---------|----------|----------|----------|------|
| Maximum Instantaneous Forward Voltage per diode at 10.0A | V <sub>F</sub>        | 0.55           | 0.55    | 0.70    | 0.85     | 0.95     | 0.95     | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage  | T <sub>A</sub> =25°C  | I <sub>R</sub> | 0.50    | 0.50    | 0.50     | 0.05     | 0.05     | mA   |
|                                                          | T <sub>A</sub> =100°C |                | 50      | 50      | 50       | 10       | 10       |      |



## TYPICAL PERFORMANCE CHARACTERISTICS

Fig 1. Derating Curve Output Rectified Current

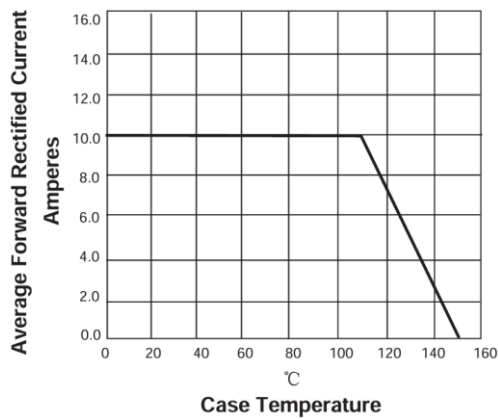


Fig 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

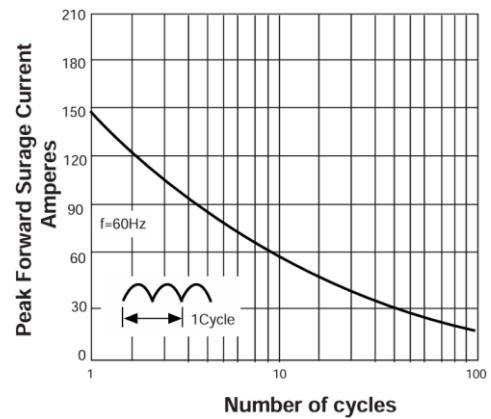


Fig 3. Typical Forward Voltage Characteristics

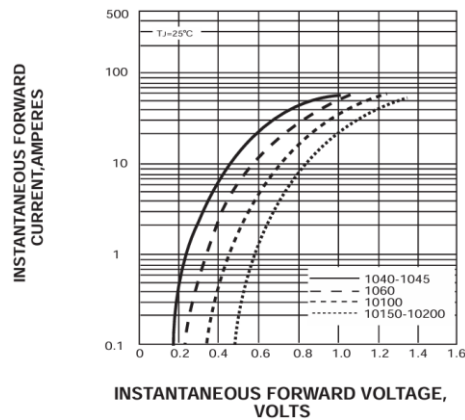
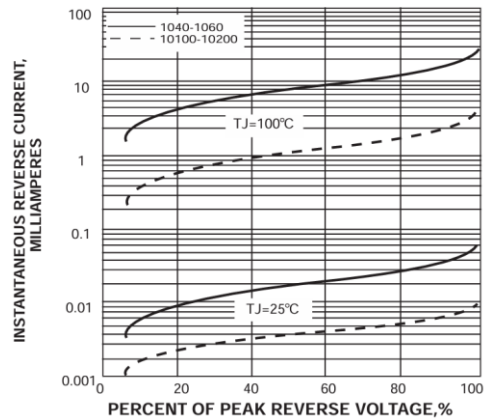


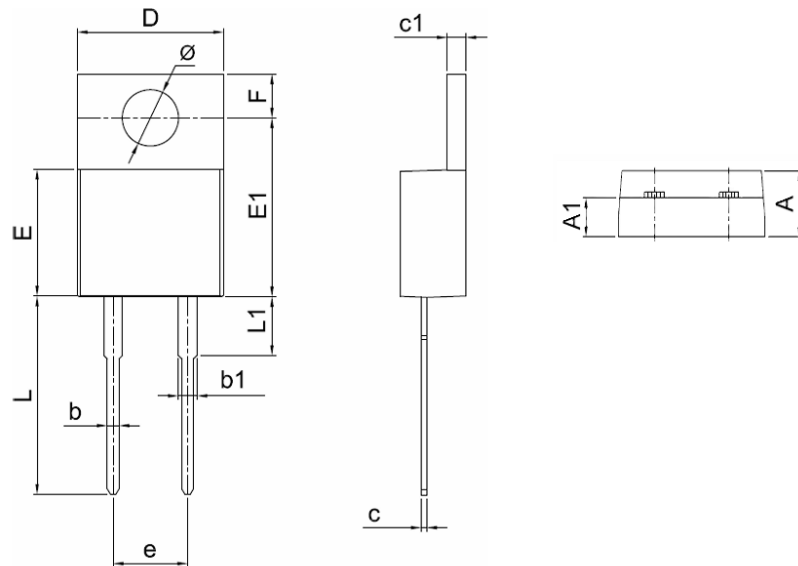
Fig 4. Typical Reverse Leakage Characteristics





## PACKAGE INFORMATION

Dimension in TO-220-2 Package



| SYMBOL | MILLIMETERS |        |
|--------|-------------|--------|
|        | Min.        | Max.   |
| A      | 4.340       | 4.670  |
| A1     | 2.520       | 2.820  |
| b      | 0.710       | 0.910  |
| b1     | 1.170       | 1.370  |
| c      | 0.300       | 0.500  |
| c1     | 1.170       | 1.370  |
| D      | 9.900       | 10.200 |
| E      | 8.500       | 8.900  |
| E1     | 12.000      | 12.500 |
| e      | 2.440       | 2.640  |
| e1     | 4.880       | 5.280  |
| F      | 2.600       | 2.800  |
| L      | 13.200      | 13.800 |
| L1     | 3.800       | 4.200  |
| Φ      | 3.600       | 3.960  |



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