



MBR1035 THRU MBR10200

10.0 AMPS. Schottky Barrier Rectifiers



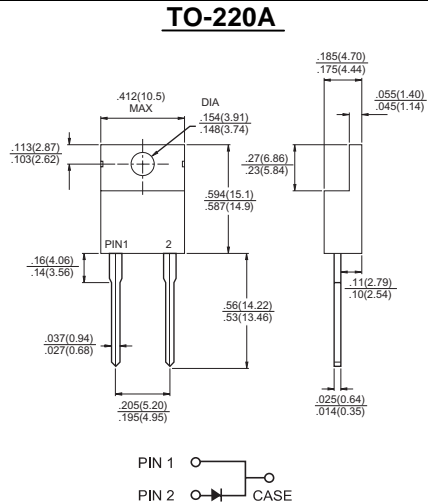
Voltage Range
35 to 200 Volts
Current
10.0 Amperes

Features

- ✦ Plastic material used carries Underwriters Laboratory Classifications 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
- ✦ Guardring for overvoltage protection
- ✦ High temperature soldering guaranteed:
260°C/10 seconds, 0.25" (6.35mm) from case

Mechanical Data

- ✦ Cases: JEDEC TO-220A molded plastic body
- ✦ Terminals: Lead solderable per MIL-STD-750, Method 2026
- ✦ Polarity: As marked
- ✦ Mounting position: Any
- ✦ Mounting torque: 5 in. - lbs. max
- ✦ Weight: 0.08 ounce, 2.24 grams



Dimensions in inches and (millimeters)

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 10200 | Units | |
|---|-----------------|-------------|----------|----------|----------|----------|-----------|-----------|---------------------------|------------------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 35 | 45 | 50 | 60 | 90 | 100 | 200 | V | |
| Maximum RMS Voltage | V_{RMS} | 24 | 31 | 35 | 42 | 63 | 70 | 140 | V | |
| Maximum DC Blocking Voltage | V_{DC} | 35 | 45 | 50 | 60 | 90 | 100 | 200 | V | |
| Maximum Average Forward Rectified Current See Fig. 1 | $I_{(AV)}$ | 10 | | | | | | | A | |
| Peak Repetitive Forward Current (Square Wave, 20KHz) at $T_c=135^\circ\text{C}$ | I_{FRM} | 20.0 | | | | | | | 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 | |
| Voltage Rate of Change (Rated V_R) | dV/dt | 10,000 | | | | | | | V/ μs | |
| Maximum Instantaneous Forward Voltage at (Note 2) $I_F=10\text{A}, T_c=25^\circ\text{C}$ $I_F=10\text{A}, T_c=125^\circ\text{C}$ $I_F=20\text{A}, T_c=25^\circ\text{C}$ $I_F=20\text{A}, T_c=125^\circ\text{C}$ | V_F | 0.70 | | 0.80 | | 0.85 | | 1.05 | V | |
| Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage (Note 2) @ $T_c=125^\circ\text{C}$ | I_R | | 0.1 | | | 0.1 | 0.009 | 10 | mA mA | |
| Typical Junction Capacitance (Note 3) | C_j | 350 | | 280 | | 200 | | | pF | |
| Maximum Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 3.5 | | | 2.0 | | | | $^\circ\text{C}/\text{W}$ | |
| Operating Junction Temperature Range | T_J | -65 to +150 | | | | | | | | $^\circ\text{C}$ |
| Storage Temperature Range | TSTG | -65 to +175 | | | | | | | | $^\circ\text{C}$ |

Notes: 1. 2.0 μs Pulse Width, $f=1.0$ KHz

2. Pulse Test: 300 μs Pulse Width, 1% Duty Cycle

3. Mounted on Heatsink Size of 2 in x 3 in x 0.25in Al-Plate.

RATINGS AND CHARACTERISTIC CURVES (MBR1035 THRU MBR10200)

FIG.1- FORWARD CURRENT DERATING CURVE

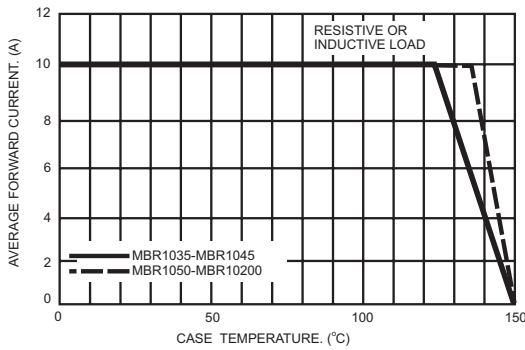


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

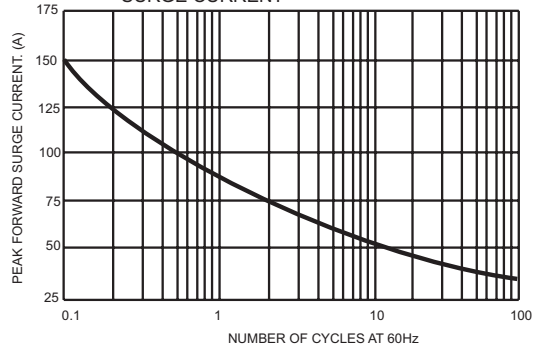


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

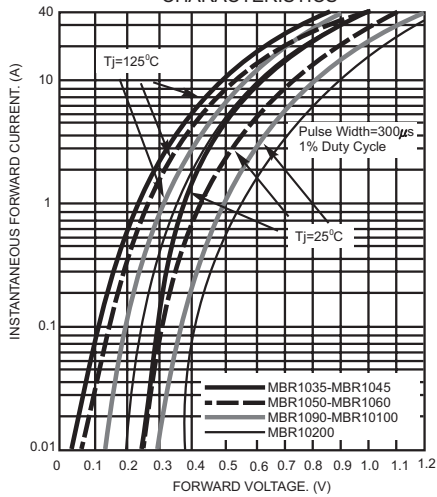


FIG.4- TYPICAL REVERSE CHARACTERISTICS

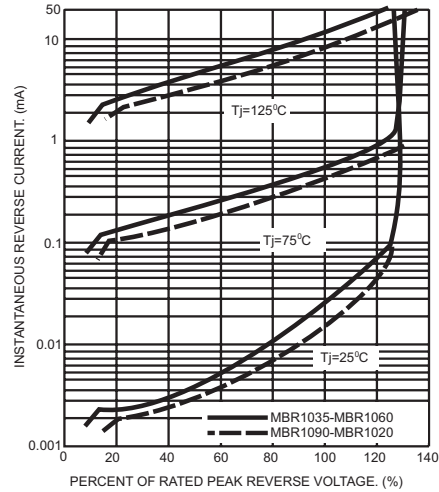


FIG.5- TYPICAL JUNCTION CAPACITANCE

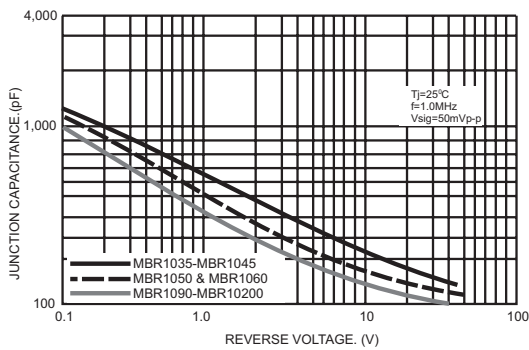


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTIC

