



# MBR10100CT THRU MBR10200CT

10.0 AMPS. Schottky Barrier Rectifiers



Voltage Range  
100 to 200 Volts  
Current  
10.0 Amperes

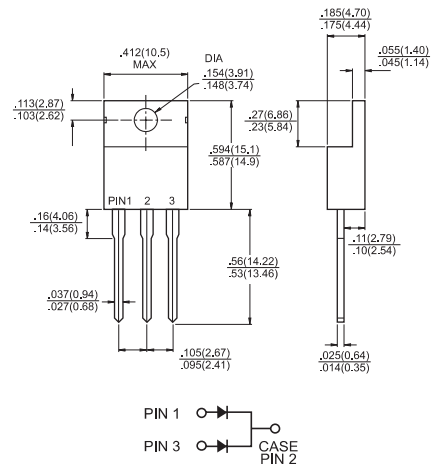
## Features

- ✦ 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-220 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

## TO-220



## 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 10100CT  | MBR 10150CT  | MBR 10200CT  | Units                     |
|-------------------------------------------------------------------------------------------------------------------------------|----------------|--------------|--------------|--------------|---------------------------|
| Maximum Recurrent Peak Reverse Voltage                                                                                        | $V_{RRM}$      | 100          | 150          | 200          | V                         |
| Maximum RMS Voltage                                                                                                           | $V_{RMS}$      | 70           | 105          | 140          | V                         |
| Maximum DC Blocking Voltage                                                                                                   | $V_{DC}$       | 100          | 150          | 200          | V                         |
| Maximum Average Forward Rectified Current at $T_c=125^\circ\text{C}$                                                          | $I_{(AV)}$     | 10           |              |              | A                         |
| Peak Repetitive Forward Current (Rated $V_F$ , Square Wave, 20KHz) at $T_c=125^\circ\text{C}$                                 | $I_{FRM}$      | 32.0         |              |              | A                         |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)                            | $I_{FSM}$      | 120          |              |              | A                         |
| Peak Repetitive Reverse Surge Current (Note 1)                                                                                | $I_{RRM}$      | 0.5          |              |              | A                         |
| Maximum Instantaneous Forward Voltage at:<br>(Note 2) $I_F=5A$ , $T_c=25^\circ\text{C}$<br>$I_F=5A$ , $T_c=125^\circ\text{C}$ | $V_F$          | 0.85<br>0.75 | 0.88<br>0.78 | 0.99<br>0.87 | V                         |
| Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage (Note 2)                          | $I_R$          | 0.008        |              |              | 0.2<br>mA                 |
| Voltage Rate of Change (Rated $V_R$ )                                                                                         | $dV/dt$        | 10,000       |              |              | V/ $\mu\text{s}$          |
| Maximum Typical Thermal Resistance (Note 3)                                                                                   | $R_{\theta_c}$ | 1.5          |              |              | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range                                                                                          | $T_J$          | -65 to +150  |              |              | $^\circ\text{C}$          |
| Storage Temperature Range                                                                                                     | $T_{STG}$      | -65 to +175  |              |              | $^\circ\text{C}$          |

Notes: 1. 2.0 $\mu\text{s}$  Pulse Width,  $f=1.0$  KHz

2. Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle

3. Thermal Resistance from Junction to Case Per Leg, Mount on Heatsink Size of 2 in x 3 in x 0.25 in Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBR10100CT THRU MBR10200CT)

FIG.1- FORWARD CURRENT DERATING CURVE

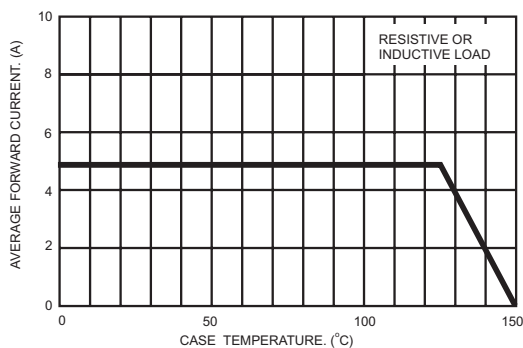


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

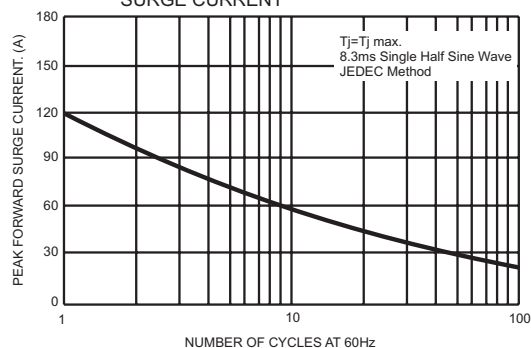


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

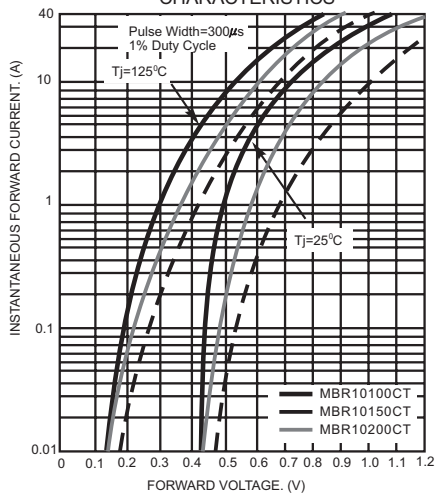


FIG.4- TYPICAL REVERSE CHARACTERISTICS

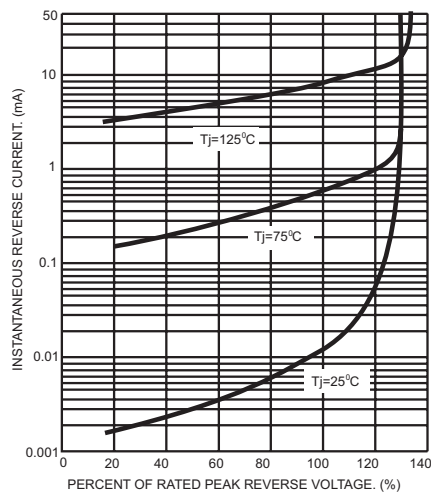


FIG.5- TYPICAL JUNCTION CAPACITANCE

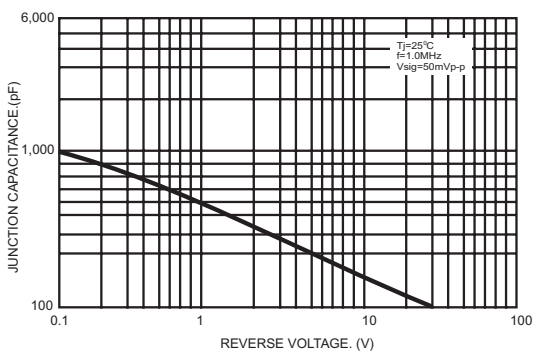


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

