



# MBR2020CT THRU MBR20100CT

Reverse Voltage - 20 to 100 Volts Forward Current - 20.0 Ampere

## SCHOTTKY BARRIER RECTIFIER

### Features

- ◆ 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, 0.25" (6.35mm) from case for 10 seconds

### Mechanical Data

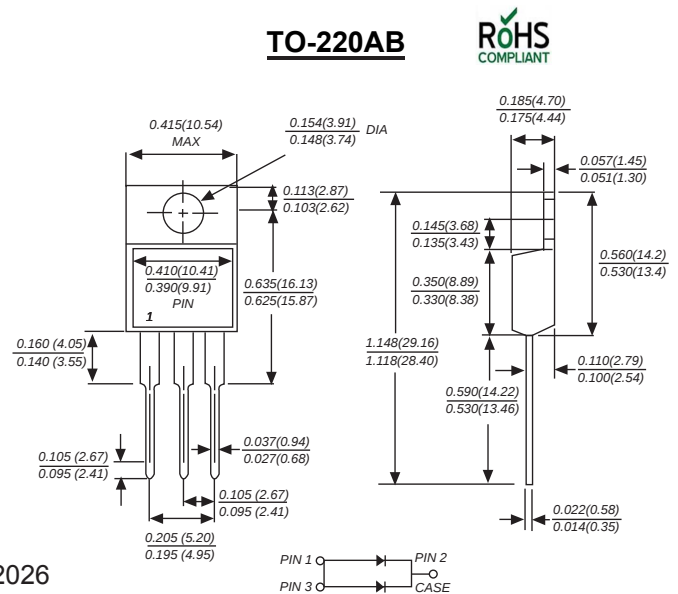
Case : JEDEC TO-220AB Molded plastic body

Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity : Polarity symbol marking on body

Mounting Position : Any

Weight : 0.080 ounce, 2.24 grams



Dimensions in inches and (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 current derate by 20%.

| Parameter                                                                                                 | SYMBOLS           | MBR<br>2020CT        | MBR<br>2030CT        | MBR<br>2040CT        | MBR<br>2045CT        | MBR<br>2050CT        | MBR<br>2060CT        | MBR<br>2070CT        | MBR<br>2080CT        | MBR<br>2090CT        | MBR<br>20100CT        | UNITS |
|-----------------------------------------------------------------------------------------------------------|-------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------------------|-------|
| Marking Code                                                                                              |                   | MDD<br>MBR<br>2020CT | MDD<br>MBR<br>2030CT | MDD<br>MBR<br>2040CT | MDD<br>MBR<br>2045CT | MDD<br>MBR<br>2050CT | MDD<br>MBR<br>2060CT | MDD<br>MBR<br>2070CT | MDD<br>MBR<br>2080CT | MDD<br>MBR<br>2090CT | MDD<br>MBR<br>20100CT |       |
| Maximum repetitive peak reverse voltage                                                                   | V <sub>RRM</sub>  | 20                   | 30                   | 40                   | 45                   | 50                   | 60                   | 70                   | 80                   | 90                   | 100                   | V     |
| Maximum RMS voltage                                                                                       | V <sub>RMS</sub>  | 14                   | 21                   | 28                   | 32                   | 35                   | 42                   | 49                   | 56                   | 63                   | 70                    | V     |
| Maximum DC blocking voltage                                                                               | V <sub>DC</sub>   | 20                   | 30                   | 40                   | 45                   | 50                   | 60                   | 70                   | 80                   | 90                   | 100                   | V     |
| Maximum average forward rectified current (see fig.1)                                                     | I <sub>(AV)</sub> | 20.0                 |                      |                      |                      |                      |                      |                      |                      |                      |                       | A     |
| Peak forward surge current 8.3ms single half sine-wave                                                    | I <sub>FSM</sub>  | 150                  |                      |                      |                      |                      |                      |                      |                      |                      |                       | A     |
| Maximum instantaneous forward voltage at 10.0A                                                            | V <sub>F</sub>    | 0.55                 |                      |                      |                      |                      | 0.75                 | 0.85                 |                      |                      |                       | V     |
| Maximum DC reverse current<br>at rated DC blocking voltage<br>T <sub>A</sub> =25℃<br>T <sub>A</sub> =100℃ | I <sub>R</sub>    | 1.0                  |                      |                      |                      |                      |                      |                      |                      |                      |                       | mA    |
|                                                                                                           |                   | 15.0                 |                      |                      |                      |                      | 50.0                 |                      |                      |                      |                       |       |
| Typical junction capacitance (NOTE 1)                                                                     | C <sub>J</sub>    | 550                  |                      |                      |                      |                      | 450                  |                      |                      |                      |                       | pF    |
| Typical thermal resistance (NOTE 2)                                                                       | R <sub>θJc</sub>  | 2.0                  |                      |                      |                      |                      |                      |                      |                      |                      |                       | ℃/W   |
| Operating junction temperature range                                                                      | T <sub>J</sub>    | -50 to +125          |                      |                      |                      |                      | -50 to +150          |                      |                      |                      |                       | ℃     |
| storage temperature range                                                                                 | T <sub>STG</sub>  | -50 to +150          |                      |                      |                      |                      |                      |                      |                      |                      |                       | ℃     |

Note: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

2. Thermal resistance from junction to case.



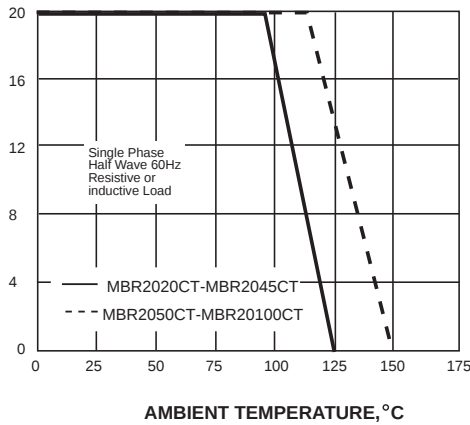
# MBR2020CT THRU MBR20100CT

Reverse Voltage - 20 to 100 Volts Forward Current - 20.0 Ampere

## Ratings And Characteristic Curves

AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



PEAK FORWARD SURGE CURRENT,  
AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

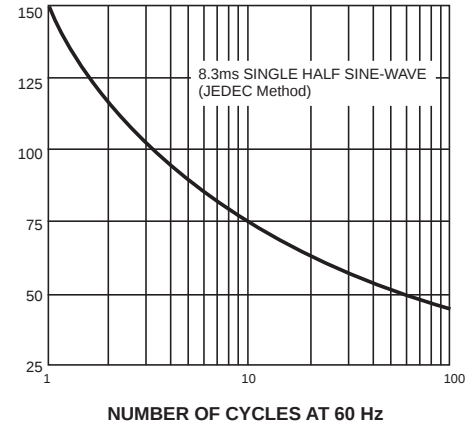
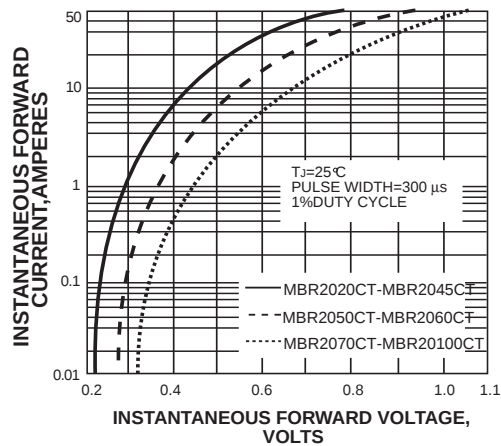


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT,  
MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

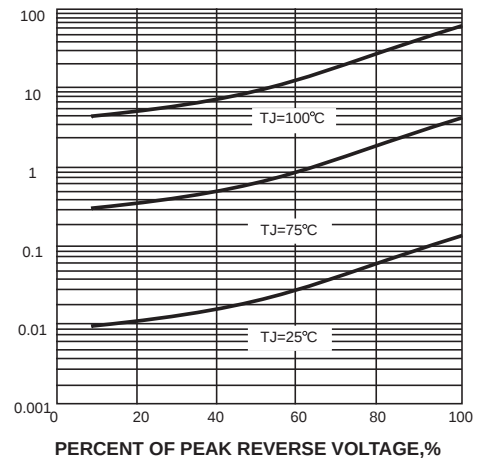
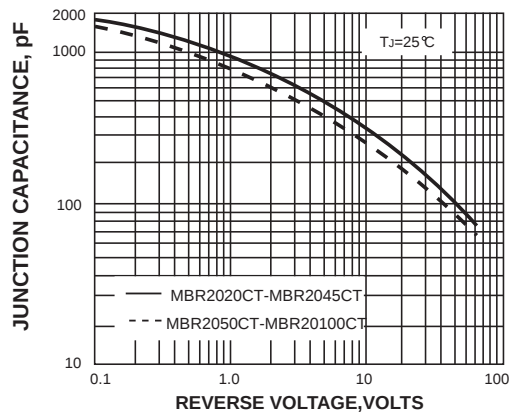
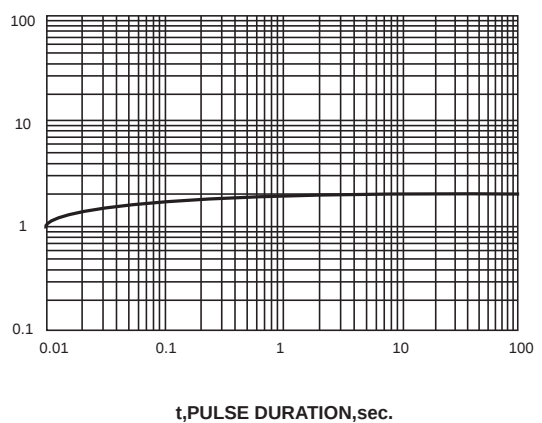


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.