

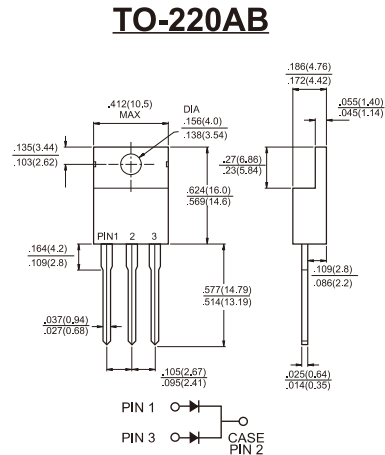


## Features

- ✧ UL Recognized File # E-326243
- ✧ 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
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

## Mechanical Data

- ✧ Cases: JEDEC TO-220AB molded plastic
- ✧ 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: 1.71 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 2035 CT | MBR 2045 CT | MBR 2050 CT | MBR 2060 CT | MBR 2090 CT | MBR 20100 CT | MBR 20150 CT | MBR 20200 CT | 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 $T_c=135^\circ\text{C}$   | $I_{F(AV)}$     | 20          |             |             |             |             |              |              |              | A                  |   |
| Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=135^\circ\text{C}$  | $I_{FRM}$       | 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 2)   | $I_{RRM}$       | 1.0         |             | 0.5         |             |             |              |              |              | A                  |   |
| Maximum Instantaneous Forward Voltage at<br>IF=10A, $T_A=25^\circ\text{C}$<br>IF=10A, $T_A=125^\circ\text{C}$<br>IF=20A, $T_A=25^\circ\text{C}$<br>IF=20A, $T_A=125^\circ\text{C}$ | $V_F$           | —           | 0.57        | 0.70        | 0.84        | 0.85        | 0.75         | 0.95         | 0.99         | 1.23               | V |
| Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage<br>(Note 1) @ $T_A=25^\circ\text{C}$<br>@ $T_A=125^\circ\text{C}$   | $I_R$           | 0.1         |             |             |             |             |              |              |              | mA                 |   |
| Voltage Rate of Change, (Rated $V_R$ )   | $dV/dt$         | 15          | 10          | 5.0         |             |             |              | 0.15         |              | mA                 |   |
| Typical Junction Capacitance   | $C_j$           | 400         |             |             |             | 320         |              |              |              | pF                 |   |
| Typical Thermal Resistance Per Leg (Note 3)  | $R_{\theta JC}$ | 1.0         |             |             |             | 2.0         |              |              |              | $^\circ\text{C/W}$ |   |
| 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. Pulse Test: 300us Pulse Width, 1% Duty Cycle  
2. 2.0us Pulse Width,  $f=1.0$  KHz  
3. Mount on Heatsink Size of (4"x6"x0.25") Al-Plate.



RATINGS AND CHARACTERISTIC CURVES (MBR2035CT THRU MBR2020CT)

FIG.1- FORWARD CURRENT DERATING CURVE

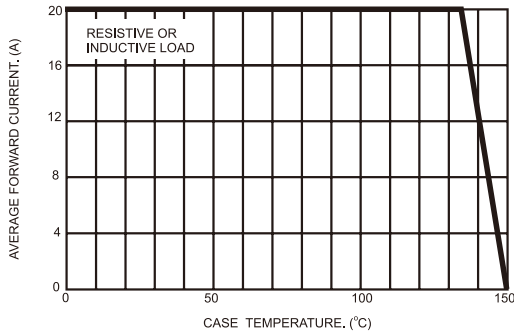


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

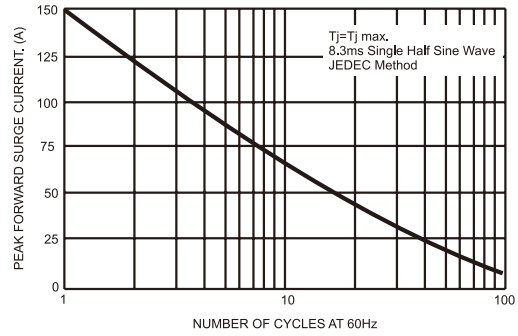


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

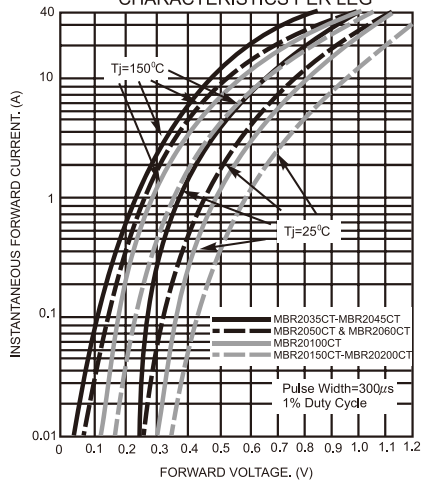


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

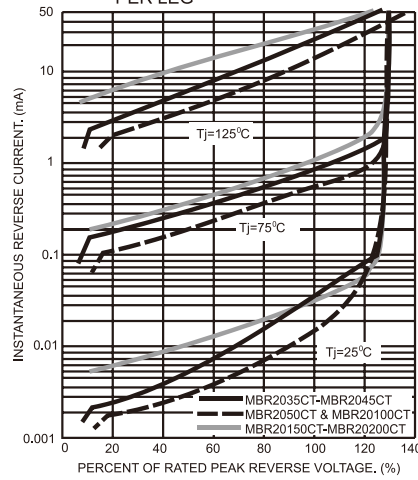


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

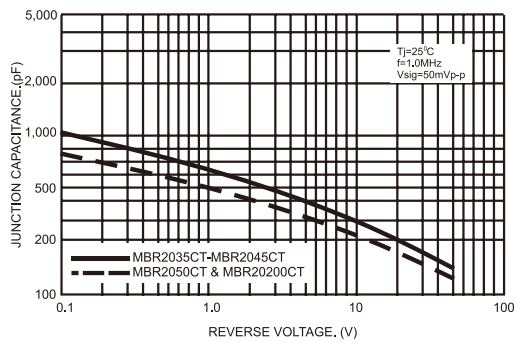


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

