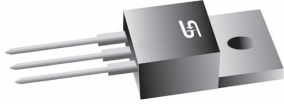




# MBR1535CT THRU MBR15100CT

## 15.0 AMPS. Schottky Barrier Rectifiers



Voltage Range  
35 to 100 Volts  
Current  
15.0 Amperes

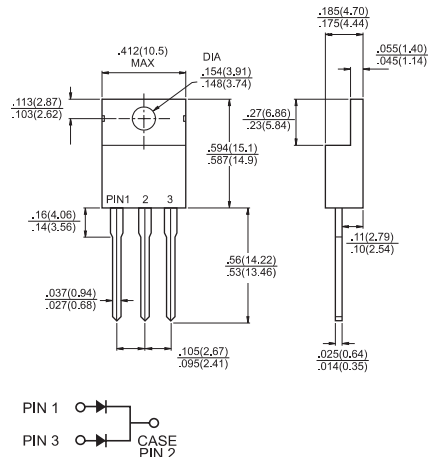
### Features

- ✧ 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 transient 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: Leads 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



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 1535CT           | MBR 1545CT | MBR 1550CT        | MBR 1560CT | MBR 1590CT        | MBR 15100CT | Units                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------|------------|-------------------|------------|-------------------|-------------|---------------------------|
| Maximum Recurrent Peak Reverse Voltage                                                                                                                                                                                                    | $V_{RRM}$                          | 35                   | 45         | 50                | 60         | 90                | 100         | V                         |
| Maximum RMS Voltage                                                                                                                                                                                                                       | $V_{RMS}$                          | 24                   | 31         | 35                | 42         | 63                | 70          | V                         |
| Maximum DC Blocking Voltage                                                                                                                                                                                                               | $V_{DC}$                           | 35                   | 45         | 50                | 60         | 90                | 100         | V                         |
| Maximum Average Forward Rectified Current at $T_c=105^\circ\text{C}$                                                                                                                                                                      | $I_{(AV)}$                         | 15                   |            |                   |            |                   |             | A                         |
| Peak Repetitive Forward Current (Rated $V_F$ , Square Wave, 20KHz) at $T_c=105^\circ\text{C}$                                                                                                                                             | $I_{FRM}$                          | 15.0                 |            |                   |            |                   |             | 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                         |
| Maximum Instantaneous Forward Voltage at (Note 2)<br>$I_F=7.5\text{A}$ , $T_c=25^\circ\text{C}$<br>$I_F=7.5\text{A}$ , $T_c=125^\circ\text{C}$<br>$I_F=15\text{A}$ , $T_c=25^\circ\text{C}$<br>$I_F=15\text{A}$ , $T_c=125^\circ\text{C}$ | $V_F$                              | 0.57<br>0.84<br>0.72 |            | 0.75<br>0.65<br>- |            | 0.92<br>0.82<br>- |             | 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<br>15.0          |            | 1.0<br>50.0       |            | 0.1<br>-          |             | mA<br>mA                  |
| Voltage Rate of Change (Rated $V_{\Delta}$ )                                                                                                                                                                                              | $dV/dt$                            | 1,000                |            |                   |            |                   |             | V/ $\mu\text{s}$          |
| Maximum Thermal Resistance Per Leg (Note 3)                                                                                                                                                                                               | $R \theta_{JA}$<br>$R \theta_{JC}$ | 60.0<br>3.0          |            |                   |            |                   |             | $^\circ\text{C}/\text{W}$ |
| 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. 2.0us Pulse Width,  $f=1.0\text{ KHz}$

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

3. Thermal Resistance from Junction to Case and Thermal Resistance from Junction to Ambient

## RATINGS AND CHARACTERISTIC CURVES (MBR1535CT THRU MBR15100CT)

FIG.1- FORWARD CURRENT DERATING CURVE

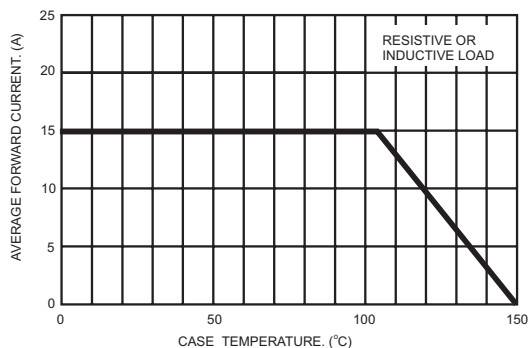


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

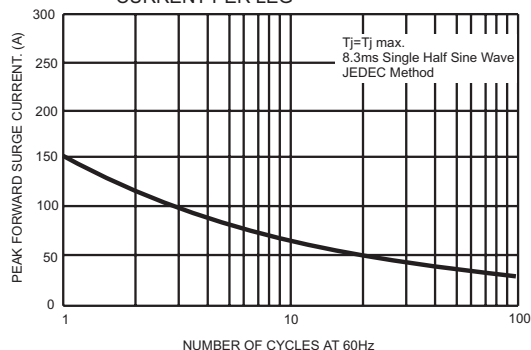


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

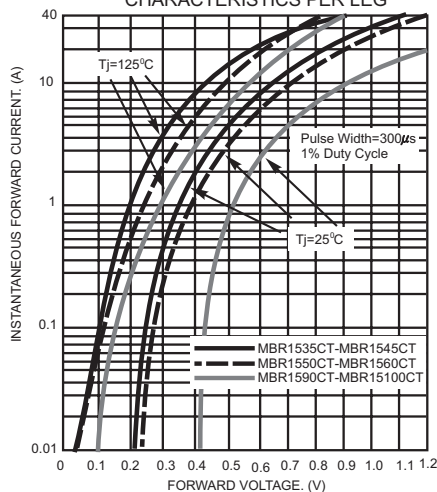


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

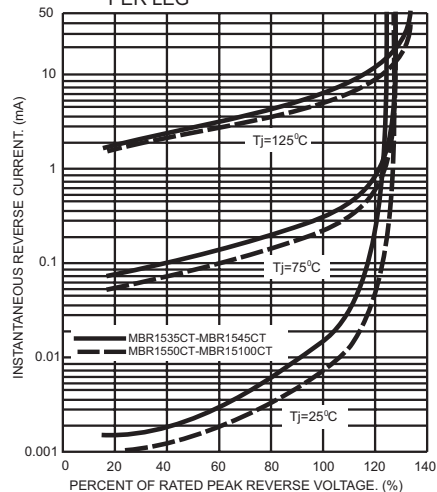


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

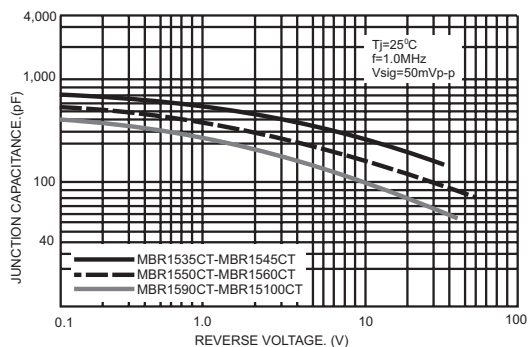


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS PER LEG

