

# **MBR6035PT - MBR60100PT**

60 AMPS. Schottky Barrier Rectifiers

**TO-3P/TO-247AD**

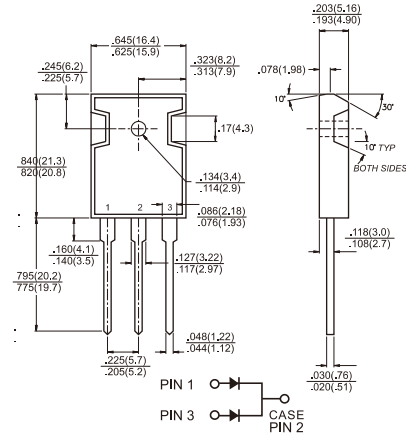


## **Features**

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ Metal silicon rectifier, 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, 0.17" (4.3mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode.

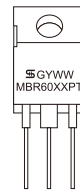
## **Mechanical Data**

- ✧ Cases: JEDEC TO-3P/TO-247AD molded plastic body
- ✧ Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 10 in. - lbs. max
- ✧ Weight: 6.15 grams



Dimensions in inches and (millimeters)

Marking Diagram



MBR60XXPT = Specific Device Code  
G = Green Compound  
Y = Year  
WW = Work Week

## **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 6035 PT          | MBR 6045 PT          | MBR 6050 PT | MBR 6060 PT       | MBR 6090 PT | MBR 60100 PT | Units    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|----------------------|-------------|-------------------|-------------|--------------|----------|
| Maximum Recurrent Peak Reverse Voltage                                                                                                                                           | V <sub>RRM</sub>   | 35                   | 45                   | 50          | 60                | 90          | 100          | V        |
| Maximum RMS Voltage                                                                                                                                                              | V <sub>RMS</sub>   | 24                   | 31                   | 35          | 42                | 63          | 70           | V        |
| Maximum DC Blocking Voltage                                                                                                                                                      | V <sub>DC</sub>    | 35                   | 45                   | 50          | 60                | 90          | 100          | V        |
| Maximum Average Forward Rectified Current at T <sub>c</sub> =125°C                                                                                                               | I <sub>F(AV)</sub> | 60                   |                      |             |                   |             |              | A        |
| Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20KHz) at T <sub>c</sub> =120°C                                                                             | I <sub>FRM</sub>   | 60                   |                      |             |                   |             |              | A        |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )                                                                              | I <sub>FSM</sub>   | 420                  |                      |             |                   |             |              | A        |
| Peak Repetitive Reverse Surge Current (Note2)                                                                                                                                    | I <sub>RRM</sub>   | 1.0                  |                      |             |                   |             |              | A        |
| Maximum Instantaneous Forward Voltage at<br>I <sub>F</sub> =30A, T <sub>A</sub> =25°C<br>I <sub>F</sub> =30A, T <sub>A</sub> =125°C<br>I <sub>F</sub> =60A, T <sub>A</sub> =25°C | V <sub>F</sub>     | 0.70<br>0.60<br>0.82 | 0.75<br>0.65<br>0.93 |             | 0.84<br>—<br>0.98 |             |              | V        |
| Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage Per Leg (Note 1)<br>@T <sub>A</sub> =25 °C<br>@ T <sub>A</sub> =125 °C                                        | I <sub>R</sub>     | 1.0<br>30            | 1.0                  |             | 10                |             |              | mA<br>mA |
| Voltage Rate of Change at (Rated V <sub>R</sub> )                                                                                                                                | dV/dt              | 10,000               |                      |             |                   |             |              | V/μS     |
| Typical Thermal Resistance Per Leg                                                                                                                                               | R <sub>θJC</sub>   | 1.2                  |                      |             |                   |             |              | °C/W     |
| Operating Junction Temperature Range                                                                                                                                             | T <sub>J</sub>     | -65 to +150          |                      |             |                   |             |              | °C       |
| Storage Temperature Range                                                                                                                                                        | T <sub>STG</sub>   | -65 to +175          |                      |             |                   |             |              | °C       |

Notes: 1. Pulse Test: 300us Pulse Width, 1% Duty Cycle  
2. 2.0us Pulse Width, f=1.0 KHz

Version: D10

## RATINGS AND CHARACTERISTIC CURVES (MBR6035PT THRU MBR60100PT)

FIG.1- FORWARD CURRENT DERATING CURVE

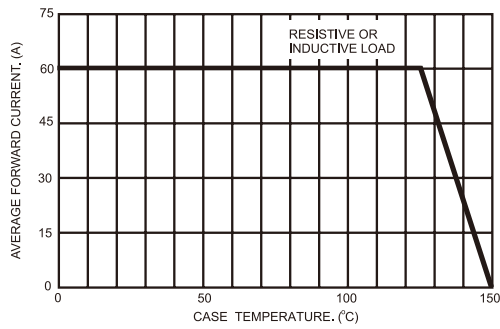


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

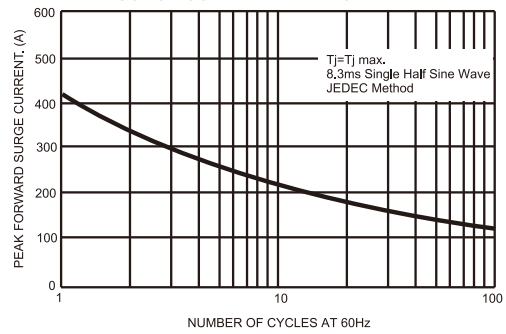


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

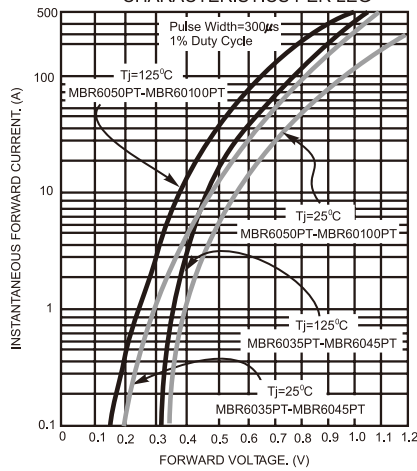


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

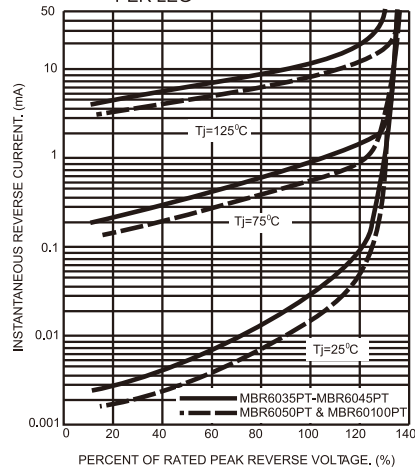


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

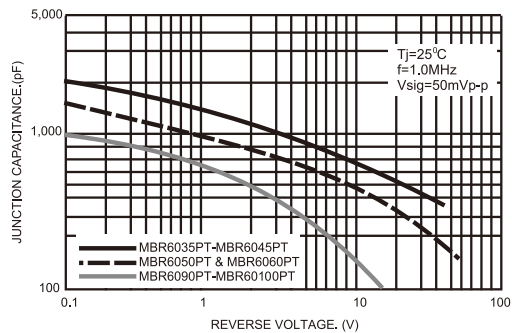


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

