



# MBR6035PT THRU MBR60100PT

## 60.0 AMPS. Schottky Barrier Rectifiers



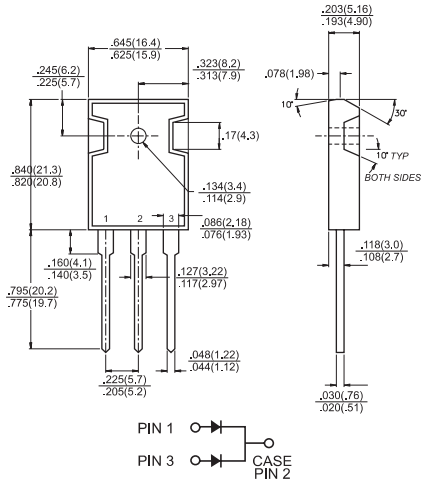
Voltage Range  
35 to 100 Volts  
Current  
60.0 Amperes

### Features

- 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

### Mechanical Data

- Cases: JEDEC TO-3P/TO-247AD molded plastic body
- Terminals: Leads solderable per MIL-STD-750, Method 2026
- Polarity: As marked
- Mounting position: Any
- Mounting torque: 10 in. - lbs. max
- Weight: 0.2 ounce, 5.6 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 6035PT           | MBR 6045PT           | MBR 6050PT | MBR 6060PT | MBR 60100PT | Units |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|----------------------|------------|------------|-------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                                                             | V <sub>RRM</sub>  | 35                   | 45                   | 50         | 60         | 100         | V     |
| Maximum RMS Voltage                                                                                                                                | V <sub>RMS</sub>  | 24                   | 31                   | 35         | 42         | 70          | V     |
| Maximum DC Blocking Voltage                                                                                                                        | V <sub>DC</sub>   | 35                   | 45                   | 50         | 60         | 100         | V     |
| Maximum Average Forward Rectified Current at Tc=125°C                                                                                              | I <sub>(AV)</sub> | 60                   |                      |            |            |             | A     |
| Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20KHz) at Tc=120°C                                                            | I <sub>FRM</sub>  | 60.0                 |                      |            |            |             | A     |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )                                                | I <sub>FSM</sub>  | 500                  |                      |            |            |             | A     |
| Peak Repetitive Reverse Surge Current (Note 1)                                                                                                     | I <sub>RRM</sub>  | 1.0                  |                      |            |            |             | A     |
| Maximum Instantaneous Forward Voltage at (Note 2)<br>I <sub>F</sub> =30A, Tc=25°C<br>I <sub>F</sub> =30A, Tc=125°C<br>I <sub>F</sub> =60A, Tc=25°C | V <sub>F</sub>    | 0.62<br>0.55<br>0.75 | 0.72<br>0.62<br>0.85 |            |            | V           |       |
| Maximum Instantaneous Reverse Current @Tc=25°C at Rated DC Blocking voltage Per Leg @ Tc=125°C (Note 1)                                            | I <sub>R</sub>    | 1.0<br>50            | 1.0<br>100           |            |            | mA<br>mA    |       |
| Voltage Rate of Change at (Rated V <sub>R</sub> )                                                                                                  | dV/dt             | 1,000                |                      |            |            |             | V/μs  |
| Typical Thermal Resistance Per Leg (Note 3)                                                                                                        | R θ <sub>JC</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. 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 Per Leg

## RATINGS AND CHARACTERISTIC CURVES (MBR6035PT THRU MBR60100PT)

FIG.1- FORWARD CURRENT DERATING CURVE

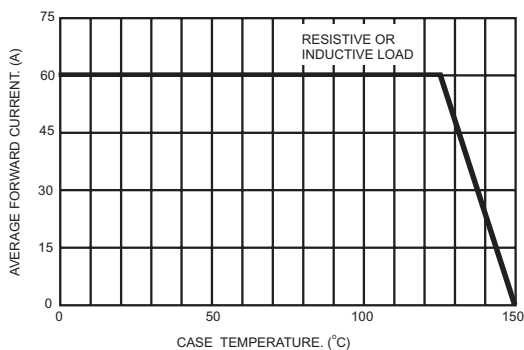


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

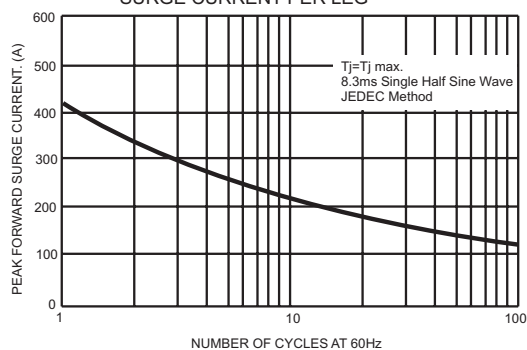


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

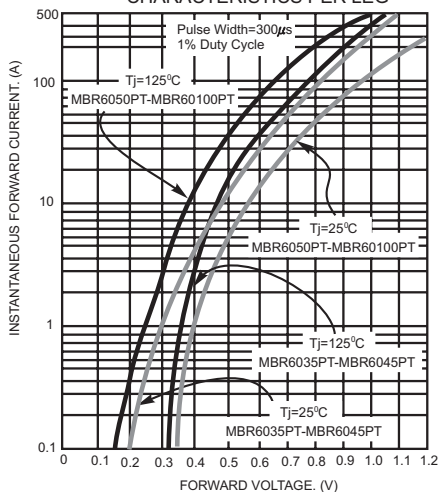


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

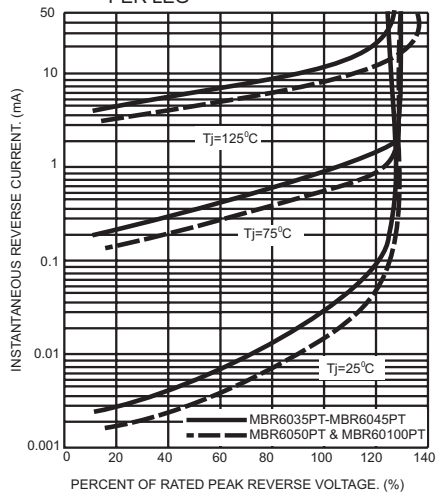


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

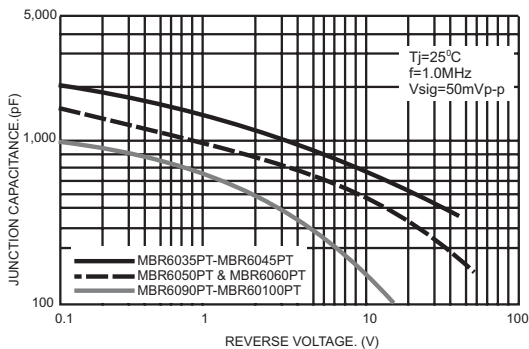


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

