



## MBR4035PT - MBR40200PT

### 40.0AMPS. Schottky Barrier Rectifiers

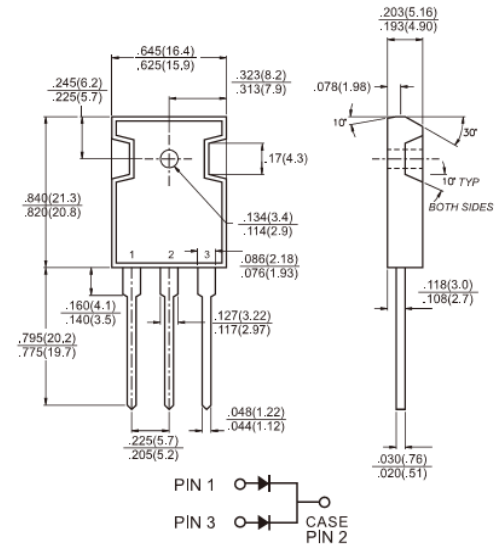
### TO-3P/TO-247AD

#### Features

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carriers Underwriters Laboratory Classification 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
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.17", (4.3mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

#### Mechanical Data

- ✧ Case: 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: 6.16 grams



#### Dimensions in inches and (millimeters)



#### Marking Diagram

- MBR40XXPT = 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 4035 PT                  | MBR 4045 PT | 4050 PT                | MBR 4060 PT | MBR 4090 PT            | MBR 40100 PT | MBR 40150 PT              | MBR 40200 PT | Units |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------|-------------|------------------------|-------------|------------------------|--------------|---------------------------|--------------|-------|
| Maximum Recurrent Peak Reverse Voltage                                                                                                                                              | V <sub>RRM</sub>   | 35                           | 45          | 50                     | 60          | 90                     | 100          | 150                       | 200          | V     |
| Maximum RMS Voltage                                                                                                                                                                 | V <sub>RMS</sub>   | 24                           | 31          | 35                     | 42          | 63                     | 70           | 105                       | 140          | V     |
| Maximum DC Blocking Voltage                                                                                                                                                         | V <sub>DC</sub>    | 35                           | 45          | 50                     | 60          | 90                     | 100          | 150                       | 200          | V     |
| Maximum Average Forward Rectified Current @ TC = 125°C (Total Device)                                                                                                               | I <sub>F(AV)</sub> | 40                           |             |                        |             |                        |              |                           |              | A     |
| Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20KHz) at Tc=120°C                                                                                             | I <sub>FRM</sub>   | 40                           |             |                        |             |                        |              |                           |              | A     |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)                                                                                  | I <sub>FSM</sub>   | 330                          |             |                        |             |                        |              |                           |              | A     |
| Peak Repetitive Reverse Surge Current (Note 1)                                                                                                                                      | I <sub>RRM</sub>   | 2.0                          |             | 1.0                    |             |                        |              |                           |              | A     |
| Maximum Instantaneous Forward Voltage at (Note 2)<br>IF=20A, T <sub>A</sub> =25°C<br>IF=20A, T <sub>A</sub> =125°C<br>IF=40A, T <sub>A</sub> =25°C<br>IF=40A, T <sub>A</sub> =125°C | V <sub>F</sub>     | 0.75<br>0.65<br>0.80<br>0.75 |             | 0.77<br>0.67<br>-<br>- |             | 0.84<br>0.74<br>-<br>- |              | 0.90<br>0.80<br>1.01<br>- |              | V     |
| Maximum Instantaneous Reverse Current @ T <sub>A</sub> =25 °C<br>at Rated Blocking Voltage Per Leg @ T <sub>A</sub> =125 °C                                                         | I <sub>R</sub>     | 1.0<br>30                    |             |                        |             | 0.5<br>20              |              | 0.1<br>10                 |              | mA    |
| Voltage Rate of Change,(Rated V <sub>R</sub> )                                                                                                                                      | dV/dt              | 10000                        |             |                        |             |                        |              |                           |              | V/us  |
| Maximum Thermal Resistance Per Leg                                                                                                                                                  | R <sub>θJC</sub>   | 1.2                          |             |                        |             |                        |              |                           |              | °C/W  |
| Operating Temperature Range                                                                                                                                                         | T <sub>J</sub>     | - 65 to + 150                |             |                        |             |                        |              |                           |              | °C    |
| Storage Temperature Range                                                                                                                                                           | T <sub>STG</sub>   | - 65 to + 175                |             |                        |             |                        |              |                           |              | °C    |

Note 1: 2.0uS Pulse Width, f=1.0KHz

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

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# RATINGS AND CHARACTERISTIC CURVES (MBR4035PT THRU MBR40200PT)

FIG.1 FORWARD CURRENT DERATING CURVE

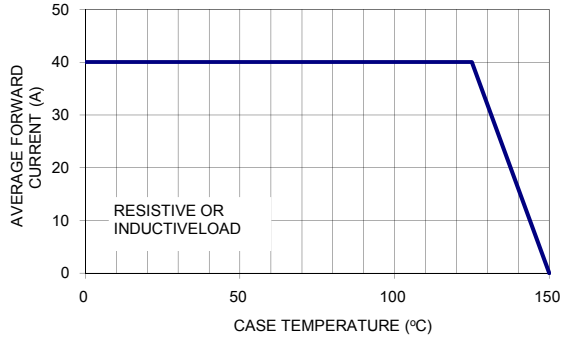


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

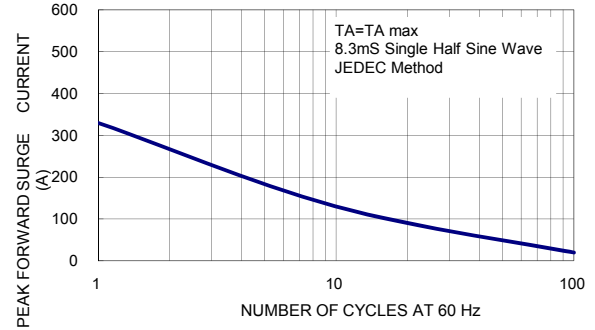


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

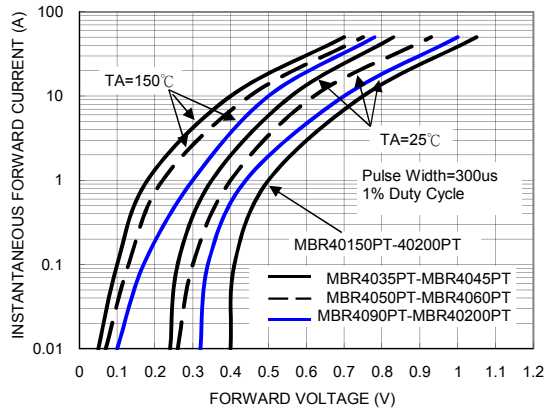


FIG.4 TYPICAL REVERSE CHARACTERISTICS PER LEG

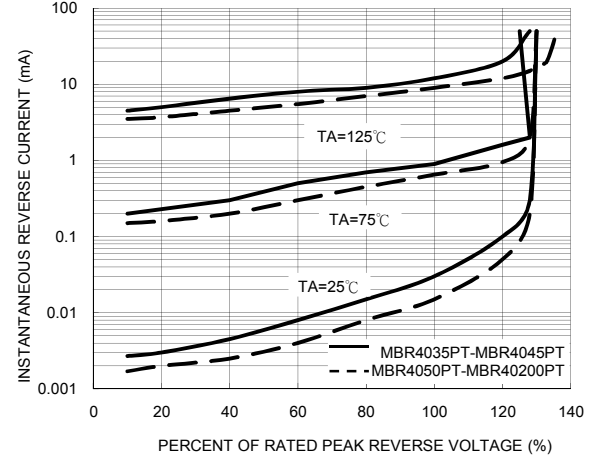


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

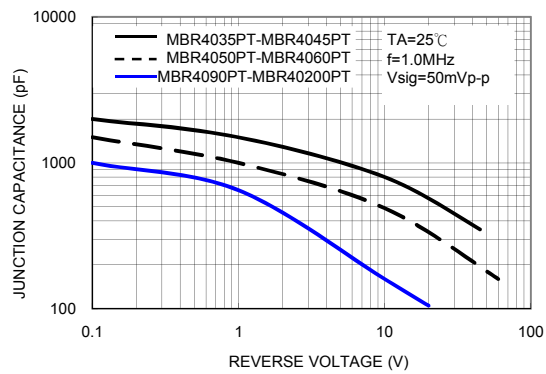
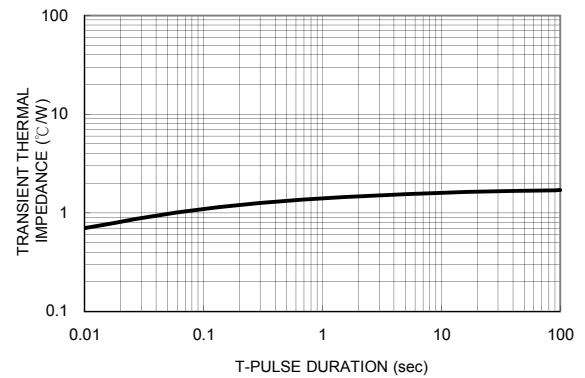


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



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