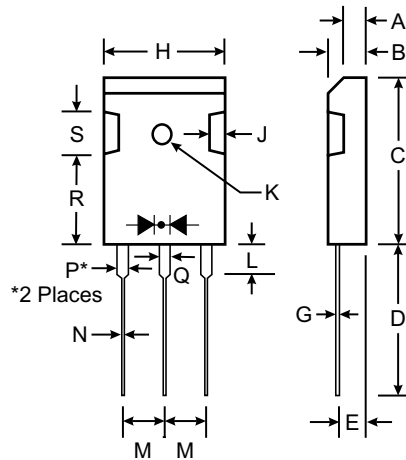


### Features

- Schottky Barrier Chip
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: Molded Plastic
- Terminals: Plated Leads Solderable per MIL-STD-202, Method 208
- Polarity: As Marked on Body
- Marking: Type Number
- Weight: 5.6 grams (approx.)
- Mounting Position: Any



| TO-3P                |              |       |
|----------------------|--------------|-------|
| Dim                  | Min          | Max   |
| A                    | 3.20         | 3.50  |
| B                    | 4.59         | 5.16  |
| C                    | 20.80        | 21.30 |
| D                    | 19.70        | 20.20 |
| E                    | 2.10         | 2.40  |
| G                    | 0.51         | 0.76  |
| H                    | 15.90        | 16.40 |
| J                    | 1.70         | 2.70  |
| K                    | 3.10Ø        | 3.30Ø |
| L                    | 3.50         | 4.51  |
| M                    | 5.20         | 5.70  |
| N                    | 1.12         | 1.22  |
| P                    | 1.93         | 2.18  |
| Q                    | 2.97         | 3.22  |
| R                    | 11.70        | 12.80 |
| S                    | 4.30 Typical |       |
| All Dimensions in mm |              |       |

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic                                                                                                       | Symbol                                                 | MBR 4030PT   | MBR 4035PT | MBR 4040PT | MBR 4045PT | MBR 4050PT   | MBR 4060PT | Unit |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|--------------|------------|------------|------------|--------------|------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                               | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 30           | 35         | 40         | 45         | 50           | 60         | V    |
| RMS Reverse Voltage                                                                                                  | V <sub>R(RMS)</sub>                                    | 21           | 24.5       | 28         | 31.5       | 35           | 42         | V    |
| Average Rectified Output Current @ T <sub>C</sub> = 125°C (Note 1)                                                   | I <sub>O</sub>                                         | 40           |            |            |            |              |            | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on rated load (JEDEC Method)   | I <sub>FSM</sub>                                       | 400          |            |            |            |              |            | A    |
| Forward Voltage Drop @ I <sub>F</sub> = 20A, T <sub>C</sub> = 25°C<br>@ I <sub>F</sub> = 20A, T <sub>C</sub> = 125°C | V <sub>FM</sub>                                        | 0.70<br>0.60 |            |            |            | 0.80<br>0.70 |            | V    |
| Peak Reverse Current @ T <sub>C</sub> = 25°C<br>at Rated DC Blocking Voltage @ T <sub>C</sub> = 125°C                | I <sub>RM</sub>                                        | 1.0<br>100   |            |            |            |              |            | mA   |
| Typical Junction Capacitance (Note 2)                                                                                | C <sub>j</sub>                                         | 1100         |            |            |            |              |            | pF   |
| Typical Thermal Resistance Junction to Case (Note 1)                                                                 | R <sub>θJC</sub>                                       | 1.4          |            |            |            |              |            | K/W  |
| Voltage Rate of Change (Rated V <sub>R</sub> )                                                                       | dV/dt                                                  | 10,000       |            |            |            |              |            | V/μs |
| Operating and Storage Temperature Range                                                                              | T <sub>j</sub> , T <sub>STG</sub>                      | -65 to +150  |            |            |            |              |            | °C   |

- Notes: 1. Thermal resistance junction to case mounted on heatsink.  
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

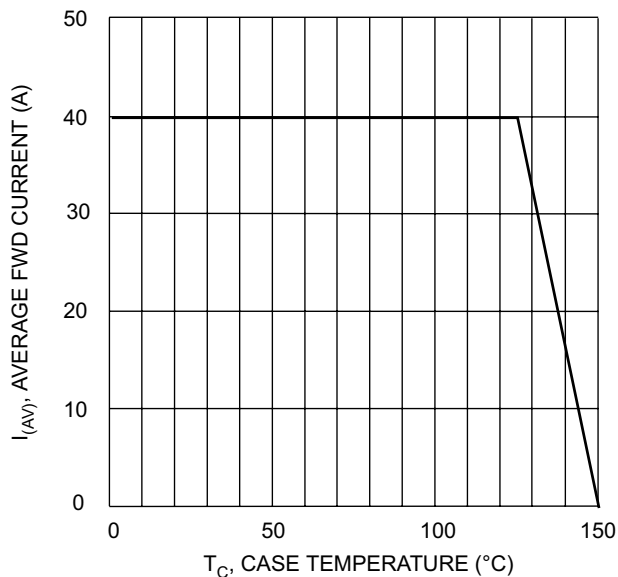


Fig. 1 Fwd Current Derating Curve

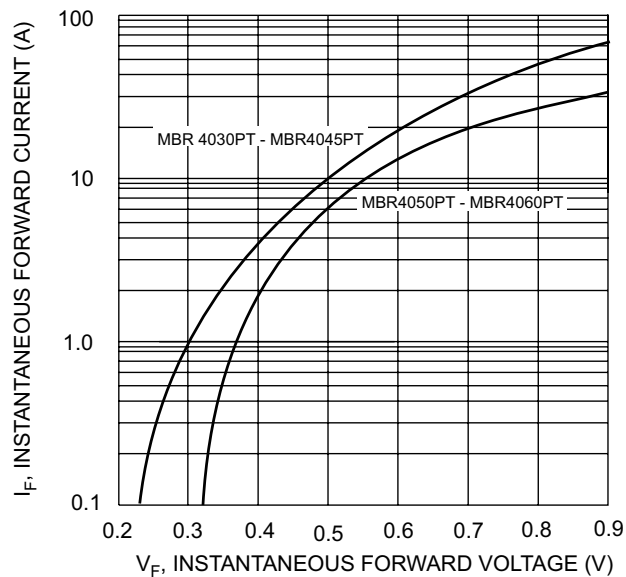


Fig. 2 Typical Forward Characteristics (per element)

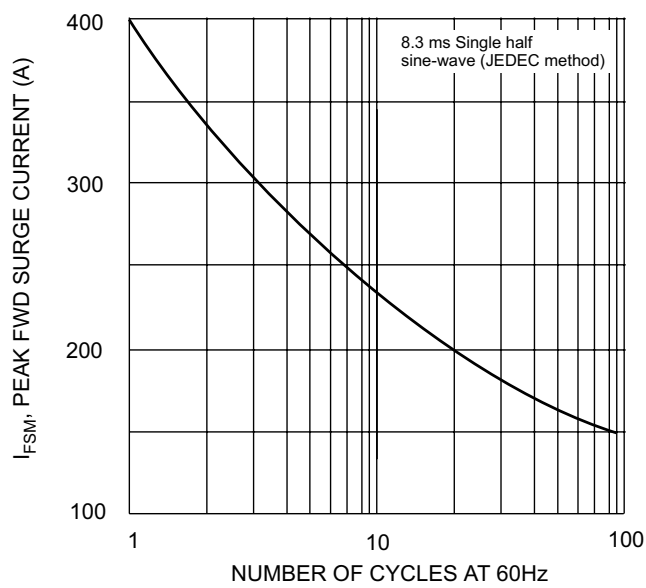


Fig. 3 Max Non-Repetitive Surge Current

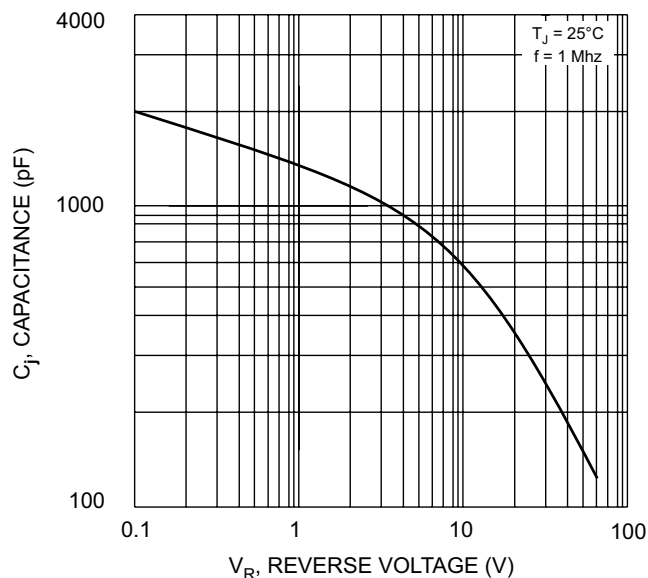


Fig. 4 Typical Junction Capacitance

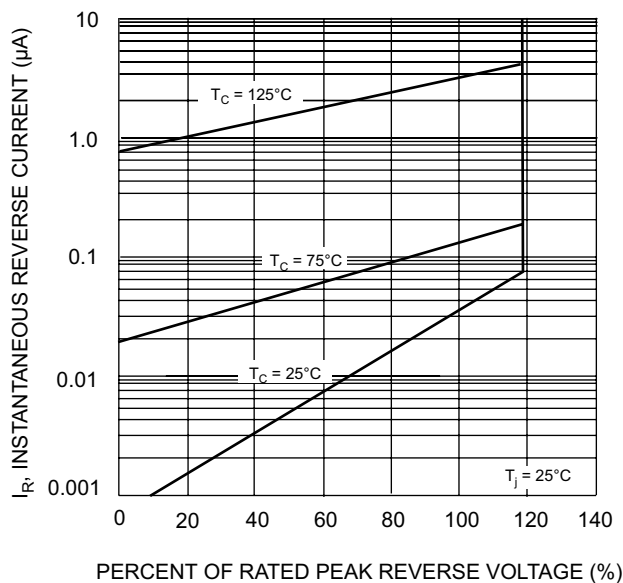


Fig. 5 Typical Reverse Characteristics