



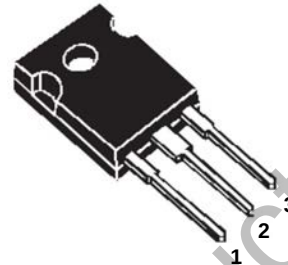
## MBR4040SPT-MBR40200SPT

### Features:

- ☐ Low power loss, high efficiency.  
High surge capacity
- ☐ For use in low voltage, high frequency inverters,  
free wheeling, and polarity protection applications.
- ☐ Metal silicon junction, majority carrier conduction.
- ☐ High current Capability, low forward voltage drop.
- ☐ Guard ring for over voltage protection.



TO-247S



1. Anode 2. Cathode 3. Anode

### Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

| Parameter                                                                                        | Symbol               | MBR 4040 SPT   | MBR 4045 SPT | MBR 4050 SPT | MBR 4060 SPT | MBR 4080 SPT | MBR 4090 SPT | MBR 40100 SPT | MBR 40150 SPT | MBR 40200 SPT | Unit |
|--------------------------------------------------------------------------------------------------|----------------------|----------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|------|
| Maximum Recurrent Peak Reverse Voltage                                                           | V <sub>RRM</sub>     | 40             | 45           | 50           | 60           | 80           | 90           | 100           | 150           | 200           | V    |
| Maximum RMS Voltage                                                                              | V <sub>RMS</sub>     | 28             | 31.5         | 35           | 42           | 56           | 63           | 70            | 105           | 140           |      |
| Maximum DC Blocking Voltage                                                                      | V <sub>R(DC)</sub>   | 40             | 45           | 50           | 60           | 80           | 90           | 100           | 150           | 200           |      |
| Maximum Average Forward Current                                                                  | I <sub>F(AV)</sub>   | 40             |              |              |              |              |              |               |               |               | A    |
| Peak Forward Surge Current:8.3ms single half sine-wave superimposed on rated load (JEDEC method) | I <sub>FSM</sub>     | 275            |              |              |              |              |              |               |               |               |      |
| Maximum Forward Voltage at 15A per leg                                                           | V <sub>F</sub>       | 0.68           | 0.72         |              | 0.85         |              |              | 0.95          |               |               | V    |
| Maximum DC Reverse Current at Rated DC Blocking Voltage                                          | T <sub>J</sub> =25℃  | I <sub>R</sub> | 0.1          |              |              |              |              |               |               |               | mA   |
|                                                                                                  | T <sub>J</sub> =125℃ |                | 20           |              |              |              |              |               |               |               |      |
| Maximum Operating Junction Temperature                                                           | T <sub>J</sub>       | 150            |              |              |              | 175          |              |               |               |               | ℃    |
| Storage Temperature                                                                              | T <sub>stg</sub>     | -55~+150       |              |              |              | -65~+175     |              |               |               |               |      |
| Typical Thermal Resistance                                                                       | R <sub>θJC</sub>     | 1.4            |              |              |              |              |              |               |               |               | ℃/W  |

## Typical Characteristics

### RATING AND CHARACTERISTIC CURVES

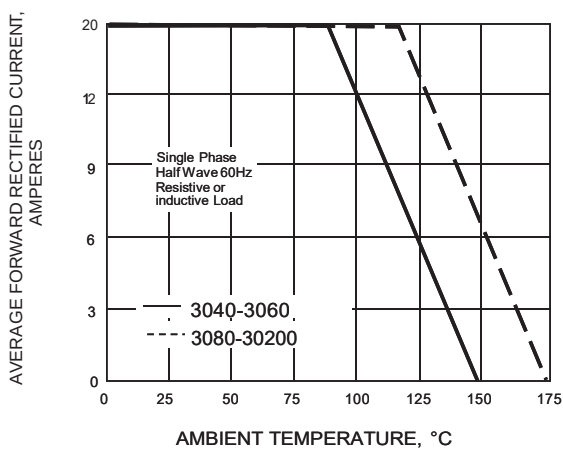


Fig.1 FORWARD CURRENT RATING CURVE

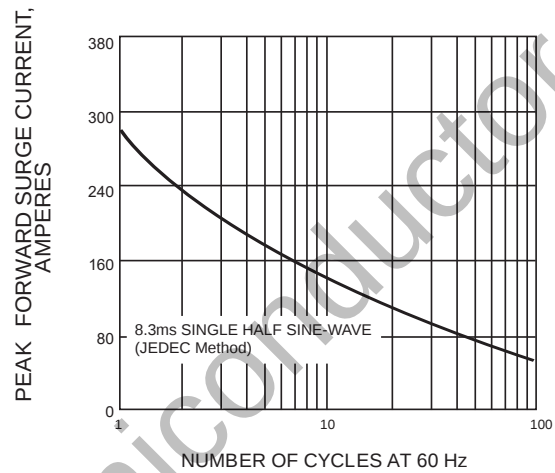


Fig.2 MAXIMUM NON-REPETITIVE SURGE CURRENT

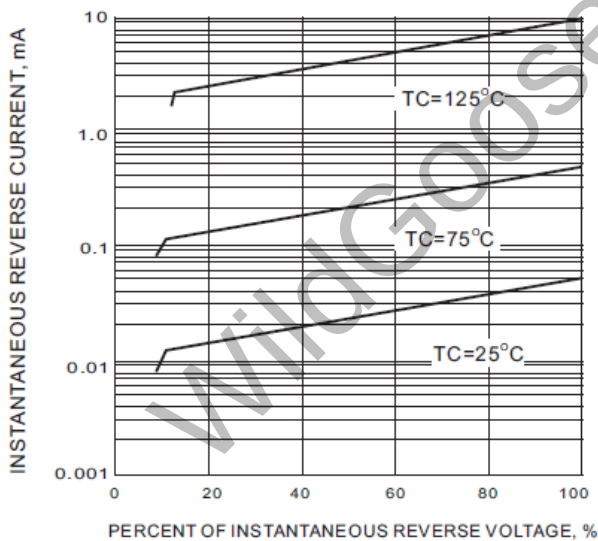


Fig.3 TYPICAL REVERSE CHARACTERISTIC

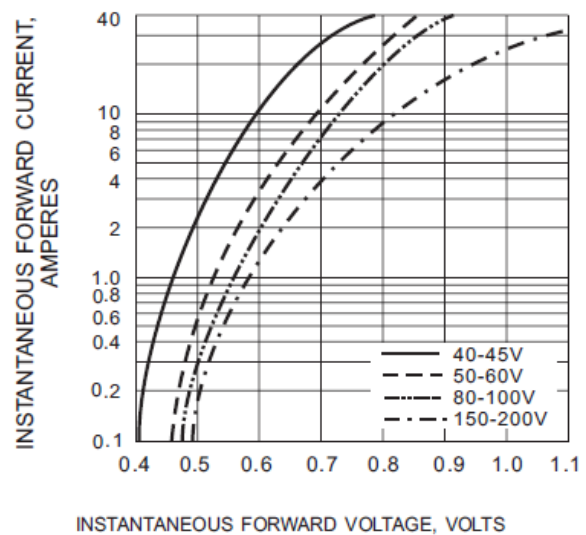
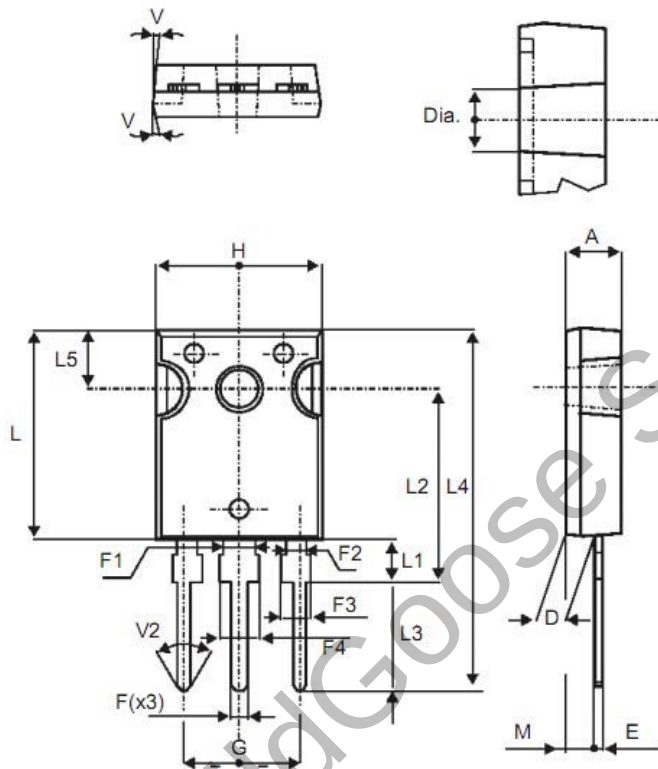


Fig.4 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC

**Package Dimension**

TO-247S



| REF. | DIMENSIONS  |       |       |        |       |       |
|------|-------------|-------|-------|--------|-------|-------|
|      | Millimeters |       |       | Inches |       |       |
|      | Min.        | Typ.  | Max.  | Min.   | Typ.  | Max.  |
| A    | 4.85        |       | 5.15  | 0.191  |       | 0.203 |
| D    | 2.20        |       | 2.60  | 0.086  |       | 0.102 |
| E    | 0.40        |       | 0.80  | 0.015  |       | 0.031 |
| F    | 1.00        |       | 1.40  | 0.039  |       | 0.055 |
| F1   |             | 3.00  |       |        | 0.118 |       |
| F2   |             | 2.00  |       |        | 0.078 |       |
| F3   | 2.00        |       | 2.40  | 0.078  |       | 0.094 |
| F4   | 3.00        |       | 3.40  | 0.118  |       | 0.133 |
| G    |             | 10.90 |       |        | 0.429 |       |
| H    | 15.45       |       | 15.75 | 0.608  |       | 0.620 |
| L    | 19.85       |       | 20.15 | 0.781  |       | 0.793 |
| L1   | 3.70        |       | 4.30  | 0.145  |       | 0.169 |
| L2   |             | 18.50 |       |        | 0.728 |       |
| L3   | 14.20       |       | 14.80 | 0.559  |       | 0.582 |
| L4   |             | 34.60 |       |        | 1.362 |       |
| L5   |             | 5.50  |       |        | 0.216 |       |
| M    | 2.00        |       | 3.00  | 0.078  |       | 0.118 |
| V    |             | 5°    |       |        | 5°    |       |
| V2   |             | 60°   |       |        | 60°   |       |
| Dia. | 3.55        |       | 3.65  | 0.139  |       | 0.143 |