

**CURRENT** 40 Ampere  
**VOLTAGE RANG** 40 to 200 Volts

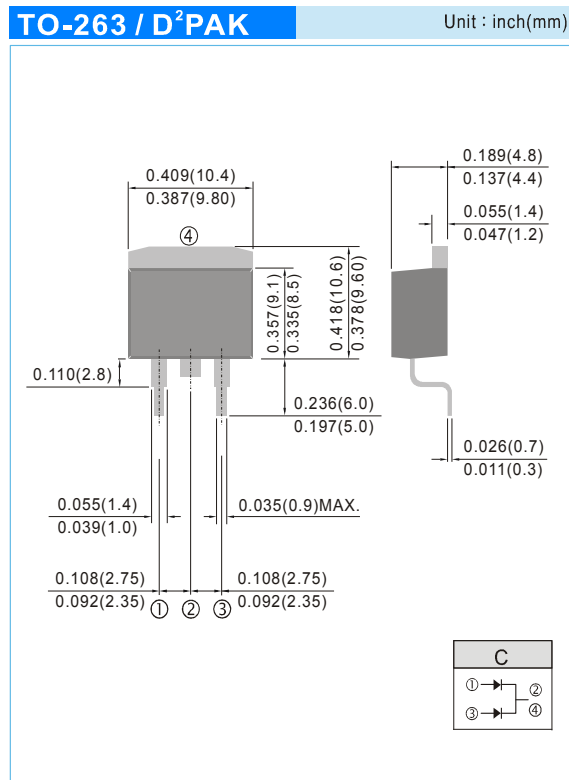
# **MBR4040DC THRU MBR40200DC**

## **FEATURES**

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O. Flame Retardant Epoxy Molding Compound.
- Low power loss, high efficiency.
- High current capability
- For use in low voltage, high frequency inverters free wheeling, and polarity protection applications.
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

## **MECHANICAL DATA**

- Case: TO-263 / D<sup>2</sup>PAK molded plastic
- Terminals: solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: As marked.
- Weight: 0.049 ounces, 1.38 grams.



## **MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings 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%

|                                                                                                        |              | Symbols | MBR<br>4030DC | MBR<br>4035DC | MBR<br>4040DC | MBR<br>4045DC | MBR<br>4050DC | MBR<br>4060DC | MBR<br>40100DC | MBR<br>40150DC | MBR<br>40200DC | Units |
|--------------------------------------------------------------------------------------------------------|--------------|---------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|-------|
| Maximum repetitive peak reverse voltage                                                                |              | VRRM    | 30            | 35            | 40            | 45            | 50            | 60            | 100            | 150            | 200            | Volts |
| Maximum RMS voltage                                                                                    |              | VRMS    | 21            | 25            | 28            | 32            | 35            | 42            | 70             | 105            | 140            | Volts |
| Maximum DC blocking voltage                                                                            |              | VDC     | 30            | 35            | 40            | 45            | 50            | 60            | 100            | 150            | 200            | Volts |
| Maximum average forward<br>rectified current(see Fig.1)                                                | Per leg      | I(AV)   | 20.0<br>40.0  |               |               |               |               |               |                |                |                | Amps  |
|                                                                                                        | Total device |         |               |               |               |               |               |               |                |                |                |       |
| Peak forward surge current 8.3ms single half<br>sine-wave superimposed on rated load<br>(JEDEC method) |              | IFSM    | 300.0         |               |               |               |               |               |                |                |                | Amps  |
| Maximum instantaneous forward voltage<br>at 40.0 A                                                     |              | VF      | 0.60          |               |               |               | 0.75          |               | 0.85           | 0.95           |                | Volts |
| Maximum instantaneous reverse<br>current at rated DC blocking<br>voltage(Note 1)                       | Tc =25℃      | IR      | 0.2           |               |               |               |               |               |                |                |                | mA    |
|                                                                                                        | Tc =125℃     |         |               |               |               |               |               |               |                |                |                |       |
| Typical thermal resistance (Note 2)                                                                    |              | RθJC    | 2.0           |               |               |               |               |               |                |                |                | ℃/W   |
| Operating junction temperature range                                                                   |              | TJ      | -65 to+150    |               |               |               |               |               |                |                |                | ℃     |
| Storage temperature range                                                                              |              | TSTG    | -65 to+150    |               |               |               |               |               |                |                |                | ℃     |

Notes :

Both Bonding and Chip structure are available.

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## RATING AND CHARACTERISTIC CURVES

FIG.1-FORWARD CURRENT DERATING CURVE

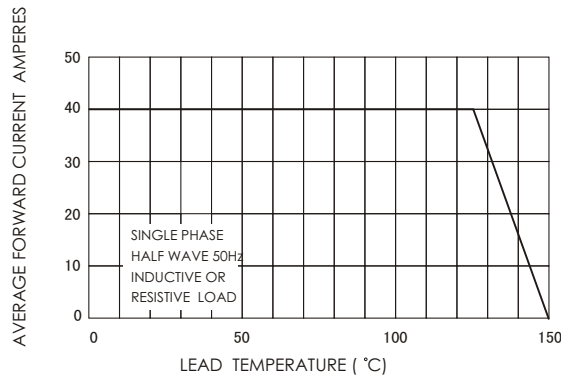


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

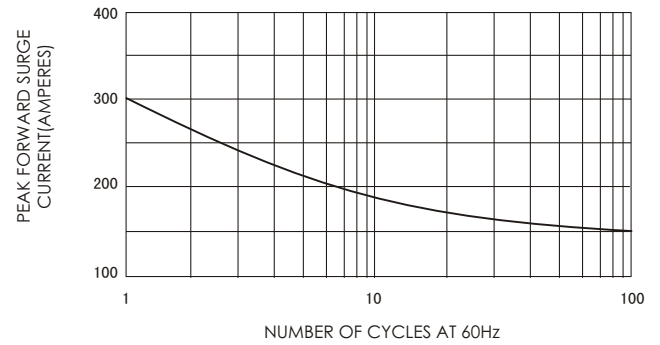


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

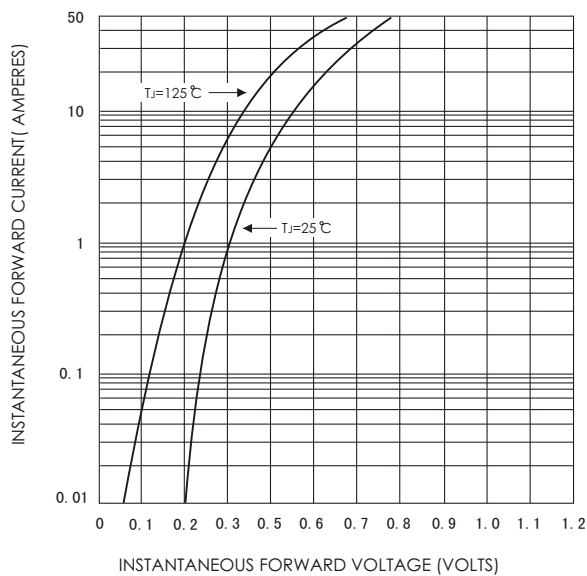


FIG.4-TYPICAL REVERSE CHARACTERISTICS

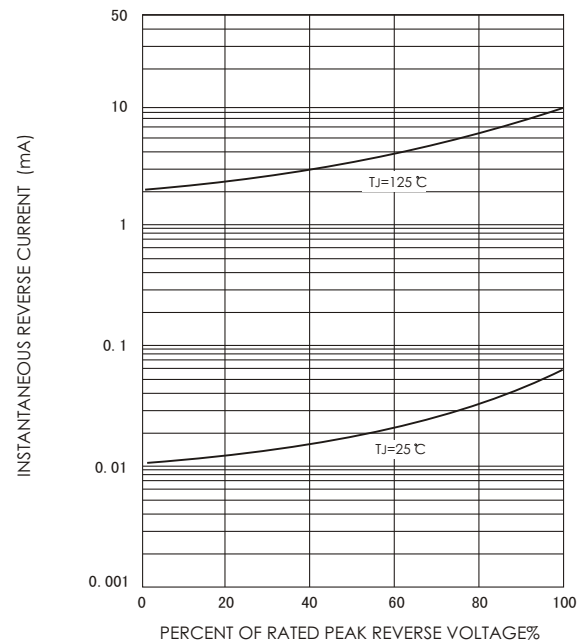


FIG.5-TYPICAL JUNCTION CAPACITANCE

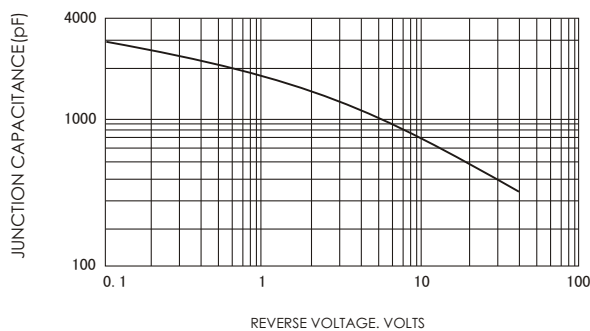
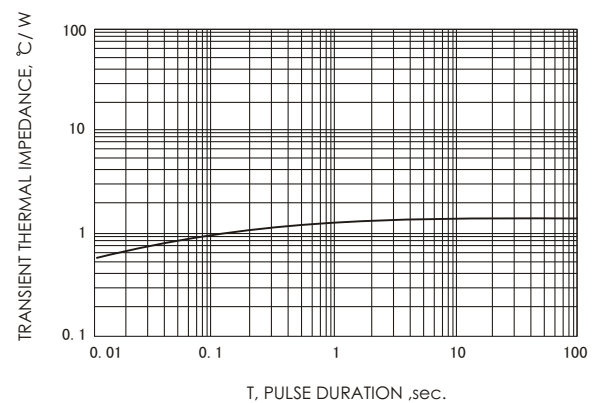


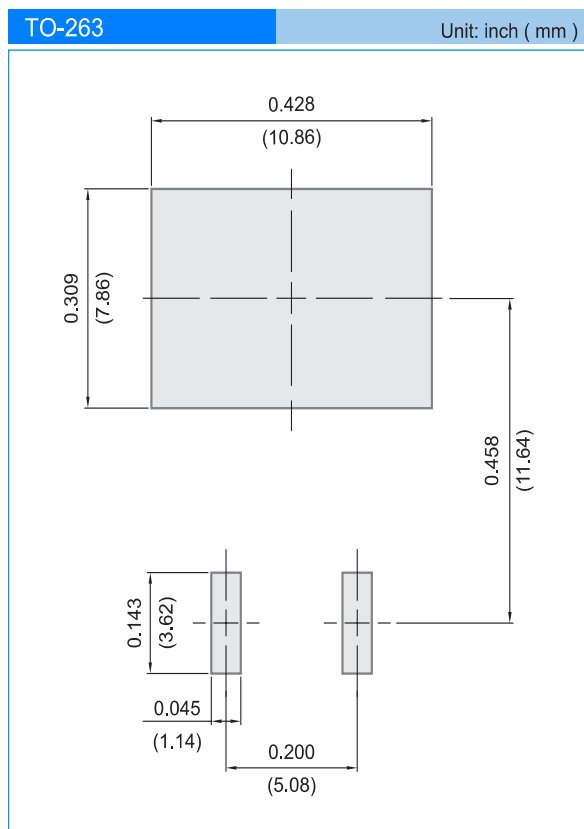
FIG.6-TYPICAL TRANSIENT THERMAL IMPEDANCE



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R - 0.8K per 13" plastic Reel