



MBR2040DC SERIES

20 AMPERES SCHOTTKY BARRIER RECTIFIERS

VOLTAGE 40 to 200 Volt **CURRENT** 20 Ampere

TO-263 / D²PAK

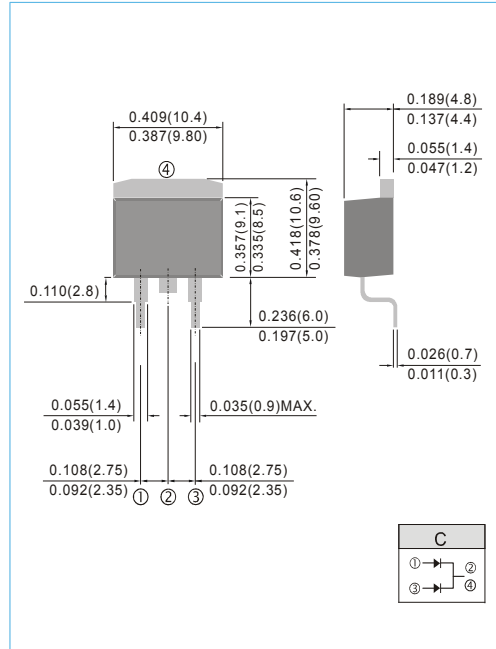
Unit : inch(mm)

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 / D²PAK 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%

| PARAMETER | SYMBOL | MBR2040DC | MBR2045DC | MBR2050DC | MBR2060DC | MBR2080DC | MBR2090DC | MBR20100DC | MBR20150DC | MBR20200DC | UNITS |
|---|-----------------|-----------|-----------|-----------|-----------|--------------|-----------|------------|------------|------------|--------|
| Maximum Recurrent Peak Reverse Voltage | V_{RRM} | 40 | 45 | 50 | 60 | 80 | 90 | 100 | 150 | 200 | V |
| Maximum RMS Voltage | V_{RMS} | 28 | 31.5 | 35 | 42 | 56 | 63 | 70 | 105 | 140 | V |
| Maximum DC Blocking Voltage | V_{DC} | 40 | 45 | 50 | 60 | 80 | 90 | 100 | 150 | 200 | V |
| Maximum Average Forward Current (See fig.1) | $I_{F(AV)}$ | 20 | | | | | | | | | A |
| Peak Forward Surge Current :8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 200 | | | | | | | | | A |
| Maximum Forward Voltage at 10A, per leg | V_F | 0.7 | 0.75 | | 0.8 | | | 0.9 | | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage $T_C=25^\circ C$ $T_C=125^\circ C$ | I_R | | | | | 0.05 | | 20 | | | mA |
| Typical Thermal Resistance | $R_{\theta JC}$ | | | | | 2 | | | | | °C / W |
| Operating Junction Temperature Range | T_J | | | | | -50 to + 150 | | | | | °C |
| Storage Temperature Range | T_{STG} | | | | | -50 to + 150 | | | | | °C |

Notes :

Both Bonding and Chip structure are available.



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RATING AND CHARACTERISTIC CURVES

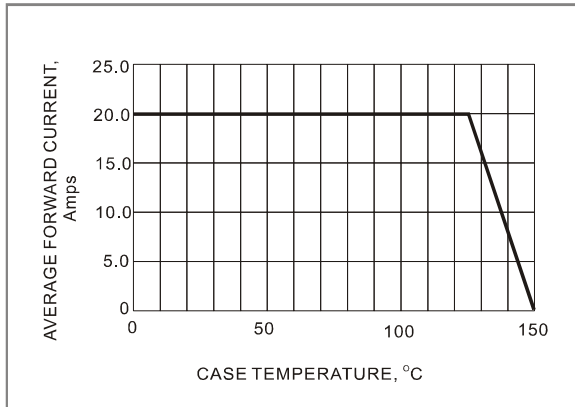


Fig.1- FORWARD CURRENT DERATING CURVE

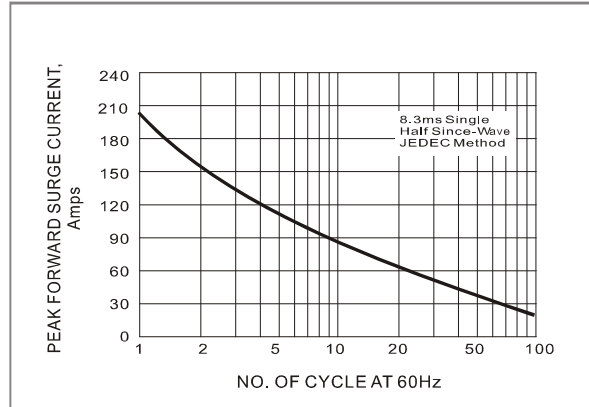


Fig.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

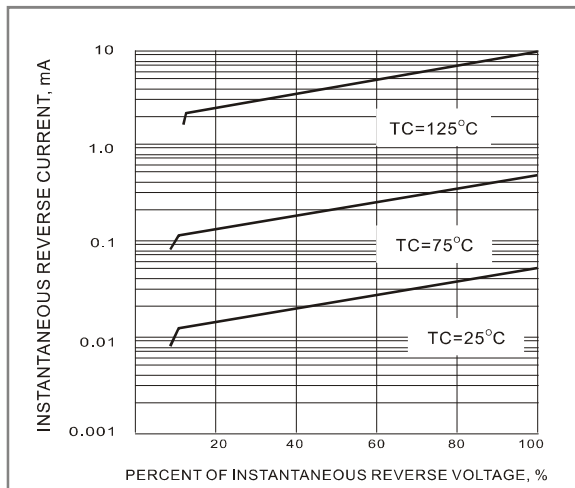


Fig.3- TYPICAL REVERSE CHARACTERISTICS

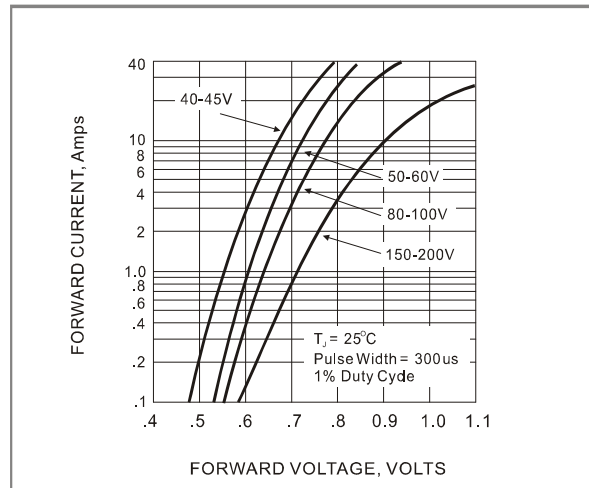


Fig.4- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

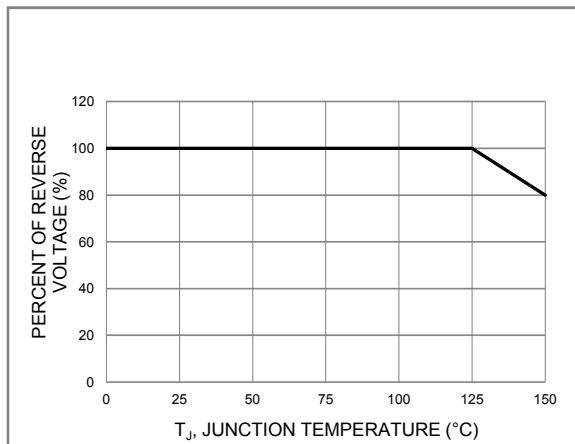
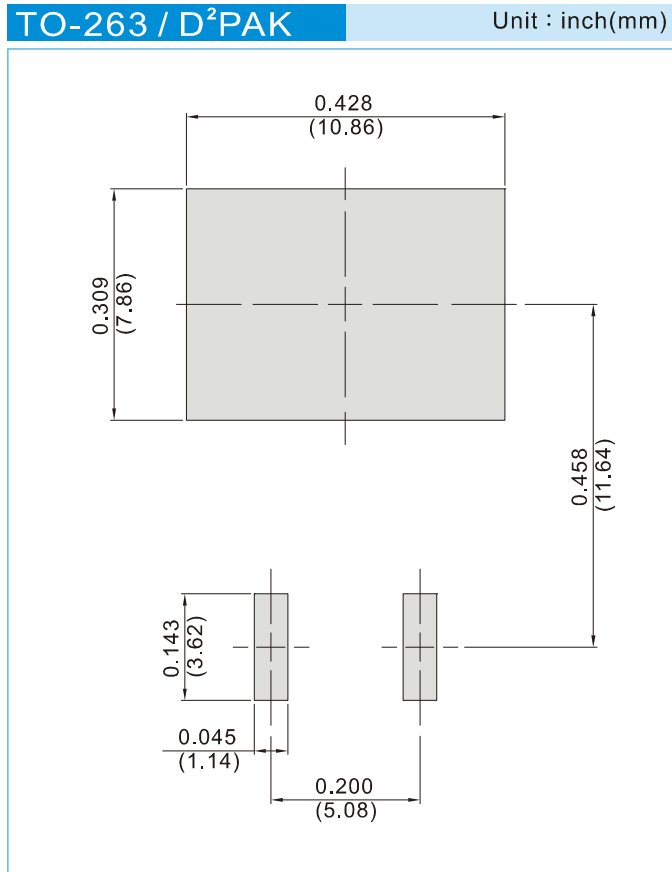


Fig.5- OPERATING TEMPERATURE DERATING CURVE



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MOUNTING PAD LAYOUT



ORDER INFORMATION

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



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Part No_packing code_Version

MBR2040DC_R2_00001

For example :

RB500V-40_R2_00001



| Packing type | Packing Code XX | | | Version Code XXXXX | | |
|--------------------------------------|------------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |



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