

MBR1020-MBR10100

Schottky Barrier Rectifiers

VOLTAGE RANGE: 30 - 100 V
CURRENT: 10 A



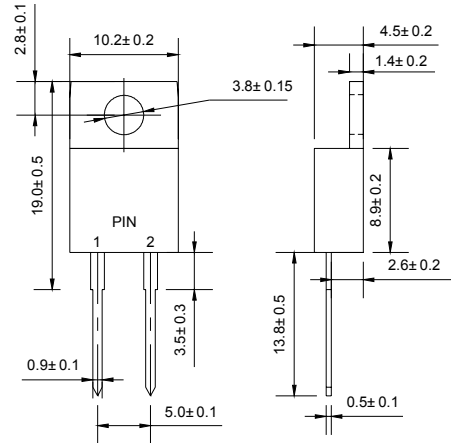
TO-220AC

Features

- ◇ 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 capacity, low forward voltage drop.
- ◇ Guard ring for over voltage protection.

Mechanical Data

- ◇ Case: JEDEC TO-220AC, molded plastic body
- ◇ Polarity: As marked
- ◇ Position: Any
- ◇ Weight: 0.069 ounces, 1.96 gram



Dimensions in millimeters

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

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

| | | MBR 1020 | MBR 1030 | MBR 1035 | MBR 1040 | MBR 1045 | MBR 1050 | MBR 1060 | MBR 1090 | MBR 10100 | UNITS |
|--|-----------------|-----------------|----------|----------|----------|----------|----------|----------|-------------------|-----------|---------------------------|
| Maximum recurrent peak reverse voltage | V_{RRM} | 20 | 30 | 35 | 40 | 45 | 50 | 60 | 90 | 100 | V |
| Maximum RMS Voltage | V_{RMS} | 14 | 21 | 25 | 28 | 32 | 35 | 42 | 63 | 70 | V |
| Maximum DC blocking voltage | V_{DC} | 20 | 30 | 35 | 40 | 45 | 50 | 60 | 90 | 100 | V |
| Maximum average forward total device rectified current @ $T_c = 125^\circ\text{C}$ | $I_{F(AV)}$ | 10 | | | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 150 | | | | | | | | | A |
| Maximum forward voltage ($I_F=10\text{A}, T_c=25^\circ\text{C}$) ($I_F=10\text{A}, T_c=125^\circ\text{C}$) (Note 1) ($I_F=20\text{A}, T_c=25^\circ\text{C}$) ($I_F=20\text{A}, T_c=125^\circ\text{C}$) | V_F | | | - | | | | 0.80 | 0.80 | | V |
| | | | | 0.57 | | | | 0.70 | 0.65 | | |
| | | | | 0.84 | | | | 0.95 | 0.95 | | |
| | | | | 0.72 | | | | 0.85 | 0.75 | | |
| Maximum reverse current @ $T_c=25^\circ\text{C}$ at rated DC blocking voltage @ $T_c=125^\circ\text{C}$ | I_R | 0.1 | | | | | | | | | mA |
| | | 15 | | | | | | | 6.0 ³⁾ | | |
| Maximum thermal resistance (Note2) | $R_{\theta JC}$ | 2.0 | | | | | | | | | $^\circ\text{C}/\text{W}$ |
| Operating junction temperature range | T_J | - 55 ---- + 150 | | | | | | | | | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | - 55 ---- + 150 | | | | | | | | | $^\circ\text{C}$ |

NOTE: 1. Pulse test: 300 μs pulse width, 1% duty cycle.

2. Thermal resistance from junction to case.

3. $T_c=100^\circ\text{C}$

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Ratings AND Characteristic Curves

FIG.1 – FORWARD CURRENT DERATING CURVE

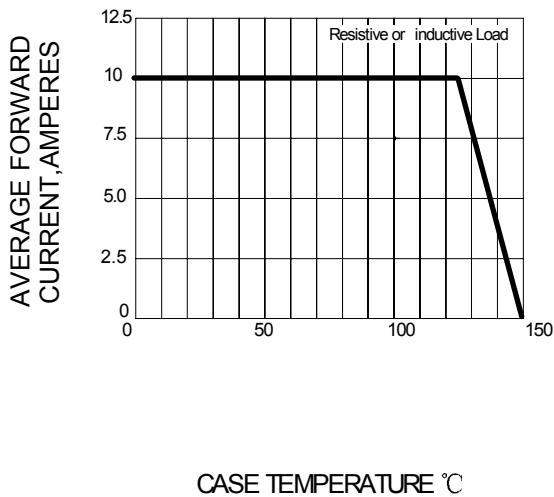


FIG.2 – MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG

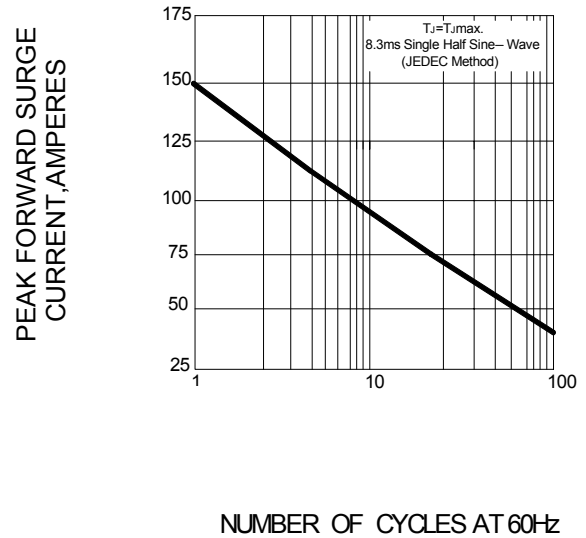


FIG.3 – TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC PERLEG

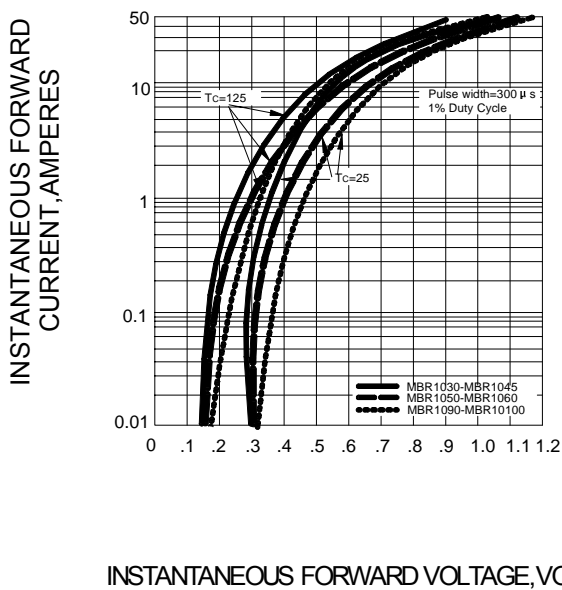


FIG.4 – TYPICAL REVERSE CHARACTERISTICS

