

Switchmode Full Plastic Dual Schottky Barrier Power Rectifiers

Using the Schottky Barrier principle with a Refractory metal capable of high temperature operation metal. The proprietary barrier technology allows for reliable operation up to 175°C junction temperature. Typical application are in switching Mode Power Supplies such as adaptors, DC/DC converters, free-wheeling and polarity protection diodes.

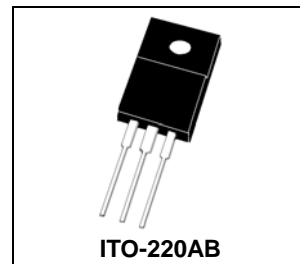
Features

- * Low Forward Voltage.
- * Low Switching noise.
- * High Current Capacity
- * Guarantee Reverse Avalanche.
- * Guard-Ring for Stress Protection.
- * Low Power Loss & High efficiency.
- * 175°C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction.
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



**SCHOTTKY BARRIER
RECTIFIERS**

**10 AMPERES
120 VOLTS**



* *In compliance with EU RoHs 2002/95/EC directives*

MAXIMUM RATINGS

| Characteristic | Symbol | MBRF10120C | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 120 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 84 | V |
| Average Rectifier Forward Current (per diode) Total Device (Rated V_R), $T_C=125^\circ\text{C}$ | $I_{F(AV)}$ | 5 10 | A |
| Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz) | I_{FM} | 20 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz) | I_{FSM} | 125 | A |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -65 to +175 | °C |

THERMAL RESISTANCES

| | | | |
|---|-----------------|-----|------|
| Typical Thermal Resistance junction to case | $R_{\theta jc}$ | 3.4 | °C/w |
|---|-----------------|-----|------|

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | MBRF10120C | Unit |
|--|--------|--------------|------|
| Maximum Instantaneous Forward Voltage (per diode) ($I_F=5$ Amp $T_C=25^\circ\text{C}$) ($I_F=5$ Amp $T_C=125^\circ\text{C}$) | V_F | 0.85 0.76 | V |
| Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25^\circ\text{C}$) (Rated DC Voltage, $T_C=125^\circ\text{C}$) | I_R | 0.01 10 | mA |

FIG-1 FORWARD CURRENT DERATING CURVE

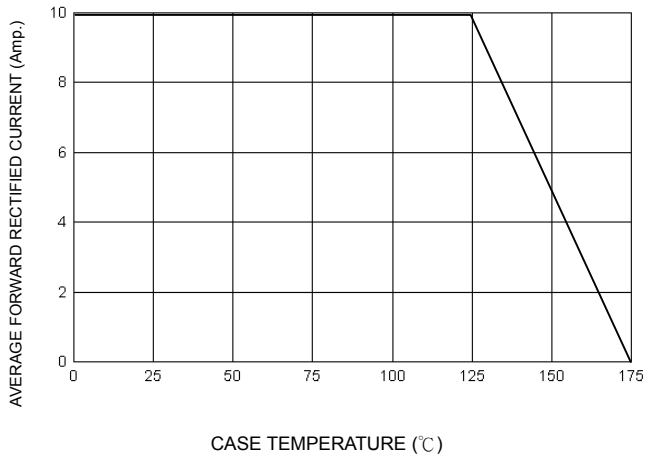


FIG-2 TYPICAL FORWARD CHARACTERISTICS

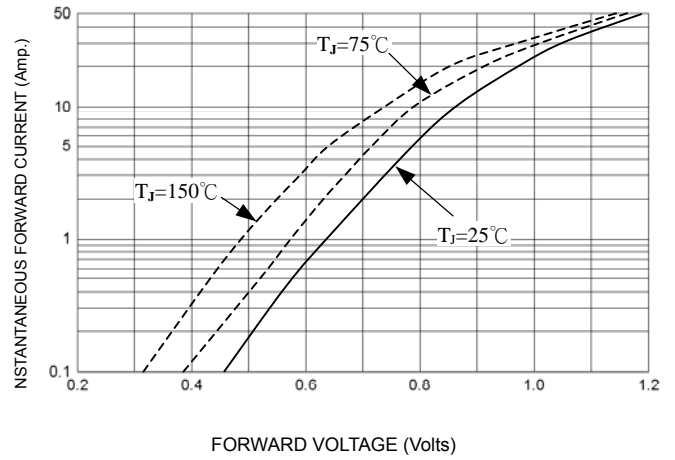


FIG-3 TYPICAL REVERSE CHARACTERISTICS

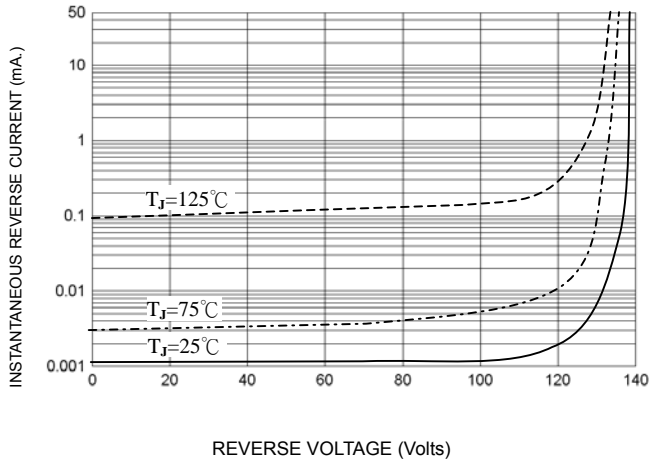


FIG-4 TYPICAL JUNCTION CAPACITANCE

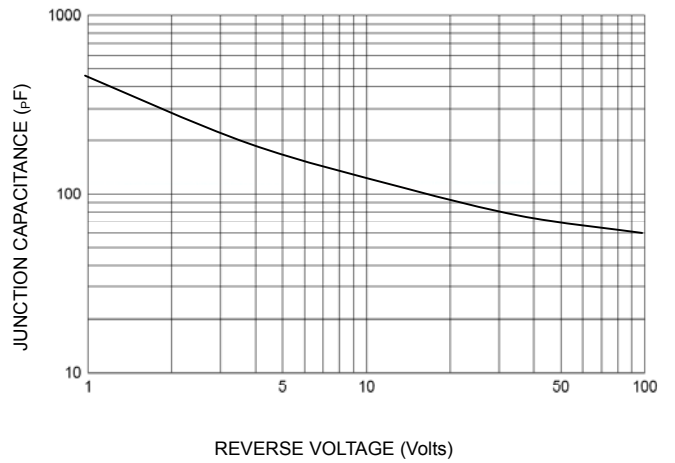


FIG-5 PEAK FORWARD SURGE CURRENT

