

## 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

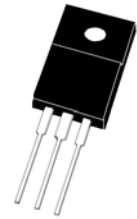
- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 175°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material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

- \* *In compliance with EU RoHs 2002/95/EC directives*
- \* *"G" Green product*  
*The green product before is indicated by the date code "XMY" with alphabet "G"XMY*

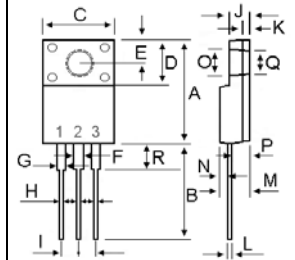


### SCHOTTKY BARRIER RECTIFIERS

**20 AMPERES  
100 VOLTS**



**ITO-220AB**



### MAXIMUM RATINGS

| Characteristic   | Symbol         | MBRF20100CL | Unit             |
|--|----------------|-------------|------------------|
| Peak Repetitive Reverse Voltage  | $V_{RRM}$      | 100         | V                |
| Working Peak Reverse Voltage   | $V_{RWM}$      |             |                  |
| DC Blocking Voltage  | $V_R$          |             |                  |
| RMS Reverse Voltage  | $V_{R(RMS)}$   | 70          | V                |
| Average Rectifier Forward Current ( per diode )  | $I_{F(AV)}$    | 10          | A                |
| Total Device (Rated $V_R$ ), $T_C=125^\circ\text{C}$   |                | 20          |                  |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                   | $I_{FM}$       | 20          | A                |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz) | $I_{FSM}$      | 150         | A                |
| Operating and Storage Junction Temperature Range   | $T_J, T_{stg}$ | -65 to +175 | $^\circ\text{C}$ |

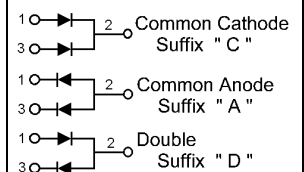
| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.90       | 15.15 |
| B   | 13.35       | 13.55 |
| C   | 10.00       | 10.10 |
| D   | 6.55        | 6.65  |
| E   | 2.65        | 2.75  |
| F   | 1.55        | 1.65  |
| G   | 1.15        | 1.25  |
| H   | 0.55        | 0.65  |
| I   | 2.50        | 2.60  |
| J   | 3.00        | 3.20  |
| K   | 1.10        | 1.20  |
| L   | 0.55        | 0.65  |
| M   | 4.40        | 4.60  |
| N   | 1.15        | 1.25  |
| O   | 3.35        | 3.45  |
| P   | 2.65        | 2.75  |
| Q   | 3.15        | 3.25  |
| R   | 3.60        | 3.80  |

### THERMAL RESISTANCES

|  |                  |     |                           |
|--|------------------|-----|---------------------------|
| Typical Thermal Resistance junction to case ( per device ) | $R_{\theta j-c}$ | 3.4 | $^\circ\text{C}/\text{w}$ |
|--|------------------|-----|---------------------------|

### ELECTRIAL CHARACTERISTICS

| Characteristic   | Symbol | Min | Typ. | Max. | Unit |
|--|--------|-----|------|------|------|
| Maximum Instantaneous Forward Voltage ( per diode )<br>( $I_F=0.1$ Amp $T_C=25^\circ\text{C}$ )<br>( $I_F=5.0$ Amp $T_C=25^\circ\text{C}$ )<br>( $I_F=10$ Amp $T_C=25^\circ\text{C}$ ) | $V_F$  | --- | 0.29 | 0.35 | V    |
|  |        | --- | 0.60 | 0.66 |      |
|  |        | --- | 0.78 | 0.85 |      |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C=25^\circ\text{C}$ )<br>( Rated DC Voltage, $T_C=125^\circ\text{C}$ )   | $I_R$  | --  | 0.08 | 0.1  | mA   |
|  |        | --  | 15   | 30   |      |



# MBRF20100CL

FIG-1 FORWARD CURRENT DERATING CURVE

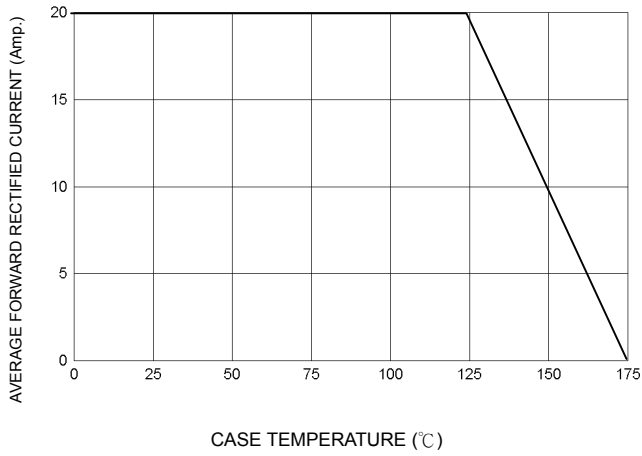


FIG-2 TYPICAL FORWARD CHARACTERISTICS

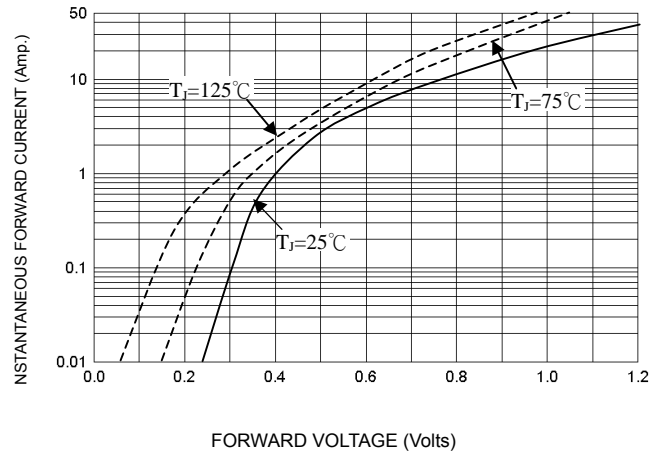


FIG-3 TYPICAL REVERSE CHARACTERISTICS

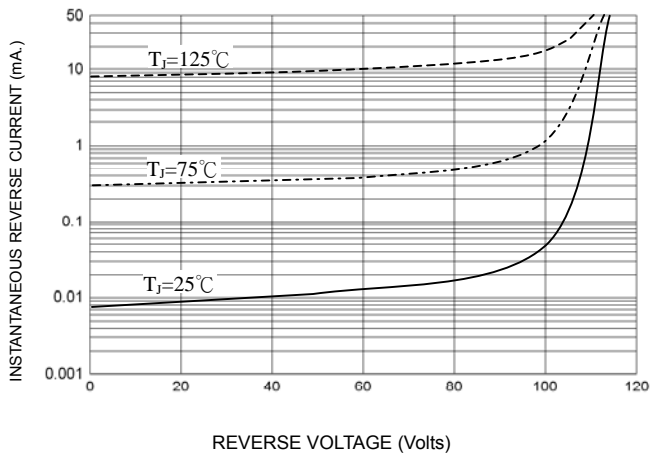


FIG-4 TYPICAL JUNCTION CAPACITANCE

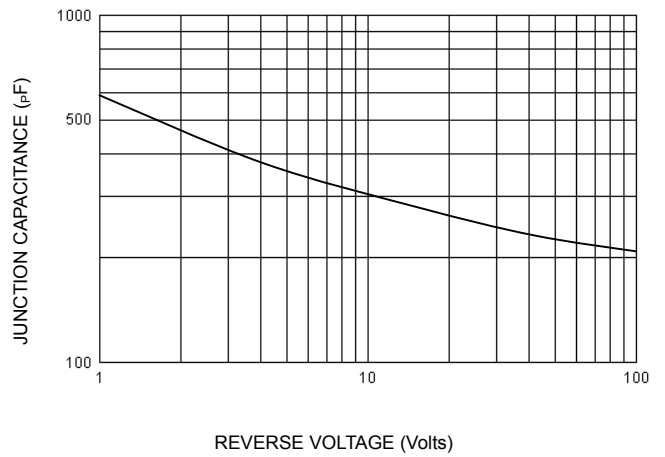
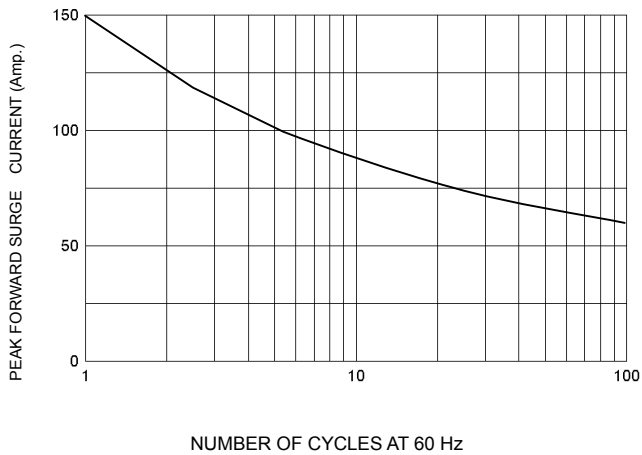


FIG-5 PEAK FORWARD SURGE CURRENT



**REMARK:** Green product is indicated by carton “Halogen-free”

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