

## Schottky Barrier 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 adaptators, DC/DC convertes, free-wheeling and polarity protection diodes.

### Features

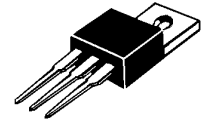
- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 175°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-0



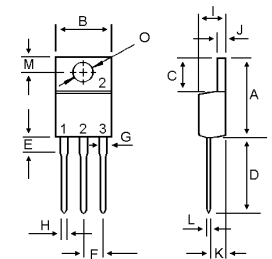
\* In compliance with EU RoHS 2002/95/EC directives

### SCHOTTKY BARRIER RECTIFIERS

**30 AMPERES  
200 VOLTS**



**TO-220AB**



| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.68       | 15.32 |
| B   | 9.78        | 10.42 |
| C   | 5.02        | 6.52  |
| D   | 13.06       | 14.62 |
| E   | 3.57        | 4.07  |
| F   | 2.42        | 2.66  |
| G   | 1.12        | 1.36  |
| H   | 0.72        | 0.96  |
| I   | 4.22        | 4.98  |
| J   | 1.14        | 1.38  |
| K   | 2.20        | 2.98  |
| L   | 0.33        | 0.55  |
| M   | 2.48        | 2.98  |
| O   | 3.70        | 3.90  |

### MAXIMUM RATINGS

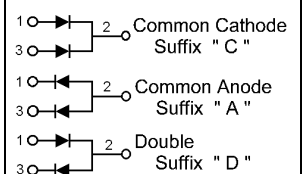
| Characteristic  | Symbol                          | MBR30200CL  | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                  | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 200         | V    |
| RMS Reverse Voltage   | $V_{R(RMS)}$                    | 140         | V    |
| Average Rectifier Forward Current ( per diode )<br>Total Device (Rated $V_R$ ), $T_C=125^\circ\text{C}$ | $I_{F(AV)}$                     | 15<br>30    | A    |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                    | $I_{FM}$                        | 30          | A    |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz)  | $I_{FSM}$                       | 250         | A    |
| Operating and Storage Junction Temperature Range  | $T_J, T_{stg}$                  | -65 to +175 | °C   |

### THERMAL RESISTANCES

|  |                 |     |      |
|--|-----------------|-----|------|
| Typical Thermal Resistance junction to case ( per device ) | $R_{\theta jc}$ | 3.2 | °C/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>( $I_F=7.5$ Amp $T_C = 25^\circ\text{C}$ )<br>( $I_F=15$ Amp $T_C = 25^\circ\text{C}$ ) | $V_F$  | --   | 0.32<br>0.85<br>0.95 | 0.38<br>0.88<br>0.98 | V    |
| 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<br>15           | 0.1<br>30            | mA   |



# MBR30200CL

FIG-1 FORWARD CURRENT DERATING CURVE

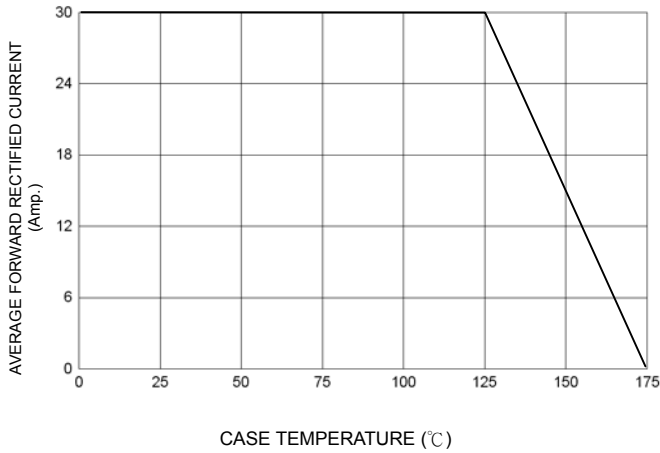


FIG-2 TYPICAL FORWARD CHARACTERISTICS

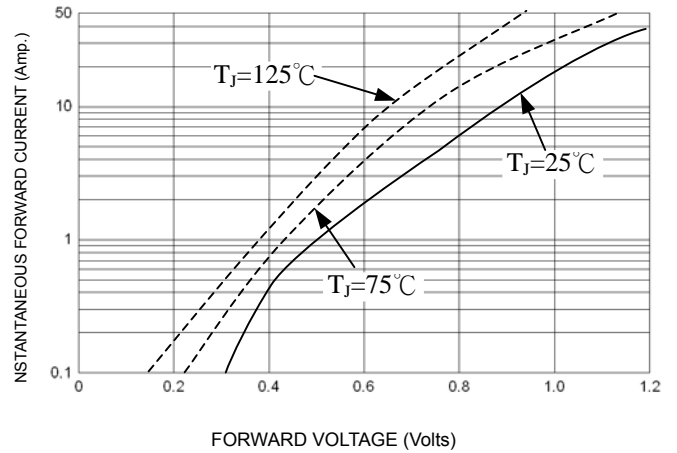


FIG-3 TYPICAL REVERSE CHARACTERISTICS

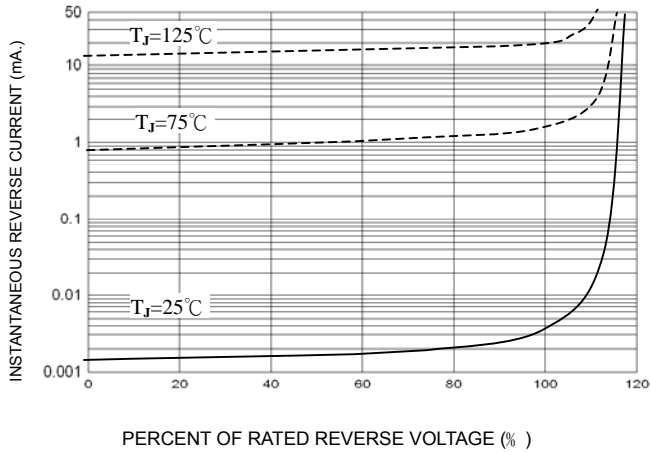


FIG-4 TYPICAL JUNCTION CAPACITANCE

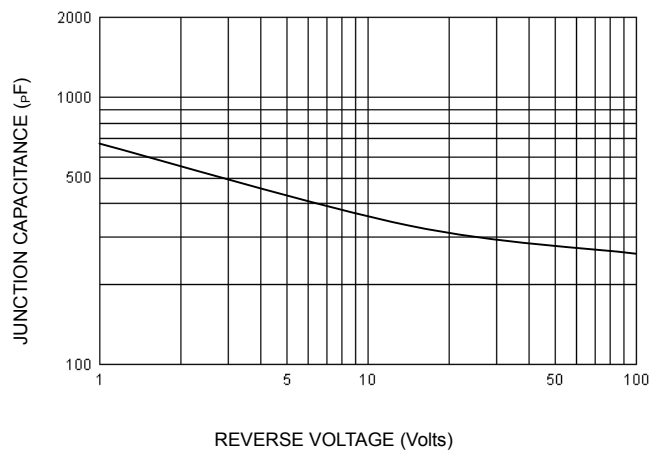
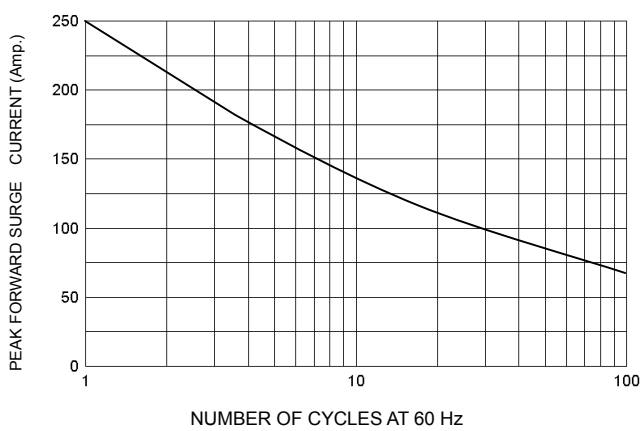


FIG-5 PEAK FORWARD SURGE CURRENT



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