

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 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

MAXIMUM RATINGS

| Characteristic | Symbol | MBR30100CL | 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) | $I_{F(AV)}$ | 15 | A |
| Total Device (Rated V_R), $T_C=125^\circ\text{C}$ | | 30 | |
| Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz) | I_{FM} | 25 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz) | I_{FSM} | 150 | A |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -65 to +175 | °C |

THERMAL RESISTANCES

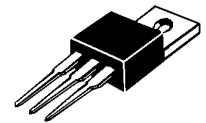
| | | | |
|--|------------------|-----|------|
| Typical Thermal Resistance junction to case (per device) | $R_{\theta j-c}$ | 3.4 | °C/w |
|--|------------------|-----|------|

ELECTRIAL CHARACTERISTICS

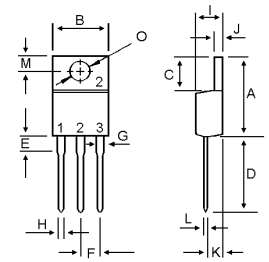
| Characteristic | Symbol | Min | Typ. | Max. | Unit |
|--|--------|-----|----------------------|----------------------|------|
| Maximum Instantaneous Forward Voltage (per diode) ($I_F=0.1$ Amp $T_C=25^\circ\text{C}$) ($I_F=7.5$ Amp $T_C=25^\circ\text{C}$) ($I_F=15$ Amp $T_C=25^\circ\text{C}$) | V_F | --- | 0.29 0.66 0.89 | 0.35 0.74 0.95 | 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 | --- | 0.08 15 | 0.1 30 | mA |

SCHOTTKY BARRIER RECTIFIERS

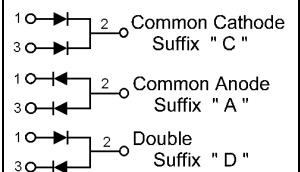
**30 AMPERES
100 VOLTS**



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 |



MBR30100CL

FIG-1 FORWARD CURRENT DERATING CURVE

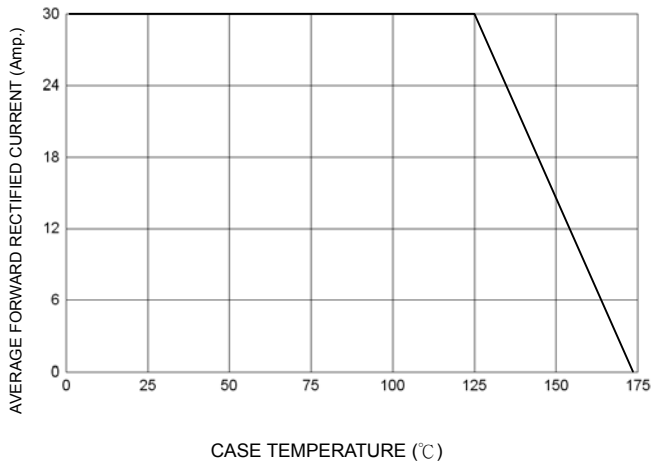


FIG-2 TYPICAL FORWARD CHARACTERISTICS

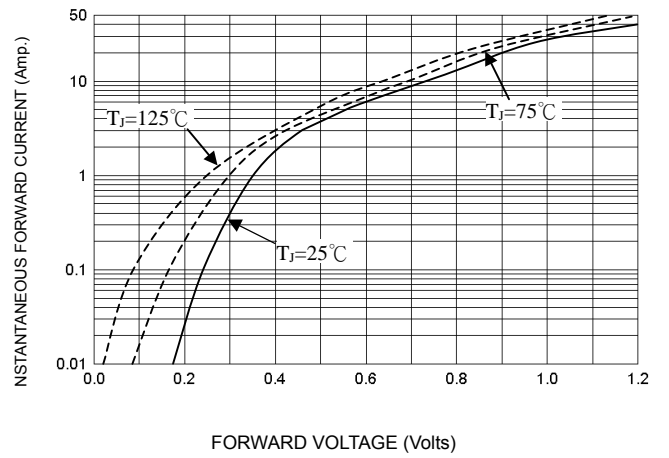


FIG-3 TYPICAL REVERSE CHARACTERISTICS

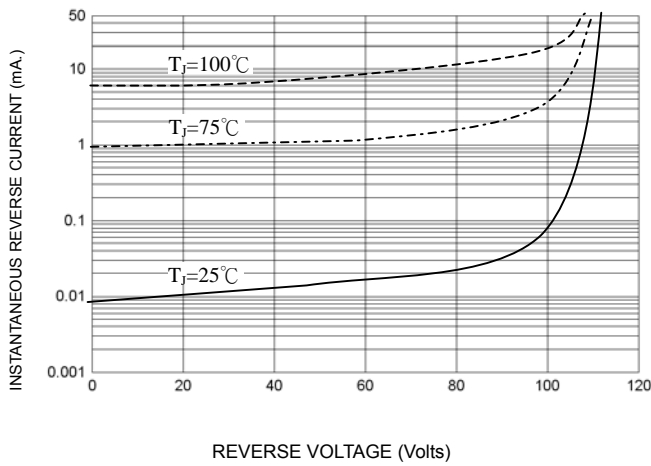


FIG-4 TYPICAL JUNCTION CAPACITANCE

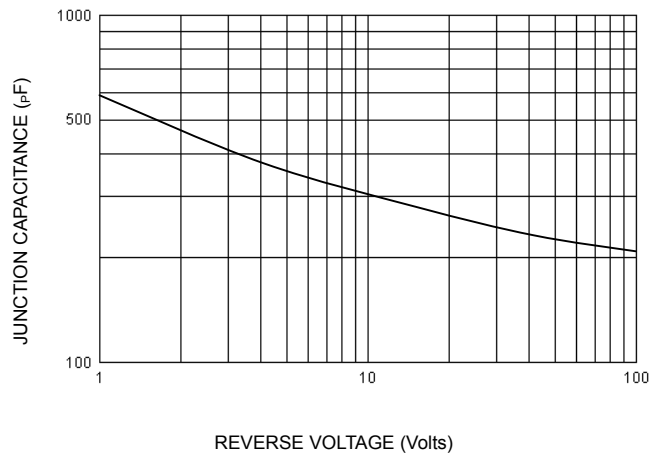


FIG-5 PEAK FORWARD SURGE CURRENT

