# MOSPEC

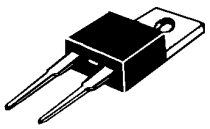
# MBR05A100K

## 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℃ junction temperature. Typical application are in switching Mode Power Supplies such as adaptors, DC/DC converters, free-wheeling and polarity protection diodes.

**SCHOTTKY BARRIER RECTIFIERS**

**5 AMPERES**
**100 VOLTS**

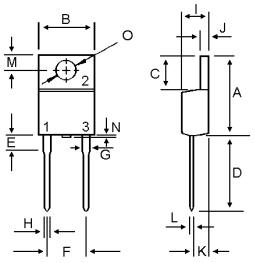


**TO-220A**

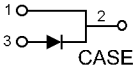
**Features**

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

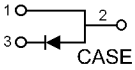
＊*In compliance with EU RoHs 2002/95/EC directives*




| DIM | MILLIMETERS | |
|---|---|---|
| | MIN | MAX |
| A | 14.68 | 15.32 |
| B | 9.78 | 10.42 |
| C | 6.02 | 6.52 |
| D | 13.06 | 14.62 |
| E | 3.57 | 4.07 |
| F | 4.84 | 5.32 |
| 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 |
| N | ---- | 1.00 |
| O | 3.70 | 3.90 |




Case Positive
Suffix "P"




Case Negative
Suffix "R"

## MAXIMUM RATINGS

| Characteristic | Symbol | MBR05A100K | Unit |
|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 100 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 70 | V |
| Average Rectifier Forward Current | $I_{F(AV)}$ | 5.0 | A |
| Peak Repetitive Forward Current<br>(Rate $V_R$, Square Wave, 20kHz) | $I_{FM}$ | 10 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz) | $I_{FSM}$ | 125 | A |
| Operating and Storage Junction Temperature Range | $T_J$ , $T_{stg}$ | -65 to +175 | ℃ |

## THERMAL RESISTANCES

| | | | |
|---|---|---|---|
| Typical Thermal Resistance junction to case | $R_{\theta jc}$ | 3.8 | ℃/w |

## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | MBR05A100K | Unit |
|---|---|---|---|
| Maximum Instantaneous Forward Voltage<br>( $I_F$ =5.0 Amp $T_C$ = 25℃)<br>( $I_F$ =5.0 Amp $T_C$ = 125℃) | $V_F$ | 0.85<br>0.78 | V |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C$ = 25℃)<br>( Rated DC Voltage, $T_C$ = 125℃) | $I_R$ | 0.01<br>10 | mA |

# MBR05A100K

FIG-1 FORWARD CURRENT DERATING CURVE

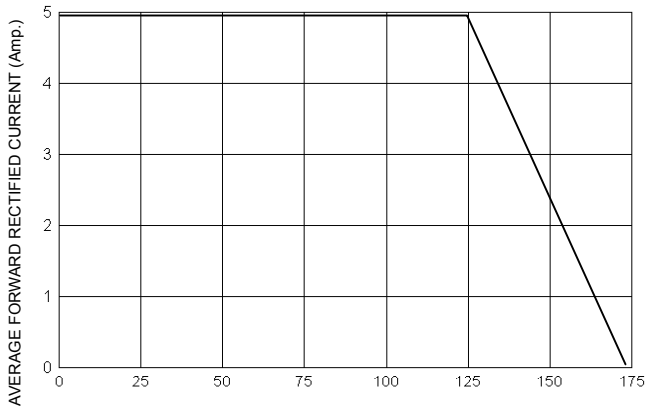



FIG-2 TYPICAL FORWARD CHARACTERISITICS

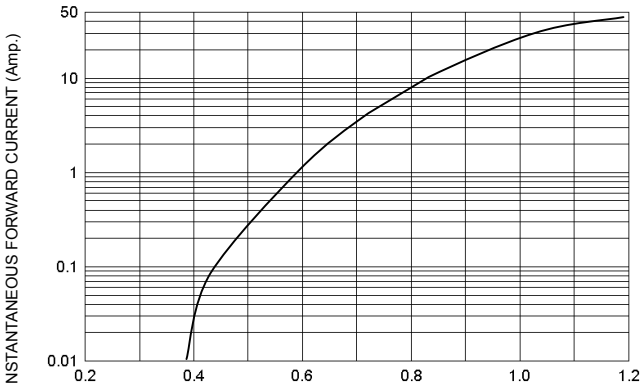



FIG-3 TYPICAL REVERSE CHARACTERISTICS

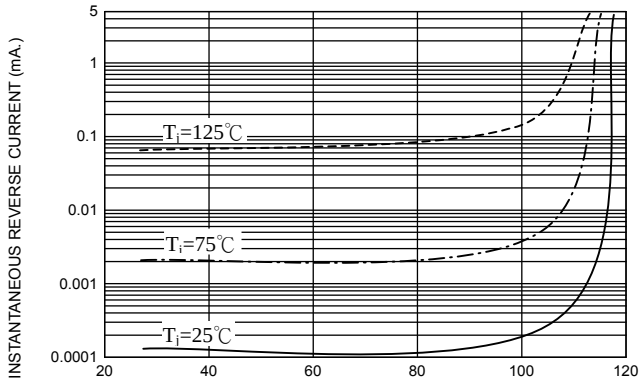



FIG-4 TYPICAL JUNCTION CAPACITANCE

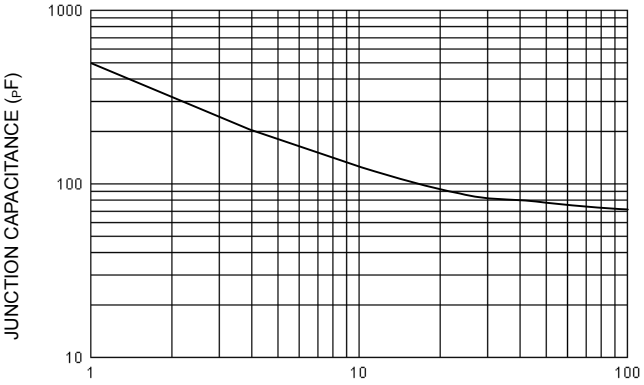
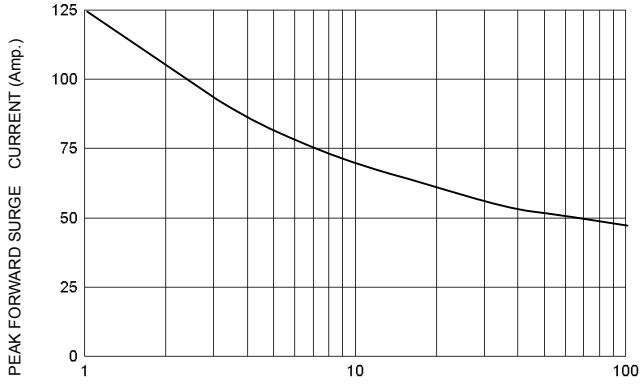



FIG-5 PEAK FORWARD SURGE CURRENT



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