# MOSPEC

# MBRS40200CN

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

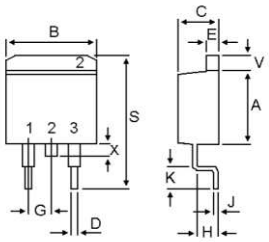
**SCHOTTKY BARRIER RECTIFIERS**

**40 AMPERES**
**200 VOLTS**

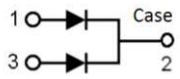
**TO-263**

**Features**

- ∗ Low Forward Voltage.
- ∗ Low Switching noise.
- ∗ High Current Capacity
- ∗ Guarantee Reverse Avalanche.
- ∗ Guard-Ring for Stress Protection.
- ∗ Low Power Loss & High efficiency.
- ∗ High Operating Junction Temperature
- ∗ Low Stored Charge Majority Carrier Conduction.
- ∗ Plastic Material used Carries Underwriters Laboratory
- ∗ Flammability Classification 94V-O
- ∗ Pb free
- ∗ In compliance with EU RoHs directives




| DIM | MILLIMETERS | |
|---|---|---|
| | MIN | MAX |
| A | 8.30 | 9.20 |
| B | 9.80 | 10.40 |
| C | 4.30 | 4.80 |
| D | 0.65 | 0.95 |
| E | 1.17 | 1.43 |
| G | 2.39 | 2.69 |
| H | 2.68 | 3.32 |
| J | 0.35 | 0.65 |
| K | 2.29 | 2.90 |
| S | 14.60 | 15.88 |
| V | 1.10 | 1.50 |
| X | --- | 2.00 |




## MAXIMUM RATINGS

| Characteristic | Symbol | MBRS40200CN | 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 $V_R$) | $I_{F(AV)}$ | 20<br>40 | A |
| Peak Repetitive Forward Current<br>(Rate $V_R$, Square Wave, 20kHz) | $I_{FM}$ | 40 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-ware, single phase, 60Hz) | $I_{FSM}$ | 360 | A |
| Operating and Storage Junction Temperature Range | $T_J$ , $T_{stg}$ | -65 to +150 | ℃ |

## THERMAL RESISTANCES

| | | | |
|---|---|---|---|
| Typical Thermal Resistance junction to case | $R_{\theta jc}$ | 3.6 | ℃/w |

## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage<br>( $I_F$ =20 Amp $T_C$ = 25℃)<br>( $I_F$ =20 Amp $T_C$ = 125℃) | $V_F$ | ---<br>--- | 0.83<br>0.72 | 0.95<br>--- | V |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C$ = 25℃)<br>( Rated DC Voltage, $T_C$ = 125℃) | $I_R$ | ---<br>--- | 2.5<br>3 | 10<br>--- | uA<br>mA |

FIG-1 FORWARD CURRENT DERATING CURVE

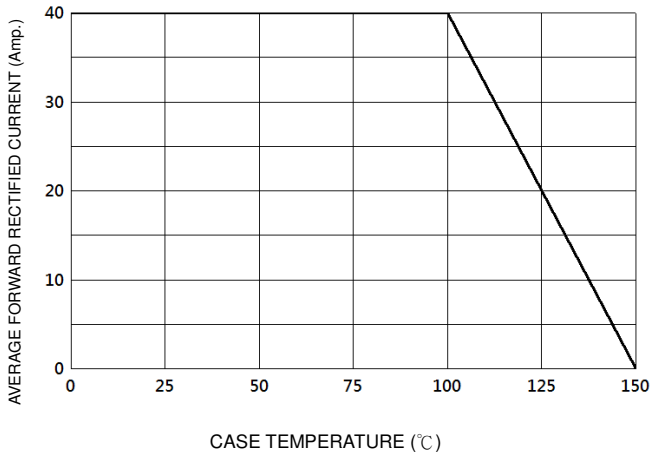



FIG-2 TYPICAL FORWARD CHARACTERISTICS

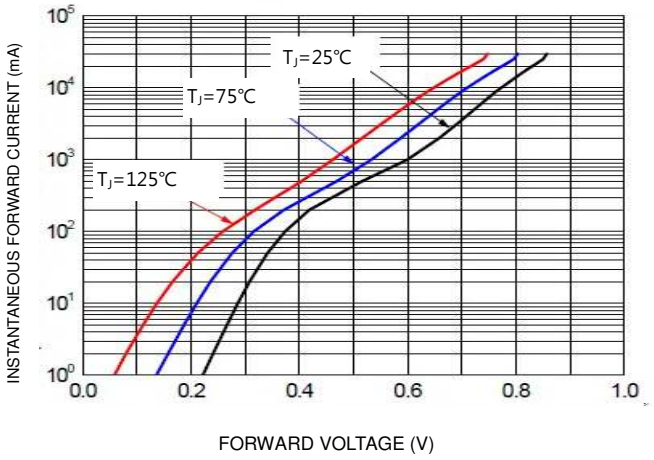



FIG-3 TYPICAL REVERSE CHARACTERISTICS

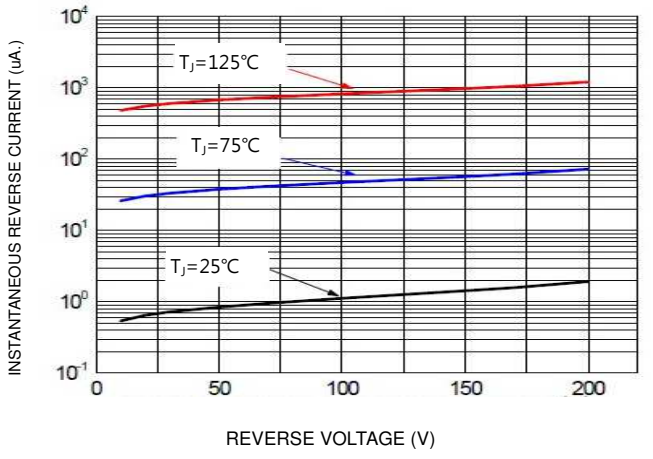



FIG-4 TYPICAL JUNCTION CAPACITANCE

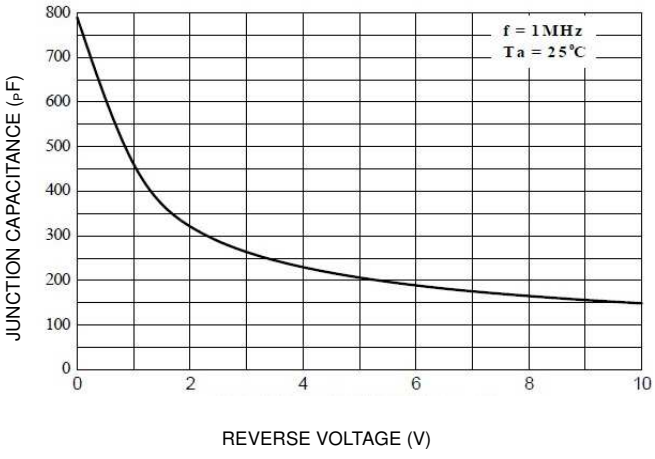
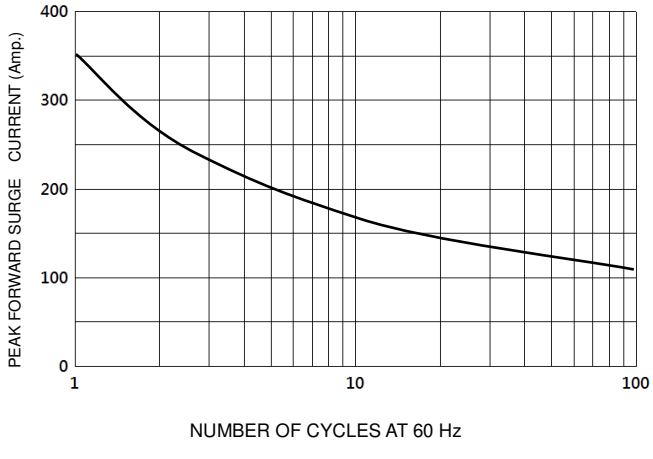



FIG-5 PEAK FORWARD SURGE CURRENT



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