

## 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 applications are in switching Mode Power Supplies such as adaptors, DC/DC converters, free-wheeling and polarity protection diodes.

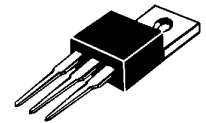
### Features

- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 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

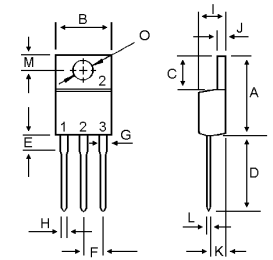


### SCHOTTKY BARRIER RECTIFIERS

**20 AMPERES  
60 VOLTS**



**TO-220AB**



| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.68       | 16.00 |
| B   | 9.78        | 10.42 |
| C   | 5.02        | 6.60  |
| D   | 13.00       | 14.62 |
| E   | 3.10        | 4.19  |
| F   | 2.41        | 2.67  |
| G   | 1.10        | 1.67  |
| H   | 0.69        | 1.01  |
| I   | 4.22        | 4.98  |
| J   | 1.14        | 1.40  |
| K   | 2.20        | 3.30  |
| L   | 0.28        | 0.61  |
| M   | 2.48        | 3.00  |
| O   | 3.50        | 4.00  |
| A   | 14.68       | 16.00 |

### MAXIMUM RATINGS

| Characteristic                                                                                          | Symbol         | MBRE2060CT  | Unit |
|---------------------------------------------------------------------------------------------------------|----------------|-------------|------|
| Peak Repetitive Reverse Voltage                                                                         | $V_{RRM}$      | 60          | V    |
| Working Peak Reverse Voltage                                                                            | $V_{RWM}$      |             |      |
| DC Blocking Voltage                                                                                     | $V_R$          |             |      |
| RMS Reverse Voltage                                                                                     | $V_{R(RMS)}$   | 42          | V    |
| Average Rectifier Forward Current (per diode)                                                           | $I_{F(AV)}$    | 10          | A    |
| Total Device (Rated $V_R$ )                                                                             |                | 20          |      |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz) | $I_{FSM}$      | 150         | A    |
| Operating Junction and Storage Temperature Range                                                        | $T_J, T_{STG}$ | -65 to +175 | °C   |

### THERMAL RESISTANCES

|                                             |                 |     |      |
|---------------------------------------------|-----------------|-----|------|
| Typical Thermal Resistance junction to case | $R_{\theta JC}$ | 3.2 | °C/w |
|---------------------------------------------|-----------------|-----|------|

### ELECTRICAL CHARACTERISTICS

| Characteristic                                                                                                               | Symbol | Min. | Typ.         | Max.        | Unit          |
|------------------------------------------------------------------------------------------------------------------------------|--------|------|--------------|-------------|---------------|
| Maximum Instantaneous Forward Voltage<br>( $I_F = 10$ Amp $T_C = 25^\circ C$ )<br>( $I_F = 10$ Amp $T_C = 125^\circ C$ )     | $V_F$  | ---  | 0.67<br>0.60 | 0.80<br>--- | V             |
| Maximum Instantaneous Reverse Current<br>(Rated DC Voltage, $T_C = 25^\circ C$ )<br>(Rated DC Voltage, $T_C = 125^\circ C$ ) | $I_R$  | ---  | 4.0<br>5.0   | 10<br>---   | $\mu A$<br>mA |
| Typical Junction Capacitance<br>(Reverse Voltage of 4 volts & $f = 1$ MHz)                                                   | $C_P$  |      | 300          |             | pF            |

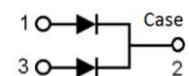


FIG-1 FORWARD CURRENT DERATING CURVE

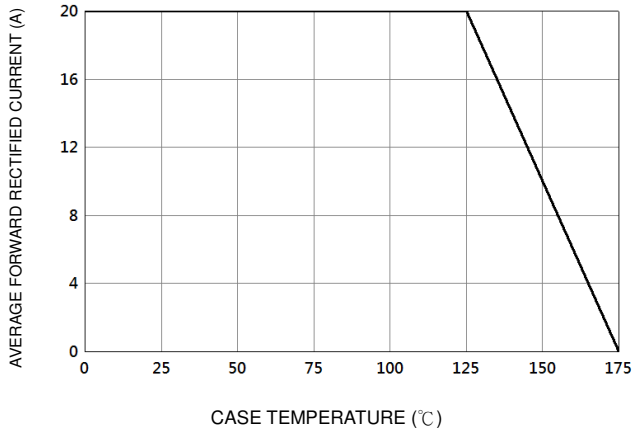


FIG-2 TYPICAL FORWARD CHARACTERISTICS

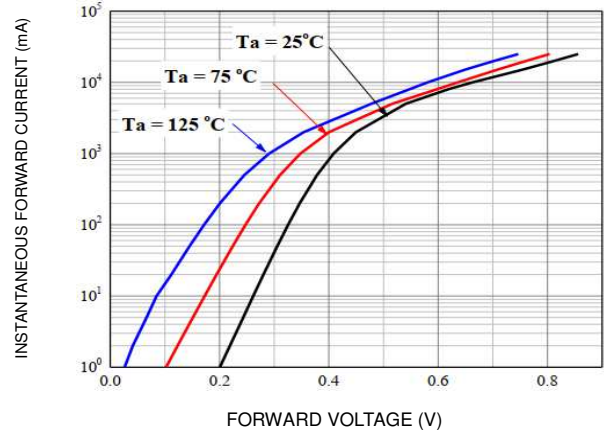


FIG-3 TYPICAL REVERSE CHARACTERISTICS

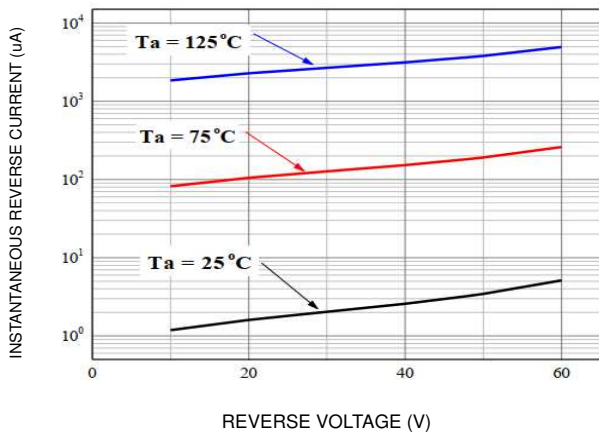


FIG-4 TYPICAL JUNCTION CAPACITANCE

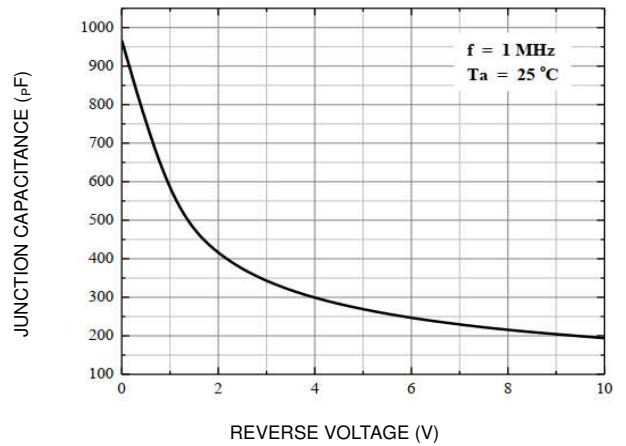
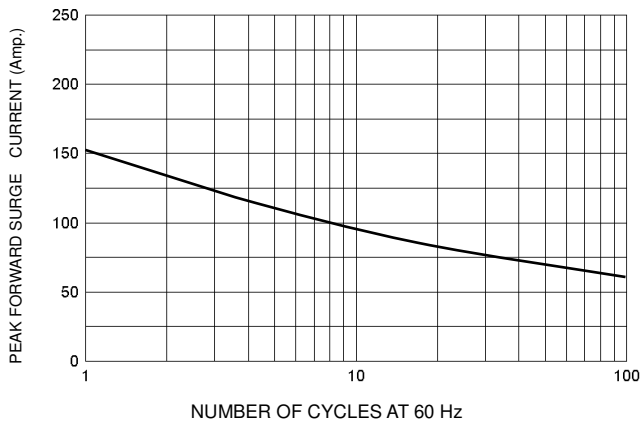


FIG-5 PEAK FORWARD SURGE CURRENT



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