

# Schottky Barrier Rectifier

## MBR20L45CT

### FEATURES

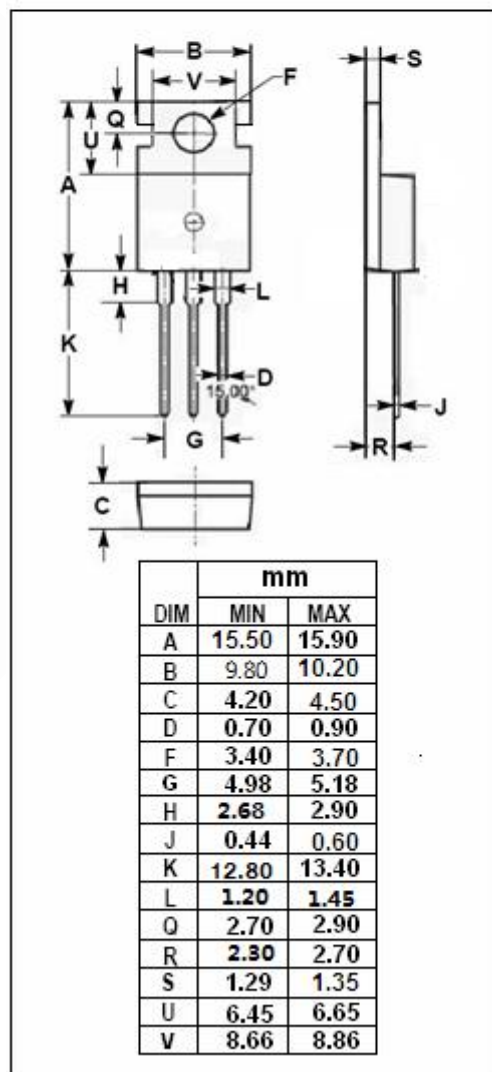
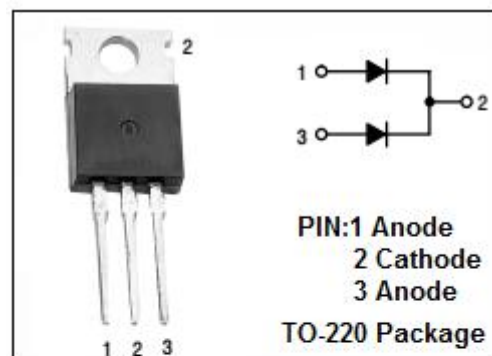
- Guard ring for overvoltage protection
- Lower power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High frequency operation
- Minimum Lot-to-Lot variations for robust device performance and reliable operation

### APPLICATIONS

- For use in high frequency rectifier of switching mode power supplies  
freewheeling diodes, dc-to-dc converters or polarity protection application.

### ABSOLUTE MAXIMUM RATINGS(Ta=25°C)

| SYMBOL                                                 | PARAMETER                                                                                                | VALUE   | UNIT |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------|------|
| V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                   | 45      | V    |
| V <sub>RMS</sub>                                       | Maximum RMS Reverse Voltage                                                                              | 31      | V    |
| I <sub>F(AV)</sub>                                     | Average Rectified Forward Current                                                                        | 20      | A    |
| I <sub>FSM</sub>                                       | Nonrepetitive Peak Surge Current<br>8.3ms single half sine-wave superimposed<br>on rated load conditions | 200     | A    |
| T <sub>J</sub>                                         | Junction Temperature                                                                                     | -55~150 | °C   |
| T <sub>stg</sub>                                       | Storage Temperature Range                                                                                | -55~150 | °C   |



**Schottky Barrier Rectifier****MBR20L45CT****THERMAL CHARACTERISTICS**

| SYMBOL        | PARAMETER                            | MAX | UNIT          |
|---------------|--------------------------------------|-----|---------------|
| $R_{th\ j-c}$ | Thermal Resistance, Junction to Case | 3.0 | $^{\circ}C/W$ |

**ELECTRICAL CHARACTERISTICS**

| SYMBOL | PARAMETER                             | CONDITIONS                           | MAX  | UNIT |
|--------|---------------------------------------|--------------------------------------|------|------|
| $V_F$  | Maximum Instantaneous Forward Voltage | $I_F = 10A ; T_c = 25^{\circ}C$      | 0.54 | V    |
|        |                                       | $I_F = 10A ; T_c = 125^{\circ}C$     | 0.52 |      |
| $I_R$  | Maximum Instantaneous Reverse Current | $V_R = V_{RWM} ; T_j = 25^{\circ}C$  | 0.2  | mA   |
|        |                                       | $V_R = V_{RWM} ; T_j = 125^{\circ}C$ | 7.5  |      |