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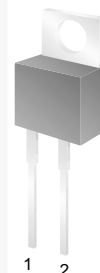
# **MBR735 - MBR760** **Schottky Rectifiers**

## **Features**

- Low Power Loss, High Efficiency
- High Surge Capacity
- Metal Silicon Junction, Majority Carrier Conduction
- High Current Capacity, Low Forward-Voltage Drop
- Guard Ring for Over-Voltage Protection (OVP)

## **Applications**

- Low-Voltage, High-Frequency Inverters
- Free Wheeling and Polarity Protection



TO-220AC



## **Absolute Maximum Ratings**

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

| Symbol      | Parameter                                                                 | Value       |     |     |     | Units            |
|-------------|---------------------------------------------------------------------------|-------------|-----|-----|-----|------------------|
|             |                                                                           | 735         | 745 | 750 | 760 |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                                        | 35          | 45  | 50  | 60  | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current                                         | 7.5         |     |     |     | A                |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge Current<br>8.3 ms Single Half-Sine-Wave | 150         |     |     |     | A                |
| $T_{stg}$   | Storage Temperature Range                                                 | -65 to +175 |     |     |     | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                            | -65 to +150 |     |     |     | $^\circ\text{C}$ |

## **Thermal Characteristics**

| Symbol          | Parameter                               | Value | Units              |
|-----------------|-----------------------------------------|-------|--------------------|
| $P_D$           | Power Dissipation                       | 2.0   | W                  |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 60    | $^\circ\text{C/W}$ |
| $R_{\theta JL}$ | Thermal Resistance, Junction to Lead    | 3.0   | $^\circ\text{C/W}$ |

# Electrical Characteristics

Values are at  $T_A = 25^{\circ}\text{C}$  unless otherwise noted.

| Symbol    | Parameter                                                                                    |                                                 | Value |     |      |     | Units |
|-----------|----------------------------------------------------------------------------------------------|-------------------------------------------------|-------|-----|------|-----|-------|
|           |                                                                                              |                                                 | 735   | 745 | 750  | 760 |       |
| $V_F$     | Forward Voltage                                                                              | $I_F = 7.5\text{ A}, T_C = 25^{\circ}\text{C}$  |       |     | 0.75 |     | V     |
|           |                                                                                              | $I_F = 7.5\text{ A}, T_C = 125^{\circ}\text{C}$ | 0.57  |     | 0.65 |     |       |
|           |                                                                                              | $I_F = 15\text{ A}, T_C = 25^{\circ}\text{C}$   | 0.84  |     |      |     |       |
|           |                                                                                              | $I_F = 15\text{ A}, T_C = 125^{\circ}\text{C}$  | 0.72  |     |      |     |       |
| $I_R$     | Reverse Current at rated $V_R$                                                               | $T_C = 25^{\circ}\text{C}$                      | 0.1   |     | 0.5  |     | mA    |
|           |                                                                                              | $T_C = 125^{\circ}\text{C}$                     | 15    |     | 50   |     |       |
| $I_{RRM}$ | Peak Repetitive Reverse Surge Current<br>2.0 $\mu\text{s}$ Pulse Width, $f = 1.0\text{ kHz}$ |                                                 | 1.0   |     | 0.5  |     | A     |

# Typical Performance Characteristics

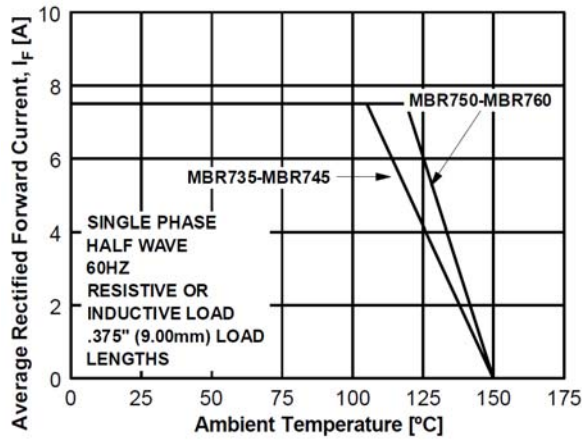


Figure 1. Forward Current Derating Curve

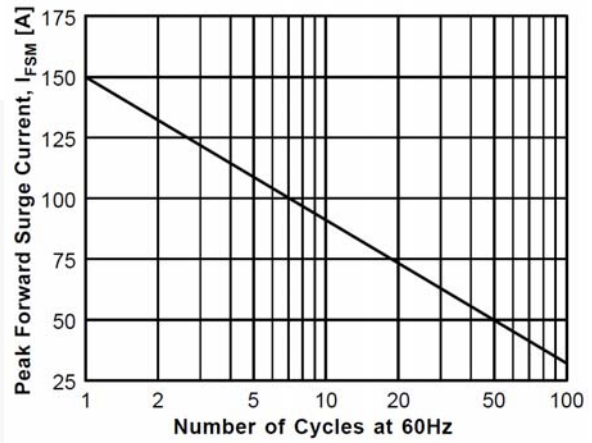


Figure 2. Non-Repetitive Surge Current

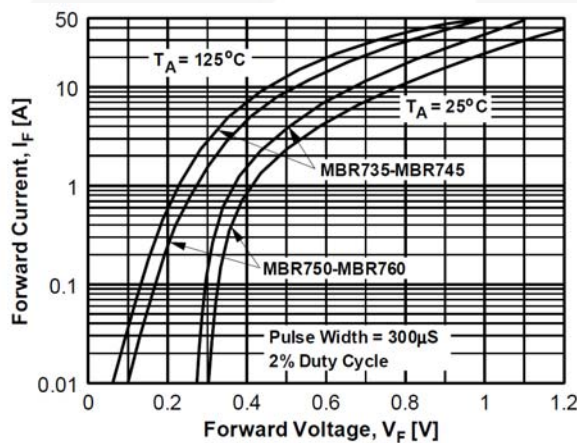


Figure 3. Forward Voltage Characteristics

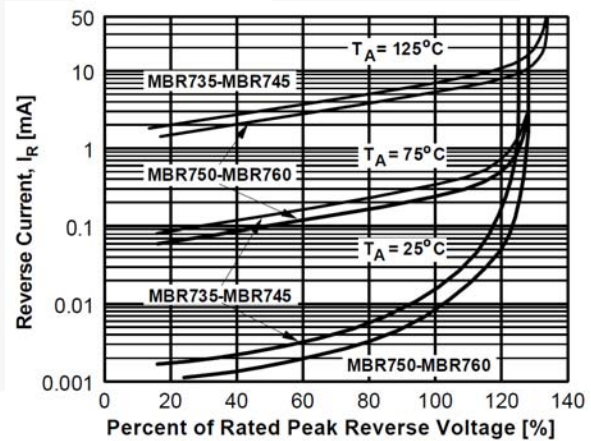


Figure 4. Reverse Current vs. Reverse Voltage

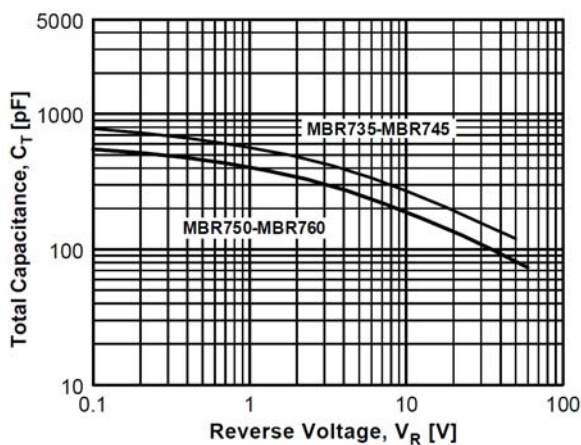


Figure 5. Total Capacitance

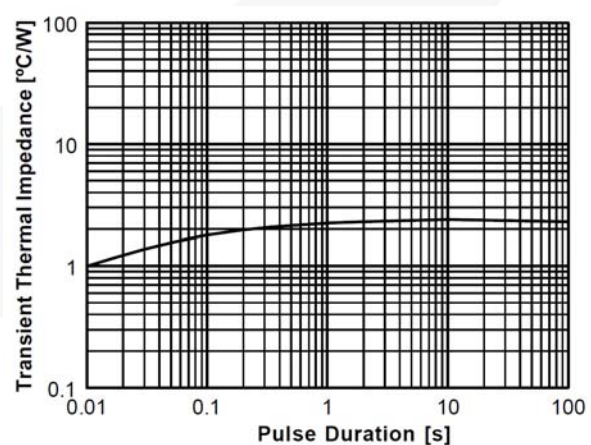
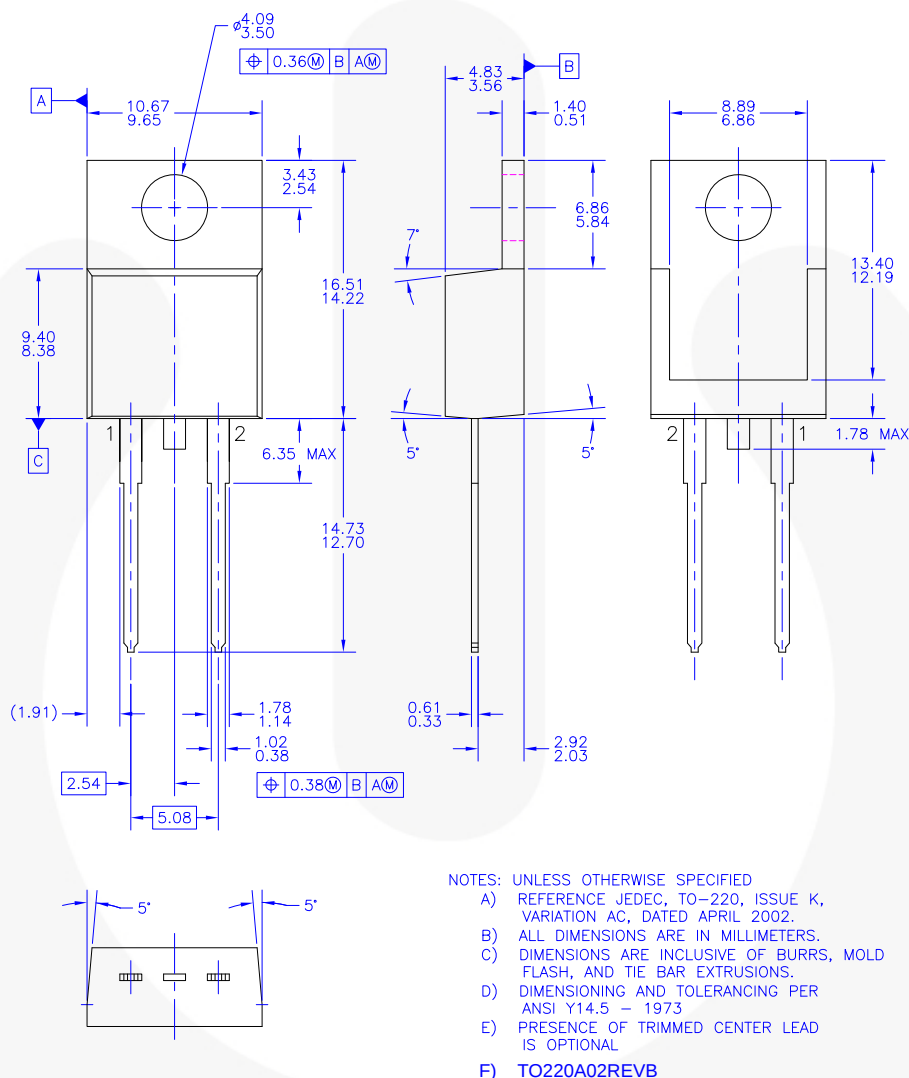


Figure 6. Thermal Impedance Characteristics

# Physical Dimensions

## TO-220 2L



**Figure 7. TO-220, MOLDED, 2-LEAD (ACTIVE)**

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| CorePOWER™                                                                        | Green FPS™ e-Series™                           | Quiet Series™                                                                     | TINYOPTO™                                                                           |
| CROSSVOLT™                                                                        | Gmax™                                          | RapidConfigure™                                                                   | TinyPower™                                                                          |
| CTL™                                                                              | GTO™                                           |  | TinyPWM™                                                                            |
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| Dual Cool™                                                                        | Making Small Speakers Sound Louder and Better™ | SmartMax™                                                                         | TriFault Detect™                                                                    |
| EcoSPARK®                                                                         | MegaBuck™                                      | SMART START™                                                                      | TRUECURRENT®*                                                                       |
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|  | MicroPak™                                      | STEALTH™                                                                          | UHC®                                                                                |
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| FastvCore™                                                                        | OPTOLOGIC®                                     | SyncFET™                                                                          | XS™                                                                                 |
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