

# 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 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	$^\circ\text{C}/\text{W}$
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	3.0	$^\circ\text{C}/\text{W}$

## 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 2.0 $\mu\text{s}$ Pulse Width, $f = 1.0\text{ kHz}$		1.0		0.5		A

## Typical Performance Characteristics

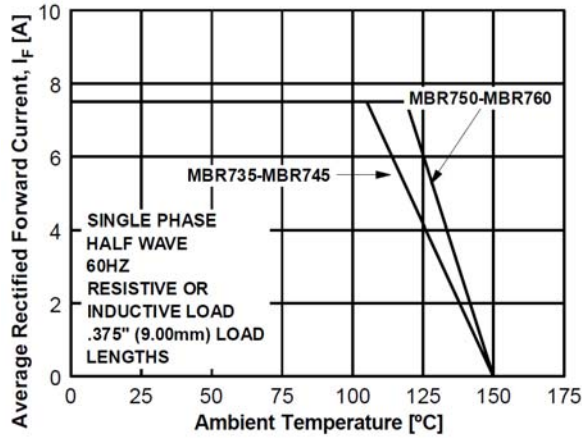


Figure 1. Forward Current Derating Curve

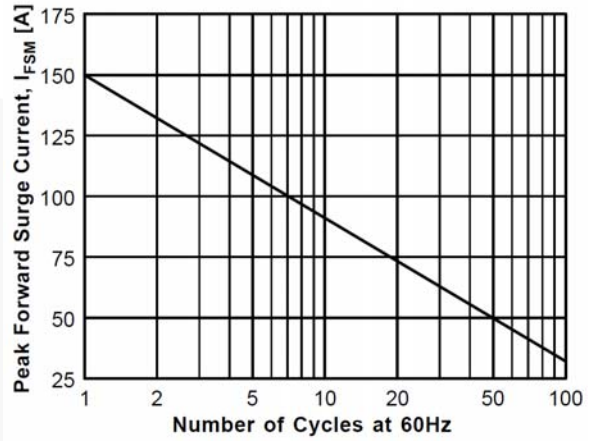


Figure 2. Non-Repetitive Surge Current

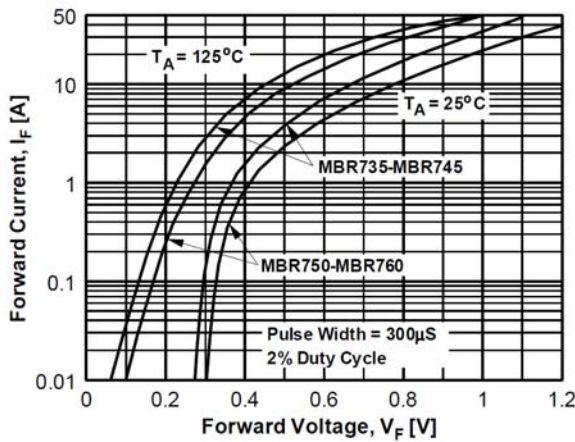


Figure 3. Forward Voltage Characteristics

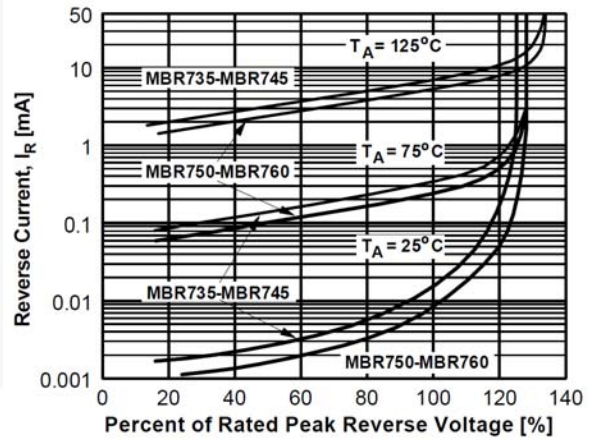


Figure 4. Reverse Current vs. Reverse Voltage

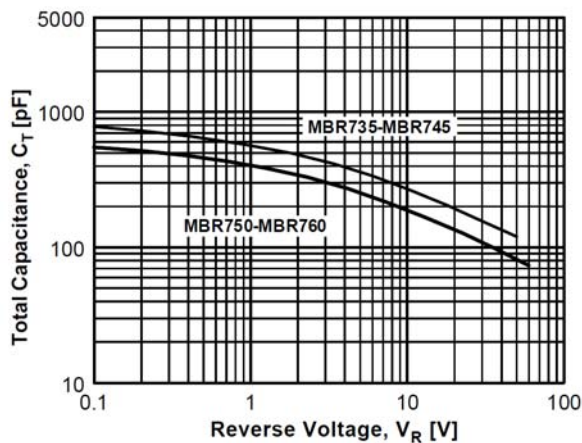


Figure 5. Total Capacitance

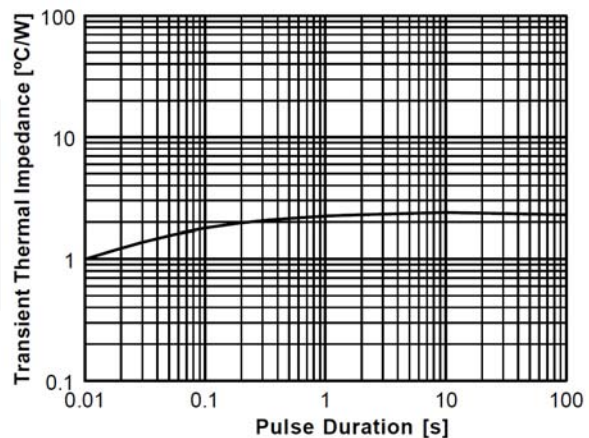
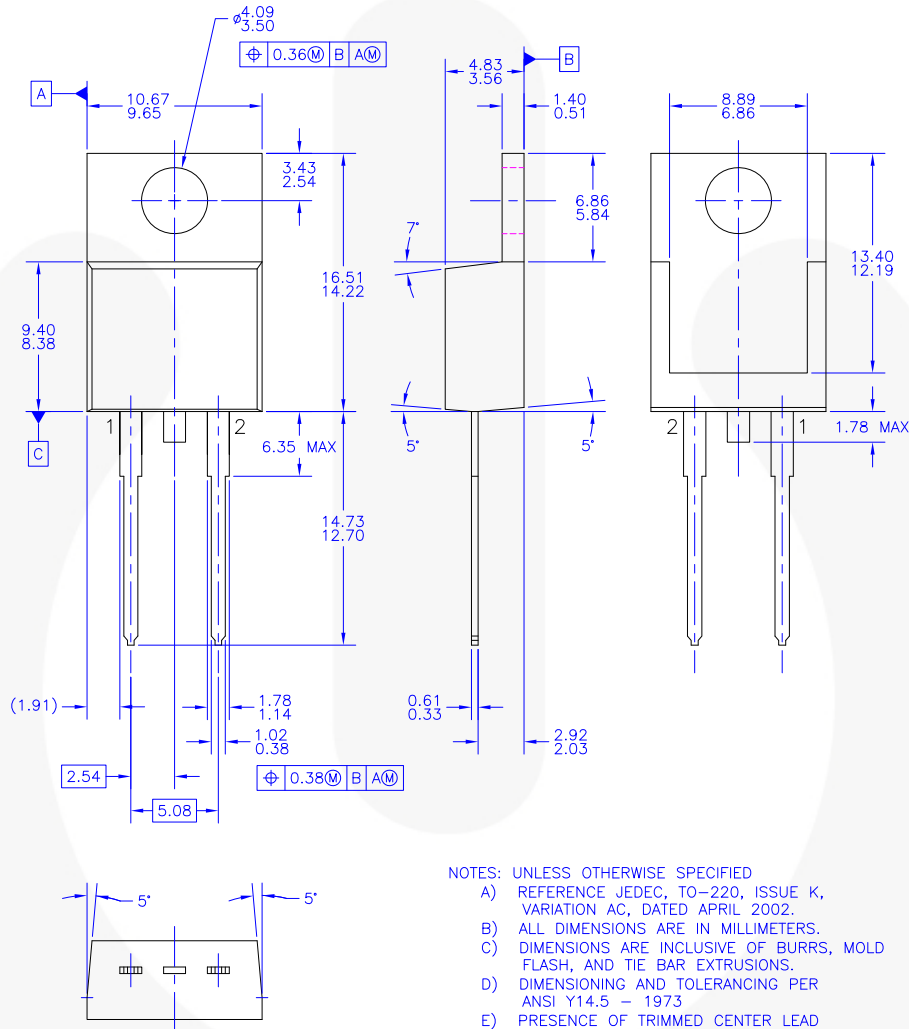


Figure 6. Thermal Impedance Characteristics

Physical Dimensions

TO-220 2L



- NOTES: UNLESS OTHERWISE SPECIFIED
- A) REFERENCE JEDEC, TO-220, ISSUE K, VARIATION AC, DATED APRIL 2002.
  - B) ALL DIMENSIONS ARE IN MILLIMETERS.
  - C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.
  - D) DIMENSIONING AND TOLERANCING PER ANSI Y14.5 - 1973
  - E) PRESENCE OF TRIMMED CENTER LEAD IS OPTIONAL
  - F) TO220A02REVB

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

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