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Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild_questions@onsemi.com.

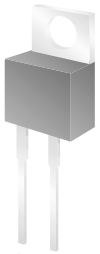
FAIRCHILD SEMICONDUCTOR®

June 2013

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)



TO-220AC

Applications

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

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°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				°C
T_J	Operating Junction Temperature	-65 to +150				°C

Thermal Characteristics

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

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter		Value				Units
			735	745	750	760	
V_F	Forward Voltage	I_F = 7.5 A, T_C = 25°C			0.75		V
		I_F = 7.5 A, T_C = 125°C	0.57		0.65		
		I_F = 15 A, T_C = 25°C	0.84				
		I_F = 15 A, T_C = 125°C	0.72				
I_R	Reverse Current at rated V_R	T_C = 25°C	0.1		0.5		mA
		T_C = 125°C	15		50		
I_{RRM}	Peak Repetitive Reverse Surge Current 2.0 µs Pulse Width, f = 1.0 kHz		1.0		0.5		A

Typical Performance Characteristics

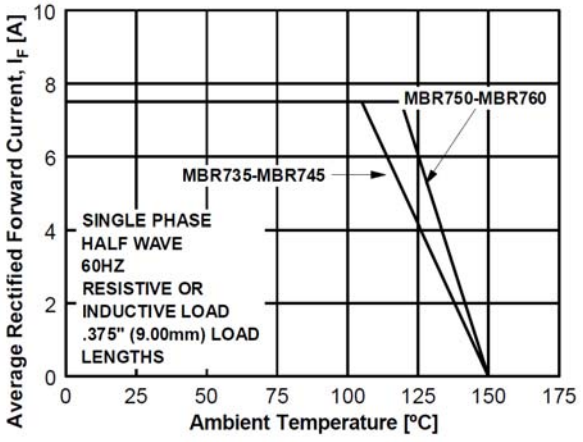


Figure 1. Forward Current Derating Curve

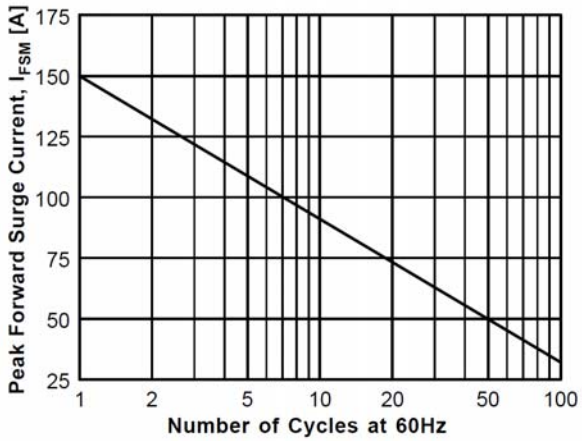


Figure 2. Non-Repetitive Surge Current

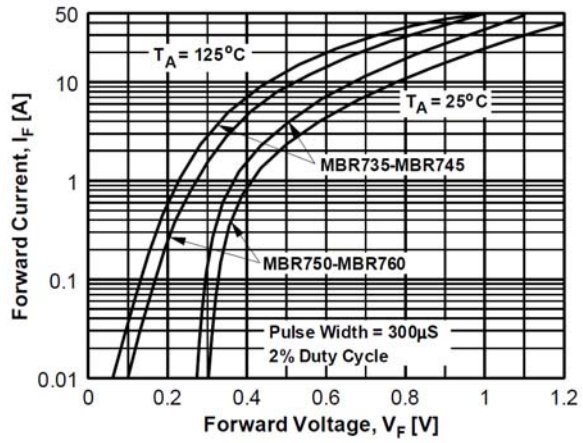


Figure 3. Forward Voltage Characteristics

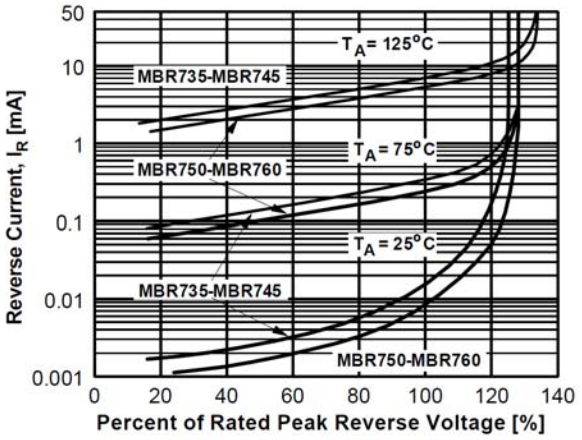


Figure 4. Reverse Current vs. Reverse Voltage

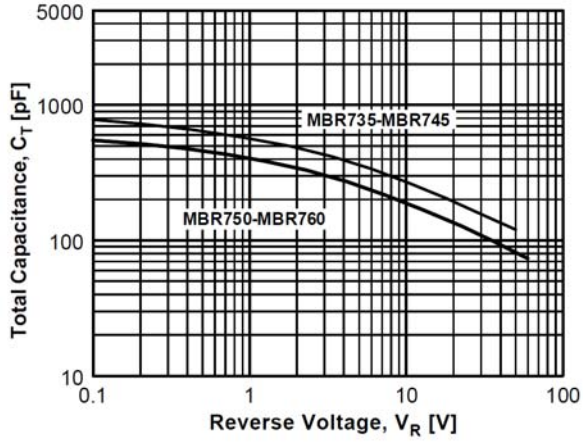


Figure 5. Total Capacitance

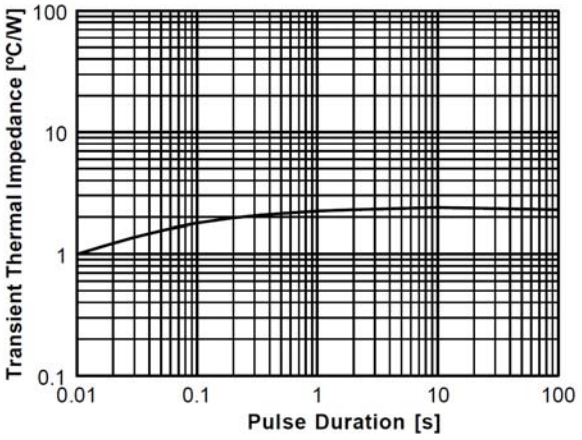


Figure 6. Thermal Impedance Characteristics

Physical Dimensions

TO-220 2L

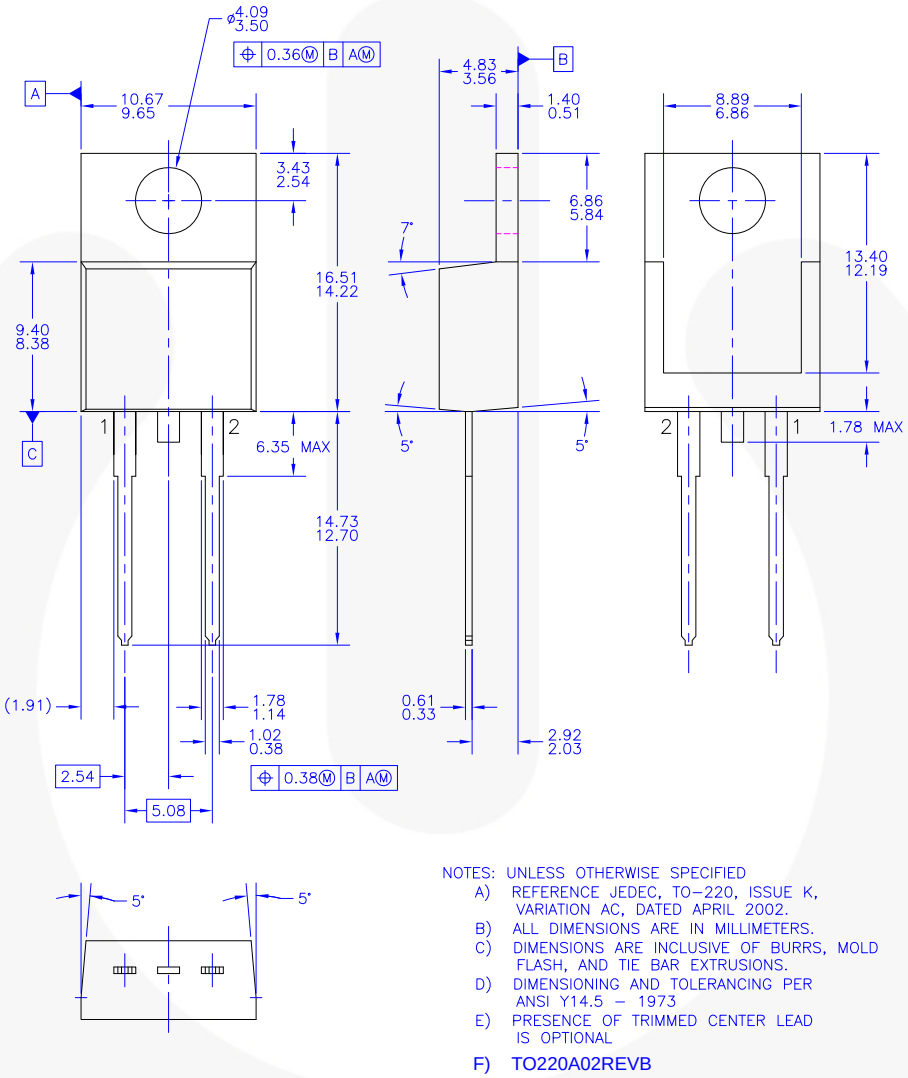


Figure 7. TO-220, MOLDED, 2-LEAD (ACTIVE)

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Rev. I64

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