FAIRCHILD SEMICONDUCTOR®

October 2013

MBR1035 - MBR1060
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
- Polarity Protection

Description

This Schottky rectifier is optimal for secondary rectification and free-wheeling applications for high-efficiency DC-DC convertor design, which features very low forward voltage drop and low leakage current.

TO-220AC

Ordering Information

Part Number	Marking	Package	Packing Method
MBR1035	MBR1035	TO-220 2L	Rail
MBR1045	MBR1045		
MBR1050	MBR1050		
MBR1060	MBR1060		

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
		MBR1035	MBR1045	MBR1050	MBR1060	
V_{RRM}	Maximum Repetitive Reverse Voltage	35	45	50	60	V
$I_{F(AV)}$	Average Rectified Forward Current	10				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	2.0	°C/W

Electrical Characteristics

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

Symbol	Parameter		Value				Units
			MBR1035	MBR1045	MBR1050	MBR1060	
V_F	Forward Voltage	I_F = 10 A, T_C = 25°C			0.80		V
		I_F = 10 A, T_C = 125°C	0.57		0.70		
		I_F = 20 A, T_C = 25°C	0.84		0.95		
		I_F = 20 A, T_C = 125°C	0.72		0.85		
I_R	Reverse Current at Rated V_R	T_C = 25°C	0.1				mA
		T_C = 125°C	15				
I_{RRM}	Peak Repetitive Reverse Surge Current 2.0 µs Pulse Width, f = 1.0 kHz		1.0		0.5		A

Typical Performance Characteristics

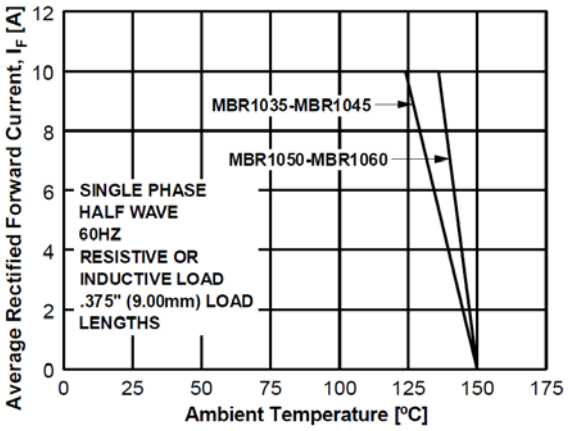


Figure 1. Forward Current Derating Curve

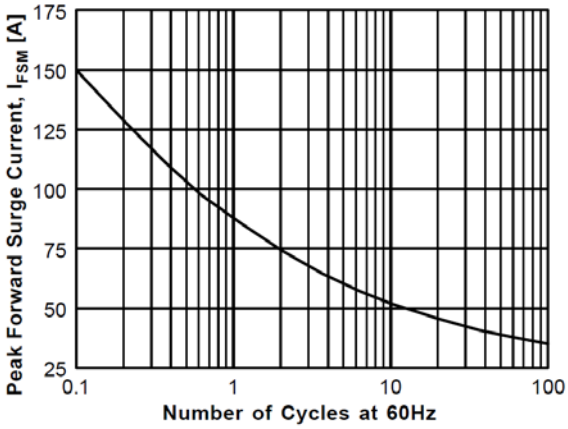


Figure 2. Non-Repetitive Surge Current

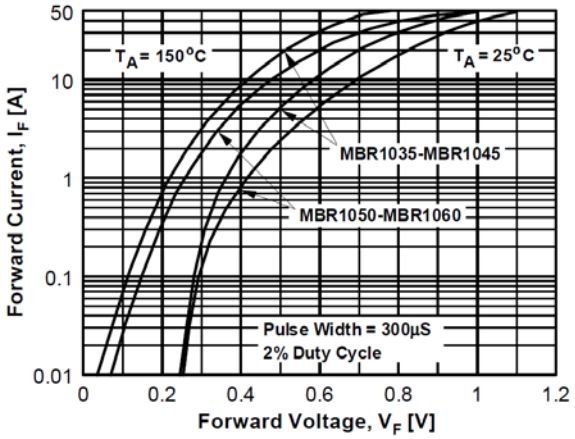


Figure 3. Forward Voltage Characteristics

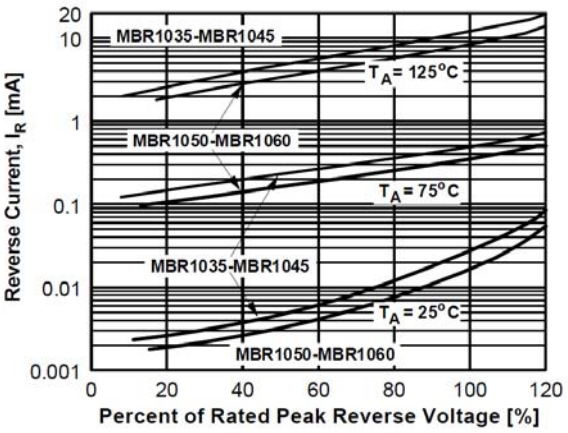


Figure 4. Reverse Current vs. Reverse Voltage

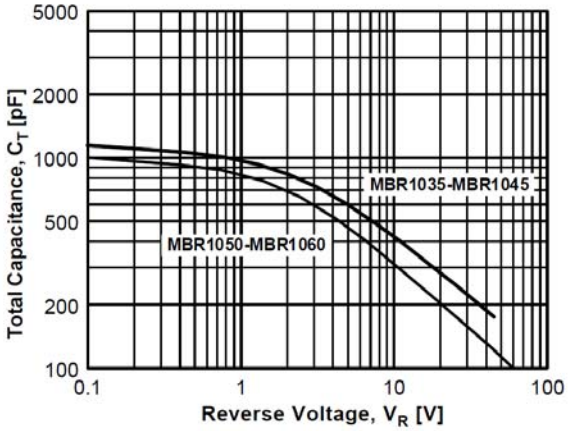


Figure 5. Total Capacitance

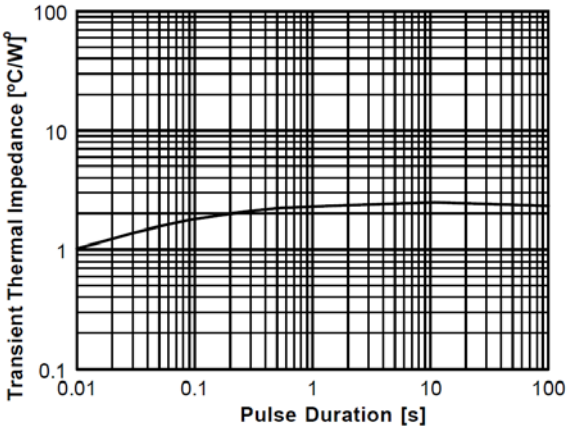
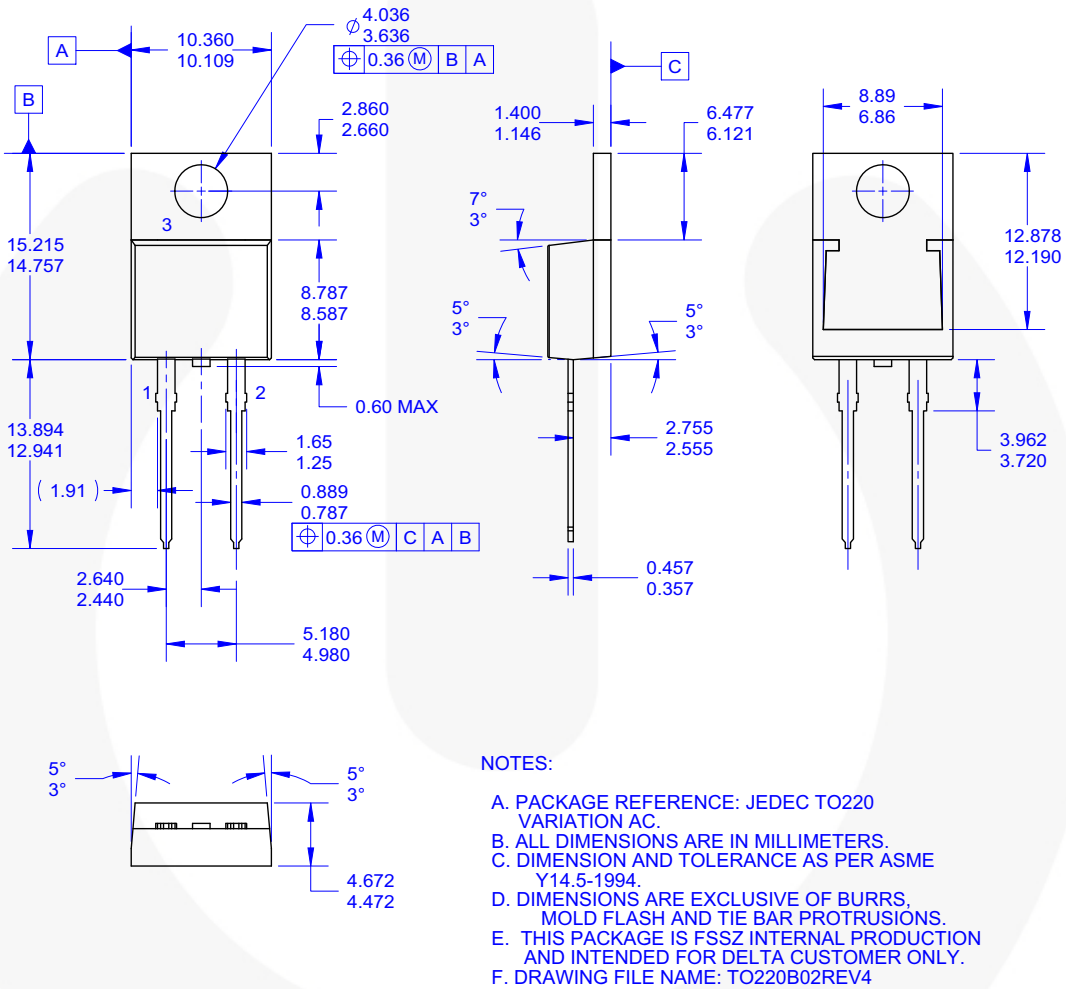


Figure 6. Thermal Impedance Characteristics

Physical Dimensions

TO-220 2L



NOTES:

A. PACKAGE REFERENCE: JEDEC TO220 VARIATION AC.
B. ALL DIMENSIONS ARE IN MILLIMETERS.
C. DIMENSION AND TOLERANCE AS PER ASME Y14.5-1994.
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E. THIS PACKAGE IS FSSZ INTERNAL PRODUCTION AND INTENDED FOR DELTA CUSTOMER ONLY.
F. DRAWING FILE NAME: TO220B02REV4

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

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http://www.fairchildsemi.com/dwg/TO/TO220B02.pdf.

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