FAIRCHILD SEMICONDUCTOR®

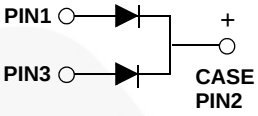
June 2013

MBR3035PT - MBR3060PT
30 A Schottky Barrier 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-3P/TO-247AD



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
		3035PT	3045PT	3050PT	3060PT	
V_{RRM}	Maximum Repetitive Reverse Voltage	35	45	50	60	V
$I_{F(AV)}$	Average Rectified Forward Current .375 inch Lead Length at T_A = 105°C	30				A
I_{FSM}	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	200				A
T_{STG}	Storage Temperature Range	-65 to +175				°C
T_J	Operating Junction Temperature Range	-65 to +150				°C

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	3.0	W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	1.4	°C/W

Electrical Characteristics

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

Symbol	Parameter		Value				Units
			3035PT	3045PT	3050PT	3060PT	
V_F	Maximum Forward Voltage, per Leg	I_F = 20 A, T_C = 25°C			0.75		V
		I_F = 20 A, T_C = 125°C	0.60		0.65		
		I_F = 30 A, T_C = 25°C	0.76				
		I_F = 30 A, T_C = 125°C	0.72				
I_R	Maximum Reverse Current at rated V_{RRM}, per Leg	T_A = 25°C	0.1		5.0		mA
		T_A = 125°C	60		100		
I_{RRM}	Peak Repetitive Reverse Surge Current, per Leg 2.0 µs Pulse Width, f = 1.0 kHz		1.0		0.5		A

Typical Performance Characteristics

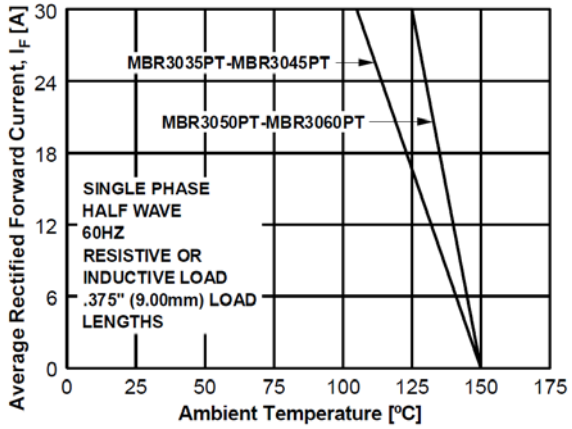


Figure 1. Forward Current Derating Curve

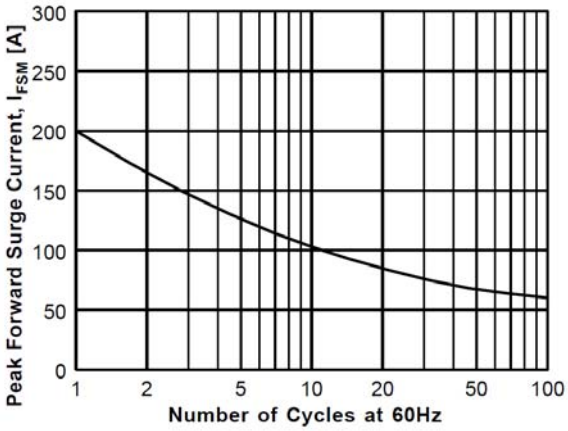


Figure 2. Non-Repetitive Surge Current

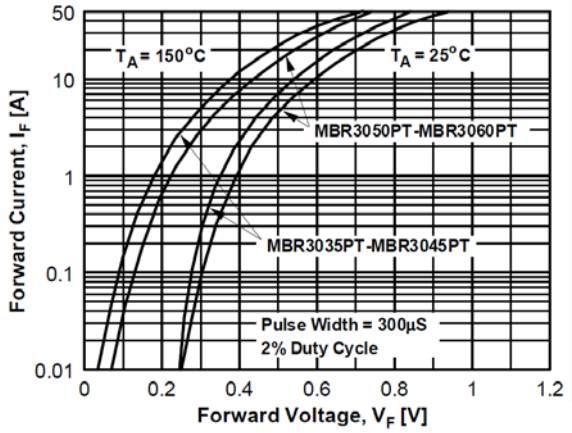


Figure 3. Forward Voltage Characteristics

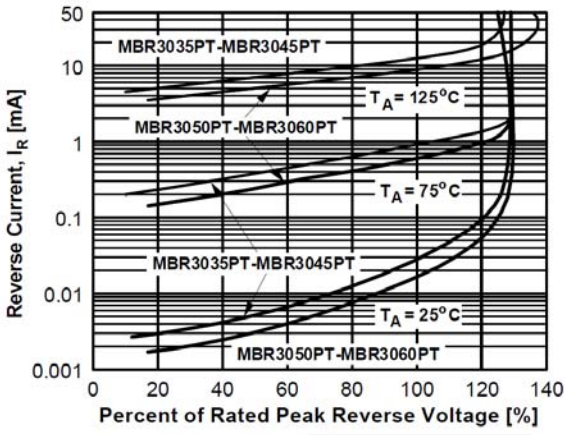


Figure 4. Reverse Current vs. Reverse Voltage

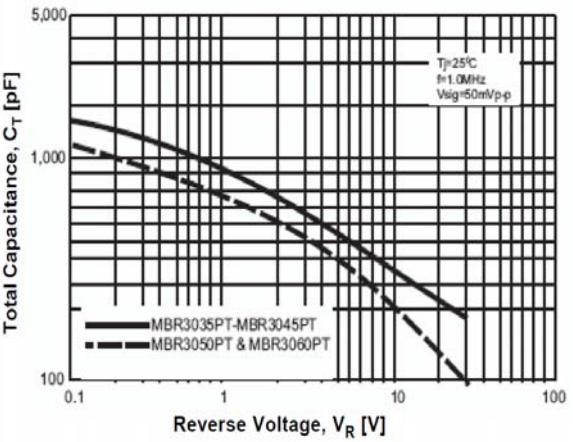


Figure 5. Total Capacitance

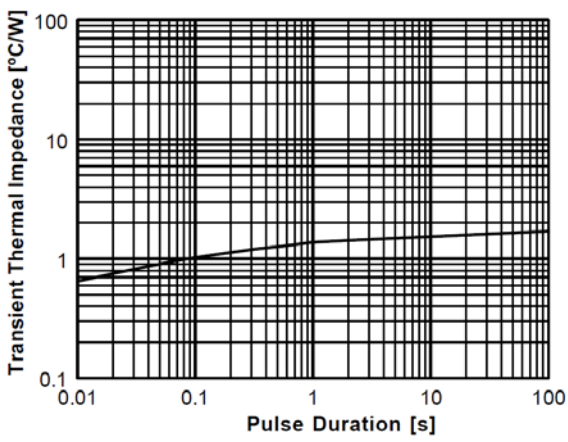
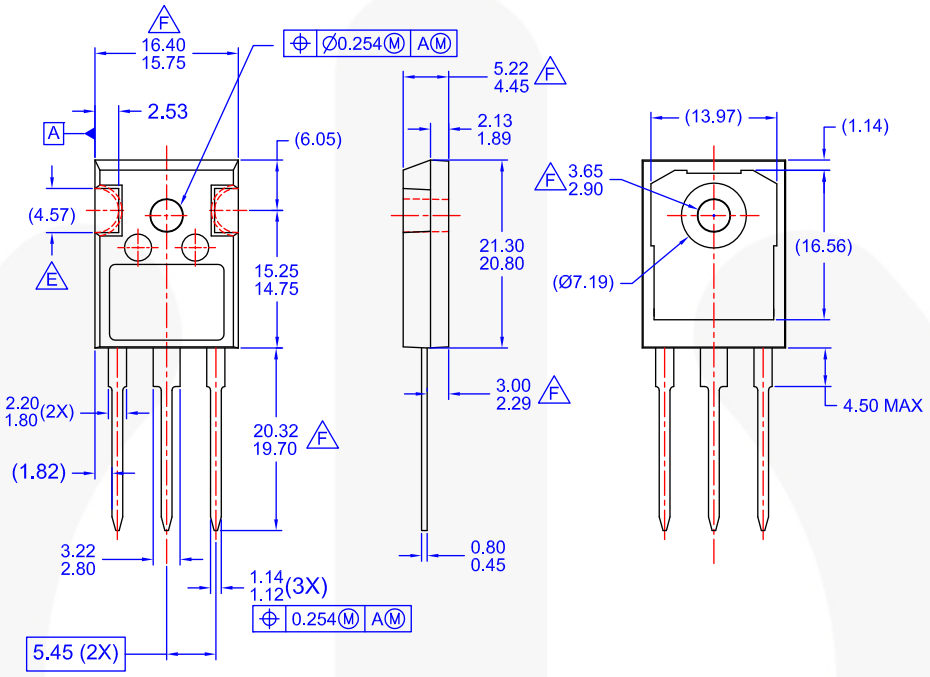


Figure 6. Thermal Impedance Characteristics

Physical Dimensions

TO-247 3L



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B. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR EXTRUSIONS.

C. ALL DIMENSIONS ARE IN MILLIMETERS.

D. DRAWING CONFORMS TO ASME Y14.5 - 1994

E. DOES NOT COMPLY JEDEC STANDARD VALUE.

F. NOTCH MAY BE SQUARE

G. DRAWING FILENAME: MKT-TO247E03_REV02

Figure 7. TO-247, MOLDED, 3 LEADS, JEDEC OPTION AD (ACTIVE)

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