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FAIRCHILD SEMICONDUCTOR®

September 2013

MBR1535CT - MBR1560CT
15 A Schottky Barrier Rectifiers

Features

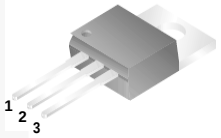
- Low Power Loss, High Efficiency
- High Surge Capacity
- Metal Silicon Junction, Majority Carrier Conduction
- High Current Capacity, Low Forward Voltage Drop
- Guard Ring for Over-Voltage Protection (OVP)

Applications

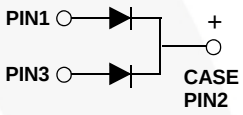
- Low-Voltage
- High-Frequency Inverters
- Free Wheeling
- Polarity Protection

Descriptions

This center tap MBR Schottky rectifier is optimal for secondary rectification and free wheeling application for high efficiency DC to DC convertor design, which features very low forward voltage drop and low leakage current.



TO-220AB



Ordering Information

Part Number	Marking	Package	Packing Method
MBR1535CT	MBR1535CT	TO-220 3L	Rail
MBR1545CT	MBR1545CT		
MBR1560CT	MBR1560CT		

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
		1535CT	1545CT	1560CT	
V_{RRM}	Maximum Repetitive Reverse Voltage	35	45	60	V
$I_{F(AV)}$	Average Rectified Forward Current .375 inch Lead Length at T_A = 105°C	15			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 Range	-65 to +150			°C

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	41.7	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
			1535CT	1545CT	1560CT	
V_F	Maximum Forward Voltage, per Leg	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	Maximum Reverse Current at Rated V_{RRM}, per Leg	T_A = 25°C		0.1	1.0	mA
		T_A = 125°C		15.0	50.0	
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

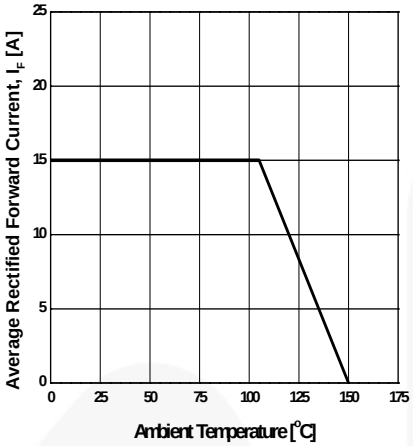


Figure 1. Forward Current Derating Curve

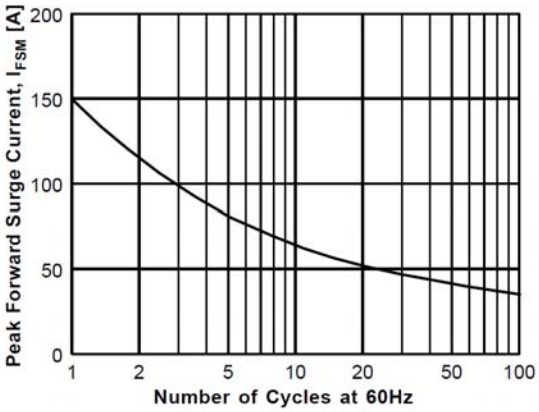


Figure 2. Non-Repetitive Surge Current

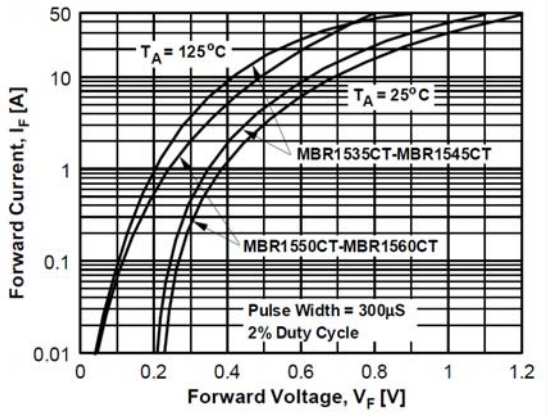


Figure 3. Forward Voltage Characteristics

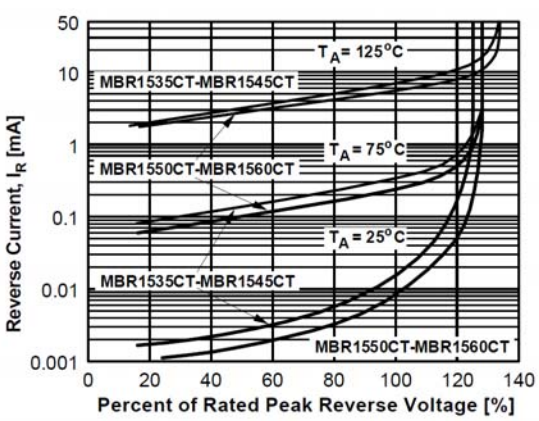


Figure 4. Reverse Current vs. Reverse Voltage

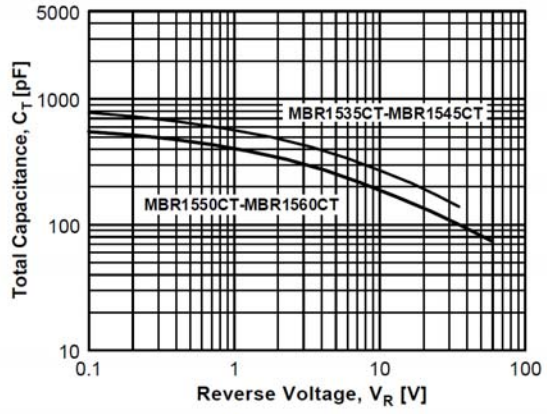


Figure 5. Total Capacitance

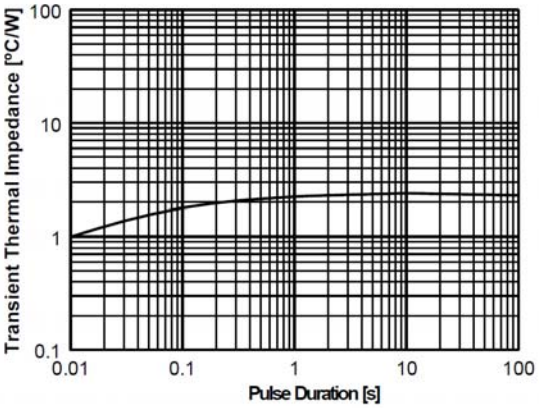


Figure 6. Thermal Impedance Characteristics

Physical Dimensions

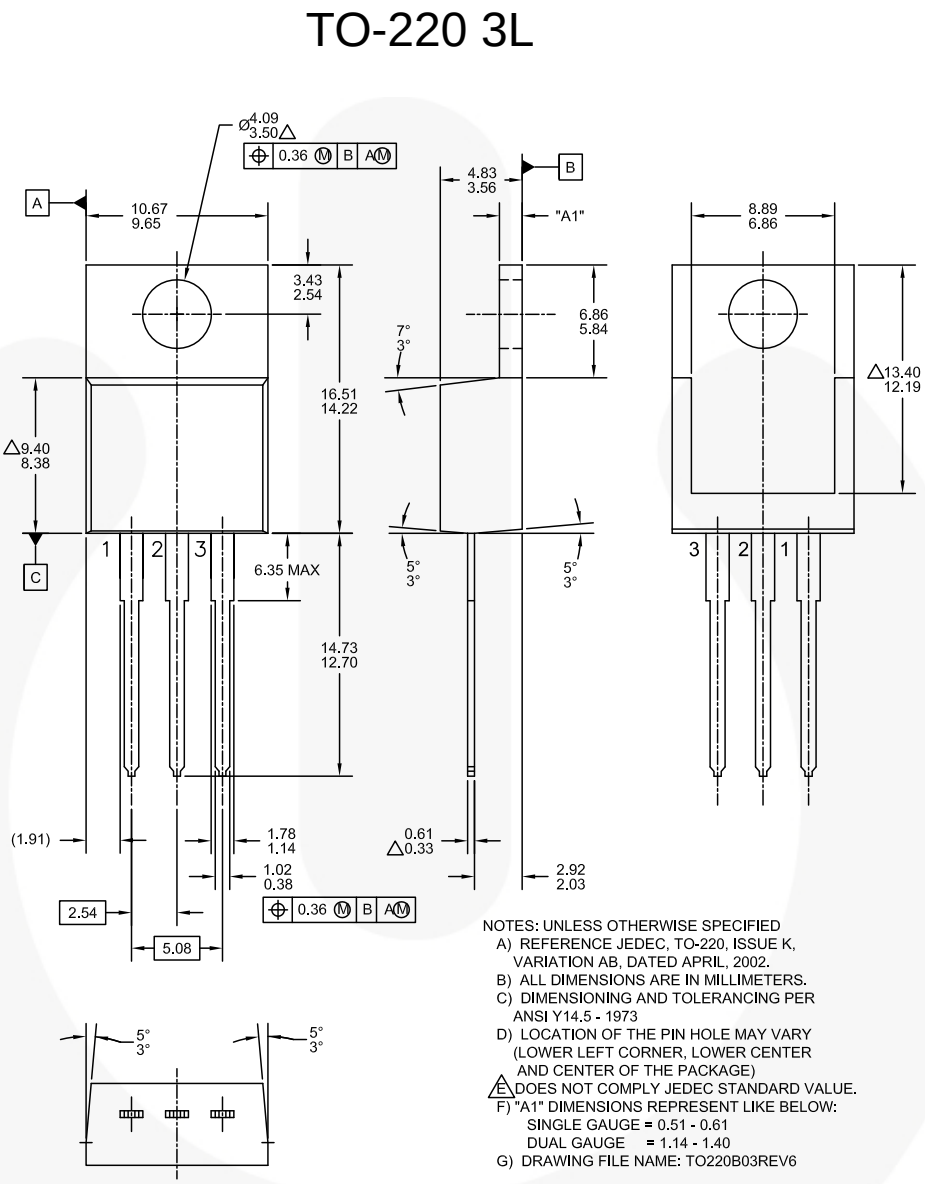


Figure 7. TO-220, MOLDED, 3-LEAD, JEDEC VARIATION AB (ACTIVE)

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Preliminary	First Production	Datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.
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