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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 cur-



### **Ordering Information**

Part Number	Marking	Package	Packing Method
MBR1535CT	MBR1535CT		
MBR1545CT	MBR1545CT	TO-220 3L	Rail
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
	i didilictei		1545CT	1560CT	Onito
$V_{RRM}$	Maximum Repetitive Reverse Voltage 35 45 60		60	V	
I <sub>F(AV)</sub>	Average Rectified Forward Current .375 inch Lead Length at T <sub>A</sub> = 105°C	15		Α	
I <sub>FSM</sub>	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave		Α		
T <sub>STG</sub>	Storage Temperature Range -65 to +175		°C		
T <sub>J</sub>	Operating Junction Temperature Range -65 to +150		°C		

### **Thermal Characteristics**

Symbol	Parameter	Value	Units
P <sub>D</sub>	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
Cymbol			1535CT	1545CT	1560CT	Oilles
V <sub>F</sub>	Maximum Forward Voltage, per Leg	$I_F = 7.5 \text{ A}, T_C = 25^{\circ}\text{C}$	0.75			
		I <sub>F</sub> = 7.5 A, T <sub>C</sub> = 125°C	0.57		0.65	V
		I <sub>F</sub> = 15 A, T <sub>C</sub> = 25°C	0.84			
		I <sub>F</sub> = 15 A, T <sub>C</sub> = 125°C	0.72			
	Maximum Reverse Current at	T <sub>A</sub> = 25°C	0.1 1.0		mΛ	
	Rated V <sub>RRM</sub> , per Leg	T <sub>A</sub> = 125°C	15	5.0	50.0	mA
I <sub>RRM</sub>	Peak Repetitive Reverse Surge Current, per Leg 2.0 μs Pulse Width, f = 1.0 kHz		1	.0	0.5	Α

## **Typical Performance Characteristics**

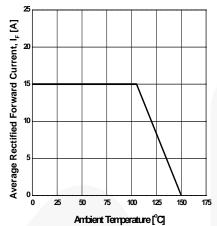


Figure 1. Forward Current Derating Curve

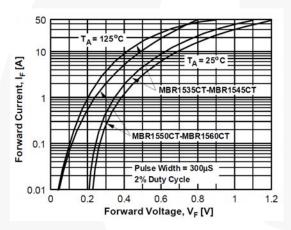


Figure 3. Forward Voltage Characteristics

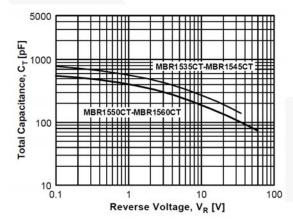


Figure 5. Total Capacitance

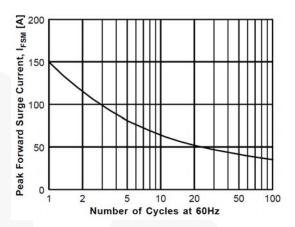


Figure 2. Non-Repetitive Surge Current

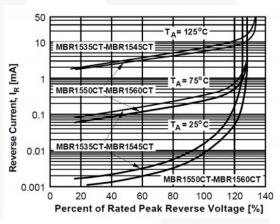
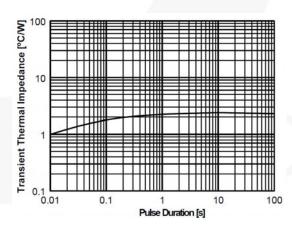


Figure 4. Reverse Current vs. Reverse Voltage



**Figure 6. Thermal Impedance Characteristics** 

### **Physical Dimensions**

## TO-220 3L

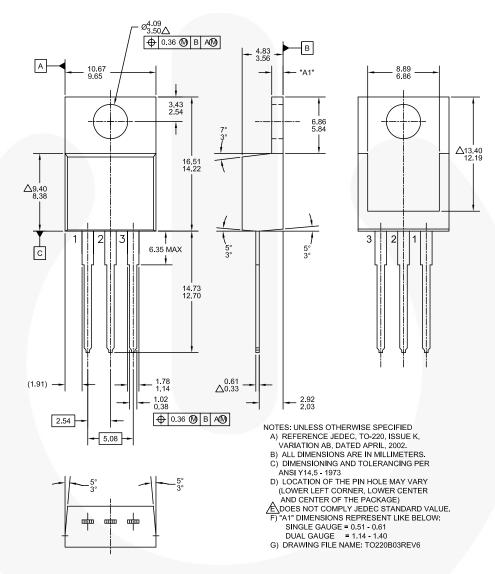


Figure 7. TO-220, MOLDED, 3-LEAD, JEDEC VARIATION AB (ACTIVE)

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Definition of Terms				
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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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