

# MBR1535CTG, MBR1545CTG

## Switch-mode Power Rectifier

### Features and Benefits

- Center-Tap Configuration
- Low Forward Voltage
- Low Power Loss / High Efficiency
- High Surge Capacity
- 175°C Operating Junction Temperature
- 15 A Total (7.5 A Per Diode Leg)
- These Devices are Pb-Free and are RoHS Compliant\*

### Applications

- Power Supply – Output Rectification
- Power Management
- Instrumentation

### Mechanical Characteristics

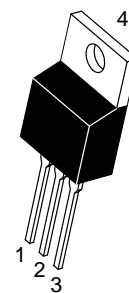
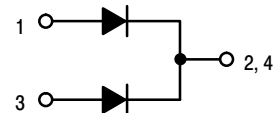
- Case: Epoxy, Molded
- Epoxy Meets UL 94, V-0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes:  
260°C Max. for 10 Seconds
- ESD Rating: Human Body Model = 3B  
Machine Model = C



**ON Semiconductor®**

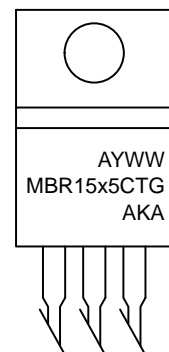
[www.onsemi.com](http://www.onsemi.com)

## SCHOTTKY BARRIER RECTIFIERS 15 AMPERES 35 and 45 VOLTS



**TO-220  
CASE 221A  
STYLE 6**

### MARKING DIAGRAM



A	= Assembly Location
Y	= Year
WW	= Work Week
x	= 3 or 4
G	= Pb-Free Package
AKA	= Diode Polarity

### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

# MBR1535CTG, MBR1545CTG

## MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR1535CT MBR1545CT	$V_{RRM}$ $V_{RWM}$ $V_R$	35 45	V
Average Rectified Forward Current ( $T_C = 163^{\circ}\text{C}$ ) Per Diode Per Device	$I_{F(AV)}$	7.5 15	A
Peak Repetitive Forward Current (Square Wave, 20 kHz, $T_C = 161^{\circ}\text{C}$ ) Per Diode	$I_{FRM}$	15	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	150	A
Peak Repetitive Reverse Surge Current (2.0 $\mu\text{s}$ , 1.0 kHz)	$I_{RRM}$	1.0	A
Storage Temperature Range	$T_{stg}$	-65 to +175	$^{\circ}\text{C}$
Operating Junction Temperature (Note 1)	$T_J$	-65 to +175	$^{\circ}\text{C}$
Voltage Rate of Change (Rated $V_R$ )	$dv/dt$	1000	V/ $\mu\text{s}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. The heat generated must be less than the thermal conductivity from Junction-to-Ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .

## THERMAL CHARACTERISTICS PER DIODE

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction-to-Case (Min. Pad)	$R_{\theta JC}$	3.0	$^{\circ}\text{C/W}$
Maximum Thermal Resistance, Junction-to-Ambient (Min. Pad)	$R_{\theta JA}$	60	$^{\circ}\text{C/W}$

## ELECTRICAL CHARACTERISTICS PER DIODE

Characteristic	Symbol	Min	Typ	Max	Unit
Maximum Instantaneous Forward Voltage (Note 2) ( $i_F = 7.5$ Amps, $T_J = 125^{\circ}\text{C}$ ) ( $i_F = 15$ Amps, $T_J = 125^{\circ}\text{C}$ ) ( $i_F = 15$ Amps, $T_J = 25^{\circ}\text{C}$ )	$V_F$	– – –	0.47 0.63 0.66	0.57 0.72 0.84	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_J = 125^{\circ}\text{C}$ ) (Rated DC Voltage, $T_J = 25^{\circ}\text{C}$ )	$i_R$	– –	10 0.025	15 0.1	mA

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

## ORDERING INFORMATION

Device	Package	Shipping
MBR1535CTG	TO-220 (Pb-Free)	50 Units / Rail
MBR1545CTG	TO-220 (Pb-Free)	50 Units / Rail

# MBR1535CTG, MBR1545CTG

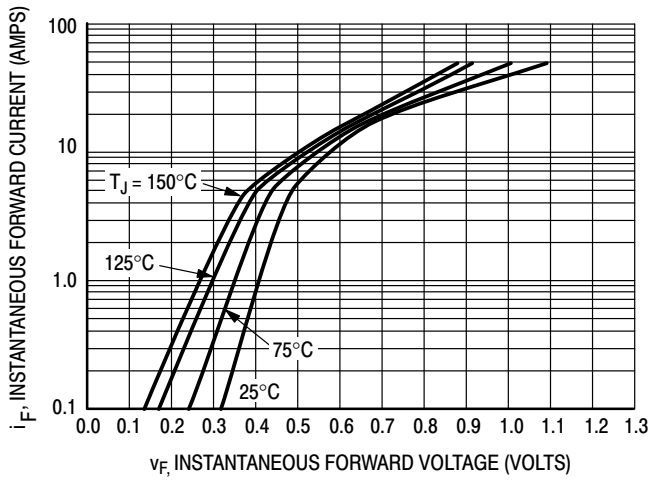


Figure 1. Typical Forward Voltage

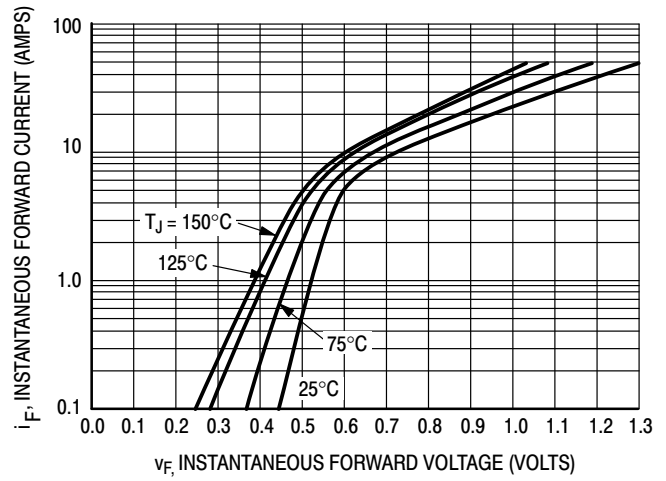


Figure 2. Maximum Forward Voltage

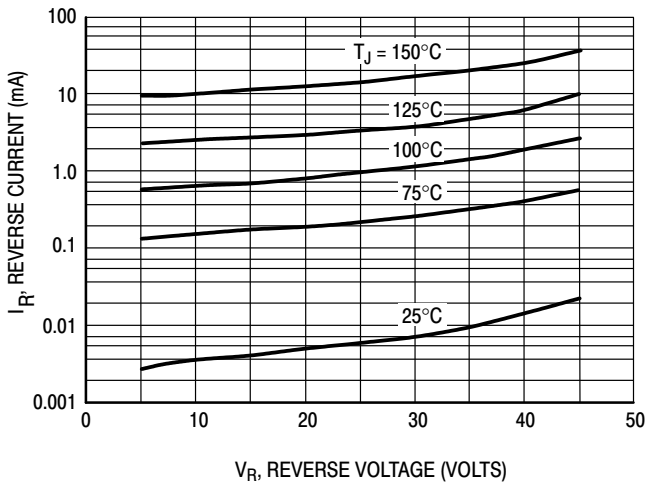


Figure 3. Typical Reverse Current

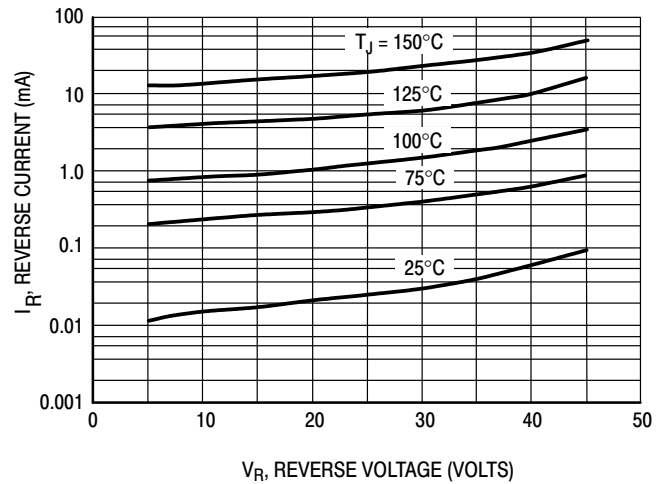


Figure 4. Maximum Reverse Current

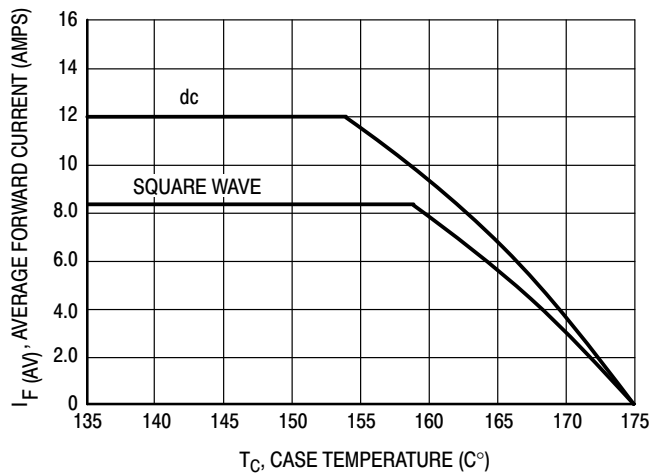


Figure 5. Current Derating, Case Per Leg

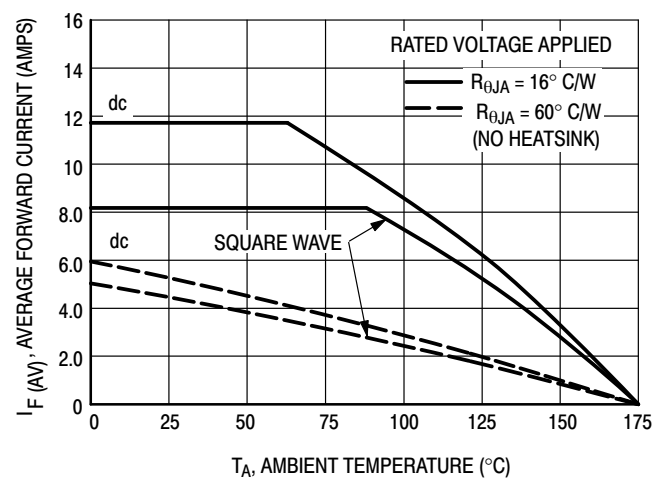


Figure 6. Current Derating, Ambient Per Leg

# MBR1535CTG, MBR1545CTG

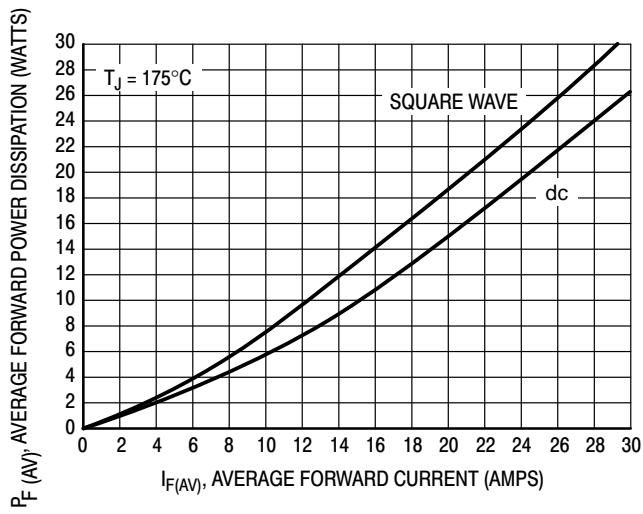


Figure 7. Forward Power Dissipation

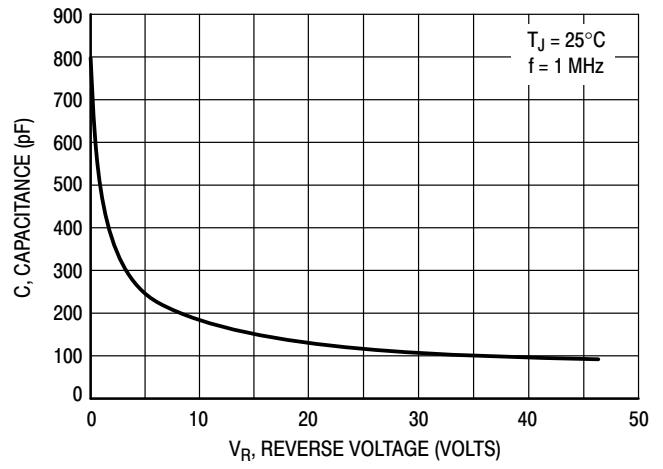
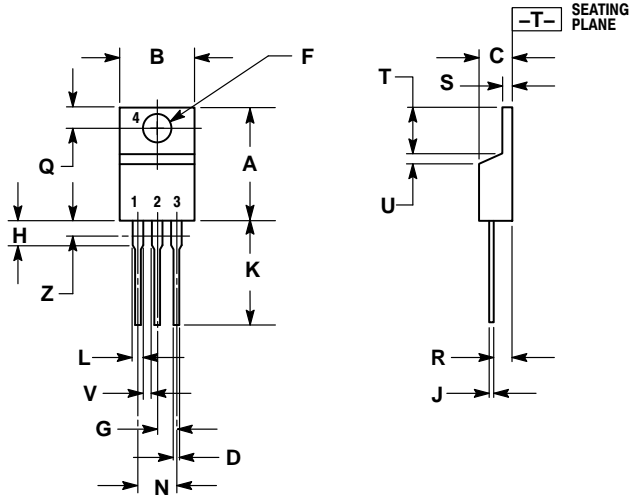


Figure 8. Typical Capacitance

# MBR1535CTG, MBR1545CTG

## PACKAGE DIMENSIONS

TO-220  
CASE 221A-09  
ISSUE AH




### NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION Z DEFINES A ZONE WHERE ALL BODY AND LEAD IRREGULARITIES ARE ALLOWED.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.570	0.620	14.48	15.75
B	0.380	0.415	9.66	10.53
C	0.160	0.190	4.07	4.83
D	0.025	0.038	0.64	0.96
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
H	0.110	0.161	2.80	4.10
J	0.014	0.024	0.36	0.61
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.15	1.52
N	0.190	0.210	4.83	5.33
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.15	1.39
T	0.235	0.255	5.97	6.47
U	0.000	0.050	0.00	1.27
V	0.045	---	1.15	---
Z	---	0.080	---	2.04

### STYLE 6:

- PIN 1. ANODE  
2. CATHODE  
3. ANODE  
4. CATHODE

ON Semiconductor and the  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC) or its subsidiaries in the United States and/or other countries. SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at [www.onsemi.com/site/pdf/Patent-Marketing.pdf](http://www.onsemi.com/site/pdf/Patent-Marketing.pdf). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

## PUBLICATION ORDERING INFORMATION

### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor  
P.O. Box 5163, Denver, Colorado 80217 USA  
Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada  
Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada  
Email: [orderlit@onsemi.com](mailto:orderlit@onsemi.com)

N. American Technical Support: 800-282-9855 Toll Free  
USA/Canada  
Europe, Middle East and Africa Technical Support:  
Phone: 421 33 790 2910  
Japan Customer Focus Center  
Phone: 81-3-5817-1050

ON Semiconductor Website: [www.onsemi.com](http://www.onsemi.com)

Order Literature: <http://www.onsemi.com/orderlit>

For additional information, please contact your local Sales Representative

MBR1535CT/D

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[ON Semiconductor:](#)

[MBR1535CT](#) [MBR1545CT](#) [MBR1535CTG](#) [MBR1545CTG](#)