MBR2535CTG, MBR2545CTG

Switch-mode Power Rectifiers

The MBR2535CTG/45CTG series uses the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

Features

- Guardring for Stress Protection
- Low Forward Voltage
- 175°C Operating Junction Temperature
- These are Pb-Free Devices*

Mechanical Characteristics

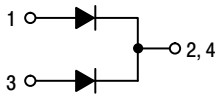
- Case: Epoxy, Molded
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

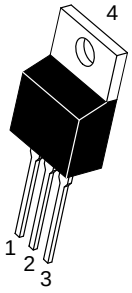
*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

ON Semiconductor®

http://onsemi.com

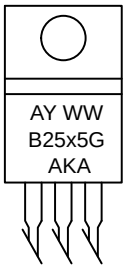
SCHOTTKY BARRIER RECTIFIERS 30 AMPERES 35 and 45 VOLTS





TO−220
CASE 221A
STYLE 6

MARKING DIAGRAM



A	= Assembly Location
Y	= Year
WW	= Work Week
B25x5	= Device Code
x	= 3 or 4
G	= Pb−Free Package
AKA	= Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR2535CTG	TO−220 (Pb−Free)	50 Units/Rail
MBR2545CTG	TO−220 (Pb−Free)	50 Units/Rail

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR2535CTG MBR2545CTG	V_{RRM} V_{RWM} V_R	 35 45	V
Average Rectified Forward Current (Rated V_R, T_C = 160°C) Per Device Per Diode	$I_{F(AV)}$	 30 15	A
Peak Repetitive Forward Current per Diode Leg (Rated V_R, Square Wave, 20 kHz, T_C = 150°C)	I_{FRM}	 30	A
Non-Repetitive Peak Surge Current per Diode Leg (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60 Hz)	I_{FSM}	 150	A
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I_{RRM}	1.0	A
Storage Temperature Range	T_{stg}	−65 to +175	°C
Operating Junction Temperature (Note 1)	T_J	−65 to +175	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs
ESD Ratings: Machine Model = C Human Body Model = 3B	ESD	 > 400 > 8000	V

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 Leg)

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case Junction-to-Ambient (Note 2)	 $R_{\theta JC}$ $R_{\theta JA}$	 1.5 50	°C/W

2. When mounted using minimum recommended pad size on FR−4 board.

ELECTRICAL CHARACTERISTICS (Per Diode)

Symbol	Characteristic	Condition	Min	Typ	Max	Unit
V_F	Instantaneous Forward Voltage (Note 3)	I_F = 15 Amp, T_J = 25°C I_F = 15 Amp, T_J = 125°C I_F = 30 Amp, T_J = 25°C I_F = 30 Amp, T_J = 125°C	− − − −	− 0.50 − 0.65	0.62 0.57 0.82 0.72	V
I_R	Instantaneous Reverse Current (Note 3)	Rated dc Voltage, T_J = 25°C Rated dc Voltage, T_J = 125°C	− −	− 9.0	0.2 25	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.

3. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

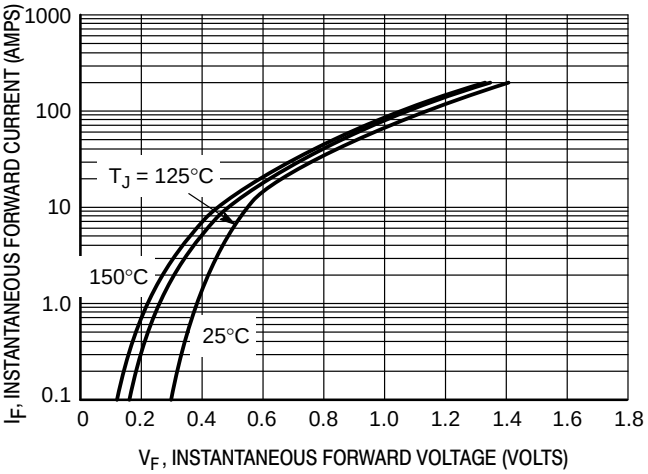


Figure 1. Typical Forward Voltage, Per Leg

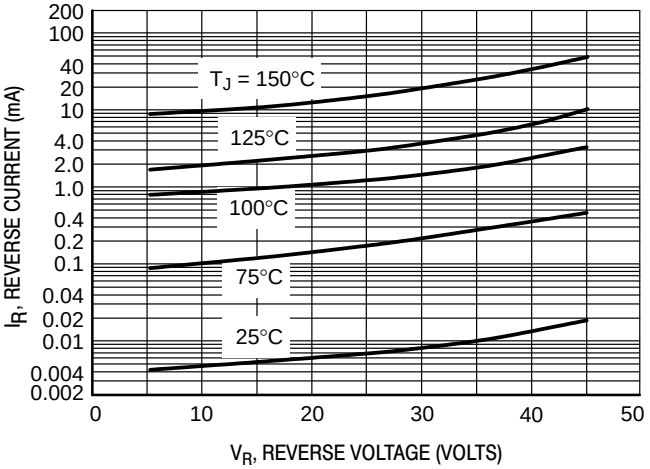


Figure 2. Typical Reverse Current, Per Leg

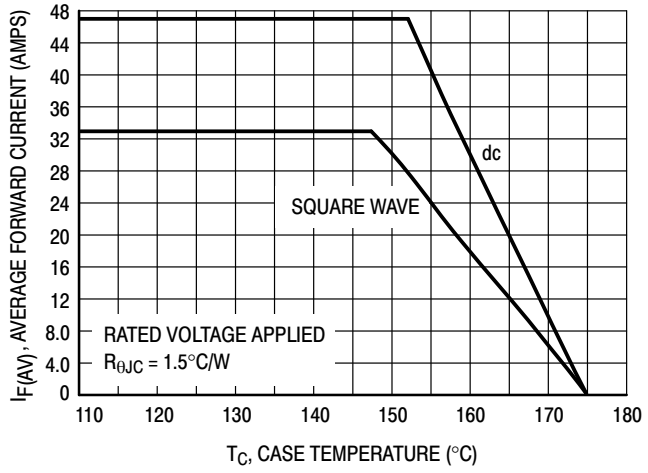


Figure 3. Current Derating, Per Device

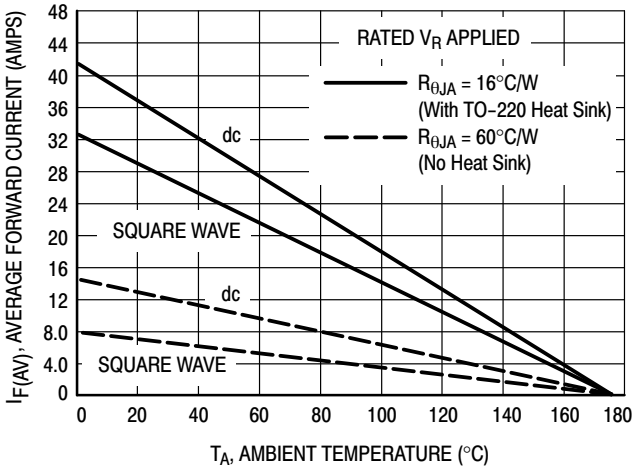


Figure 4. Current Derating, Per Device

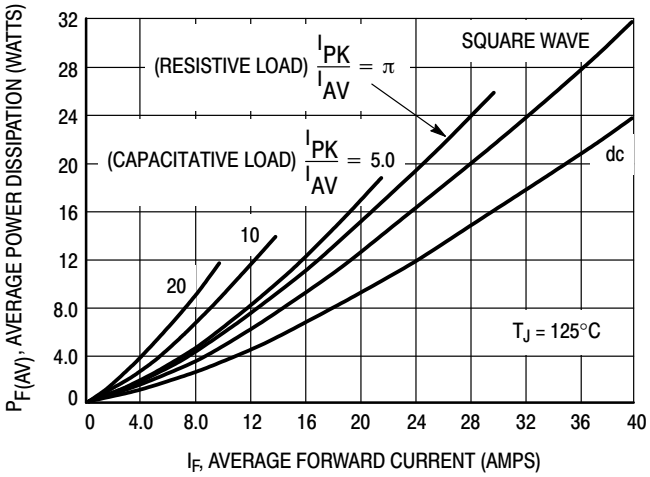
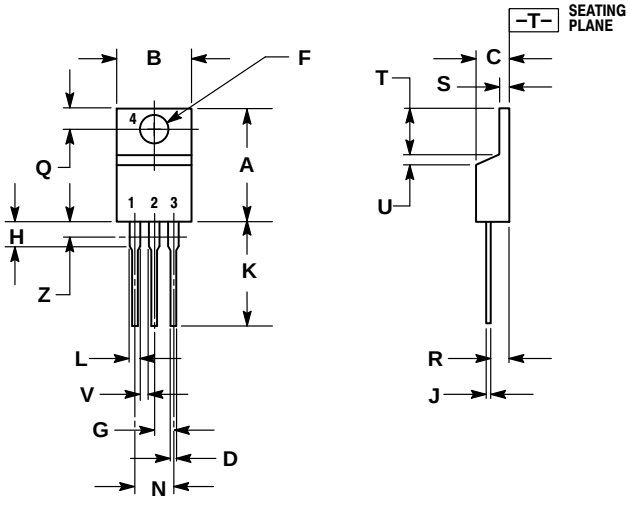


Figure 5. Forward Power Dissipation

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.

	INCHES		MILLIMETERS	
DIM	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

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

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**

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

For additional information, please contact your local Sales Representative

MBR2535CT/D

Mouser Electronics

Authorized Distributor

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

ON Semiconductor:

MBR2535CTG MBR2545CTG