MBR2535CT, MBR2545CT

MBR2545CT is a Preferred Device

SWITCHMODE™ Power Rectifiers

The MBR2535CT/45CT series uses the Schottky Barrier principle with a platinum barrier metal. These state−of−the−art devices have the following features:

Features

- Pb−Free Packages are Available*
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature

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

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage MBR2535CT MBR2545CT	V_{RRM} V_{RWM} V_R	 35 45	V
Average Rectified Forward Current (Rated V_R, T_C = 130°C)	$I_{F(AV)}$	30	A
Peak Repetitive Forward Current, per Diode Leg (Rated V_R, Square Wave, 20 kHz, T_C = 130°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	T_J	−65 to +150	°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

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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

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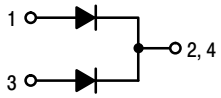
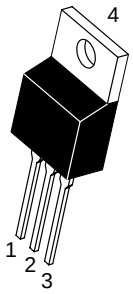
http://onsemi.com

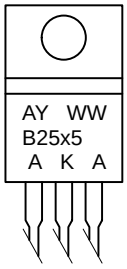
SCHOTTKY BARRIER RECTIFIERS 25 AMPERES 35 and 45 VOLTS



MARKING DIAGRAM



TO−220AB CASE 221A PLASTIC



A = Assembly Location
Y = Year
WW = Work Week
B25x5 = Device Code
x = 3 or 4
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR2535CT	TO−220	50 Units/Rail
MBR2535CTG	TO−220 (Pb−Free)	50 Units/Rail
MBR2545CT	TO−220	50 Units/Rail
MBR2545CTG	TO−220 (Pb−Free)	50 Units/Rail

Preferred devices are recommended choices for future use and best overall value.

THERMAL CHARACTERISTICS (Per Diode Leg)

Characteristic	Symbol	MBR2535CT	MBR2545CT	Unit
Maximum Thermal Resistance, Junction−to−Case	$R_{\theta JC}$	1.5	1.5	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 1) (i_F = 30 Amps, T_C = 125°C) (i_F = 30 Amps, T_C = 25°C)	v_F	 0.73 0.82	 0.73 0.82	V
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_C = 125°C) (Rated dc Voltage, T_C = 25°C)	i_R	 40 0.2	 40 0.2	mA

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

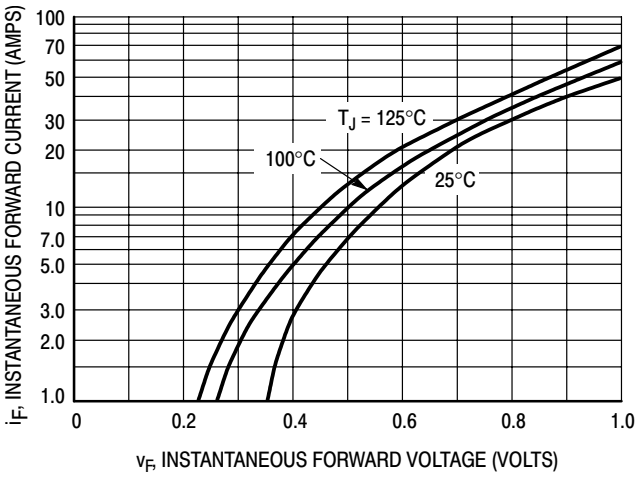


Figure 1. Typical Forward Voltage

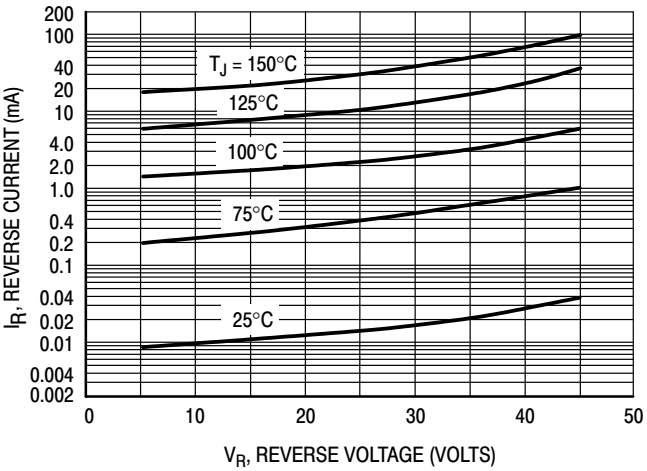


Figure 2. Typical Reverse Current

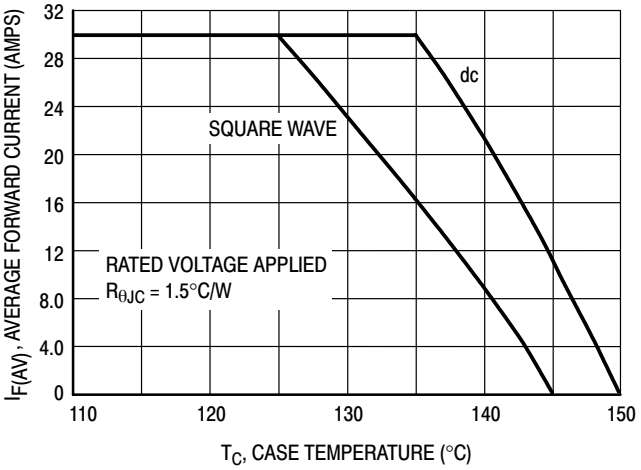


Figure 3. Current Derating, Case

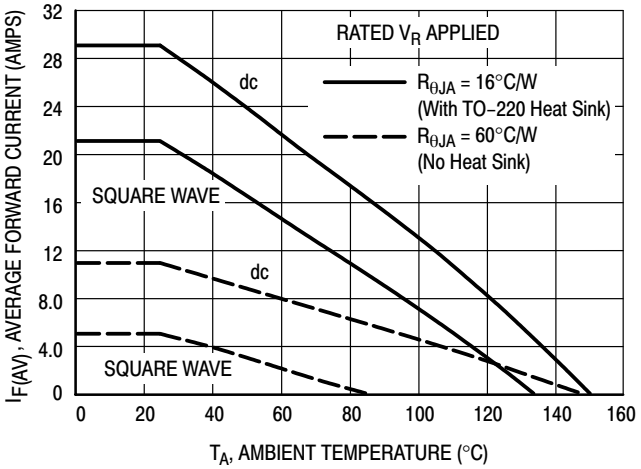


Figure 4. Current Derating, Ambient

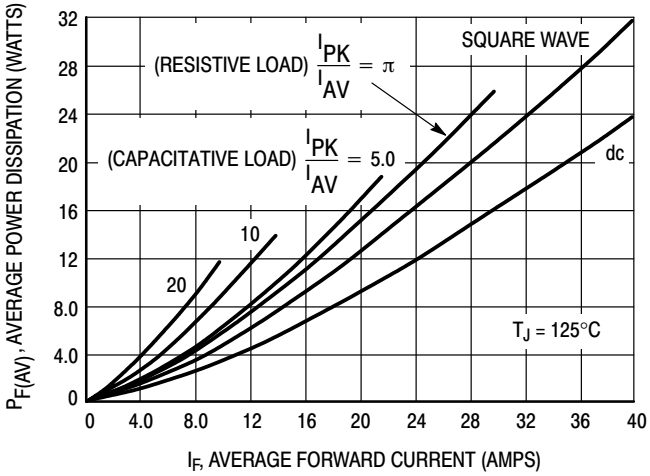
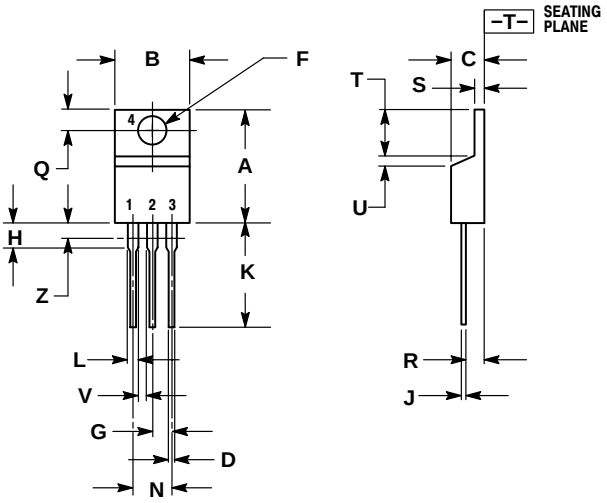


Figure 5. Forward Power Dissipation

PACKAGE DIMENSIONS

TO−220
PLASTIC
CASE 221A−09
ISSUE AA



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	0.405	9.66	10.28
C	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.147	3.61	3.73
G	0.095	0.105	2.42	2.66
H	0.110	0.155	2.80	3.93
J	0.018	0.025	0.46	0.64
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

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PUBLICATION ORDERING INFORMATION

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MBR2535CT/D