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

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

Mechanical Characteristics

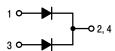
- Case: Epoxy, Molded
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds



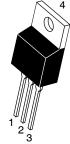
ON Semiconductor®

http://onsemi.com

SCHOTTKY BARRIER RECTIFIERS 30 AMPERES 35 and 45 VOLTS







TO-220AB CASE 221A PLASTIC



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
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.

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

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 , $T_C = 160$ °C)	I _{F(AV)}	30	А
Peak Repetitive Forward Current, per Diode Leg (Rated V _R , Square Wave, 20 kHz, T _C = 150°C)	I _{FRM}	30	А
Non-Repetitive Peak Surge Current per Diode Leg (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60 Hz)	I _{FSM}	150	А
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I _{RRM}	1.0	А
Storage Temperature Range	T _{stg}	-65 to +175	°C
Operating Junction Temperature (Note 1)	TJ	-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 Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS (Per Leg)

Characteristic	Symbol	Value	Unit
Thermal Resistance, – Junction-to-Case – Junction-to-Ambient (Note 2)	$R_{ hetaJC} \ R_{ hetaJA}$	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	Тур	Max	Unit
V _F	Instantaneous Forward Voltage (Note 3)	$\begin{split} I_F &= 15 \text{ Amp, } T_J = 25^{\circ}\text{C} \\ I_F &= 15 \text{ Amp, } T_J = 125^{\circ}\text{C} \\ I_F &= 30 \text{ Amp, } T_J = 25^{\circ}\text{C} \\ I_F &= 30 \text{ Amp, } T_J = 125^{\circ}\text{C} \end{split}$	- - - -	- 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

^{3.} Pulse Test: Pulse Width = 300 $\mu s,$ Duty Cycle $\leq 2.0\%.$

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

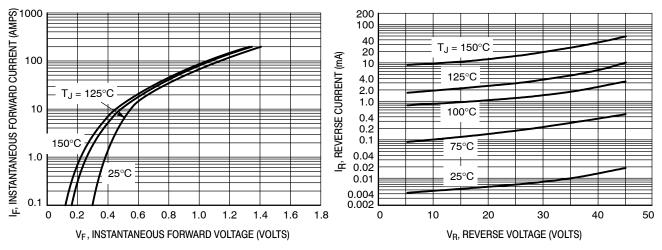


Figure 1. Typical Forward Voltage, Per Leg

Figure 2. Typical Reverse Current, Per Leg

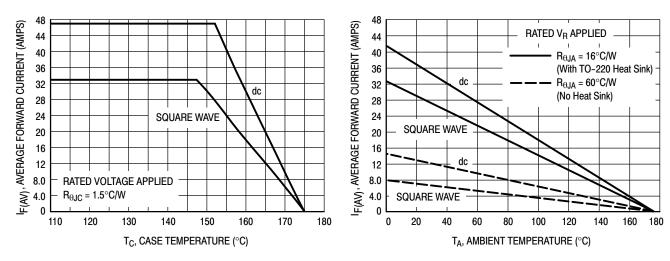


Figure 3. Current Derating, Per Device

Figure 4. Current Derating, Per Device

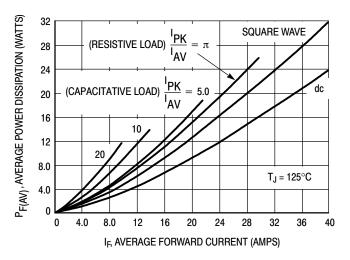
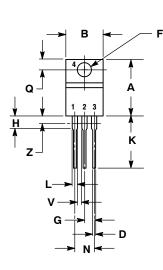
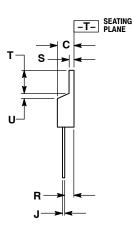


Figure 5. Forward Power Dissipation

PACKAGE DIMENSIONS

TO-220 CASE 221A-09 **ISSUE AF**





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

	INC	HES	MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
Α	0.570	0.620	14.48	15.75
В	0.380	0.405	9.66	10.28
С	0.160	0.190	4.07	4.82
D	0.025	0.035	0.64	0.88
F	0.142	0.161	3.61	4.09
G	0.095	0.105	2.42	2.66
Н	0.110	0.155	2.80	3.93
J	0.014	0.025	0.36	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
٧	0.045		1.15	
Z		0.080		2.04

STYLE 6: PIN 1. ANODE

- 2. CATHODE
- ANODE CATHODE
- 3

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