MBR2545CTP

SWITCHMODE™ Power Rectifier

. . . using the Schottky Barrier principle with a platinum barrier metal. These state−of−the−art devices have the following features:

- Guardring for Stress Protection
- Low Forward Voltage
- 175°C Operating Junction Temperature

Mechanical Characteristics:

- Case: Epoxy, Molded
- 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
- Shipped 50 units per plastic tube
- Marking: B2545P

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	V
Average Rectified Forward Current (Rated V_R, T_C = 130°C)	$I_{F(AV)}$	30	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 130°C) Per Diode Leg	I_{FRM}	30	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) Per Diode Leg	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

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.

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

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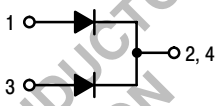
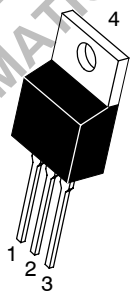
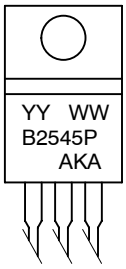
SCHOTTKY BARRIER RECTIFIER 30 AMPERES 45 VOLTS





CASE 221A
TO−220AB
PLASTIC

MARKING DIAGRAM



YY = Year
WW = Work Week
B2545P = Device Code
AKA = Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR2545CTP	TO−220	50 Units/Rail

THERMAL CHARACTERISTICS (Per Diode Leg)

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.0	°C/W

ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 2) (i_F = 30 Amps, T_C = 125°C) (i_F = 30 Amps, T_C = 25°C)	v_F	 0.73 0.82	Volts
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_C = 125°C) (Rated dc Voltage, T_C = 25°C)	i_R	 40 0.2	mA

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

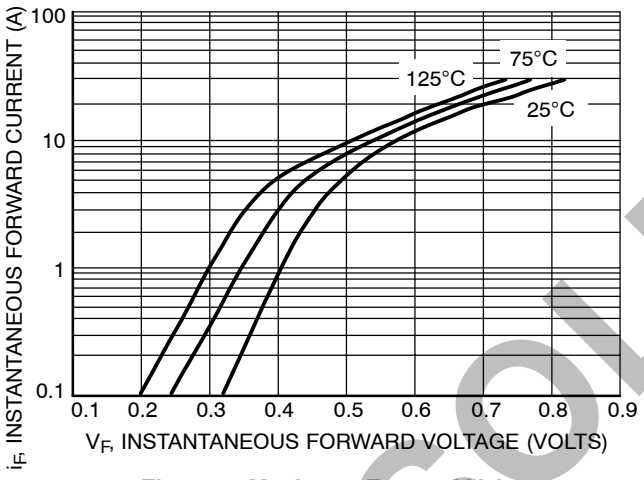


Figure 1. Maximum Forward Voltage

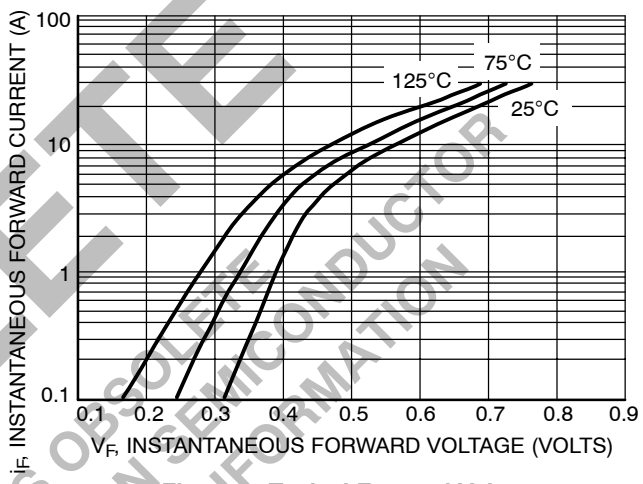


Figure 2. Typical Forward Voltage

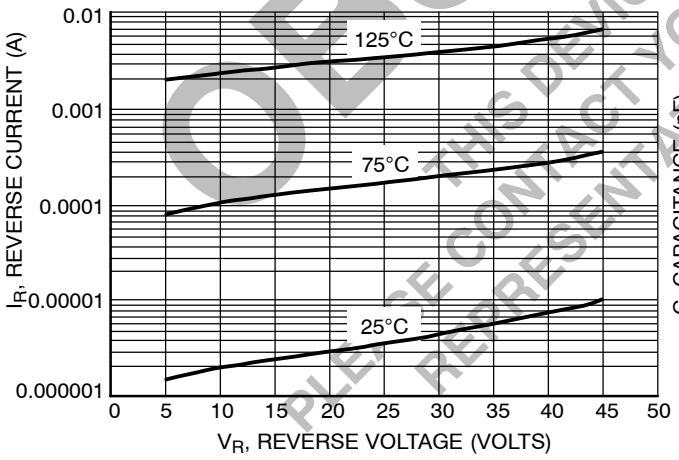


Figure 3. Typical Reverse Current

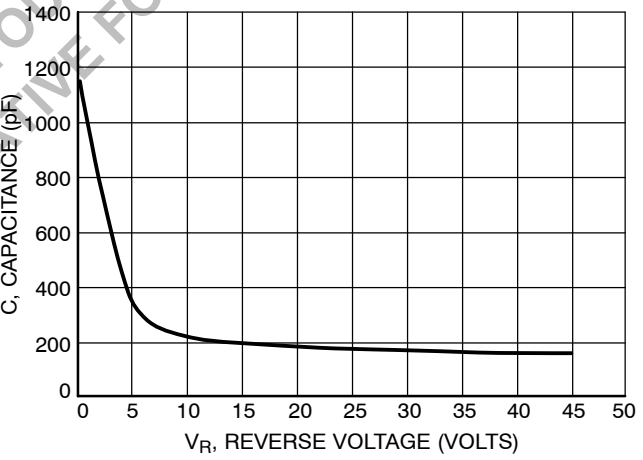


Figure 4. Typical Capacitance

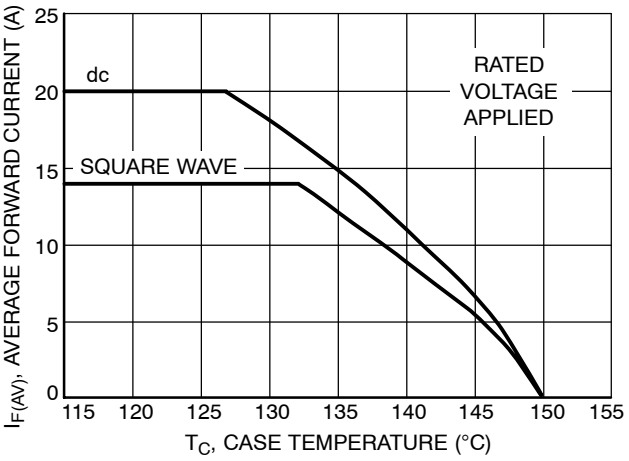


Figure 5. Current Derating, Case, Per Diode

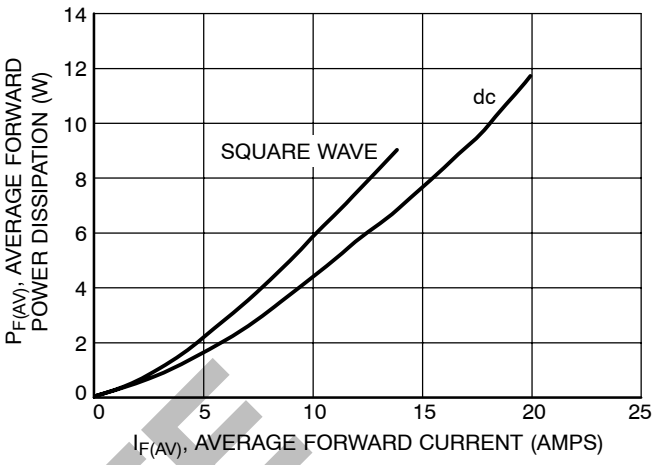
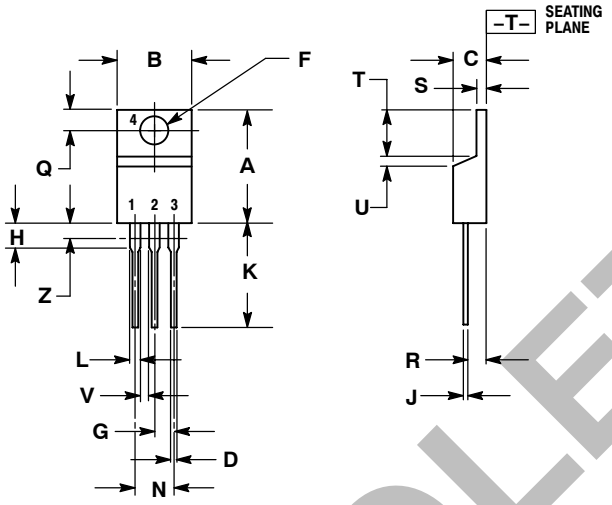


Figure 6. Forward Power Dissipation, Per Diode

MBR2545CTP

PACKAGE DIMENSIONS

TO−220 THREE−LEAD
TO−220AB
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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