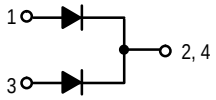
SWITCHMODE™ Power Rectifiers

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

- 20 Amps Total (10 Amps Per Diode Leg)
- Guard–Ring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Guaranteed Reverse Avalanche
- Epoxy Meets UL94, VO at 1/8″
- Low Power Loss/High Efficiency
- High Surge Capacity
- Low Stored Charge Majority Carrier Conduction

Mechanical Characteristics:

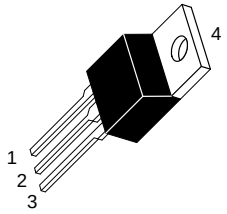
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B2060, B2070, B2080, B2090, B20100



MBR2060CT
MBR2070CT
MBR2080CT
MBR2090CT
MBR20100CT

MBR2060CT and MBR20100CT are Motorola Preferred Devices

SCHOTTKY BARRIER RECTIFIERS 20 AMPERES 60–100 VOLTS



CASE 221A–06 TO–220AB PLASTIC

MAXIMUM RATINGS PER DIODE LEG

Rating	Symbol	MBR					Unit
		2060CT	2070CT	2080CT	2090CT	20100CT	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	60	70	80	90	100	Volts
Average Rectified Forward Current (Rated V_R) T_C = 133°C	$I_{F(AV)}$	10					Amps
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz) T_C = 133°C	I_{FRM}	20					Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	150					Amps
Peak Repetitive Reverse Surge Current (2.0 µs, 1.0 kHz)	I_{RRM}	0.5					Amp
Operating Junction Temperature	T_J	– 65 to +150					°C
Storage Temperature	T_{stg}	– 65 to +175					°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000					V/µs

THERMAL CHARACTERISTICS

Maximum Thermal Resistance — Junction to Case — Junction to Ambient	$R_{\theta JC}$ $R_{\theta JA}$	2.0 60	°C/W

SWITCHMODE is a trademark of Motorola, Inc.
Preferred devices are Motorola recommended choices for future use and best overall value.

Rev 2

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ELECTRICAL CHARACTERISTICS PER DIODE LEG

Rating	Symbol	MBR					Unit
		2060CT	2070CT	2080CT	2090CT	20100CT	
Maximum Instantaneous Forward Voltage (1) (i_F = 10 Amps, T_C = 125°C) (i_F = 10 Amps, T_C = 25°C) (i_F = 20 Amps, T_C = 125°C) (i_F = 20 Amps, T_C = 25°C)	v_F			0.75 0.85 0.85 0.95			Volts
Maximum Instantaneous Reverse Current (1) (Rated dc Voltage, T_C = 125°C) (Rated dc Voltage, T_C = 25°C)	i_R			6.0 0.1			mA

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

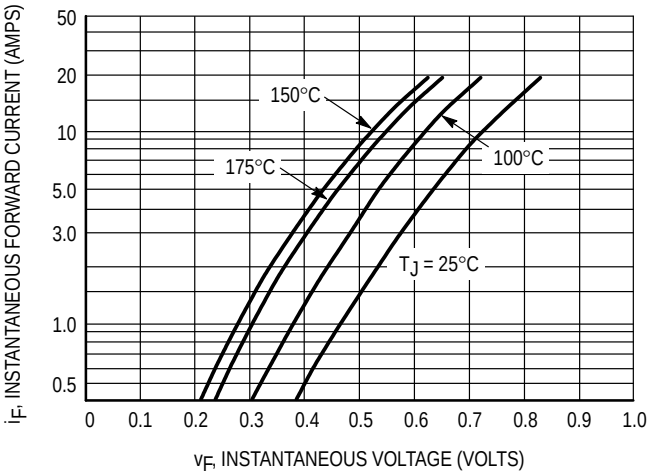


Figure 1. Typical Forward Voltage Per Diode

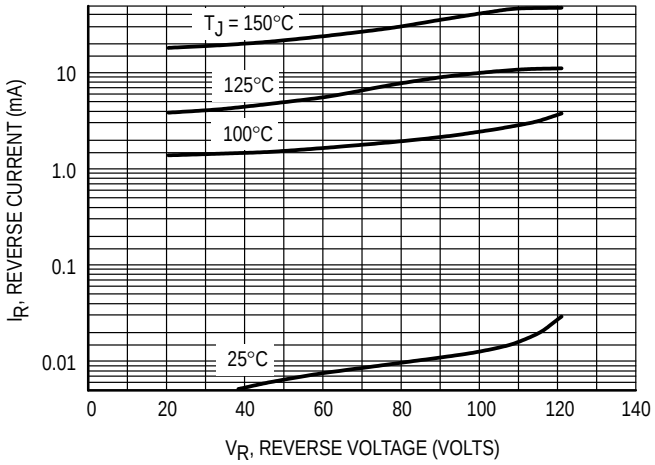


Figure 2. Typical Reverse Current Per Diode

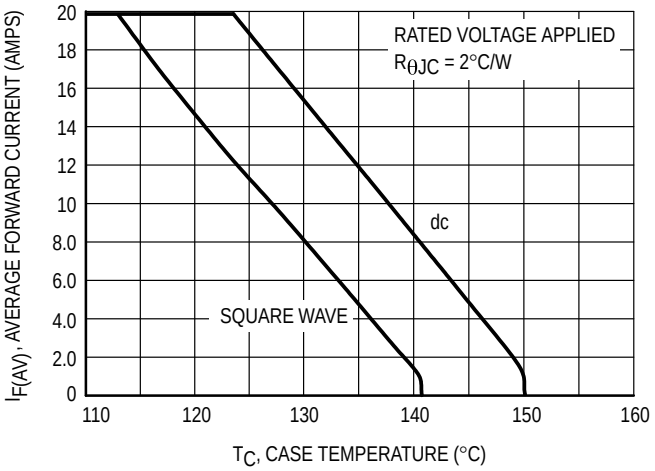


Figure 3. Current Derating, Case

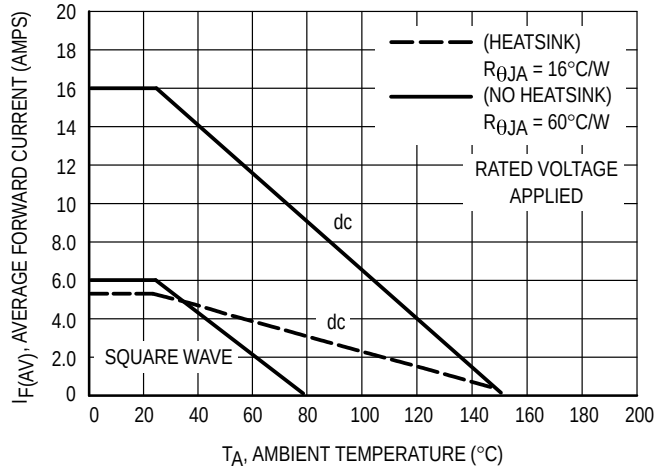


Figure 4. Current Derating, Ambient

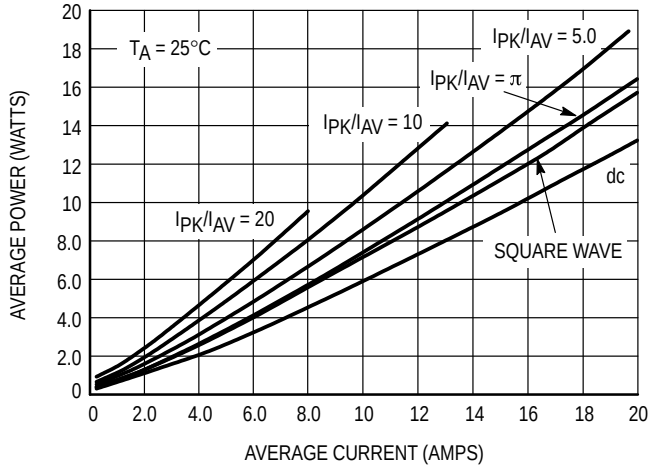
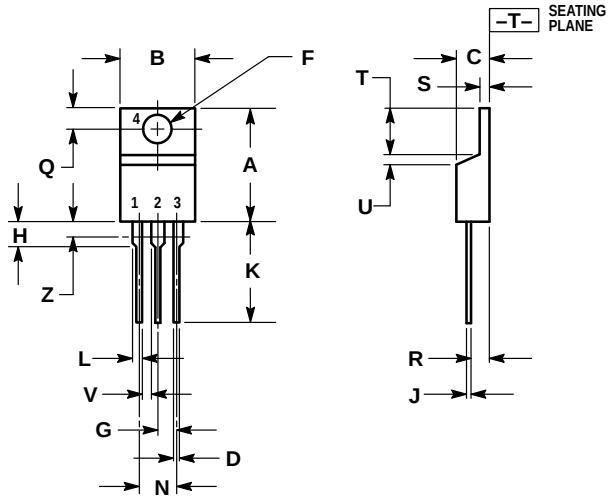


Figure 5. Average Power Dissipation and Average Current

PACKAGE DIMENSIONS



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

CASE 221A–06
(TO–220AB)
ISSUE Y

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