

MBR2060CT, MBR2080CT, MBR2090CT, MBR20100CT

MBR2060CT and MBR20100CT are Preferred Devices

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
- 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, B2080, B2090, B20100

MAXIMUM RATINGS

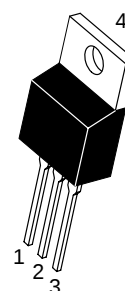
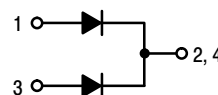
Please See the Table on the Following Page



ON Semiconductor™

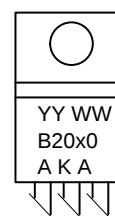
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SCHOTTKY BARRIER RECTIFIERS 20 AMPERES 60–100 VOLTS



TO-220AB
CASE 221A
PLASTIC

MARKING DIAGRAM



YY = Year
WW = Work Week
B20x0 = Device Code
x = 6, 8, 9 or 10
AKA = Polarity Designator

ORDERING INFORMATION

Device	Package	Shipping
MBR2060CT	TO-220	50 Units/Rail
MBR2080CT	TO-220	50 Units/Rail
MBR2090CT	TO-220	50 Units/Rail
MBR20100CT	TO-220	50 Units/Rail

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

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MAXIMUM RATINGS (Per Diode Leg)

Rating	Symbol	MBR				Unit
		2060CT	2080CT	2090CT	20100CT	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	60	80	90	100	Volts
Average Rectified Forward Current (Rated V_R) $T_C = 133^\circ\text{C}$	$I_{F(AV)}$	10				Amps
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz) $T_C = 133^\circ\text{C}$	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				$^\circ\text{C}$
Storage Temperature	T_{stg}	- 65 to +175				$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	10,000				$\text{V}/\mu\text{s}$

THERMAL CHARACTERISTICS

Maximum Thermal Resistance — Junction to Case — Junction to Ambient	$R_{\theta JC}$ $R_{\theta JA}$	2.0 60	$^\circ\text{C}/\text{W}$
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ELECTRICAL CHARACTERISTICS (Per Diode Leg)

Maximum Instantaneous Forward Voltage (Note 1.) ($i_F = 10$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 10$ Amps, $T_C = 25^\circ\text{C}$) ($i_F = 20$ Amps, $T_C = 125^\circ\text{C}$) ($i_F = 20$ Amps, $T_C = 25^\circ\text{C}$)	V_F	0.75 0.85 0.85 0.95	Volts
Maximum Instantaneous Reverse Current (Note 1.) (Rated dc Voltage, $T_C = 125^\circ\text{C}$) (Rated dc Voltage, $T_C = 25^\circ\text{C}$)	i_R	6.0 0.1	mA

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

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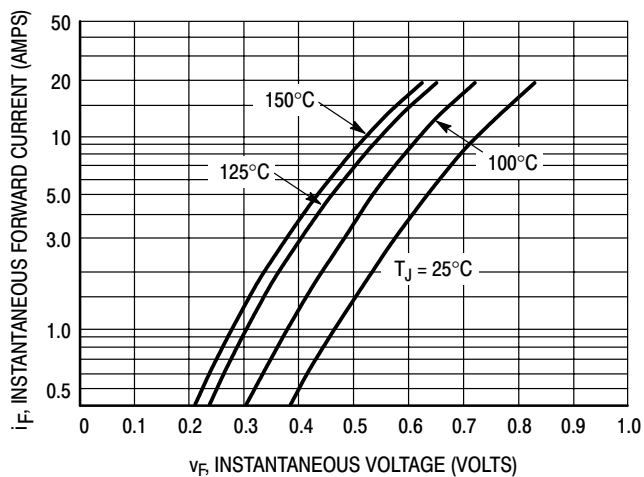


Figure 1. Typical Forward Voltage Per Diode

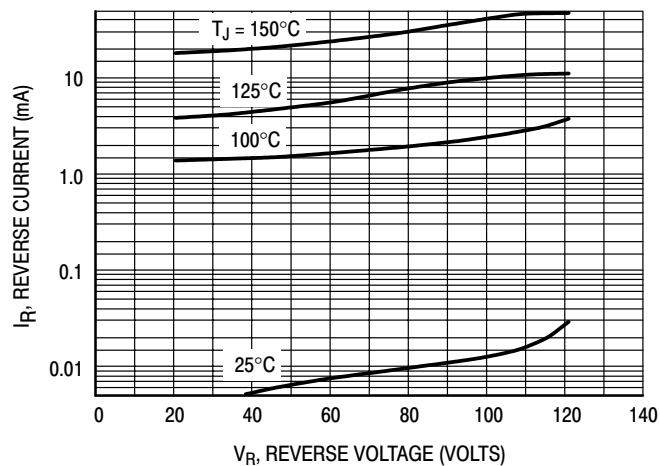


Figure 2. Typical Reverse Current Per Diode

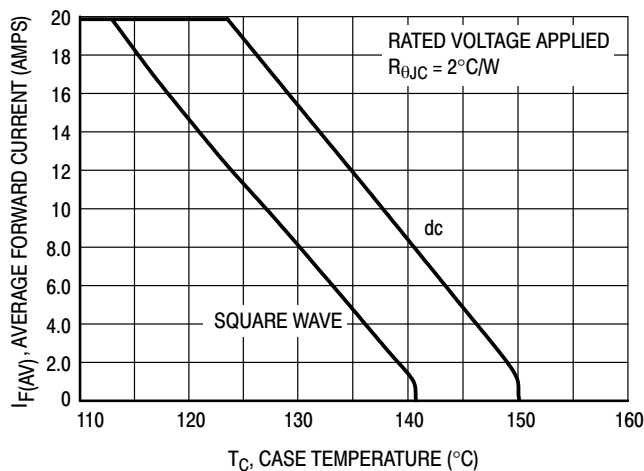


Figure 3. Current Derating, Case

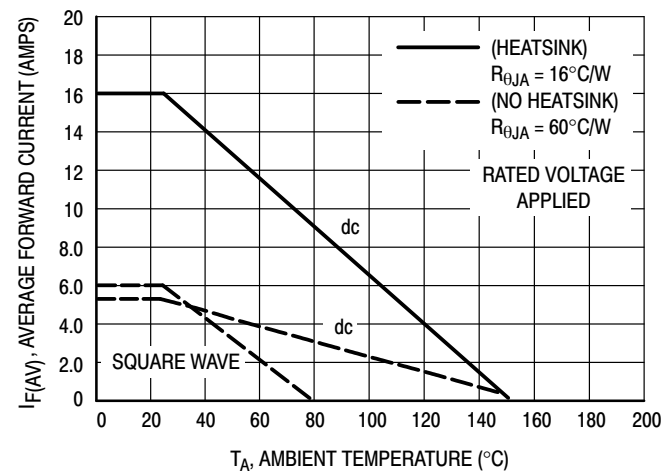


Figure 4. Current Derating, Ambient

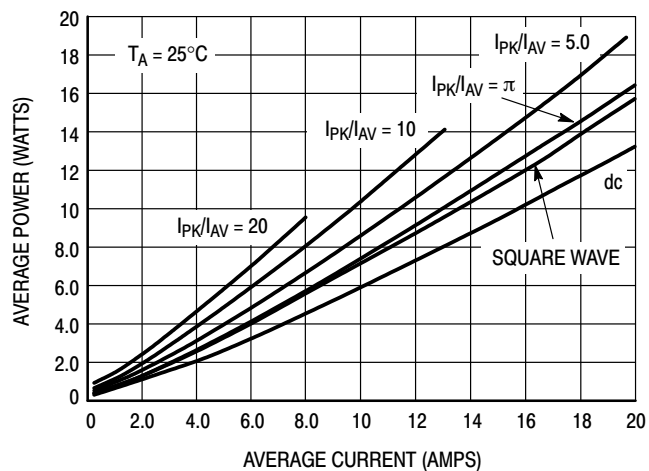
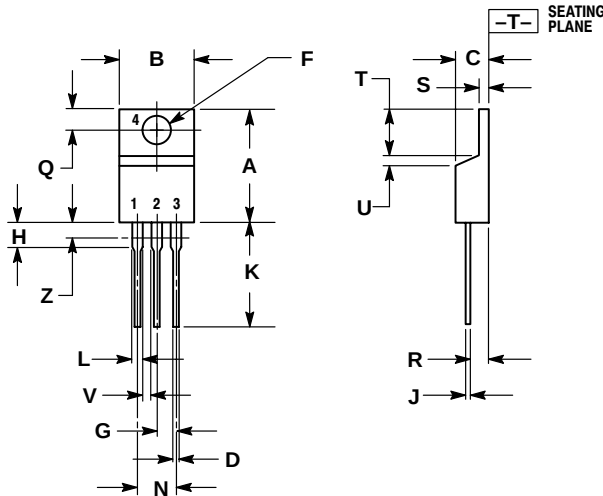


Figure 5. Average Power Dissipation and Average Current

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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.

DIM	INCHES		MILLIMETERS	
	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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