

MBR1060, MBR1080, MBR1090, MBR10100

MBR1060 and MBR10100 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:

- 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: B1060, B1080, B1090, B10100

MAXIMUM RATINGS

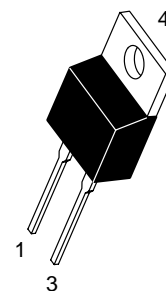
Please See the Table on the Following Page



ON Semiconductor™

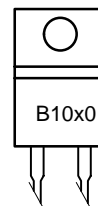
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**SCHOTTKY BARRIER
RECTIFIERS
10 AMPERES
60 to 100 VOLTS**



TO-220AC
CASE 221B
PLASTIC

MARKING DIAGRAM



B10x0 = Device Code
x = 6, 8, 9 or 10

ORDERING INFORMATION

Device	Package	Shipping
MBR1060	TO-220	50 Units/Rail
MBR1080	TO-220	50 Units/Rail
MBR1090	TO-220	50 Units/Rail
MBR10100	TO-220	50 Units/Rail

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

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MAXIMUM RATINGS

Rating	Symbol	MBR				Unit
		1060	1080	1090	10100	
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

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	0.7 0.8 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 0.10	mA

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

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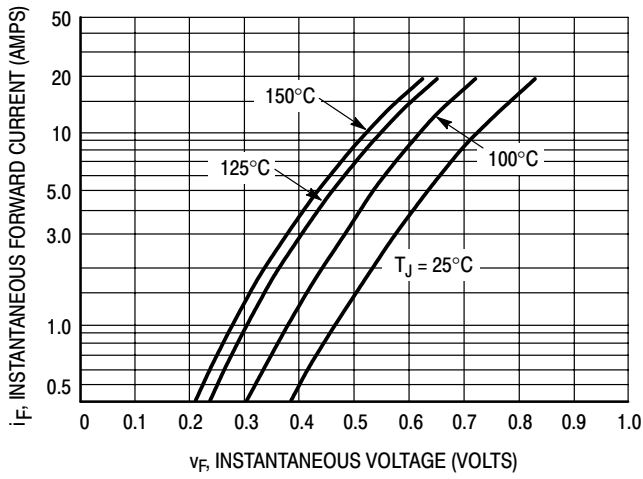


Figure 1. Typical Forward Voltage

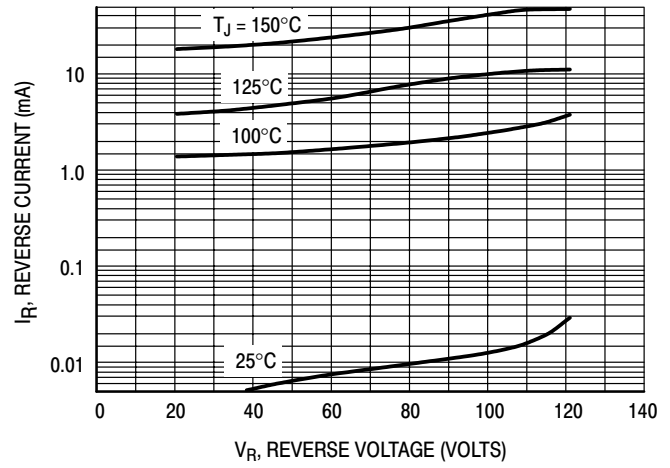


Figure 2. Typical Reverse Current

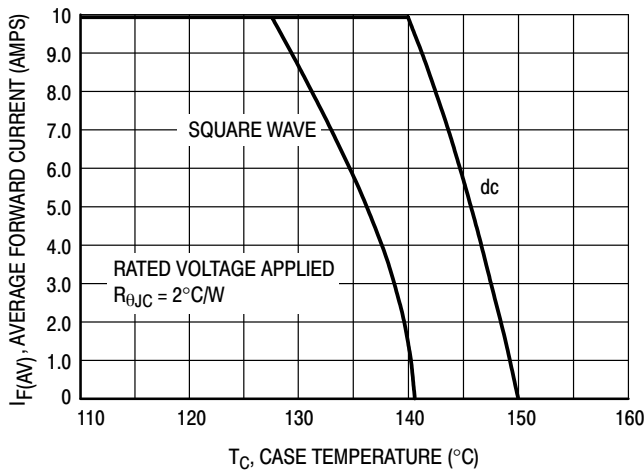


Figure 3. Current Derating, Case

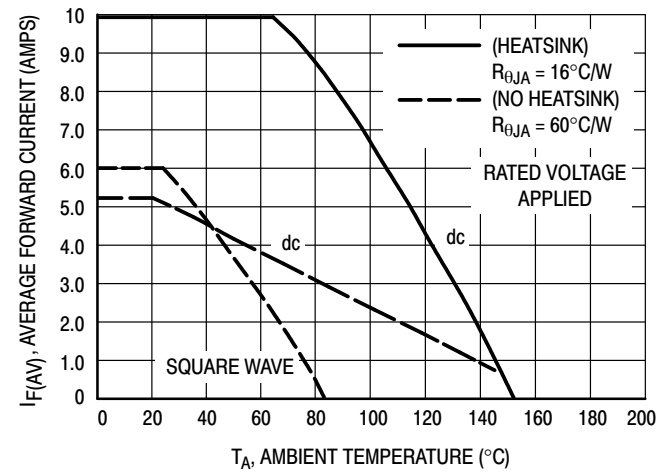


Figure 4. Current Derating, Ambient

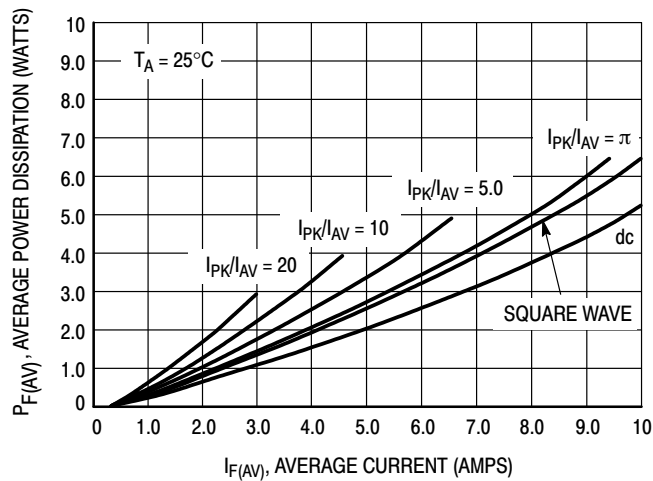
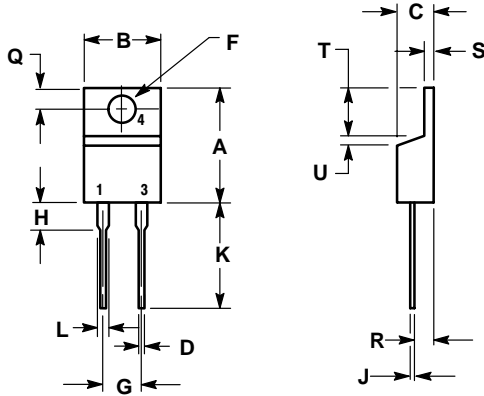


Figure 5. Forward Power Dissipation

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PACKAGE DIMENSIONS

TO-220
PLASTIC
CASE 221B-04
ISSUE D



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.595	0.620	15.11	15.75
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.82
D	0.025	0.035	0.64	0.89
F	0.142	0.147	3.61	3.73
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.14	1.39
T	0.235	0.255	5.97	6.48
U	0.000	0.050	0.000	1.27

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