SWITCHMODE Power Rectifiers

MBR1060

SCHOTTKY BARRIER RECTIFIERS 10 AMPERES, 60 VOLTS

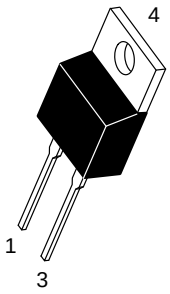


Features

- Guard-Ring for Stress Protection
- Low Forward Voltage
- 175 °C Operating Junction Temperature
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Low Power Loss/High Efficiency
- High Surge Capacity
- Low Stored Charge Majority Carrier Conduction
- Pb-Free Packages are Available*

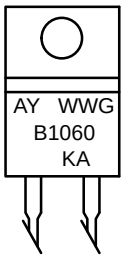
Mechanical Characteristics

- 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
- ESD Rating: Human Body Model = 3B
  Machine Model = C



TO-220AC
CASE 221B
PLASTIC

MARKING DIAGRAM



A	= Assembly Location
Y	= Year
WW	= Work Week
G	= Pb-Free Package
B1060	= Device Code
KA	= Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR1060G	TO-220 (Pb-Free)	50 Units/Rail

DISCONTINUED (Note 1)

MBR1060	TO-220	50 Units/Rail

1. **DISCONTINUED:** This device is not available. Please contact your **onsemi** representative for information. The most current information on this device may be available on www.onsemi.com.

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

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MAXIMUM RATINGS

Rating	Symbol	MBR1060	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	60	V
Average Rectified Forward Current (Rated V_R) T_C = 133 °C	$I_{F(AV)}$	10	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz) T_C = 133 °C	I_{FRM}	20	A
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I_{RRM}	0.5	A
Operating Junction Temperature (Note 1)	T_J	−65 to +175	°C
Storage Temperature	T_{stg}	−65 to +175	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

THERMAL CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2) (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	 0.7 0.8 0.85 0.95	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_C = 125 °C) (Rated dc Voltage, T_C = 25 °C)	i_R	 22 0.10	mA

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

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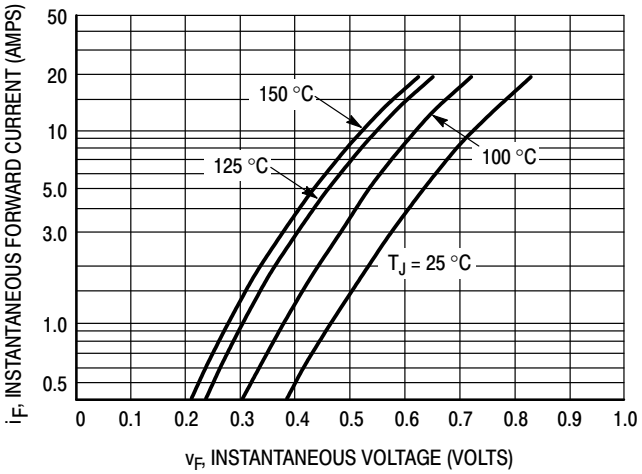


Figure 1. Typical Forward Voltage

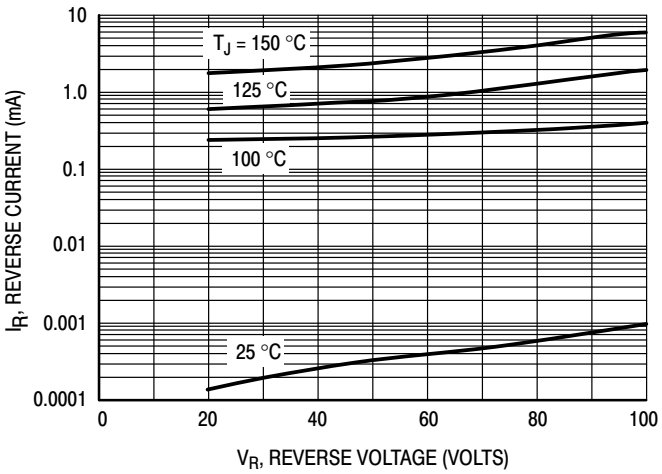


Figure 2. Typical Reverse Current

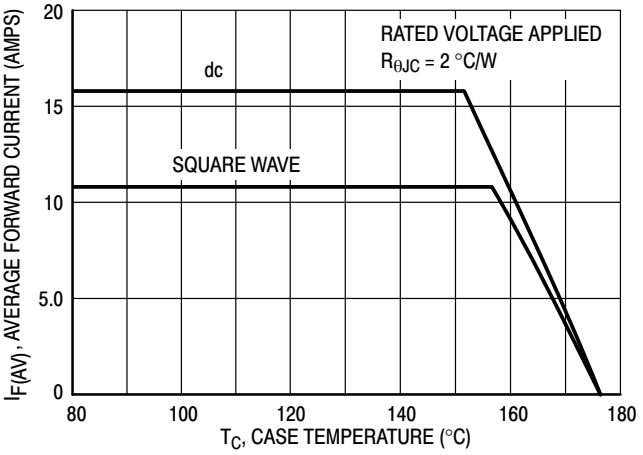


Figure 3. Typical Current Derating, Case

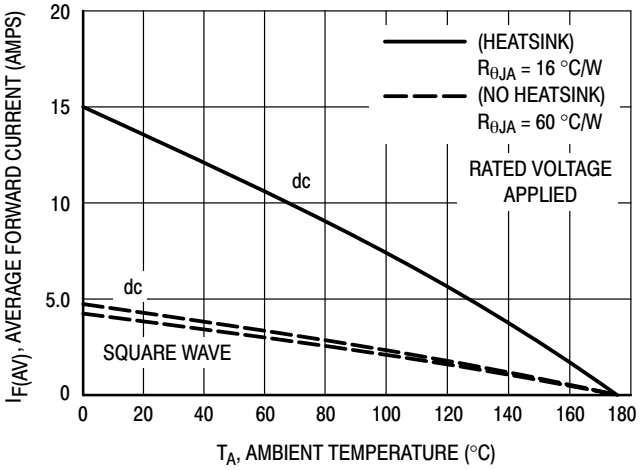


Figure 4. Typical Current Derating, Ambient

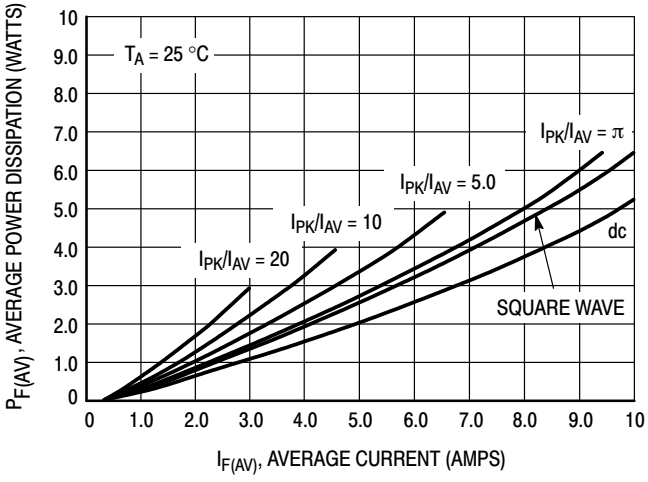


Figure 5. Forward Power Dissipation

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REVISION HISTORY

Revision	Description of Changes	Date
12	Rebranded the document to **onsemi** format. MBR1060 OPN marked as Discontinued.	3/31/2026

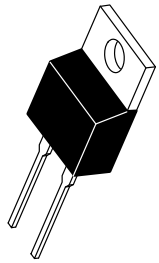
This document has undergone updates prior to the inclusion of this revision history table. The changes tracked here only reflect updates made on the noted approval dates.

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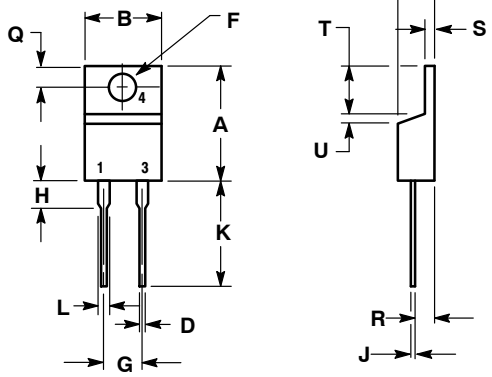
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TO−220, 2−LEAD
CASE 221B−04
ISSUE F

DATE 12 APR 2013



SCALE 1:1



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

	INCHES		MILLIMETERS	
DIM	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	0.039	0.64	1.00
F	0.142	0.161	3.61	4.09
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.014	0.025	0.36	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

STYLE 1:
PIN 1. CATHODE
2. N/A
3. ANODE
4. CATHODE

STYLE 2:
PIN 1. ANODE
2. N/A
3. CATHODE
4. ANODE

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