



**RoHS
Compliant**

Description

Using the Schottky Barrier principle with a Molybdenum barrier metal. These state-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes.

Features

- Low forward voltage
- Low switching noise
- High current capacity
- Guarantee reverse avalanche
- Guard-ring for stress protection
- Low power loss and high efficiency
- 175°C operating junction temperature
- Low stored charge majority carrier conduction
- Plastic material used carries Underwriters Laboratory
- Flammability classification 94V-0

Specifications

Reverse Voltage : 40 to 60 Volts

Forward Current : 10 Amperes

Maximum Ratings

Characteristic	Symbol	MBR1040	MBR1045	MBR1060	Units
Peak Repetitive Reverse Voltage	V _{RRM}	40	45	60	V
Working Peak Reverse Voltage	V _{RWM}				
DC Blocking Voltage	V _R				
RMS Reverse Voltage	V _R (RMS)	28	32	42	A
Average Rectifier Forward Current	I _F (AV)				
Peak Repetitive Forward Current (Rate V _R , Square Wave, 20kHz)	I _{FM}				
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-ware, single phase, 60Hz)	I _{FSM}	°C			
Operating and Storage Junction Temperature Range	T _J , T _{STG}				

Thermal Resistances

Typical Thermal Resistance junction to case	R _{θJC}	3.4	°C/W
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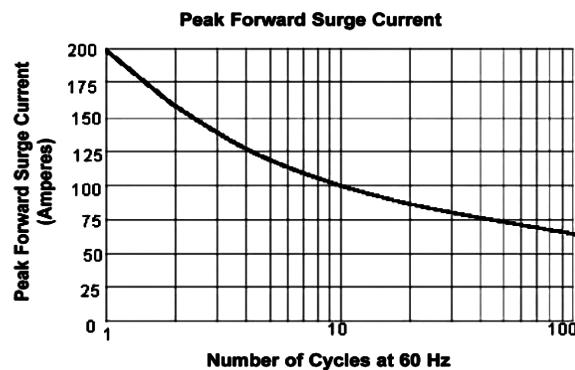
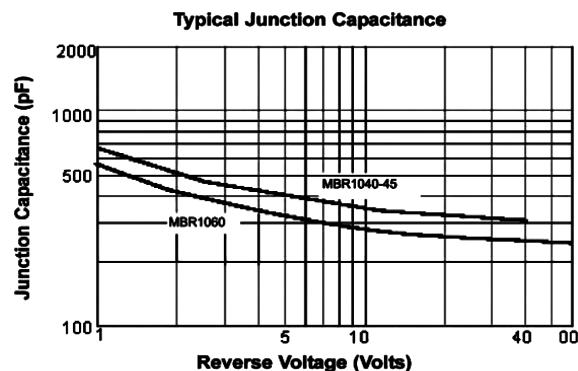
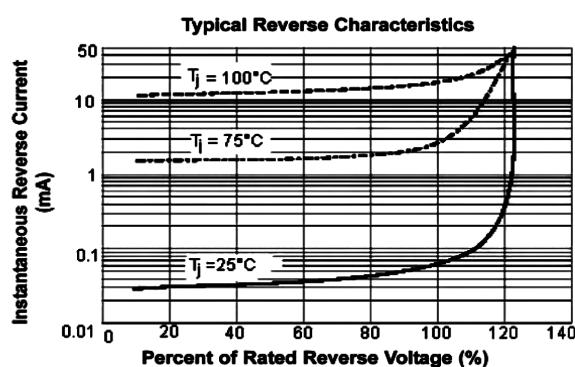
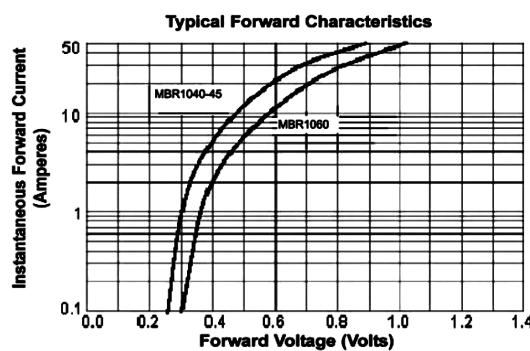
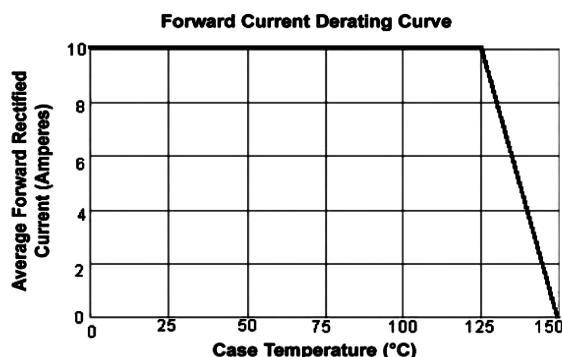
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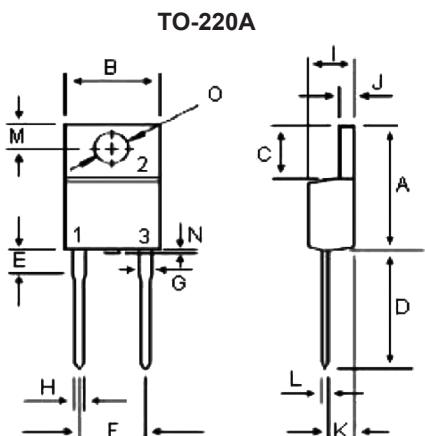
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Electrical Characteristics

Characteristic	Symbol	MBR1040	MBR1045	MBR1060	Units
Maximum Instantaneous Forward Voltage ($I_F = 10$ Amperes $T_c = 25^\circ\text{C}$) ($I_F = 10$ Amperes $T_c = 125^\circ\text{C}$)	V_F		0.55 0.48	0.7 0.6	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_c = 25^\circ\text{C}$) (Rated DC Voltage, $T_c = 125^\circ\text{C}$)	I_R		0.05 20		mA



Diagram



Dim.	Min.	Max.
A	14.68	15.32
B	9.78	10.42
c	6.02	6.52
D	13.06	14.62
E	3.57	4.07
F	4.84	5.32
G	1.12	1.36
H	0.72	0.96

Dim.	Min.	Max.
I	4.22	4.98
J	1.14	1.38
K	2.2	2.98
L	0.33	0.55
M	2.48	2.98
N	-	1
O	3.7	3.9

Dimensions : Millimetres

Part Number Table

Description	Part Number
Schottky Barrier Rectifier, 40V	MBR1040
Schottky Barrier Rectifier, 45V	MBR1045
Schottky Barrier Rectifier, 60V	MBR1060

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