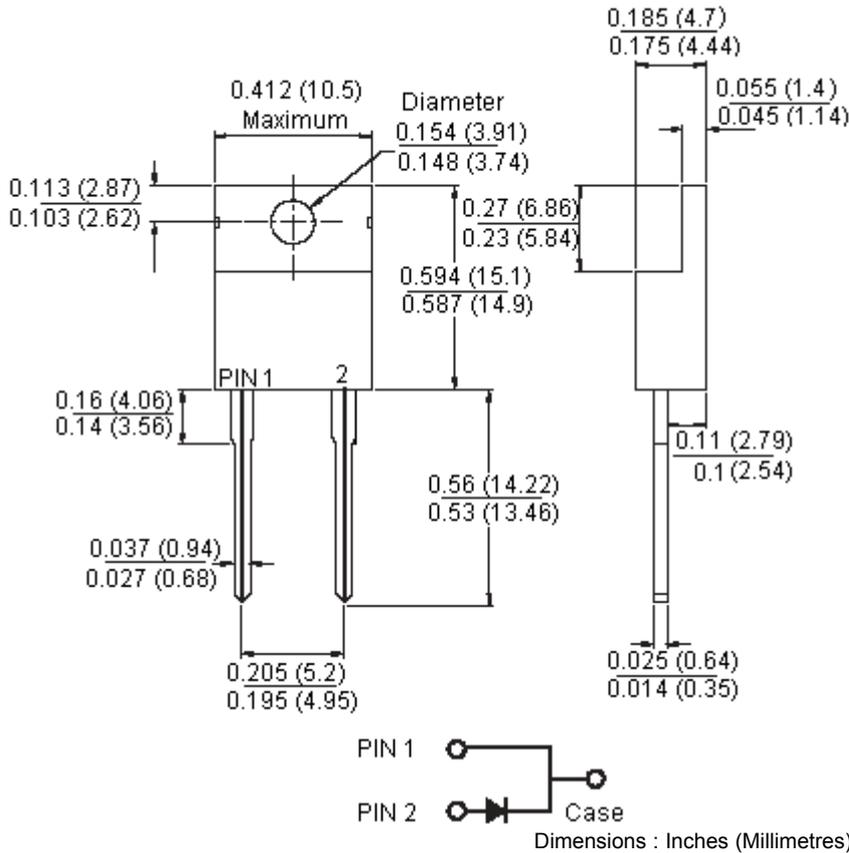


Schottky Diode

MBR10X Series



TO-220AC



Features:



- Plastic material
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- High current capability, low forward voltage drop
- High surge capability
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- Guardring for over voltage protection
- High temperature soldering guaranteed: 260°C / 10 seconds, 0.25 inch (6.35 mm) from case

Mechanical Data

Cases	: JEDEC TO-220AC moulded plastic body
Terminals	: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
Polarity	: As marked
Mounting position	: Any
Mounting torque	: 5 in. - lbs. maximum
Weight	: 0.08 ounce, 2.24 g

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified
 Single phase, half wave, 60 Hz, resistive or inductive load
 For capacitive load, derate current by 20%

Type Number	Symbol	MBR 1045	MBR 1060	MBR 10100	MBR 10150	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	45	60	100	150	V
Maximum RMS Voltage	V_{RMS}	31	42	70	105	
Maximum DC Blocking Voltage	V_{DC}	45	60	100	150	

Schottky Diode



MBR10X Series

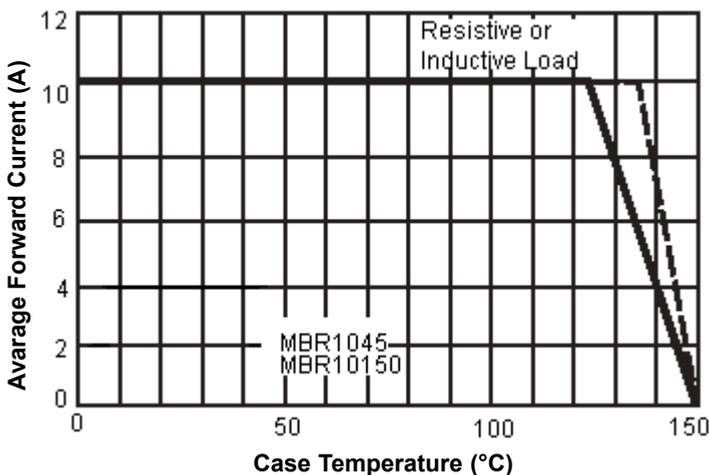
Type Number	Symbol	MBR 1045	MBR 1060	MBR 10100	MBR 10150	Unit
Maximum average forward rectified current at $T_C = 125^\circ\text{C}$	$I_{(AV)}$	10				A
Peak repetitive forward current (rated V_R , square wave, 20 KHz) at $T_C = 125^\circ\text{C}$	I_{FRM}	32				
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	150				
Peak repetitive reverse surge current (Note 1)	I_{RRM}	1	0.5			
Maximum Instantaneous forward voltage at (Note 2) $I_F = 10\text{ A}, T_C = 25^\circ\text{C}$ $I_F = 10\text{ A}, T_C = 125^\circ\text{C}$ $I_F = 20\text{ A}, T_C = 25^\circ\text{C}$ $I_F = 20\text{ A}, T_C = 125^\circ\text{C}$	V_F	0.7 0.57 0.84 0.72	0.8 0.7 0.95 0.85	0.85 0.71 - -	1.05 - - -	V
Maximum instantaneous reverse current at $T_C = 25^\circ\text{C}$ at rated DC blocking voltage at $T_C = 125^\circ\text{C}$ (Note 2)	I_R	0.1				μA
		15	10	6		μA
Voltage rate of change (Rated V_R)	dV / dt	10,000				V / μS
Typical junction capacitance	C_j	500				pF
Maximum typical thermal resistance (Note 3)	$R_{\theta JC}$	3				$^\circ\text{C} / \text{W}$
Operating junction temperature range	T_J	-65 to +150				$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 to +175				

Notes:

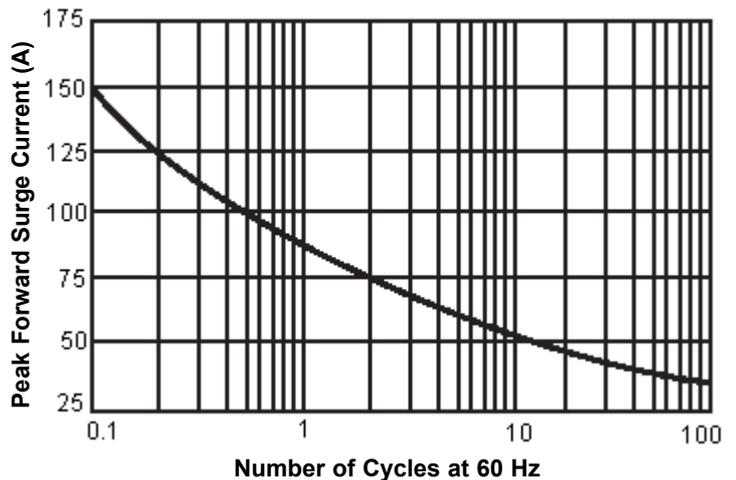
- 2 μs Pulse Width, $f = 1\text{ KHz}$
- Pulse Test: 300 μs Pulse Width, 1% Duty Cycle
- Thermal resistance from junction to case per leg with heatsink size of 2 x 3 x 0.25 inches Al-Plate

Ratings and Characteristic Curves (MBR10100, MBR10150, MBR1045 and MBR1060)

Forward Current Derating Curve



Maximum Non-Repetitive Peak Forward Surge Current



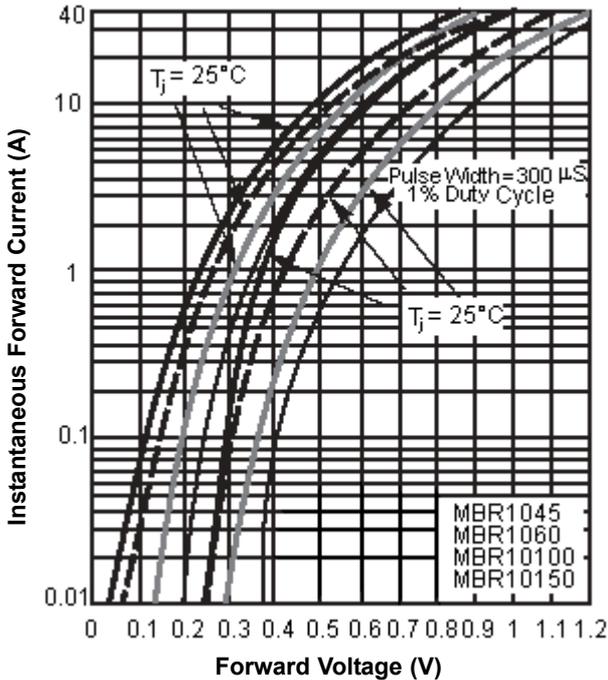
Schottky Diode

MBR10X Series

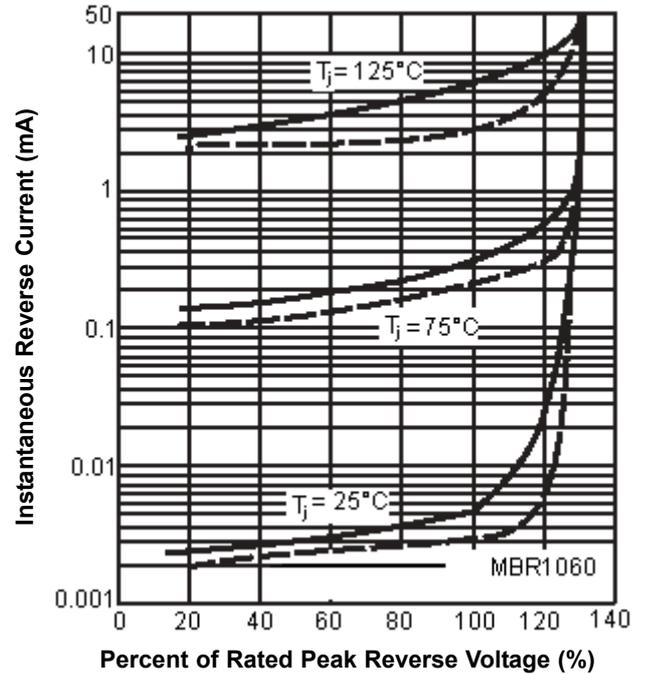


Ratings and Characteristic Curves (MBR10100, MBR10150, MBR1045 and MBR1060)

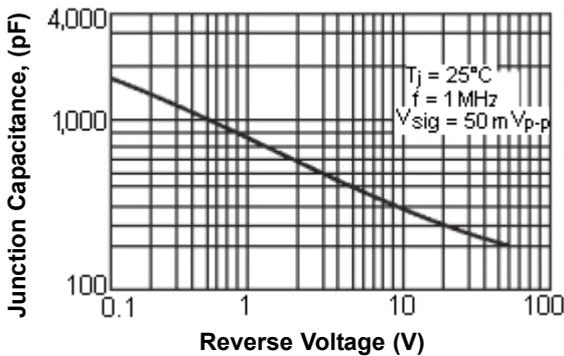
Typical Instantaneous Forward Characteristics



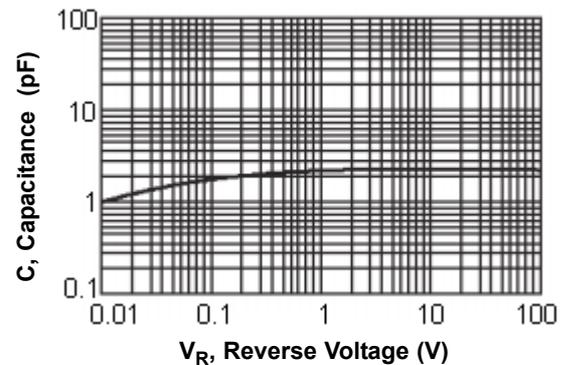
Typical Reverse Characteristics



Typical Junction Capacitance



Typical Capacitance



Part Number Table

Description	Part Number
Diode, Schottky 10 A 100 V	MBR10100
Diode, Schottky 10 A 150 V	MBR10150
Diode, Schottky 10 A 45 V	MBR1045
Diode, Schottky 10 A 60 V	MBR1060

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