

MBR1045/MBRF1045

Schottky Barrier Rectifier
 Reverse Voltage 45 V Forward Current 10 A

Features

- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Single rectifier construction, positive center tap
- Low forward voltage, high efficiency
- Guarding for over voltage protection



MBR1045
 Package: TO-220-AC



MBRF1045
 Package: ITO-220-AC

Mechanical Data

- Case: epoxy, molded
- Weight: 1.9grams (approximately)
- Finish: all external surfaces corrosion resistant and terminal leads readily solderable
- Lead temperature for soldering purpose: 260°C max. for 10 sec
- 50 units per plastic tube



Schematic Diagram

Maximum Ratings & Electrical Characteristics

($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Test Conditions		Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage			V_{RRM}	45	V
Working Peak Reverse Voltage			V_{RWM}	45	V
Maximum DC Blocking Voltage			V_{DC}	45	V
Maximum Average Forward Rectified Current @ $T_c=100^{\circ}\text{C}$			$I_{F(AV)}$	10	A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load per Diode			I_{FSM}	150	A
Peak repetitive Reverse Current Per Leg at $t_p=2.0\mu\text{s}$, 1KHz			I_{RRM}	1.0	A
Voltage Rate of Change (rated V_R)			DV/dt	10000	V/ μs
Operating Junction Temperature Range			T_J	- 55 to+150	$^{\circ}\text{C}$
Storage Temperature Range			T_{STG}	- 55 to+150	$^{\circ}\text{C}$
Isolation Voltage (ITO-220-AB only) from Terminal to Heatsink $t = 1 \text{ sec}$			V_{AC}	1500	V
Maximum Instantaneous Forward Voltage per Leg	$I_F=10\text{A}$ $I_F=10\text{A}$	$T_c=25^{\circ}\text{C}$ $T_c=125^{\circ}\text{C}$	V_F	0.57 0.51	V
Maximum Reverse Current per Leg at Working Peak Reverse Voltage		$T_J=25^{\circ}\text{C}$ $T_J=100^{\circ}\text{C}$	I_R	200 15	μA mA

Thermal Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Typ.(TO-220-AC)	Typ.(ITO-220-AC)	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case per Leg	2.0	4.0	$^{\circ}\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient per Leg	62.5	62.5	$^{\circ}\text{C}/\text{W}$

Note: Pulse test:300us pulse width, duty cycle=2%

Ratings and Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

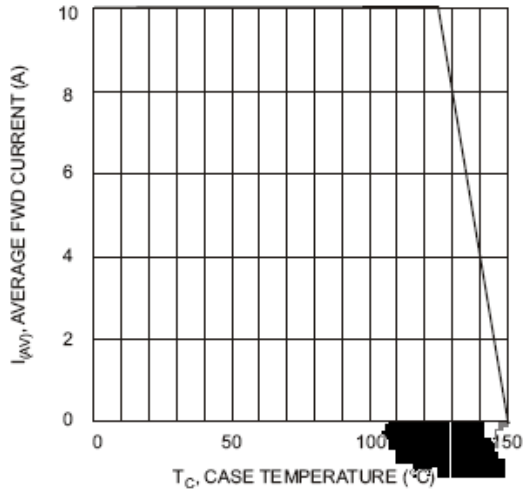


Fig. 1 Forward Current Derating Curve

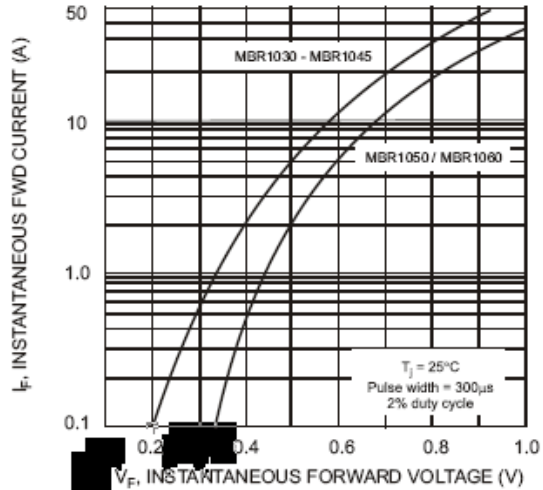


Fig. 2 Typical Forward Characteristics

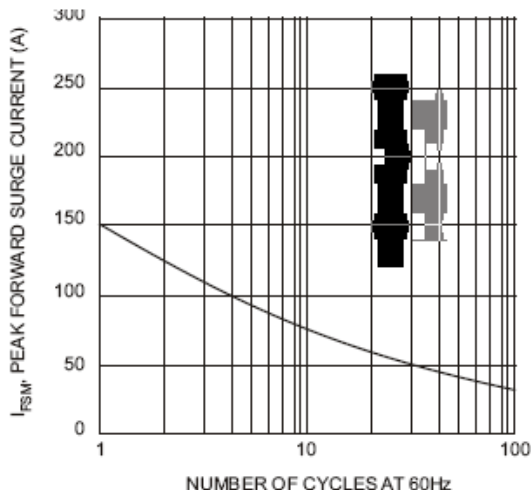


Fig. 3 Max Non-Repetitive Surge Current

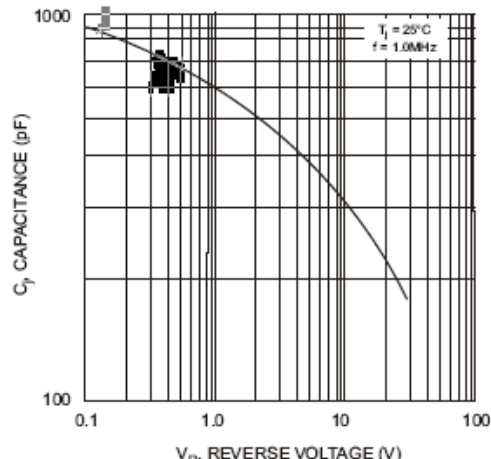


Fig. 4 Typical Junction Capacitance

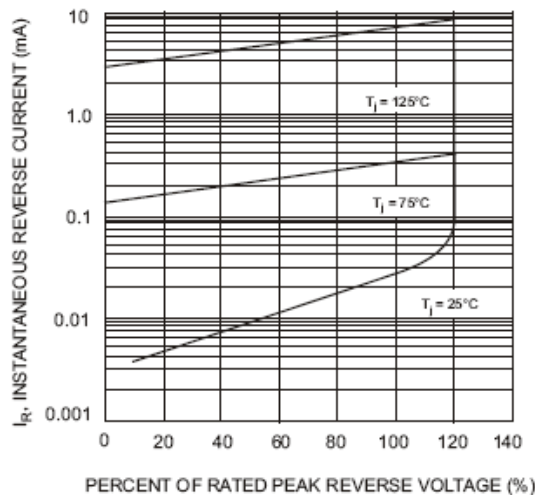


Fig. 5 Typical Reverse Characteristics

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Package Outline Dimensions

in millimeters

TO-220-AC

ITO-220-AC

