

# MBRF2035 - MBRF20150

Isolated 20.0 AMPS. Schottky Barrier Rectifiers  
ITO-220AC

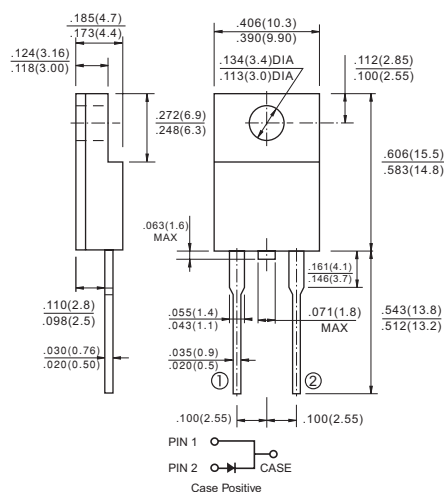


## Features

- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ 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 overvoltage protection
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds, 0.25" (6.35mm) from case

## Mechanical Data

- ✧ Cases: ITO-220AC molded 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. max
- ✧ Weight: 0.08 ounce, 2.24 grams



Dimensions in inches and (millimeters)

## 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	MBRF 2035	MBRF 2045	MBRF 2050	MBRF 2060	MBRF 2090	MBRF 20100	MBRF 20150	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	150	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	105	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	150	V
Maximum Average Forward Rectified Current at $T_c=125^\circ\text{C}$	$I_{(AV)}$	20							A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=125^\circ\text{C}$	$I_{FRM}$	40							A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	150							A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0		0.5				A	
Maximum Instantaneous Forward Voltage at: (Note 2) $I_F=20\text{A}, T_c=25^\circ\text{C}$ $I_F=20\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.75 0.65		0.82 0.72		0.95 0.87		1.02 0.98	V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage (Note2) @ $T_c=125^\circ\text{C}$	$I_R$	0.2 15		0.2 10		0.1 5.0		mA mA	
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000							V/ $\mu\text{s}$
Typical Junction Capacitance	$C_j$	560				420			pF
Maximum Typical Thermal Resistance(Note 3)	$R_{\theta JC}$	3.0							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	-65 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65 to +175							$^\circ\text{C}$

- Notes:
1. 2.0 $\mu\text{s}$  Pulse Width,  $f=1.0$  KHz
  2. Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle
  3. Mounted on Heatsink Size of 2 in x 3 in x 0.25 in Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBRF2035 THRU MBRF20150)

FIG.1- FORWARD CURRENT DERATING CURVE

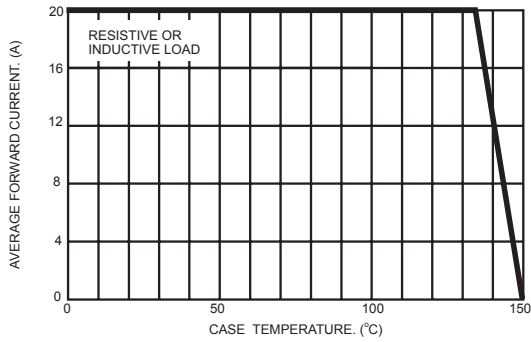


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

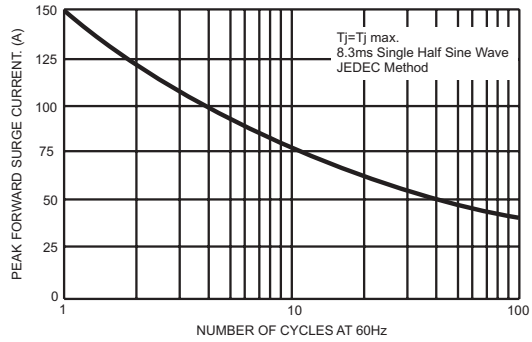


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

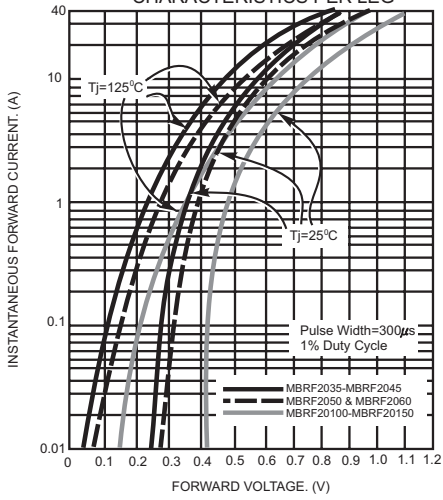


FIG.4- TYPICAL REVERSE CHARACTERISTICS PER LEG

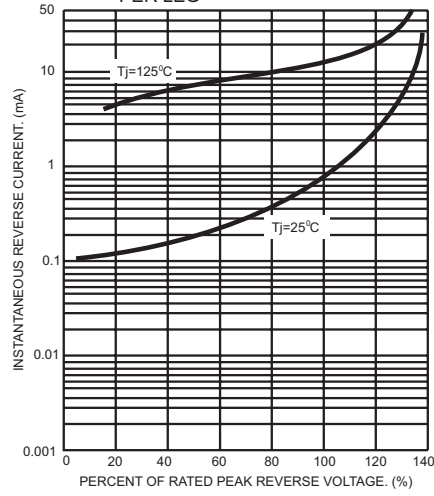


FIG.5- TYPICAL JUNCTION CAPACITANCE PER LEG

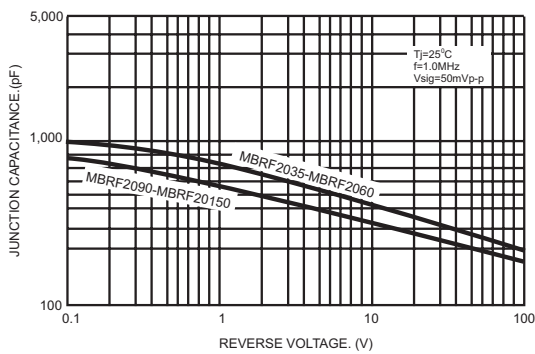


FIG.6- TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

