



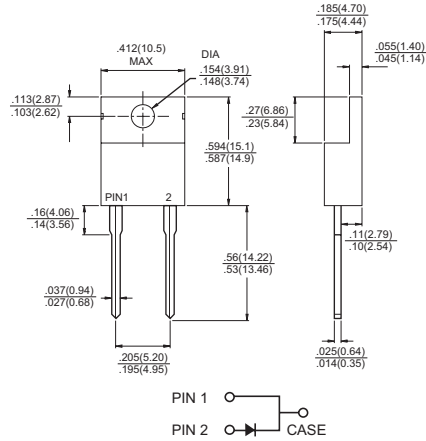
# MBR1035 - MBR10150

## 10.0 AMPS. Schottky Barrier Rectifiers

### TO-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: JEDEC TO-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	MBR 1035	MBR 1045	MBR 1050	MBR 1060	MBR 1090	MBR 10100	MBR 10150	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 $T_C=125^\circ\text{C}$	$I_{(AV)}$	10							A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=125^\circ\text{C}$	$I_{FRM}$	32							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) $I_F=10\text{A}, T_C=25^\circ\text{C}$ $I_F=10\text{A}, T_C=125^\circ\text{C}$ $I_F=20\text{A}, T_C=25^\circ\text{C}$ $I_F=20\text{A}, T_C=125^\circ\text{C}$	$V_F$	0.70 0.57 0.84 0.72		0.80 0.70 0.95 0.85		0.85 0.71 — —	1.05 — — —	V	
Maximum Instantaneous Reverse Current @ $T_C=25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_C=125^\circ\text{C}$ (Note 2)	$I_R$	0.1			0.1				mA mA
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000							V/ $\mu\text{s}$
Typical Junction Capacitance	$C_j$	500							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,  $f=1.0\text{ KHz}$   
 2. Pulse Test: 300 $\mu\text{s}$  Pulse Width, 1% Duty Cycle  
 3. Thermal Resistance from Junction to Case Per Leg with Heatsink Size of 2 in x 3 in x 0.25 in Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBR1035 THRU MBR10150)

FIG.1- FORWARD CURRENT DERATING CURVE

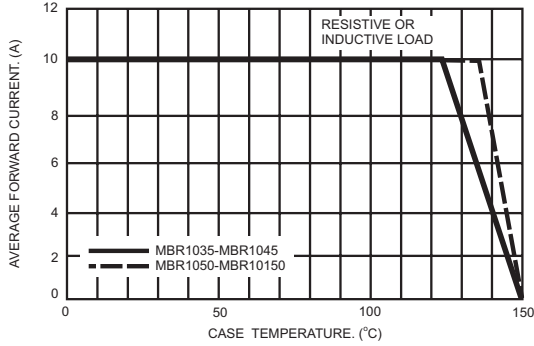


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

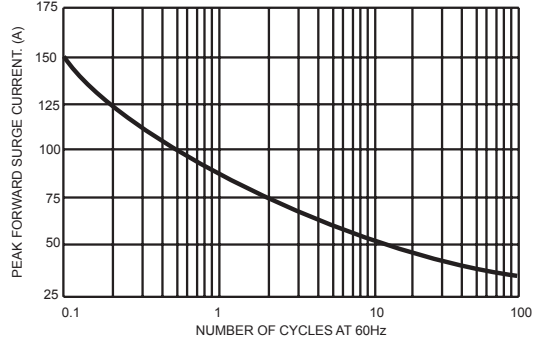


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

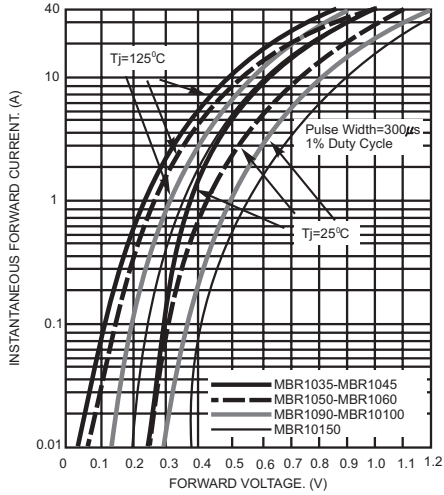


FIG.4- TYPICAL REVERSE CHARACTERISTICS

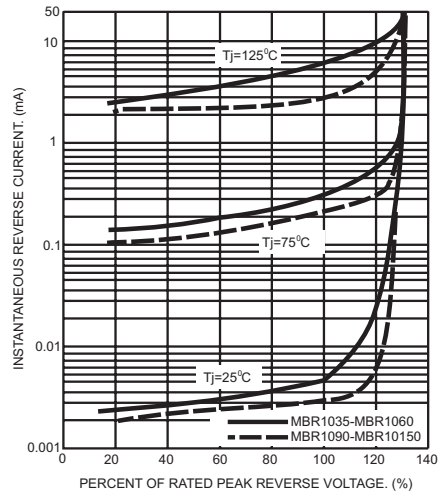


FIG.5- TYPICAL JUNCTION CAPACITANCE

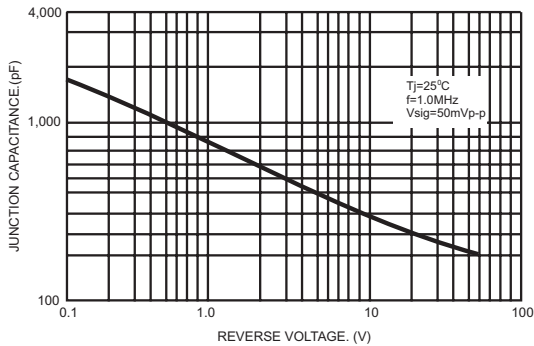


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTIC

