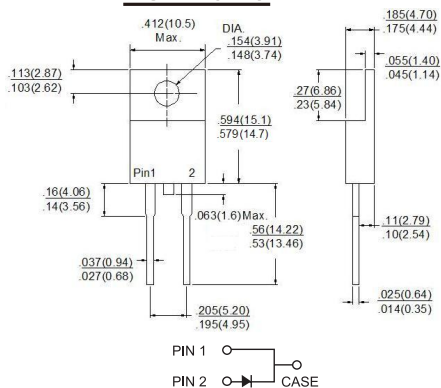




TO-220AC



Dimensions in inches and (millimeters)

Marking Diagram



MBR10XX = Specific Device Code
 G = Green Compound
 Y = Year
 WW = Work Week

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
- Green compound with suffix "G" on packing code & prefix "G" on datecode.

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

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	MBR 10200	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	35	45	50	60	90	100	150	200	V
Maximum RMS Voltage	V_{RMS}	24	31	35	42	63	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	90	100	150	200	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								mA mA
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)	$R_{\theta JC}$	3.0								$^\circ\text{C/W}$
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. 2.0us Pulse Width, $f=1.0\text{ KHz}$

2. Pulse Test: 300us 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 MBR10200)

FIG.1- FORWARD CURRENT DERATING CURVE

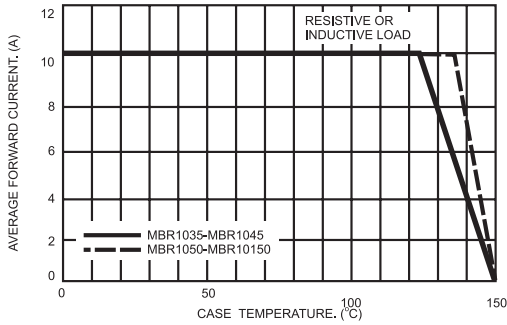


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

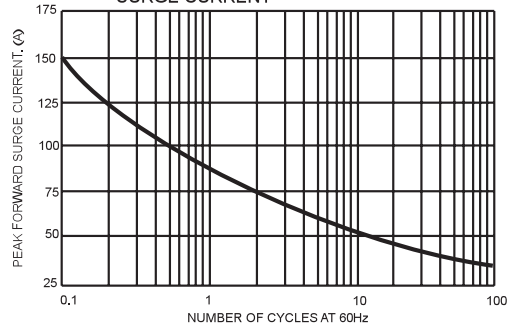


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

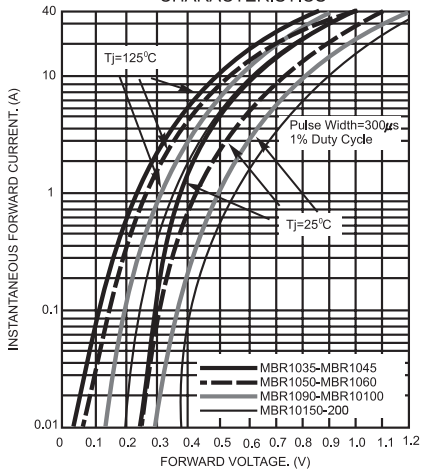


FIG.4- TYPICAL REVERSE CHARACTERISTICS

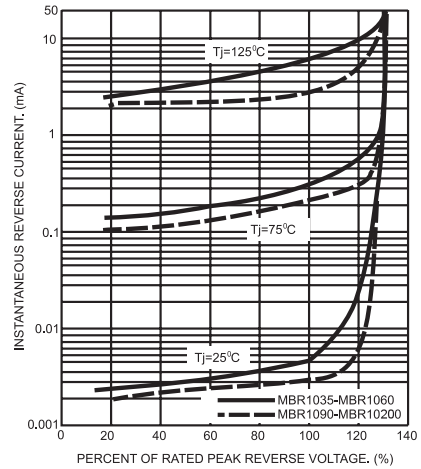


FIG.5- TYPICAL JUNCTION CAPACITANCE

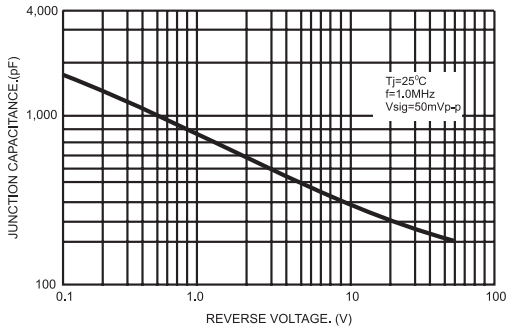


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTIC

