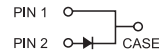
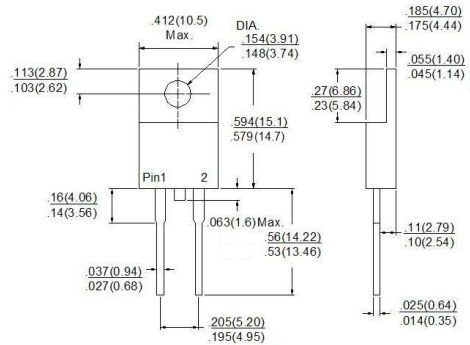


# MBR1635 - MBR16150

## 16.0 AMPS. Schottky Barrier Rectifiers TO-220AC



Dimensions in inches and (millimeters)

Marking Diagram



MBR16XX = 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 1635	MBR 1645	MBR 1650	MBR 1660	MBR 1690	MBR 16100	MBR 16150	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 $T_C=125^{\circ}C$	$I_{AV}$	16							A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=125^{\circ}C$	$I_{FRM}$	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) $I_F=16A, T_C=25^{\circ}C$ $I_F=16A, T_C=125^{\circ}C$	$V_F$	0.63		0.75		0.85	0.95	V	
		0.57		0.65		0.75	0.92		
Maximum Instantaneous Reverse Current @ $T_C=25^{\circ}C$ at Rated DC Blocking Voltage (Note 2) @ $T_C=125^{\circ}C$	$I_R$	0.5		0.5		0.3	0.1	mA mA	
		15		10		7.5	5		
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000							V/ $\mu$ S
Typical Junction Capacitance	$C_j$	500							pF
Maximum Typical Thermal Resistance(Note 3)	$R_{\theta JC}$	3.0							$^{\circ}C/W$
Operating Junction Temperature Range	$T_J$	-65 to +150							$^{\circ}C$
Storage Temperature Range	$T_{STG}$	-65 to +175							$^{\circ}C$

- Notes:
1. 2.0 $\mu$ s Pulse Width,  $f=1.0$  KHz
  2. Pulse Test: 300 $\mu$ s Pulse Width, 1% Duty Cycle
  3. Thermal Resistance from Junction to Case Per Leg with Heatsink Size of 2" x 3"x 0.25" Al-Plate.

## RATINGS AND CHARACTERISTIC CURVES (MBR1635 THRU MBR16150)

FIG.1- FORWARD CURRENT DERATING CURVE

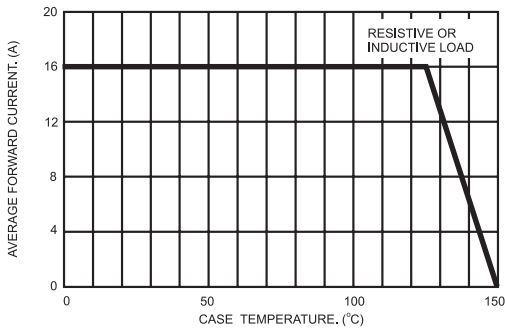


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

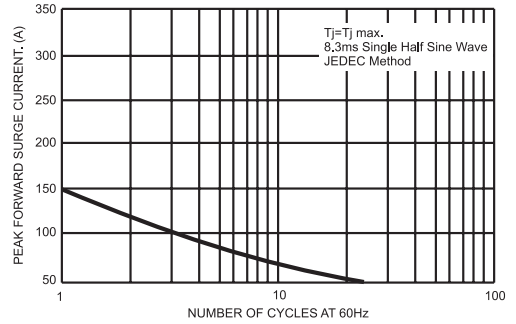


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

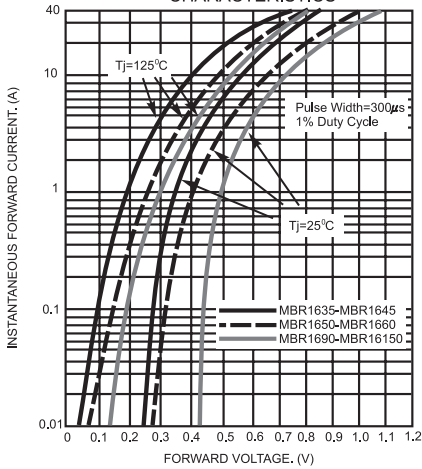


FIG.4- TYPICAL REVERSE CHARACTERISTICS

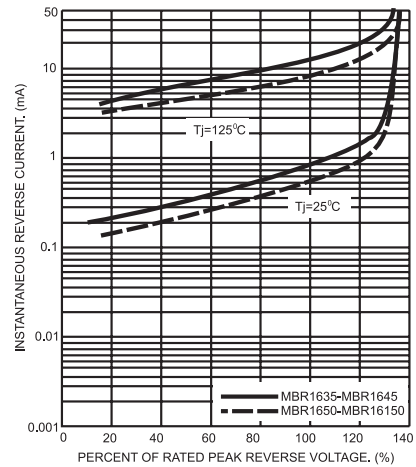


FIG.5- TYPICAL JUNCTION CAPACITANCE

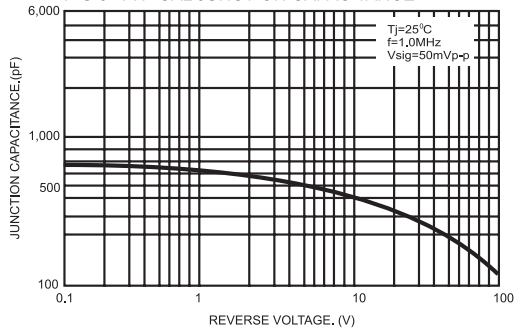


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

