



# MBR1635 THRU MBR16100

## 16.0 AMPS. Schottky Barrier Rectifiers



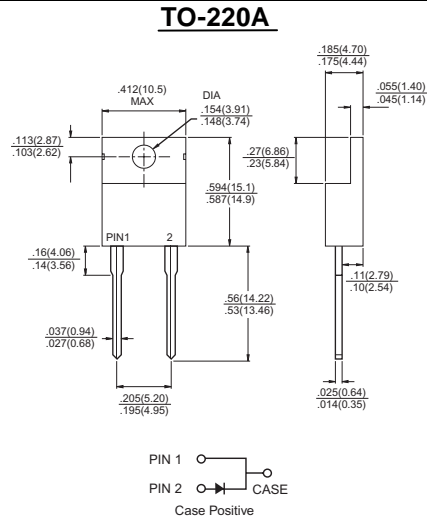
Voltage Range  
35 to 100 Volts  
Current  
16.0 Amperes

### 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-220A molded plastic body
- ✦ Terminals: Lead 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 1635	MBR 1645	MBR 1650	MBR 1660	MBR 1690	MBR 16100	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	V
Maximum Average Forward Rectified Current at $T_c=125^\circ\text{C}$	$I_{(AV)}$	16						A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_c=125^\circ\text{C}$	$I_{FRM}$	32.0						A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	150				250		A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1.0		0.5			A	
Maximum Instantaneous Forward Voltage at: (Note 2) $I_F=16\text{A}, T_c=25^\circ\text{C}$ $I_F=16\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.63 0.57		0.75 0.65		0.85 0.75		V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage (Note 2) @ $T_c=125^\circ\text{C}$	$I_R$	0.2 40.0		1.0 50.0		0.2 -		mA mA
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000						V/ $\mu\text{S}$
Maximum Typical Thermal Resistance(Note 3)	$R_{\theta JC}$	3.0						$^\circ\text{C}/\text{W}$
Typical Junction Capacitance	$C_j$	500						pF
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,  $f=1.0$  KHz

2. Pulse Test: 300us 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 MBR16100)

FIG.1- FORWARD CURRENT DERATING CURVE

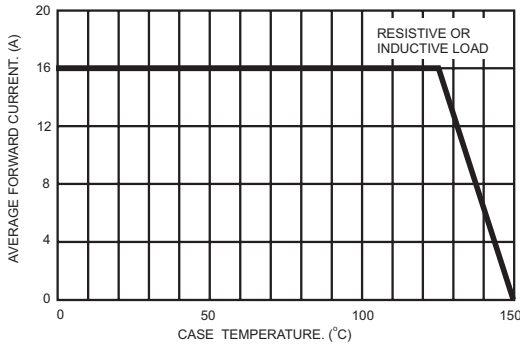


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

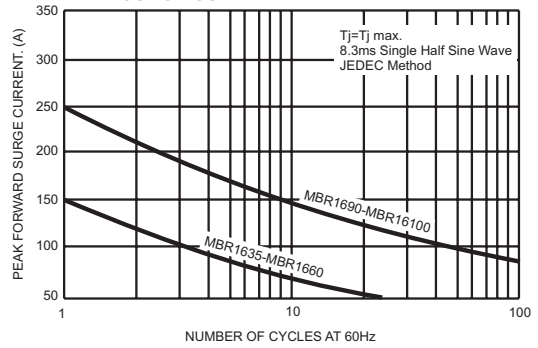


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

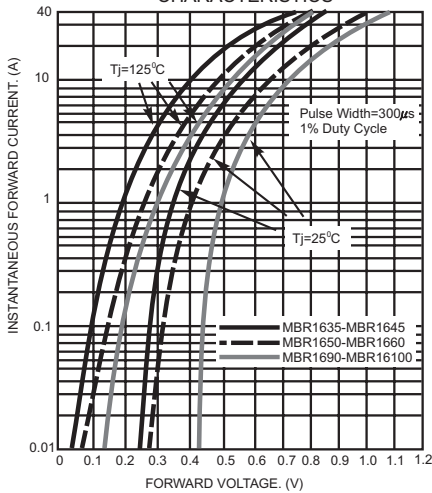


FIG.4- TYPICAL REVERSE CHARACTERISTICS

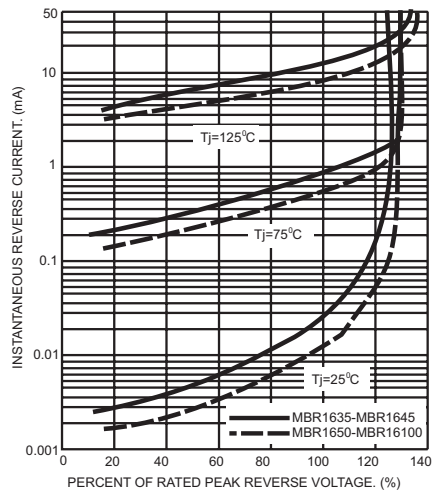


FIG.5- TYPICAL JUNCTION CAPACITANCE

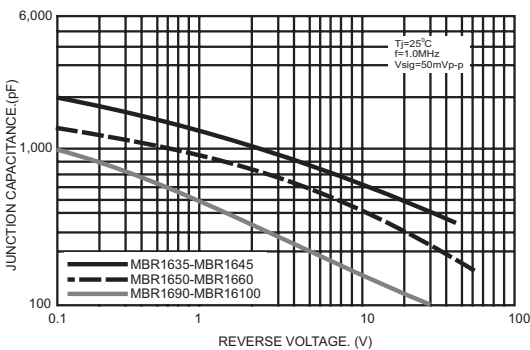


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

