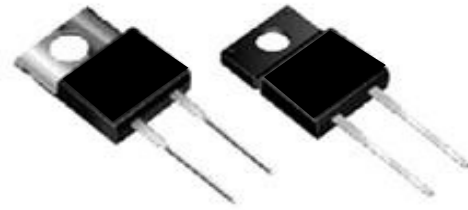


# MBR1645-MBRF1645

Schottky Barrier Rectifier  
Reverse Voltage 45 V Forward Current 16 A

## Features

- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Single rectifier construction, positive center tap
- Metal of silicon rectifier, majority carrier conduction
- Low forward voltage, high efficiency
- Guarding for over voltage protection

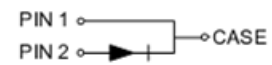


**MBR1645**  
Package: TO-220-AC

**MBRF1645**  
Package: ITO-220-AC

## Mechanical Data

- Case: Epoxy Molded
- Weight: 1.9grams(approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 50 units per plastic tube



**Schematic Diagram**

## Maximum Ratings & Electrical Characteristics

( $T_A=25^\circ\text{C}$  unless otherwise noted)

Parameter	Test Conditions		Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage			$V_{RRM}$	45	V
Working Peak Reverse Voltage			$V_{RWM}$	45	V
Maximum DC Blocking Voltage			$V_{DC}$	45	V
Maximum Average Forward Rectified Current @ $T_C=105^\circ\text{C}$			$I_{F(AV)}$	16	A
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load per Diode			$I_{FSM}$	150	A
Peak repetitive Reverse Current Per Leg at $t_p=2.0\mu\text{s}$ , 1KHz			$I_{RRM}$	1.0	A
Voltage Rate of Change (rated $V_R$ )			$DV/dt$	10000	V/us
Operating Junction Temperature Range			$T_J$	-55 to+150	$^\circ\text{C}$
Storage Temperature Range			$T_{STG}$	-55 to+150	$^\circ\text{C}$
Isolation Voltage (ITO-220-AC only) from Terminal to Heatsink $t = 1 \text{ sec}$			$V_{AC}$	1500	V
Maximum Instantaneous Forward Voltage per Leg	$I_F=16\text{A}$	$T_C=25^\circ\text{C}$	$V_F$	0.60	V
	$I_F=16\text{A}$	$T_C=125^\circ\text{C}$		0.53	
Maximum Reverse Current per Leg at Working Peak Reverse Voltage		$T_J=25^\circ\text{C}$	$I_R$	200	$\mu\text{A}$
		$T_J=100^\circ\text{C}$		15	
<b>Thermal Characteristics</b> ( $T_A=25^\circ\text{C}$ unless otherwise noted)					
Symbol	Parameter		Typ.(TO-220-AC)	Typ.(ITO-220-AC)	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case per Leg		2.0	4.0	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient per Leg		62.5	62.5	$^\circ\text{C}/\text{W}$

**Note:** Pulse test:300us pulse width, duty cycle=2%

## Ratings and Characteristics Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

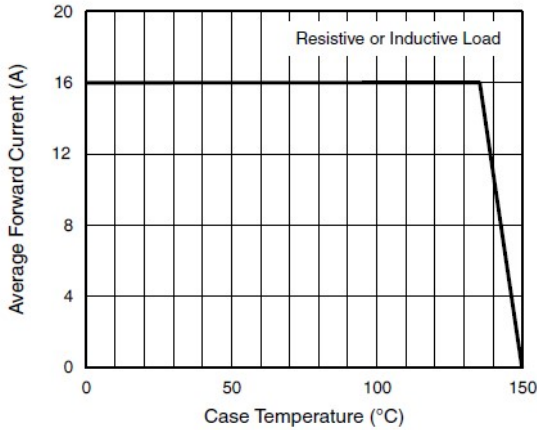


Figure 1. Forward Current Derating Curve

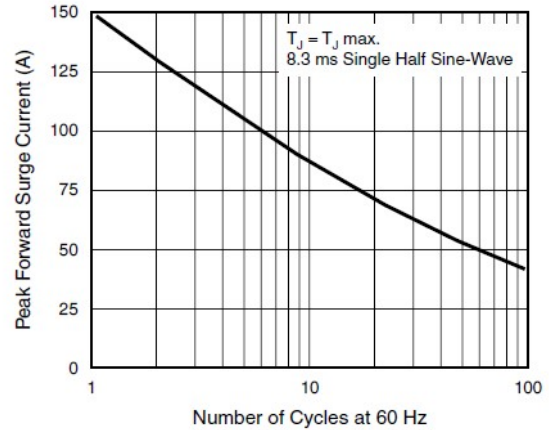


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

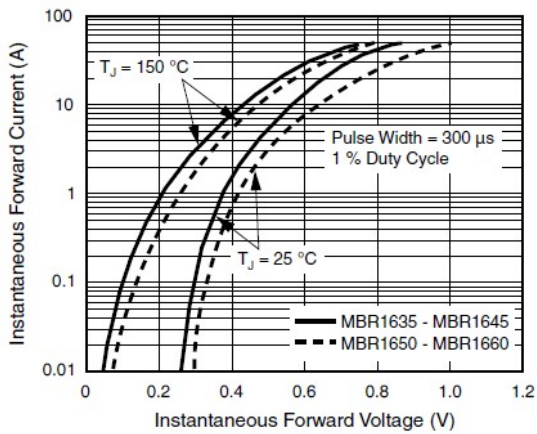


Figure 3. Typical Instantaneous Forward Characteristics

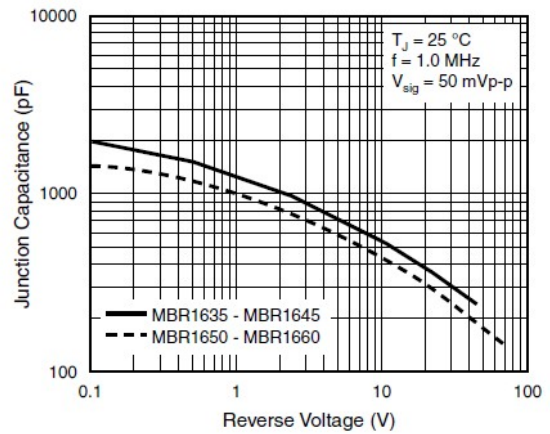


Figure 5. Typical Junction Capacitance

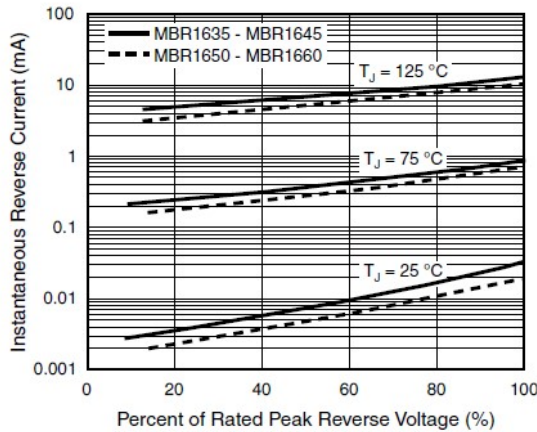


Figure 4. Typical Reverse Characteristics

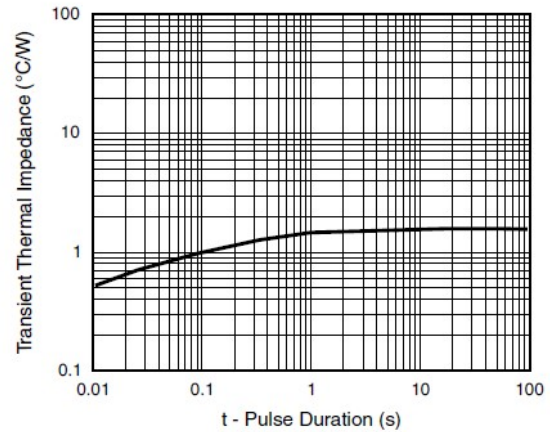
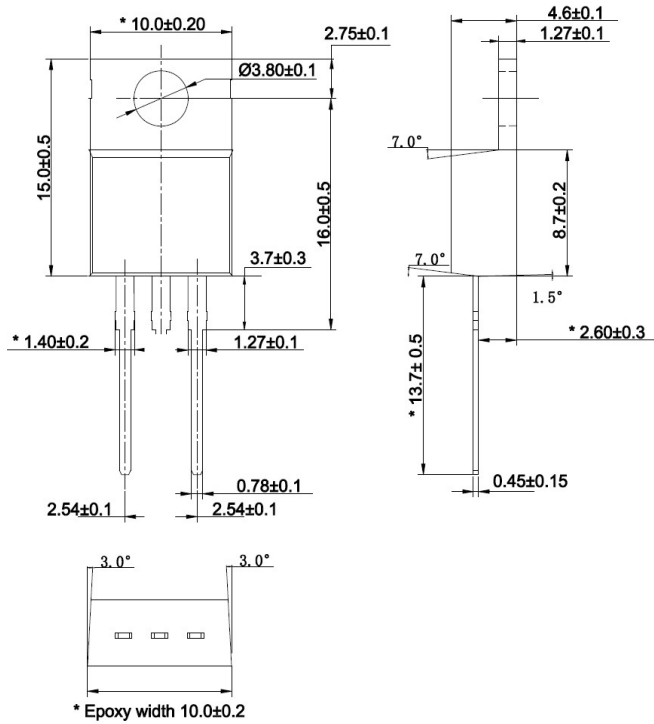


Figure 6. Typical Transient Thermal Impedance

## Package Outline Dimensions

in millimeters

TO-220-AC



ITO-220-AC

