

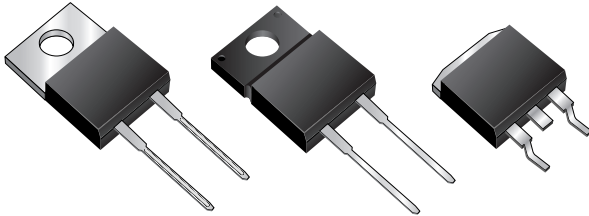


# MBR16xx, MBRF16xx & MBRB16xx Series

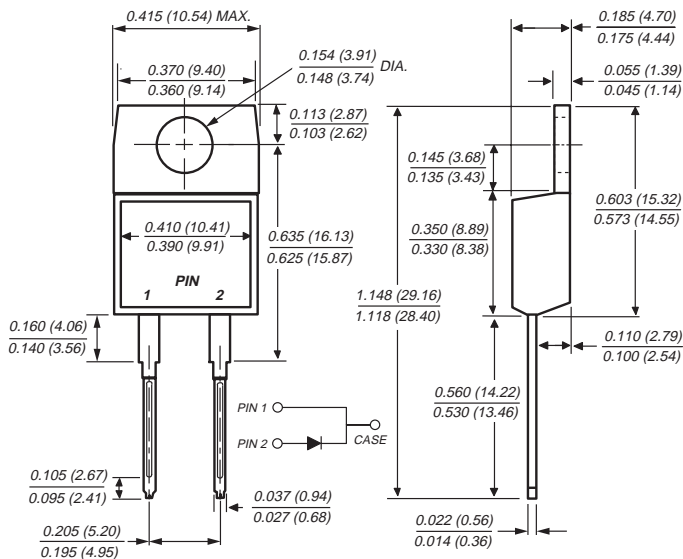
Vishay Semiconductors  
formerly General Semiconductor

## Schottky Barrier Rectifier

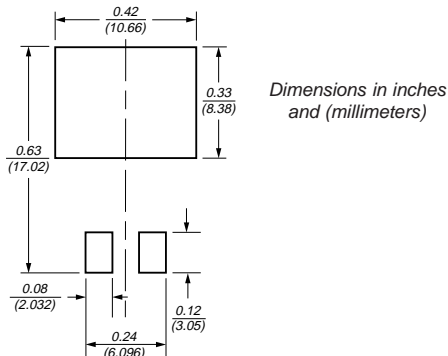
Reverse Voltage 35 to 60V  
Forward Current 16A



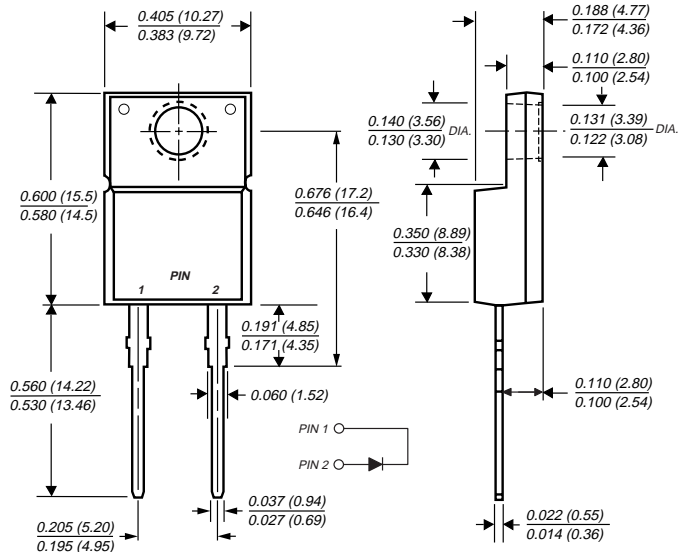
### TO-220AC (MBR16xx)



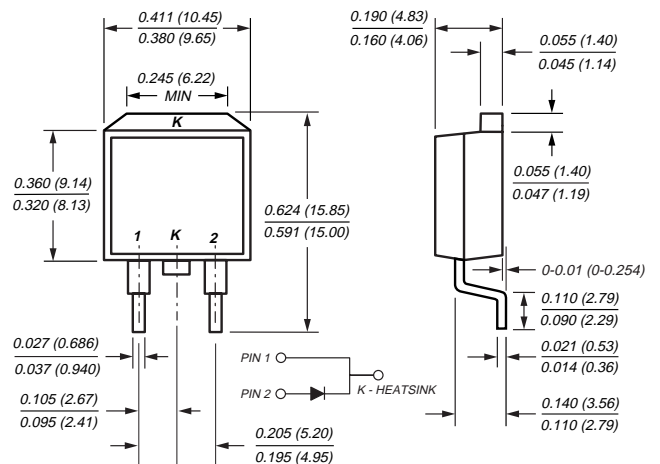
### Mounting Pad Layout TO-263AB



### ITO-220AC (MBRF16xx)



### TO-263AB (MBRB16xx)



## Features

- Plastic package has Underwriters Laboratory Flammability Classifications 94V-0
- Metal silicon junction, majority carrier conduction
- Low power loss, high efficiency
- Guardring for overvoltage protection
- For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case

## Mechanical Data

**Case:** JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

**Polarity:** As marked

**Mounting Position:** Any

**Mounting Torque:** 10 in-lbs maximum

**Weight:** 0.08 oz., 2.24 g

# MBR16xx, MBRF16xx & MBRB16xx Series



Vishay Semiconductors  
formerly General Semiconductor

## Maximum Ratings (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR1635	MBR1645	MBR1650	MBR1660	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	50	60	V
Working peak reverse voltage	V <sub>RWM</sub>	35	45	50	60	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	50	60	V
Maximum average forward rectified current at T <sub>C</sub> = 125 °C	I <sub>F(AV)</sub>	16				A
Peak repetitive forward current at T <sub>C</sub> = 125°C (rated V <sub>R</sub> , sq. wave, 20 KHz)	I <sub>FRM</sub>	32				A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	150				A
Peak repetitive reverse current at t <sub>p</sub> = 2.0μs, 1KHz	I <sub>RRM</sub>	1.0		0.5		A
Voltage rate of change (rated V <sub>R</sub> )	dv/dt	10,000		1,000		V/μs
Operating junction temperature range	T <sub>J</sub>	-65 to +150				°C
Storage temperature range	T <sub>STG</sub>	-65 to +175				°C
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1.0 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 (NOTE 1) 3500 (NOTE 2) 1500 (NOTE 3)				V

## Electrical Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR1635	MBR1645	MBR1650	MBR1660	Unit
Maximum instantaneous forward voltage (Note 4) at I <sub>F</sub> = 16A, T <sub>C</sub> = 25°C at I <sub>F</sub> = 16A, T <sub>C</sub> = 125°C	V <sub>F</sub>	0.63		0.75		V
		0.57		0.65		
Maximum instantaneous reverse current T <sub>C</sub> = 25°C at rated DC blocking voltage (Note 4) T <sub>C</sub> = 125°C	I <sub>R</sub>	0.2		1.0		mA
		40		50		

## Thermal Characteristics (T<sub>C</sub> = 25°C unless otherwise noted)

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Typical thermal resistance from junction to case	R <sub>θJC</sub>	1.5	3.0	1.5	°C/W

### Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

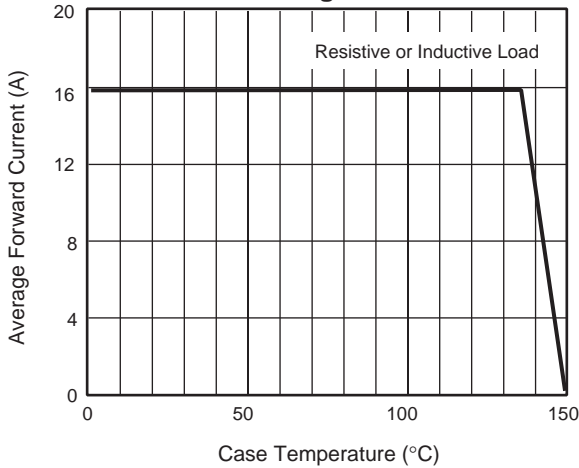
## Ordering Information

Product	Case	Package Code	Package Option
MBR1635 - MBR1660	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRF1635 - MBRF1660	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRB1635 - MBRB1660	TO-263AB	31	13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton
		81	Anti-Static 13" reel, 800/reel, 4.8K/carton

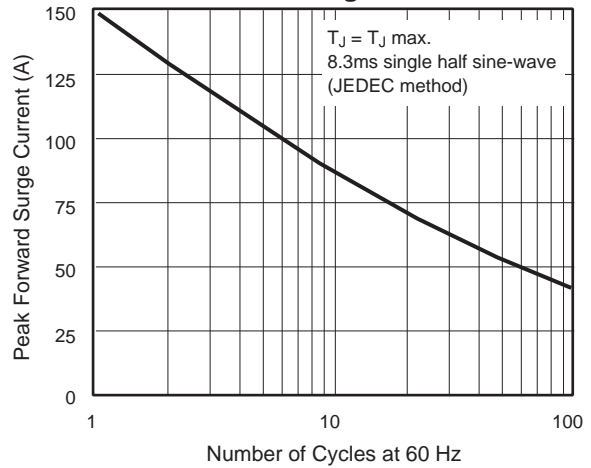


## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

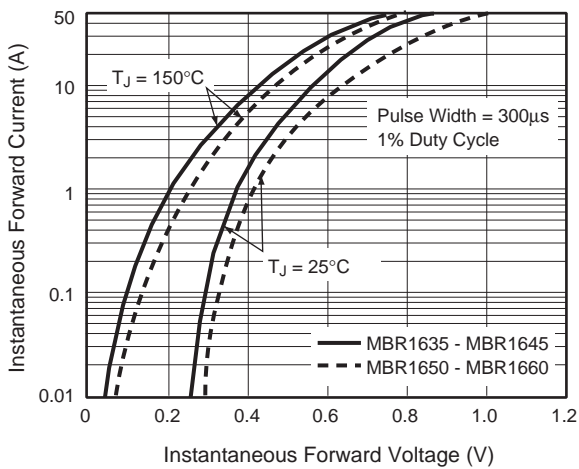
**Fig. 1 - Forward Current Derating Curve**



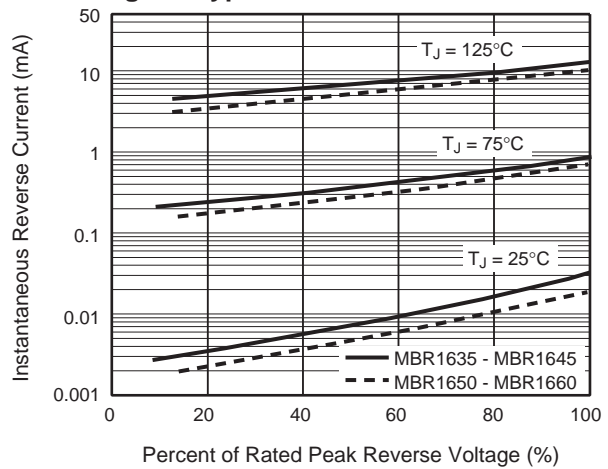
**Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current**



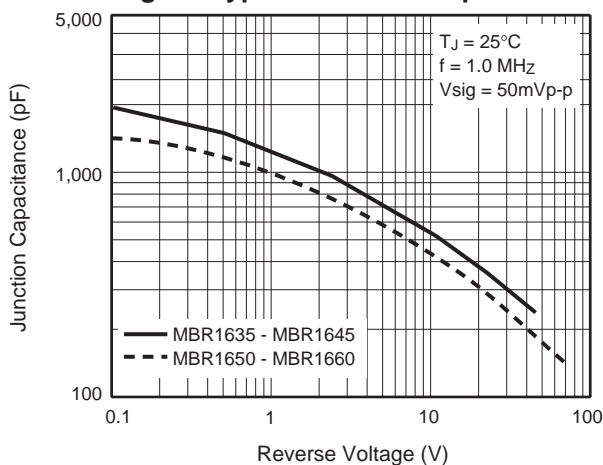
**Fig. 3 - Typical Instantaneous Forward Characteristics**



**Fig. 4 - Typical Reverse Characteristics**



**Fig. 5 - Typical Junction Capacitance**



**Fig. 6 - Typical Transient Thermal Impedance**

