

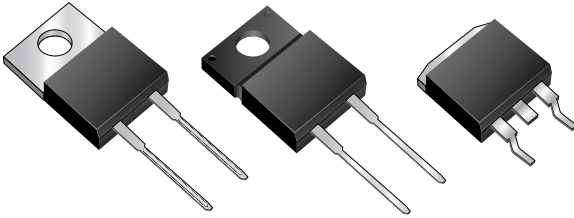


# MBR7xx, MBRF7xx & MBRB7xx Series

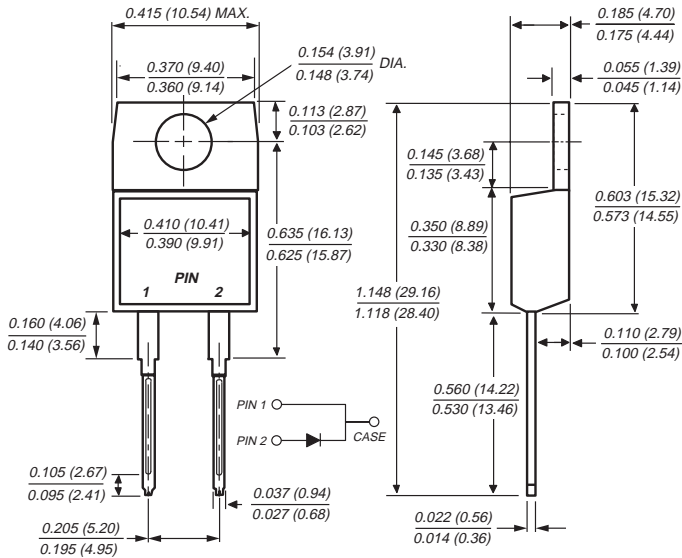
Vishay Semiconductors  
formerly General Semiconductor

## Schottky Barrier Rectifier

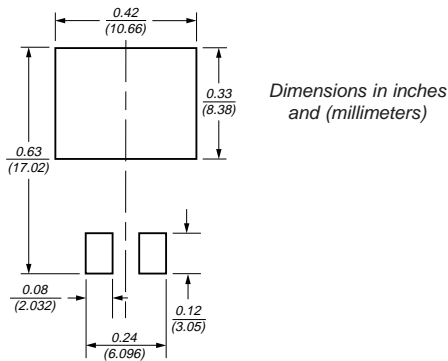
Reverse Voltage 35 to 60V  
Forward Current 7.5A



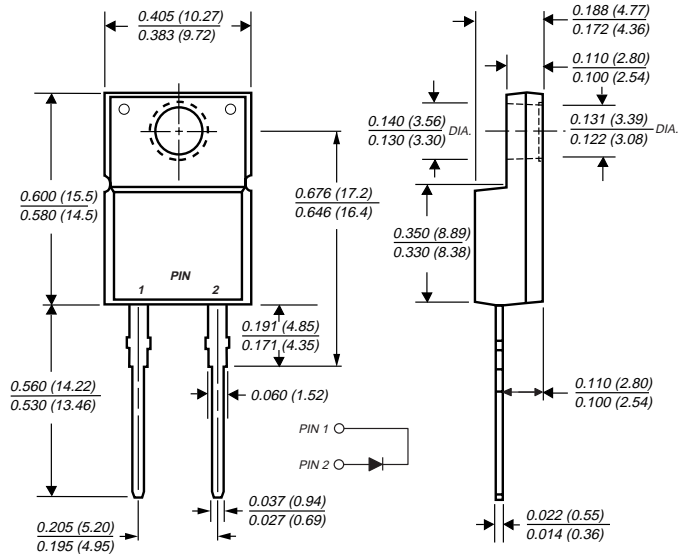
TO-220AC (MBR7xx)



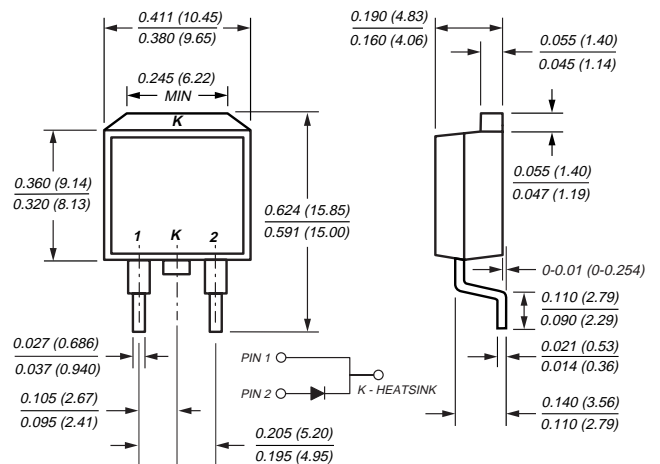
Mounting Pad Layout TO-263AB



ITO-220AC (MBRF7xx)



TO-263AB (MBRB7xx)



## 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 ounce, 2.24 grams

# MBR7xx, MBRF7xx & MBRB7xx Series



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

Parameter	Symbol	MBR735	MBR745	MBR750	MBR760	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 (SEE FIG. 1)	I <sub>F(AV)</sub>	7.5				A
Peak repetitive forward current (sq. wave, 20 KHz) at T <sub>C</sub> = 105°C	I <sub>FRM</sub>	15				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				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	MBR735	MBR745	MBR750	MBR760	Unit
Maximum instantaneous forward voltage (Note 4) at I <sub>F</sub> = 7.5A, T <sub>C</sub> = 25°C at I <sub>F</sub> = 7.5A, T <sub>C</sub> = 125°C at I <sub>F</sub> = 15A, T <sub>C</sub> = 25°C at I <sub>F</sub> = 15A, T <sub>C</sub> = 125°C	V <sub>F</sub>	- 0.57 0.84 0.72		0.75 0.65 - -		V
Maximum reverse current at DC blocking voltage T <sub>C</sub> = 25°C T <sub>C</sub> = 125°C	I <sub>R</sub>	0.1 15		0.5 50		mA

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

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Thermal resistance from junction to case	R <sub>θJC</sub>	3.0	5.0	3.0	°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

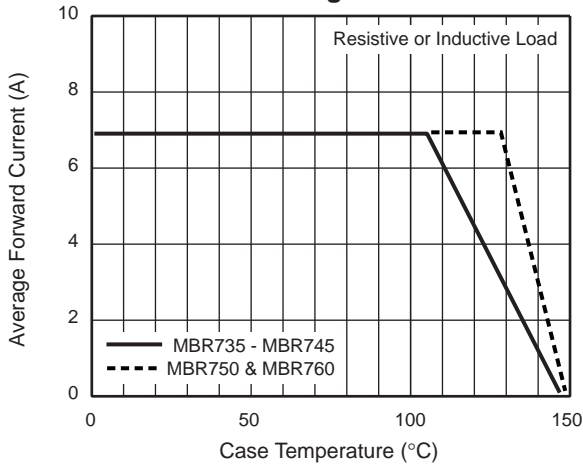
## Ordering Information

Product	Case	Package Code	Package Option
MBR735 - MBR760	TO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRF735 - MBRF760	ITO-220AC	45	Anti-Static tube, 50/tube, 2K/carton
MBRB735 - MBRB760	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

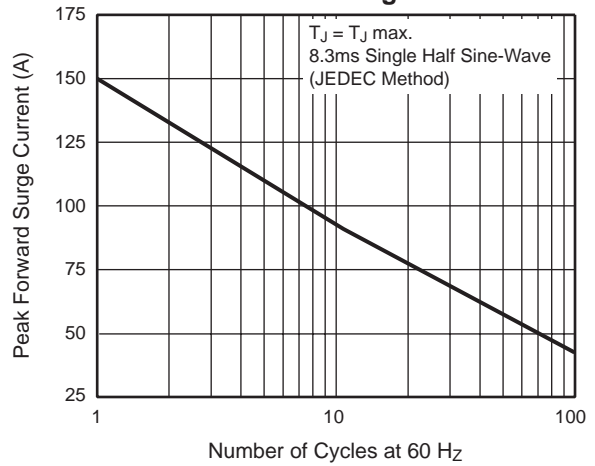


## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

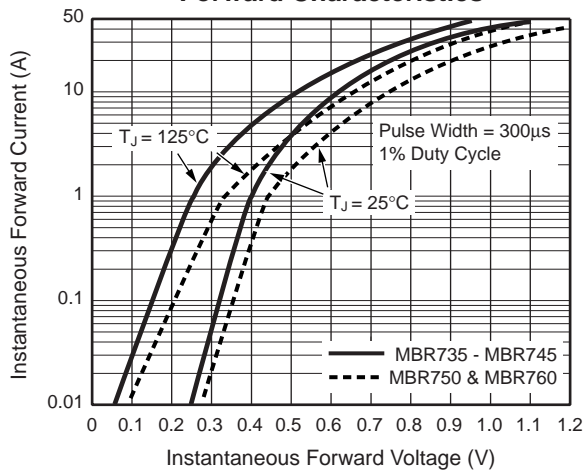
### Fig. 1 – Forward Current Derating Curve



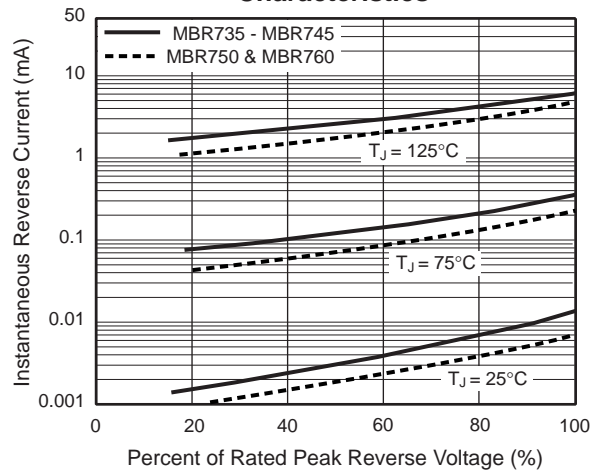
### Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current



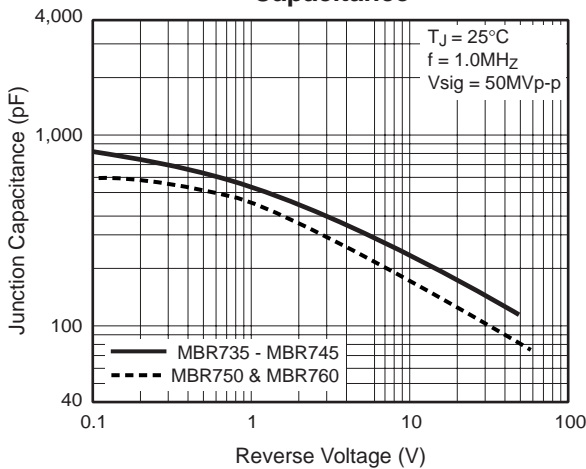
### Fig. 3 – Typical Instantaneous Forward Characteristics



### Fig. 4 – Typical Reverse Characteristics



### Fig. 5 – Typical Junction Capacitance



### Fig. 6 – Typical Transient Thermal Impedance

