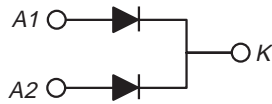




# MBR3045CT, MBRF3045CT & MBRB3045CT/CT-1 Series

New Product

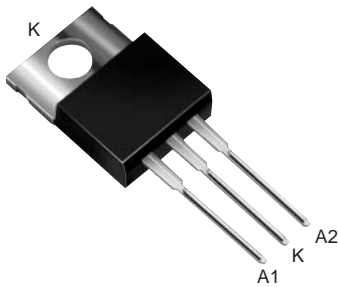
Vishay Semiconductors  
formerly General Semiconductor



## Dual Schottky Rectifiers

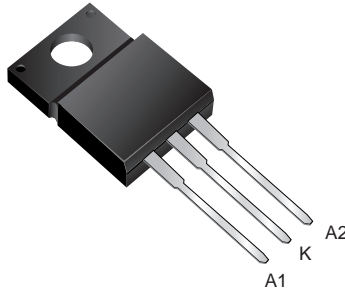
Reverse Voltage 30 to 45V  
Forward Current 30A  
Max. Forward Voltage 0.76V at 30A  
Max. Junction Temperature 150°C

TO-220AB



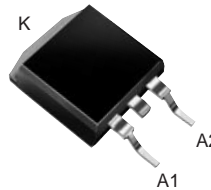
MBR3035CT  
MBR3045CT

ITO-220AB



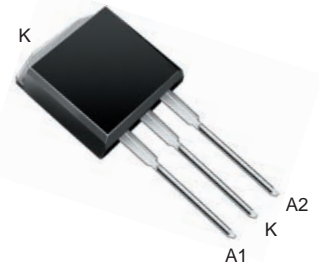
MBRF3035CT  
MBRF3045CT

TO-263AB  
(D<sup>2</sup>Pak)



MBRB3035CT  
MBRB3045CT

TO-262AA  
(I<sup>2</sup>Pak)



MBRB3035CT-1  
MBRB3045CT-1

## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Dual rectifier construction, positive center tap
- 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

## Mechanical Data

**Case:** JEDEC TO-220AB, ITO-220AB, TO-263AB & TO-262AA molded plastic body

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

High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case (TO-220AB, ITO-220AB & TO-252AA) at terminals (TO-236AB)

**Polarity:** As marked **Mounting Position:** Any

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

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

## Ordering Information

Product	Case	Package Code	Package Option
MBR3035CT - MBR3045CT	TO-220AB	45	Anti-Static tube, 50/tube, 2K/carton
MBRF3035CT - MBRF3045CT	ITO-220AB	45	Anti-Static tube, 50/tube, 2K/carton
MBRB3035CT - MBRB3045CT	TO-263AB	31	13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton
MBRB3035CT-1 - MBRB3045CT-1	TO-262AA	81	Anti-Static 13" reel, 800/reel, 4.8K/carton
		45	Anti-Static tube, 50/tube, 2K/carton

# MBR3045CT, MBRF3045CT & MBRB3045CT/CT-1 Series



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

Parameter	Symbol	MBR3035CT	MBR3045CT	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	35	45	V
Working peak reverse voltage	V <sub>RWM</sub>	35	45	V
Maximum DC blocking voltage	V <sub>DC</sub>	35	45	V
Maximum average forward rectified current <i>Total device</i> <i>Per leg</i>	I <sub>F(AV)</sub>	30 15		A
Peak repetitive forward current per leg at T <sub>C</sub> = 105°C (rated V <sub>R</sub> , square wave, 20KHz)	I <sub>FRM</sub>	30		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I <sub>FSM</sub>	200		A
Peak repetitive reverse current per leg at t <sub>p</sub> = 2μs, 1KHz	I <sub>R</sub>	2.0		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 second, RH ≤ 30%	V <sub>ISOL</sub>	4500 <sup>(1)</sup> 3500 <sup>(2)</sup> 1500 <sup>(3)</sup>		V

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

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage per leg at <sup>(4)</sup> : I <sub>F</sub> = 20A, T <sub>C</sub> = 125°C I <sub>F</sub> = 30A, T <sub>C</sub> = 25°C I <sub>F</sub> = 30A, T <sub>C</sub> = 125°C	V <sub>F</sub>	0.60 0.76 0.72	V
Maximum instantaneous reverse current per leg at rated DC blocking voltage <sup>(4)</sup> T <sub>J</sub> = 25°C T <sub>J</sub> = 125°C	I <sub>R</sub>	1.0 60	mA

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

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Typical thermal resistance per leg	R <sub>θJC</sub>	1.5	4.5	1.5	°C/W

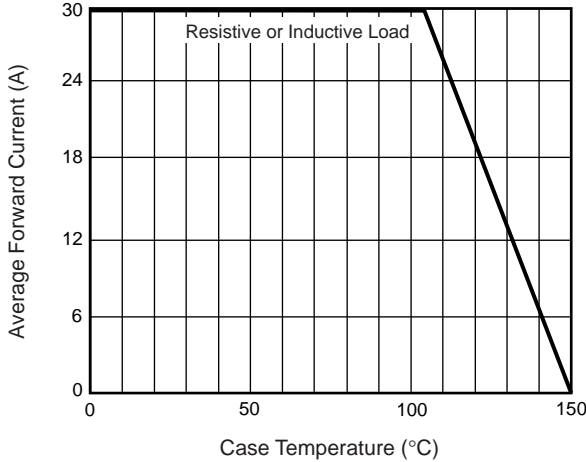
### Notes:

- (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

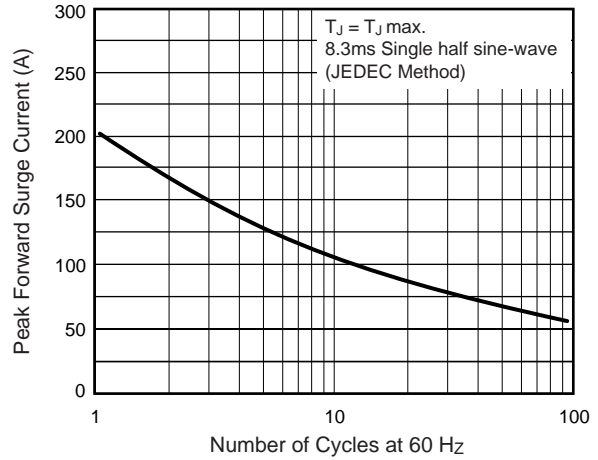


**Ratings and Characteristic Curves per leg** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

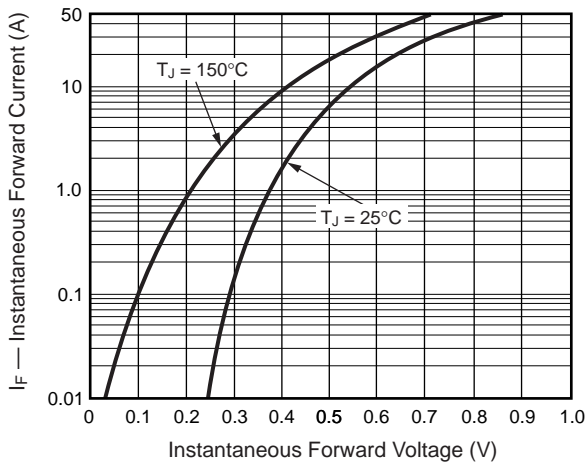
**Fig. 1 – Forward Current Derating Curve**



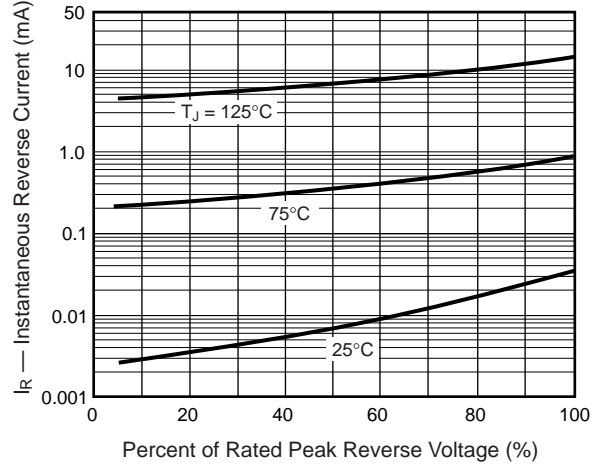
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg**



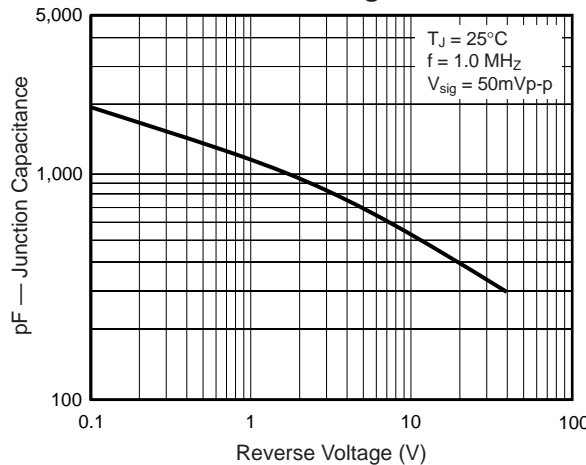
**Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg**



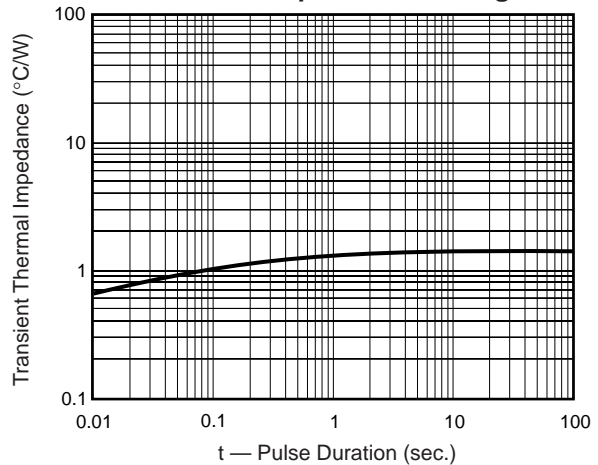
**Fig. 4 – Typical Reverse Characteristics Per Leg**



**Fig. 5 – Typical Junction Capacitance Per Leg**



**Fig. 6 – Typical Transient Thermal Impedance Per Leg**

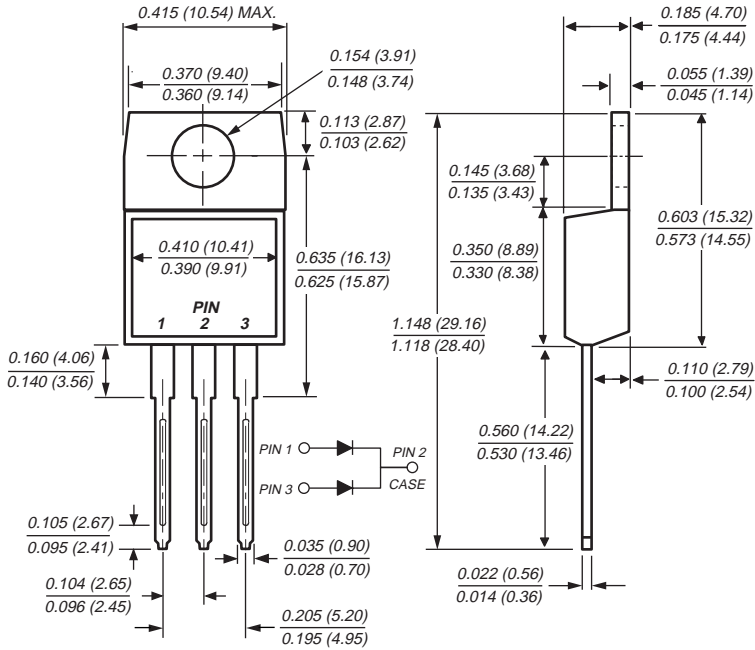


# MBR3045CT, MBRF3045CT & MBRB3045CT/CT-1 Series

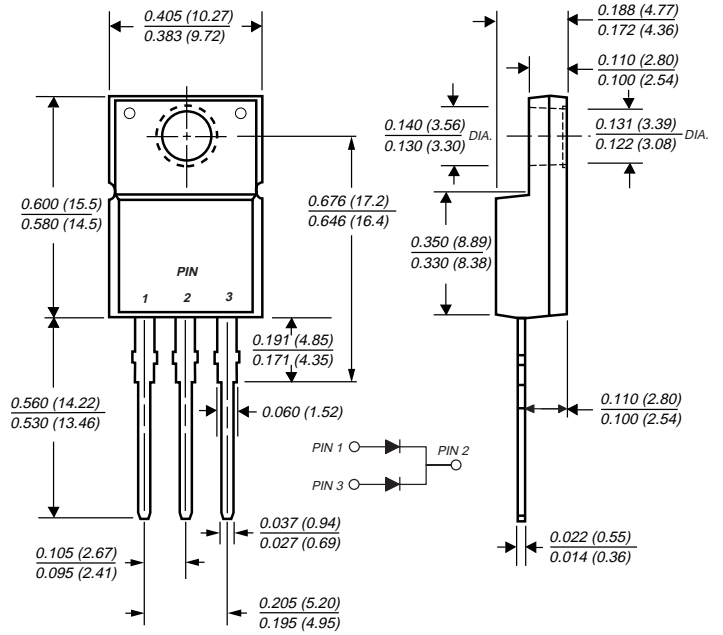


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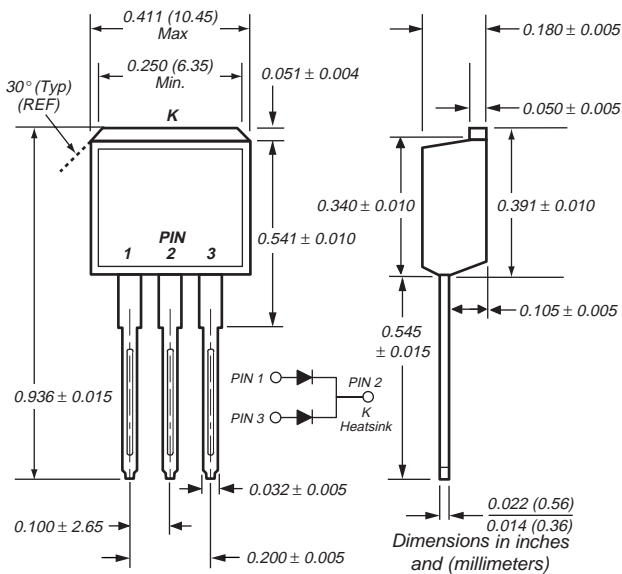
## TO-220AB (MBR3045CT, MBR3045CT)



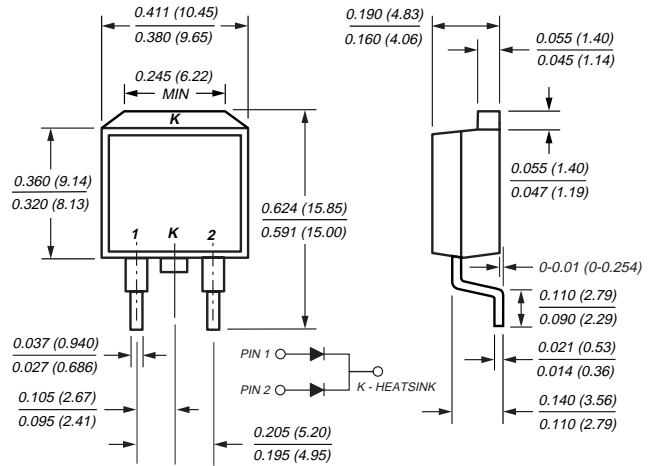
## ITO-220AB (MBRF3045CT, MBRF3045CT)



## TO-262AA (MBRB3045CT-1, MBRB3045CT-1)



## TO-263AB (MBRB3045CT, MBRB3045CT)



## Mounting Pad Layout TO-263AB

