

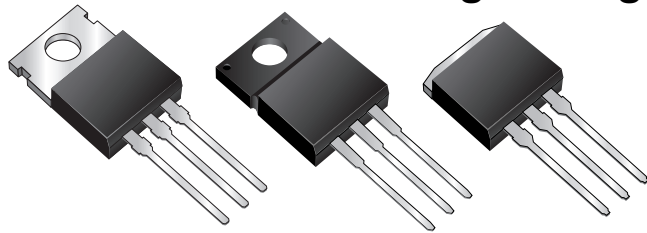


# MBR20H200CT, MBRF20H200CT & MBRB20H200CT-1 Series

New Product

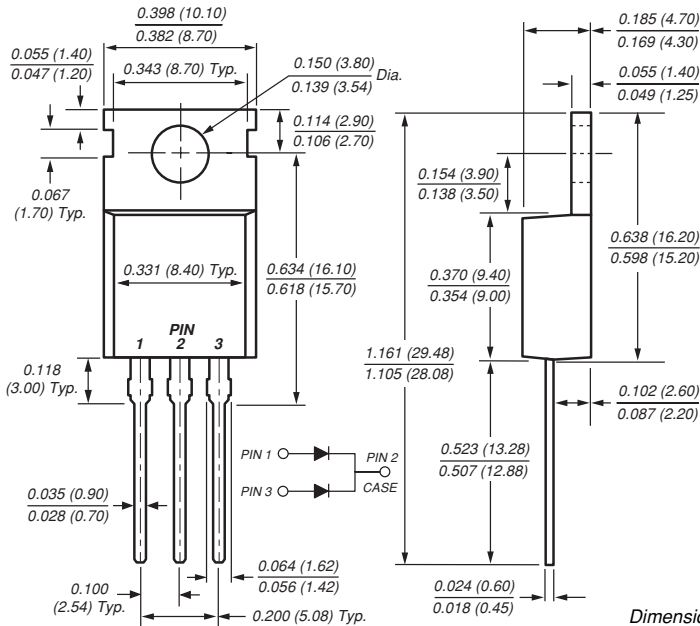
Vishay Semiconductors  
formerly General Semiconductor

## Dual High-Voltage Schottky Rectifiers

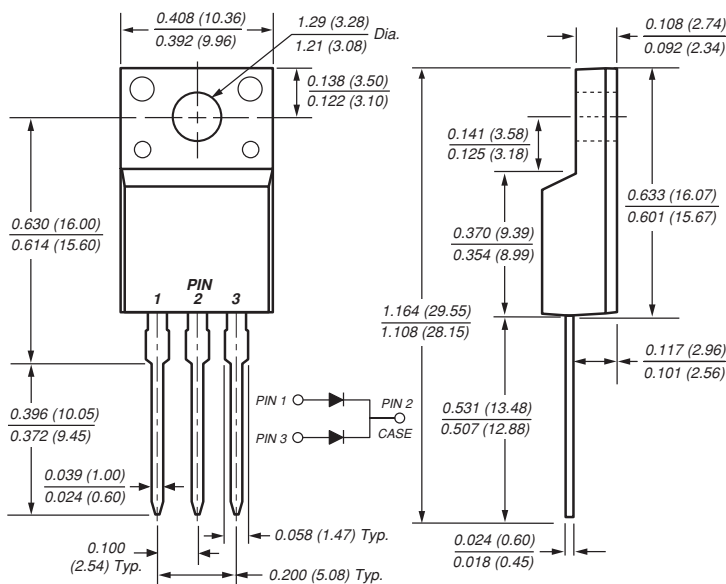


Reverse Voltage 200V  
Forward Current 20A  
Max. Junction Temperature 175°C

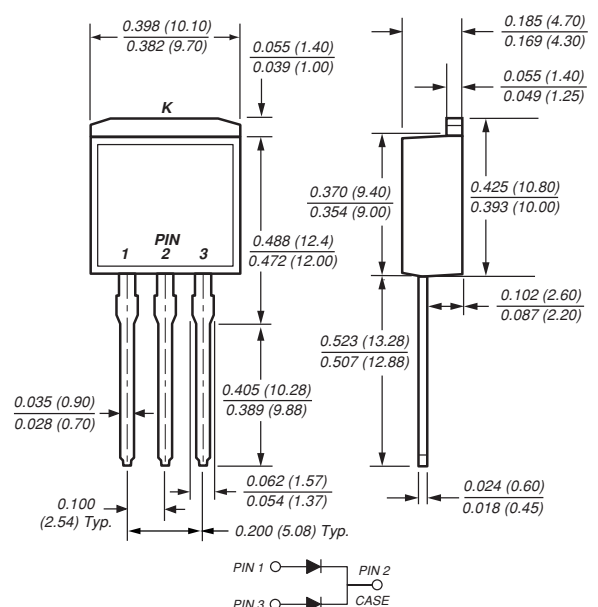
### TO-220AB (MBR20H200CT)



### ITO-220AB (MBRF20H200CT)



### TO-262AA (MBRB20H200CT-1)



## Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Dual rectifier construction, positive center tap
- Metal silicon junction, majority carrier conduction
- Low leakage current, Low power loss, High efficiency
- Guardring for overvoltage protection
- For use in high frequency switching power supplies and converters with up to 48V output, free wheeling, and polarity protection applications
- Rated for reverse surge and ESD

## Mechanical Data

**Case:** JEDEC TO-220AB, ITO-220AB, 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) at terminals (TO-236AB)

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

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

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

# MBR20H200CT, MBRF20H200CT & MBRB20H200CT-1 Series



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

Parameter	Symbol	MBR20H200CT	MBRF20H200CT	MBRB20H200CT-1	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>		200		V
Working peak reverse voltage	V <sub>RWM</sub>		200		V
Maximum DC blocking voltage	V <sub>DC</sub>		200		V
Maximum average forward rectified current <i>Total device</i> (Fig. 1) <i>Per leg</i>	I <sub>F(AV)</sub>		20 10		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I <sub>FSM</sub>		290		A
Peak repetitive reverse current per leg at t <sub>p</sub> = 2μs, 1KHZ	I <sub>RRM</sub>		1.0		A
Peak non-repetitive reverse surge energy (8/20μs waveform)	E <sub>RSM</sub>		20		mJ
Non-repetitive avalanche energy per leg at 25°C, E <sub>AS</sub> = 2.0A, L=10mH	E <sub>AS</sub>		20		mJ
Electrostatic discharge capacitor voltage Human body model: C = 100pF, R = 1.5KΩ	V <sub>C</sub>		25		KV
Voltage rate of change (rated V <sub>R</sub> )	dv/dt		10,000		V/μs
Operating junction and storage temperature range	T <sub>J</sub> , 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	Typical	Maximum	Unit
Maximum instantaneous forward voltage per leg at: I <sub>F</sub> = 10A, T <sub>J</sub> = 25°C I <sub>F</sub> = 10A, T <sub>J</sub> = 125°C I <sub>F</sub> = 20A, T <sub>J</sub> = 25°C I <sub>F</sub> = 20A, T <sub>J</sub> = 125°C	V <sub>F</sub>	0.81 0.65 0.87 0.74	0.88 0.75 0.97 0.85	V
Maximum reverse current per leg at working peak reverse voltage <sup>(4)</sup> T <sub>J</sub> = 25°C T <sub>J</sub> = 125°C	I <sub>R</sub>		5.0 1.0	μA mA
Typical junction capacitance at 4.0V, 1MHZ	C <sub>J</sub>		250	pF

## 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>	2.0	4.0	2.0	°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 does overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.97")
- (4) Pulse test: 300μs pulse width, 1% duty cycle

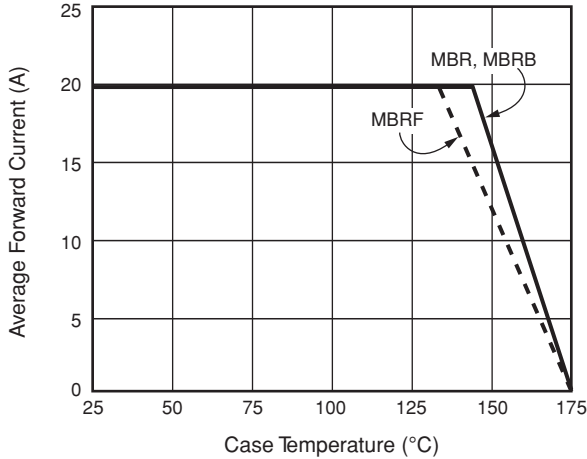
## Ordering Information

Product	Case	Package Code	Package Option
MBR20H200CT	TO-220AB	45	Anti-Static tube, 50/tube, 1K/carton
MBRF20H200CT	TO-200AB	45	Anti-Static tube, 50/tube, 1K/carton
MBRB20H200CT-1	TO-262AA	45	Anti-Static tube, 50/tube, 1K/carton

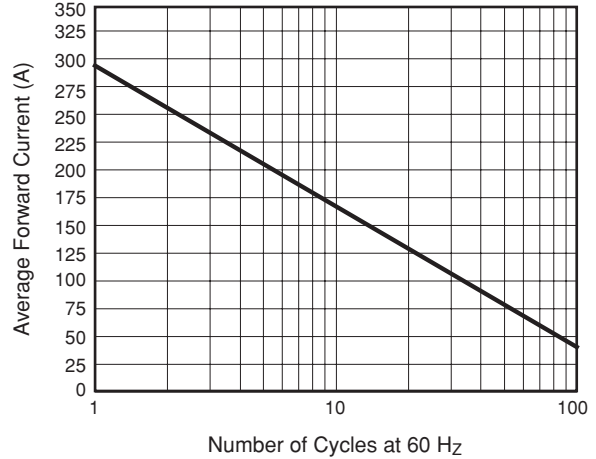


**Ratings and Characteristic Curves** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

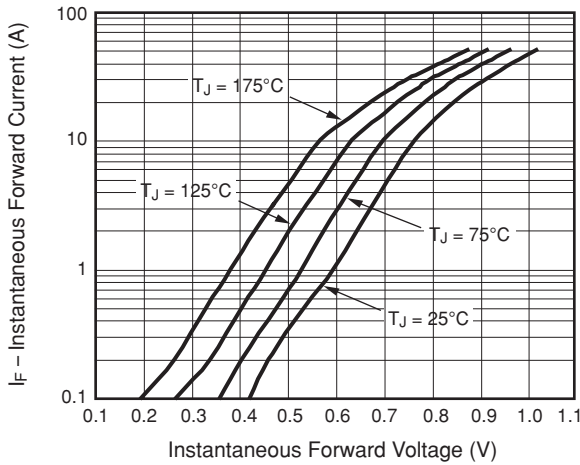
**Fig. 1 – Forward Derating Curve**



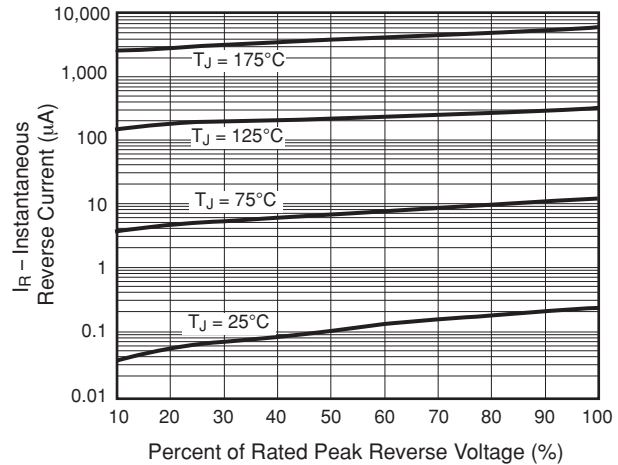
**Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current**



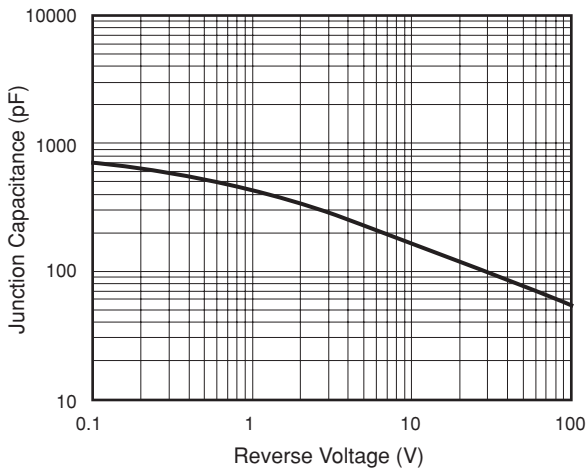
**Fig. 3 – Typical Instantaneous Forward Characteristics**



**Fig. 4 – Typical Reverse Characteristics**



**Fig. 5 – Typical Junction Capacitance**



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

