

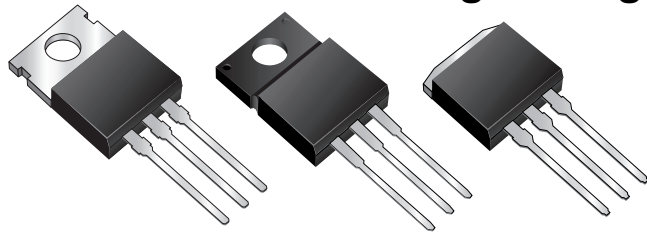


MBR20H150CT, MBRF20H150CT & MBRB20H150CT-1 Series

New Product

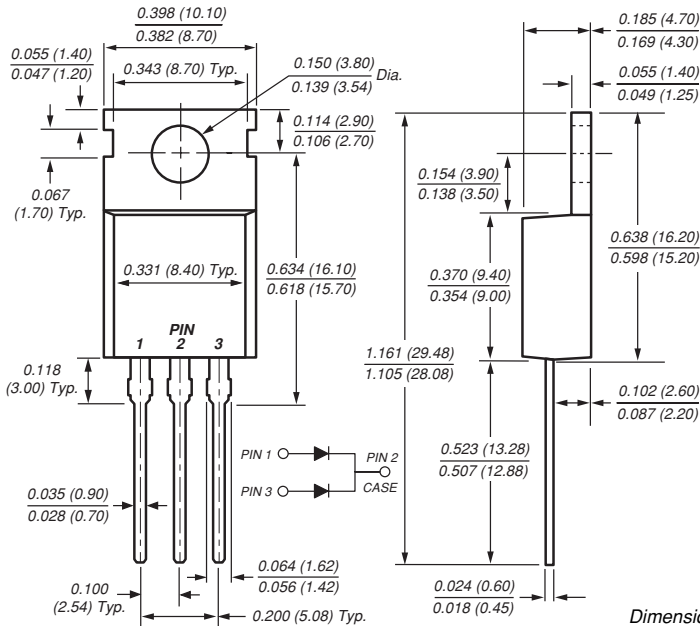
Vishay Semiconductors
formerly General Semiconductor

Dual High-Voltage Schottky Rectifiers



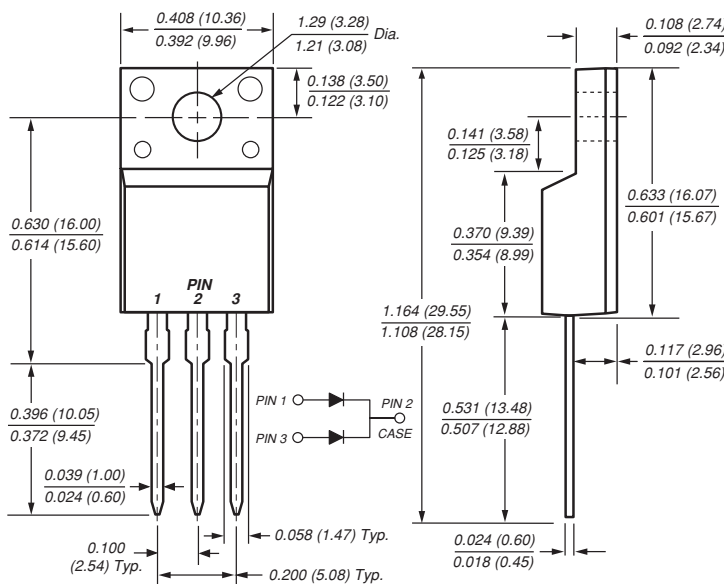
Reverse Voltage 150V
Forward Current 20A
Max. Junction Temperature 175°C

TO-220AB (MBR20H150CT)

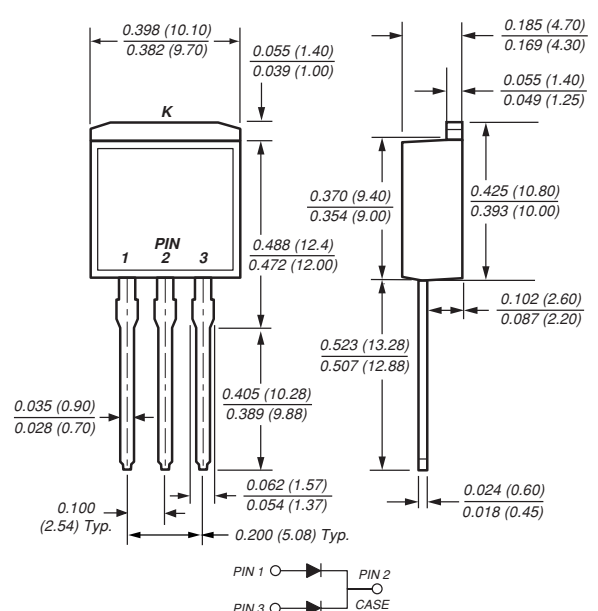


Dimensions in inches
and (millimeters)

ITO-220AB (MBRF20H150CT)



TO-262AA (MBRB20H150CT-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 inverters, free wheeling, and polarity protection applications

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

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Maximum Ratings (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR20H150CT	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	150	V
Working peak reverse voltage	V _{RWM}	150	V
Maximum DC blocking voltage	V _{DC}	150	V
Maximum average forward rectified current <i>Total device</i> <i>Per leg</i>	I _{F(AV)}	20 10	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I _{FSM}	200	A
Peak repetitive reverse current per leg at t _p = 2μs, 1KHz	I _{RRM}	1.0	A
Peak non-repetitive reverse surge energy per leg (8/20μs waveform)	E _{RSM}	10	mJ
Non-repetitive avalanche energy per leg at 25°C, I _{AS} = 1.5A, L=10mH	E _{AS}	11.25	mJ
Voltage rate of change (rated V _R)	dv/dt	10,000	V/μs
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +175	°C
RMS Isolation voltage (MBRF type only) from terminals to heatsink with t = 1 second, RH ≤ 30%	V _{ISOL}	4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾	V

Electrical Characteristics (T_C = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Maximum instantaneous forward voltage per leg at ⁽⁴⁾ : I _F = 10A, T _C = 25°C I _F = 10A, T _C = 125°C I _F = 20A, T _C = 25°C I _F = 20A, T _C = 125°C	V _F	0.90 0.75 0.99 0.86	V
Maximum reverse current per leg at working peak reverse voltage	I _R	5.0 1.0	μA mA

Thermal Characteristics (T_C = 25°C unless otherwise noted)

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Typical thermal resistance per leg	R _{θJC}	2.2	4.2	2.2	°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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Forward Derating Curve (Total)

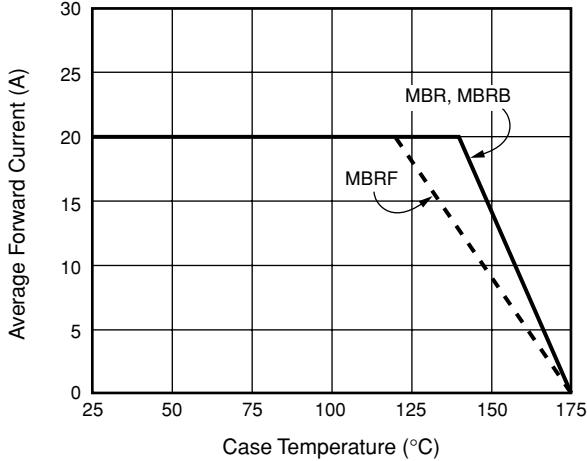


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

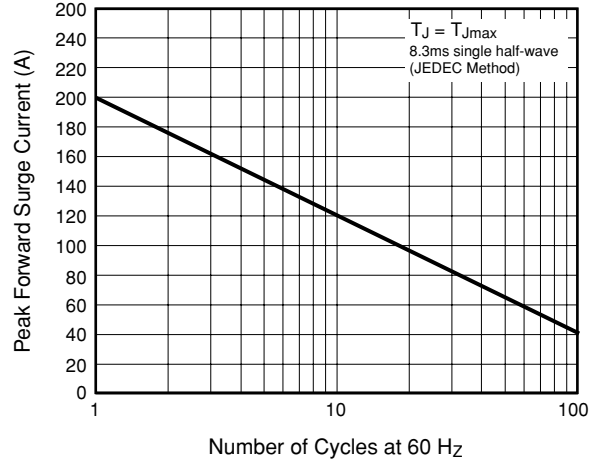


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

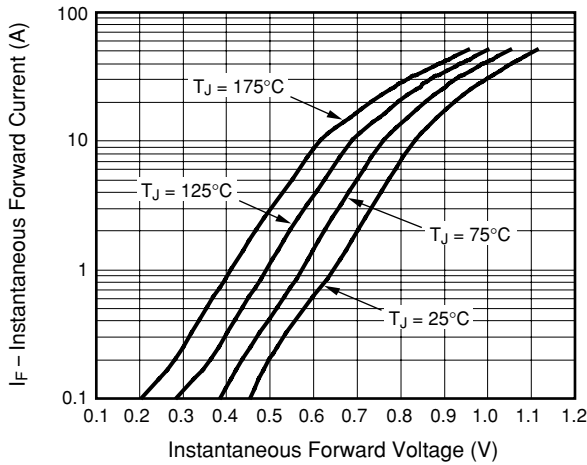


Fig. 4 – Typical Reverse Characteristics Per Leg

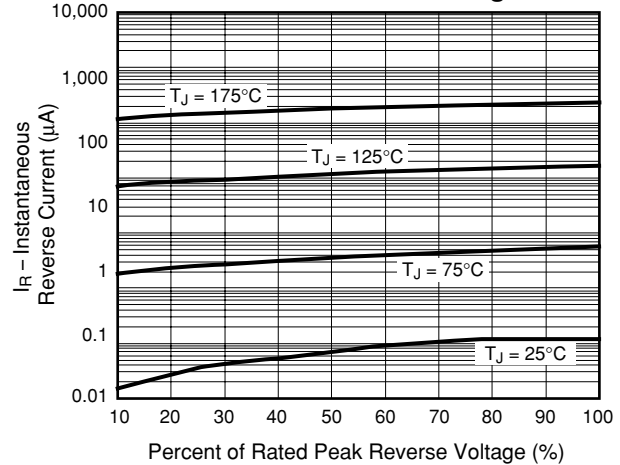


Fig. 5 – Typical Junction Capacitance Per Leg

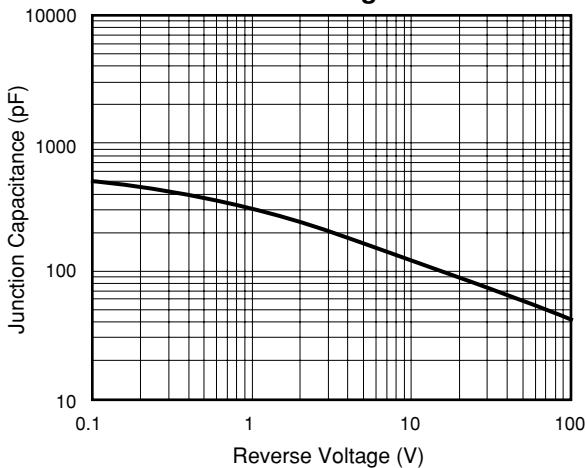
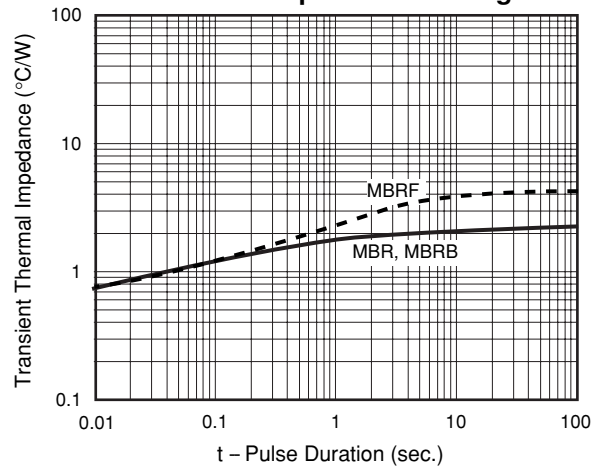


Fig. 6 – Typical Transient Thermal Impedance Per Leg



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