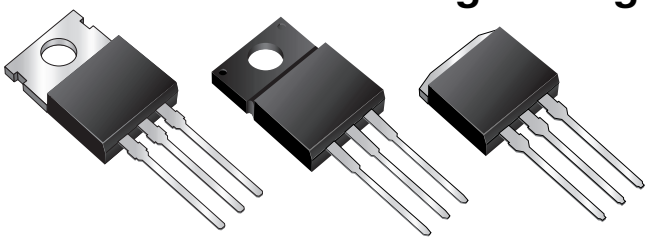
MBR30H150CT, MBRF30H150CT & MBRB30H150CT-1 Series

New Product

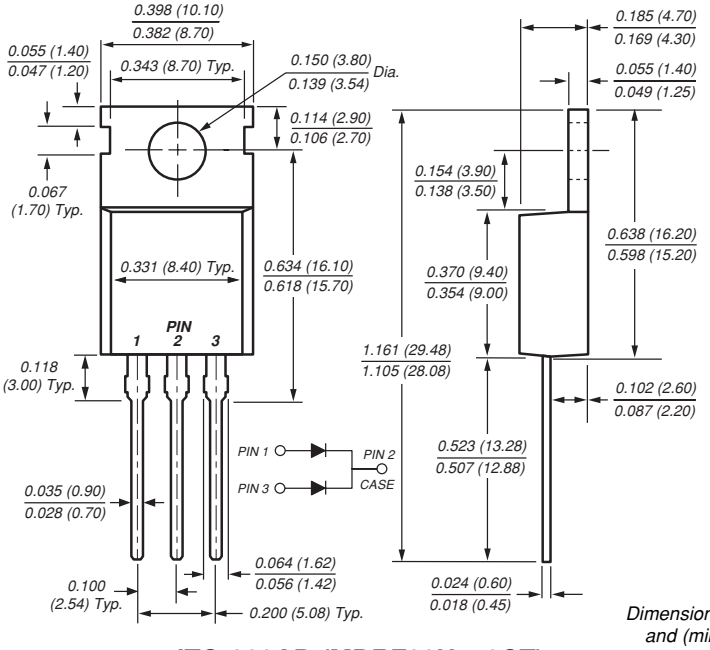
Vishay Semiconductors
formerly General Semiconductor

Dual High-Voltage Schottky Rectifiers



Reverse Voltage 150V
Forward Current 30A
Max. Junction Temperature 175°C

TO-220AB (MBR30H150CT)



Dimensions in inches and (millimeters)

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

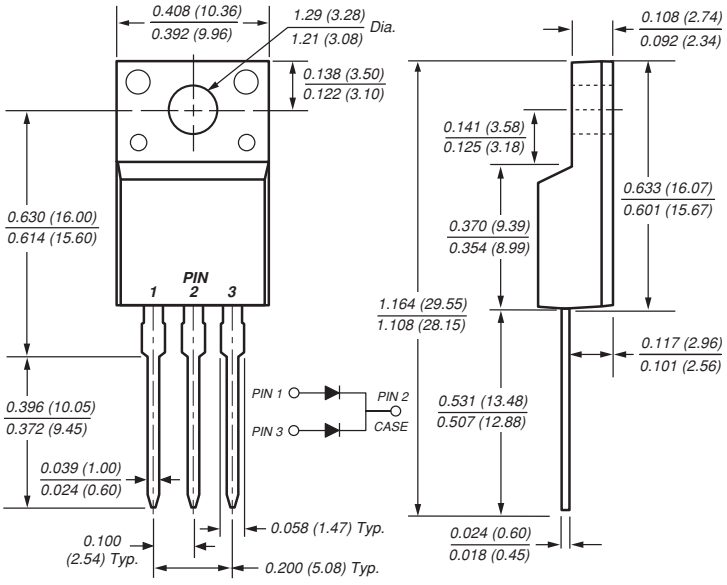
High temperature soldering guaranteed: 250°C/10 seconds, 0.25" (6.35mm) from case (TO-220AB, ITO-220AB) at terminals (TO-236AB)

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

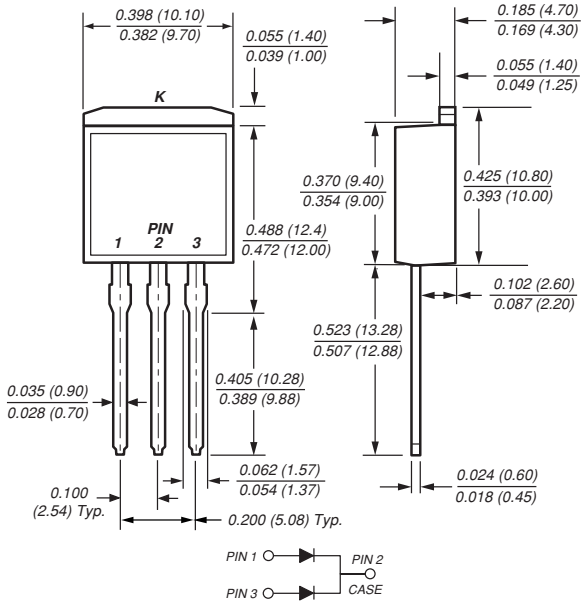
Mounting Torque: 10 in-lbs maximum

Weight: 0.08 oz., 2.24 g

ITO-220AB (MBRF30H150CT)



TO-262AA (MBRB30H150CT-1)



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

Parameter	Symbol	MBR30H150CT	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 *Total device* *Per leg*	$I_{F(AV)}$	30 15	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	I_{FSM}	260	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} = 2.0A, L=10mH	E_{AS}	20	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 = 15A, T_C = 25°C	V_F	0.90	V
	I_F = 15A, T_C = 125°C		0.75	
	I_F = 30A, T_C = 25°C		0.99	
	I_F = 30A, T_C = 125°C		0.86	
Maximum reverse current per leg at working peak reverse voltage	T_J = 25°C	I_R	5.0	µA
	T_J = 125°C		1.0	mA

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

Parameter	Symbol	MBR	MBRF	MBRB	Unit
Typical thermal resistance per leg	$R_{\Theta JC}$	1.7	4.0	1.7	°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°C unless otherwise noted)

Fig. 1 – Forward Derating Curve (Total)

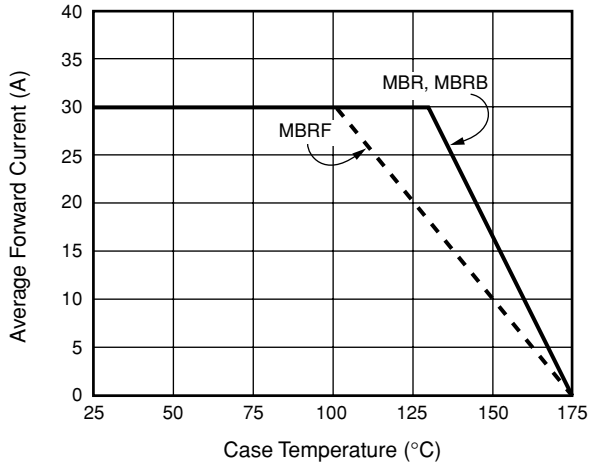


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current Per Leg

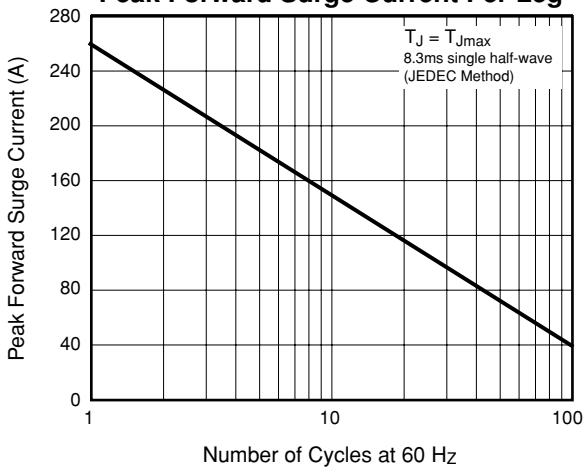


Fig. 3 – Typical Instantaneous Forward Characteristics Per Leg

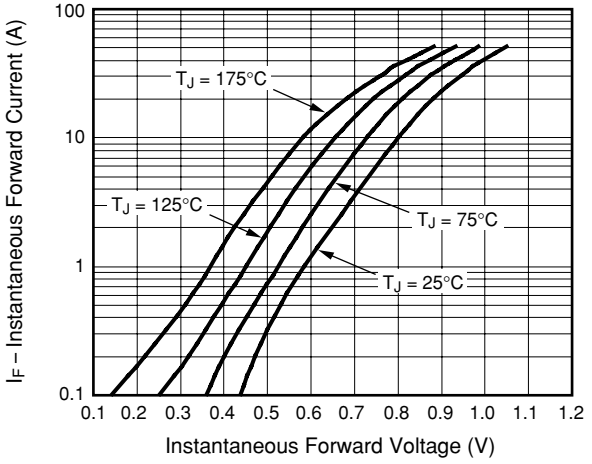


Fig. 4 – Typical Reverse Characteristics Per Leg

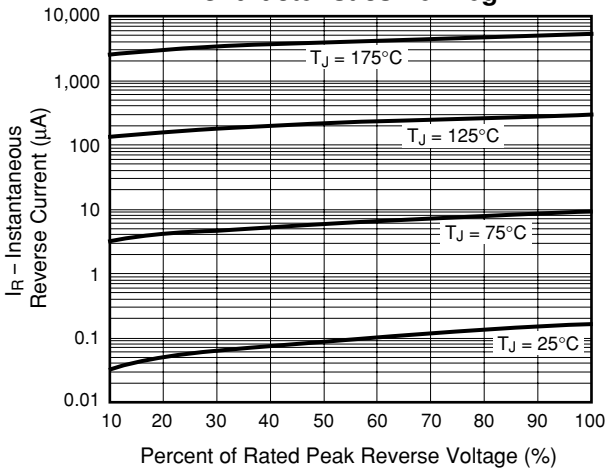


Fig. 5 – Typical Junction Capacitance Per Leg

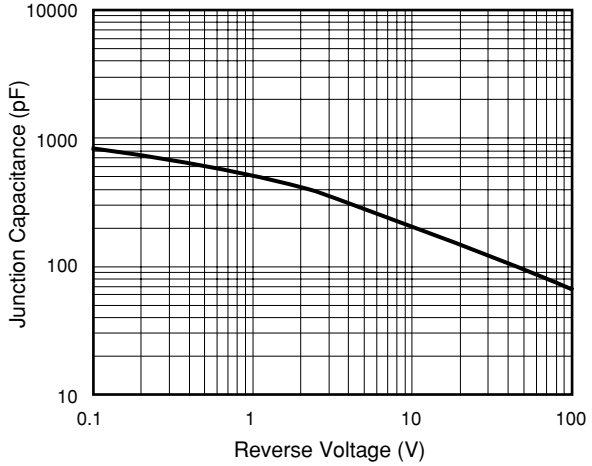


Fig. 6 – Typical Transient Thermal Impedance Per Leg