

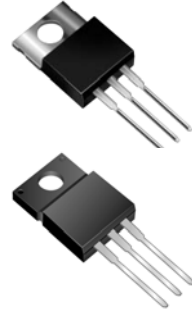


# MBR30150CT, MBRF30150CT

Dual Common-Cathode High-Voltage Schottky Barrier Rectifiers  
Reverse Voltage 150 Volts Forward Current 30.0 Amperes

## Features

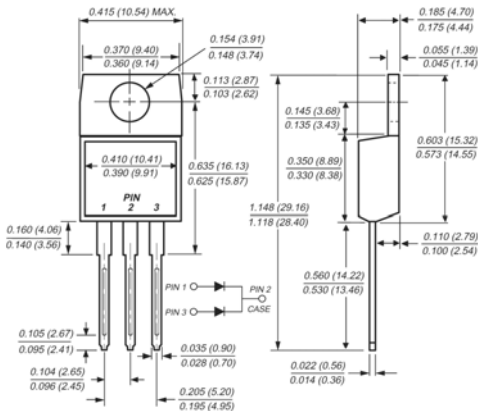
- ◆ Guardring for overvoltage protection
- ◆ Low power loss, high efficiency
- ◆ Low forward voltage drop
- ◆ High frequency operation
- ◆ Solder Dip 260 °C, 40 seconds
- ◆ For use in high frequency inverters, free wheeling and polarity protection applications



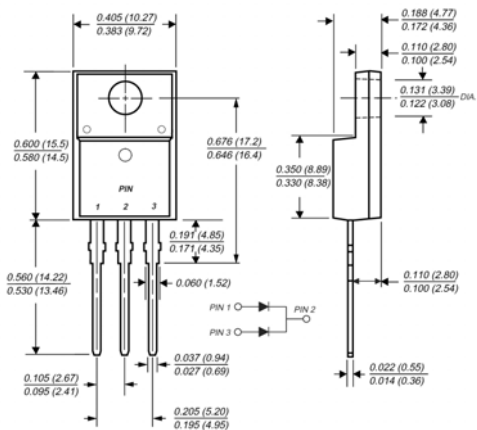
## Mechanical Data

- ◆ Case: TO-220AB, ITO-220AB Epoxy meets UL-94V-0 Flammability rating
- ◆ Terminals: Matte Tin plated (E3 Suffix) leads, solderable per J-STD-002B and JESD22-B102D
- ◆ Mounting Torque: 10 in-lbs maximum
- ◆ Polarity: As marked
- ◆ Weight: 0.08 ounce, 2.24 grams

### TO-220AB



### ITO-220AB



Dimensions in inches and (millimeters)

## Maximum Ratings and Electrical Characteristics

( $T_C = 25^\circ\text{C}$  unless otherwise noted)

Parameter	Symbol	MBR30150CT	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	150	Volts
Working peak reverse voltage	$V_{RWM}$	150	Volts
Maximum DC blocking voltage	$V_{DC}$	150	Volts
Maximum average forward rectified current (See Fig. 1)	Total device Per leg $I_{F(AV)}$	30 15	Amps
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) per leg	$I_{FSM}$	260	Amps
Peak repetitive reverse current per leg at $t_p = 2.0\mu\text{s}$ , 1KHz	$I_{RRM}$	1.0	Amp
Voltage rate of change (rated $V_R$ )	$dv/dt$	10,000	V/ $\mu\text{s}$
Maximum instantaneous forward voltage per leg (Note 4) at $I_F=15\text{A}$ , $T_C=25^\circ\text{C}$ at $I_F=15\text{A}$ , $T_C=125^\circ\text{C}$ at $I_F=30\text{A}$ , $T_C=25^\circ\text{C}$ at $I_F=30\text{A}$ , $T_C=125^\circ\text{C}$	$V_F$	0.90 0.75 0.99 0.86	Volt
Maximum reverse current per leg at working peak reverse voltage $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	$I_R$	5.0 1.0	$\mu\text{A}$ mA
Typical thermal resistance per leg	$R_{\theta JC}$	MBR 1.7 / MBRF 4.0	$^\circ\text{C/W}$
RMS Isolation voltage (MBRF type only) from terminals to heatsink with $t = 1.0$ second, $RH \leq 30\%$	$V_{ISOL}$	4500 (Note 1) 3500 (Note 2) 1500 (Note 3)	Volts
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

- 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: 300 $\mu\text{s}$  pulse width, 1% duty cycle

# RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

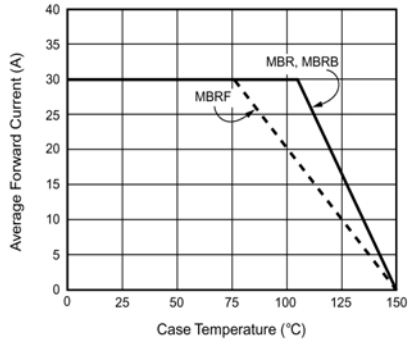


Figure 1. Forward Derating Curve (Total)

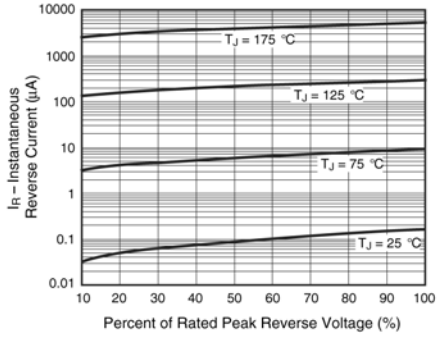


Figure 4. Typical Reverse Characteristics Per Leg

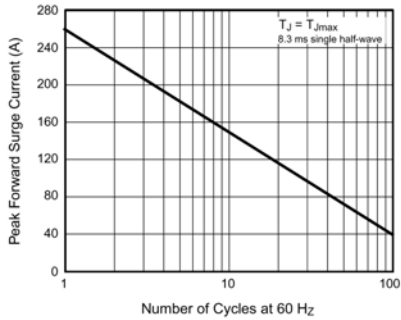


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Leg

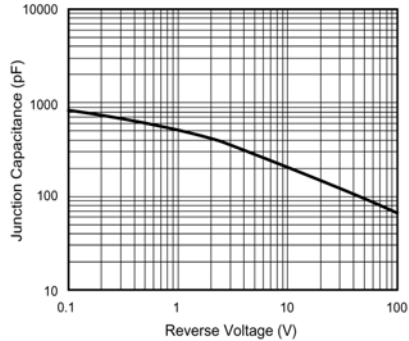


Figure 5. Typical Junction Capacitance Per Leg

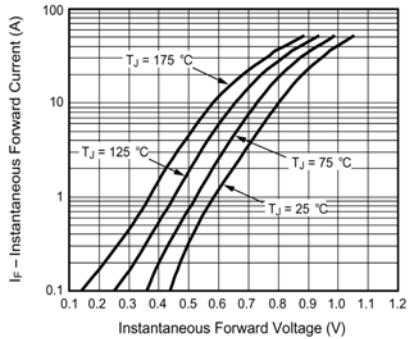


Figure 3. Typical Instantaneous Forward Characteristics Per Leg

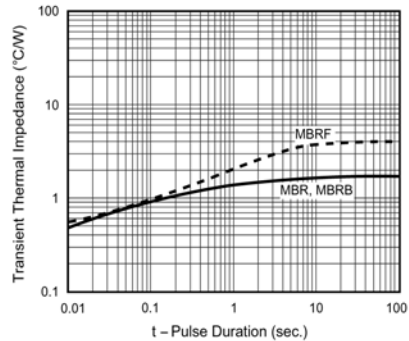


Figure 6. Typical Transient Thermal Impedance Per Leg