



## MBR30L45CT - MBR30L100CT

### 30.0AMPS Low $V_F$ Schottky Barrier Rectifiers

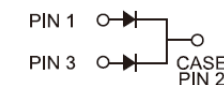
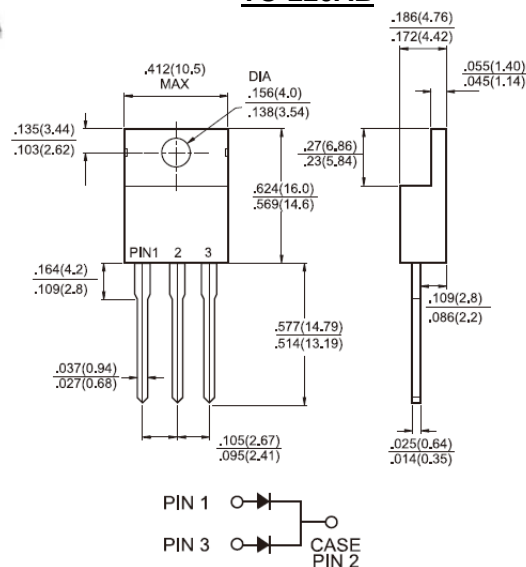
#### TO-220AB

#### Features

- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ Plastic material used carries Underwriters Laboratory Classification 94V-0
- ✧ High surge current capability
- ✧ Guard-ring for overvoltage protection
- ✧ For use in low voltage - high frequency inverter, free wheeling, and polarity protection application
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds/.375", (9.5mm) lead lengths at 5 lbs.,(2.3kg) tension
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

#### Mechanical Data

- ✧ Case: JEDEC TO-220AB molded plastic
- ✧ Terminals: Pure tin plated leads, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 5 in- lbs, max
- ✧ Weight: 1.92 grams



#### Dimensions in inches and (millimeters)

#### Marking Diagram

MBR30LXXCT = Specific Device Code  
G = Green Compound  
Y = Year  
WW = Work Week



#### Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	MBR 30L45CT	MBR 30L60CT	MBR 30L100CT	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	45	60	100	V
Maximum RMS Voltage	V <sub>RMS</sub>	31	42	70	V
Maximum DC Blocking Voltage	V <sub>DC</sub>	45	60	100	V
Maximum Average Forward Rectified Current	I <sub>F(AV)</sub>	30			A
Peak Repetitive Forward Current (Rated V <sub>R</sub> , Square Wave, 20KHz)	I <sub>FRM</sub>	30			A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	I <sub>FSM</sub>	220			A
Peak Repetitive Reverse Surge Current (Note 1)	I <sub>RRM</sub>	1			A
Maximum Instantaneous Forward Voltage (Note 2) IF=15A, T <sub>A</sub> =25℃ IF=15A, T <sub>A</sub> =125℃	V <sub>F</sub>	0.55 0.50	0.60 0.56	0.77 0.67	V
Maximum Reverse Current @ Rated V <sub>R</sub> T <sub>A</sub> =25℃ T <sub>A</sub> =100℃	I <sub>R</sub>	0.4 200	0.48 150	0.5 32	mA
Voltage Rate of Change,(Rated V <sub>R</sub> )	dV/dt	10000			V/us
Typical Junction Capacitance (Note 3)	C <sub>j</sub>	600	460		pF
Typical Thermal Resistance	R <sub>θJC</sub>	1			℃/W
Operating Temperature Range	T <sub>J</sub>	- 65 to + 150			℃
Storage Temperature Range	T <sub>STG</sub>	- 65 to + 175			℃

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

Note 3: Measure at 1 MHz and Applied Reverse Voltage of 4.0V D.C.

## RATINGS AND CHARACTERISTIC CURVES (MBR30L45CT THRU MBR30L100CT)

FIG.1 FORWARD CURRENT DERATING CURVE

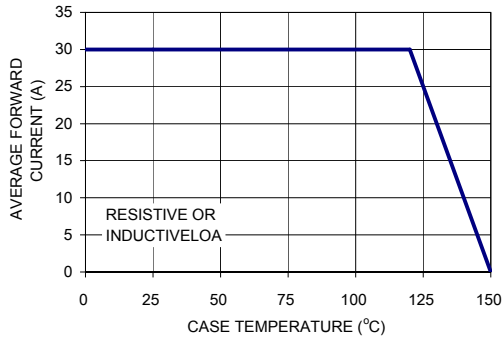


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

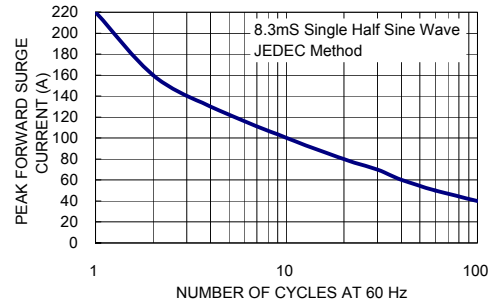


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

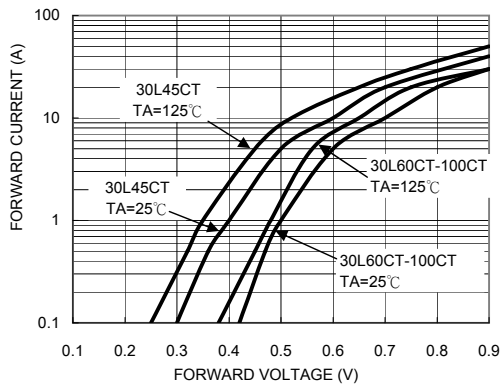


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

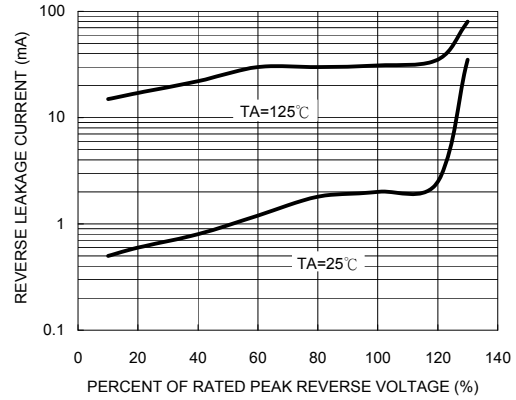


FIG. 5 TYPICAL JUNCTION CAPACITANCE

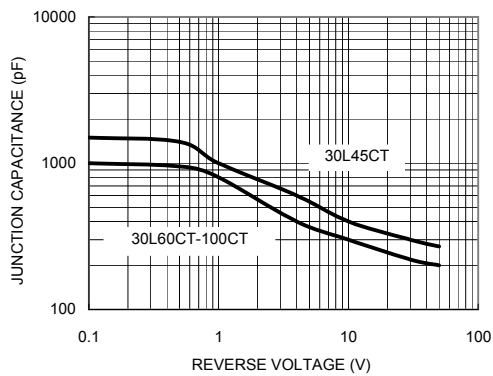


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

