



**KERSEMI**

**MBR30L45CT - MBR30L100CT**

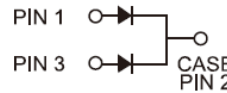
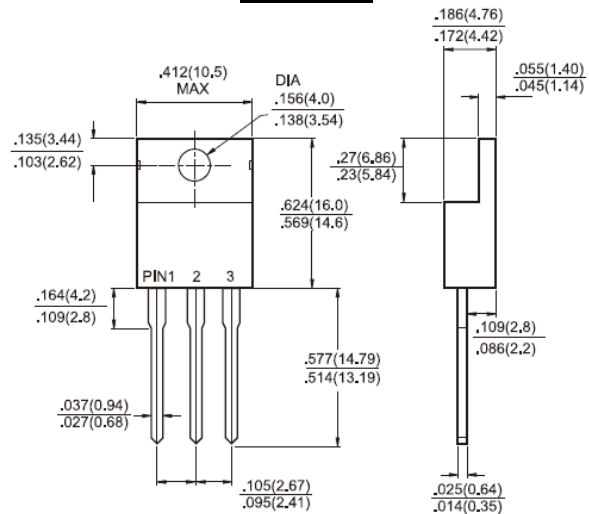
**TO-220AB**

**Features**

- ✧ UL Recognized File # E-326243
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ Plastic material used carriers 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	$V_{RRM}$	45	60	100	V
Maximum RMS Voltage	$V_{RMS}$	31	42	70	V
Maximum DC Blocking Voltage	$V_{DC}$	45	60	100	V
Maximum Average Forward Rectified Current @ $T_C=120^\circ C$	$I_{F(AV)}$	30			A
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20KHz) at $T_C=130^\circ C$	$I_{FRM}$	30			A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	$I_{FSM}$	220			A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	1			A
Maximum Instantaneous Forward Voltage $I_F=15A, T_A=25^\circ C$ $I_F=15A, T_A=125^\circ C$ $I_F=30A, T_A=25^\circ C$ $I_F=30A, T_A=125^\circ C$	$V_F$	0.55 0.50 0.74 0.67	0.60 0.56 0.75 0.70	0.66 0.57 0.80 0.66	V
Maximum Reverse Current @ Rated $V_R$ $T_A=25^\circ C$ (Note 2) $T_A=100^\circ C$	$I_R$	0.4 200	0.48 150	0.2 15	uA mA
Voltage Rate of Change, (Rated $V_R$ )	$dV/dt$	10000			V/us
Typical Junction Capacitance (Note 3)	$C_j$	600	460		pF
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	1			$^\circ C/W$
Operating Temperature Range	$T_J$	- 65 to + 150			$^\circ C$
Storage Temperature Range	$T_{STG}$	- 65 to + 175			$^\circ C$

- 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.
- Note 4: Heatsink Size (4" x 6" x 0.25") Al-Plate

FIG.1 FORWARD CURRENT DERATING CURVE

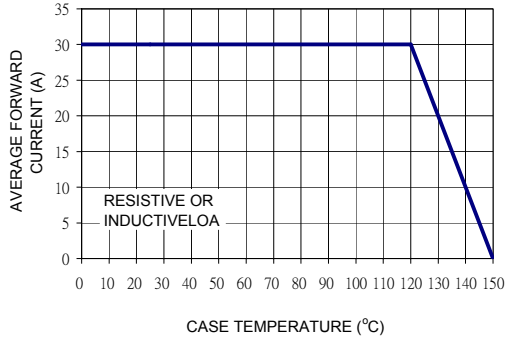


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

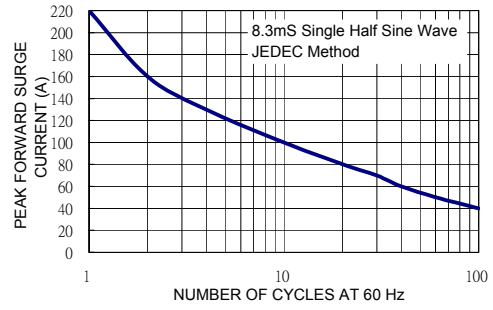


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

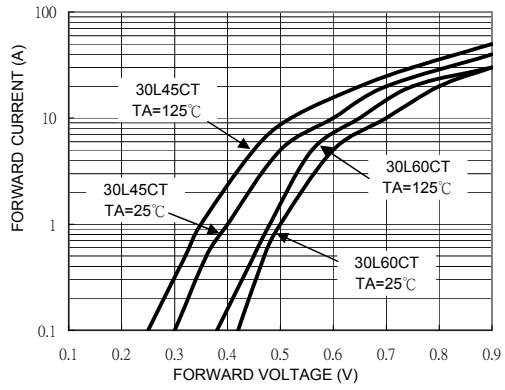


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

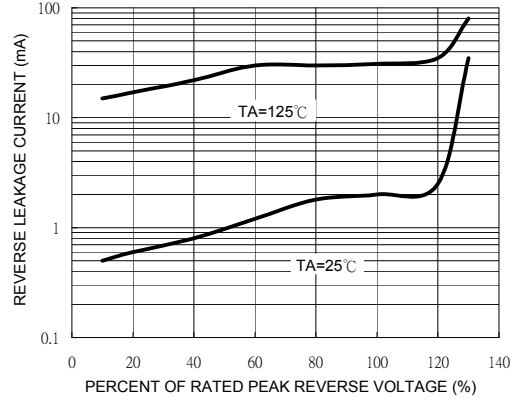


FIG. 5 TYPICAL JUNCTION CAPACITANCE

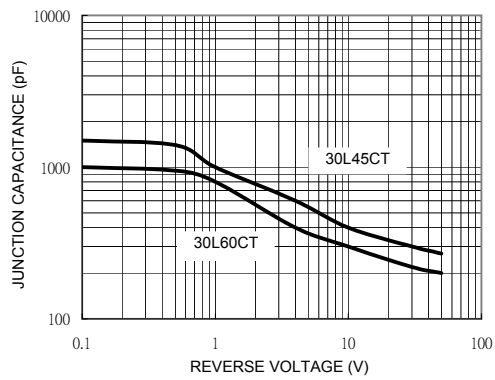


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

