

Features

- ✧ 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



Mechanical Data

- ✧ Case: TO-220AB
- ✧ 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

Ordering Information(example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
MBR20L100CT	TO-220AB	50 / TUBE	D0	D0G

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	MBR20L100CT		MBR20L120CT		Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100		120		V
Maximum RMS Voltage	V_{RMS}	70		84		V
Maximum DC Blocking Voltage	V_{DC}	100		120		V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	20				A
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	20				A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	I_{FSM}	150				A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1				A
Maximum Instantaneous Forward Voltage (Note 2) $I_F=10A, T_A=25^{\circ}C$ $I_F=10A, T_A=125^{\circ}C$ $I_F=20A, T_A=25^{\circ}C$ $I_F=20A, T_A=125^{\circ}C$	V_F	TYP	MAX	TYP	MAX	V
		0.72	0.75	0.78	0.83	
		0.58	0.68	0.63	0.72	
		0.81	0.85	0.86	0.90	
		0.67	0.75	0.73	0.80	
Maximum Reverse Current @ Rated V_R $T_A=25^{\circ}C$ $T_A=100^{\circ}C$	I_R	TYP	MAX	TYP	MAX	uA mA
		1.10	20	1.00	20	
		1.20	15	1.40	10	
Voltage Rate of Change,(Rated V_R)	dV/dt	10000				V/us
Typical Junction Capacitance (Note 3)	C_j	435		270		pF
Typical Thermal Resistance	$R_{\theta JC}$	2.8		3.0		$^{\circ}C/W$
Operating Temperature Range	T_J	- 55 to + 150				$^{\circ}C$
Storage Temperature Range	T_{STG}	- 55 to + 150				$^{\circ}C$

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.

RATINGS AND CHARACTERISTIC CURVES (MBR20L100CT - MBR20L120CT)

FIG.1 FORWARD CURRENT DERATING CURVE

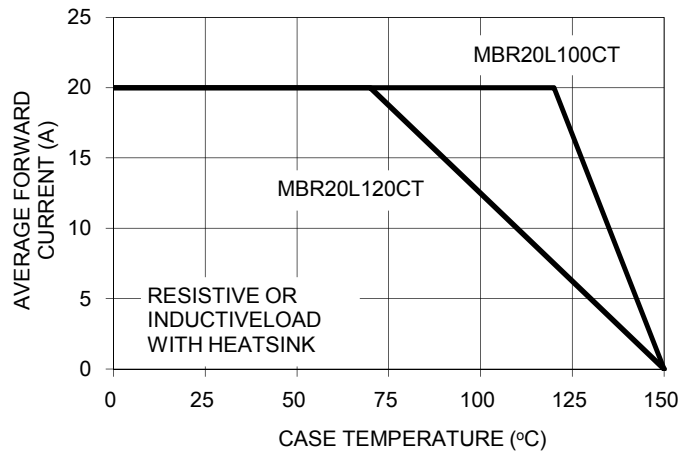


FIG. 2 MAXIMUM FORWARD SURGE CURRENT PER LEG

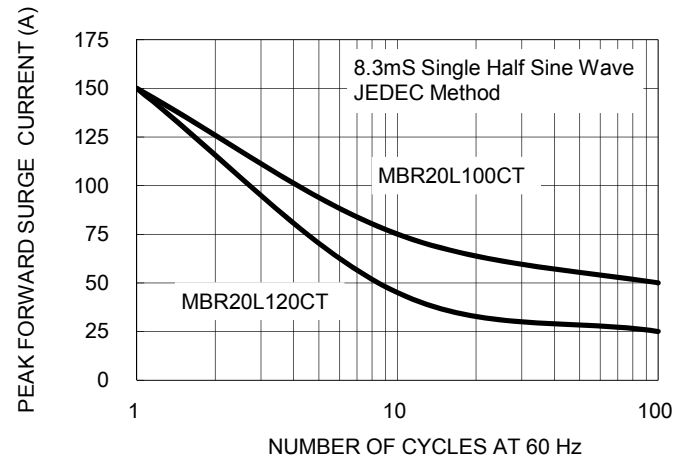


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

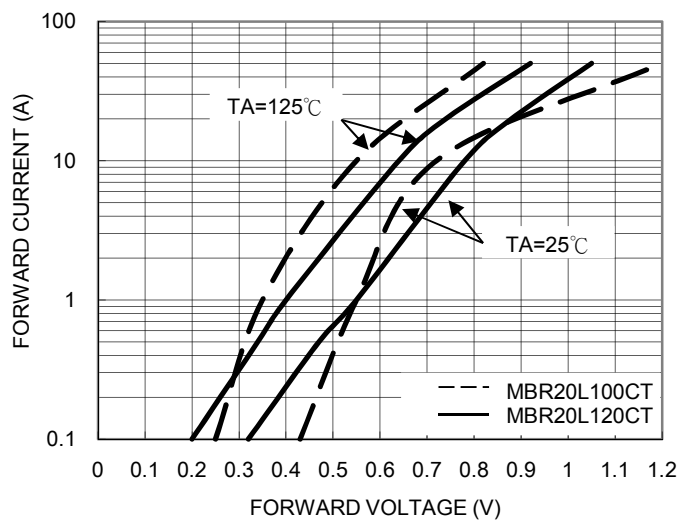


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

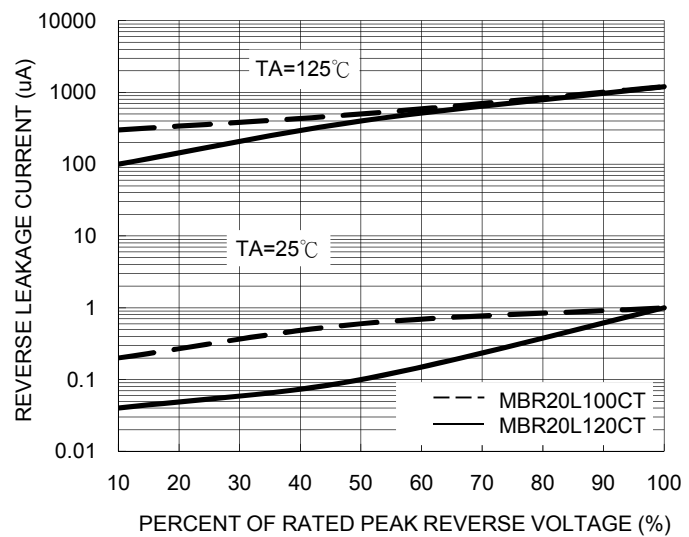


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

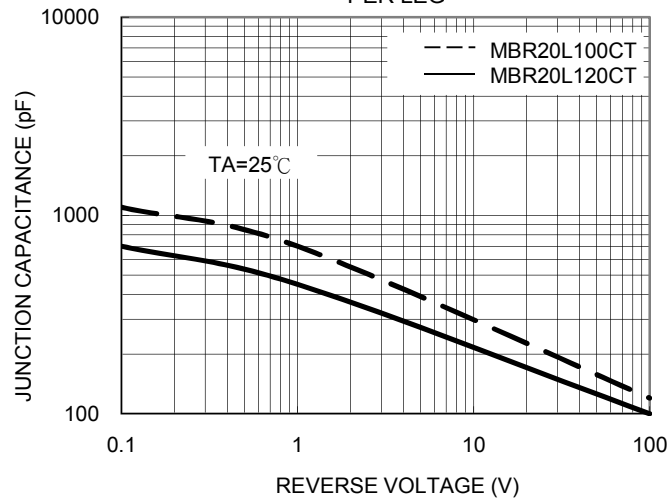
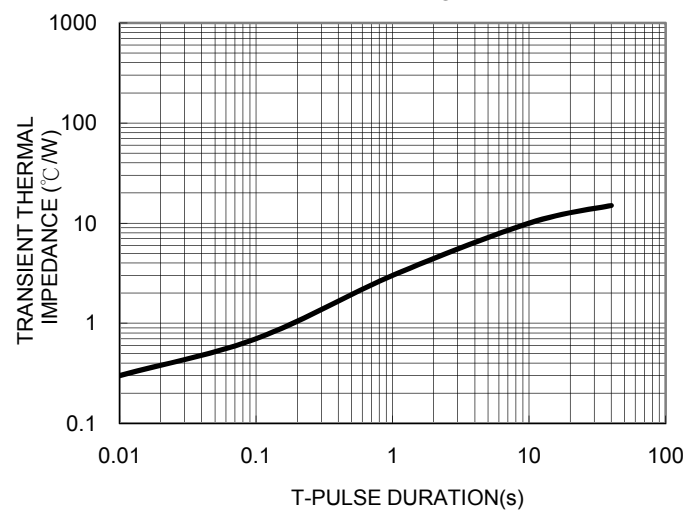


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

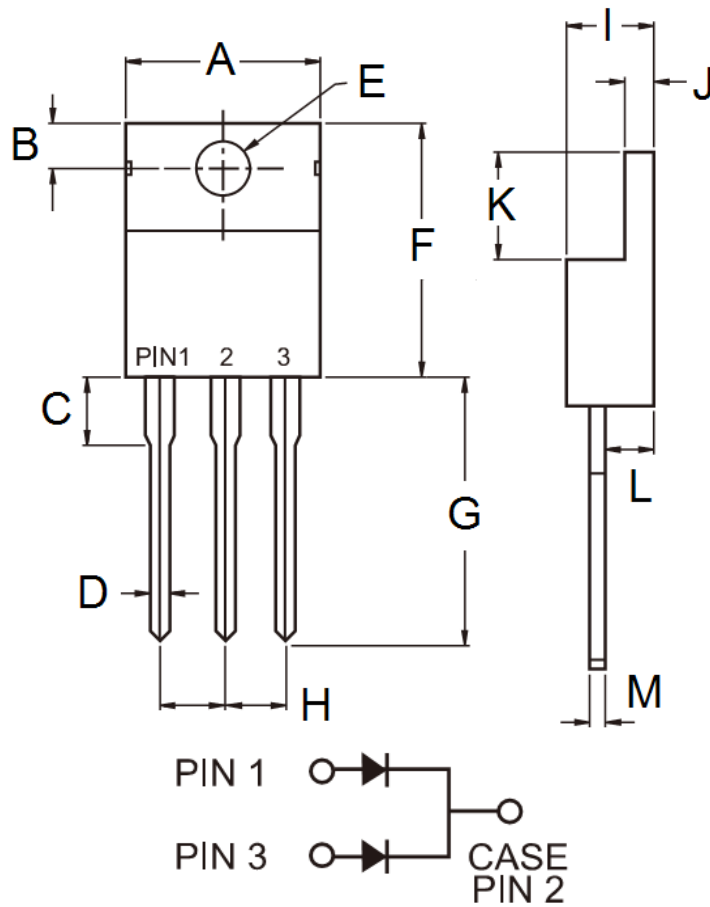


Ordering information

Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
MBR20LxxCT	TO-220AB	50 / TUBE	C0	C0G
	TO-220AB	50 / TUBE	D0	D0G

Note: "xx" is Device Code from "100" thru "120".

Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	-	10.50	-	0.413
B	2.62	3.44	0.103	0.135
C	2.80	4.20	0.110	0.165
D	0.68	0.94	0.027	0.037
E	3.54	4.00	0.139	0.157
F	14.60	16.00	0.575	0.630
G	13.19	14.79	0.519	0.582
H	2.41	2.67	0.095	0.105
I	4.42	4.76	0.174	0.187
J	1.14	1.40	0.045	0.055
K	5.84	6.86	0.230	0.270
L	2.20	2.80	0.087	0.110
M	0.35	0.64	0.014	0.025

Marking Diagram



P/N = Specific Device Code
G = Green Compound
YWW = Date Code