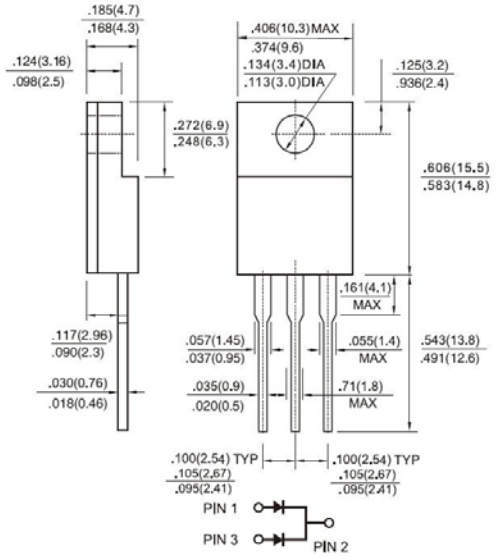
TAIWAN SEMICONDUCTOR

MBRF20L100CT - MBRF20L120CT

20.0AMPS Isolated Low V_F Schottky Barrier Rectifier

ITO-220AB

Pb RoHS COMPLIANCE



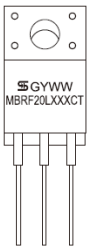
Features

- ✧ High current capability, low forward voltage drop
- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ High Surge current capability
- ✧ Qualified as per AEC-Q101
- ✧ Guard-ring for transient protection
- ✧ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ High temperature soldering guaranteed: 260℃/ 10 seconds, 0.375"(9.5mm) lead lengths 5 lbs tension
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: ITO-220AB
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ Mounting position: Any
- ✧ Mounting torque: 5 in-lbs. Max.
- ✧ Weight: 1.7 grams

Dimensions in inches and (millimeters)



Marking Diagram

MBRF20LXXCT	= Specific Device Cod
G	= Green compound
Y	= Year
WW	= Work Week

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ 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	MBRF20L100CT		MBRF20L120CT		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 VR, Square Wave, 20KHz)	$I_{F(RMS)}$	20				A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150				A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1				A
Maximum Instantaneous Forward Voltage at (Note 2)	V_F	TYP	MAX	TYP	MAX	V
IF = 10A, T_A=25℃		0.72	0.75	0.78	0.83	
IF = 10A, T_A=125℃		0.58	0.68	0.63	0.72	
IF = 20A, T_A=25℃		0.81	0.85	0.86	0.9	
IF = 20A, T_A=125℃		0.67	0.75	0.73	0.8	
Maximum Reverse Current at Rated DC Blocking Voltage	I_R	TYP	MAX	TYP	MAX	uA mA
T_A=25 ℃		1.1	20	1	20	
T_A=125 ℃		1.2	15	1.4	10	
Voltage rate of change (Rated V_R)	dV/dt	10,000				V/uS
Typical Junction Capacitance (Note 3)	Cj	435		270		pF
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	5.5		5		°C/W
Operating Temperature Range	T_J	-55 to + 150				°C
Storage Temperature Range	T_{STG}	-55 to + 150				°C

Note1: 2.0uS Pulse Width, F=1.0KHz, Continues 10 Cycles

Note2: Pulse Test : 300us Pulse Width, 1% Duty cycle

Note3: Measure at 1MHz and Applied Reverse Voltage of 4.0V D.C.

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RATINGS AND CHARACTERISTIC CURVES (MBRF20L100CT THRU MBRF20L120CT)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

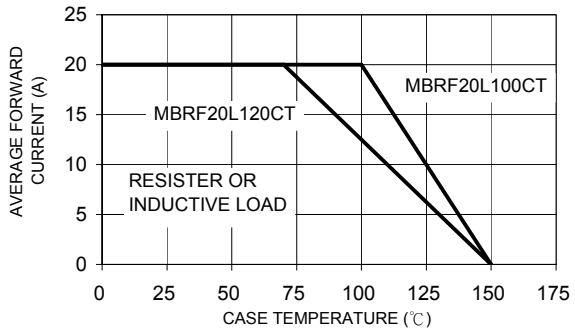


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

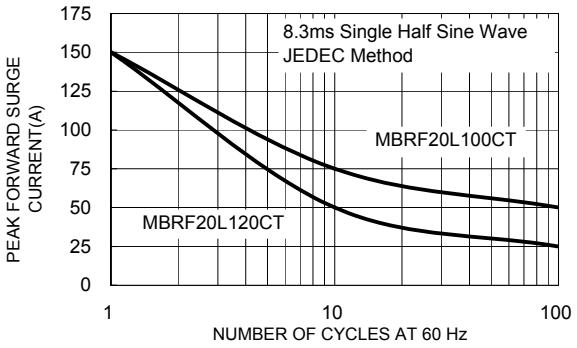


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

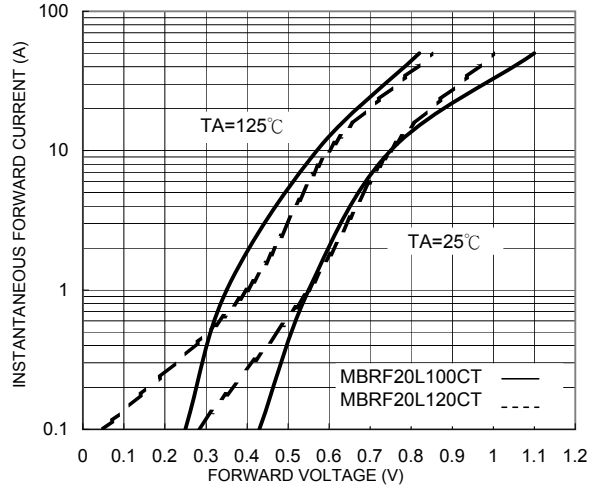


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

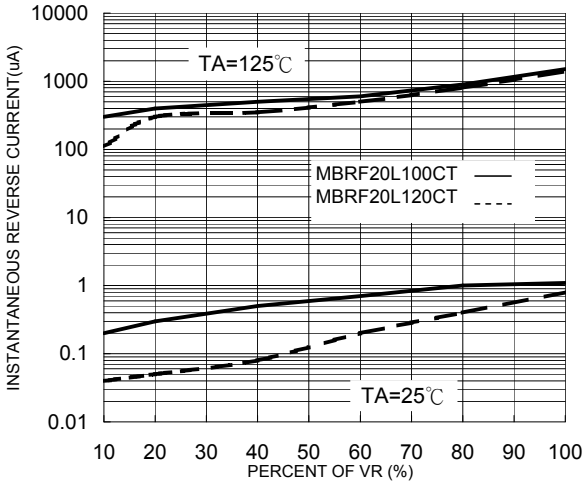


FIG. 5 TYPICAL JUNCTION CAPACITANCE

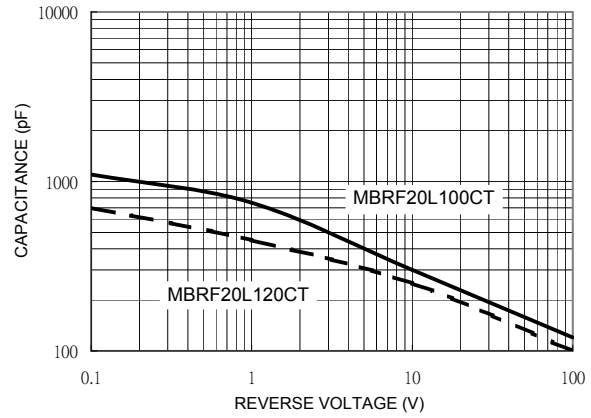
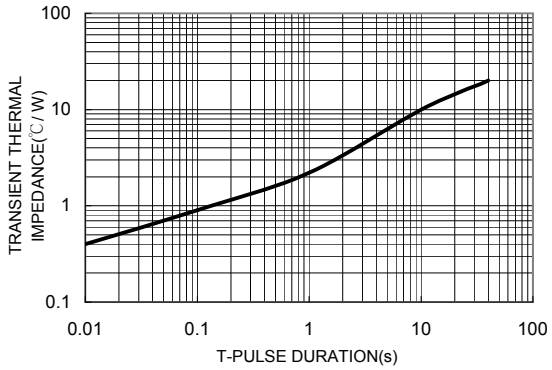


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



Version:C11