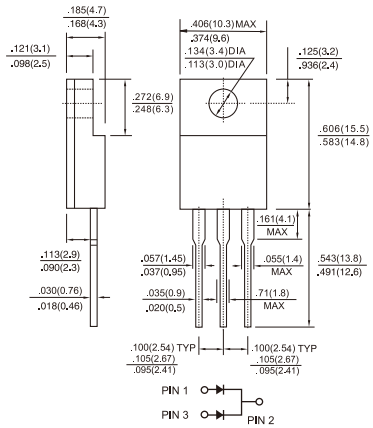
TAIWAN SEMICONDUCTOR

MBRF30L120CT

Isolated 30.0 AMPS. Low V_F Schottky Barrier Rectifiers

RoHS COMPLIANCE

ITO-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
- ✧ Qualified as per AEC-Q101
- ✧ Guard-ring for transient protection
- ✧ For use in low voltage, high frequency inventor, freewheeling, and polarity protection application
- ✧ High temperature soldering guaranteed: 260℃/10S/.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 leads, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ Weight: 1.72 grams
- ✧ Mounting Torque:5 in-lbs. max.
- ✧ Mounting position:Any

Dimensions in inches and (millimeters)

Marking Diagram

MBRF30LXXXCT	=	Specific Device Code
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	MBRF30L120CT		Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	120		V
Maximum RMS Voltage	V_{RMS}	84		V
Maximum DC blocking voltage	V_{DC}	120		V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	30		A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz)	$I_{F(RMS)}$	30		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load	I_{FSM}	200		A
Peak Repetitive Reverse Surge Current (Note 2)	I_{RRM}	1		A
Maximum Instantaneous Forward Voltage	V_F	TYP.	Max.	V
@ 15A / T_A=25℃		0.81	0.88	
@ 15A / T_A=125℃		0.66	0.75	
@ 30A / T_A=25℃		0.89	0.95	
@ 30A / T_A=125℃		0.76	0.82	
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	I_R	TYP.	Max.	
@T_A=25℃		1.1	20.0	uA
@T_A=125℃		1.7	25.0	mA
Voltage rate of change (rated V_R)	dV/dt	10,000		V/uS
Typical Junction Capacitance (Note 3)	Cj	360		pF
Typical Thermal Resistance (Note 4)	$R_{\theta JC}$	5.0		°C/W
Operating Temperature Range	T_J	-55 to + 150		°C
Storage Temperature Range	T_{STG}	-55 to + 150		°C

Note: 1. Pulse Test with PW=300 usec,1% Duty Cycle
2. 2.0uS Pulse Width, F=1.0KHz, Continues 10 cycles
3. Measured at 1 MHz and Applied Reverse Voltage of 4.0 V D.C.
4. Mount on Heatsink Size of 4" x 6" x 0.25" Al-Plate

RATINGS AND CHARACTERISTIC CURVES (MBRF30L120CT)

Fig.1 Maximum Forward Current Derating Curve

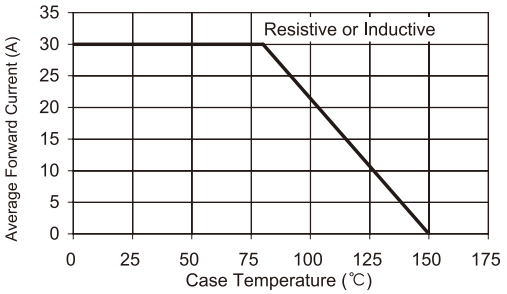


Fig. 2 Maximum Forward Surge Current

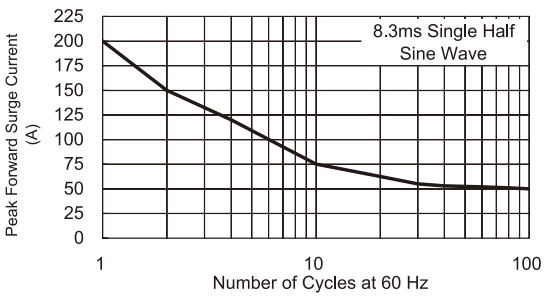


Fig. 3 Typical Forward Characteristics

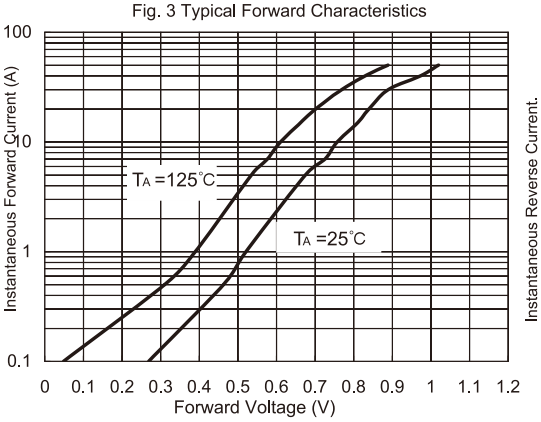


Fig. 4 Typical Reverse Characteristics

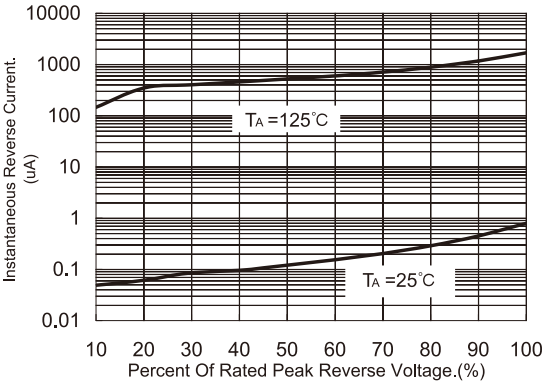


Fig. 5 Typical Junction Capacitance

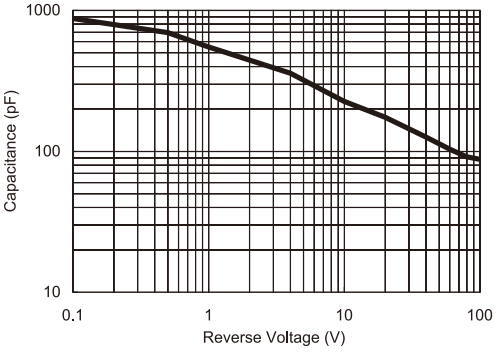


Fig. 6 Typical Transient Thermal Impedance