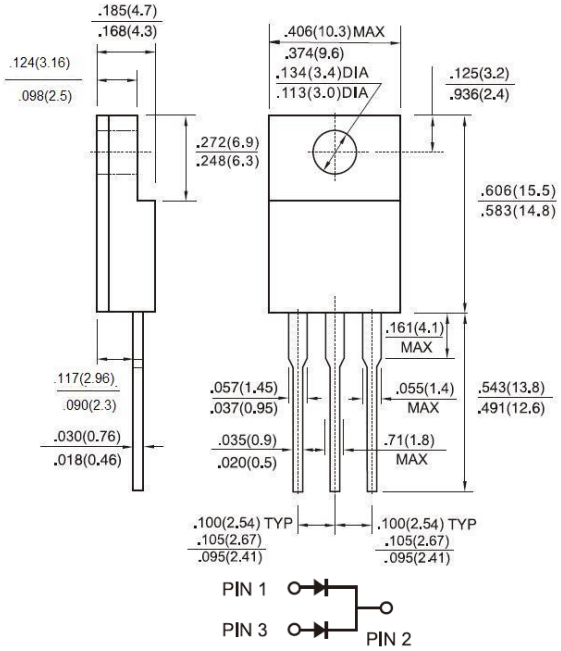
TAIWAN SEMICONDUCTOR

MBRF30L45CT

30.0AMPS Isolated Low V_F Schottky Barrier Rectifier

ITO-220AB

RoHS COMPLIANCE



Dimensions in inches and (millimeters)

Features

- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ High Surge current capability
- ✧ Metal silicon junction, majority condution
- ✧ 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: JEDEC ITO-220AB Modled plastic
- ✧ 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: 1.72 grams

Marking Diagram

MBRF30LXXCT	= 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	MBRF30L45CT	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	45	V
Maximum RMS Voltage	V_{RMS}	31	V
Maximum DC blocking voltage	V_{DC}	45	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	30	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	220	A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	1	A
Maximum Instantaneous Forward Voltage at (Note 2) IF = 15A, T_A=25℃ IF = 15A, T_A=125℃ IF = 30A, T_A=25℃ IF = 30A, T_A=125℃	V_F	 0.55 0.50 0.74 0.67	V
Maximum Reverse Current at Rated DC Blocking Voltage T_A=25 ℃ T_A=125 ℃	I_R	 0.4 200	mA
Voltage rate of change (Rated V_R)	dV/dt	10,000	V/uS
Typical Junction Capacitance (Note 3)	Cj	700	pF
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1	^{O}C/W
Operating Temperature Range	T_J	-65 to + 150	^{O}C
Storage Temperature Range	T_{STG}	-65 to + 150	^{O}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 (MBRF30L45CT)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

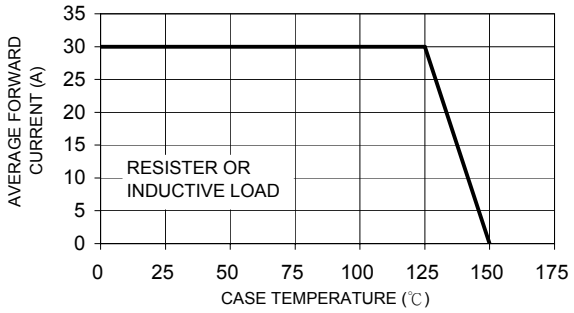


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

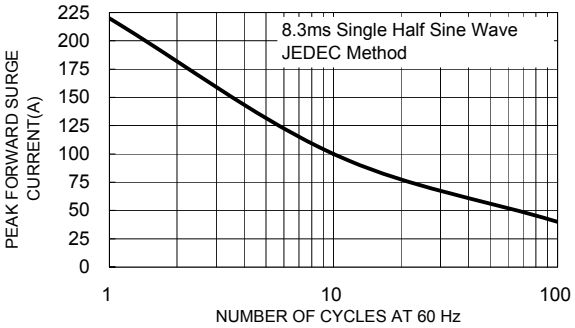


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

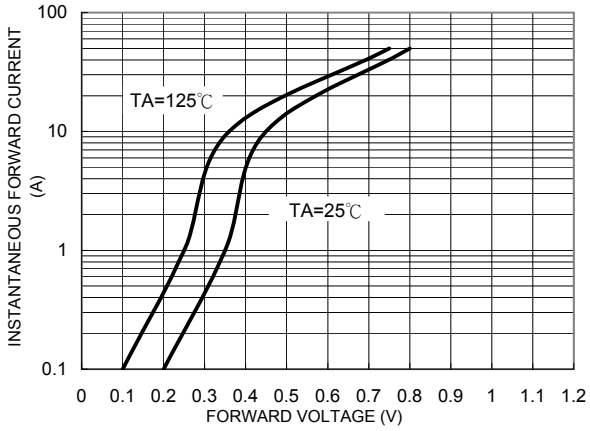


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

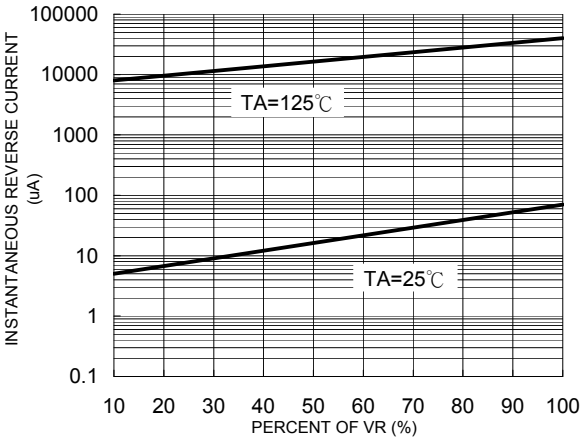


FIG. 5 TYPICAL JUNCTION CAPACITANCE

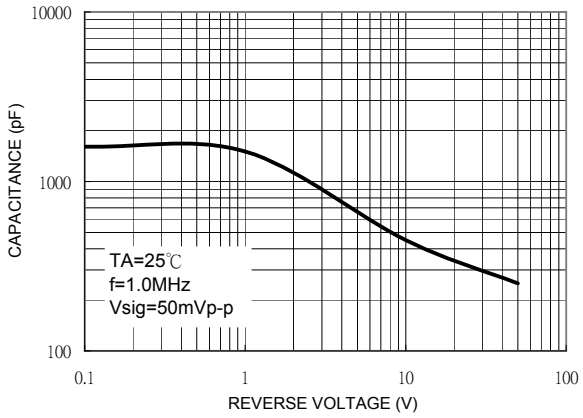
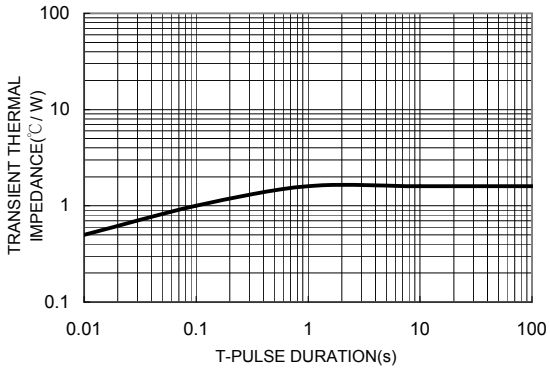


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



Version:I11