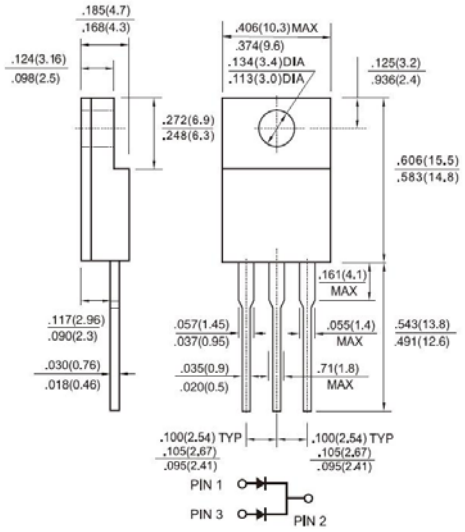
TAIWAN SEMICONDUCTOR

MBRF2035CT - MBRF20200CT

20.0 AMPS. Isolated Schottky Barrier Rectifiers

ITO-220AB

RoHS COMPLIANCE



Dimensions in inches and (millimeters)

Features

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ✧ Metal silicon junction, majority carrier conductior
- ✧ Low power loss, high efficiency
- ✧ High current capability, low forward voltage drop
- ✧ High surge capability
- ✧ For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- ✧ Guard-ring for overvoltage protection
- ✧ High temperature soldering guaranteed: 260℃/10 seconds, at terminals
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case:ITO-220AB molded plastic body
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: As marked
- ✧ Mounting position:Any
- ✧ Mounting torque: 5 in. - lbs, max
- ✧ Weight: 1.7 grams

Marking Diagram

MBRF20XXCT	= 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	MBRF 2035 CT	MBRF 2045 CT	MBRF 2050 CT	MBRF 2060 CT	MBRF 2080 CT	MBRF 2090 CT	MBRF 20100 CT	MBRF 20150 CT	MBRF 20200 CT	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	35	45	50	60	80	90	100	150	200	V
Maximum RMS Voltage	V_{RMS}	24	31	35	42	56	63	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	80	90	100	150	200	V
Maximum Average Forward Rectified Current at Tc=135℃	$I_{F(AV)}$	20									A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at Tc=135℃	I_{FRM}	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		0.5							A
Maximum Instantaneous Forward Voltage (Note 2) IF=10A, TA=25℃ IF=10A, TA=125℃ IF=20A, T_A=25℃ IF=20A, T_A=125℃	V_F	 - 0.57 0.84 0.72		 0.80 0.70 0.95 0.85		 0.80 0.65 1.00 0.75	 0.85 0.75 0.95 0.85		 0.95 0.85 1.05 0.95		V
Maximum Reverse Current @ Rated VR T_A=25 ℃ T_A=125 ℃	I_R	0.1 15		10		30	5		2		mA
Voltage Rate of Change (Rated V_R)	dV/dt	10000									V/us
Typical Junction Capacitance	Cj	400		310							V/us
RMS Isolation Voltage (MBRF Type Only) from Terminals to Heatsink with t=1.0 Second, RH≦30%	V_{ISO}	4500(Note 3) 3500(Note 4) 1500(Note 5)									
Typical Thermal Resistance Per Leg	$R_{\theta JC}$	1.5				3.5					°C/W
Operating Temperature Range	T_J	- 65 to + 150									°C
Storage Temperature Range	T_{STG}	- 65 to + 175									°C

Note 1: 2.0uS Pulse Width, f=1.0KHz

Note 2: Pulse Test : 300uS Pulse Width, 1% Duty Cycle

Note 3: Clip Mounting (on case), where lead does not overlap heatsink with 0.11" offset

Note 4: Clip Mounting (on case), where lead does not overlap heatsink

Note 5: Screw Mounting screw, where diameter is ≦4.9mm(0.19")

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RATINGS AND CHARACTERISTIC CURVES (MBRF2035CT THRU MBRF20200CT)

FIG.1 FORWARD CURRENT DERATING CURVE

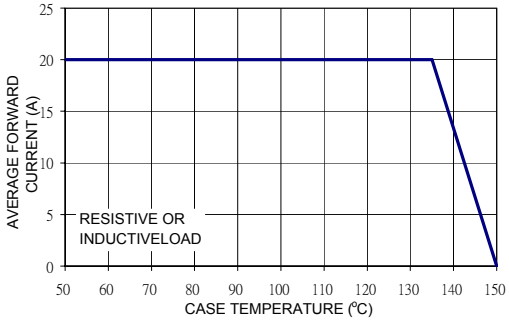


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

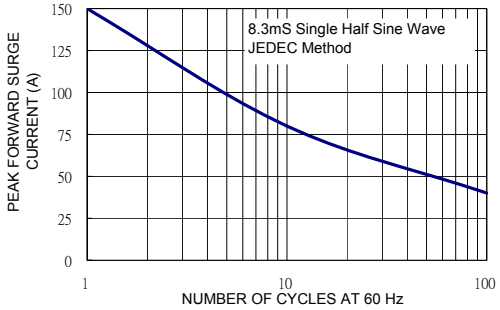


FIG. 3 TYPICAL FORWARD CHARACTERISRICS PER LEG

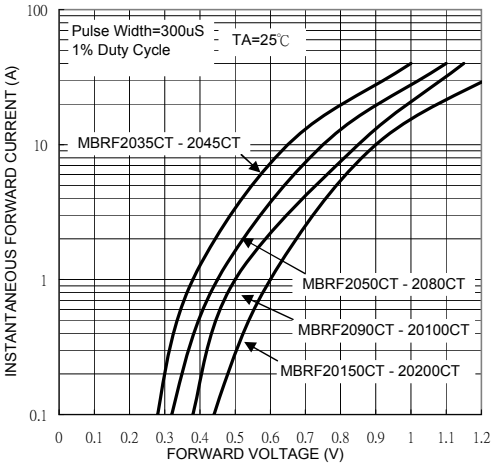


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

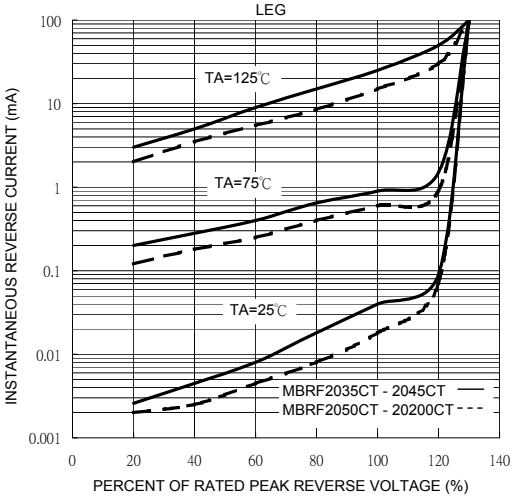


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

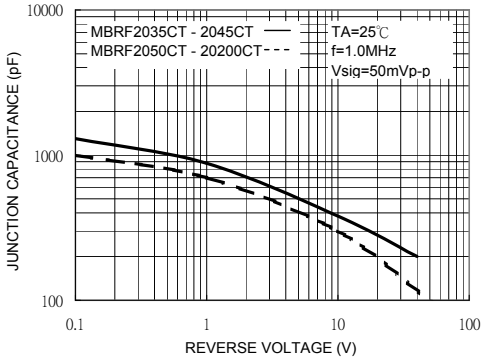
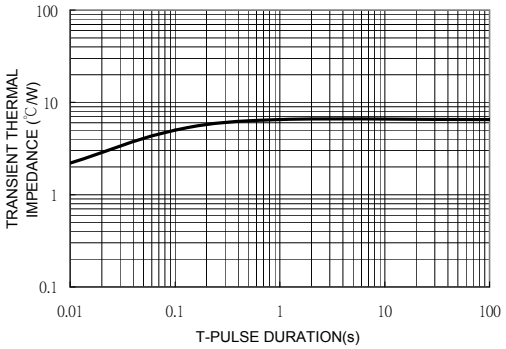


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



Version:J11