

Features

- ✧ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ✧ Metal silicon rectifier, majority carrier conduction
- ✧ 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°C/10 seconds/.25", (6.35mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Case: ITO-220AC 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: 1.61 grams

Ordering Information(example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
MBRF5100	ITO-220AC	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	MBRF 5100	MBRF 5150	MBRF 5200	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	100	150	200	V
Maximum RMS Voltage	V_{RMS}	70	105	140	V
Maximum DC Blocking Voltage	V_{DC}	100	150	200	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	5			A
Peak Repetitive Surge Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	10			A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	120			A
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	0.5			A
Maximum Instantaneous Forward Voltage (Note 2) $I_F=5A, T_A=25^\circ C$ $I_F=5A, T_A=125^\circ C$	V_F	0.90 0.80	1.02 0.92		V
Maximum Reverse Current @ Rated V_R $T_A=25^\circ C$ $T_A=125^\circ C$	I_R	0.1 5			mA
Voltage Rate of Change, (Rated V_R)	dV/dt	10000			V/us
Typical Junction capacitance	C_j	310			pF
Typical Thermal Resistance	$R_{\theta JC}$	3			°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

RATINGS AND CHARACTERISTIC CURVES (MBRF5100 THRU MBRF5200)

FIG. 1 FORWARD CURRENT DERATING CURVE

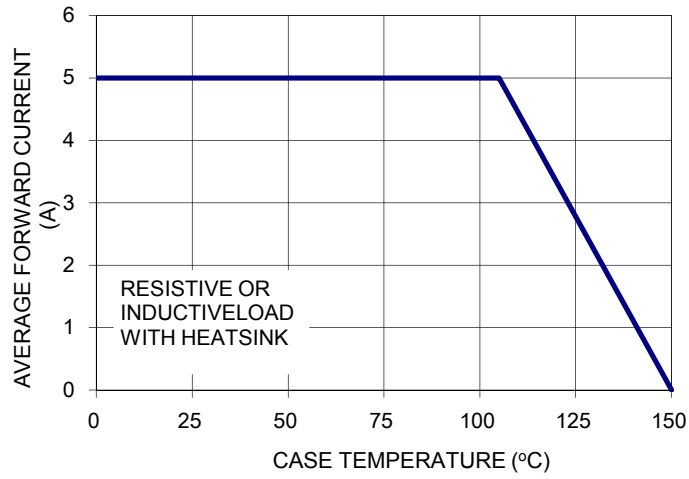


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

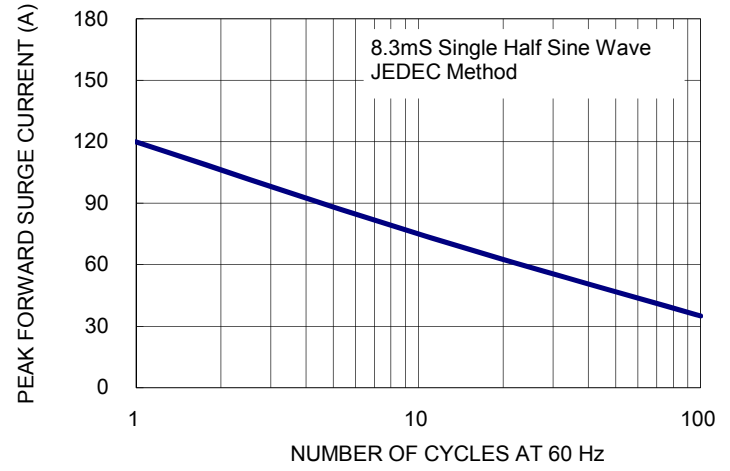


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

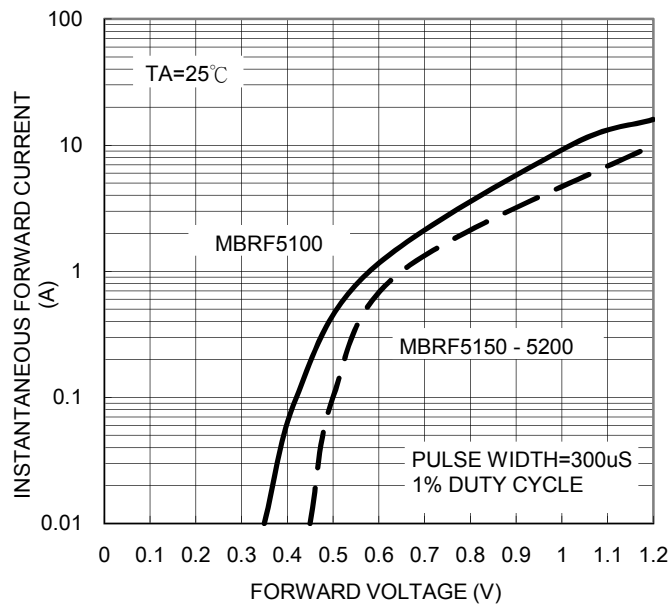


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

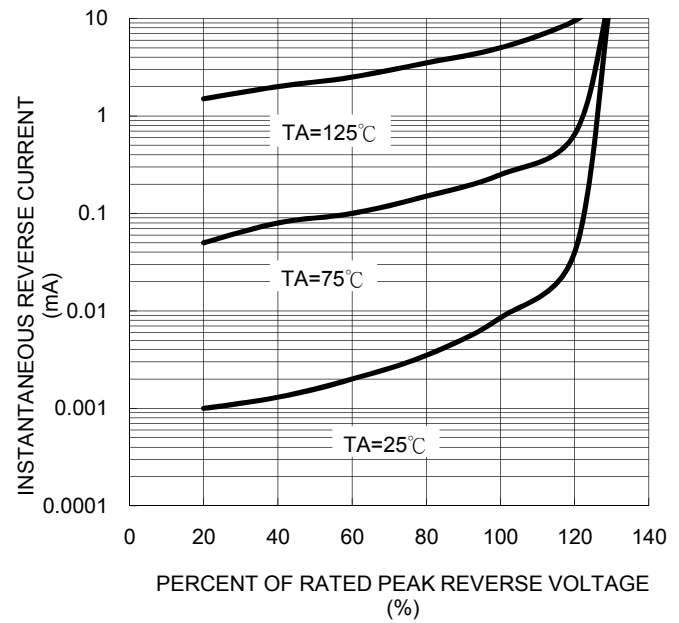


FIG. 5 TYPICAL JUNCTION CAPACITANCE

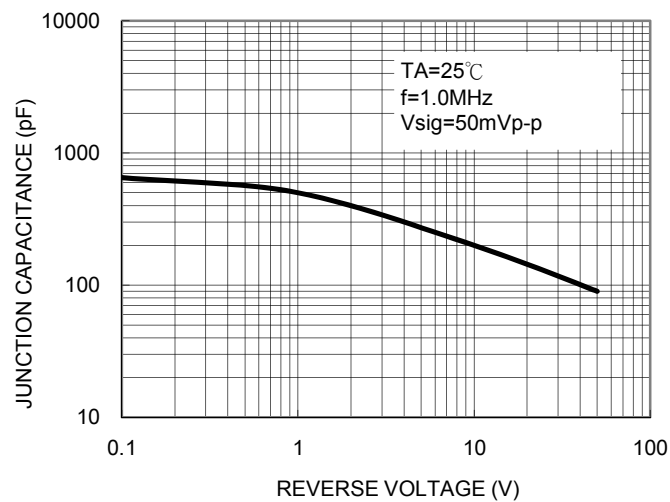
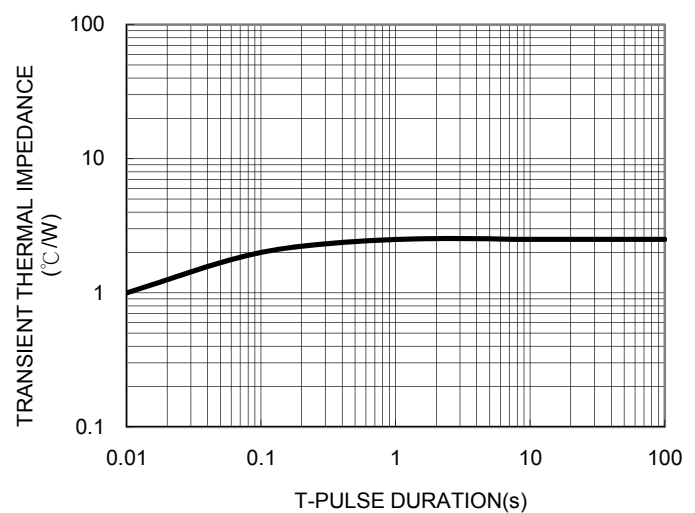


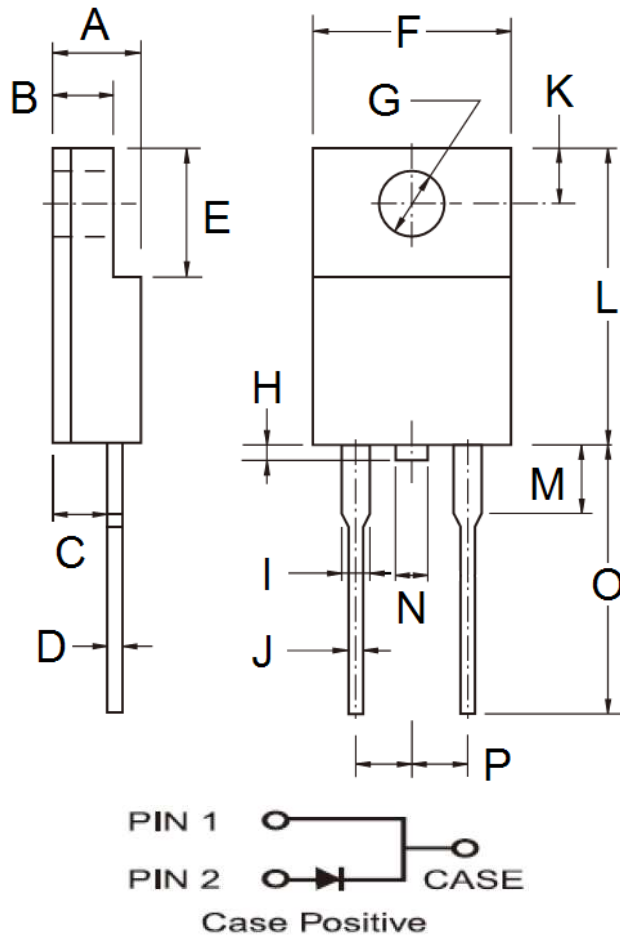
FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE



Ordering information

Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
MBRF5xxx	ITO-220AC	50 / TUBE	C0	C0G
	ITO-220AC	50 / TUBE	D0	D0G

Note: "xxx" is Device Code from "100" thru "200".

Dimensions


DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	4.30	4.70	0.169	0.185
B	2.50	3.10	0.098	0.122
C	2.30	2.90	0.091	0.114
D	0.46	0.76	0.018	0.030
E	6.30	6.90	0.248	0.272
F	9.60	10.30	0.378	0.406
G	3.00	3.40	0.118	0.134
H	-	1.60	-	0.063
I	0.95	1.45	0.037	0.057
J	0.50	0.90	0.020	0.035
K	2.40	3.20	0.094	0.126
L	14.80	15.50	0.583	0.610
M	-	4.10	-	0.161
N	-	1.80	-	0.071
O	12.60	13.80	0.496	0.543
P	4.95	5.20	0.195	0.205

Marking Diagram


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