

Features

- ◇ UL Recognized File # E-326243
- ◇ Plastic material used carriers Underwriters Laboratory Classification 94V-0
- ◇ Metal silicon junction, 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/.17", (4.3mm) from case
- ◇ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ◇ Case: JEDEC TO-3P/TO-247AD molded plastic
- ◇ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, Method 2026
- ◇ Polarity: As marked
- ◇ Mounting position: Any
- ◇ Mounting torque: 10 in-lbs, max
- ◇ Weight: 6.10 grams

Ordering Information (example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
MBR3035PT	TO-3P	30 / TUBE	C0	C0G

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	MBR 3035 PT	MBR 3045 PT	MBR 3050 PT	MBR 3060 PT	MBR 3090 PT	MBR 30100 PT	MBR 30150 PT	MBR 30200 PT	Unit				
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	35	45	50	60	90	100	150	200	V				
Maximum RMS Voltage	V_{RMS}	24	31	35	42	63	70	105	140	V				
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	90	100	150	200	V				
Maximum Average Forward Rectified Current	$I_{F(AV)}$	30								A				
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	30								A				
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	200								A				
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	2		1						A				
Maximum Instantaneous Forward Voltage (Note 2) IF=15A, $T_A=25^\circ C$ IF=15A, $T_A=125^\circ C$ IF=30A, $T_A=25^\circ C$ IF=30A, $T_A=125^\circ C$	V_F	-	0.75	0.85	0.95	1.05	0.60	0.65	0.75	0.92	-	1.02	1.10	V
Maximum Reverse Current @ Rated V_R $T_A=25^\circ C$ $T_A=125^\circ C$	I_R	1		0.5				0.1		mA				
Maximum Reverse Current @ Rated V_R $T_A=25^\circ C$ $T_A=125^\circ C$	I_R	20		15		10				mA				
Voltage Rate of Change, (Rated V_R)	dV/dt	10000								V/us				
Typical Junction Capacitance	C_j	600		460		320				pF				
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1.4								$^\circ C/W$				
Operating Temperature Range	T_J	- 65 to + 150								$^\circ C$				
Storage Temperature Range	T_{STG}	- 65 to + 175								$^\circ C$				

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

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

RATINGS AND CHARACTERISTIC CURVES (MBR3035PT THRU MBR30200PT)

FIG. 1 FORWARD CURRENT DERATING CURVE

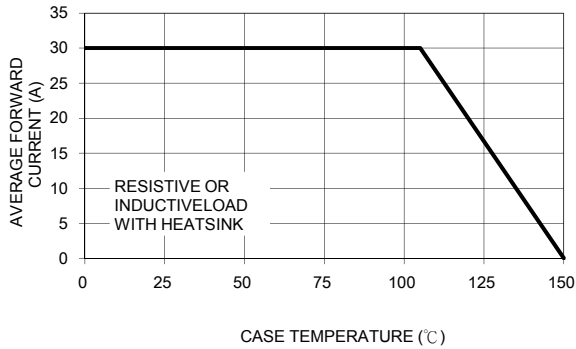


FIG. 2 MAXIMUM FORWARD SURGE CURRENT PER LEG

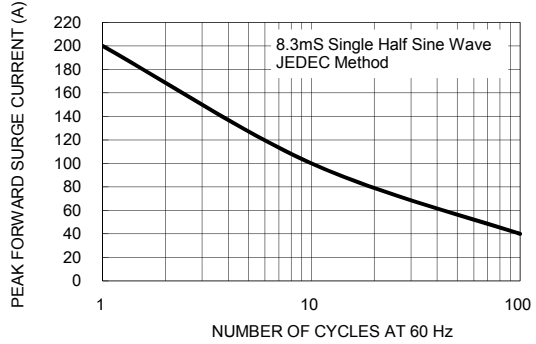


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

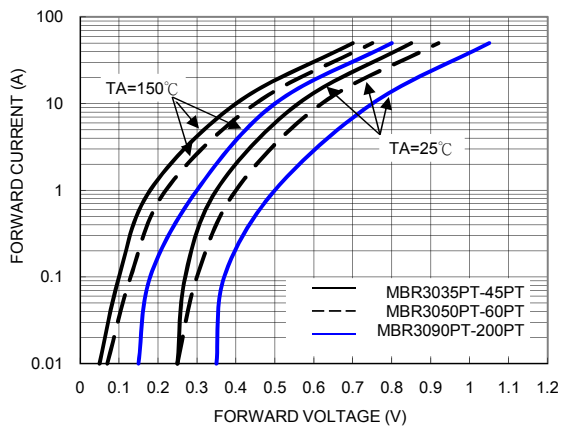


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG

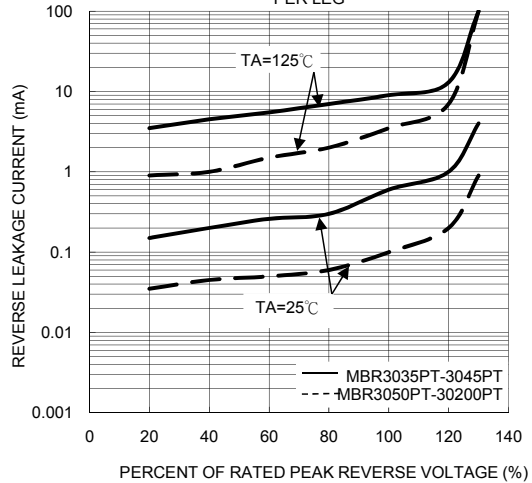


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

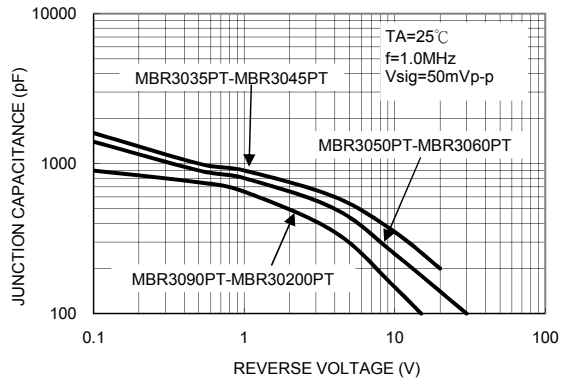
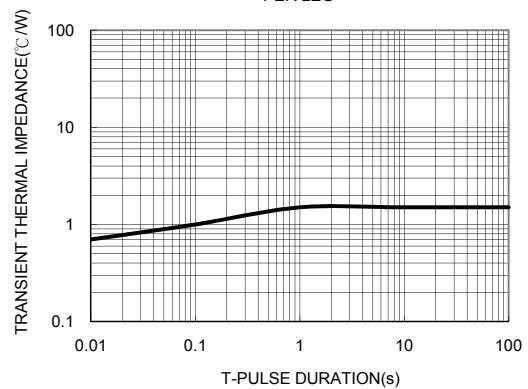


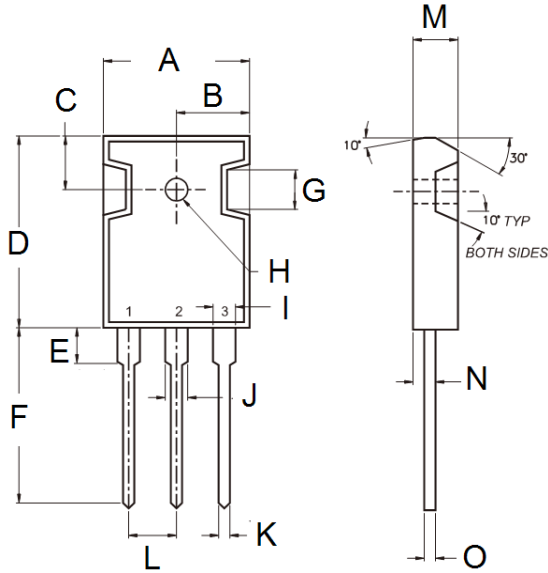
FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG



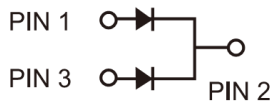
Ordering information

Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
MBR30xxPT	TO-3P	30 / TUBE	C0	C0G

Note: "xx" is Device Code from "35" thru "200".

Dimensions


DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	15.90	16.40	0.626	0.646
B	7.90	8.20	0.311	0.323
C	5.70	6.20	0.224	0.244
D	20.80	21.30	0.819	0.839
E	3.50	4.10	0.138	0.161
F	19.70	20.20	0.776	0.795
G	-	4.30	-	0.169
H	2.90	3.40	0.114	0.134
I	1.93	2.18	0.076	0.086
J	2.97	3.22	0.117	0.127
K	1.12	1.22	0.044	0.048
L	5.20	5.70	0.205	0.224
M	4.90	5.16	0.193	0.203
N	2.70	3.00	0.106	0.118
O	0.51	0.76	0.020	0.030


Marking Diagram


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