

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 body
- ◇ 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: 6.16 grams

Ordering Information (example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
MBR4035PT	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 4035 PT	MBR 4045 PT	MBR 4050 PT	MBR 4060 PT	MBR 4090 PT	MBR 40100 PT	MBR 40150 PT	MBR 40200 PT	Units	
Maximum Recurrent 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	$I_{F(AV)}$	40								A	
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20KHz)	I_{FRM}	40								A	
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	330								A	
Peak Repetitive Reverse Surge Current (Note 1)	I_{RRM}	2.0			1.0						A
Maximum Instantaneous Forward Voltage at (Note 2) IF=20A, $T_A=25^\circ\text{C}$ IF=20A, $T_A=125^\circ\text{C}$ IF=40A, $T_A=25^\circ\text{C}$ IF=40A, $T_A=125^\circ\text{C}$	V_F	0.75 0.65 0.80 0.75		0.77 0.67 -		0.84 0.74 -		0.90 0.80 1.01 -		V	
Maximum Instantaneous Reverse Current @ $T_A=25^\circ\text{C}$ at Rated Blocking Voltage Per Leg @ $T_A=125^\circ\text{C}$	I_R	1.0			0.5		0.1		mA		
Voltage Rate of Change, (Rated V_R)	dV/dt	10000								V/us	
Maximum Thermal Resistance Per Leg	$R_{\theta JC}$	1.2								$^\circ\text{C/W}$	
Operating Temperature Range	T_J	- 65 to + 150								$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	- 65 to + 175								$^\circ\text{C}$	

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

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

RATINGS AND CHARACTERISTIC CURVES (MBR4035PT THRU MBR40200PT)

FIG.1 FORWARD CURRENT DERATING CURVE

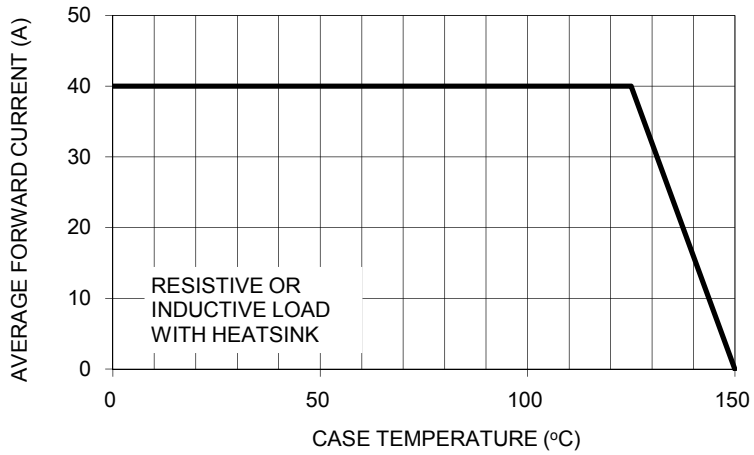


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

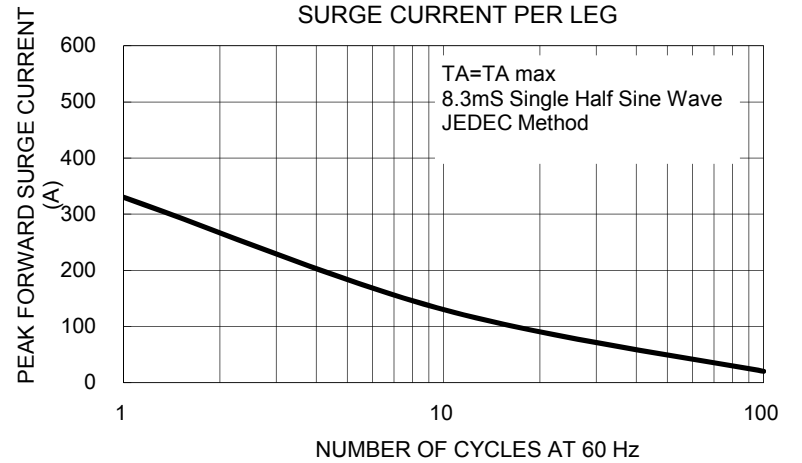


FIG. 3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

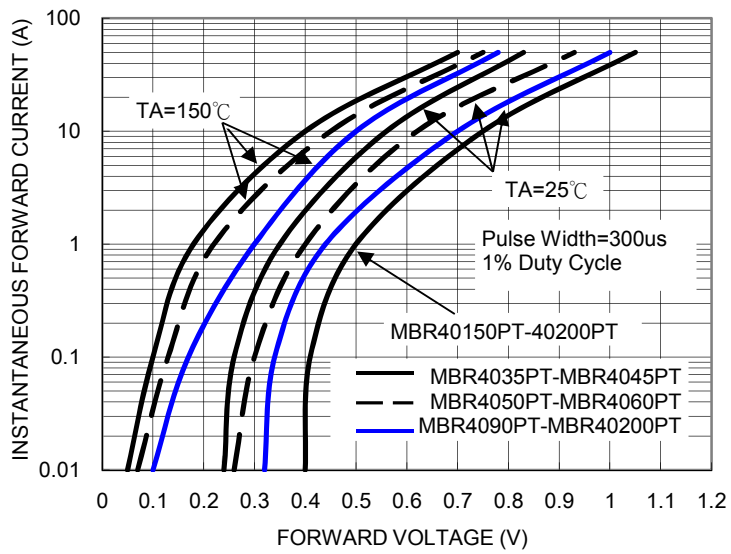


FIG.4 TYPICAL REVERSE CHARACTERISTICS PER LEG

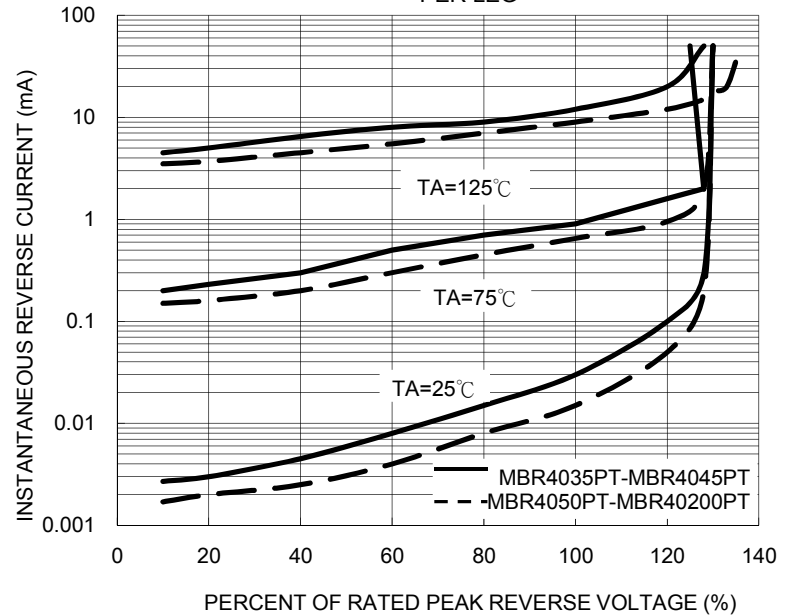


FIG. 5 TYPICAL JUNCTION CAPACITANCE PER LEG

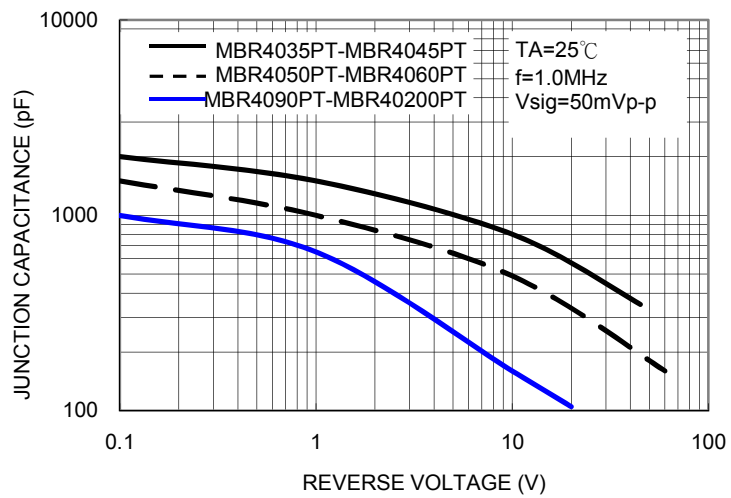
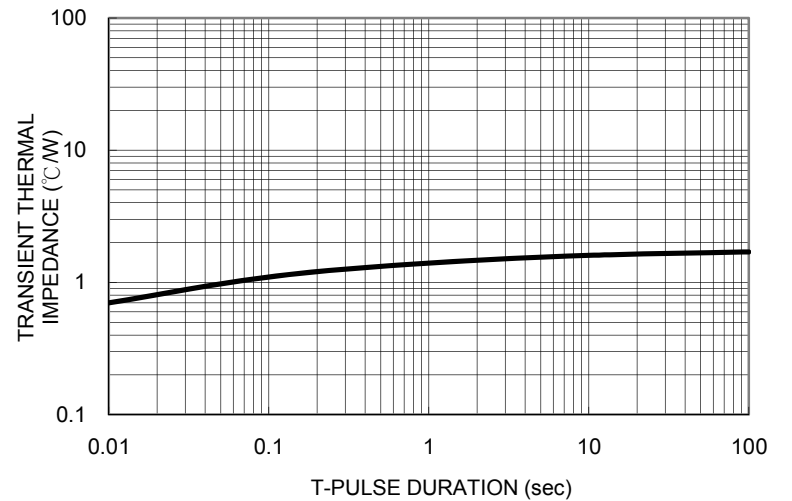


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

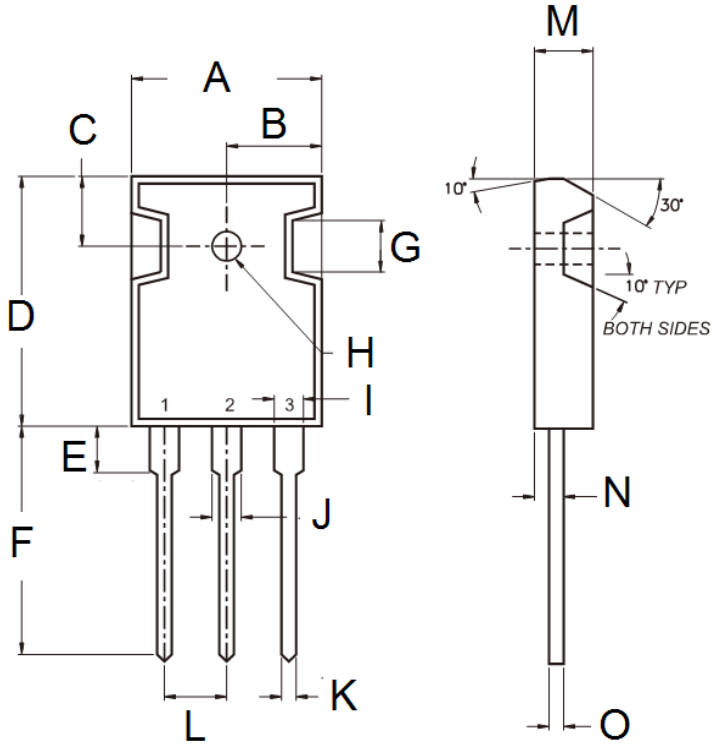


Ordering information

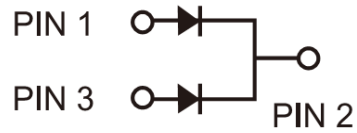
Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
MBR40xxPT	TO-3P	30 / TUBE	C0	C0G

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