

Features

- ✧ 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, 0.25"(6.35mm) from case
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Cases: JEDEC TO-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: 1.86 grams

Ordering Information(example)

Part No.	Package	Packing	Packing code	Packing code (Green)
MBR1635	TO-220AC	50 / TUBE	C0	C0G

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	MBR 1635	MBR 1645	MBR 1650	MBR 1660	MBR 1690	MBR 16100	MBR 16150	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	35	45	50	60	90	100	150	V
Maximum RMS Voltage	V_{RMS}	24	31	35	42	63	70	105	V
Maximum DC Blocking Voltage	V_{DC}	35	45	50	60	90	100	150	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	16							A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz)	I_{FRM}	32							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	0.5					A	
Maximum Instantaneous Forward Voltage at: (Note 2) IF=16A, TA=25°C IF=16A, TA=125°C	V_F	0.63 0.57	0.75 0.65	0.85 0.75	0.95 0.92	V			
Maximum Instantaneous Reverse Current @ TA=25 °C at Rated DC Blocking Voltage @ TA=125 °C	I_R	0.5 15	0.5 10	0.3 7.5	0.1 5	mA			
Voltage Rate of Change (Rated VR)	dV/dt	10,000							V/uS
Typical Junction Capacitance	Cj	500							pF
Maximum Typical Thermal Resistance	RθJC	3							°C/W
Operating Junction Temperature Range	TJ	- 65 to + 150							°C
Storage Temperature Range	TSTG	- 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 (MBR1635 THRU MBR16150)

FIG.1- FORWARD CURRENT DERATING CURVE

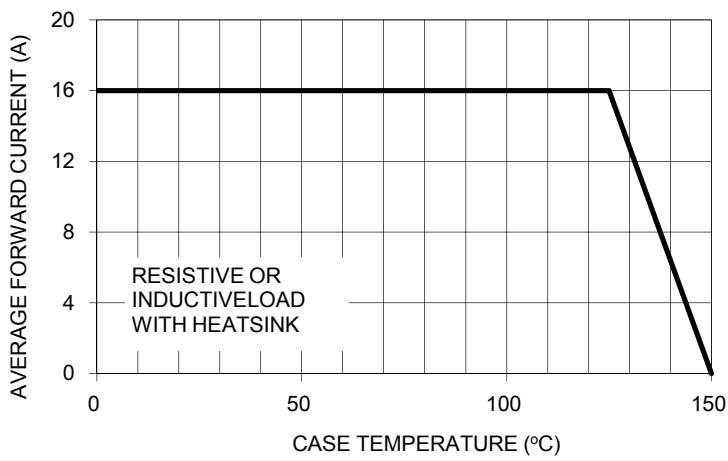


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

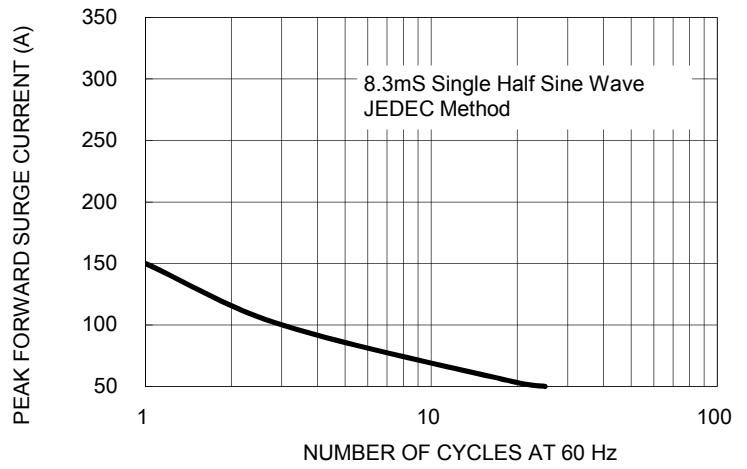


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

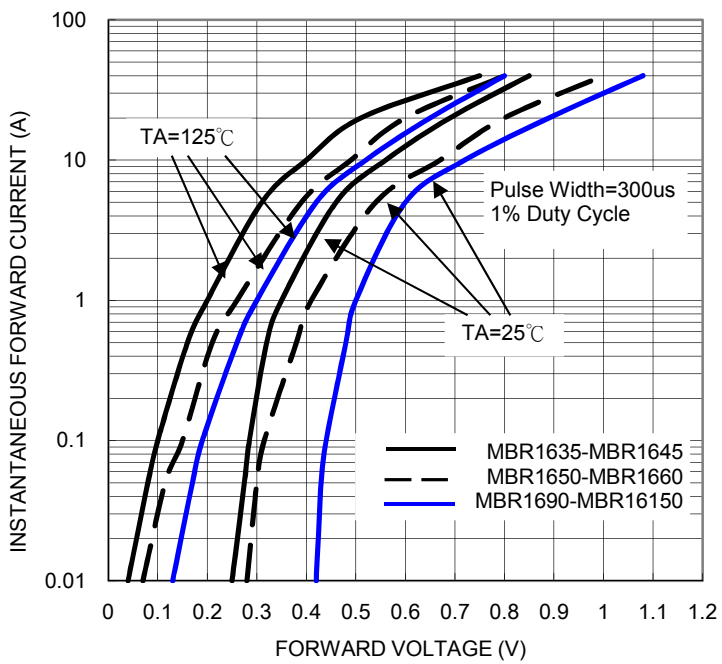


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

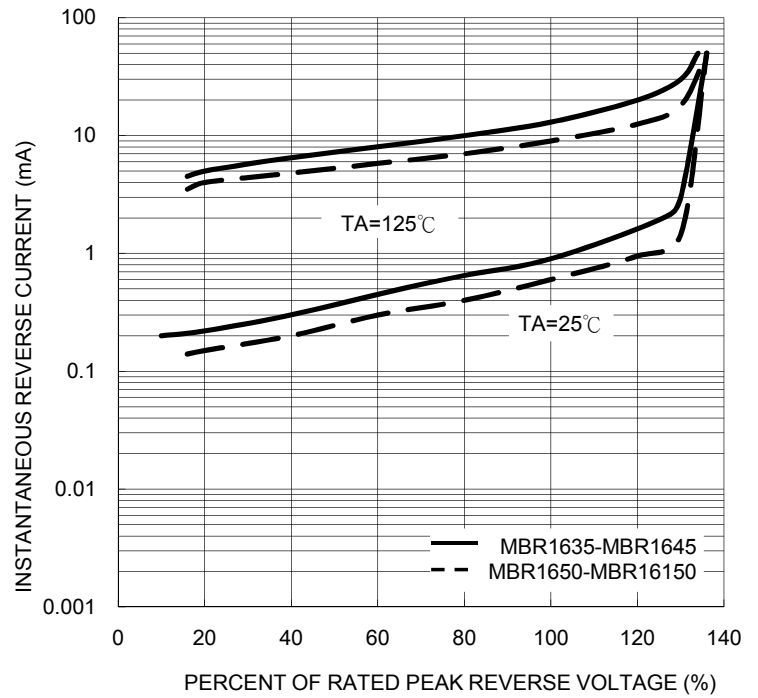


FIG. 5- TYPICAL JUNCTION CAPACITANCE

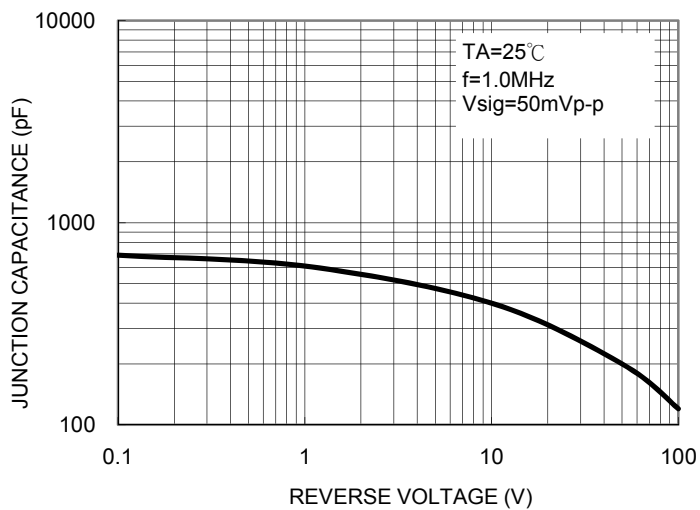
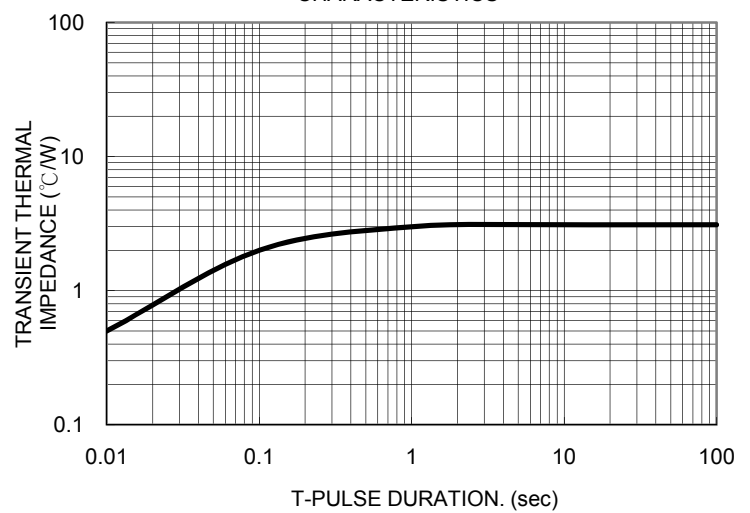


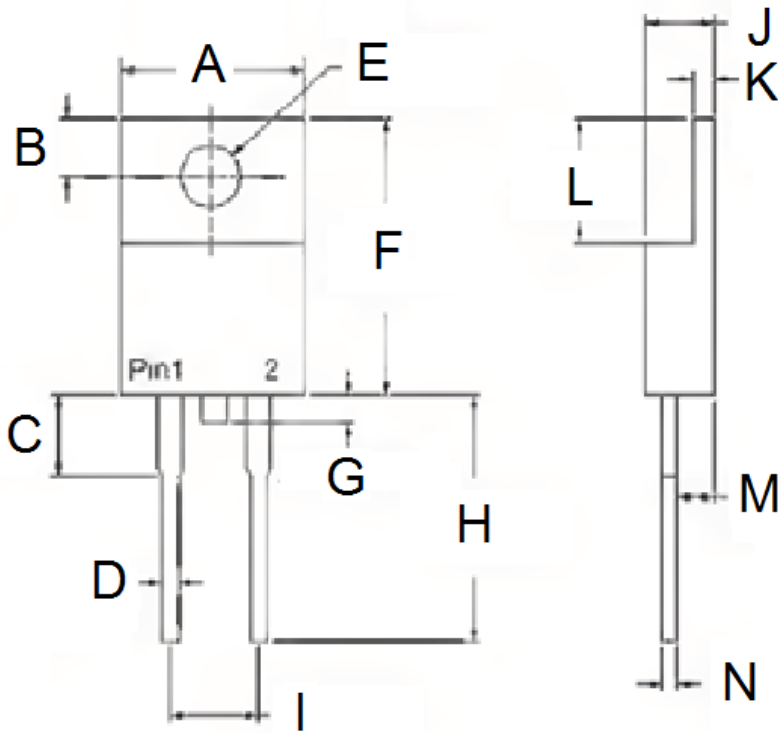
FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS



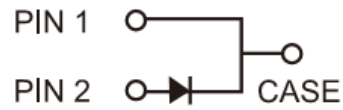
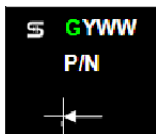
Ordering information

Part No.	Package	BULK Packing	Packing code	Packing code (Green)
MBR16xx	TO-220AC	50 / TUBE	C0	C0G

Note: "xx" is Device Code from "35" thru "150".

Dimensions


DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	-	10.50	-	0.413
B	2.62	3.44	0.103	0.135
C	2.80	4.20	0.110	0.165
D	0.68	0.94	0.027	0.037
E	3.54	4.00	0.139	0.157
F	14.60	16.00	0.575	0.630
G	-	1.60	-	0.063
H	13.19	14.79	0.519	0.582
I	4.95	5.20	0.195	0.205
J	4.42	4.76	0.174	0.187
K	1.14	1.40	0.045	0.055
L	5.84	6.86	0.230	0.270
M	2.20	2.80	0.087	0.110
N	0.35	0.64	0.014	0.025


Marking Diagram


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