TAIWAN SEMICONDUCTOR

The Smartest Choice

MBR735 - MBR7150

7.5 AMPS. Schottky Barrier Rectifiers

TO-220AC

Pb-Free

RoHS COMPLIANT

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℃/10 seconds, 0.25"(6.35mm) from case
- Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- Case: 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: 1.85 grams

Ordering Information(example)

Part No.	Package	Packing	Packing code	Green Compound Packing code
MBR735	TO-220AC	50 / TUBE	D0	D0G

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	MBR 735	MBR 745	MBR 750	MBR 760	MBR 790	MBR 7100	MBR 7150	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	$I_{F(AV)}$	7.5							A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz)	I_{FRM}	15							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=7.5A, T_A=25℃ IF=7.5A, T_A=125℃ IF=15A, T_A=25℃ IF=15A, T_A=125℃	V_F	 - 0.57 0.84 0.72		 0.75 0.65 - -		 0.92 0.82 - -		 0.95 0.92 - -	V
Maximum Instantaneous Reverse Current @ T_A=25 ℃	I_R	0.1							mA
at Rated DC Blocking Voltage @ T_A=125 ℃		15		10		5			
Voltage Rate of Change (Rated V_R)	dV/dt	10000							V/us
Typical Junction Capacitance	Cj	360		280		200		160	pF
Typical Thermal Resistance	$R_{\theta JC}$ $R_{\theta JA}$	5 15							^{O}C/W
Operating Junction Temperature Range	T_J	- 65 to + 150							^{O}C
Storage Temperature Range	T_{STG}	- 65 to + 175							^{O}C

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

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

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RATINGS AND CHARACTERISTIC CURVES (MBR735 THRU MBR7150)

FIG.1- FORWARD CURRENT DERATING CURVE

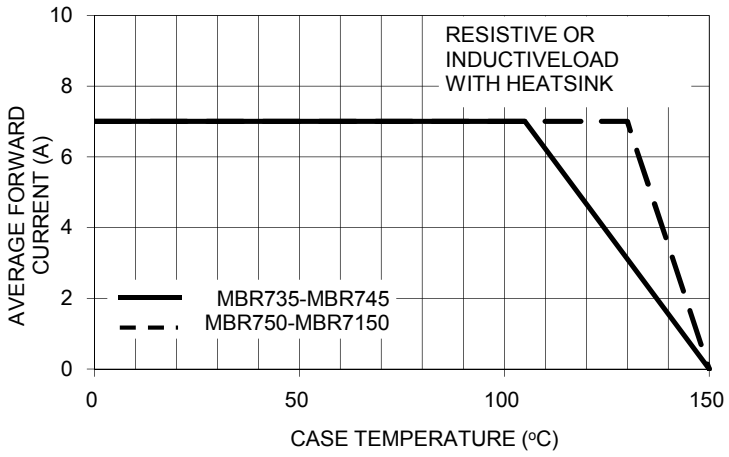


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

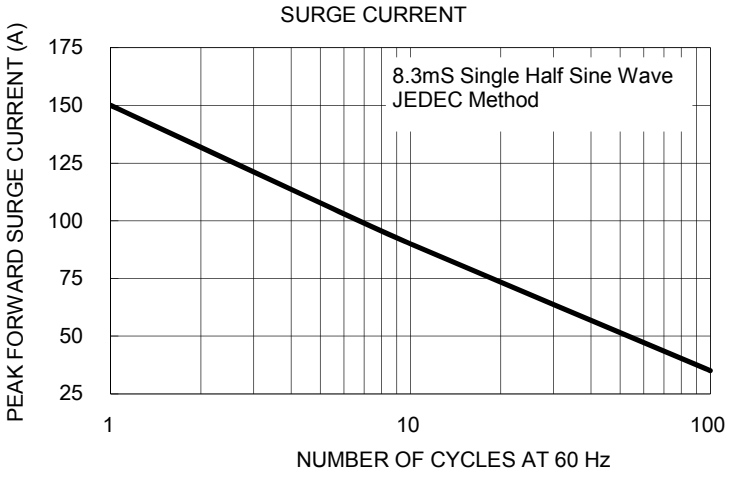


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISRICS

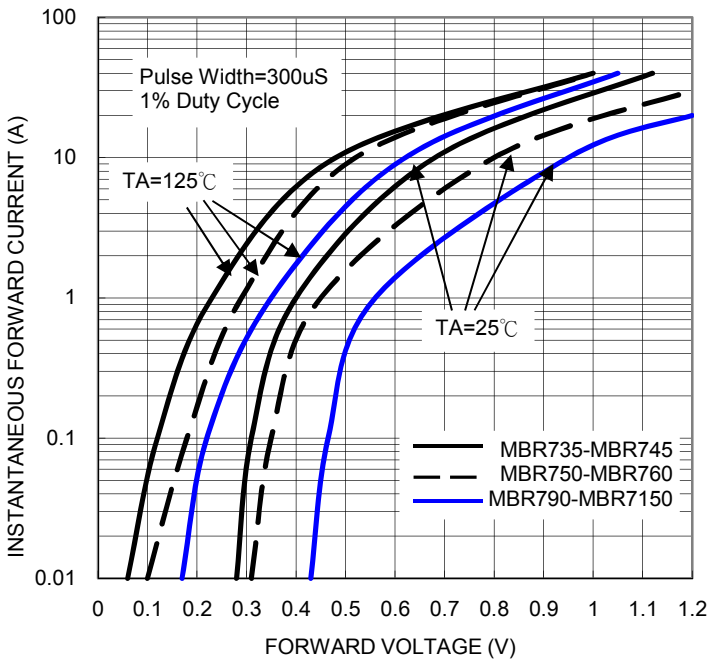


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

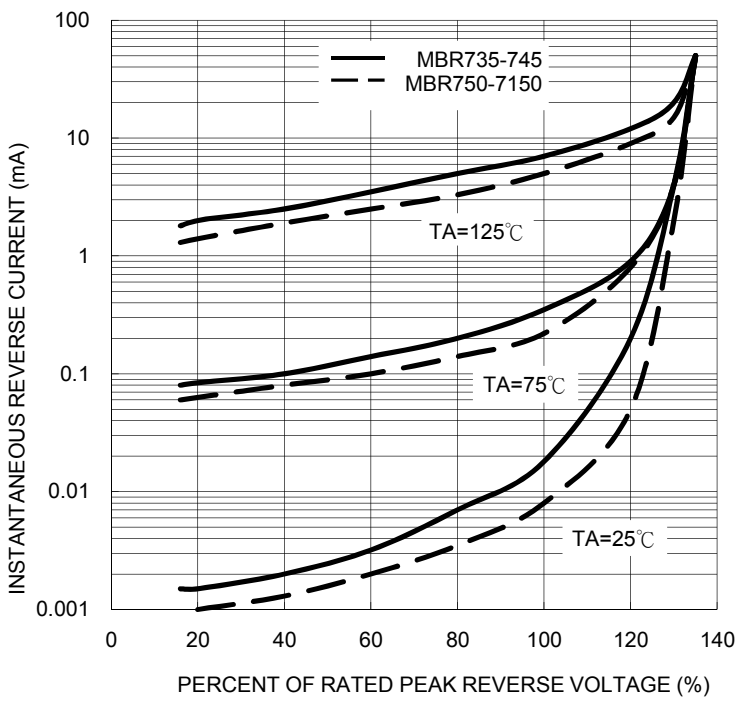


FIG. 5- TYPICAL JUNCTION CAPACITANCE

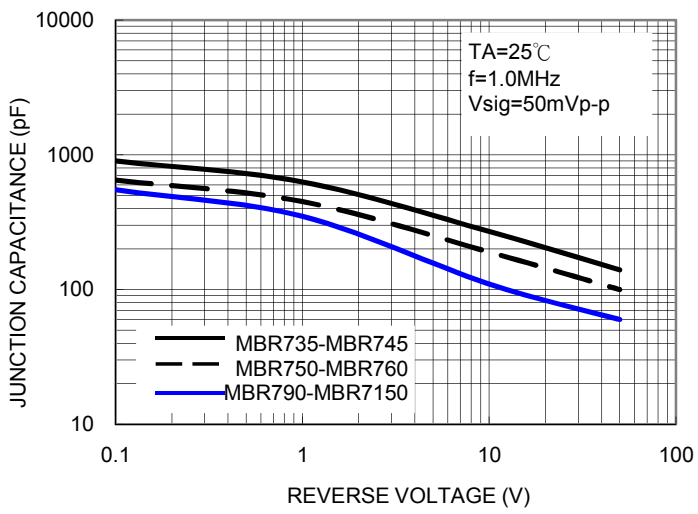
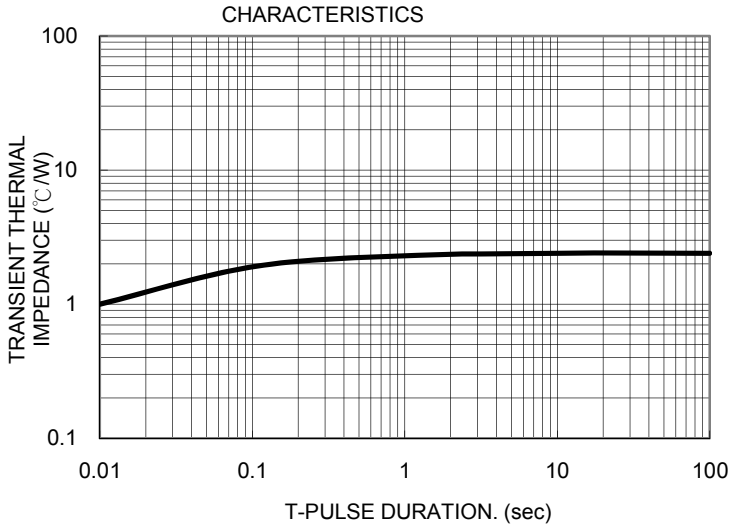


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS



Version:H12

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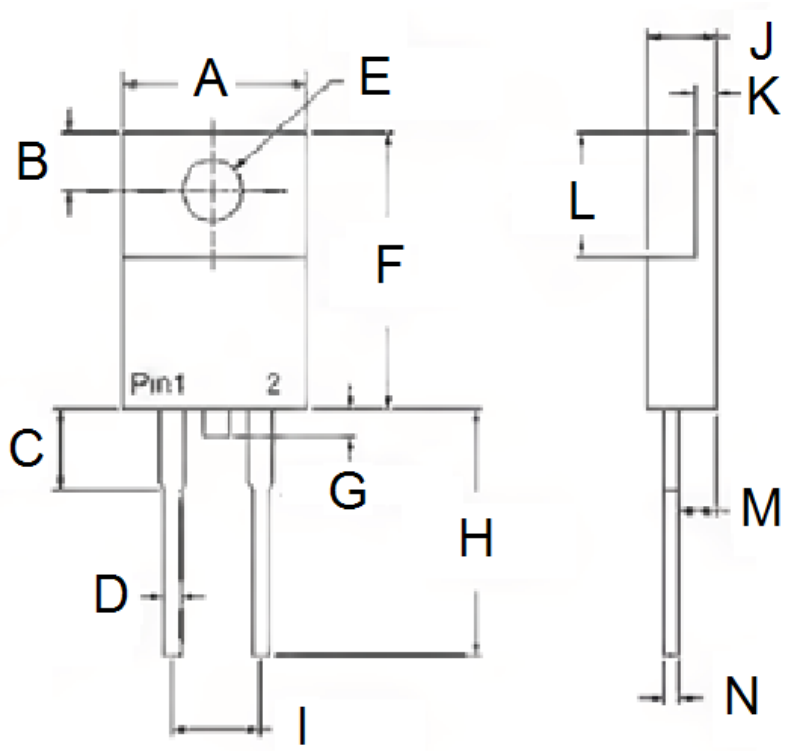
Ordering information

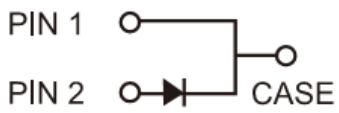
Part No.	Package	BULK Packing	Packing code	Green Compound Packing code
MBR7xx	TO-220AC	50 / TUBE	C0	C0G
	TO-220AC	50 / TUBE	D0	D0G

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