TAIWAN SEMICONDUCTOR

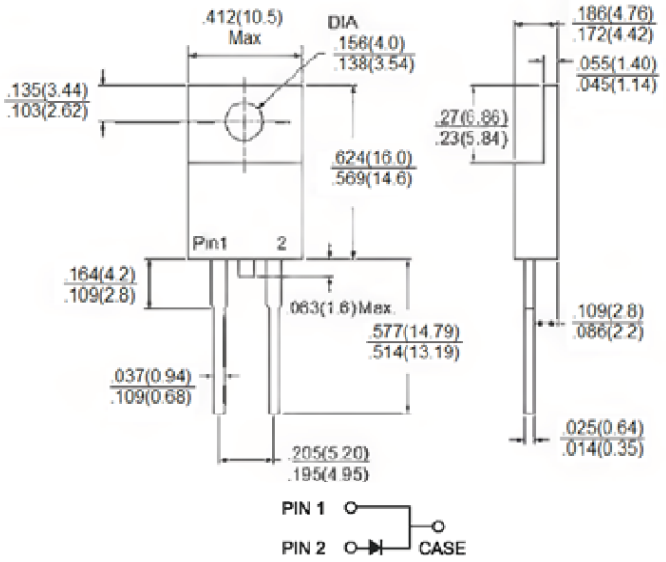
MBR735 - MBR7150

7.5 AMPS. Schottky Barrier Rectifiers

TO-220AC

RoHS COMPLIANCE





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

Dimensions in inches and (millimeters)



Marking Diagram

MBR7XX	= Specific Device Code
G	= Green Compound
Y	= Year
WW	= Work Week

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							°C/W
Operating Junction 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

TAIWAN SEMICONDUCTOR

RATINGS AND CHARACTERISTIC CURVES (MBR735 THRU MBR7150)

FIG.1- FORWARD CURRENT DERATING CURVE

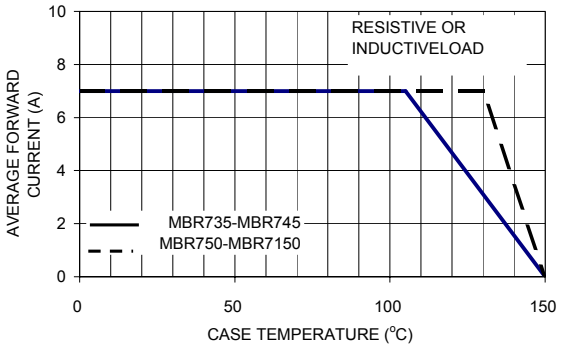


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

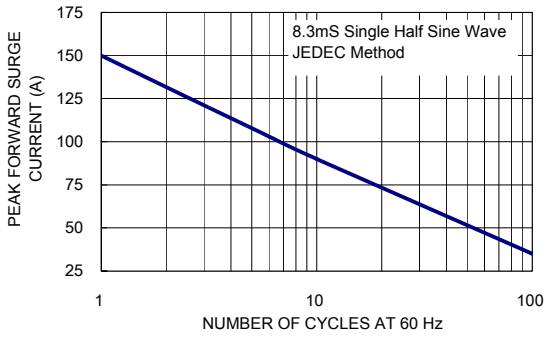


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISRICS

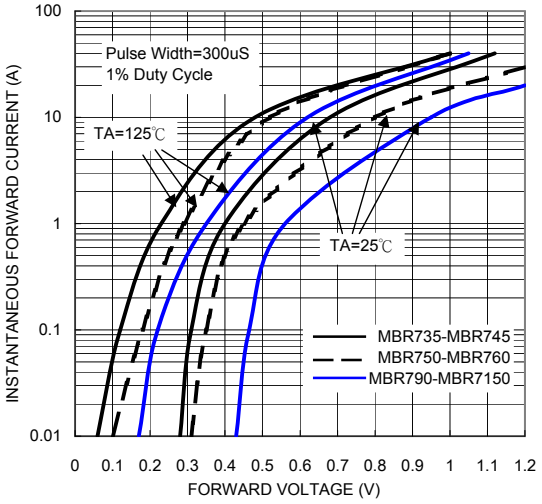


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

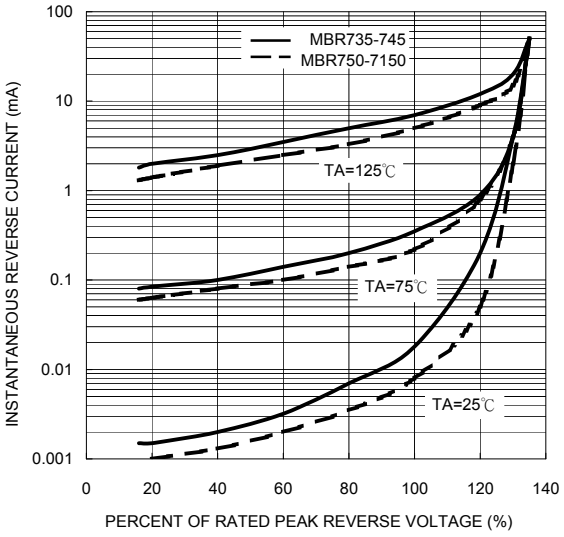


FIG. 5- TYPICAL JUNCTION CAPACITANCE

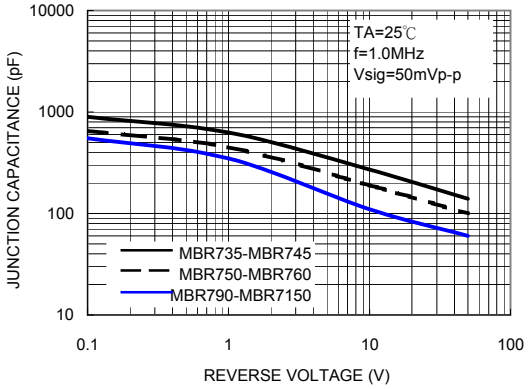
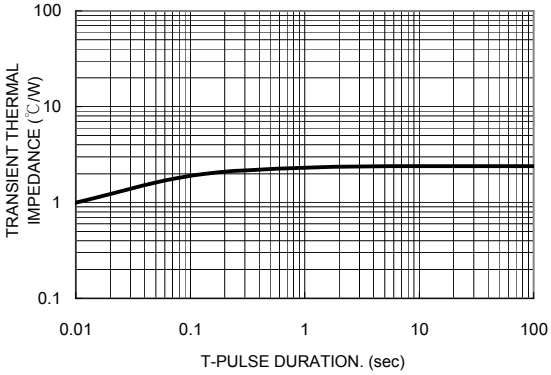


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS



Version:G11