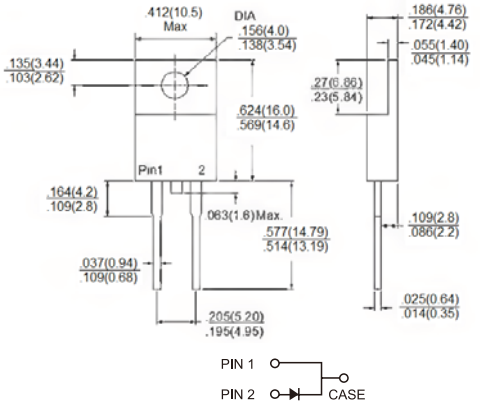
TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

MBR735 - MBR7150

7.5 AMPS. Schottky Barrier Rectifiers

TO-220AC



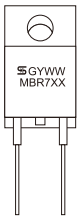
Dimensions in inches and (millimeters)

Features

- ✧ UL Recognized File # E-326243
- ✧ Plastic material used carries Underwriters Laboratory Classifications 94V-0
- ✧ Metal silicon rectifier, 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
- ✧ Guardring 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: 1.85 grams



Marking Diagram

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

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 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 See Fig. 1	$I_{F(AV)}$	7.5							A
Peak Repetitive Forward Current (Square Wave, 20KHz) at T_C=105°C	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 2)	I_{RRM}	1.0		0.5					A
Maximum Instantaneous Forward Voltage at I_F=7.5A,T_A=25°C I_F=7.5A,T_A=125°C I_F=15A,T_A=25°C I_F=15A,T_A=125°C	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 °C at Rated DC Blocking Voltage (Note 1) @ T_A=125 °C	I_R	0.1 15.0		0.1 10		0.1 5.0			mA mA
Voltage Rate of Change (Rated V_R)	dV/dt	10,000							V/uS
Typical Junction Capactance	Cj	360		280		200		160	pF
Maximum Thermal Resistance, (Note 3)	RθJC RθJA	5.0 15.0							°C/W
Operating Junction Temperature Range	T_J	-65 to +150							°C
Storage Temperature Range	T_{STG}	-65 to +175							°C

Notes: 1. Pulse Test: 300us Pulse Width, 1% Duty Cycle
2. 2.0us Pulse Width, f=1.0 KHz
3. Mounted on Heatsink Size of 2 in x 3 in x 0.25 in Al-Plated.

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RATINGS AND CHARACTERISTIC CURVES (MBR735 THRU MBR7150)

FIG.1- FORWARD CURRENT DERATING CURVE

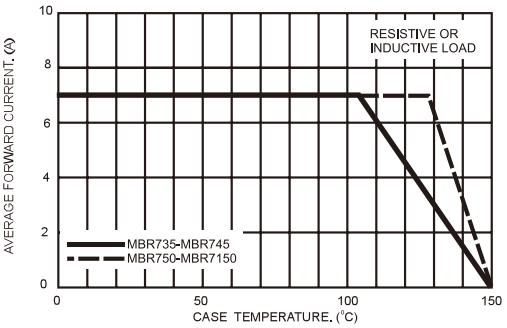

FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

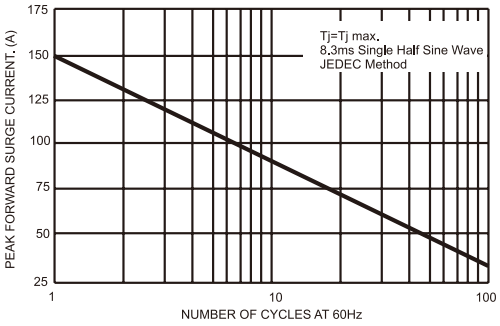

FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

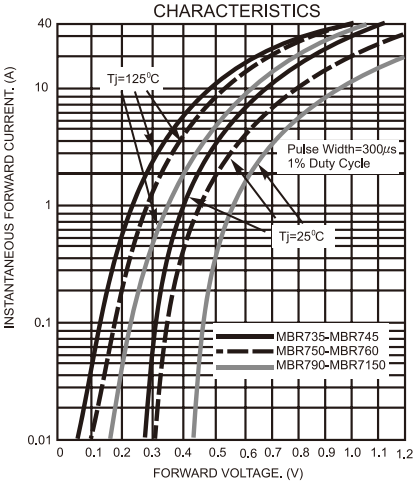

FIG.4- TYPICAL REVERSE CHARACTERISTICS

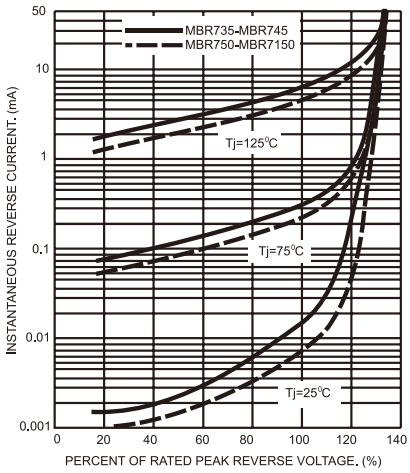

FIG.5- TYPICAL JUNCTION CAPACITANCE

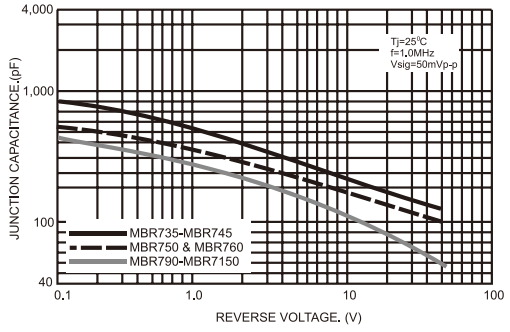

FIG 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS