TAIWAN SEMICONDUCTOR

MBR1635 - MBR16150

16.0 AMPS. Schottky Barrier Rectifiers

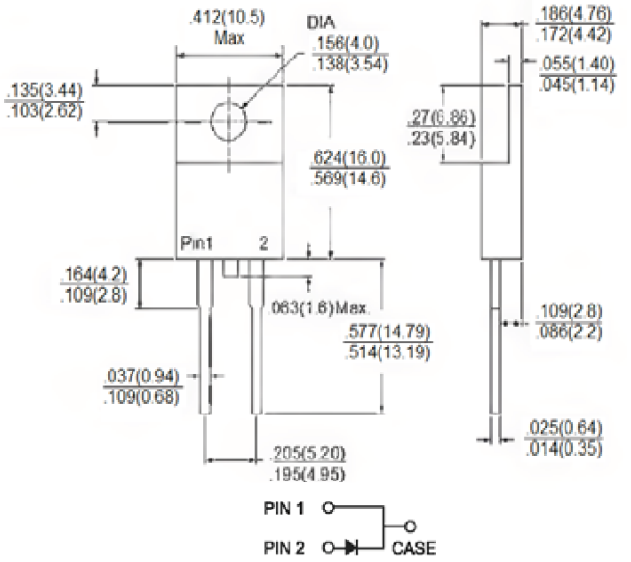
TO-220AC

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

- 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

Dimensions in inches and (millimeters)



Marking Diagram

MBR16XX	= 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 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, T_A=25℃ IF=16A, T_A=125℃	V_F	0.63 0.57		0.75 0.65		0.85 0.75		0.95 0.92	V
Maximum Ilstantaneous Reverse Current @ T_A=25 ℃ at Rated DC Blocking Voltage @ T_A=125 ℃	I_R	0.5 15		0.5 10		0.3 7.5		0.1 5	mA mA
Voltage Rate of Change (Rated V_R)	dV/dt	10,000							V/uS
Typical Junction Capacitance	Cj	500							pF
Maximum Typical Thermal Resistance	$R_{\theta JC}$	3							^{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 (MBR1635 THRU MBR16150)

FIG.1- FORWARD CURRENT DERATING CURVE

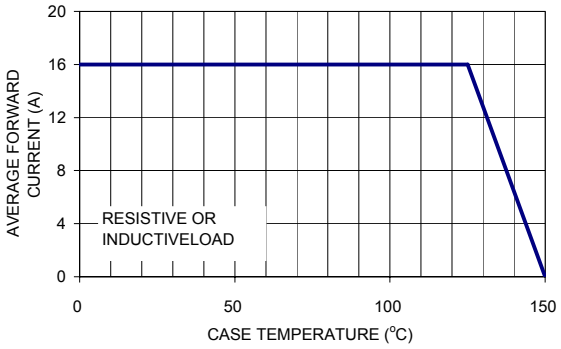


FIG. 2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

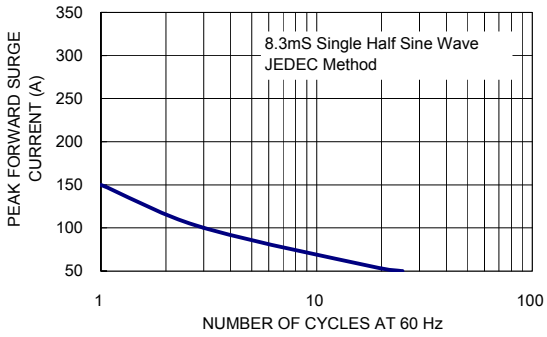


FIG. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISRICS

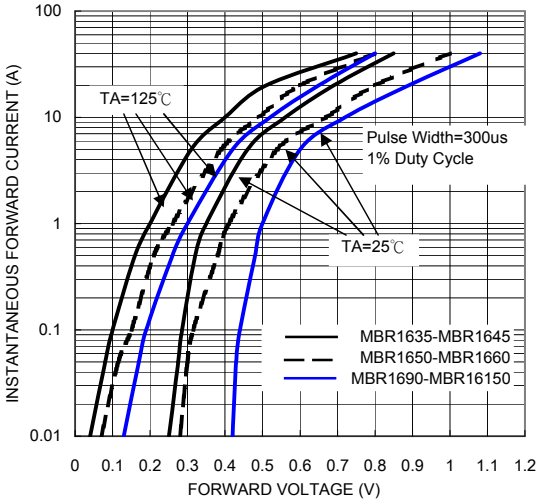


FIG. 4- TYPICAL REVERSE CHARACTERISTICS

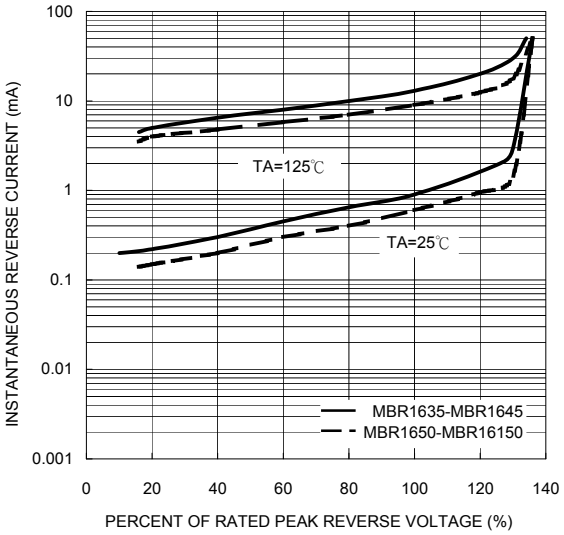


FIG. 5- TYPICAL JUNCTION CAPACITANCE

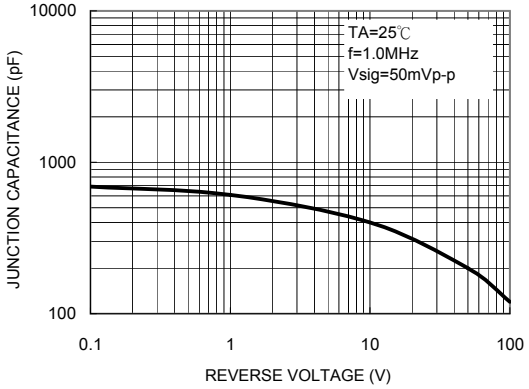
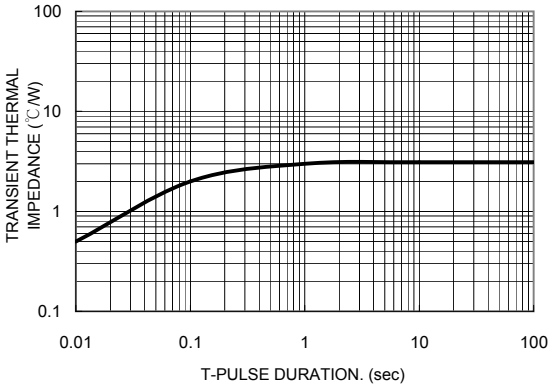


FIG. 6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS



Version:G11