

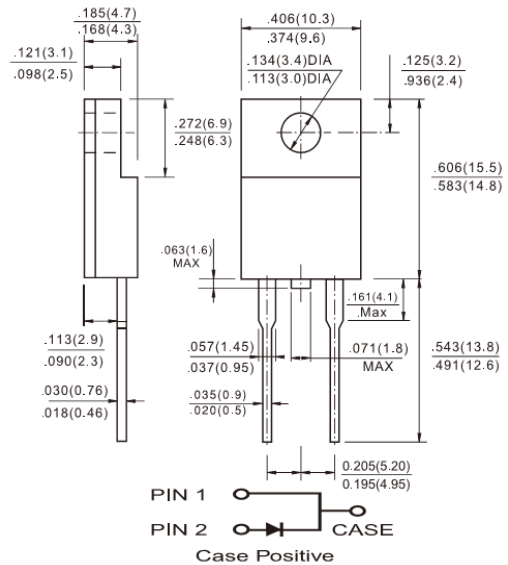


Features

- ✦ UL Recognized File # E-326243
- ✦ 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, at terminals
- ✦ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✦ Case: ITO-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: 1.7 grams



Dimensions in inches and (millimeters)



Marking Diagram

- MBRF16XX = 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	MBRF 1635	MBRF 1645	MBRF 1650	MBRF 1660	MBRF 1690	MBRF 16100	MBRF 16150	Unit
Maximum Repetitive 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 at $T_c=125^\circ\text{C}$	$I_{F(AV)}$	16							A
Peak Repetitive Forward Current (Rated VR, Square Wave, 20KHz) at $T_c=125^\circ\text{C}$	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	0.5						A
Maximum Instantaneous Forward Voltage (Note 2) $I_F=16\text{A}, T_A=25^\circ\text{C}$ $I_F=16\text{A}, T_A=125^\circ\text{C}$	V_F	0.63	0.75	0.85	0.95				V
Maximum Reverse Current @ Rated VR $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	I_R	0.5			0.3	0.1			mA
		15	10	7.5	5				
Voltage Rate of Change (Rated V_R)	dV/dt	10000							V/us
Typical Junction Capacitance	C_j	500							pF
Typical Thermal Resistance	$R_{\theta JC}$	3							$^\circ\text{C}/\text{W}$
Operating Temperature Range	T_J	- 65 to + 150							$^\circ\text{C}$
Storage Temperature Range	T_{STG}	- 65 to + 150							$^\circ\text{C}$

Note 1: 2.0uS Pulse Width, $f=1.0\text{KHz}$

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

RATINGS AND CHARACTERISTIC CURVES (MBRF1635 THRU MBRF16150)

FIG.1 FORWARD CURRENT DERATING CURVE

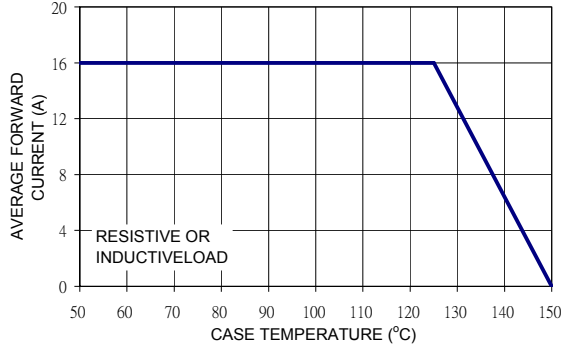


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

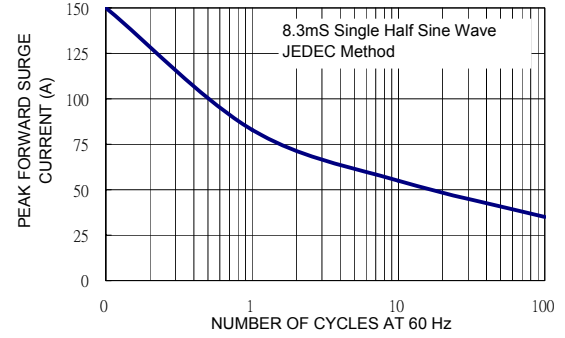


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

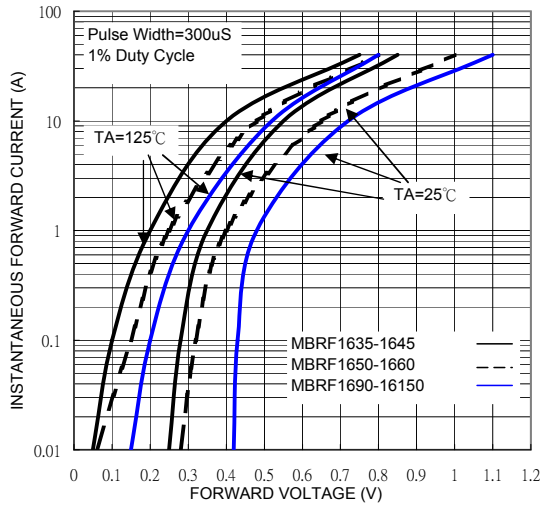


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

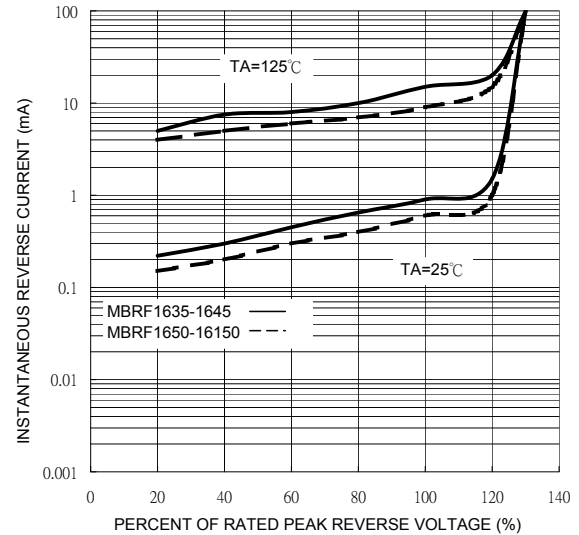


FIG. 5 TYPICAL JUNCTION CAPACITANCE

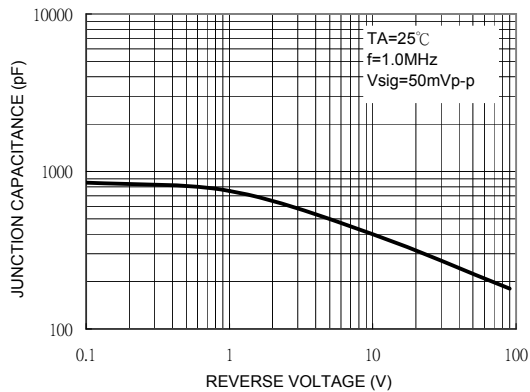


FIG. 6 TYPICAL TRANSIENT THERMAL IMPEDANCE

