



# MBRF735 THRU MBRF7100

## Isolation 7.5 AMPS. Schottky Barrier Rectifiers



Voltage Range  
35 to 100 Volts  
Current  
7.5 Amperes

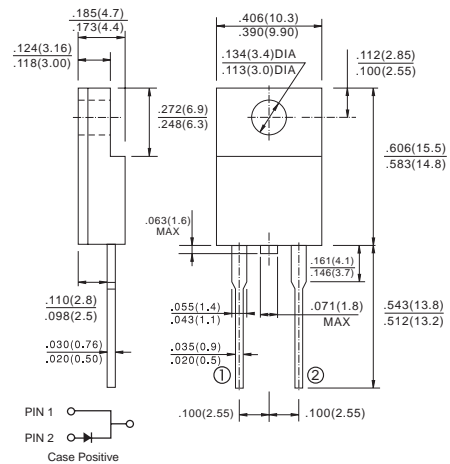
### Features

- ✦ 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

### Mechanical Data

- ✦ Cases: ITO-220AC molded plastic body
- ✦ Terminals: Lead solderable per MIL-STD-750, Method 2026
- ✦ Polarity: As marked
- ✦ Mounting position: Any
- ✦ Mounting torque: 5 in. - lbs. max
- ✦ Weight: 0.08 ounce, 2.24 grams

### ITO-220AC



Dimensions in inches and (millimeters)

### 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 735	MBRF 745	MBRF 750	MBRF 760	MBRF 790	MBRF 7100	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	35	45	50	60	90	100	V
Maximum RMS Voltage	$V_{RMS}$	24	31	35	42	63	70	V
Maximum DC Blocking Voltage	$V_{DC}$	35	45	50	60	90	100	V
Maximum Average Forward Rectified Current See Fig. 1	$I_{AV}$	7.5						A
Peak Repetitive Forward Current (Square Wave, 20KHz) at $T_c=105^\circ\text{C}$	$I_{FRM}$	15.0						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) $I_f=7.5\text{A}, T_c=25^\circ\text{C}$ $I_f=7.5\text{A}, T_c=125^\circ\text{C}$ $I_f=15\text{A}, T_c=25^\circ\text{C}$ $I_f=15\text{A}, T_c=125^\circ\text{C}$	$V_F$	0.57 0.84 0.72		0.75 0.65		0.92 0.82		V
Maximum Instantaneous Reverse Current @ $T_c=25^\circ\text{C}$ at Rated DC Blocking Voltage (Note 1) @ $T_c=125^\circ\text{C}$	$I_R$	0.1 15.0		0.5 1,000		0.1 -		mA mA
Voltage Rate of Change (Rated $V_R$ )	$dV/dt$	10,000						V/uS
Maximum Thermal Resistance, (Note 3)	$R_{\theta_{JC}}$	7.0						°C/W
Typical Junction Capacitance	$C_j$	350		280		200		pF
Operating Junction Temperature Range	$T_J$	-65 to +150						°C
Storage Temperature Range	$T_{STG}$	-65 to +175						°C

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

## RATINGS AND CHARACTERISTIC CURVES (MBRF735 THRU MBRF7100)

FIG.1- FORWARD CURRENT DERATING CURVE

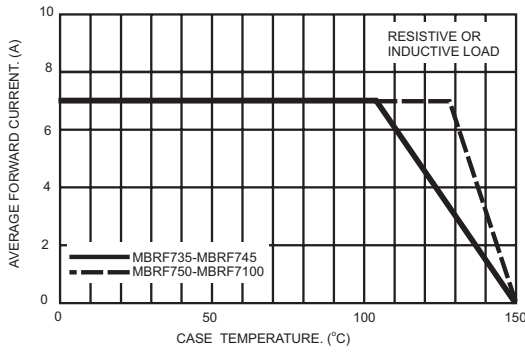


FIG.2- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

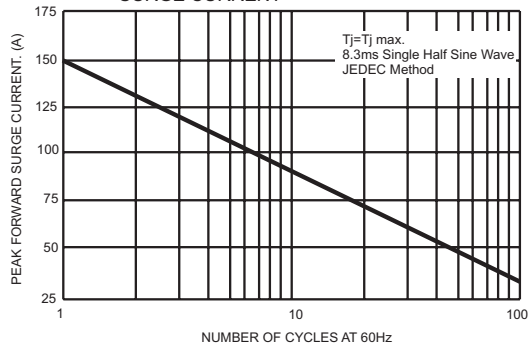


FIG.3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

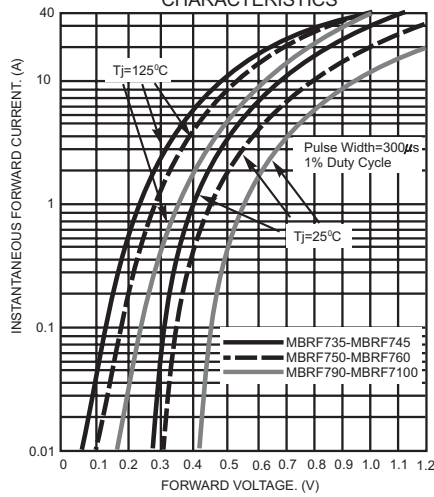


FIG.4- TYPICAL REVERSE CHARACTERISTICS

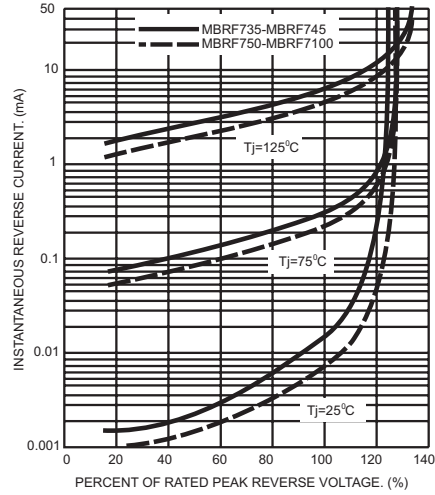


FIG.5- TYPICAL JUNCTION CAPACITANCE

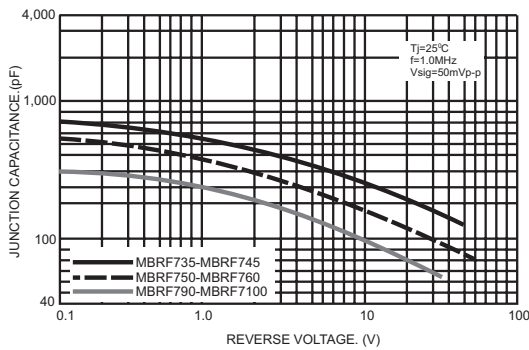


FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

