

Switchmode Full Plastic Dual Schottky Barrier Power Rectifiers

Using the Schottky Barrier principle with a Refractory metal capable of high temperature operation metal. The proprietary barrier technology allows for reliable operation up to 150 °C junction temperature. Typical application are in switching Mode Power Supplies such as adaptators, DC/DC convertes, free-wheeling and polarity protection diodes.

- * Low Forward Voltage.
- * Low Switching noise.
- * High Current Capacity
- * Guarantee Reverse Avalanche.
- * Guard-Ring for Stress Protection.
- * Low Power Loss & High efficiency.
- * 150 °C Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction.
- * Plastic Material used Carries Underwriters Laboratory

Mechanical Data

- * Case : JEDEC ITO-220AB molded plastic body
- * Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- * Polarity: As marked
- * Mounting Torque: 4-6kg.cm
- * Weight: 1.7 g approx.

Plating pb free is indicated by box



MAXIMUM RATINGS

Characteristic	Symbol	MBRF30100C	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	100	V
Working Peak Reverse Voltage	V_{RWM}		
DC Blocking Voltage	V_R		
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Average Rectifier Forward Current	$I_{F(AV)}$	15	A
Total Device (Rated V_R , $T_C=100$)		30	
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz)	I_{FM}	30	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	250	A
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-65 to +150	

THERMAL RESISTANCES

Typical Thermal Resistance junction to case	$R_{\theta j-c}$		
Per diode	3.1	/w	
Total	2.3		
Coupling	2.1		
	$R_{\theta c}$		

Where the diodes 1 and 2 are used simultaneously:

$$T_J(\text{diode } 1) = P(\text{diode } 1) \times R_{\theta(j-c)} (\text{Per diode}) + P(\text{diode } 2) \times R_{\theta c}$$

ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	MBRF30100C	Unit
Maximum Instantaneous Forward Voltage ($I_F = 15$ Amp $T_C = 25$ °C) ($I_F = 15$ Amp $T_C = 125$ °C)	V_F	0.85 0.75	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25$ °C) (Rated DC Voltage, $T_C = 125$ °C)	I_R	0.1 15	mA

To evaluation the conduction losses use the following equation:

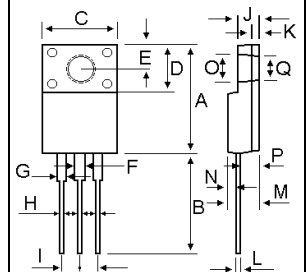
$$P = 0.58 \times I_{F(AV)} + 0.01 \times I_{F(RMS)}^2$$

SCHOTTKY BARRIER RECTIFIERS

**30 AMPERES
100 VOLTS**



ITO-220AB



DIM	MILLIMETERS	
	MIN	MAX
A	15.05	15.15
B	13.35	13.45
C	10.00	10.10
D	6.55	6.65
E	2.65	2.75
F	1.55	1.65
G	1.15	1.25
H	0.55	0.65
I	2.50	2.60
J	3.00	3.20
K	1.10	1.20
L	0.55	0.65
M	4.40	4.60
N	1.15	1.25
P	2.65	2.75
O	3.35	3.45
Q	3.15	3.25



Common cathode
Suffix "C"

MBRF30100C

FIG-1 FORWARD CURRENT DERATING CURVE

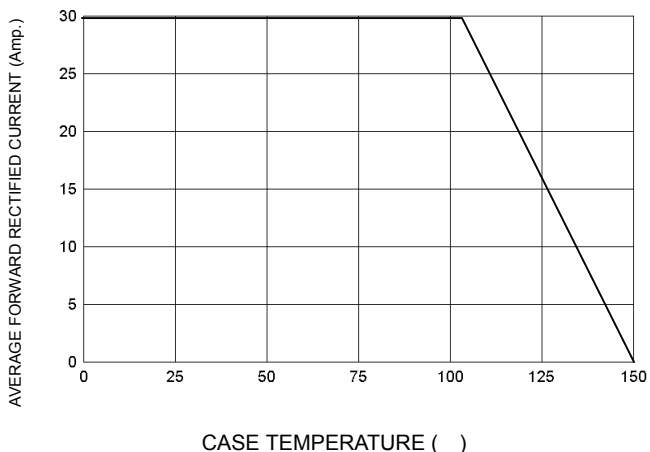


FIG-2 TYPICAL FORWARD CHARACTERISTICS

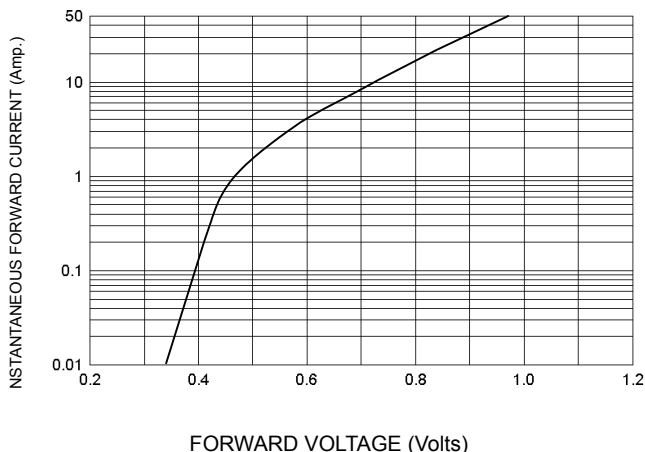


FIG-3 TYPICAL REVERSE CHARACTERISTICS

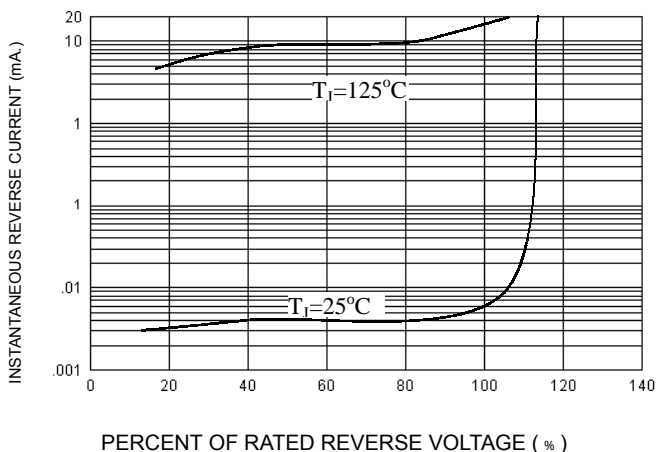


FIG-4 TYPICAL JUNCTION CAPACITANCE

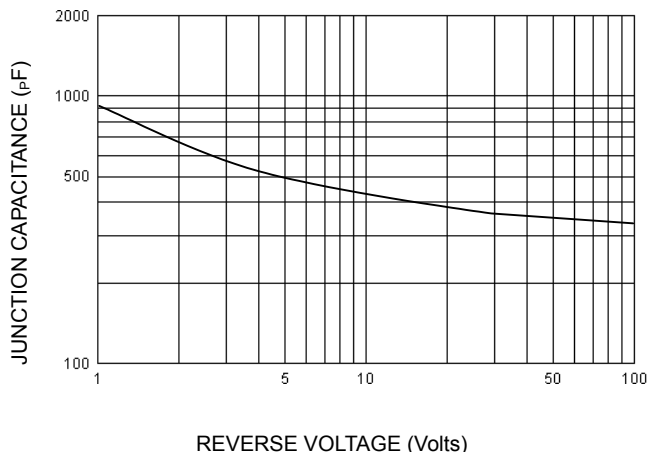


FIG-5 PEAK FORWARD SURGE CURRENT

