

## 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 175°C junction temperature. Typical application are in switching Mode Power Supplies such as adaptors, DC/DC converters, free-wheeling and polarity protection diodes.

### Features

- \* Low Forward Voltage.
- \* Low Switching noise.
- \* High Current Capacity
- \* Guarantee Reverse Avalanche.
- \* Guard-Ring for Stress Protection.
- \* Low Power Loss & High efficiency.
- \* 175°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction.
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



\* In compliance with EU RoHs 2002/95/EC directives

### MAXIMUM RATINGS

Characteristic	Symbol	MBRF30100CK	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 ( per diode ) Total Device (Rated $V_R$ , $T_C=100^\circ\text{C}$ )	$I_{F(AV)}$	15 30	A
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 +175	°C

### THERMAL RESISTANCES

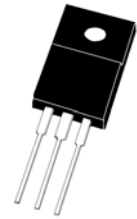
Typical Thermal Resistance junction to case	$R_{\theta jc}$	3.2	°C/w
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### ELECTRIAL CHARACTERISTICS

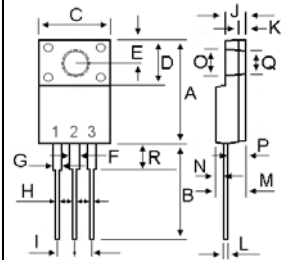
Characteristic	Symbol	MBRF30100CK	Unit
Maximum Instantaneous Forward Voltage ( per diode ) ( $I_F=15$ Amp $T_C=25^\circ\text{C}$ ) ( $I_F=15$ Amp $T_C=125^\circ\text{C}$ )	$V_F$	0.85 0.78	V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C=25^\circ\text{C}$ ) ( Rated DC Voltage, $T_C=125^\circ\text{C}$ )	$I_R$	0.01 15	mA

### SCHOTTKY BARRIER RECTIFIERS

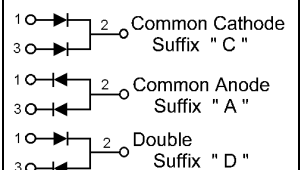
**30 AMPERES  
100 VOLTS**



ITO-220AB



DIM	MILLIMETERS	
	MIN	MAX
A	14.90	15.15
B	13.35	13.55
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
O	3.35	3.45
P	2.65	2.75
Q	3.15	3.25
R	3.60	3.80



# MBRF30100CK

FIG-1 FORWARD CURRENT DERATING CURVE

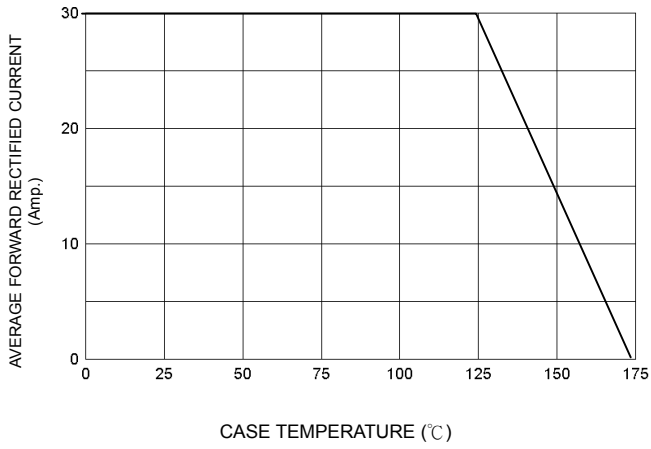


FIG-2 TYPICAL FORWARD CHARACTERISTICS

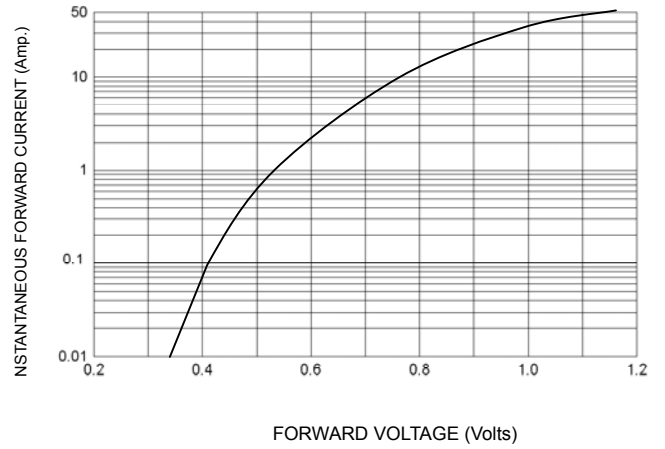


FIG-3 TYPICAL REVERSE CHARACTERISTICS

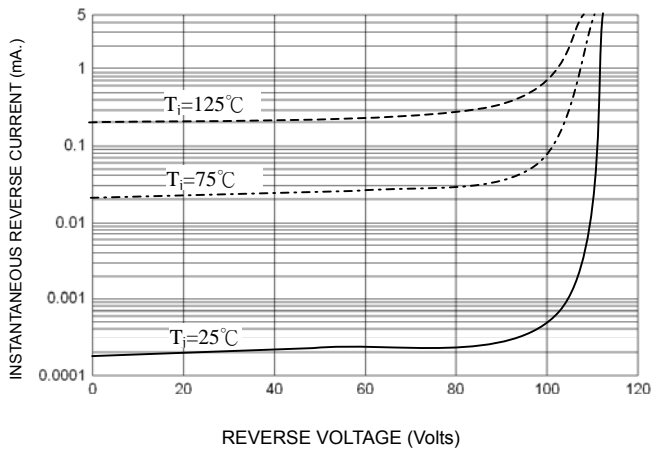


FIG-4 TYPICAL JUNCTION CAPACITANCE

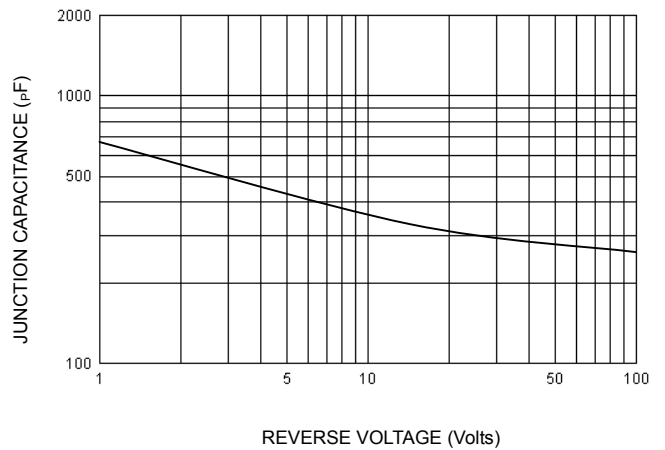


FIG-5 PEAK FORWARD SURGE CURRENT

