

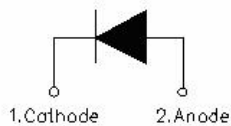
## MBRF30100 SCHOTTKY RECTIFIER



### Features

- 150 °C T<sub>J</sub> operation
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	100	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @T <sub>c</sub> =100°C, rectangular wave form	30	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	280	A

### Electrical Characteristics:

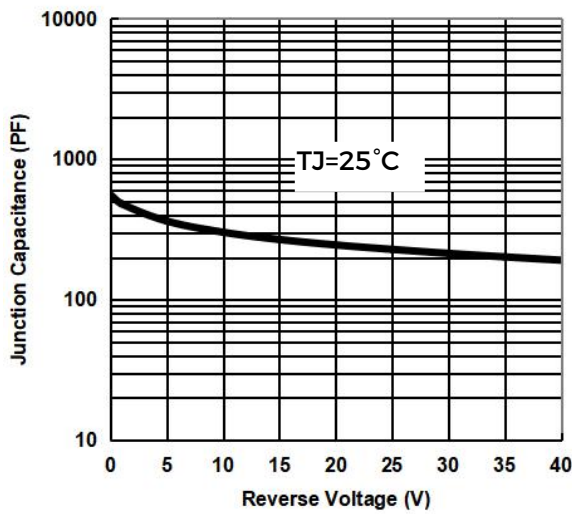
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@30A, Pulse, T <sub>J</sub> = 25 °C	0.85	0.90	V
	$V_{F2}$	@30A, Pulse, T <sub>J</sub> = 125 °C	0.76	0.81	V
Reverse Current*	$I_{R1}$	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.01	1.0	mA
	$I_{R2}$	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	6	20	mA
Junction Capacitance	$C_T$	@V <sub>R</sub> = 5V, T <sub>c</sub> = 25 °C f <sub>SIC</sub> = 1MHz	400	800	pF
Typical Series Inductance	$L_S$	Measured lead to lead 5 mm from package body	8.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

\* Pulse width < 300 μs, duty cycle < 2%

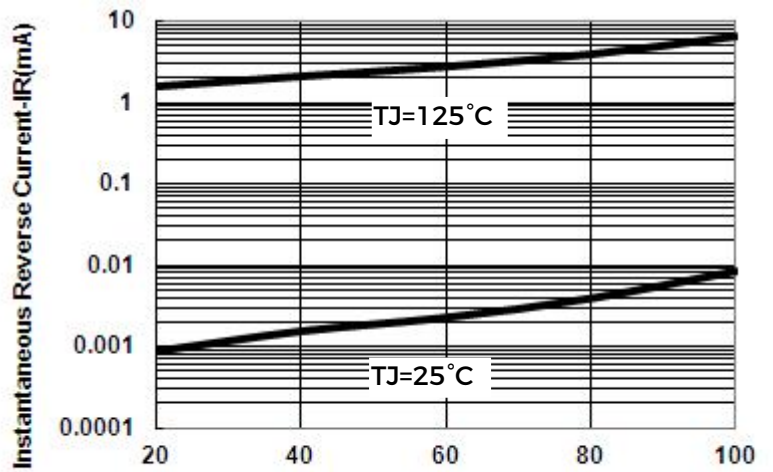
**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	4.5	°C/W
Approximate Weight	wt	-	1.6	g
Case Style	ITO-220AC			

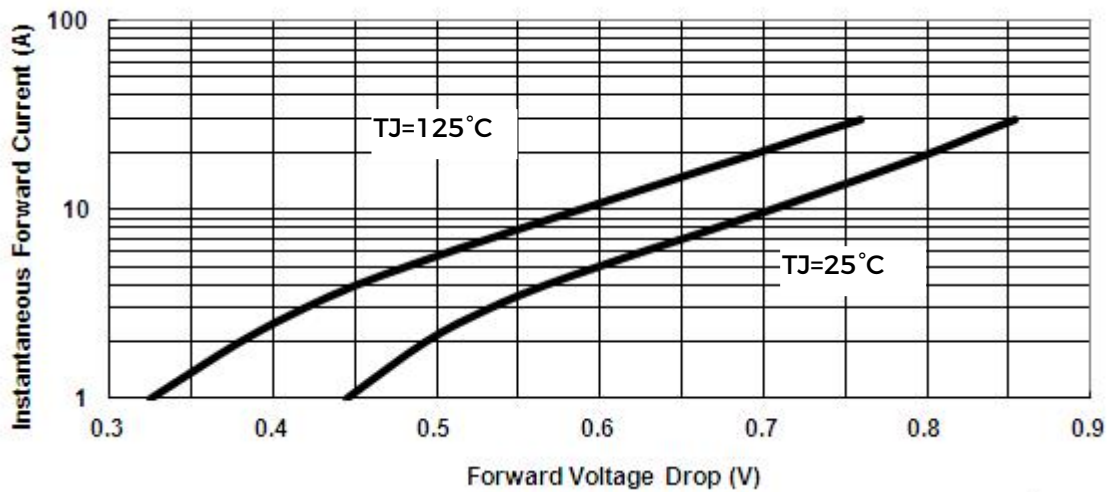
**Ratings and Characteristics Curves**



**Fig.1-Typical Junction Capacitance**

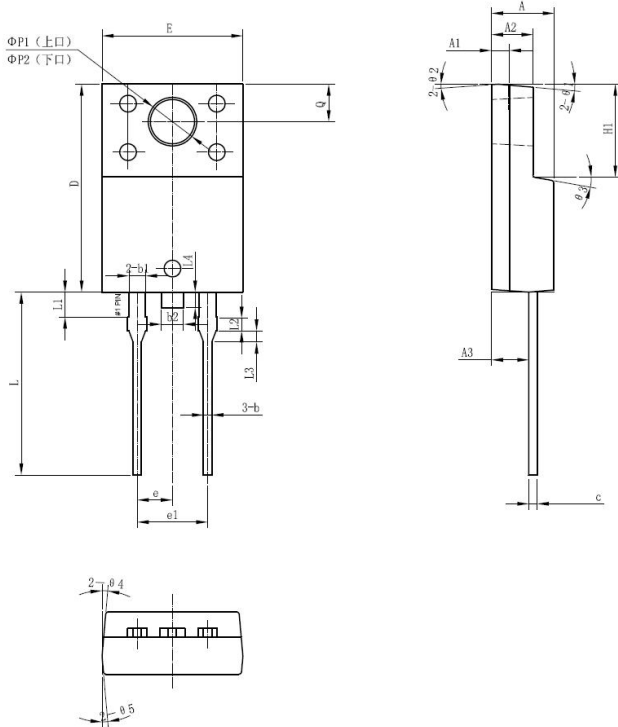


**Fig.2-Typical Reverse Characteristics**



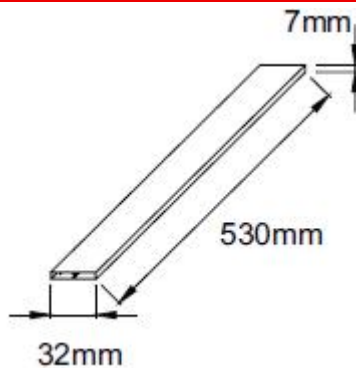
**Fig.3-Typical Instantaneous Forward Voltage Characteristics**

**Mechanical Dimensions ITO-220AC**

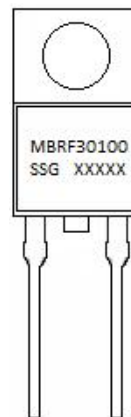


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
$\Phi P1$ (上口)	3.30	3.50	3.70
$\Phi P2$ (下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
$\theta 1$		5°	
$\theta 2$		4°	
$\theta 3$		10°	
$\theta 4$		5°	
$\theta 5$		5°	

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- MBR = Device Type
- F = Package type
- 30 = Forward Current (30A)
- 100 = Reverse Voltage (100V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information**

Device	Package	Shipping
MBRF30100	ITO-220AC (Pb-Free)	50 pcs/ tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.



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