



THE DATASHEET OF MBRF2045



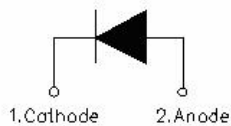
MBRF2045 SCHOTTKY RECTIFIER



Features

- 150 °C T_J 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	-	45	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _c =123°C, rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3ms, Half Sine pulse	252	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 20A, Pulse, T _J = 25 °C	0.51	0.60	V
	V _{F2}	@ 20A, Pulse, T _J = 125 °C	0.45	0.58	V
Reverse Current*	I _{R1}	@V _R = rated V _R , T _J = 25 °C	0.06	1	mA
	I _{R2}	@V _R = rated V _R , T _J = 125°C	15	100	mA
Junction Capacitance	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	500	1100	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	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	DC operation	1.5	$^{\circ}\text{C/W}$
Typical Thermal Resistance, Junction to Case(Per package)	$R_{\theta\text{JC}}$	DC operation	50	$^{\circ}\text{C/W}$
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta\text{CS}}$	Mounting surface, smooth and greased	0.50	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	1.6	g
Case Style	ITO-220AC			

Ratings and Characteristics Curves

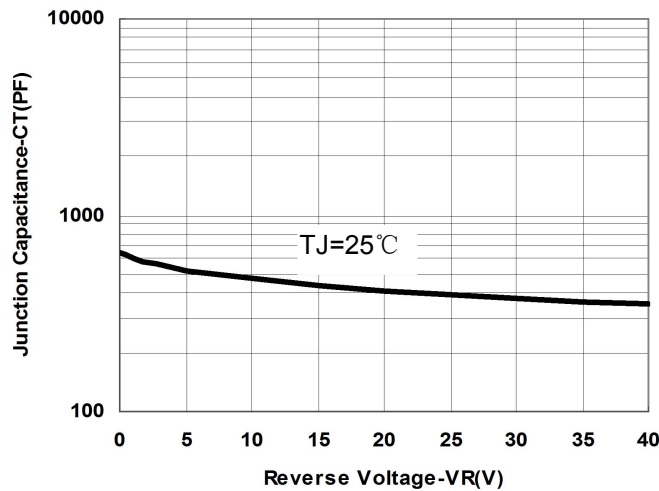


Fig.1-Typical Junction Capacitance

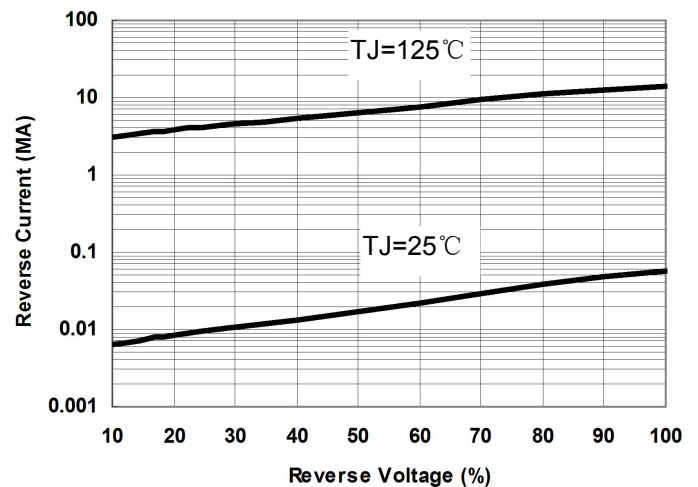


Fig.2-Typical Reverse Characteristics

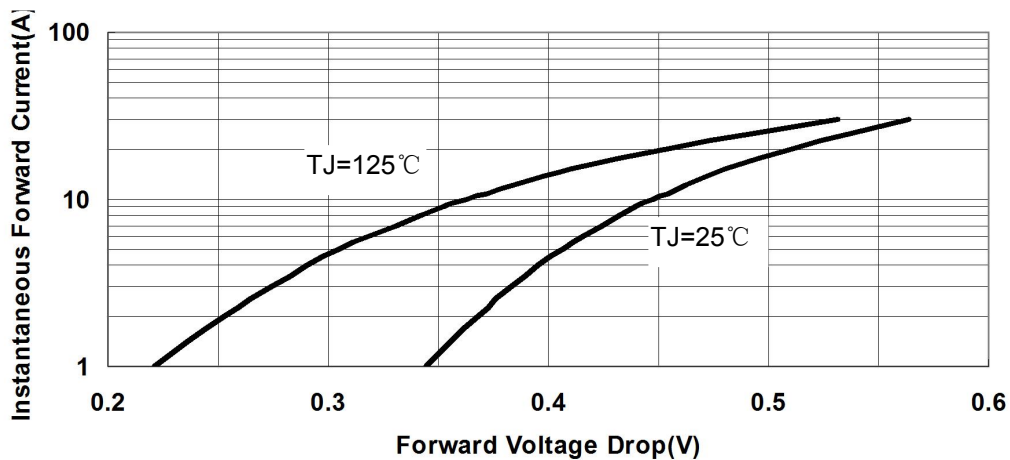
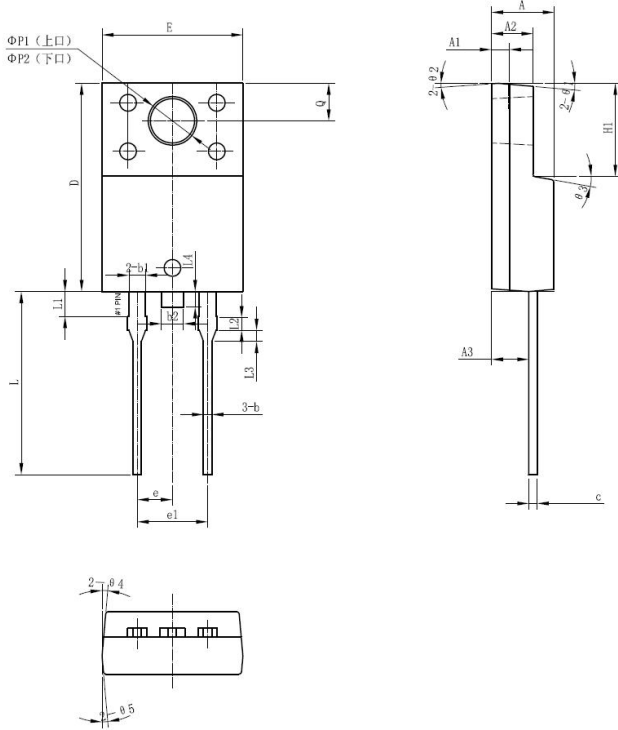


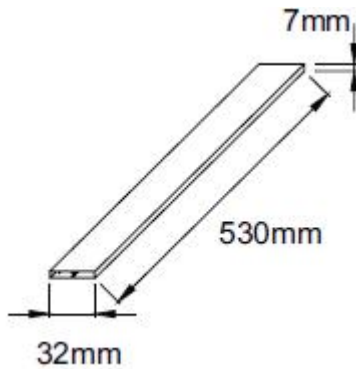
Fig.3-Typical Instantaneous Forward Voltage Characteristics

Mechanical Dimensions ITO-220AC

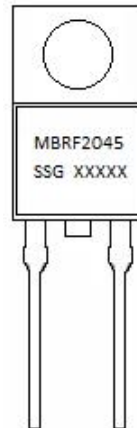


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
ΦP1(上□)	3.30	3.50	3.70
ΦP2(下□)	2.99	3.19	3.39
Q	2.50	2.70	2.90
θ1		5°	
θ2		4°	
θ3		10°	
θ4		5°	
θ5		5°	

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- MBR = Device Type
- F = Package type
- 20 = Forward Current (20A)
- 45 = Reverse Voltage (45V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information

Device	Package	Shipping
MBRF2045	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.

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •





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