Technical Data *Green Products*
Data Sheet N1070, Rev. A

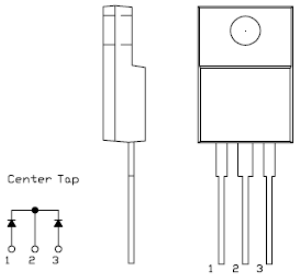
MBRF2045CTU SCHOTTKY RECTIFIER

Applications:

- **Switching power supply**
- **Converters**
- **Free-Wheeling diodes**
- **Reverse battery protection**

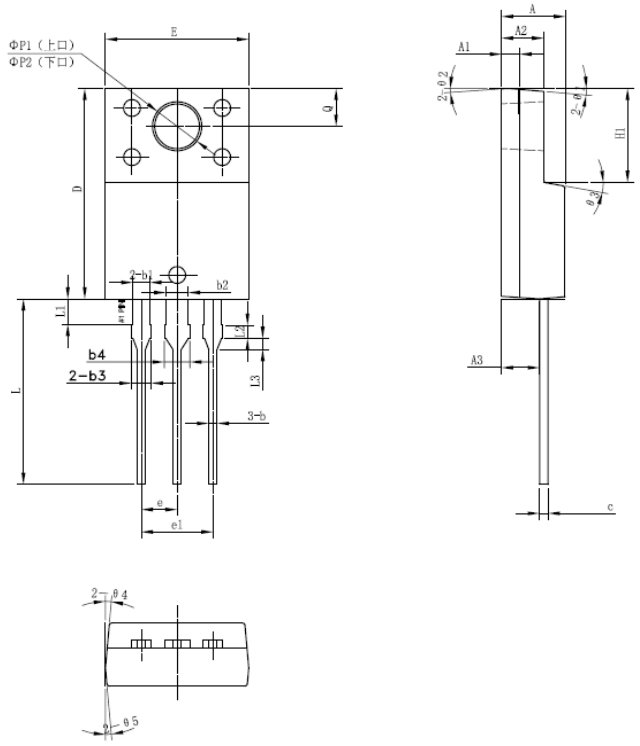
Features:

- **125°C T_J operation**
- **Center tap configuration**
- **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**
- **Terminals: pure tin plated, solderable per MIL-STD-750, Method 2026**
- **This is a Pb − Free Device**
- **All SMC parts are traceable to the wafer lot**
- **Additional testing can be offered upon request**



OUTLINE DRAWING

Mechanical Dimensions (In mm):



SYMBOL	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
b3	1.20	1.30	1.45
b4	1.60	1.70	1.85
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
ΦP1(上口)	3.30	3.50	3.70
ΦP2(下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
Θ1		5°	
Θ2		4°	
Θ3		10°	
Θ4		5°	
Θ5		5°	

ITO-220AB(HD)

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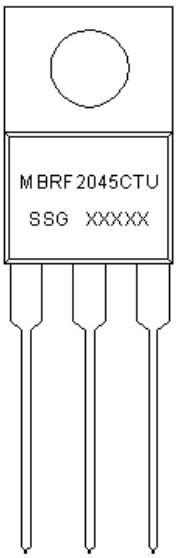
Marking Diagram:



Where XXXXX is YYWWL

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

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

Ordering Information:

Device	Package	Shipping
MBRF2045CTU	ITO-220AB (Pb-Free)	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

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 (per device)	$I_{F\ (AV)}$	50% duty cycle @T_C =80°C, rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	200	A

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Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V_{F1}	@ 10A, Pulse, T_J = 25 °C	0.43	0.50	V
Reverse Current at DC condition (per leg) *	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.002	1	mA
Reverse Current (per leg) *	I_{R2}	@V_R = rated V_R T_J = 125 °C	18	200	mA
Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	560	750	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	8.0	-	nH
RSM Isolation Voltage (t = 1.0 second, R. H. < =30%, T_A = 25 °C)	V_{ISO}	Clip mounting, the epoxy body away from the heatsink edge by more than 0.110" along the lead direction.	-	4500	V
		Clip mounting, the epoxy body is inside the heatsink.	-	3500	
		Screw mounting, the epoxy body is inside the heatsink.	-	1500	

* Pulse Width < 300μs, Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature Range	T_J	-	-55 to +125	°C
Storage Temperature Range	T_{stg}	-	-55 to +125	°C
Typical Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	5.0	°C/W
Approximate Weight	wt	-	2	g
Case Style	ITO-220AB			

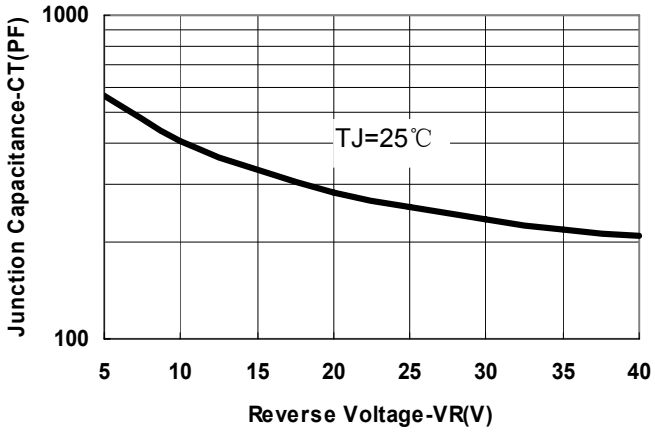

Fig.1-Typical Junction Capacitance Vs.Reverse Voltage

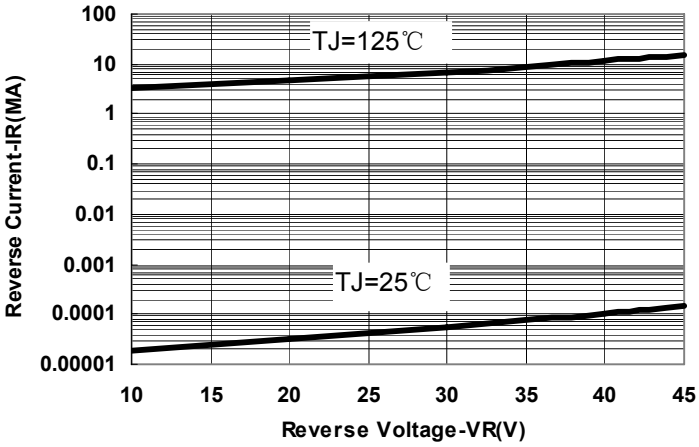

Fig.2-Typical Values Of Reverse Current Vs.Reverse Voltage

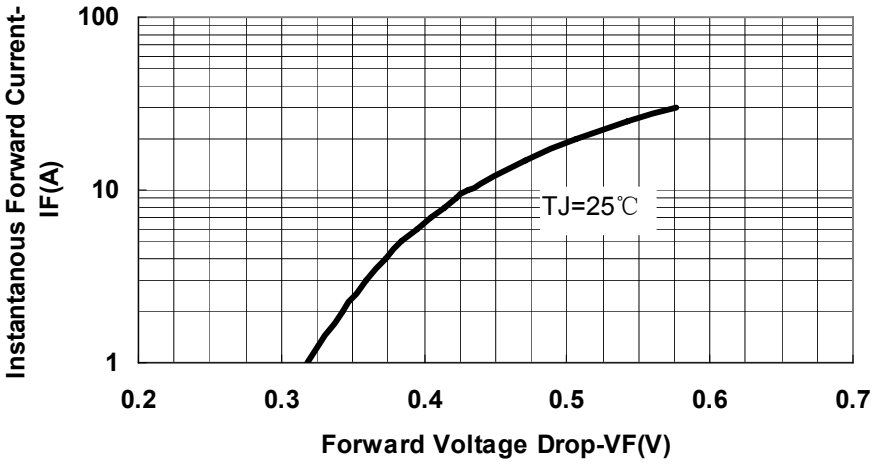

Fig.3-Typical Forward Voltage Drop Characteristics

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