

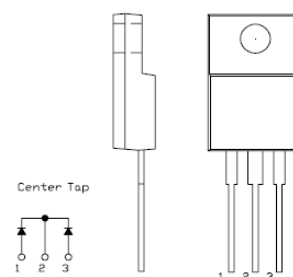
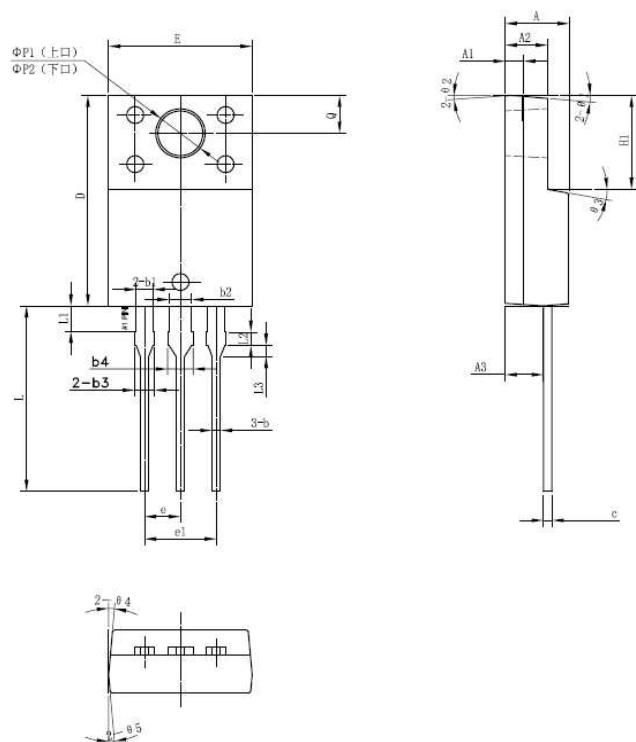
## MBRF2045CTU SCHOTTKY RECTIFIER

**Applications:**

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

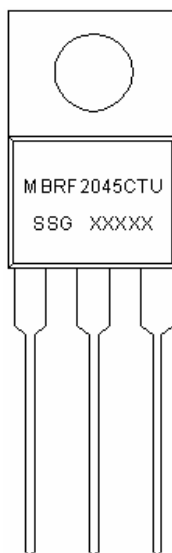
**Features:**

- 125°C T<sub>J</sub> 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
- 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)**

**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 Inverse Voltage	$V_{RWM}$	-	45	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=80^\circ\text{C}$ , rectangular wave form	20	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	200	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop(per leg) *	$V_{F1}$	@ 10A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.50	V
Max. Reverse Current at DC condition (per leg)	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	1	mA
Max. Reverse Current (per leg) *	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	200	mA
Max. Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	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%, $T_A = 25\text{ }^\circ\text{C}$ )	$V_{ISO}$	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 < 300 $\mu$ s, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

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

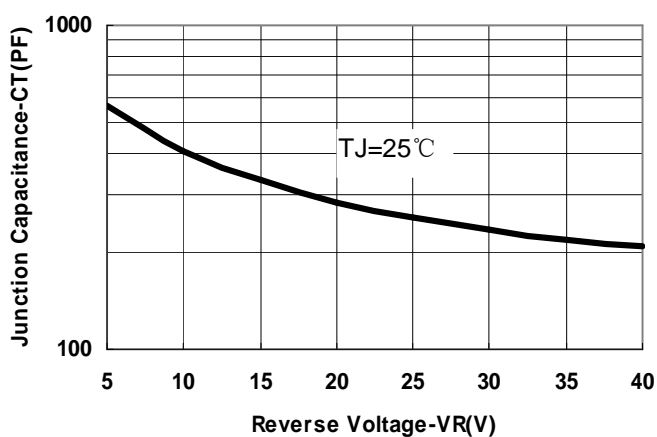


Fig.1-Typical Junction Capacitance Vs.Reverse Voltage

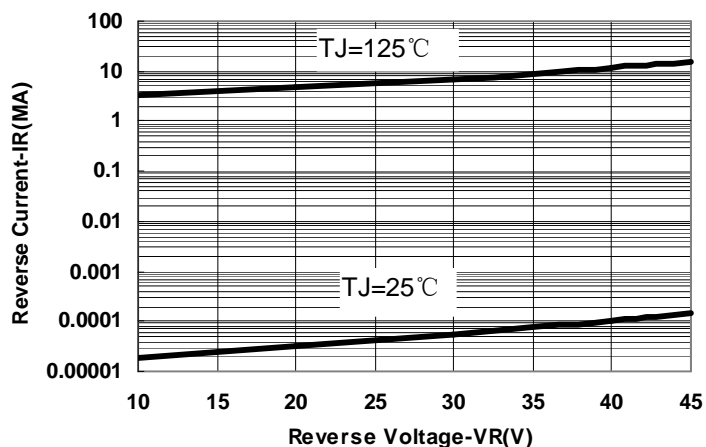


Fig.2-Typical Values Of Reverse Current Vs.Reverse Voltage

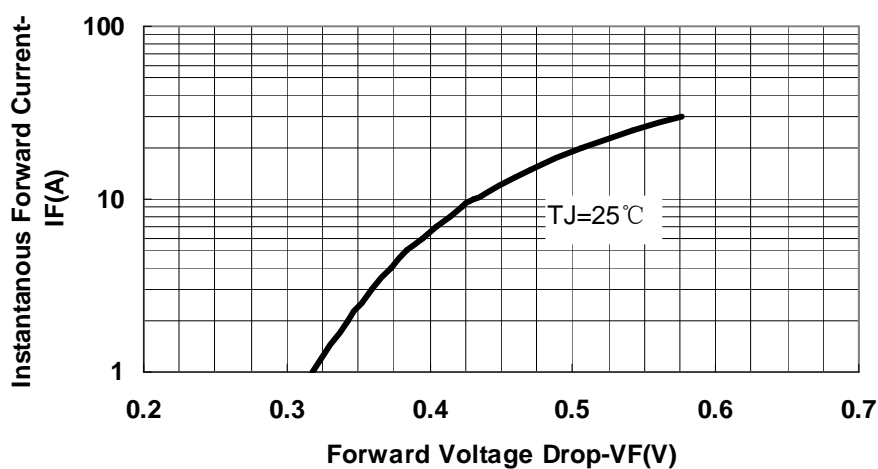


Fig.3-Typical Forward Voltage Drop Characteristics

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