

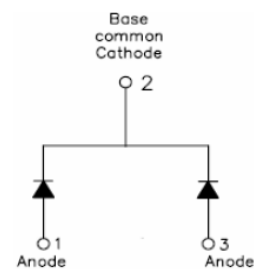
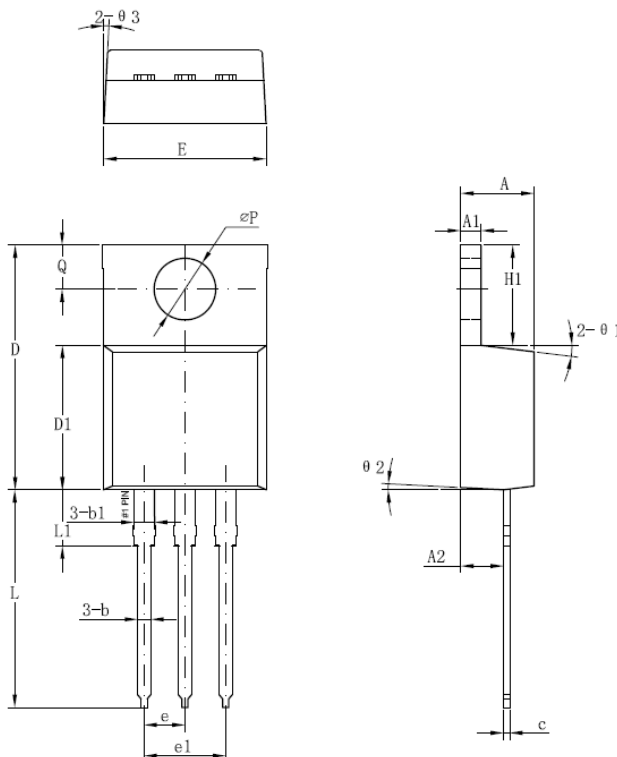
MBR1045CTP SCHOTTKY RECTIFIER

Applications:

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

Features:

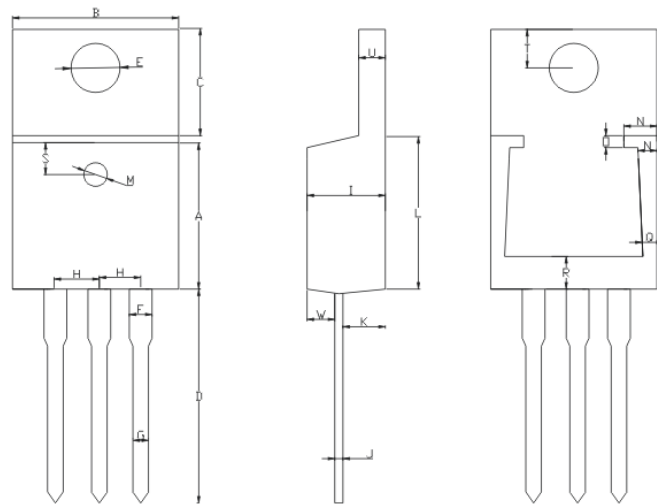
- 150 °C T_J operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device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


Mechanical Dimensions: In mm


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

OPTION 1(HD)

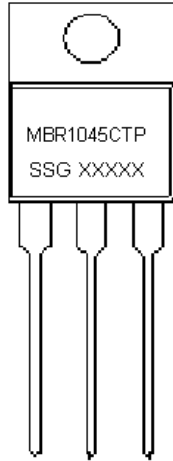
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - sales@smc-diodes.com •



A: 8.5 ± 0.5	B: 9.5 ± 0.5	C: 6.4 ± 0.5	D: 14.1 ± 1
E: 3.84 ± 0.03	F: 1.27 ± 0.03	G: 0.85 ± 0.10	H: 2.54 ± 0.025
I: 4.6 ± 0.5	J: 0.38 ± 0.015	K: 2.75 ± 0.025	L: 9.0 ± 0.5
M: 1.5 ± 0.05	N: 1.8 ± 0.05	O: 0.5 ± 0.05	P: 1.2 ± 0.05
Q: 0.9 ± 0.05	R: 3.2 ± 0.05	S: 1.55 ± 0.05	T: 2.8 ± 0.15
U: 1.27 ± 0.05	W: 1.27 ± 0.03		

OPTION 2(SR)

TO-220AB

Marking Diagram:


Where XXXXX is YYWWL

MBR	= Device Type
10	= Forward Current (10A)
45	= Reverse Voltage (45V)
CTP	= Configuration
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

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

Ordering Information:

Device	Package	Shipping
MBR1045CTP	TO-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
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 105^\circ\text{C}$, rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	125	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop (per leg) *	V _{F1}	@ 5A, Pulse, T _J = 25 °C	0.70	V
	V _{F2}	@ 5A, Pulse, T _J = 125 °C	0.57	V
Reverse Current (per leg) *	I _{R1}	@V _R = rated V _R T _J = 25 °C	1.0	mA
	I _{R2}	@V _R = rated V _R T _J = 125°C	15	mA
Junction Capacitance (per leg)	C _T	@V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz	300	pF
Typical Series Inductance (per leg)	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 < 300μs, 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
Maximum Thermal Resistance Junction to Case	R _{θJC}	DC operation	2.0	°C/W
Maximum Thermal Resistance, Junction to Case(Per package)	R _{θJC}	DC operation	1.0	°C/W
Maximum Thermal Resistance, Case to Heat Sink	R _{θCS}	Mounting surface, smooth and greased (only for TO-220)	0.50	°C/W
Approximate Weight	wt	-	2	g
Case Style	TO-220AB			

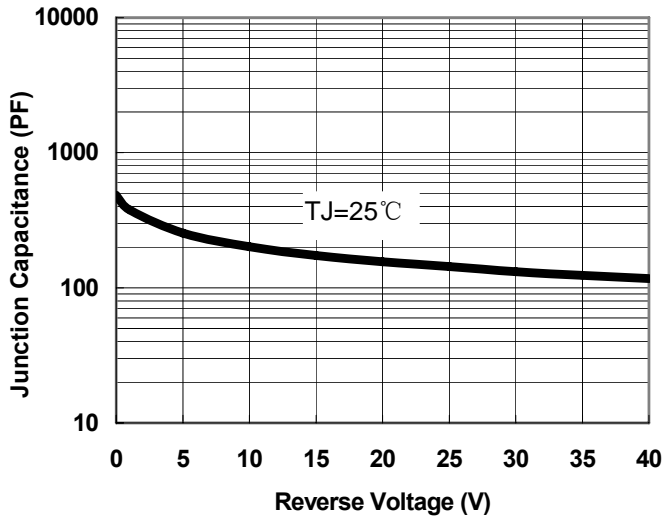


Fig.1-Typical Junction Capacitance

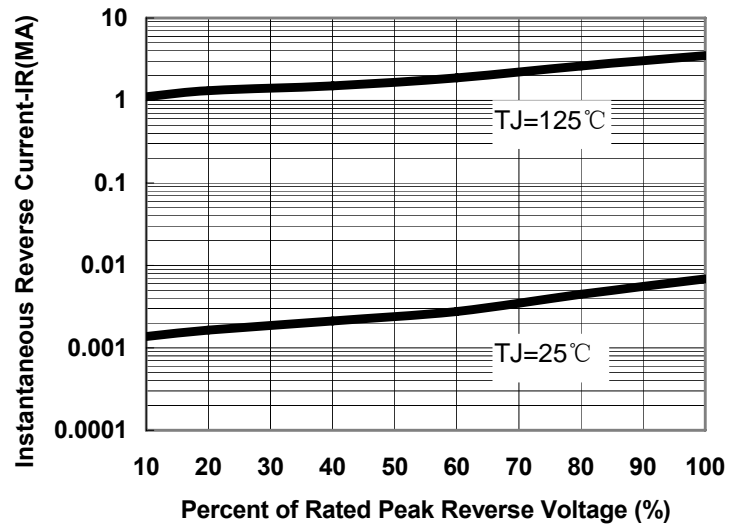


Fig.2-Typical Reverse Characteristics

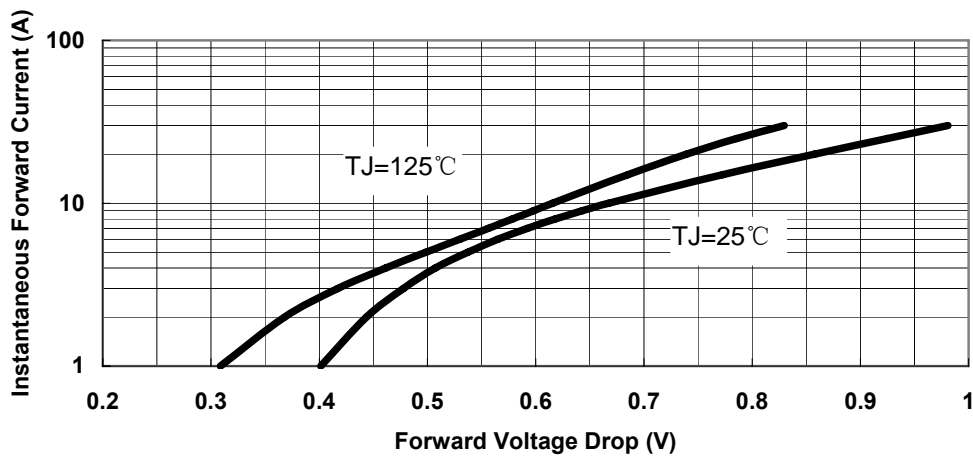


Fig.3-Typical Instantaneous Forward Voltage Characteristics



MBR1045CTP

Technical Data
Data Sheet N0030, Rev. A

Green Products

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