

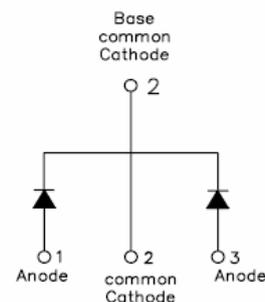
## MBR20100CTP SCHOTTKY RECTIFIER

### Applications:

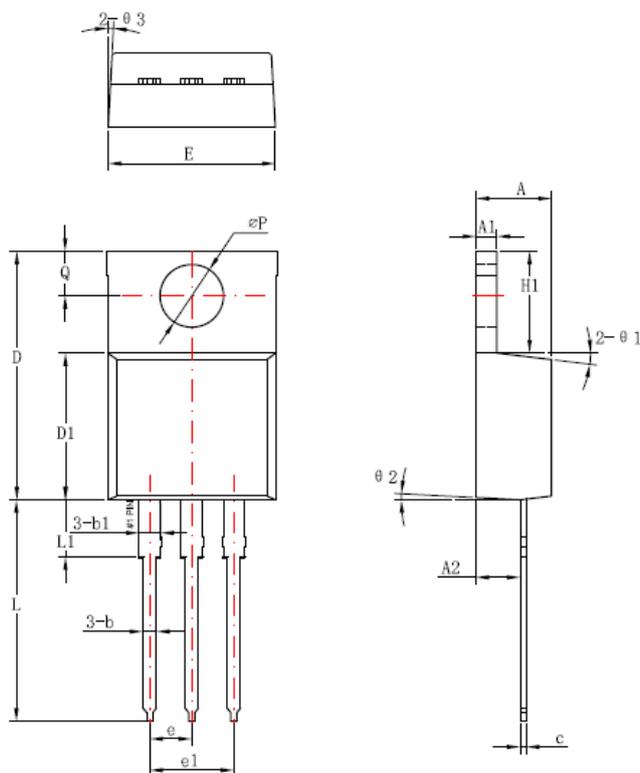
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

- 150 °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

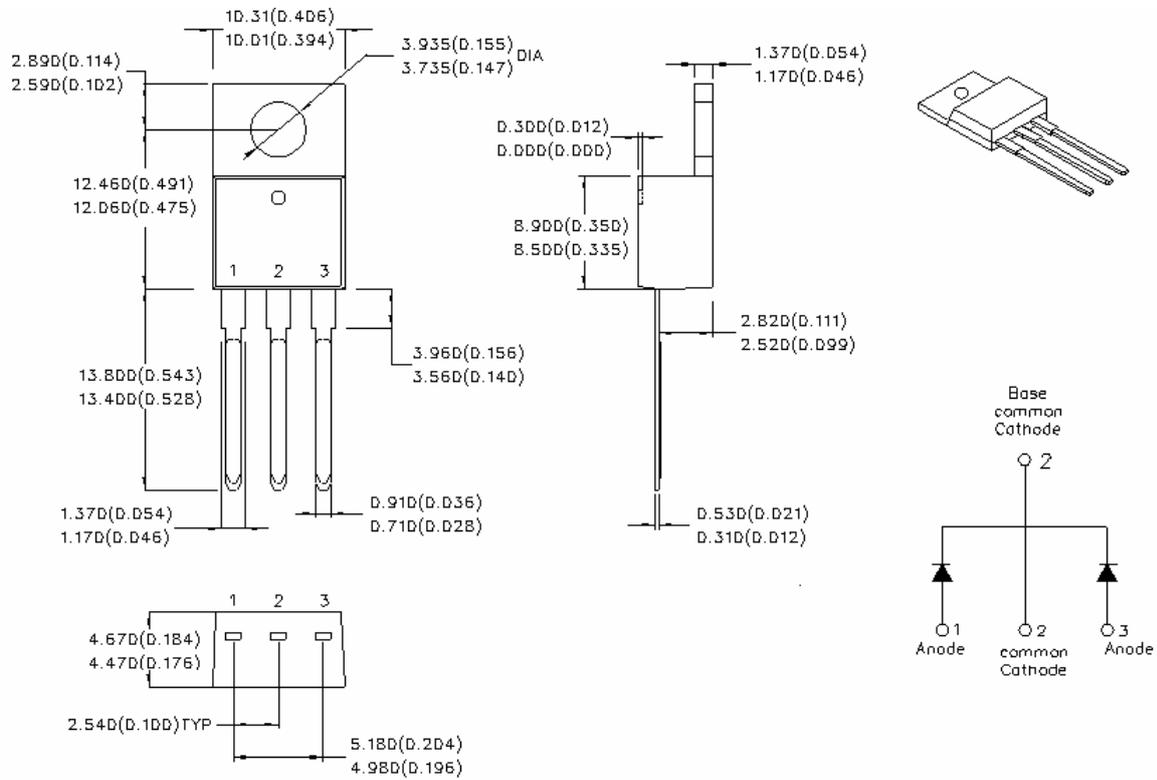


### Mechanical Dimensions: In mm

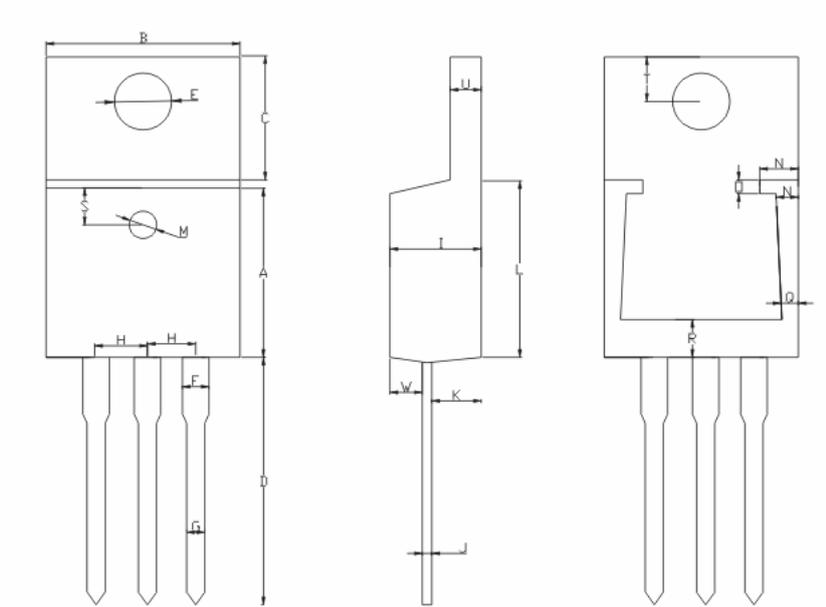


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74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

### OPTION1(HD)



**OPTION 2(CJ)**



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

**OPTION 3(SR)**

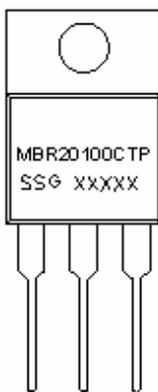
**TO-220AB**



Technical Data  
Data Sheet N0622, Rev. -

**Green Products**

**Marking Diagram:**



Where XXXXX is YYWWL

MBR = Device Type  
20 = Forward Current (20A)  
100 = Reverse Voltage (100V)  
CT P = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

**Ordering Information:**

Device	Package	Shipping
MBR20100CTP	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	$V_{RWM}$	-	100	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C=105^{\circ}C$ , rectangular wave form	20	A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	150	A



**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V <sub>F1</sub>	@ 10A, Pulse, T <sub>J</sub> = 25 °C	0.90	V
	V <sub>F2</sub>	@ 10A, Pulse, T <sub>J</sub> = 125 °C	0.80	V
Max. Reverse Current at DC condition (per leg)	I <sub>R1</sub>	@ V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	1.0	mA
Max. Reverse Current (per leg) *	I <sub>R2</sub>	@ V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	6.0	mA
Max. Junction Capacitance (per leg)	C <sub>T</sub>	@ V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	250	pF
Typical Series Inductance (per leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/μs

\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T <sub>J</sub>	-	-55 to +150	°C
Max. Storage Temperature	T <sub>stg</sub>	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case (per leg)	R <sub>θJC</sub>	DC operation	3.5	°C/W
Approximate Weight	wt	-	2	g
Case Style	TO-220AB			

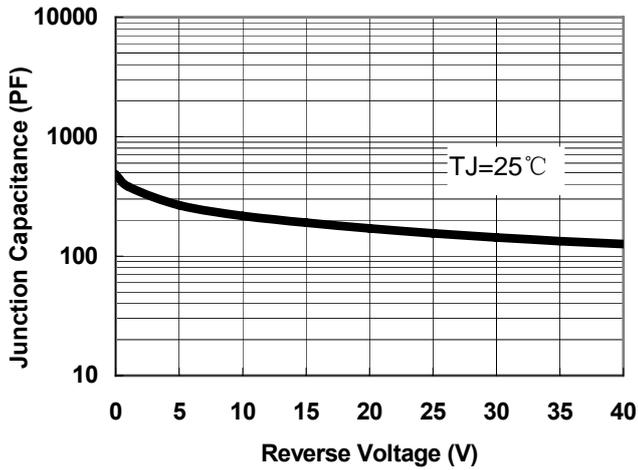


Fig.1-Typical Junction Capacitance

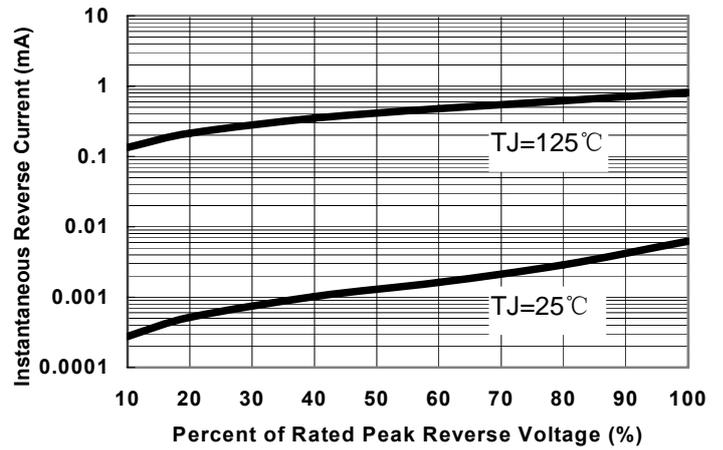


Fig.2-Typical Reverse Characteristics

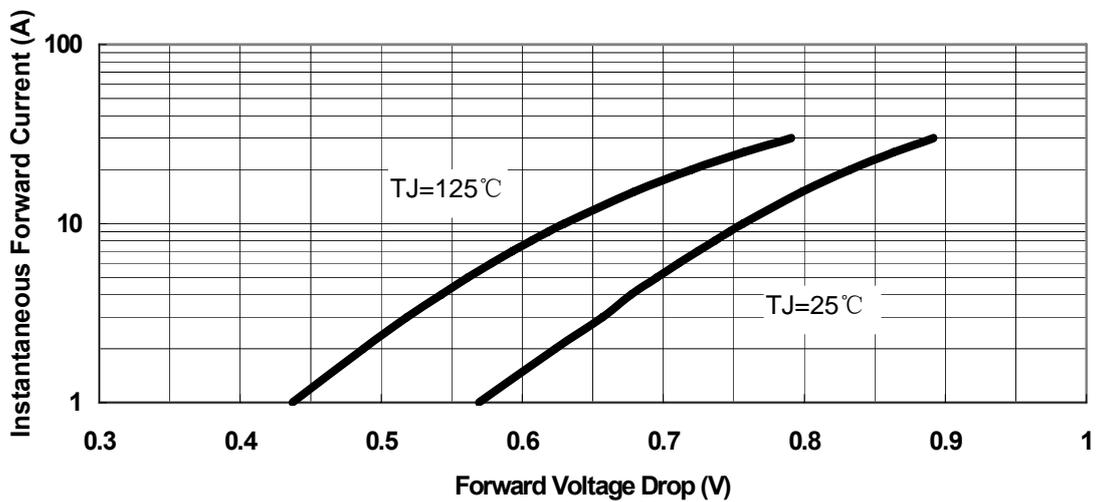


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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