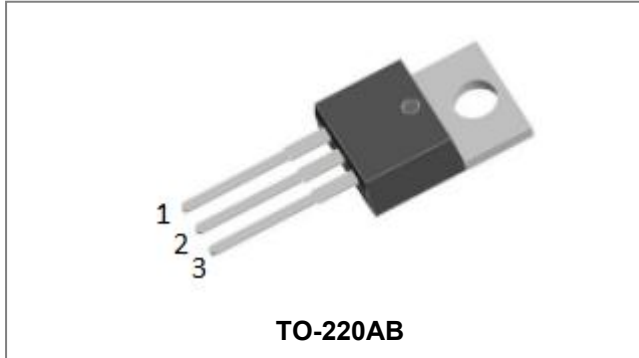


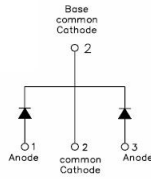
## MBR2045CTP SCHOTTKY RECTIFIER



### 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

### Circuit Diagram



### Applications

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

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	45	V
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =116°C, rectangular wave form	10(Per Leg) 20(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	250	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V <sub>F1</sub>	@ 10A, Pulse, T <sub>J</sub> = 25 °C	0.57	-	V
	V <sub>F2</sub>	@ 20A, Pulse, T <sub>J</sub> = 25 °C	0.74	0.84	V
Reverse Current (per leg) *	I <sub>R1</sub>	@ 10A, Pulse, T <sub>J</sub> = 125 °C	0.54	-	V
		@ 20A, Pulse, T <sub>J</sub> = 125 °C	0.70	0.72	V
Reverse Current (per leg) *	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C	9	15.0	mA
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	400	pF
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	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case	$R_{th(j-c)}$	DC operation	5	°C/W
Approximate Weight	wt	-	2	g
Case Style	TO-220AB			

**Ratings and Characteristics Curves**

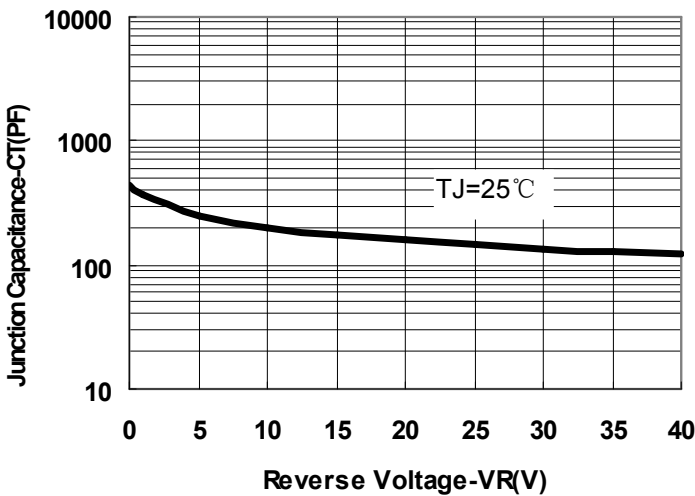


Fig.1-Typical Junction Capacitance

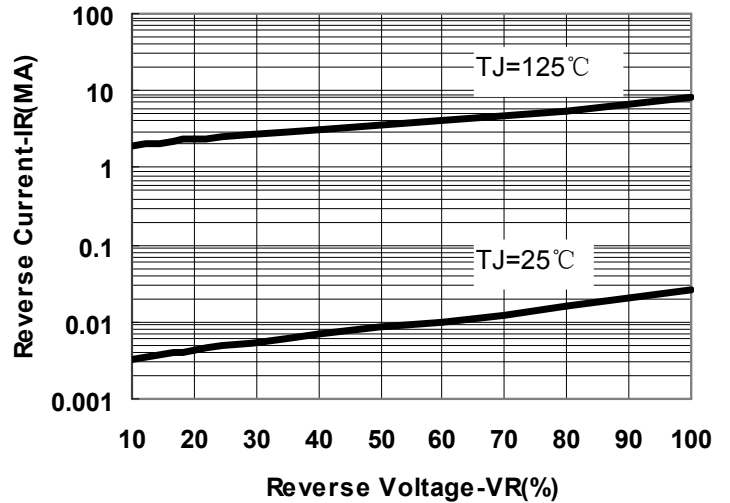


Fig.2-Typical Reverse Characteristics

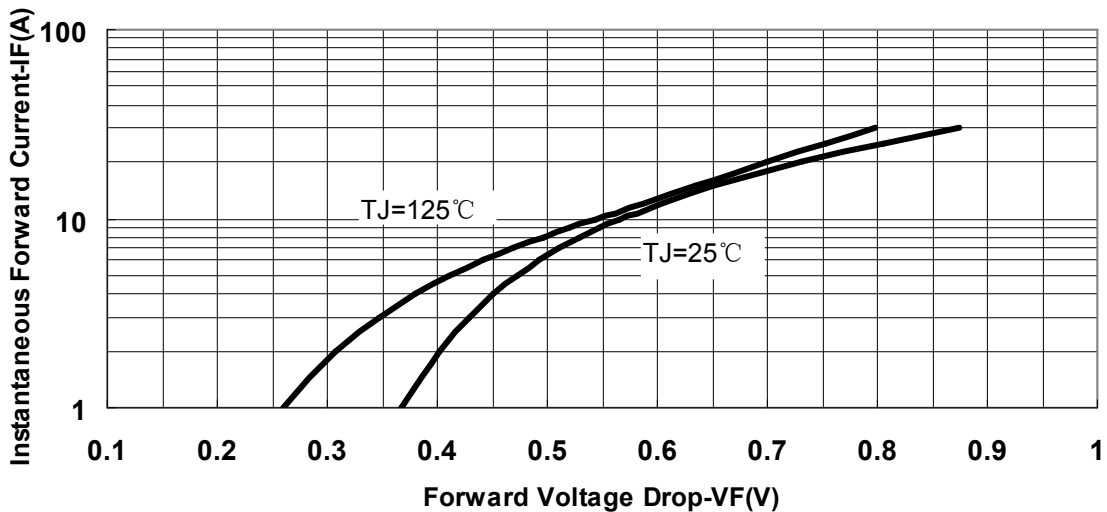
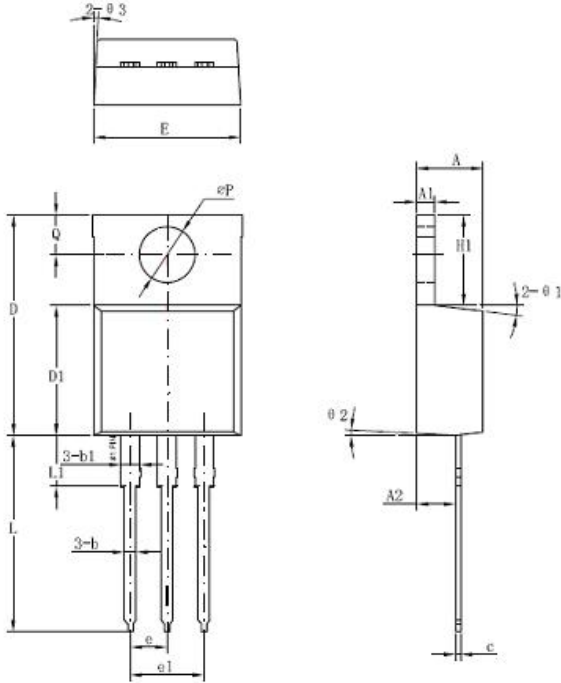
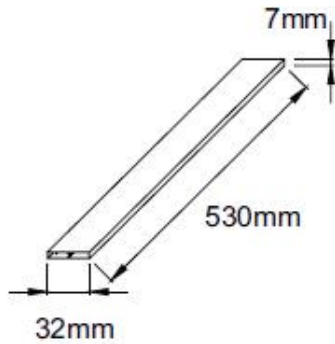
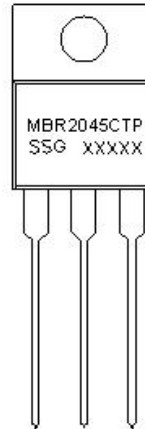


Fig.3-Typical Instantaneous Forward Voltage Characteristics

**Mechanical Dimensions TO-220AB**


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	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	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		7°	
Θ2		3°	
Θ3		4°	

**Tube Specification**

**Marking Diagram**


Where XXXXX is YYWWL

MBR = Device Type  
 20 = Forward Current (20A)  
 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
MBR2045CTP	TO-220AB (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.

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