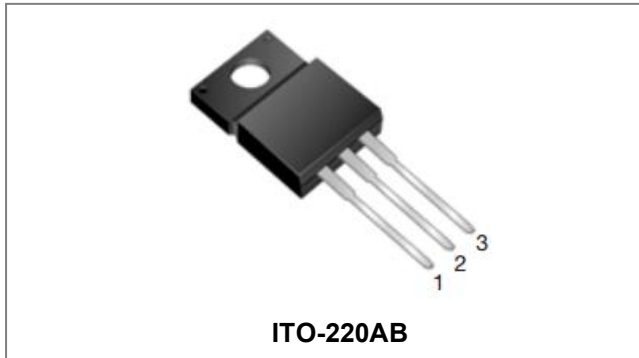


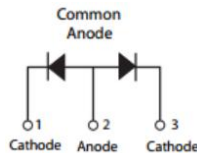
## MBRF40100CTR SCHOTTKY RECTIFIER



### 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	V <sub>RRM</sub>	-	100	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	-		
DC Blocking Voltage	V <sub>R</sub>	-		
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =135°C, rectangular wave form	20(Per Leg) 40(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	280	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	0.70	0.80	V
		@ 20A, Pulse, T <sub>J</sub> = 25 °C	0.80	0.88	
	V <sub>F2</sub>	@ 10A, Pulse, T <sub>J</sub> = 125 °C	0.59	0.70	V
		@ 20A, Pulse, T <sub>J</sub> = 125 °C	0.70	0.74	
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	0.009	1.0	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C	6.4	20	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	363	800	pF
Series Inductance(Per Leg)	L <sub>S</sub>	Measured lead to lead 5 mm from package body	8.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs
RSM Isolation Voltage (t = 1.0 second, R. H. < =30%, T <sub>A</sub> = 25 °C)	V <sub>ISO</sub>	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	

**Technical Data**  
**Data Sheet N0856, Rev. C**



		Screw mounting, the epoxy body is inside the heatsink.	-	1500	
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\* Pulse width < 300  $\mu$ s, duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}$ C
Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}$ C
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	3.5	$^{\circ}$ C/W
Approximate Weight	wt	-	2	g

**Ratings and Characteristics Curves**

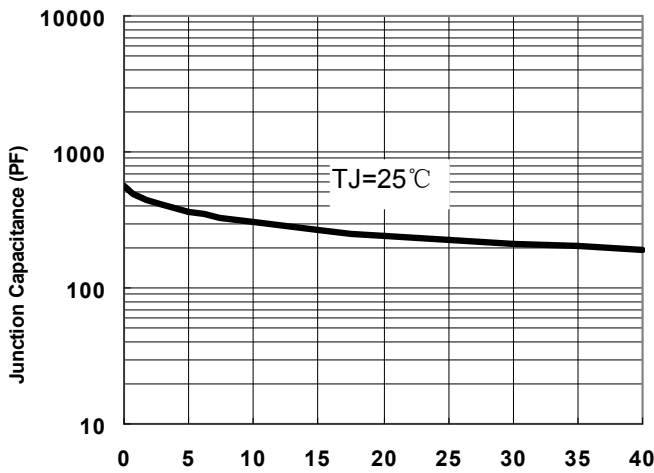


Fig.1-Typical Junction Capacitance

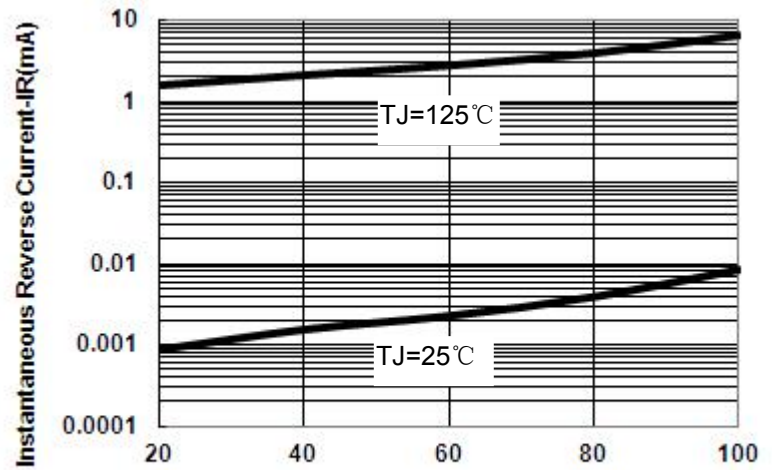


Fig.2-Typical Reverse Characteristics

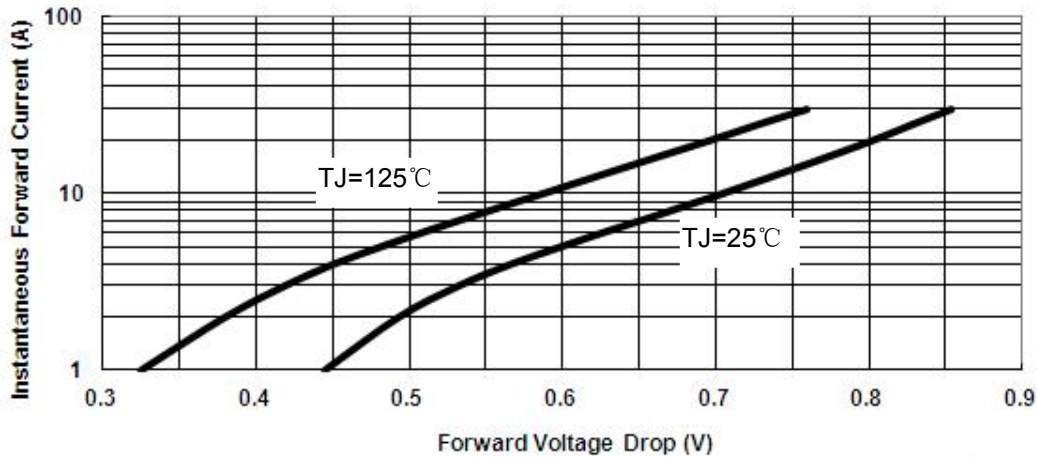
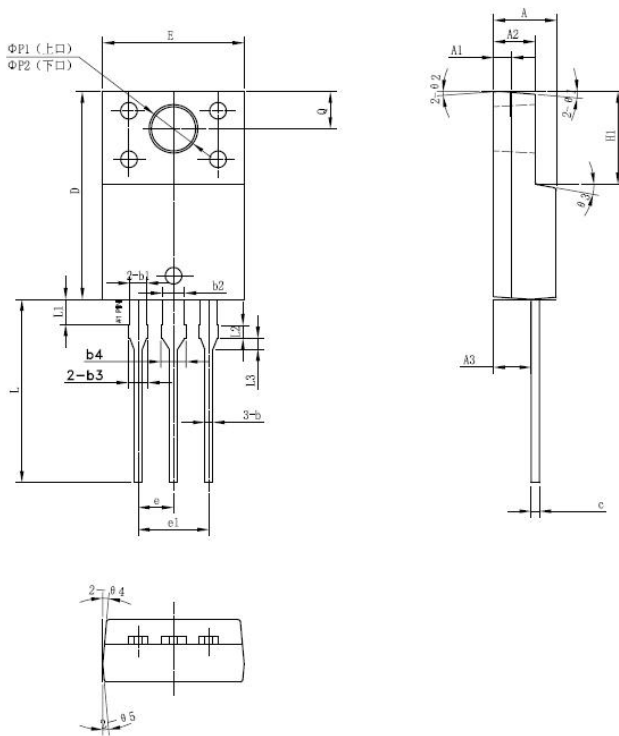
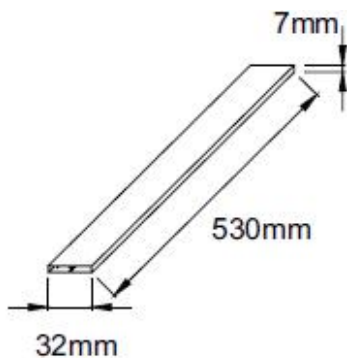
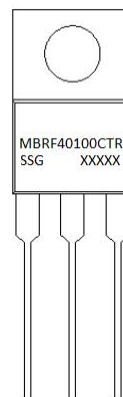


Fig.3-Typical Instantaneous Forward Voltage Characteristics

**Mechanical Dimensions ITO-220AB**


SYMBOL	Millimeters		
	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	0.50	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°	

**Tube Specification**

**Marking Diagram**


Where XXXXX is YYWWL

MBR = Device Type  
 F = Package type  
 40 = Forward Current (40A)  
 100 = Reverse Voltage (100V)  
 CTR = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Ordering Information**

Device	Package	Shipping
MBRF40100CTR	ITO-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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