Technical Data *Green Products*

Data Sheet N0083, Rev. A

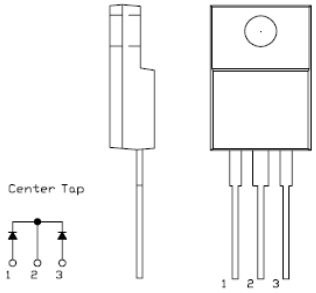
MBRF4080CT/MBRF4090CT/MBRF40100CT
SCHOTTKY RECTIFIER

Applications:

- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

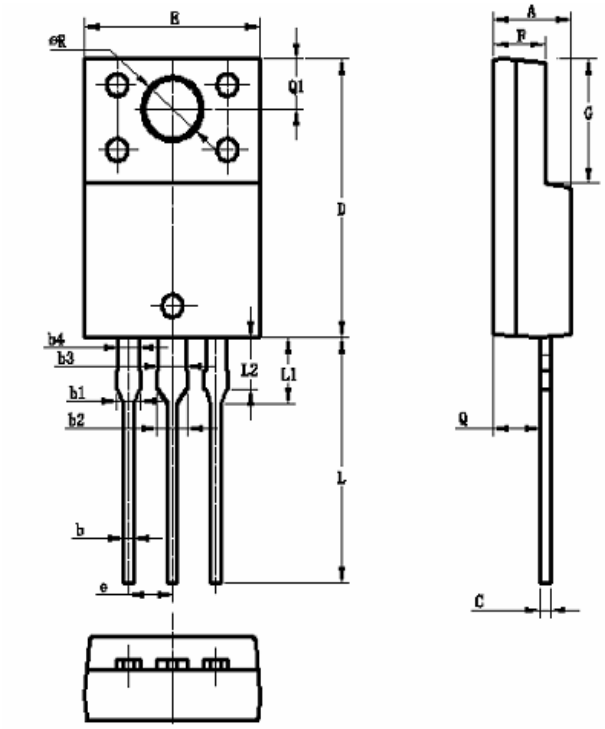
Features:

- 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



OUTLINE DRAWING

Mechanical Dimensions: In Inches / mm

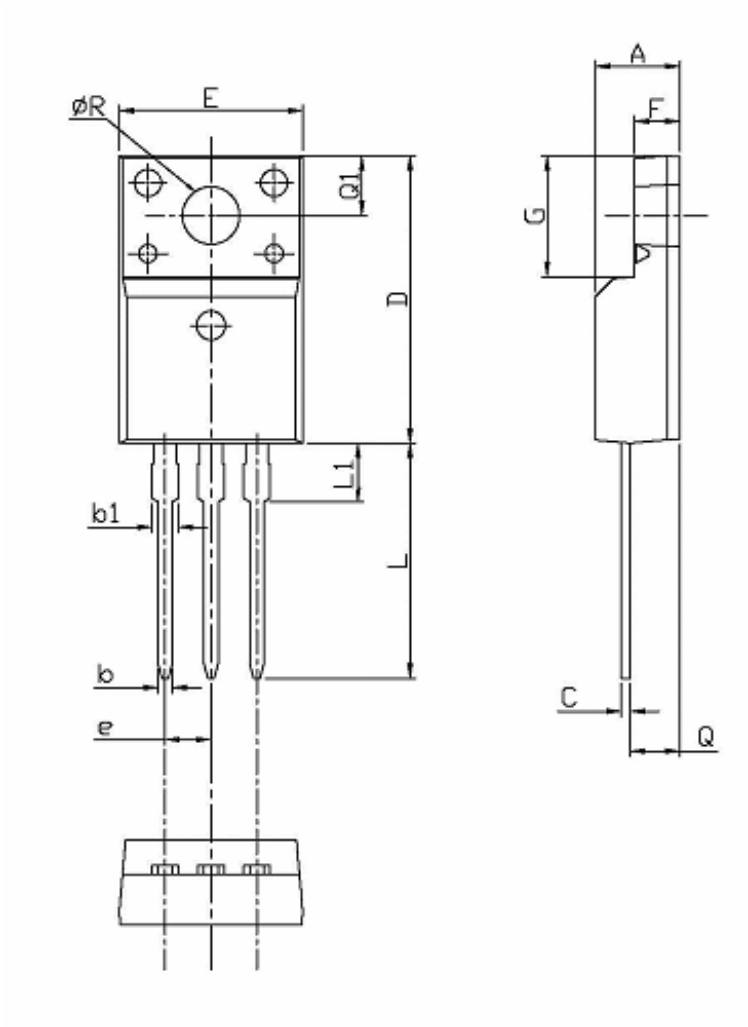


	OPTION 1		OPTION 2	
Dim	Min	Max	Min	Max
A	4.4	4.6	4.30	4.70
b	0.6TYP		0.50	0.75
b1	1.3TYP		1.30	1.40
b2	1.7TYP		1.70	1.80
b3	1.6TYP		1.50	1.75
b4	1.2TYP		1.10	1.35
C	0.60TYP		0.50	0.75
D	14.8	15.1	14.80	15.20
E	10.06	10.26	9.96	10.36
e	2.55TYP		2.54TYP	
F	2.9	3.1	2.80	3.20
G	6.5	6.9	6.50	6.90
L	12.7	13.7	12.8	13.2
L1	3.4	3.8	3.60	4.00
L2	2.6	3.0	-	-
Q	2.5	2.9	2.50	2.90
Q1	2.5	2.9	2.70REF	
ØR	3.5REF		3.50REF	

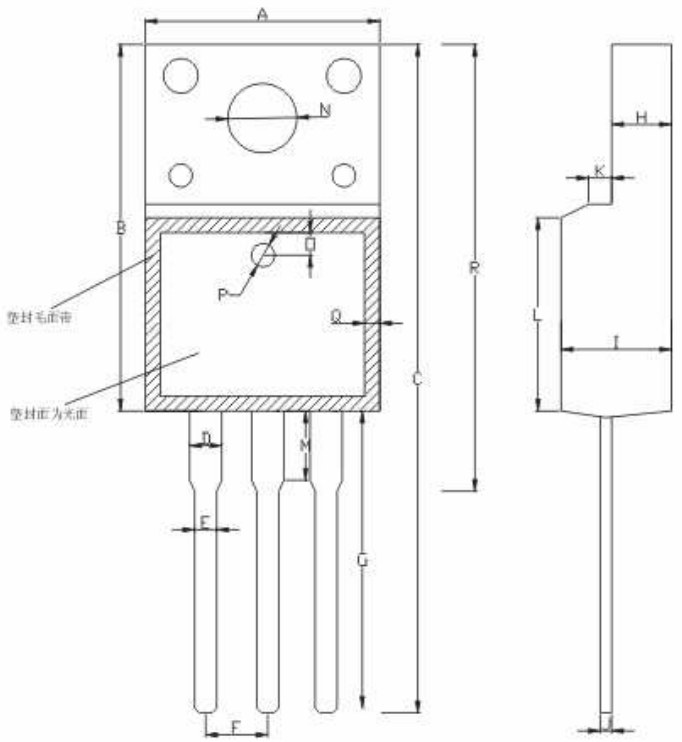
MBRF4080CT
MBRF4090CT
MBRF40100CT

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	OPTION 3		OPTION 4	
Dim	**Min**	**Max**	**Min**	**Max**
A	4.53	4.93	4.50	4.90
b	0.71	0.91	0.70	0.90
b1	1.15	1.39	1.33	1.47
C	0.36	0.53	0.45	0.60
D	15.67	16.07	15.67	16.07
E	9.96	10.36	9.96	10.36
e	2.54TYP		2.54 BSC	
F	2.34	2.76	2.34	2.74
G	6.50	6.90	6.48	6.88
L	12.37	12.77	12.78	13.18
L1	2.23	2.63	3.03	3.43
Q	2.56	2.96	2.56	2.96
Q1	3.10	3.50	3.10	3.50
ØR	2.98	3.38	3.08	3.28



A:10.20 ± 0.50	B:15.90 ± 0.50	C:29.00 ± 1.00	D:1.24 ± 0.10
E:0.80 ± 0.10	F:2.54 ± 0.10	G:13.10 ± 1,0	H:2.55 ± 0.05
I:4.70 ± 0.05	J:0.50 ± 0.05	K:1.20 ± 0.20	L:8.00 ± 0.50
M:3.00 ± 0.50	N:3.20 ± 0.20	O:1,25 ± 0.05	P:1.5 ± 0.05
Q:1.0 ± 0.20	R:19.2 ± 1.0		

OPTION 5 (SR)

ITO-220AB

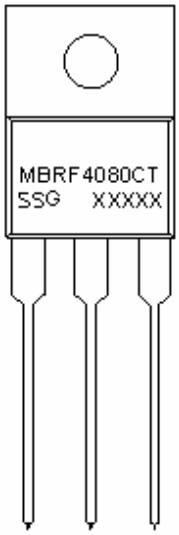
SANGDEST
MICROELECTRONICS

MBRF4080CT
MBRF4090CT
MBRF40100CT

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Marking Diagram:



Where XXXXX is YYWWL

MBR = Device Type
F = Package type
40 = Forward Current (40A)
80 = Reverse Voltage (80V)
CT = Configuration
SSG = SSG
YY = Year
WW = Week
L = Lot Number

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

Ordering Information:

Device	Package	Shipping
MBRF4080CT MBRF4090CT MBRF40100CT	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}	-	80	MBRF4080CT	V
			90	MBRF4090CT	
			100	MBRF40100CT	
Average Forward	$I_{F(AV)}$	50% duty cycle @T_C =135℃, rectangular wave form	20(Per leg) 40(Per device)		A
Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	280		A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 10A, Pulse, T_J = 25 °C @ 20A, Pulse, T_J = 25 °C @ 40A, Pulse, T_J = 25 °C	0.72 0.79 0.88	0.80 0.88 1.02	V
	V_{F2}	@ 10A, Pulse, T_J = 125 °C @ 20A, Pulse, T_J = 125 °C @ 40 A, Pulse, T_J = 125 °C	0.63 0.70 0.80	0.70 0.74 0.88	V
Reverse Current (per leg)*	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.006	1.0	mA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	0.09	6	mA
Junction Capacitance (per leg)	C_T	@V_R = 5V, T_C = 25 °C f_{SIG} = 1MHz	363	400	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
RSM Isolation Voltage (t = 1.0 second, R. H. < =30%, T_A = 25 °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 < 300µs, Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +150	°C
Max. Storage Temperature	T_{stg}	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	3.5	°C/W
Approximate Weight	wt	-	2	g
Case Style	ITO-220AB			

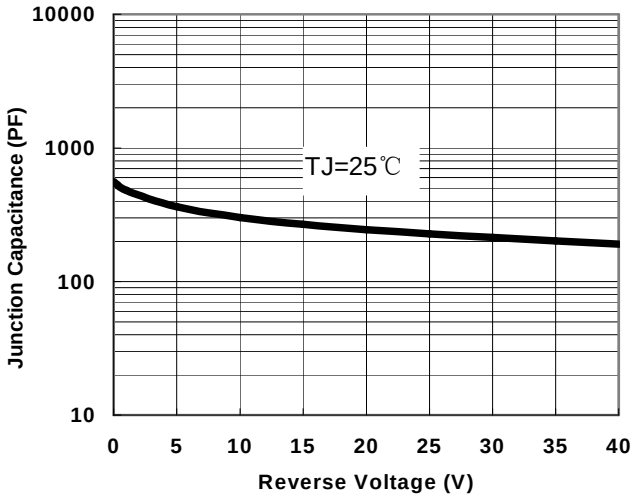


Fig.1-Typical Junction Capacitance

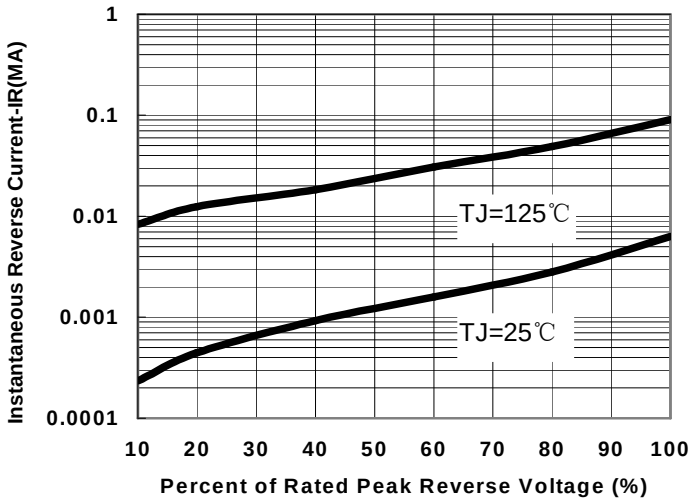


Fig.2-Typical Reverse Characteristics

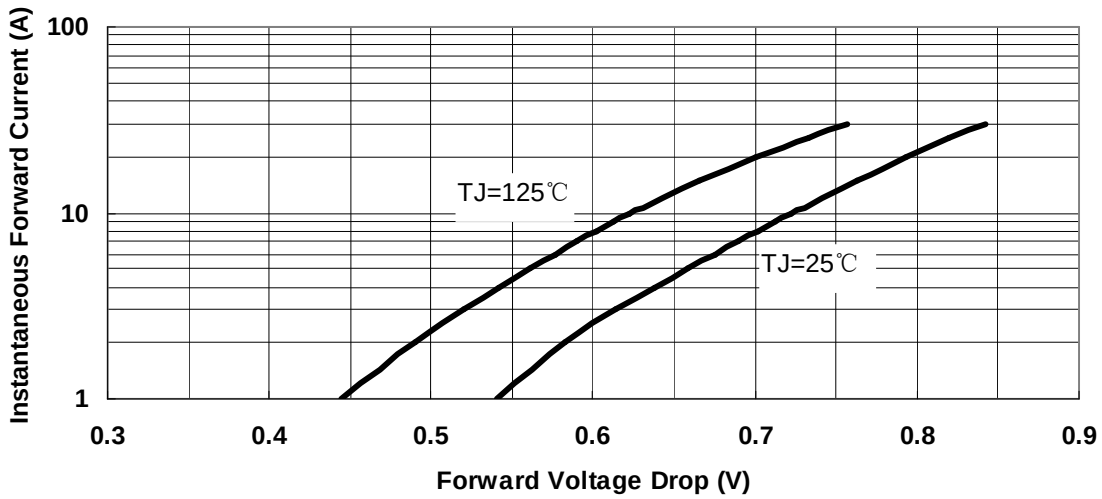


Fig.3-Typical Instantaneous Forward Voltage Characteristics

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