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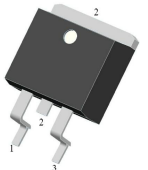

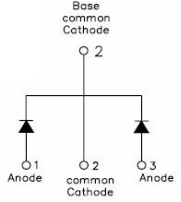
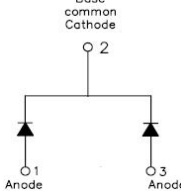
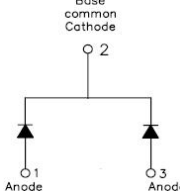
# **MBR1080/90/100CT MBRB1080/90/100CT MBR1080/90/100CT-1** **SCHOTTKY RECTIFIER**

## 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

## Applications

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

MBR10...CT	MBRB10...CT	MBR10...CT-1
		
		
TO-220AB	D <sup>2</sup> PAK	TO-262

## Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	80	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	-	90	
DC Blocking Voltage	V <sub>R</sub>	-	100	
Average Rectified Forward Current	I <sub>F (AV)</sub>	50% duty cycle @T <sub>c</sub> =100°C, rectangular wave form	5(Per Leg) 10(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse , T <sub>C</sub> = 25 °C	120	A

## Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	$V_{F1}$	@ 3A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$ @ 5A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$	0.70 0.79	0.78 0.85	V
	$V_{F2}$	@ 3 A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$ @ 5 A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$	0.60 0.65	0.65 0.75	V
Reverse Current (Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^{\circ}\text{C}$	0.02	1.00	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^{\circ}\text{C}$	4	15	mA
Junction Capacitance(Per Leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^{\circ}\text{C}$ $f_{SIG} = 1\text{MHz}$	280	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/ $\mu\text{s}$

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

## Thermal-Mechanical Specifications:

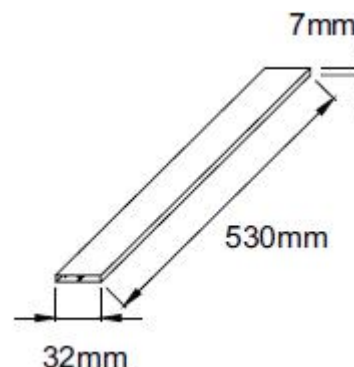
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	2.0	$^{\circ}\text{C/W}$
Typical Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.5	$^{\circ}\text{C/W}$
Case Style	TO-220AB D <sup>2</sup> PAK TO-262			

## Tube Specification

Device	Package	Weight	Shipping
MBR10...CT	TO-220AB	1.8g	50pcs / tube
MBRB10...CT	D <sup>2</sup> PAK	1.85g	800pcs / reel
MBR10...CT-1	TO-262	1.85g	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

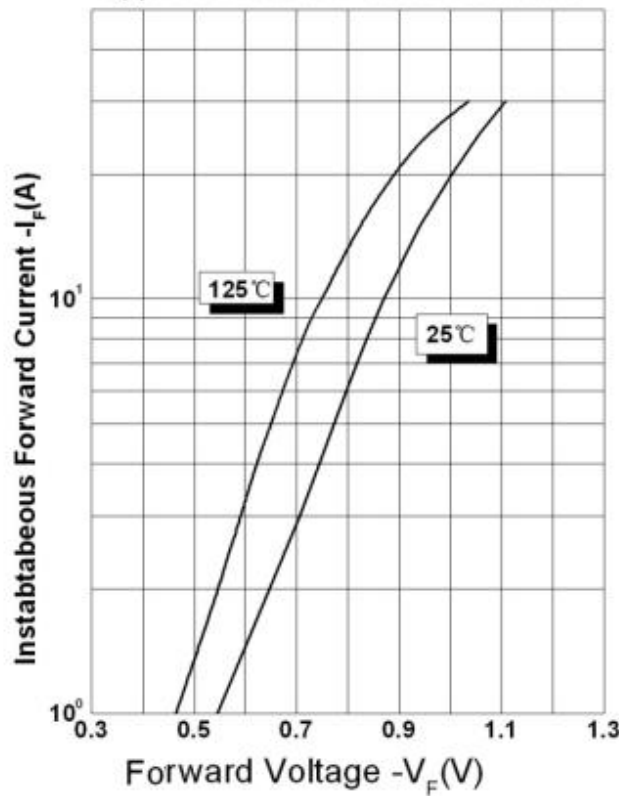
## Tube Specification(TO-220AB/TO-262)



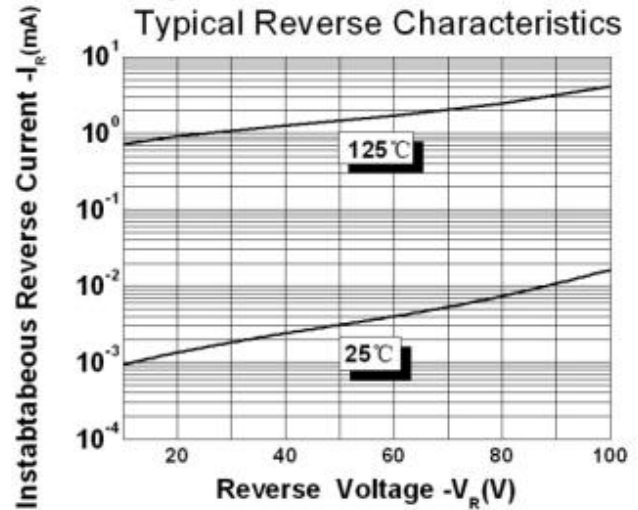


## Ratings and Characteristics Curves

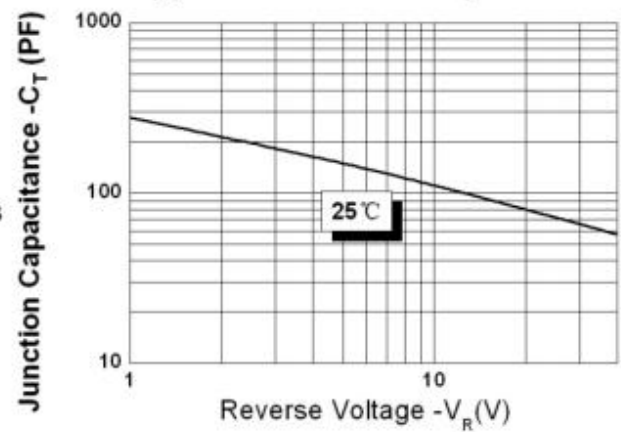
**Figure 1**  
Typical Forward Characteristics



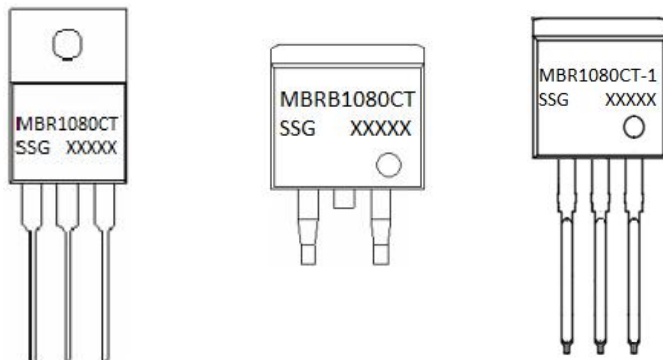
**Figure 2**  
Typical Reverse Characteristics



**Figure 3**  
Typical Junction Capacitance



## Marking Diagram

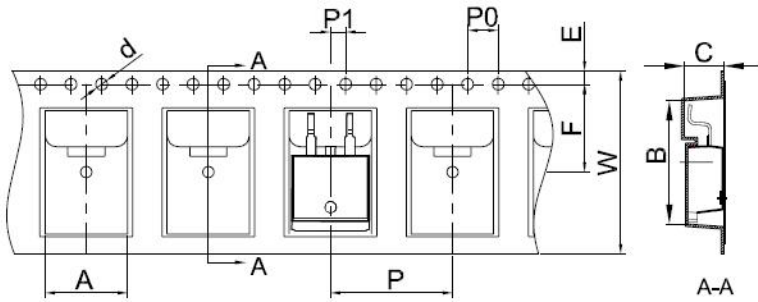


Where XXXXX is YYWWL

MBR = Device Type  
B = Package type  
10 = Forward Current (10A)  
80/90/100 = Reverse Voltage (80/90/100V)  
CT -1 = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

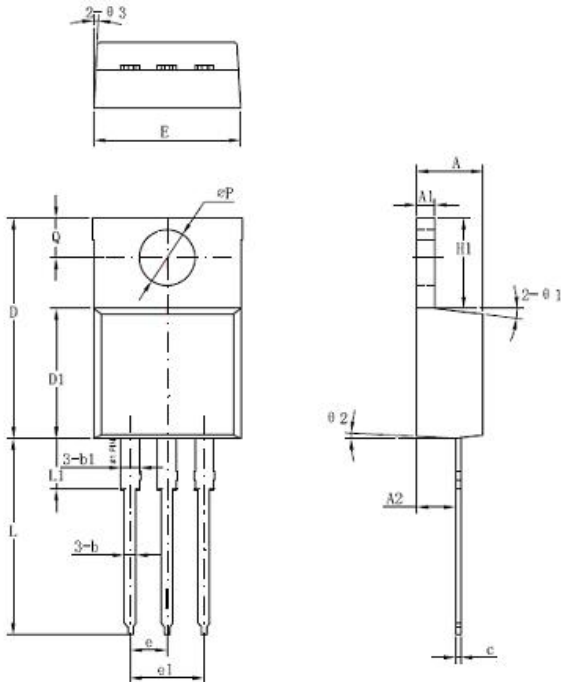
**Cautions:** Molding resin  
Epoxy resin UL:94V-0

## Carrier Tape Specification D<sup>2</sup>PAK



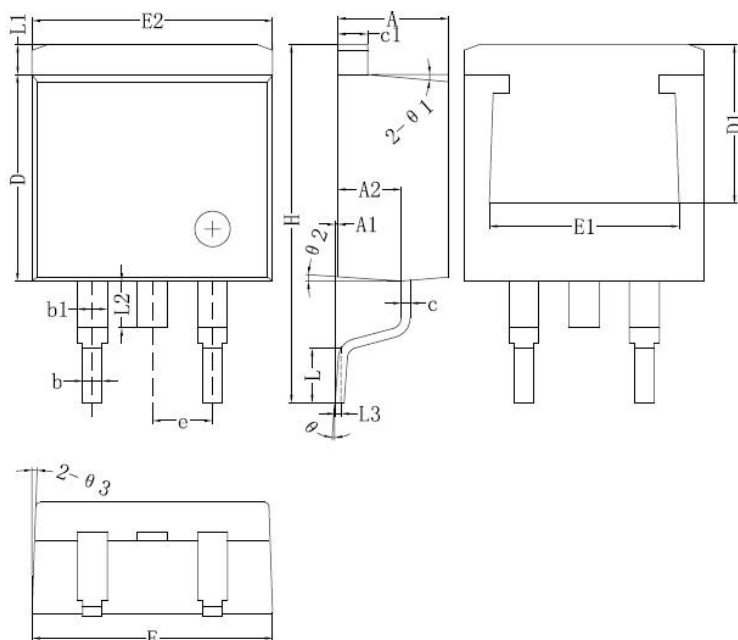
Symbol	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

## Mechanical Dimensions TO-220AB



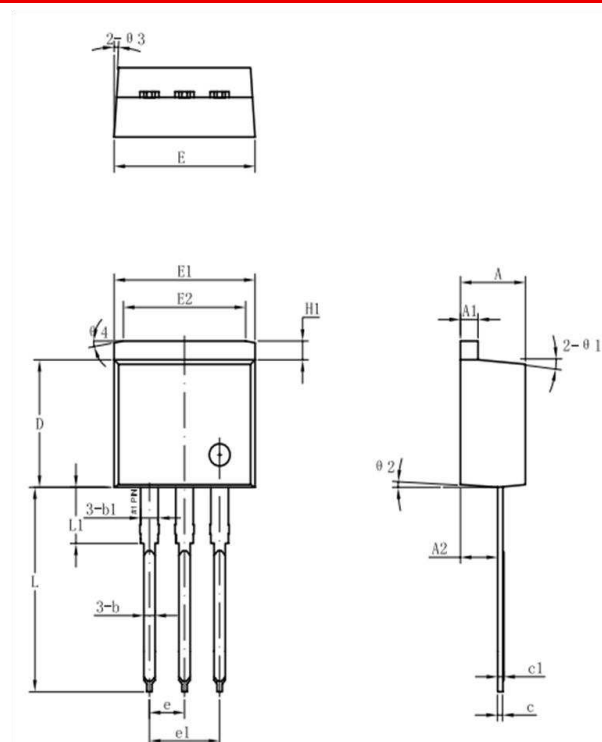
Symbol	Millimeters		
	Min.	Typical	Max.
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		7°	
Θ2		3°	
Θ3		4°	

## Mechanical Dimensions D<sup>2</sup>PAK



Symbol	Millimeters		
	Min.	Typical	Max.
A	4.47	4.70	4.85
A1	0	0.10	0.25
A2	2.59	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
c1	1.17	1.27	1.37
D	8.50	8.70	8.90
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.31
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.74
L1	1.12	1.27	1.42
L2	1.30		2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

## Mechanical Dimensions TO-262



Symbol	Millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

**Technical Data**  
**Data Sheet N0735, Rev. A**



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