



Technical Data

Green Products

Data Sheet N0735, Rev. -

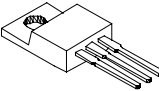
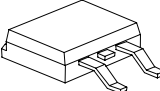
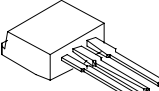
MBR1080/90/100CT MBRB1080/90/100CT MBR1080/90/100CT-1
SCHOTTKY RECTIFIER

Applications:

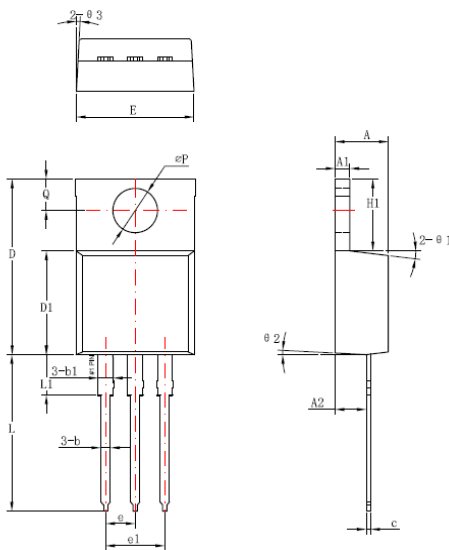
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

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

Case styles		
MBR10...CT	MBRB10...CT	MBR10...CT-1
		
TO-220AB	D²PAK	TO-262

Mechanical Dimensions: In Inches / mm



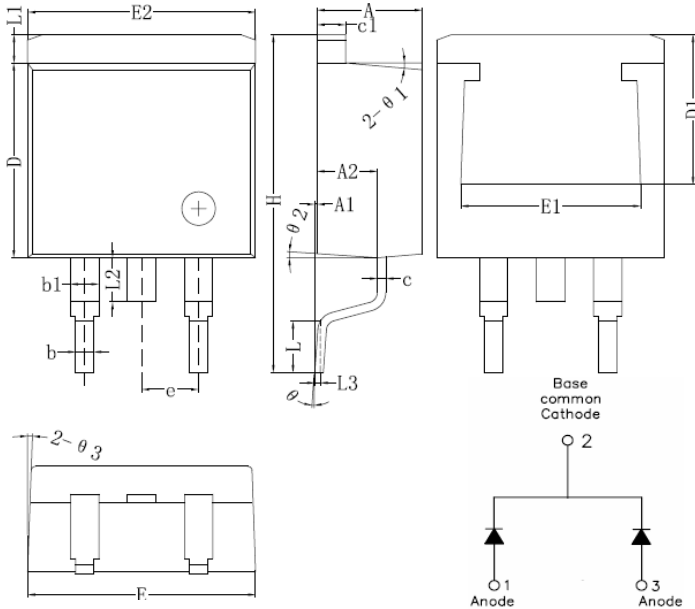
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74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

TO-220AB



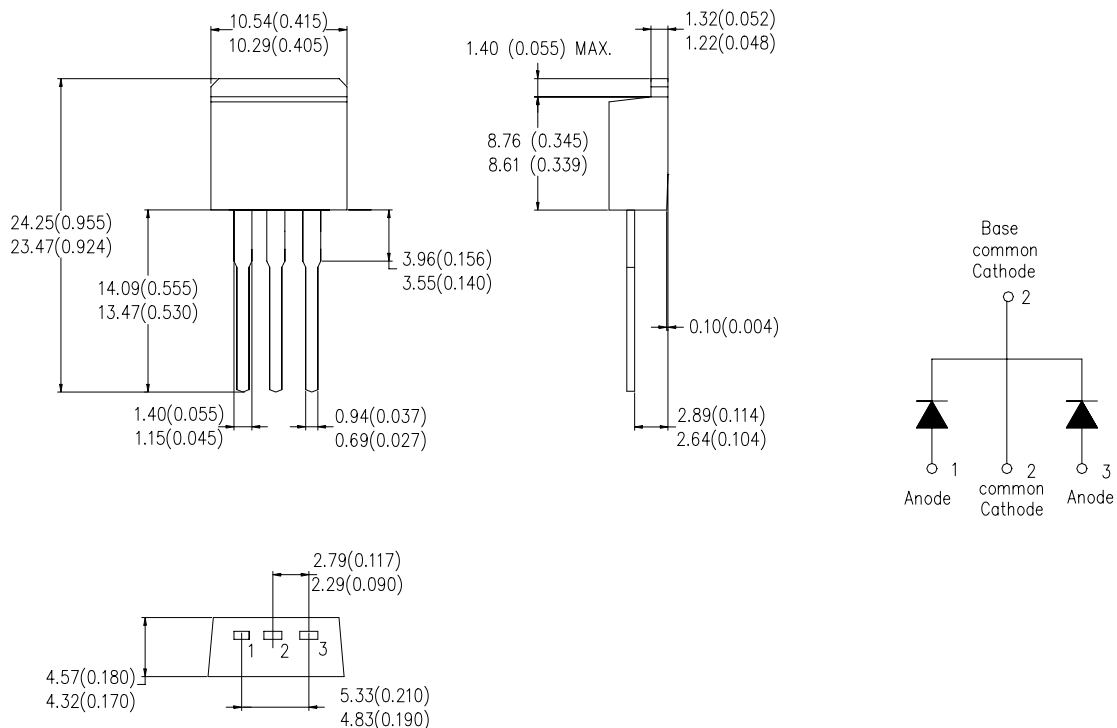
Technical Data
Data Sheet N0735, Rev. -

Green Products



Symbol	Dimensions in 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°	

D²PAK



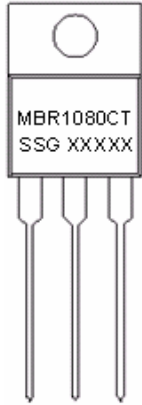
TO-262



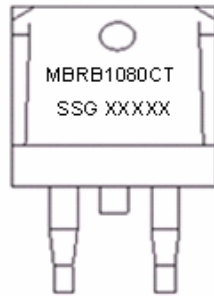
Technical Data
Data Sheet N0735, Rev. -

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Marking Diagram:



MBR1080CT



MBRB1080CT

Where XXXXX is YYWWL

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

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

Ordering Information:

Device	Package	Shipping
MBR1080CT	TO-220AB (Pb-Free)	50pcs / tube
MBRB1080CT	D ² PAK (Pb-Free)	800pcs / reel

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	V	
			90		MBR1080CT MBRB1080CT MBR1080CT-1
			100		MBR1090CT MBRB1090CT MBR1090CT-1
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @T _c =100°C, rectangular wave form	5(Per leg)	A	
			10(Per device)		
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	120	A	



Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 3A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.78	V
		@ 5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.85	
	V_{F2}	@ 3 A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.65	V
		@ 5 A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.75	
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	1.00	mA
		I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{V}$, $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	300	pF
Typical Series Inductance (per leg)	L_S	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 < 300 μs , Duty Cycle <2%

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Max. Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case (per leg)	$R_{\theta JC}$	DC operation	2.0	$^\circ\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased (only for TO-220)	0.50	$^\circ\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	TO-220AB D ² PAK TO-262			

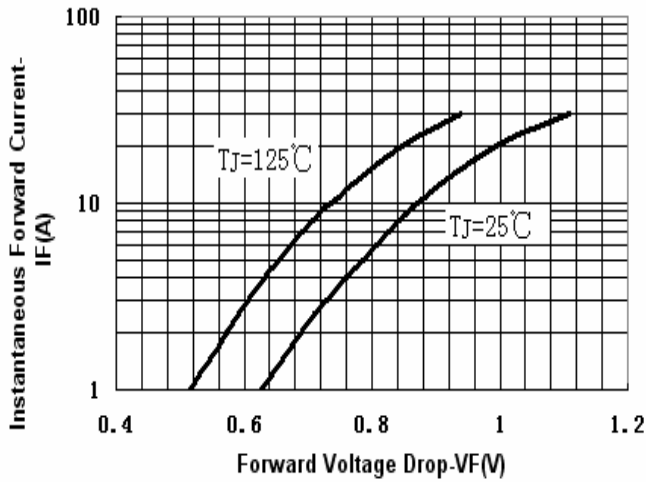


Fig.1-Typical Forward Voltage Drop Characteristics

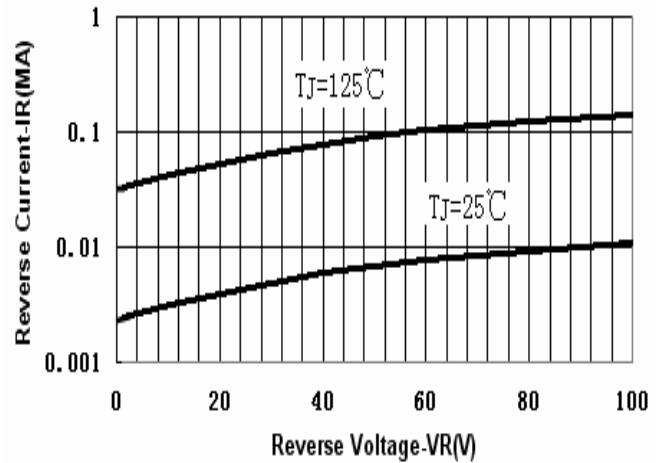


Fig.2-Typical Values Of Reverse Current Vs.Reverse Voltage

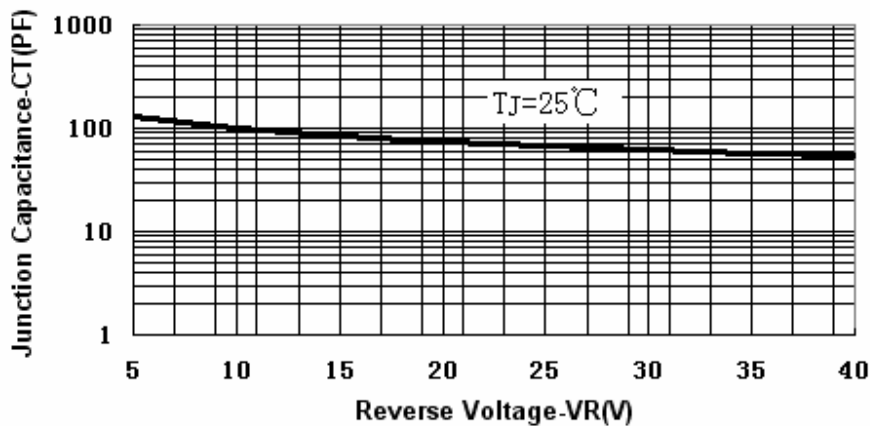


Fig.3-Typical Junction Capacitance Vs.Reverse Voltage

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