



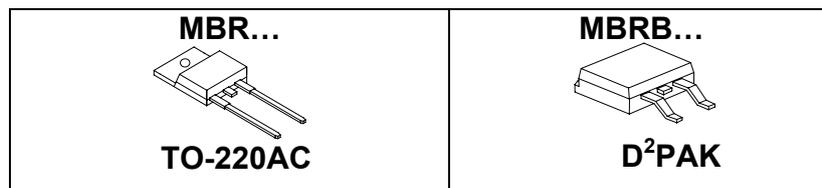
**MBR1650/MBRB1650/MBR1660/MBRB1660**  
**SCHOTTKY RECTIFIER**

**Applications:**

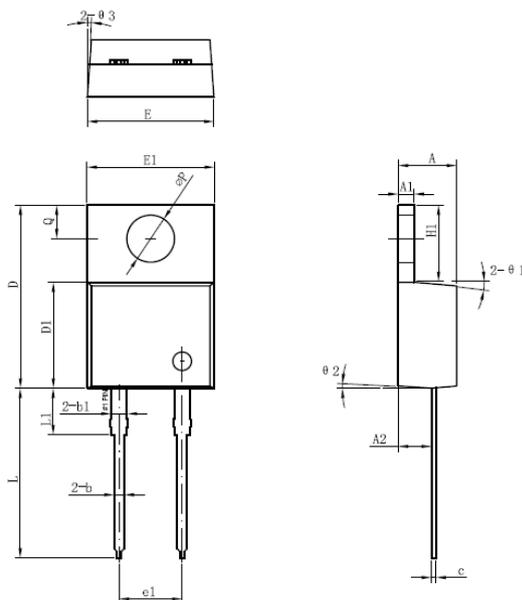
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

**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

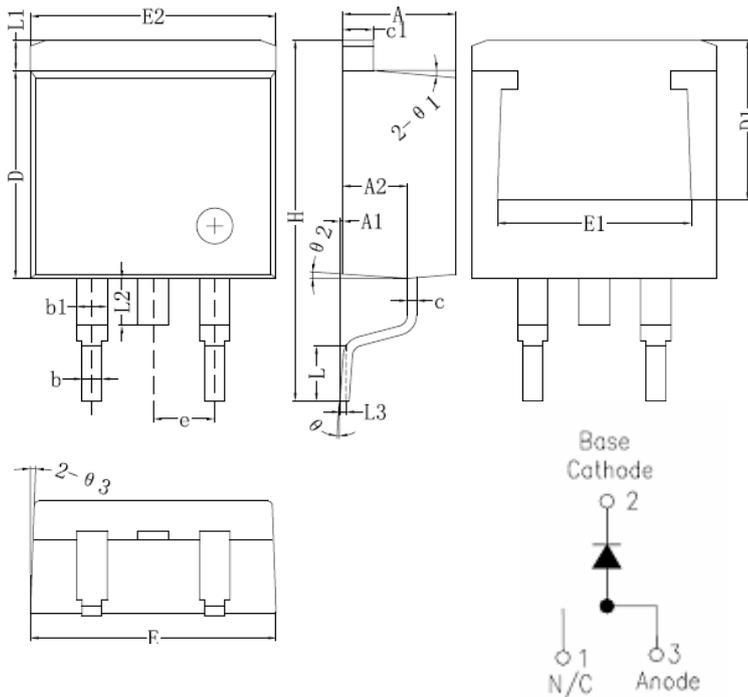


**Mechanical Dimensions: In Inches / mm**



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
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	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		5°	
θ2		4°	
θ3		4°	

**TO-220AC**



**D<sup>2</sup>PAK**

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°	



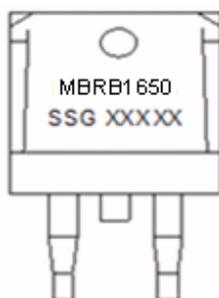
Technical Data  
Data Sheet N0728, Rev. -

*Green Products*

**Marking Diagram:**



MBR1650



MBRB1650

Where XXXXX is YYWWL

- MBR = Device Type
- B = Package type
- 16 = Forward Current (16A)
- 50 = Reverse Voltage (50V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information:**

Device	Package	Shipping
MBR1650	TO-220AC(Pb-Free)	50pcs/ tube
MBRB1650	D <sup>2</sup> 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	$V_{RWM}$	-	50(MBR1650, MBRB1650) 60(MBR1660-, MBRB1660)	V
Max. Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C = 135^\circ\text{C}$ , rectangular wave form	16	A
Max. Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3 ms, half Sine pulse	150	A



**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop*	$V_{F1}$	@ 16A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.75	V
	$V_{F2}$	@ 16A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.65	V
Max. Reverse Current (per leg) *	$I_{R1}$	@ $V_R = \text{rated } V_R$ Pulse $T_J = 25\text{ }^\circ\text{C}$	1.0	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , Pulse $T_J = 125\text{ }^\circ\text{C}$	50	mA
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	-	10,00	V/ $\mu\text{s}$

\* Pulse Width < 300 $\mu\text{s}$ , 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	$R_{\theta JC}$	DC operation	1.5	$^\circ\text{C/W}$
Typical Thermal Resistance Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.50	$^\circ\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	TO-220AB D <sup>2</sup> PAK(Suffix "s" for D <sup>2</sup> PAK;"MBRB × × × ×" for D <sup>2</sup> PAK)			

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