

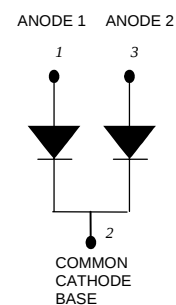
MBR4045WT SCHOTTKY RECTIFIER

Applications:

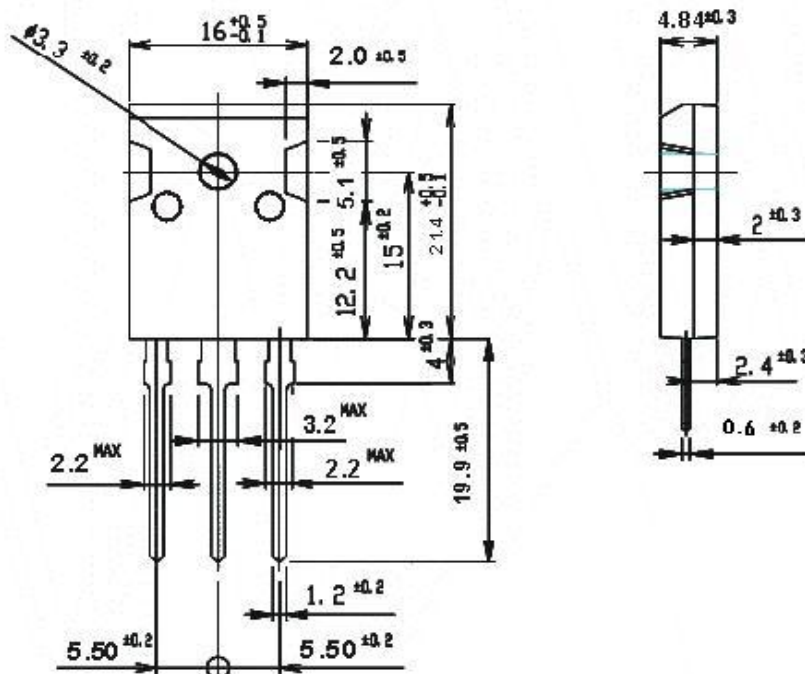
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

Features:

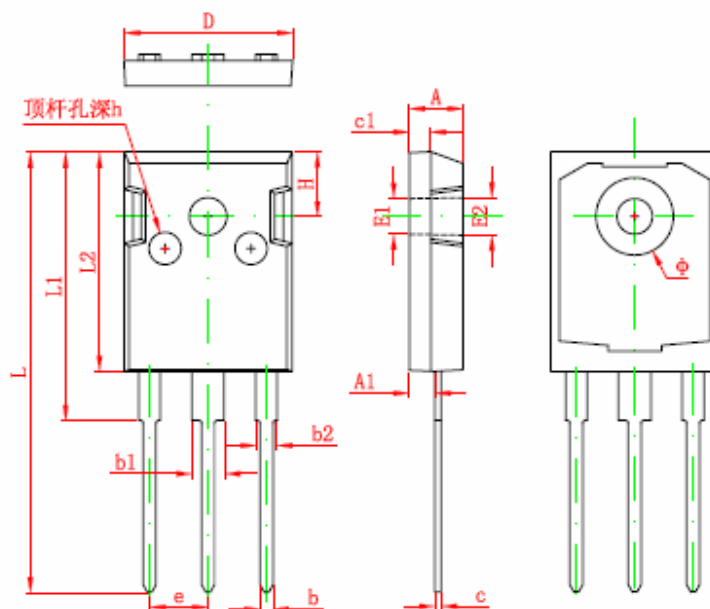
- 150°C T_J operation
- Center tap TO-247AD package
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



Mechanical Dimensions: In mm



OPTION 1(SR)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF		0.138 REF	
E2	3.600 REF		0.142 REF	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP		0.215 TYP	
H	5.980 REF		0.235 REF	
h	0.000	0.300	0.000	0.012

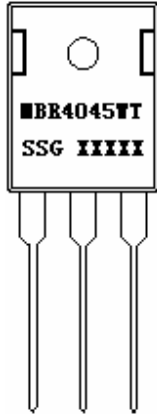
OPTION 2(CJ)

TO-247AD

Technical Data
Data Sheet N0742, Rev. A

Green Products

Marking Diagram:



Where XXXXX is YYWWL

MBR = Device Type
40 = Forward Current (40A)
45 = Reverse Voltage (45V)
WT = Configuration
SSG = SSG
YY = Year
WW = Week
L = Lot Number

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

Ordering Information:

Device	Package	Shipping
MBR4045WT	TO-247AD (Pb-Free)	30pcs/ 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}	-	45	V
Max. Average Forward	$I_{F(AV)}$	50% duty cycle @ $T_C = 125^\circ\text{C}$, rectangular wave form	20(per leg) 40(per device)	A
Max. Peak One Cycle Non- Repetitive Surge Current (per leg)	I_{FSM}	8.3 ms, half Sine pulse	318	A
Non-Repetitive Avalanche Energy (per leg)	E_{AS}	$T_J = 25^\circ\text{C}$, $I_{AS} = 3\text{ A}$, $L = 4.40\text{ mH}$	20	mJ
Repetitive Avalanche Current (per leg)	I_{AR}	Current decaying linearly to zero in 1 μsec Frequency limited by $T_{J\text{ max}}$. $V_A = 1.5 \times$ V_R typical	3	A

Electrical Characteristics:

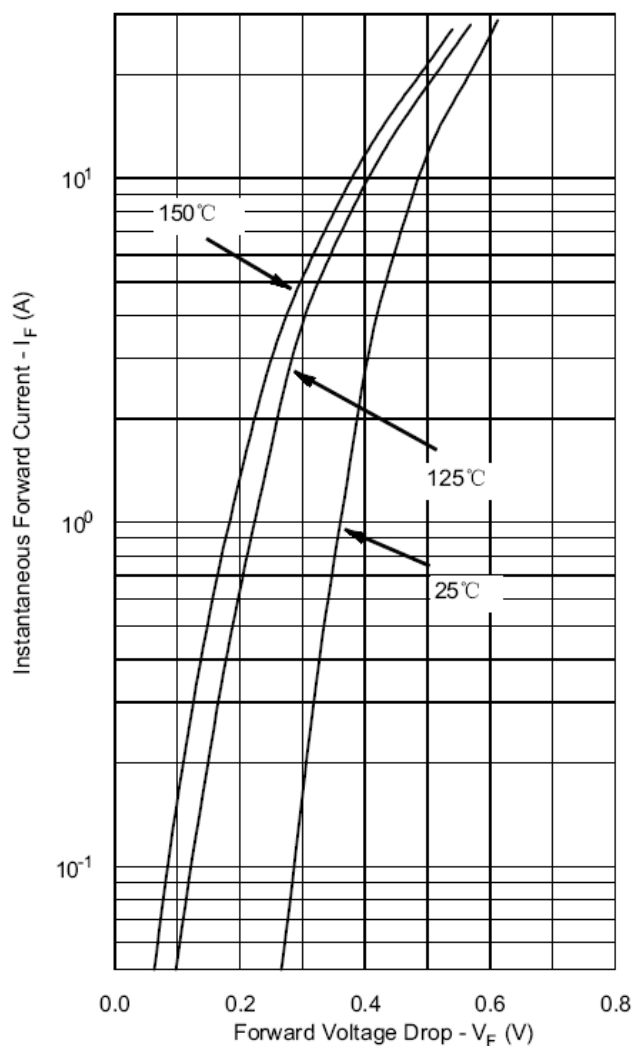
Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V_{F1}	@ 20A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$ @ 40A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$	0.70 0.80	V
	V_{F2}	@ 20A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$ @ 40A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$	0.60 0.75	V
Max. Reverse Current (per leg) *	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^{\circ}\text{C}$	1.0	mA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 100\text{ }^{\circ}\text{C}$	50	mA
	I_{R3}	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^{\circ}\text{C}$	85	mA
Max. Junction Capacitance (per leg)	C_T	@ $V_R = 5\text{ V}$, $T_C = 25\text{ }^{\circ}\text{C}$ $f_{SIG} = 1\text{ MHz}$	900	pF
Typical Series Inductance (per leg)	L_S	Measured lead to lead 5 mm from package body	7.5	nH
Max. Voltage Rate of Change	dv/dt	-	10,000	V/ μs

* Pulse Width < 300 μs , Duty Cycle < 2%

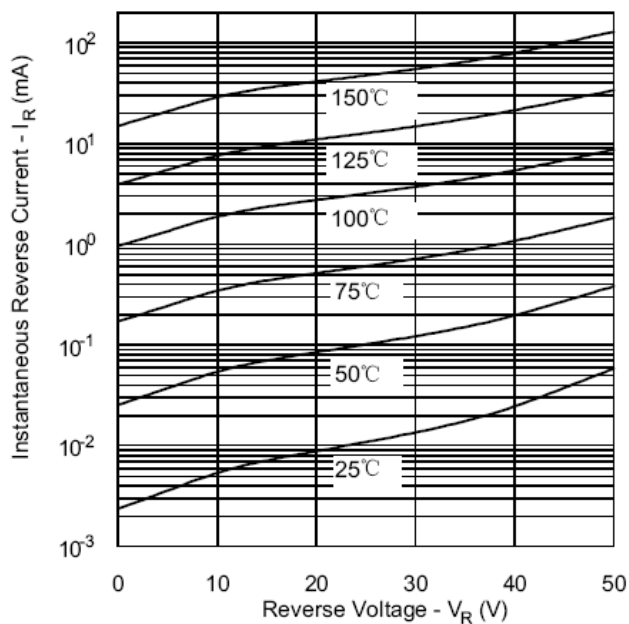
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Max. Junction Temperature	T_J	-	-55 to +150	$^{\circ}\text{C}$
Max. Storage Temperature	T_{stg}	-	-55 to +175	$^{\circ}\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	1.4	$^{\circ}\text{C/W}$
Maximum Thermal Resistance, Case to Heat Sink	$R_{\theta CS}$	Mounting surface, smooth and greased	0.7	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	6	g
Case Style	TO-247AD			

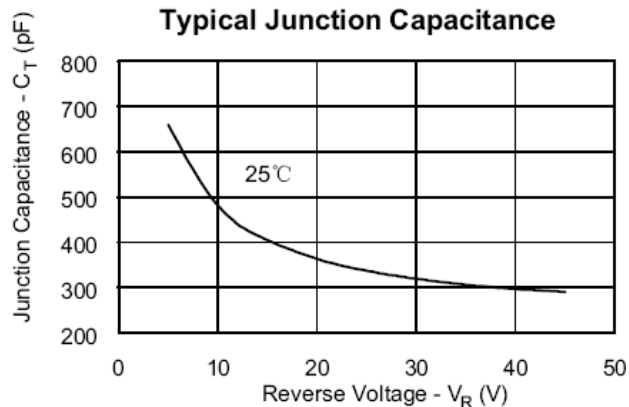
Typical Forward Characteristics



Typical Reverse Characteristics



Typical Junction Capacitance



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