

Technical Data
Data Sheet N0745, Rev. -

Green Products

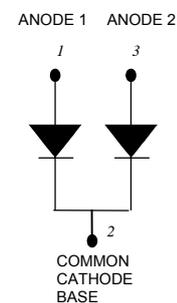
MBR6040WT/MBR6045WT SCHOTTKY RECTIFIER

Applications:

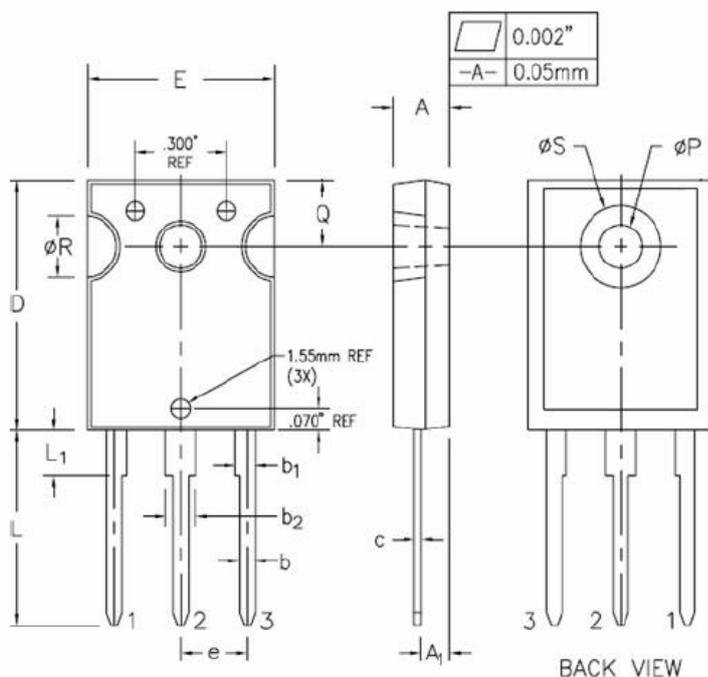
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

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

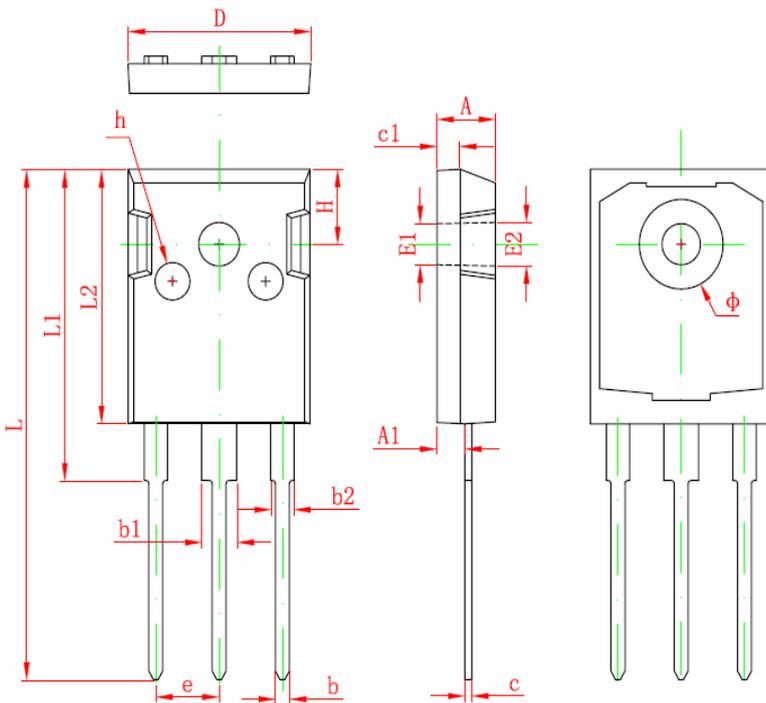


Mechanical Dimensions: In mm



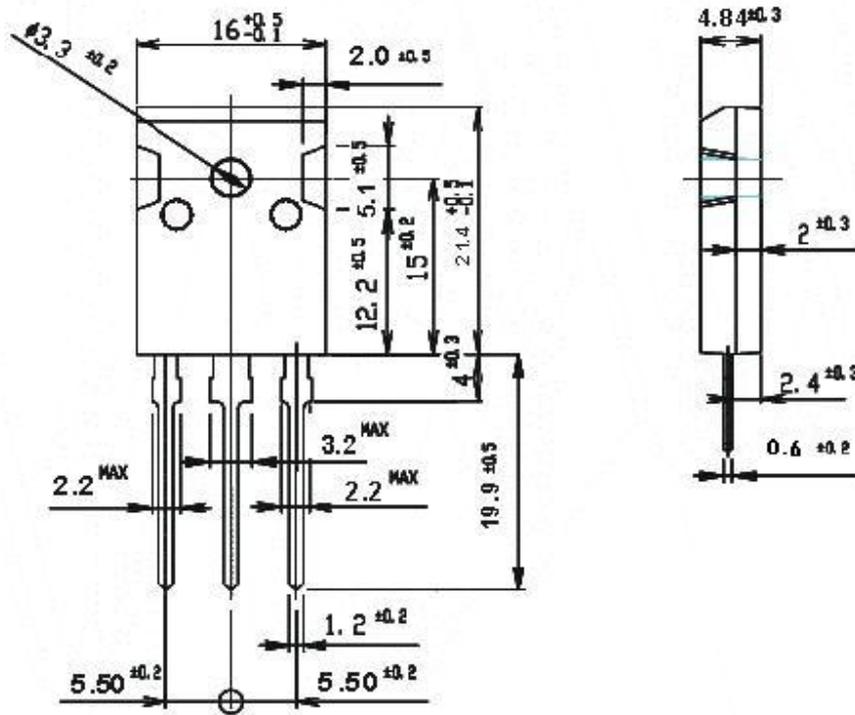
OPTION 1

SYMBOL	MILLIMETERS	
	MIN.	MAX.
A	4.58	4.82
A ₁	2.29	2.66
b	1.17	1.35
b ₁	1.53	1.77
b ₂	2.42	2.66
c	0.51	0.71
D	20.32	20.82
E	15.37	15.87
e	5.56	BSC.
L	15.75	16.25
L ₁	3.69	3.93
øP	3.51	3.65
Q	5.34	5.58
øR	4.96	5.20
øS	6.61	6.85



Symbol	Dimensions In Millimeters	
	Min	Max
A	4.850	5.150
A1	2.200	2.600
b	1.000	1.400
b1	2.800	3.200
b2	1.800	2.200
c	0.500	0.700
c1	1.900	2.100
D	15.450	15.750
E1	3.500 REF	
E2	3.600 REF	
L	40.900	41.300
L1	24.800	25.100
L2	20.300	20.600
ϕ	7.100	7.300
e	5.450 TYP	
H	5.980 REF	
h	0.000	0.300

OPTION 2



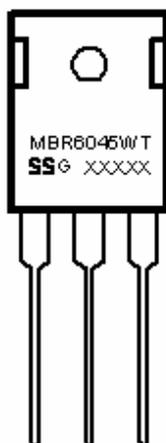
OPTION 3

TO-247AD

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Marking Diagram:



Where XXXXX is YYWWL

MBR = Device Type
60 = Forward Current (60A)
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
MBR6045WT	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 Reverse Voltage	VRWM	-	40	MBR6040WT	V
			45	MBR6045WT	
Max. Average Forward Current	IF(AV)	50% duty cycle @TC =135°C rectangular wave form	30(per leg)		A
			60(per leg)		
Repetitive Avalanche Current(per leg)	IAR	Current decaying linearly to zero in 1 μsec Frequency limited by T _J max. V _A =1.5×V _R typical	6		A
Max. Peak One Cycle Non-Repetitive Surge Current (per leg)	I _{FSM}	8.3 ms, half Sine pulse	432		A
Non-Repetitive Avalanche Energy(per leg)	E _{AS}	T _J =25°C, I _{AS} =4A, L=3.4mH	27		mJ

Electrical Characteristics:

Characteristics	Symbol	Condition	Max.	Units
Max. Forward Voltage Drop (per leg) *	V _{F1}	@ 30A, Pulse, T _J = 25°C	0.65	V
	V _{F2}	@ 30 A, Pulse, T _J = 125°C	0.55	V
Max. Reverse Current (per leg) *	I _{R1}	@V _R = rated VDC ,T _J = 25°C	1.0	mA
	I _{R2}	@V _R = rated VDC ,T _J = 125°C	150	mA
Max. Junction Capacitance (per leg)	C _T	@V _R = 5V, T _C = 25°C f _{SIG} = 1MHz	1400	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 < 300μs, Duty Cycle <2%
 Measured lead to lead 5 mm from package body

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature Range	T _J	-	-55 to +150	°C
Storage Temperature Range	T _{stg}	-	-55 to +150	°C
Maximum Thermal Resistance Junction to Case	R _{θJC}	DC operation	1.0 (per device)	°C/W
			0.5 (per device)	
Maximum Thermal Resistance, Case to Heat Sink	R _{θCS}	Mounting surface, smooth and greased	0.24	°C/W
Approximate Weight	wt	-	6.7	g
Case Style	TO-247AD			

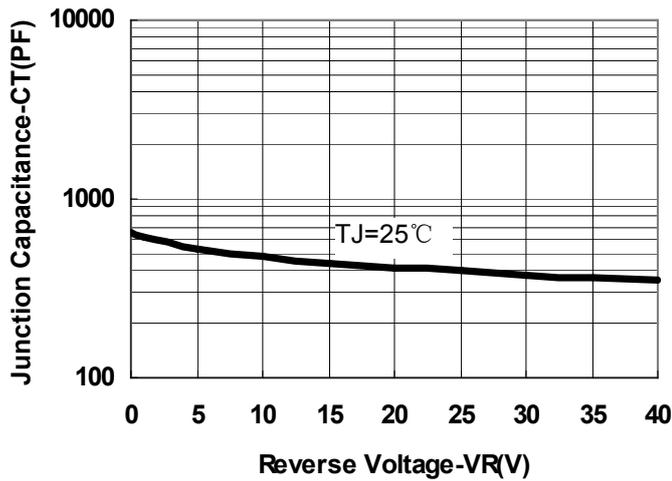


Fig.1-Typical Junction Capacitance Vs.Reverse Voltage

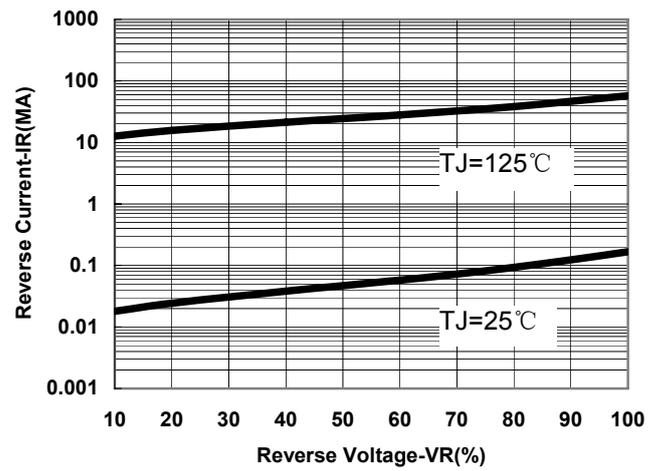


Fig.2-Typical Values Of Reverse Current VS.Reverse Voltage

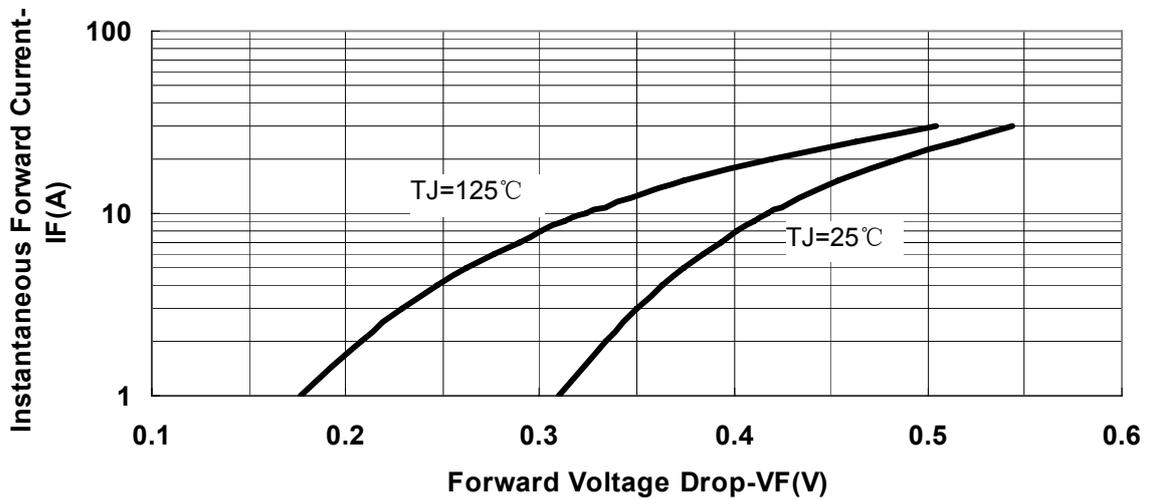


Fig.3-Typical Forward Voltage Drop Characteristics

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