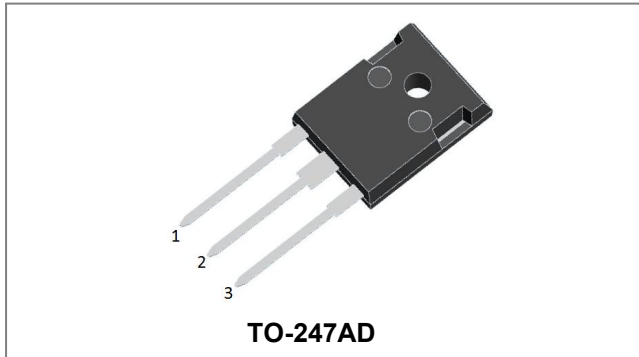


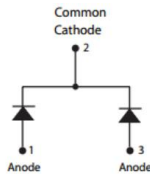
MBR4045WT SCHOTTKY RECTIFIER



Features

- 150 °C T_J operation
- 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

Circuit Diagram



Applications

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

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	45	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C =125°C, rectangular wave form	20(per leg) 40(per device)	A
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°C, I _{AS} = 3 A, L = 4.40 mH	20	mJ
Repetitive Avalanche Current (Per leg)	I _{AR}	Current decaying linearly to zero in 1 µsec Frequency limited by T _{J max.} V _A = 1.5 x V _R typical	3	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg) *	V _{F1}	@ 20A, Pulse, T _J = 25 °C @ 40A, Pulse, T _J = 25 °C	0.58 -	0.70 0.80	V
	V _{F2}	@ 20A, Pulse, T _J = 125 °C @ 40A, Pulse, T _J = 125 °C	0.51 -	0.60 0.75	V
Reverse Current (per leg) *	I _{R1}	@V _R = rated VR T _J = 25 °C	0.05	1.0	mA
	I _{R2}	@V _R = rated VR T _J = 100 °C	9	50	mA
	I _{R3}	@V _R = rated VR T _J = 125 °C	35	85	mA
Junction Capacitance (per leg)	C _T	@V _R = 5 V, T _C = 25 °C f _{SIG} = 1MHz	650	1100	pF
Typical Series Inductance (per leg)	L _S	Measured lead to lead 5 mm from package body	7.5	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

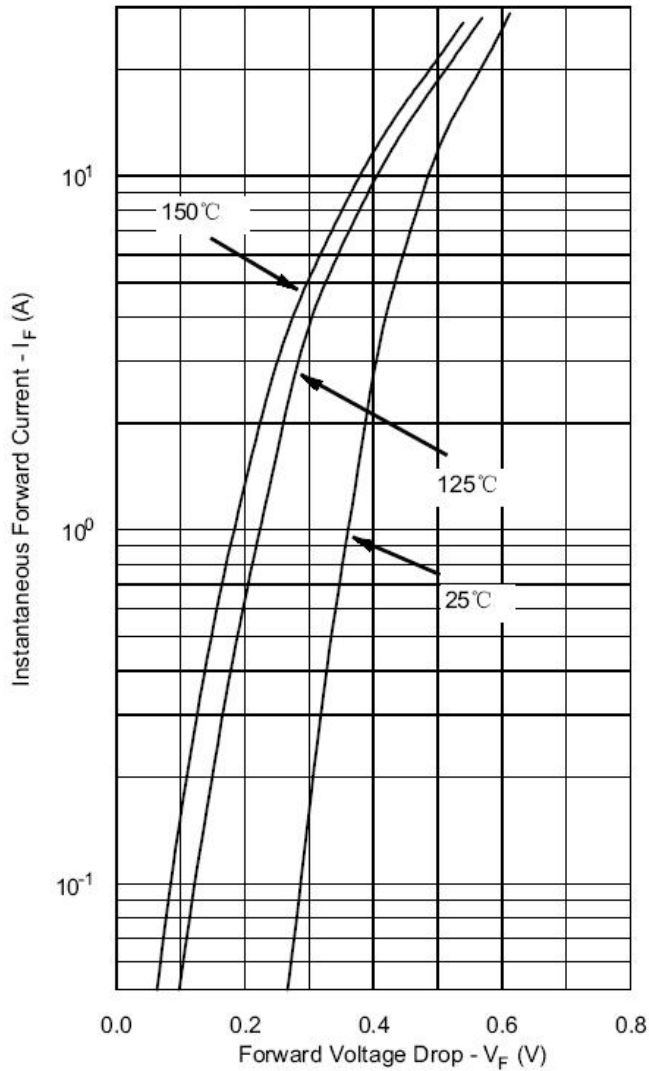
* Pulse width < 300 μs, duty cycle < 2%

Thermal-Mechanical Specifications:

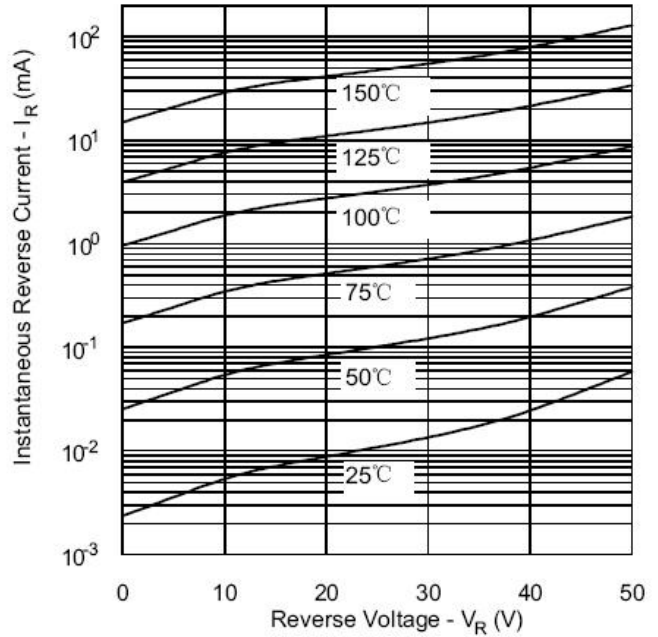
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T _J	-	-55 to +150	°C
Storage Temperature	T _{stg}	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R _{θJC}	DC operation	1.4	°C/W
Typical Thermal Resistance, Case to Heat Sink	R _{θCS}	Mounting surface, smooth and greased	0.7	°C/W
Approximate Weight	wt	-	6	g
Case Style	TO-247AD			

Ratings and Characteristics Curves

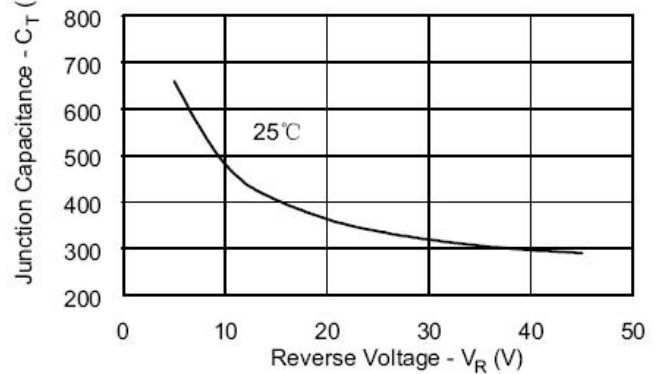
Typical Forward Characteristics

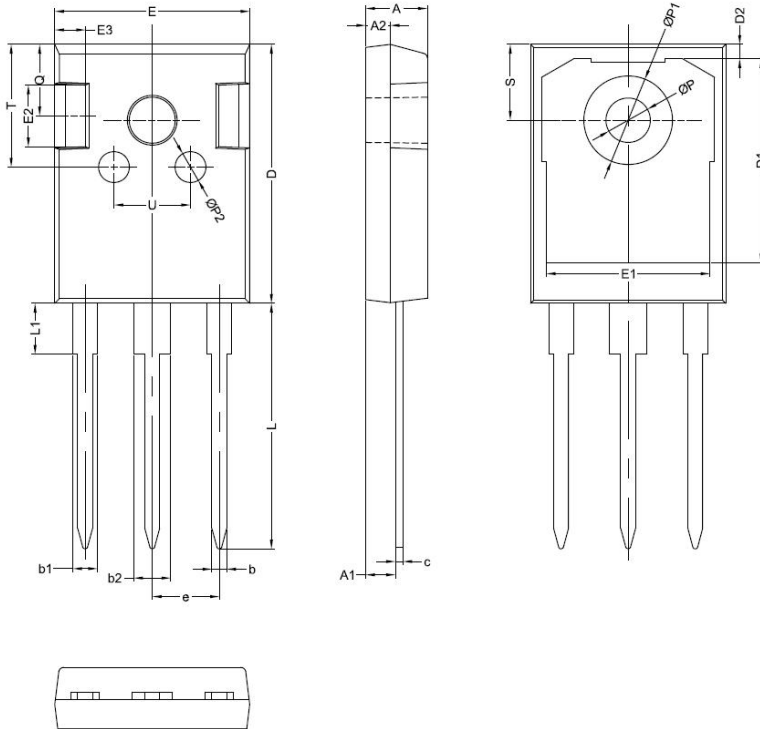


Typical Reverse Characteristics



Typical Junction Capacitance



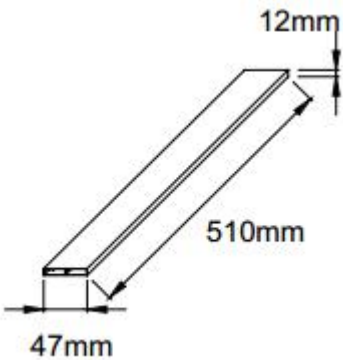
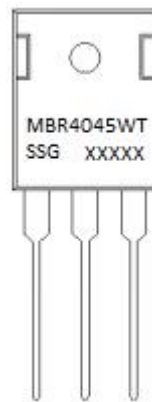
Mechanical Dimensions TO-247AD


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.40
b1	1.80	2.00	2.20
b2	2.80	3.00	3.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.55	
D2		1.20	
E	15.45	15.80	16.00
E1		13.30	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.70
L1		4.13	
P	3.50	3.60	3.70
P1	7.1		7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

Ordering Information:

Device	Package	Shipping
MBR4045WT	TO-247AD(Pb-Free)	25pcs / 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

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

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