

MBR4045WT

40 A SCHOTTKY RECTIFIER

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Rating	Symbol	MBR4045WT	Unit
Peak repetitive reverse voltage	V_{RRM}	45	V
Working peak reverse voltage	V_{RWM}		
DC blocking voltage	V_R		
Average rectified forward current (Rated V_R)	$I_{F(AV)}$	40 @ $T_C = 125^\circ\text{C}$	A
Peak repetitive forward current (Rated V_R , square wave, 20 kHz)	I_{FRM}	40 @ $T_C = 90^\circ\text{C}$	A
Peak repetitive reverse surge current (2.0 μs , 1.0 kHz)	I_{RRM}	2	A
Non-repetitive peak surge current (surge applied at rated load conditions, halfwave, single phase, 60Hz)	I_{FSM}	400	A
Operating junction temperature range ⁽¹⁾	T_J	-65 to +175	$^\circ\text{C}$
Storage junction temperature range	T_{stg}	-65 to +175	$^\circ\text{C}$
Peak surge junction temperature (forward current applied)	$T_{J(pk)}$	175	$^\circ\text{C}$
Voltage rate of change (Rated V_R)	dv/dt	10000	V/ μs
Maximum thermal resistance			
Junction to case	$R_{\theta JC}$	1.4	$^\circ\text{C/W}$
Junction to ambient	$R_{\theta JA}$	50.1	

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

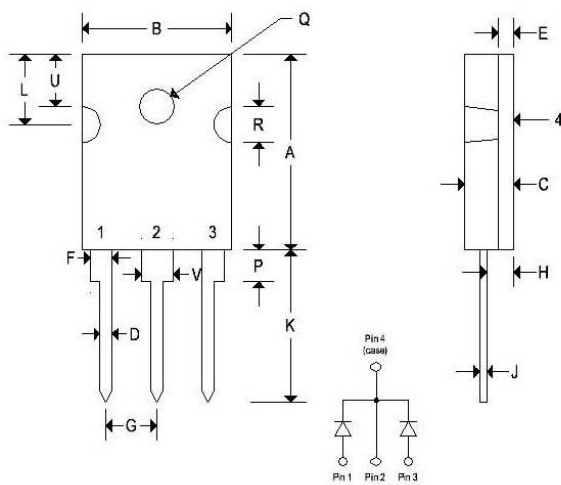
Parameter	Symbol	MBR4045WT		Unit
		Typical	Maximum	
Instantaneous forward voltage ⁽²⁾ ($I_F = 20\text{A}$, $T_C = 25^\circ\text{C}$) ($I_F = 20\text{A}$, $T_C = 125^\circ\text{C}$) ($I_F = 40\text{A}$, $T_C = 25^\circ\text{C}$) ($I_F = 40\text{A}$, $T_C = 125^\circ\text{C}$)	V_F	0.52 0.47 0.65 0.63	070 0.60 0.80 0.75	V
Instantaneous reverse current ⁽²⁾ (Rated dc voltage, $T_C = 25^\circ\text{C}$) (Rated dc voltage, $T_C = 100^\circ\text{C}$)	I_R	0.09 7.5	1.0 50	mA

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MECHANICAL CHARACTERISTICS

Case	TO-247
Marking	Alpha-numeric
Pin out	See below



	TO-247			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.803	0.823	20.400	20.900
B	0.608	0.628	15.440	15.950
C	0.185	0.205	4.700	5.210
D	0.043	0.051	1.090	1.300
E	0.059	0.064	1.500	1.630
F	0.071	0.086	1.800	2.180
G	0.215 BSC		5.450 BSC	
J	0.019	0.027	0.480	0.680
K	0.613	0.633	15.570	16.080
L	0.286	0.295	7.260	7.500
P	0.122	0.133	3.100	3.380
Q	0.138	0.145	3.500	3.700
R	0.130	0.150	3.300	3.800
U	0.209 BSC		5.300 BSC	
V	0.120	0.134	3.050	3.400



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and engineering services since 1977

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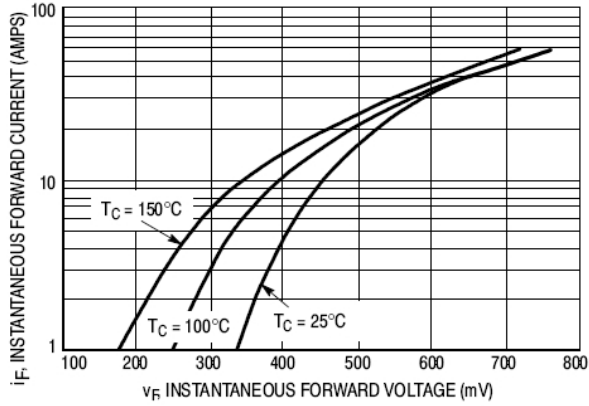


Figure 1. Typical Forward Voltage

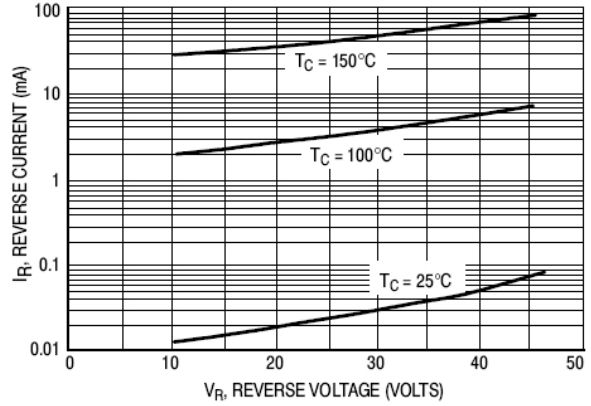


Figure 2. Typical Reverse Current

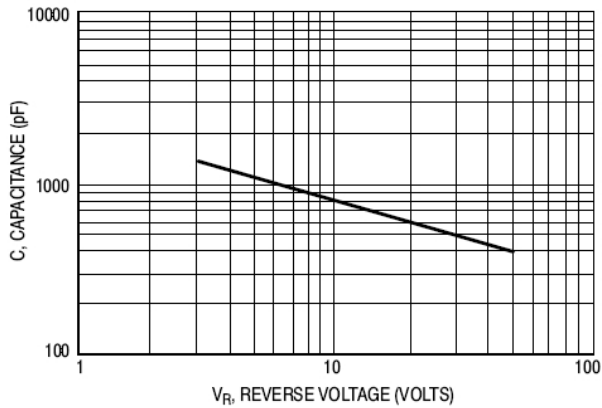


Figure 3. Typical Capacitance Per Leg

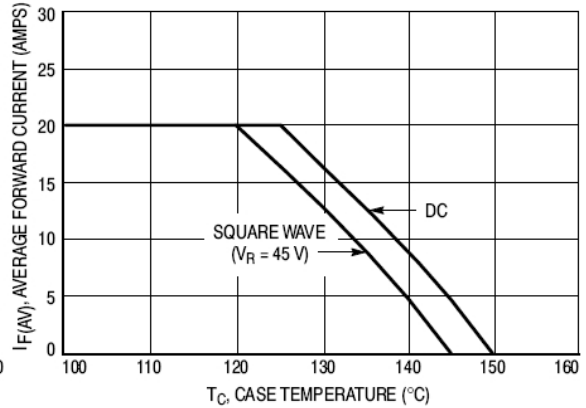


Figure 4. Current Derating Per Leg