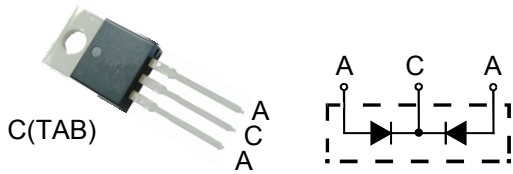


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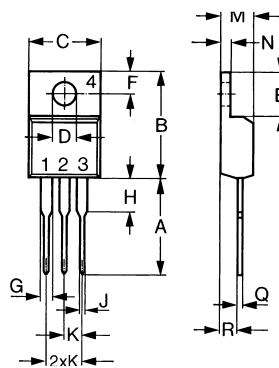
MBR2045CT

Wide Temperature Range and High T_{jm} Schottky Barrier Rectifiers



A=Anode, C=Cathode, TAB=Cathode

Dimensions TO-220AB



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.38	0.56	0.015	0.022
R	2.29	2.79	0.090	0.110

	V_{RSM}	V_{RRM}
	V	V
MBR2045CT	45	45

Symbol	Test Conditions	Maximum Ratings	Unit
I_{FRMS}		38	
I_{FAV}	$T_C=165^\circ\text{C}$; rectangular, $d=0.5$	10	A
I_{FAV}	$T_C=165^\circ\text{C}$; rectangular, $d=0.5$; per device	20	
I_{FSM}	$T_{VJ}=45^\circ\text{C}$; $t_p=10\text{ms}$ (50Hz), sine	270	A
E_{AS}	$I_{AS}=8\text{A}$; $L=180\mu\text{H}$; $T_{VJ}=25^\circ\text{C}$; non-repetitive	7	mJ
I_{AR}	$V_A=1.5 \cdot V_{RRM}$ typ.; $f=10\text{kHz}$; repetitive	0.8	A
$(dv/dt)_{cr}$		5000	V/us
T_{VJ}		-55...+175	$^\circ\text{C}$
T_{VJM}		175	
T_{stg}		-55...+150	
P_{tot}	$T_C=25^\circ\text{C}$	90	W
M_d	mounting torque	0.4...0.6	Nm
Weight	typical	2	g

Symbol	Test Conditions	Characteristic Values		Unit
		typ.	max.	
I_R	$T_{VJ}=25^\circ\text{C}$; $V_R=V_{RRM}$ $T_{VJ}=125^\circ\text{C}$; $V_R=V_{RRM}$		0.1 100	mA
V_F	$I_F=10\text{A}$; $T_{VJ}=125^\circ\text{C}$ $I_F=10\text{A}$; $T_{VJ}=25^\circ\text{C}$ $I_F=20\text{A}$; $T_{VJ}=125^\circ\text{C}$		0.55 0.63 0.73	V
R_{thJC} R_{thCH}		0.5	1.7	K/W

FEATURES

- * International standard package
- * Very low V_F
- * Extremely low switching losses
- * Low I_{RM} -values

APPLICATIONS

- * Rectifiers in switch mode power supplies (SMPS)
- * Free wheeling diode in low voltage converters

ADVANTAGES

- * High reliability circuit operation
- * Low voltage peaks for reduced protection circuits
- * Low noise switching
- * Low losses



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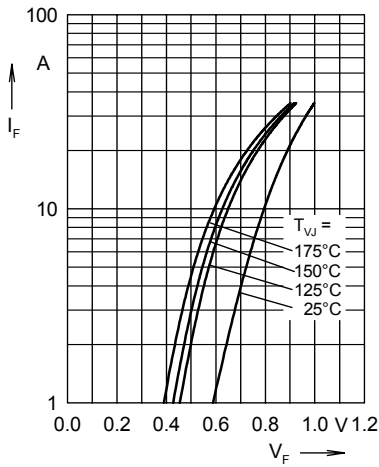


Fig. 1 Maximum forward voltage drop characteristics

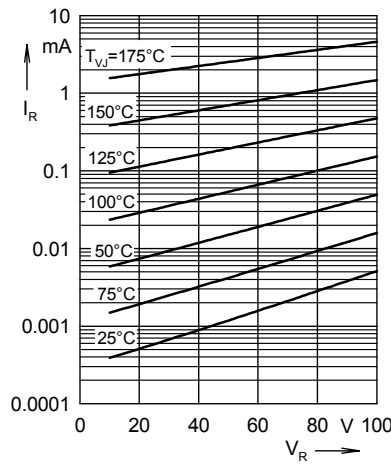


Fig. 2 Typ. value of reverse current I_R versus reverse voltage V_R

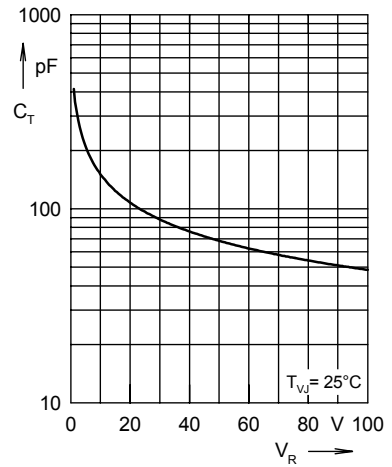


Fig. 3 Typ. junction capacitance C_T versus reverse voltage V_R

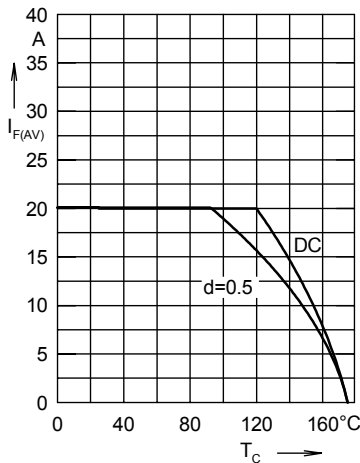


Fig. 4 Average forward current $I_{F(AV)}$ versus case temperature T_c

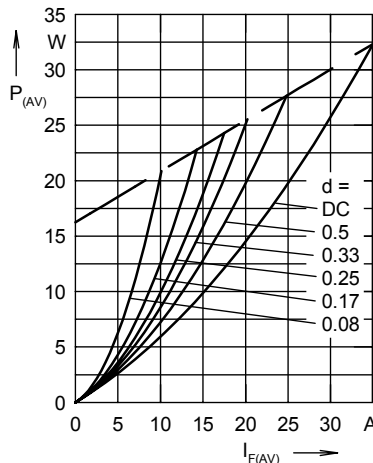


Fig. 5 Forward power loss characteristics

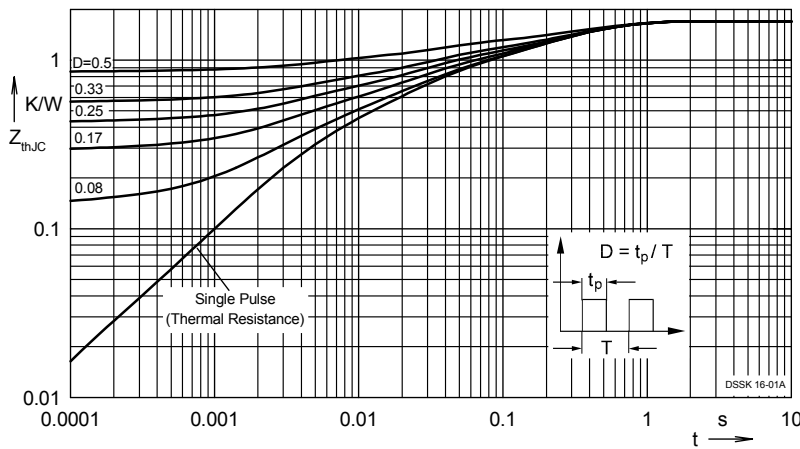


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per Diode

