

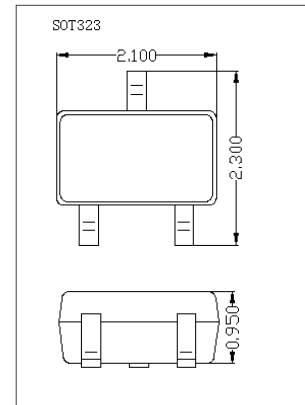
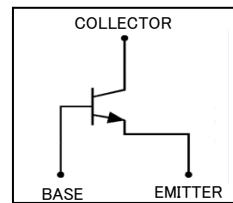
DATA SHEET

MMBT3904W

- ◇Epoxy Meets UL 94 V-0 Flammability Rating
- ◇Small Outline Surface Mount Package

Device Marking Code	
MMBT3904W	K2N

Equivalent Circuit



Maximum Ratings (Ta = 25 °C)

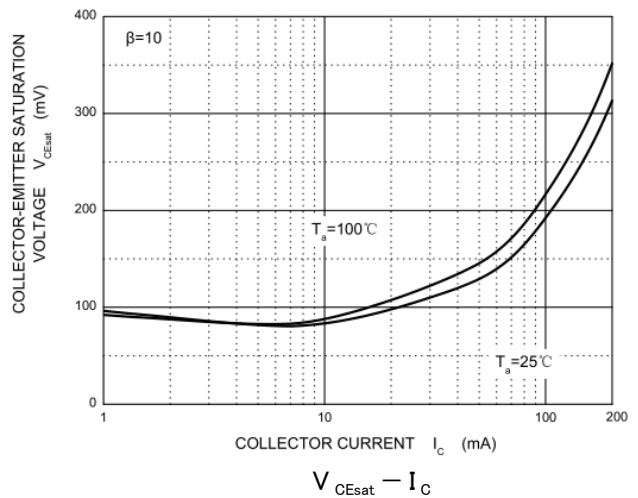
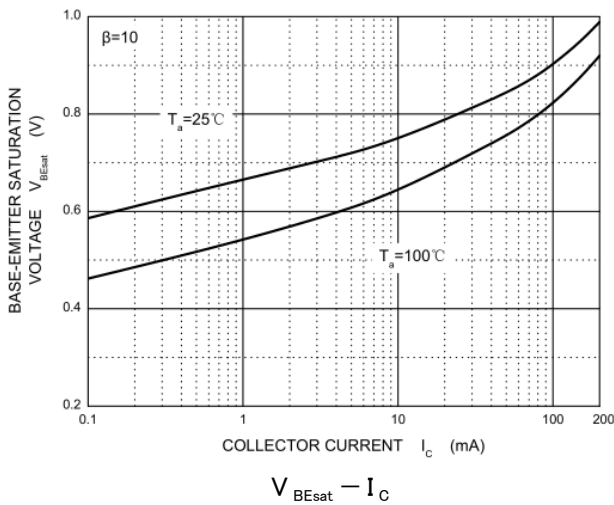
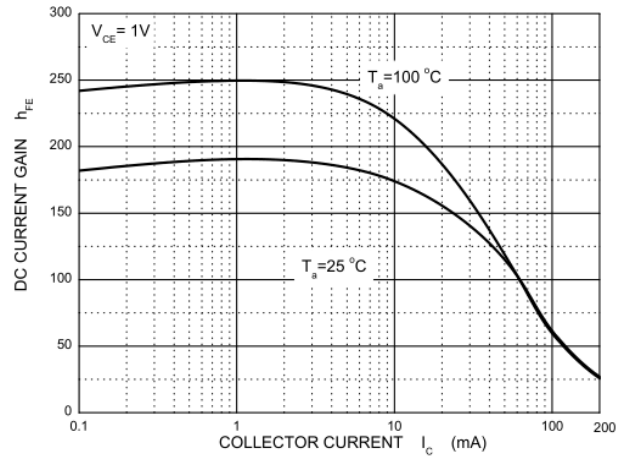
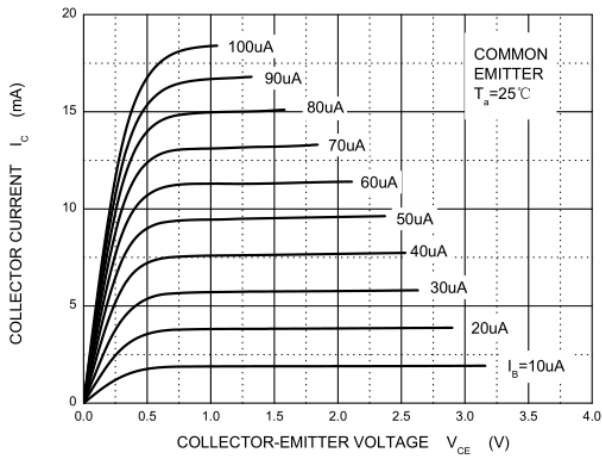
Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	5	V
I _C	Collector Current	200	mA
P _C	Collector Power Dissipation	200	mW
R _{θJA}	Thermal Resistance from Junction to Ambient	625	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55 ~ +150	°C

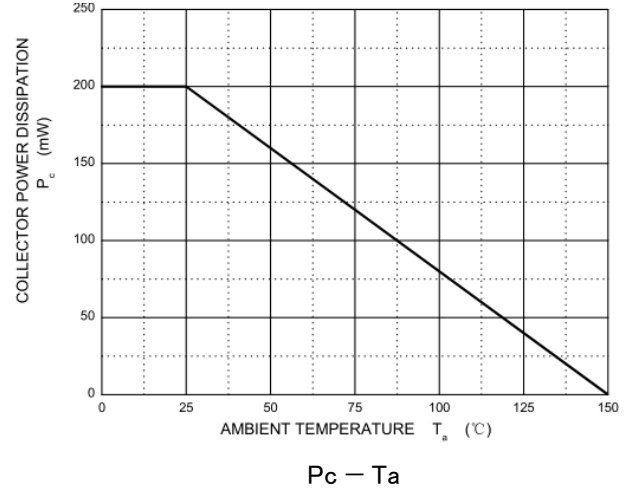
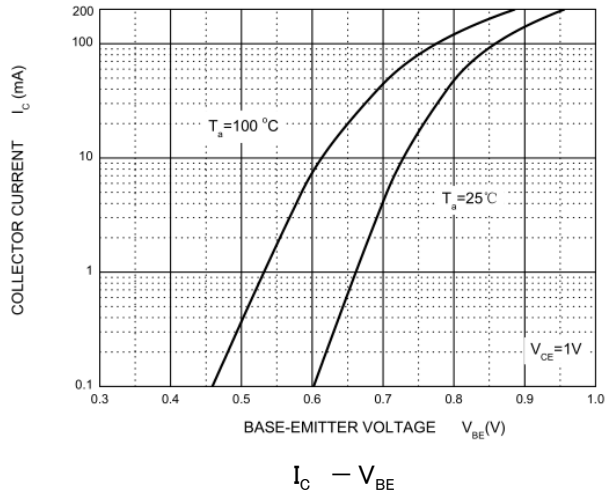
Electrical Characteristics (Ta = 25 °C)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
V _{(BR)CBO}	Collector-Base Breakdown Voltage	I _C =10 μA, I _E =0	60			V
V _{(BR)CEO}	Collector-Emitter Breakdown Voltage	I _C =1mA, I _B =0	40			V
V _{(BR)EBO}	Emitter-Base Breakdown Voltage	I _E =10 μA, I _C =0	5			V
I _{CBO}	Collector Cut-Off Current	V _{CB} =60V, I _E =0			60	nA
I _{CEX}	Collector Cut-Off Current	V _{CE} =30V, I _{BE(off)} =3V			50	nA
h _{FE}	DC Current Gain	V _{CE} =1V, I _C =100 μA	40			
		V _{CE} =1V, I _C =1mA	70			
		V _{CE} =1V, I _C =10mA	100		300	
		V _{CE} =1V, I _C =50mA	60			
V _{CE(sat)}	Collector-Emitter Saturation Voltage	I _C =10mA, I _B =1mA			0.25	V
		I _C =50mA, I _B =5mA			0.3	V
V _{BE(sat)}	Base-Emitter Saturation Voltage	I _C =10mA, I _B =1mA			0.85	V
		I _C =50mA, I _B =5mA			0.95	V
f _T	Transition Frequency	V _{CE} =20V, I _C =10mA, f=100MHz	300			MHz

C_{ob}	Collector Output Capacitance	$V_{OB}=5V, I_E=0,$ $f=1MHz$	4	pF
C_{ib}	Collector Output Capacitance	$V_{EB}=0.5V, I_E=0,$ $f=1MHz$	8	pF
t_d	Delay time	$V_{CC}=3V, V_{BE(off)}=0.5V,$	35	nS
t_r	Delay time	$I_C=10mA, I_{B1}=1mA$	35	nS
t_s	Storage time	$V_{CC}=3V, I_C=10mA,$	225	nS
t_f	Fall time	$I_{B1}=I_{B2}=1mA$	75	nS

Typical Characteristics





ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBT3904W	SOT323	Tape & Reel 3000pcs /7" Reel	8mm	4mm	Conductive	

PACKAGE DIMENSIONS

Package outline : SOT323

TOP VIEW

SIDE VIEW

SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.900	1.000
A1	0.00	0.100
A2	0.900	1.000
b	0.200	0.400
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.400
e	0.650 TYP.	
e1	1.200	1.400
L	0.525 REF.	
L1	0.260	0.450
θ	0°	8°

FRONT VIEW

SOLDERING PATTERN

Notice:

- Lead plating: Pb free solder
- Lead thickness includes solder plating
- Other Tolerance: ± 0.008
- Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
- Unit: mm