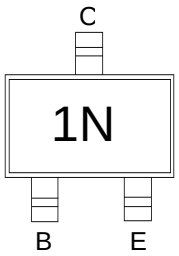
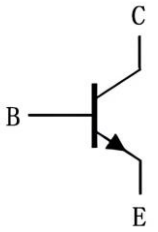
Features

- Complementary to MMBT3906M
- Small Package



Marking and pin assignment

SOT-723 top view



Schematic diagram

Pb-Free RoHS Halogen-Free

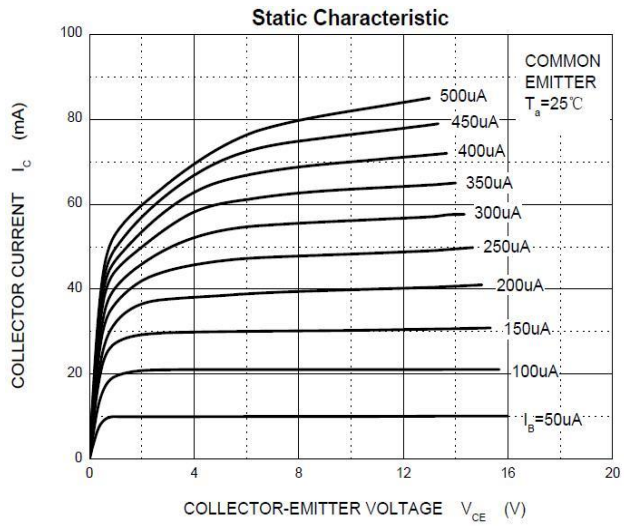
MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

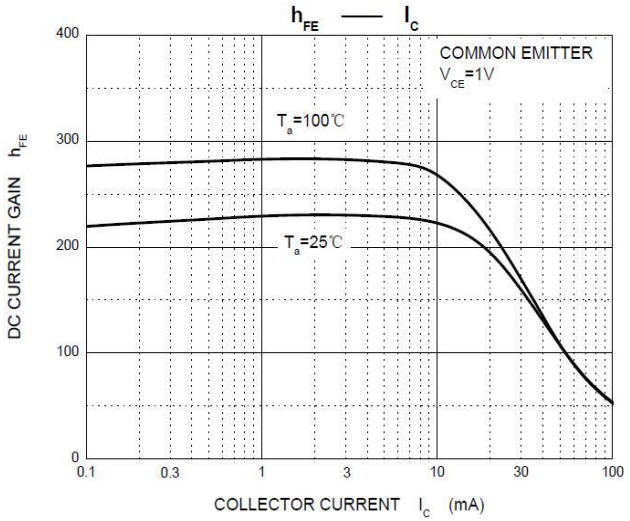
Symbol	Parameter	Limit	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous 0.5 A	0.2	A
P_C	Power Dissipation	0.1	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	1250	°C/W
T_J,T_{STG}	Operation Junction and Storage Temperature Range	-55~+150	°C

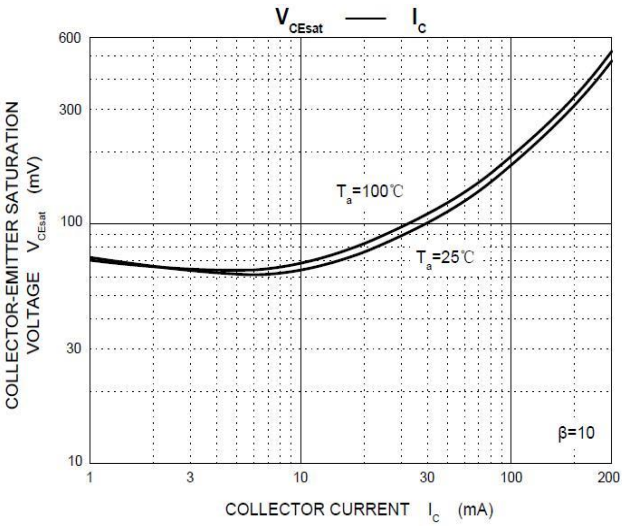
ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise specified)

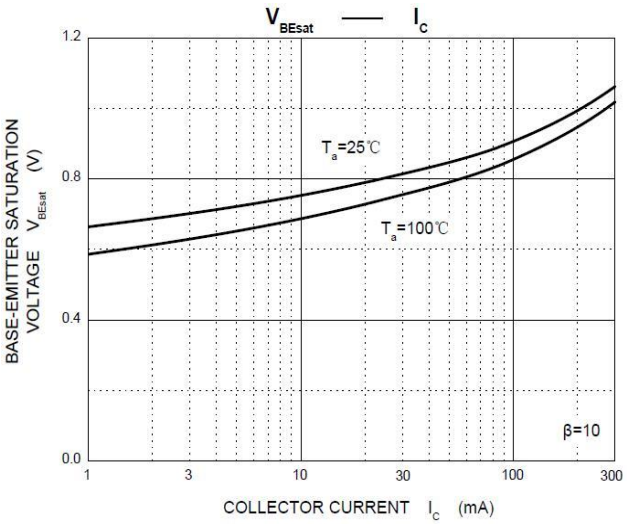
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	I_C=10μA,I_E=0	60	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	I_C=1mA,I_B=0	40	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	I_E=10μA,I_C=0	6	--	--	V
I_{CEX}	Collector cut-off current	V_{CE}=30V, $V_{EB(off)}$=3V	--	--	50	nA
I_{EBO}	Emitter cut-off current	V_{EB}= 5V,I_C=0	--	--	100	nA
h_{FE1}	DC current gain	V_{CE}=1V,I_C=0.1mA	40	--	--	
h_{FE2}		V_{CE}=1V,I_C=1mA	70	--	--	
h_{FE3}		V_{CE}=1V,I_C=10mA	100	--	300	
h_{FE4}		V_{CE}=1V,I_C=50mA	60	--	--	
$V_{CE(sat)1}$	Collector-emitter saturation voltage	I_C=10mA I_B=1mA	--	--	0.2	V
$V_{CE(sat)2}$		I_C=50mA I_B=5mA	--	--	0.3	V
$V_{BE(sat)1}$	Base-emitter saturation voltage	I_C=10mA I_B=1mA	0.65	--	0.85	V
$V_{BE(sat)2}$		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}	Output capacitance	V_{CB}= 5V, I_E=0,f=1MHz	--	--	4	pF
C_{ib}	Input capacitance	V_{EB}= 0.5V, I_c=0,f=1MHz	--	--	8	pF
NF	Noise figure	V_{CE}=5V,I_C=0.1mA,f=1MHz,R_S=1kΩ	--	--	5	dB
t_d	Delay time	V_{CC}=3V, $V_{BE(off)}$=-0.5V	--	--	35	ns
t_r	Rise time	I_C=10mA,I_{B1}=1mA	--	--	35	ns
t_s	Storage time	V_{CC}=3V, I_C=10mA,	--	--	200	ns
t_f	Fall time	I_{B1}= I_{B2}=1mA	--	--	50	ns

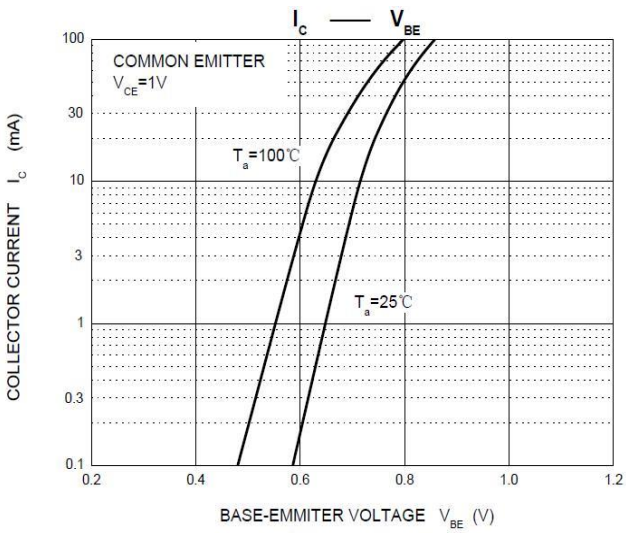
Typical Operating Characteristics

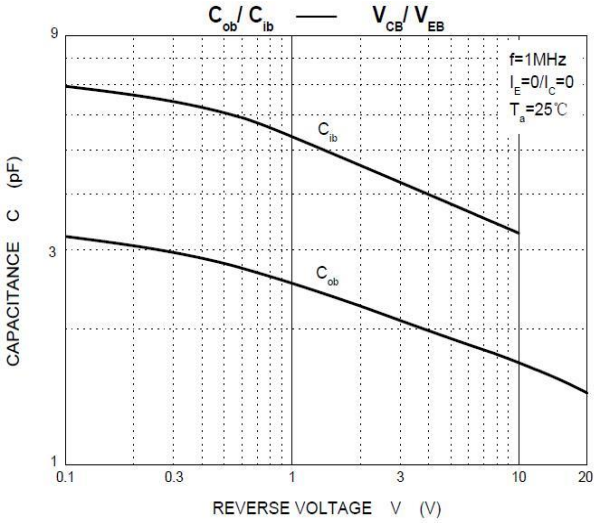


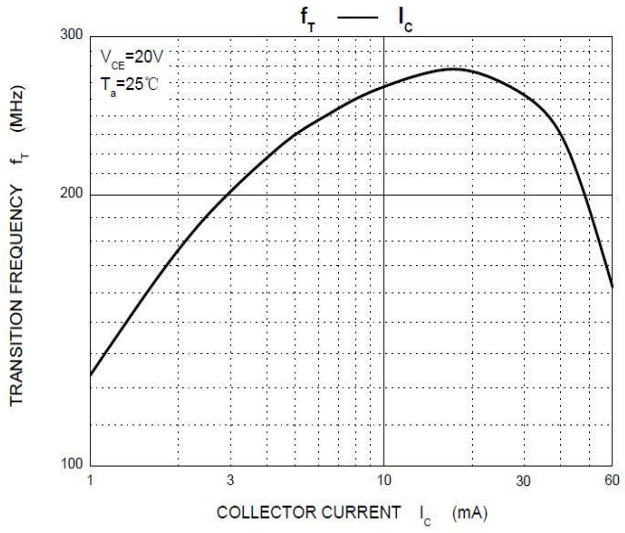


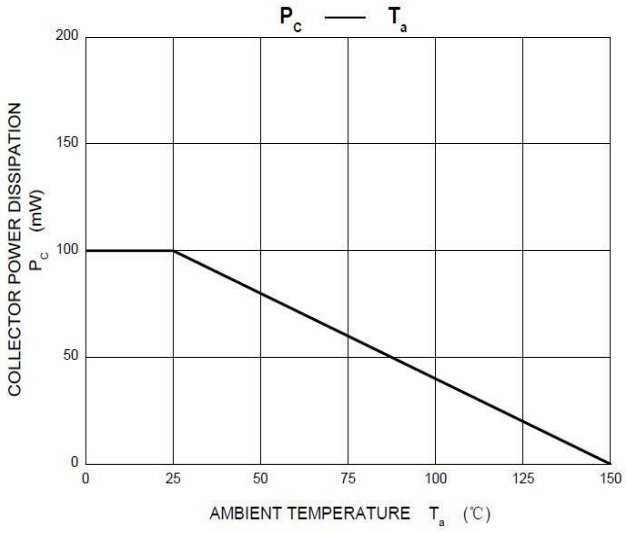








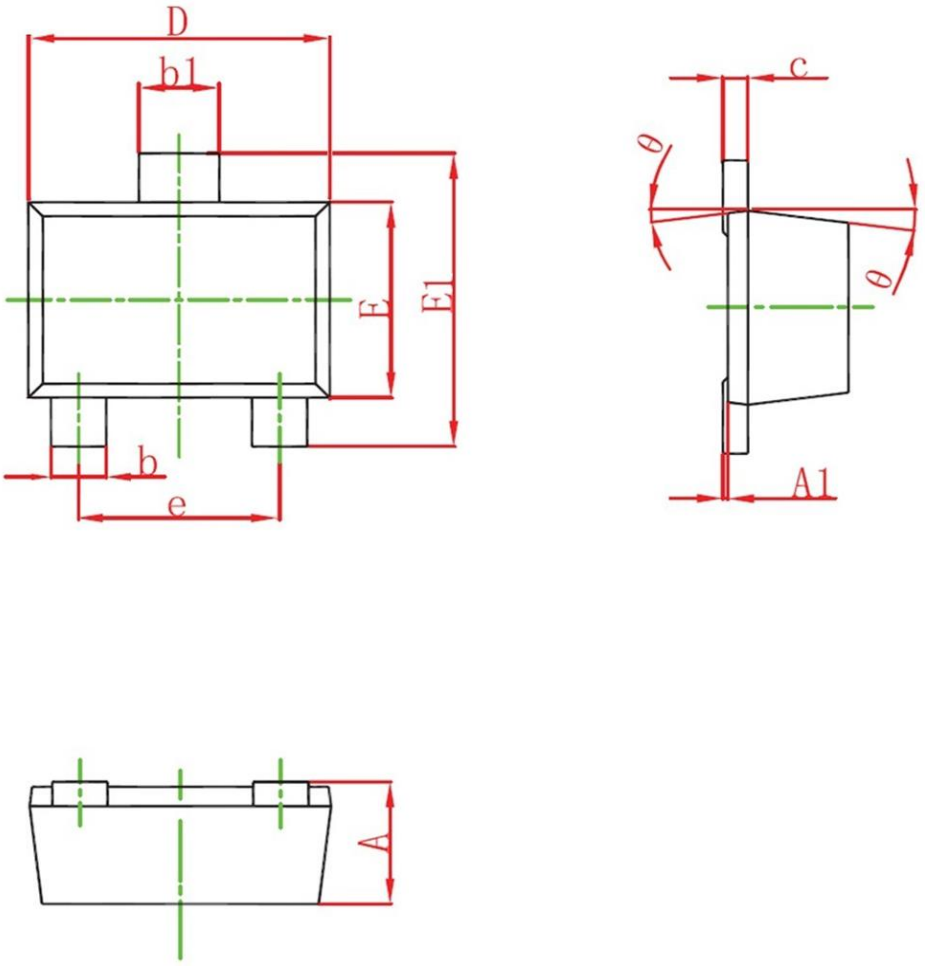




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBT3904M	SOT-723	1N	8,000	120,000	480,000	7"reel

SOT-723 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.320	0.400	0.012	0.016
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.006	0.010
b1	0.270	0.370	0.010	0.014
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.046	0.050
E	0.750	0.850	0.030	0.034
E1	1.150	1.250	0.046	0.050
e	0.800TYP		0.020TYP	
θ	7°REF		7°REF	