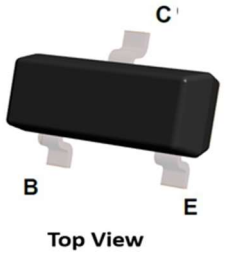
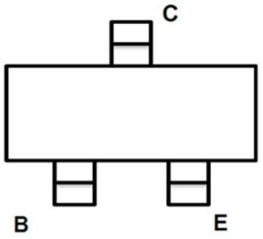
MMBT3904M

MMBT3904M
NPN General Purpose Transistor

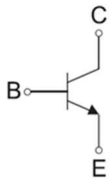
General description
• NPN General Purpose Transistor

FEATURES
• SOT-723 General Purpose Transistors.
• VCEO 40V
• Ic 200mA
• PC 100mW
• Complementary to MMBT3906M
• Small Outline Surface Mount Package.
• RoHS Compliant / Green EMC.





SOT-723



Type	MMBT3904M
Marking	1N

Absolute Maximum Ratings(Ta=25℃)

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

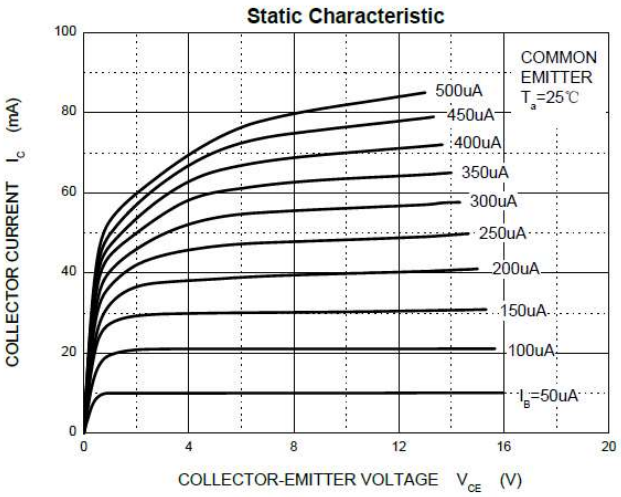
MMBT3904M

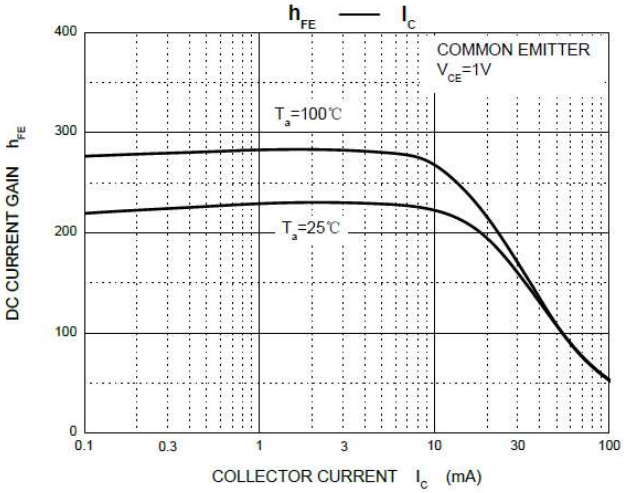
ELECTRICAL CHARACTERISTICS @ 25°C Unless Otherwise Specified

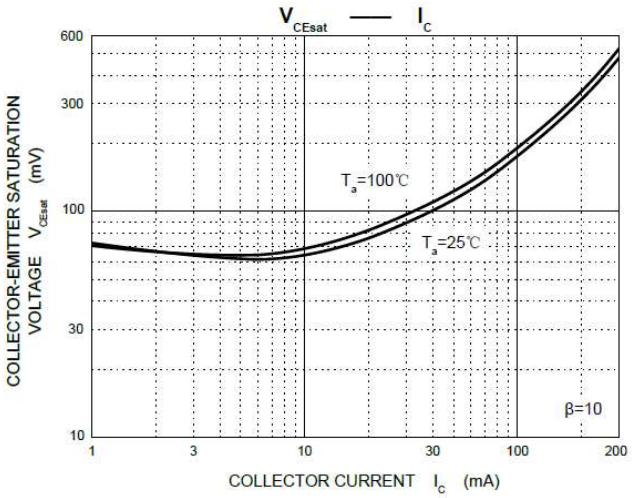
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6			V
Collector cut-off current	I_{CEX}	V_{CE}=30V,$V_{EB(off)}$=3V			50	nA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			100	nA
DC current gain	h_{FE}	V_{CE}=1V,I_C=0 mA	40			
		V_{CE}=1V,I_C=1mA	70			
		V_{CE}=1V,I_C=10mA	100		300	
		V_{CE}=1V,I_C=50mA	60			
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA,I_B=1mA			0.2	V
		I_C=50mA,I_B=5mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA,I_B=1mA	0.65		0.85	V
		I_C=50mA,I_B=5mA			0.95	V
Transition frequency	f_T	V_{CE}=20V,I_C=10mA,f=100MHz	300			MHz
Output capacitance	C_{ob}	V_{CB}=5V,I_E=0,f=1MHz			4	pF
Input capacitance	C_{ib}	V_{EB}=0.5V,I_C=0,f=1MHz			8	pF
Noise figure	NF	V_{CE}=5V,I_C=0.1mA,f=1MHz,R_S=1kΩ			5	dB

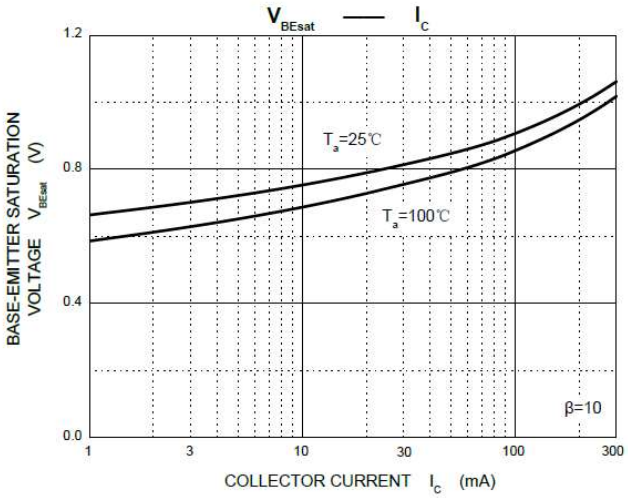
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Delay time	t_d	V_{CC}=3V,$V_{BE(off)}$=-0.5V, I_C=10mA,I_{B1}=1mA			35	ns
Rise time	t_r				25	ns
Storage time	t_s	V_{CC}=3V,I_C=10mA I_{B1}=I_{B2}=1mA			200	ns
Fall time	t_f				50	ns

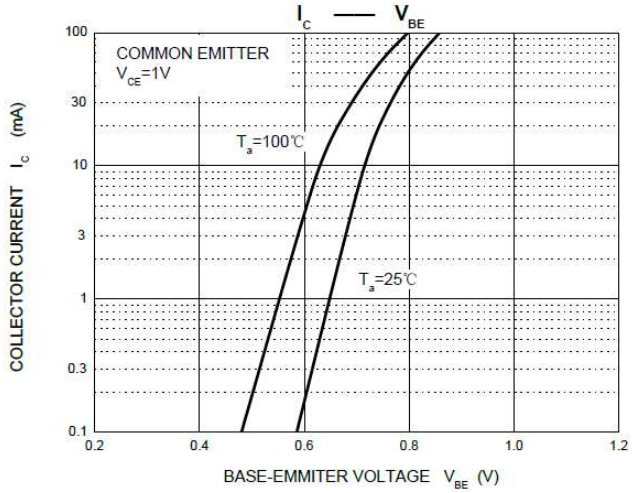
TYPICAL CHARACTERICTIC

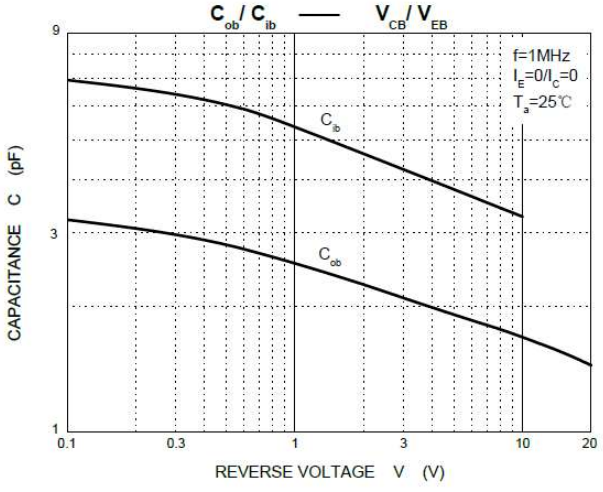


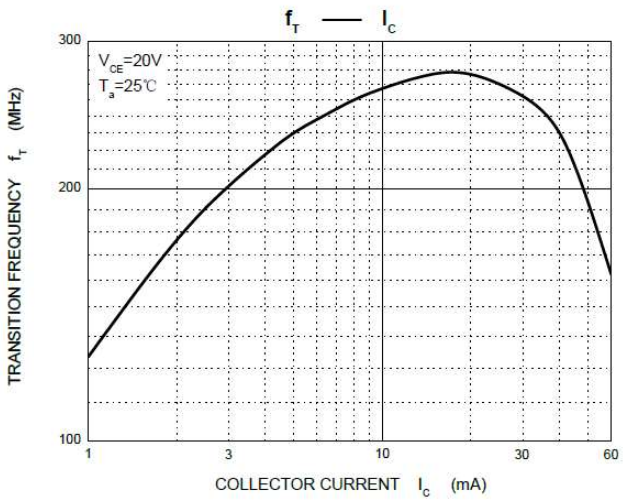


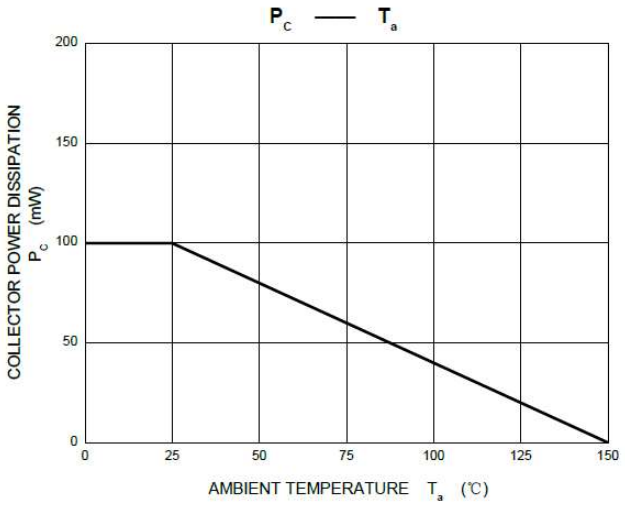




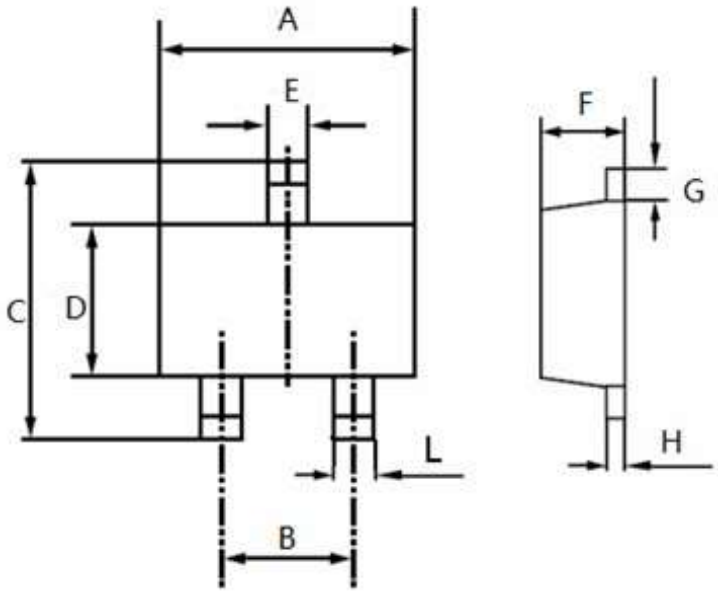








PACKAGE DIMENSIONS



Symbol	Dimensions In Millimeters	
	Min	Max
A	1.100	1.300
B	0.8typ	
C	1.100	1.300
D	0.700	0.900
E	0.200	0.300
F	0.400	0.500
G	0.150	0.250
H	0.060	0.160
L	0.150	0.250

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