

MMBT3906M

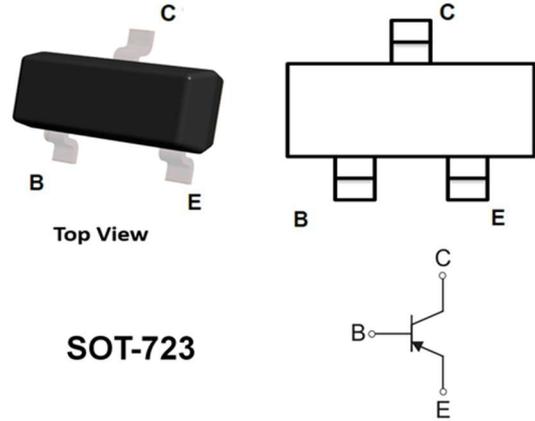
MMBT3906M PNP General Purpose Transistor

General description

- PNP General Purpose Transistor

FEATURES

- SOT-723 General Purpose Transistors.
- V_{CE0} -40V
- I_c -200mA
- P_C 100mW
- Complementary to MMBT3904M
- Small Outline Surface Mount Package.
- RoHS Compliant / Green EMC.



SOT-723

Type	MMBT3904M
Marking	3N

Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CB0}	-40	V
Collector-Emitter Voltage	V_{CE0}	-40	V
Emitter-Base Voltage	V_{EB0}	5	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	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^\circ\text{C}$

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ELECTRICAL CHARACTERISTICS @ 25°C Unless Otherwise Specified

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	-5			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}	$V_{CE}=-1V, I_C=-0.1mA$	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}	$V_{EC}=-0.5V, I_C=0, f=1MHz$			8	pF
Noise figure	NF	$V_{CE}=-5V, I_C=-0.1mA, f=1MHz, R_S=1k\Omega$			5	dB

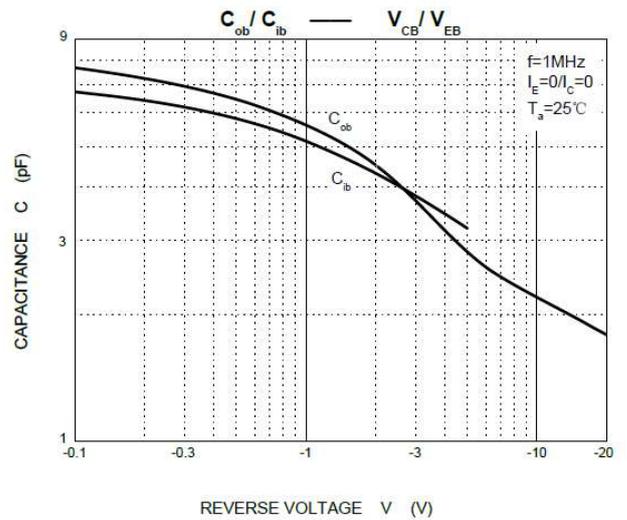
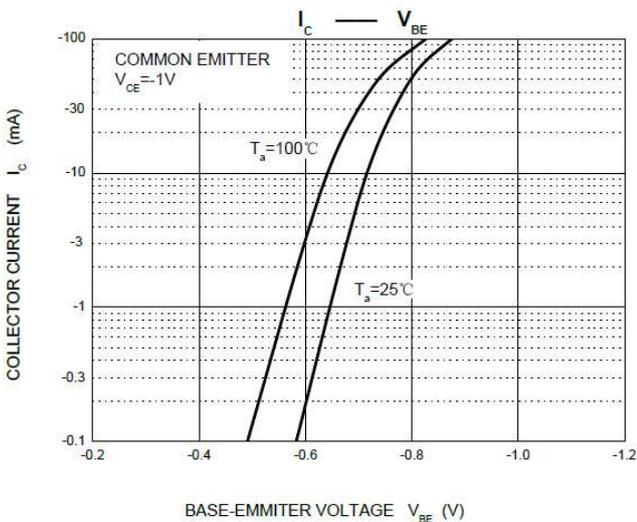
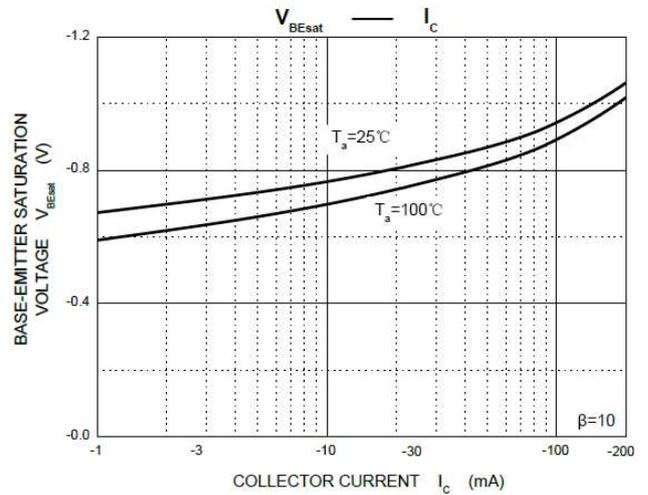
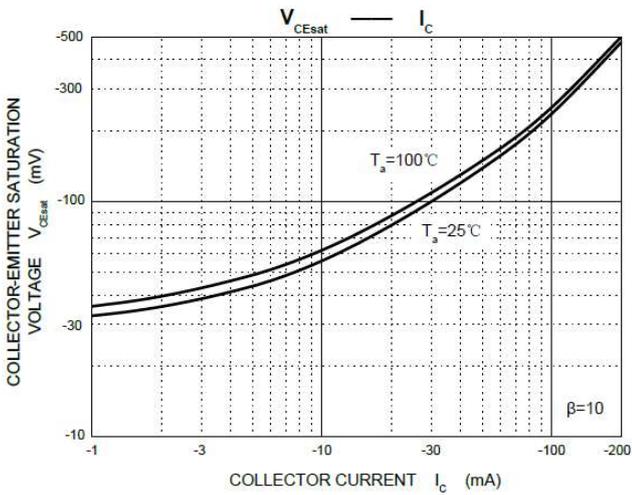
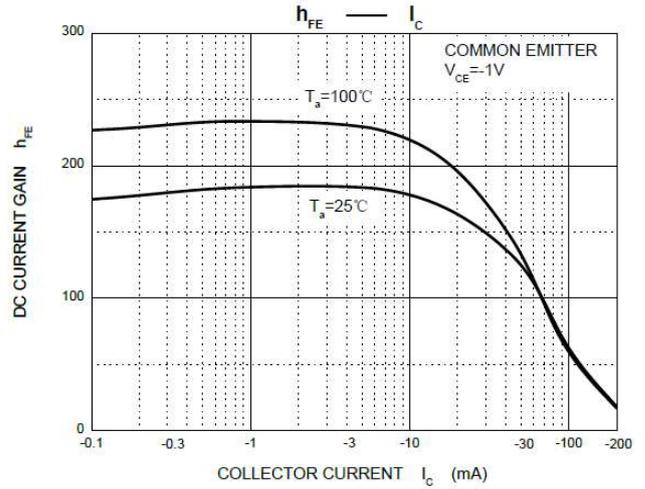
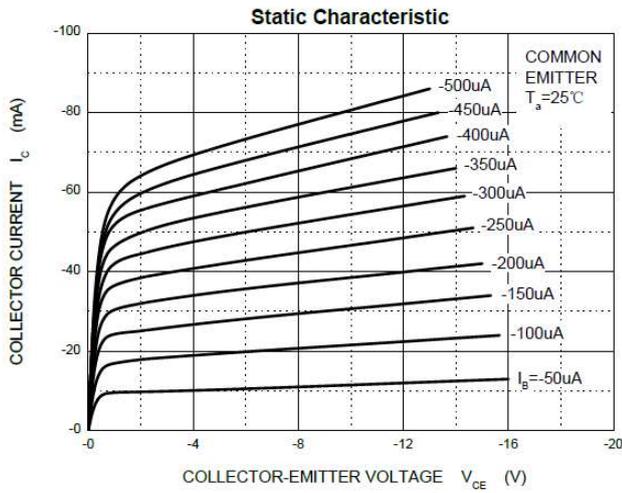
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Parameter	Symbol	Conditions	Min	Typ	Max	Units
Delay time	t_d	$V_{CC}=-3V, V_{BE(off)}=-0.5V, I_C=-10mA, I_{B1}=-1mA$			35	ns
Rise time	t_r				25	ns
Storage time	t_s	$V_{CC}=-3V, I_C=-10mA, I_{B1}=I_{B2}=-1mA$			225	ns
Fall time	t_f				75	ns

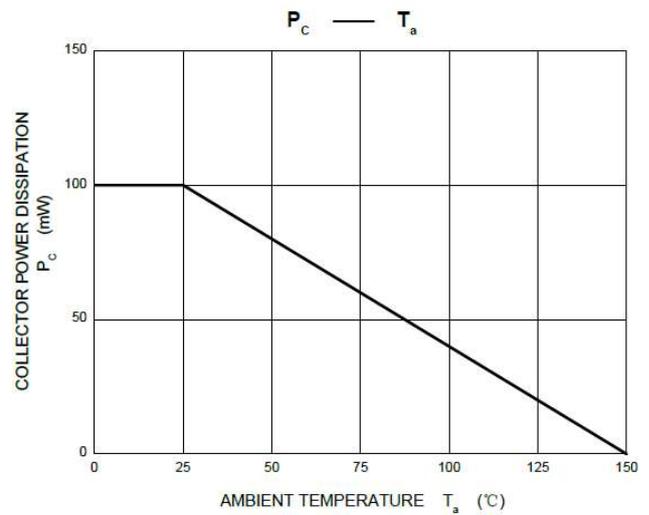
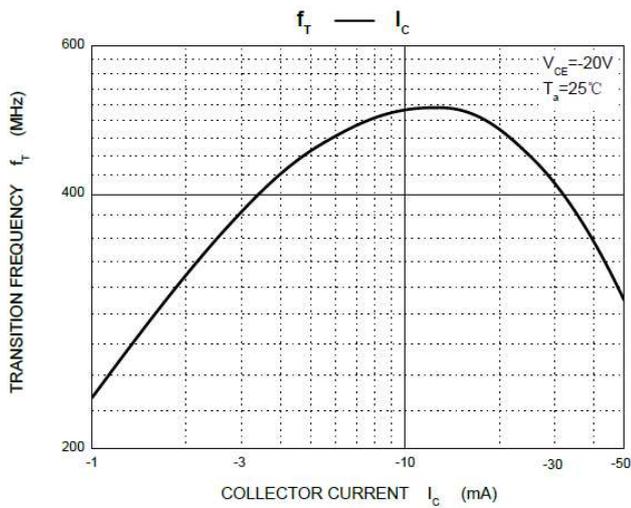


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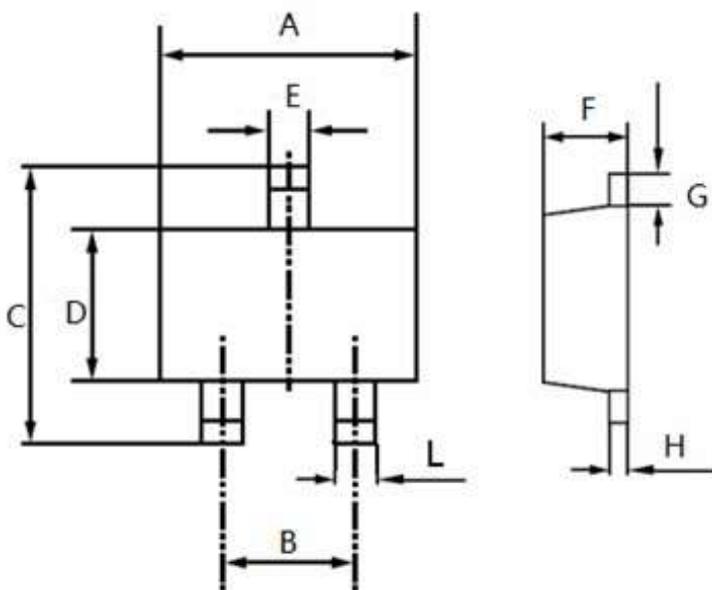
TYPICAL CHARACTERISTIC



MMBT3906M



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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