Features

- Small package.
- Complementary to MMBT3906M
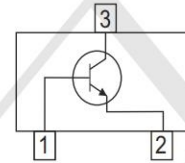
Mechanical data

- Case: SOT-723, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
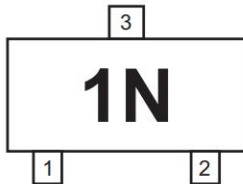
Package and Pin Configuration

SOT723

Circuit diagram

- 1.BASE
- 2.EMITTER
- 3.COLLECTOR

Marking

1N

Maximum Ratings (at TA=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	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	junction to ambient	$R_{\theta JA}$	1250	°C/W
Junction temperature		T_J	150	°C
Storage temperature range		T_{stg}	-55~+150	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
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	$h_{FE(1)}$	V_{CE}=1V, I_C=0.1mA	40		
	$h_{FE(2)}$	V_{CE}=1V, I_C=1mA	70		
	$h_{FE(3)}$	V_{CE}=1V, I_C=10mA	100	300	
	$h_{FE(4)}$	V_{CE}=1V, I_C=50mA	60		
Collector-Emitter saturation voltage	$V_{CE(sat)1}$	I_C=10mA, I_B=1mA		0.2	V
	$V_{CE(sat)2}$	I_C=50mA, I_B=5mA		0.3	V
Base-Emitter saturation voltage	$V_{BE(sat)1}$	I_C=10mA, I_B=1mA	0.65	0.85	V
	$V_{BE(sat)2}$	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
Delay time	t_d	V_{CC}=3V, $V_{BE(off)}$=-0.5V		35	nS
Rise time	t_r	I_C=10mA, I_{B1}=1mA		35	nS
Storage time	t_s	V_{CC}=3V, I_C=10mA		200	nS
Fall time	t_f	I_{B1}=I_{B2}=1mA		50	nS

Typical Performance Characteristics (T_A=25°C unless otherwise Specified)

Fig.1 - Static Characteristic

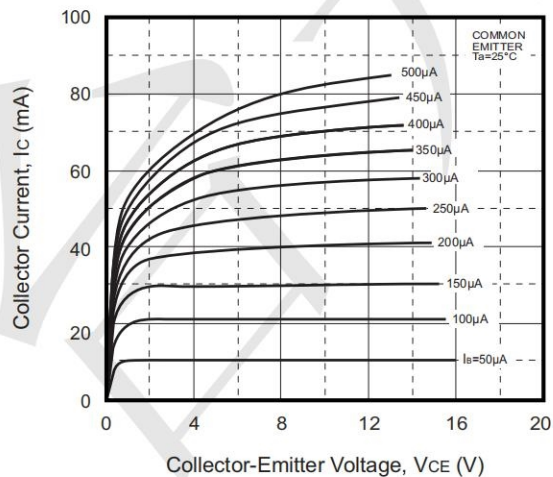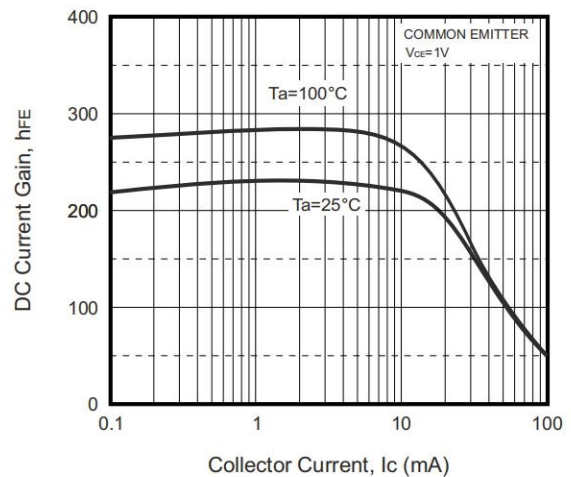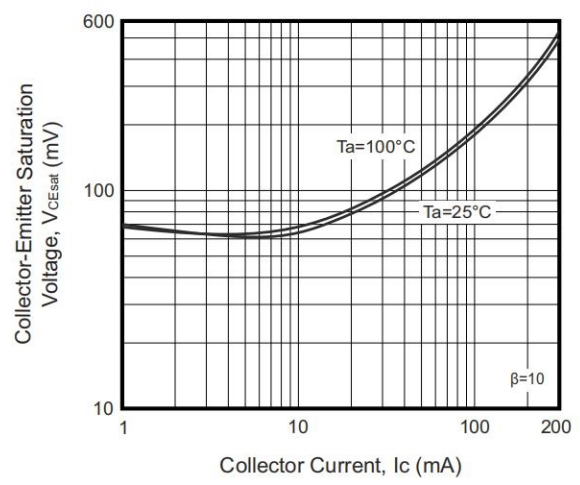

Fig.2 - h_{FE} — I_C
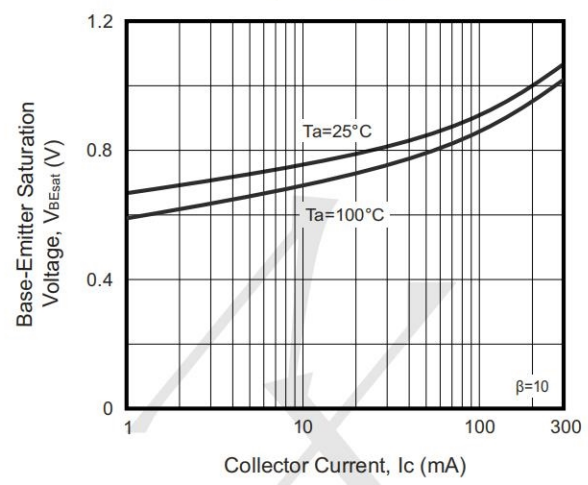
Fig.3 - V_{CEsat} — I_C

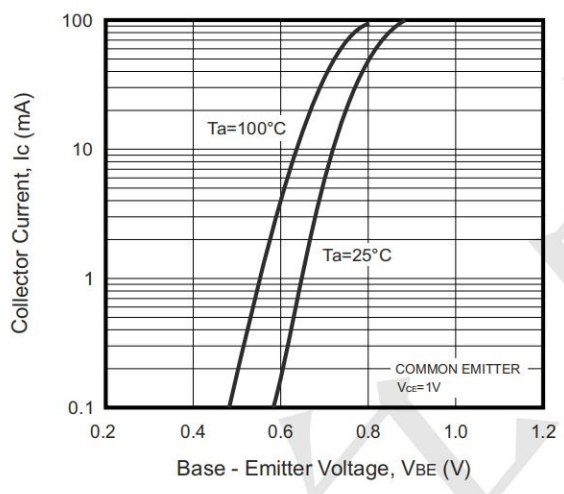Fig.4 - V_{BEsat} — I_C

Fig.5 - I_C — V_{BE}

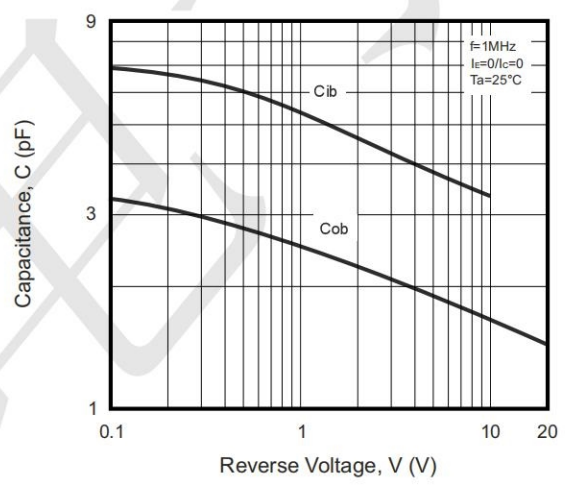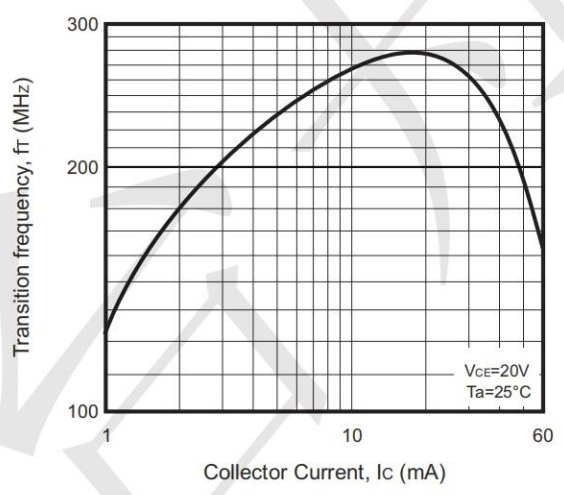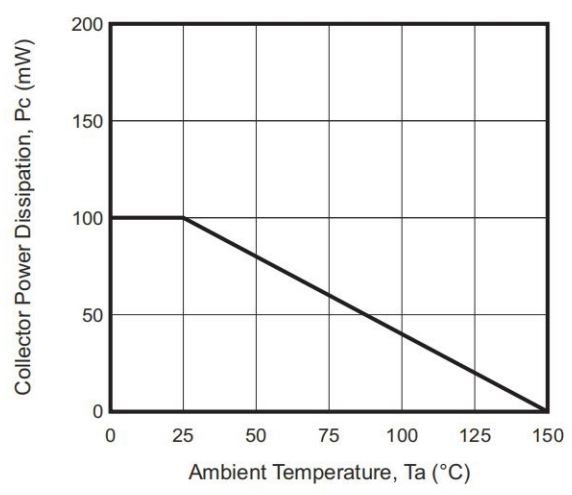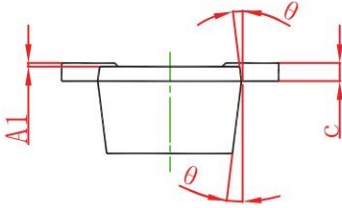Fig.6 - C_{ob}/C_{ib} — V_{CB}/V_{EB}

Fig.7 - F_T — I_C

Fig.8 - P_C — Ta

SOT-723 Package Outline Dimensions

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	