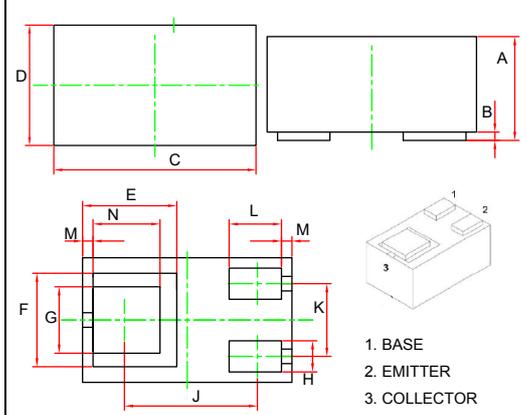




MMBT3904M

NPN Plastic-Encapsulate Transistors

SOT-883



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.450	0.550	
B	0.000	0.004	0.010	0.100	
C	0.037	0.041	0.950	1.050	
D	0.022	0.026	0.550	0.650	
E	0.018REF.		0.450REF.		
F	0.018REF.		0.450REF.		
G	0.011	0.015	0.270	0.370	
H	0.004	0.008	0.100	0.200	
J	0.025REF.		0.635REF.		
K	0.012	0.016	0.300	0.400	
L	0.008	0.012	0.200	0.300	
M	0.002REF.		0.050REF.		
N	0.011	0.015	0.270	0.370	

Features

- Halogen free available upon request by adding suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking :1N
- Single General-Purpose Switching Transistor

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	60	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EB0}	Emitter-Base Voltage	6	V
I _c	Collector Current -Continuous	200	mA
P _c	Collector Dissipation	Note1	100 mW
		Note2	590 mW
R _{θJA}	Thermal Resistance from Junction to Ambient	Note1	1250 °C/W
		Note2	212 °C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~+150	°C

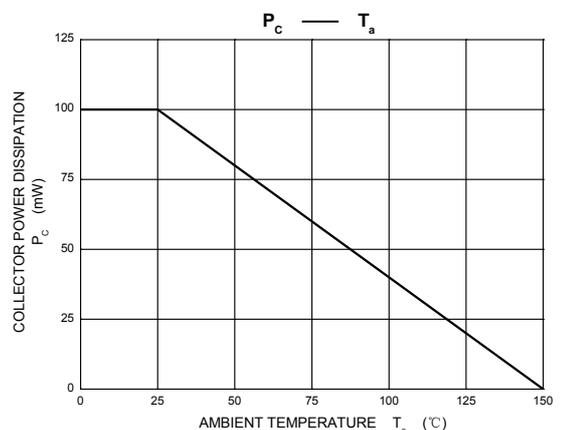
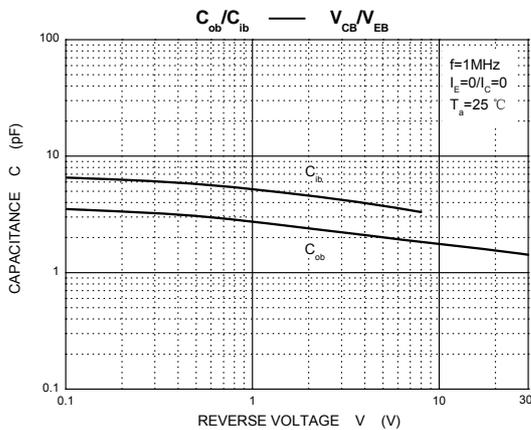
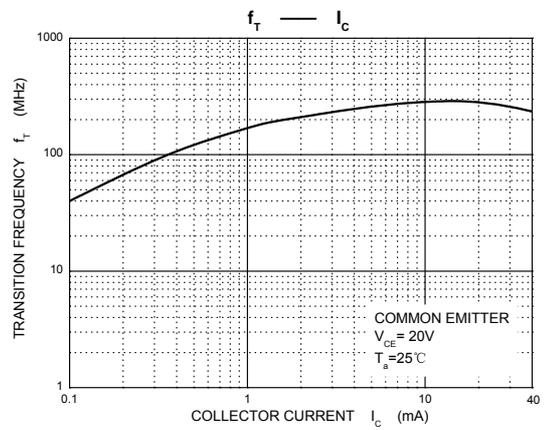
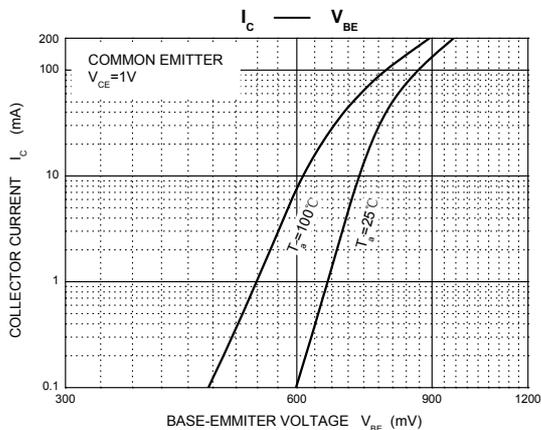
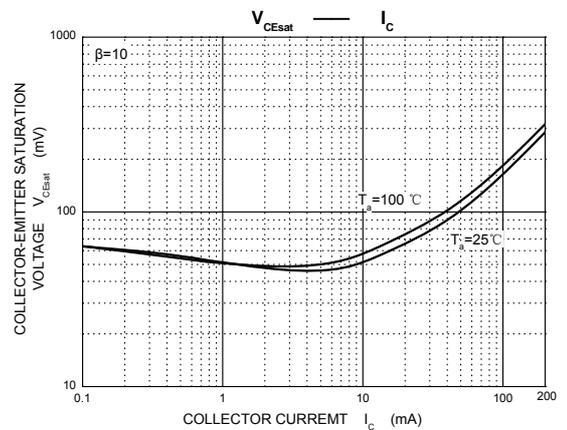
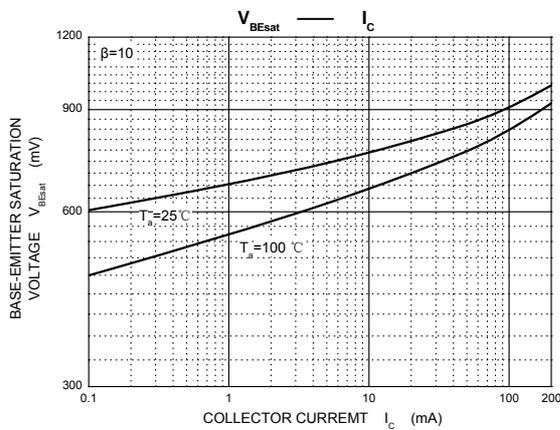
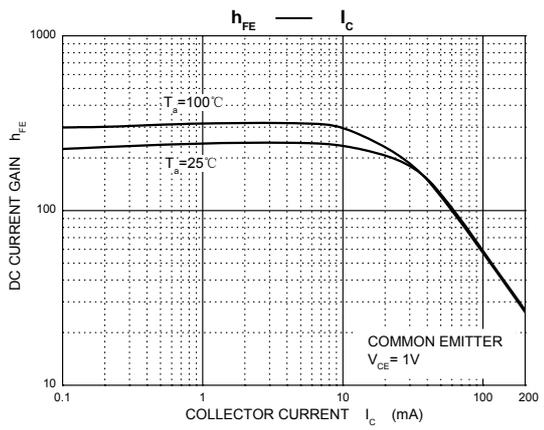
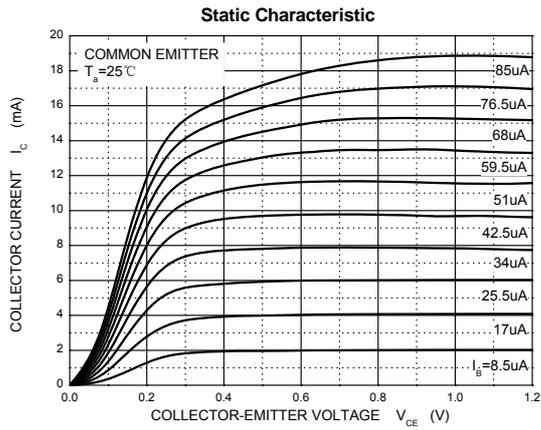
Note:1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

2.Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector 1cm².

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1mA, I_B=0$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=60V, I_E=0$			0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE}=30V, V_{BE(off)}=3V$			50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=5V, I_C=0$			0.1	μA
DC current gain	h_{FE}	$V_{CE}=1V, I_C=10mA$	100		300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=50mA, I_B=5mA$			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=50mA, I_B=5mA$			0.95	V
Transition frequency	f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300			MHz
Delay time	t_d	$V_{CC}=3V, V_{BE(off)}=0.5V, I_C=10mA, I_{B1}=1mA$			35	ns
Rise time	t_r				35	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 Characteristics



Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel; 10Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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