MMBT3904

NPN GENERAL PURPOSE TRANSISTOR

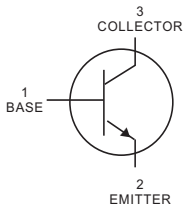
VOLTAGE	40 Volt	POWER	200 mWatt

FEATURES

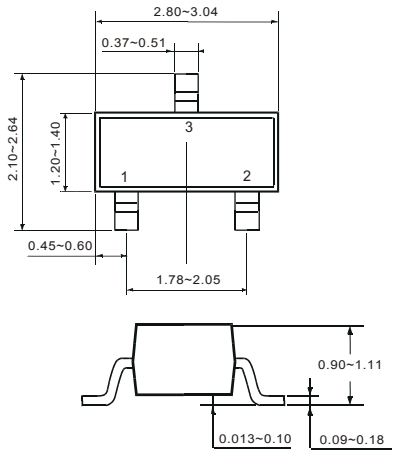
- NPN epitaxial silicon, planar design
- Epitaxial planar die construction
- As complementary type, the PNP transistor MMBT3906 is Recommended
- Lead free in compliance with EU RoHS

MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0



SOT-23 Unit:mm



MAXIMUM RATINGS (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector - Emitter Voltage	V_{CEO}	40	V
Collector - Base Voltage	V_{CBO}	60	V
Emitter - Base Voltage	V_{EBO}	6	V
Collector Current - Continuous	I_C	200	mA
Collector Dissipation	P_C	200	mW
Thermal resistance junction to ambient	$R_{\theta JA}$	625	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~+150	°C

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ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Test 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_{CBO}	V_{CB}=60V, I_E=0		100	nA
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		100	nA
DC current gain	h_{FE1}	V_{CE}=1V, I_C= 10mA	100	300	
	h_{FE2}	V_{CE}= 1V, I_C=50mA	60		
	h_{FE3}	V_{CE}= 1V, I_C=100mA	30		
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	td	V_{CC}=3V,V_{BE}=0.5V I_C=10mA, I_{B1}=I_{B2}=1mA		35	nS
Rise Time	tr			35	nS
Storage Time	ts	V_{CC}=3V,I_C=10mA I_{B1}=I_{B2}=1mA		200	nS
Fall Time	tf			50	nS

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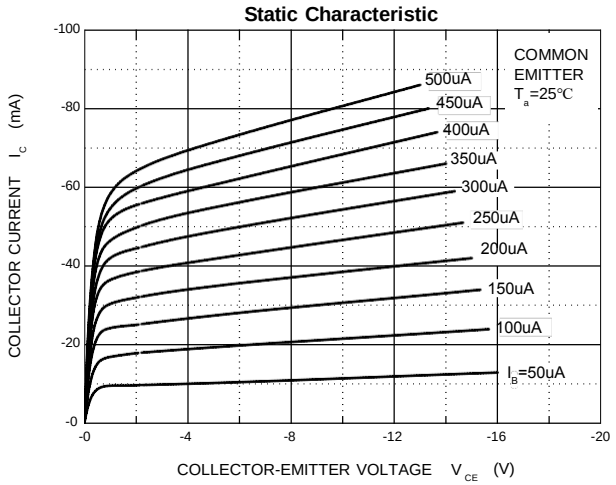
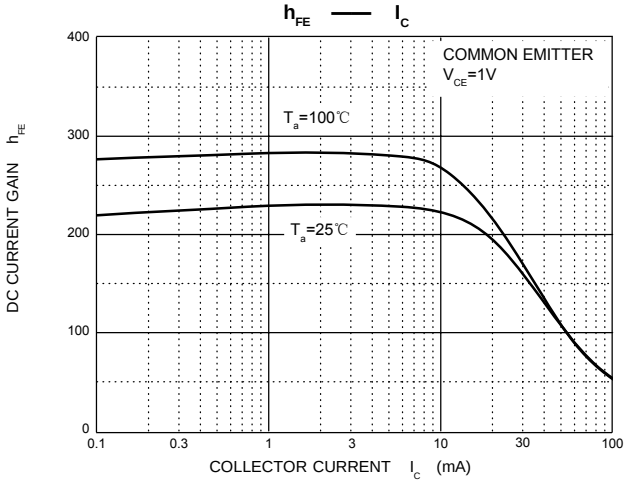
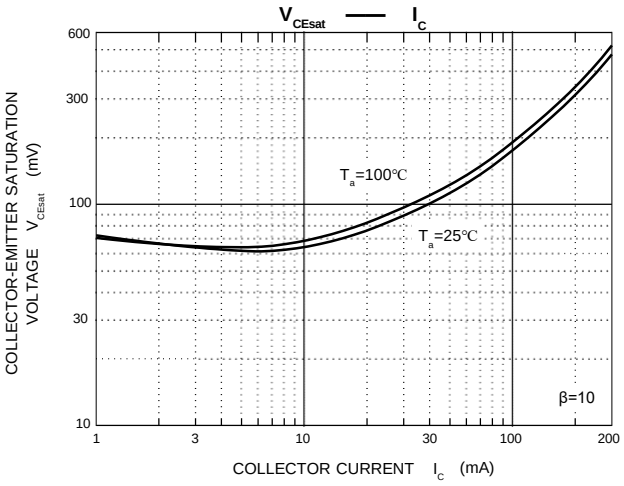
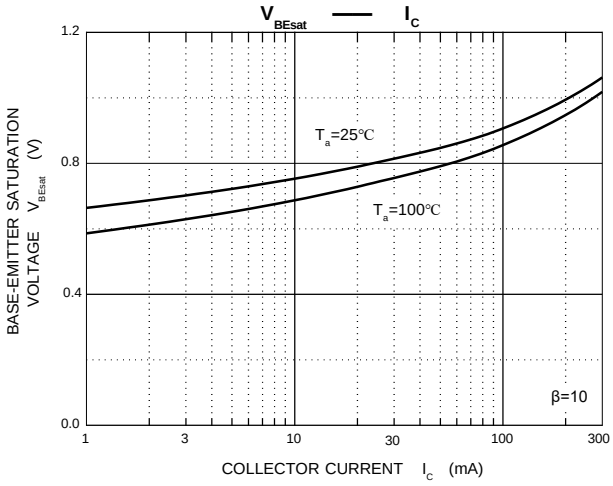
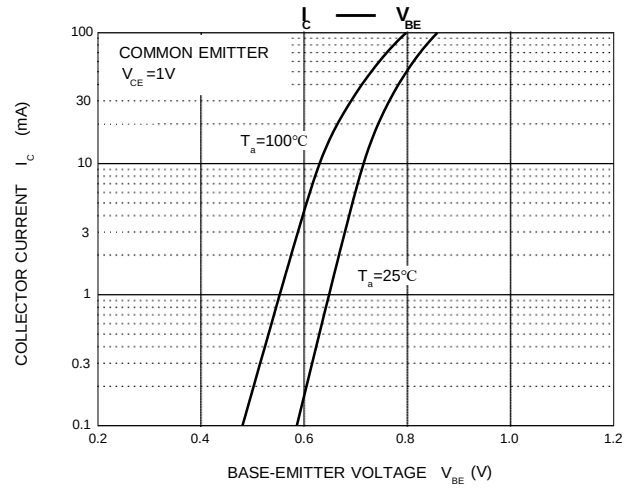
Typical Characteristics

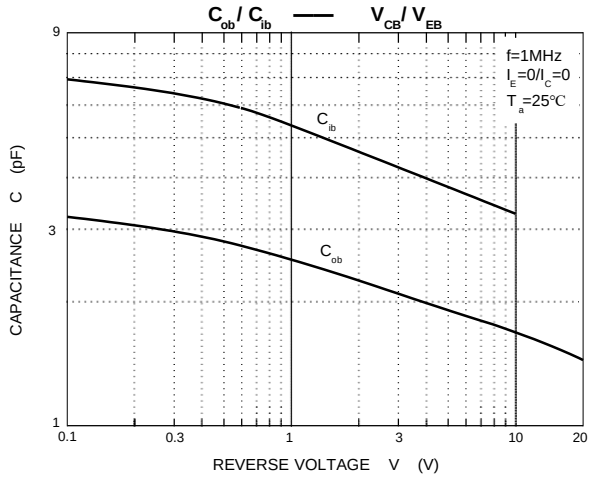












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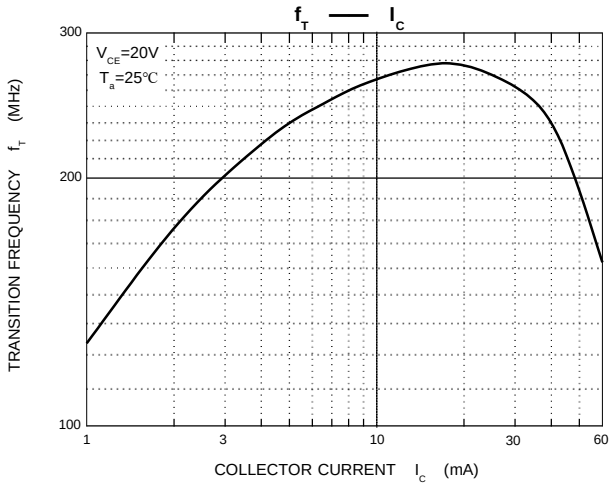
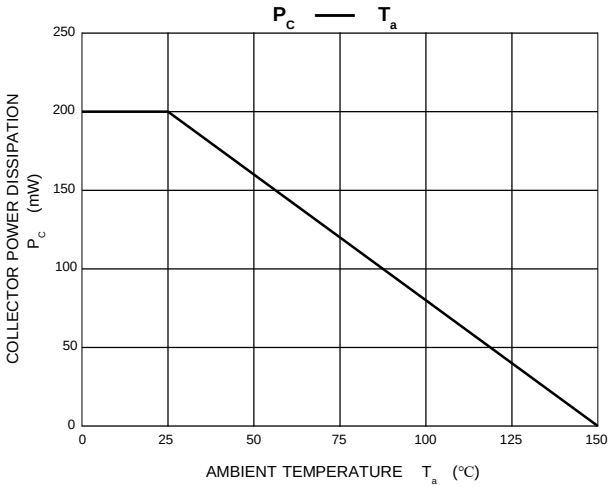
Typical Characteristics

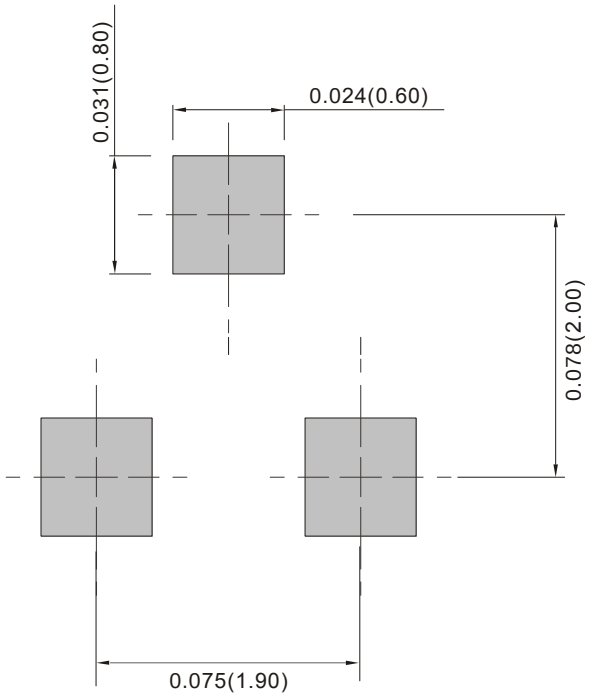




MOUNTING PAD LAYOUT

SOT-23

Unit:Inch(mm)



Ordering Information

- **Packing information**

MMBT3904	Packing Quantity
Tape&Reel	7 Inch； 3kpcs/Reel
Bulk(Tube/Box)	N/A