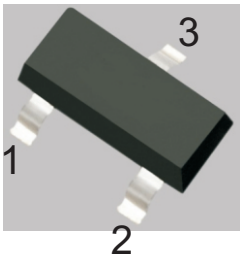
MMBT3906

PNP TRANSISTOR

SOT-23



1.BASE
2.EMITTER
3.COLLECTOR

FEATURES

- As complementary type, the NPN transistor MMBT3904 is Recommended
- Epitaxial planar die construction

MAXIMUM RATINGS (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector–Base Voltage	V_{CBO}	-40	V
Collector–Emitter Voltage	V_{CEO}	-40	V
Emitter–Base Voltage	V_{EBO}	-5	V
Collector Current — Continuous	I_C	-0.2	A
Collector Dissipation	P_C	0.2	W
Thermal Resistance From Junction To Ambient	R_{thJA}	625	℃/W
Operation Junction and Storage Temperature Range	T_J,T_{stg}	-55~+150	℃

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C =-10uA, I_E = 0	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C =-1 mA, I_B = 0	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E =-10uA, I_C = 0	-5		V
Collector cut-off current	I_{CBO}	V_{CB} =-40V, I_E = 0		-100	nA
Collector cut-off current	I_{CEX}	V_{CE} =-30V, V_{CE}=-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} =-2V, 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	t_d	V_{CC} =-3V, V_{BE} =-0.5V I_C =-10mA,I_{B1}=I_{B2}=-1mA		35	ns
Rise time	t_r			35	ns
Storage time	t_s	V_{CC} =-3V, I_C =-10mA I_{B1}=I_{B2}=-1mA		225	ns
Fall time	t_f			75	ns

CLASSIFICATION OF $h_{FE(1)}$

HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

TYPICAL CHARACTERICS

Fig.1 Static characteristics

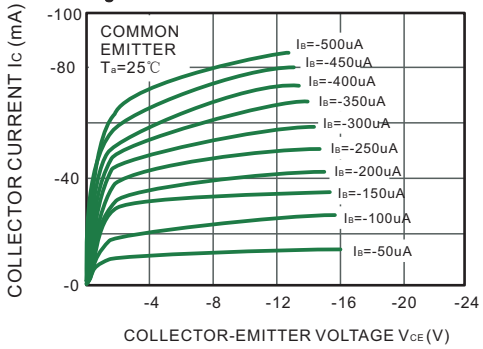


Fig.2 PC —— Ta

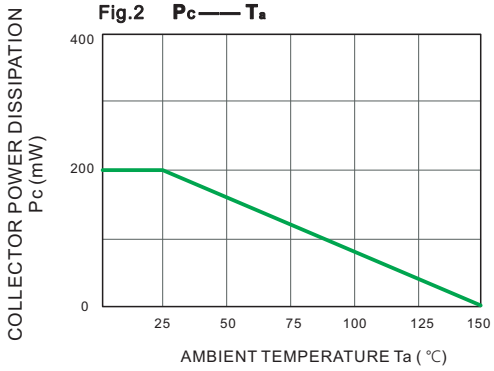


Fig.3 Cob / Cib —— VCB / VEB

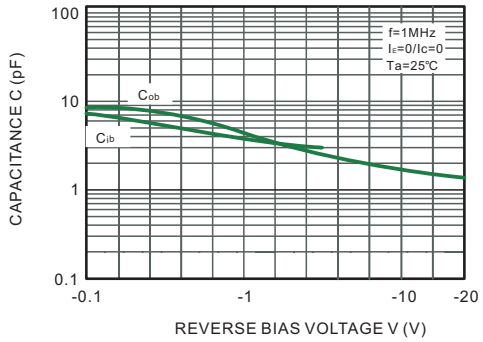


Fig.4 VCEsat —— Ic

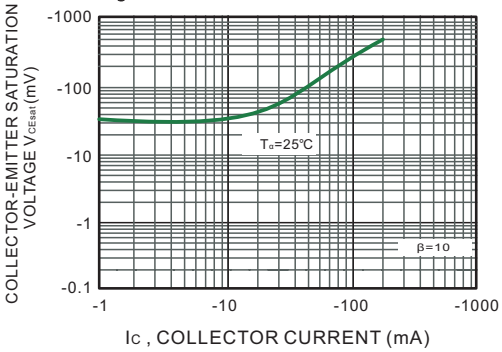


Fig.5 hFE--Ic

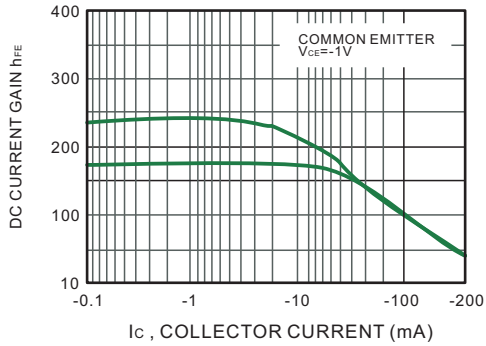


Fig.6 VBEsat —— Ic

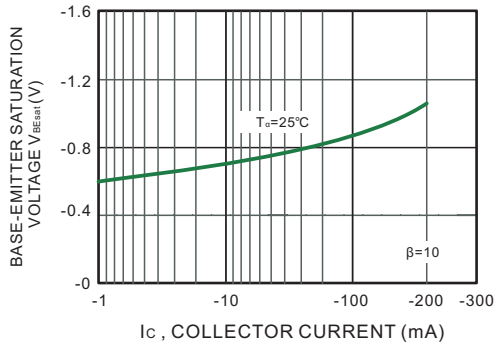


Fig.7 Ic —— VBE

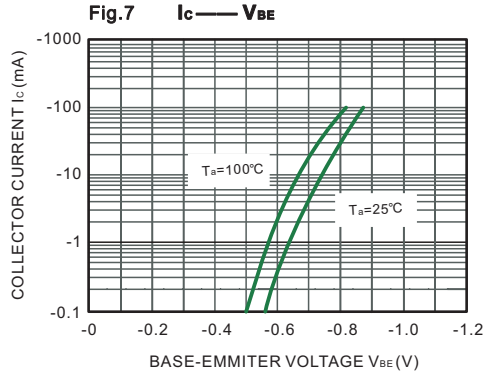
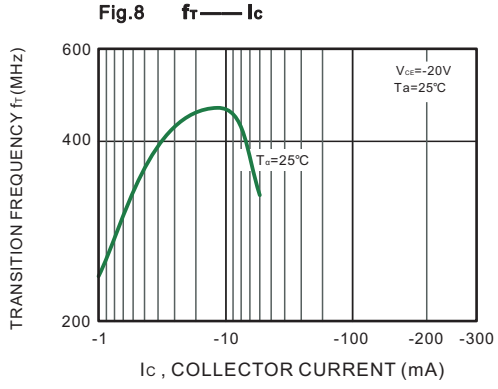
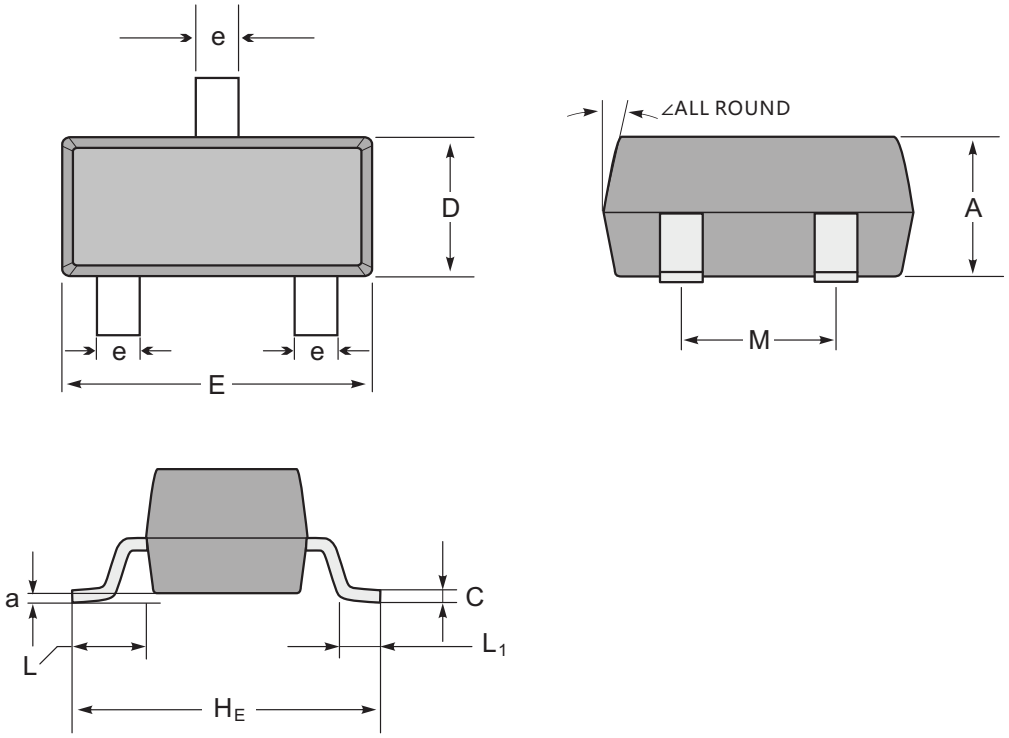


Fig.8 fT —— Ic



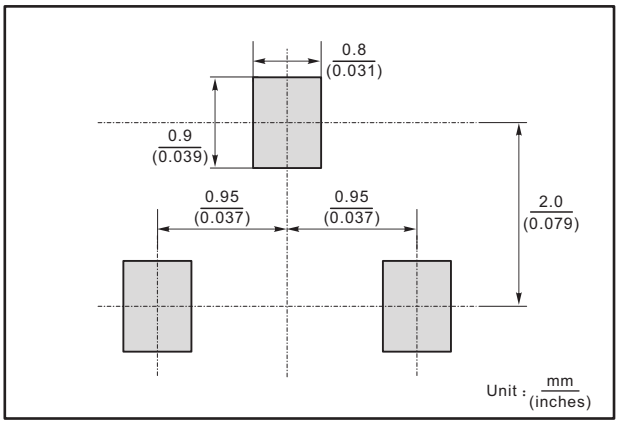
SOT-23 Package Outline Dimensions



SOT-23 mechanical data

UNIT		A	C	D	E	H_E	e	M	L	L_1	a	∠
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0	12°
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15	
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0	
	min	35	3	47	110	87	12	67			6	

The recommended mounting pad size



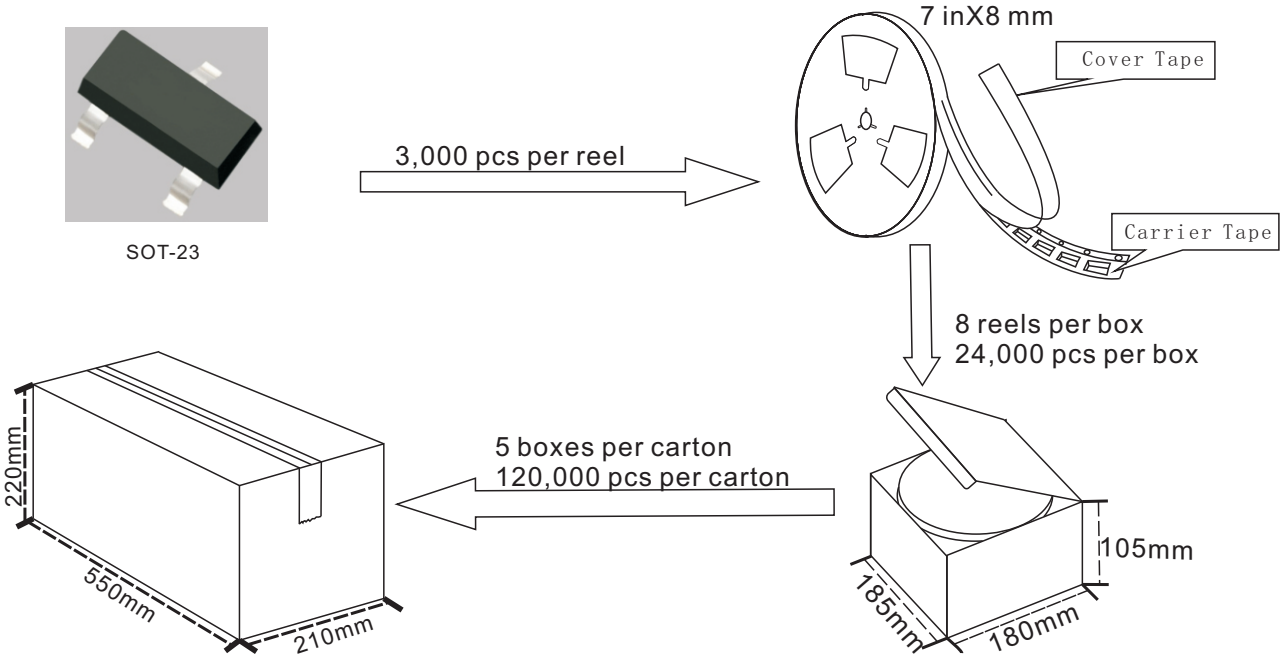
Marking

Type number	Marking code
MMBT3906	2A

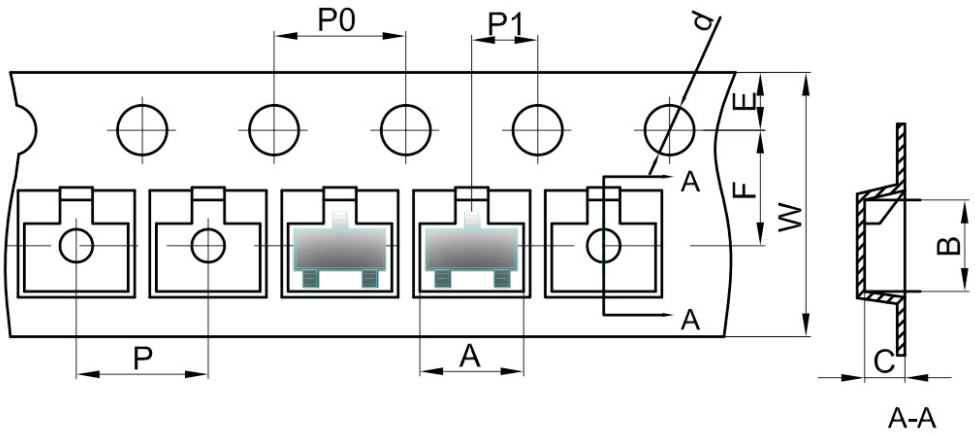
SOT-23 Packing

1.The method of packaging and dimension are shown as below figure. (Dimension in mm)

SOT-23



SOT-23 Embossed Carrier Tape



Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer