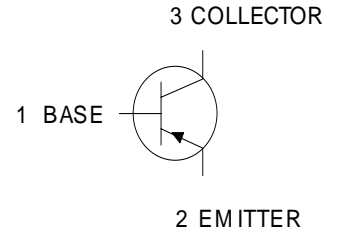




MMBT3906 TRANSISTOR (PNP)

FEATURES

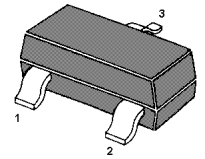
- Complementary Type The NPN Transistor
- MMBT3904 is Recommended
- Epitaxial Planar Die Construction



MARKING: 2A

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

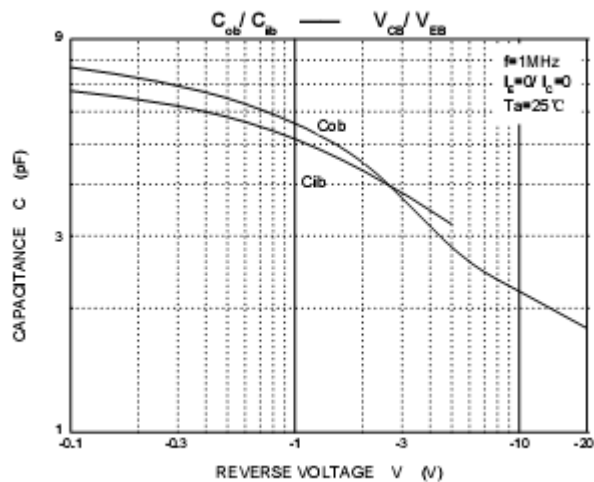
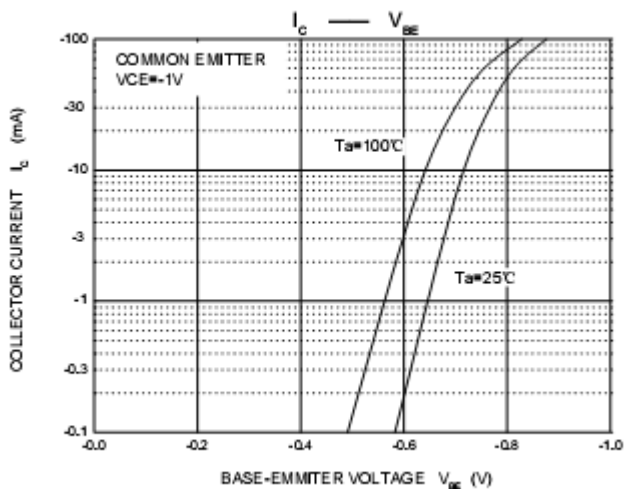
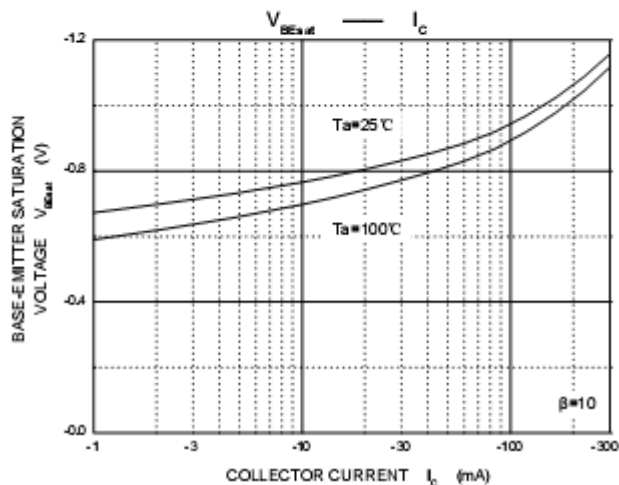
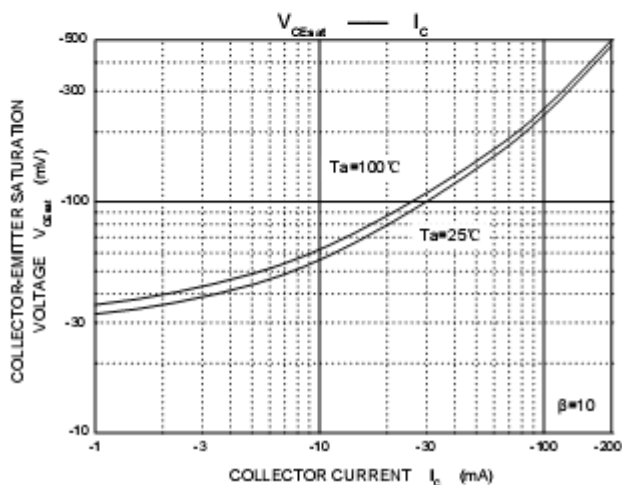
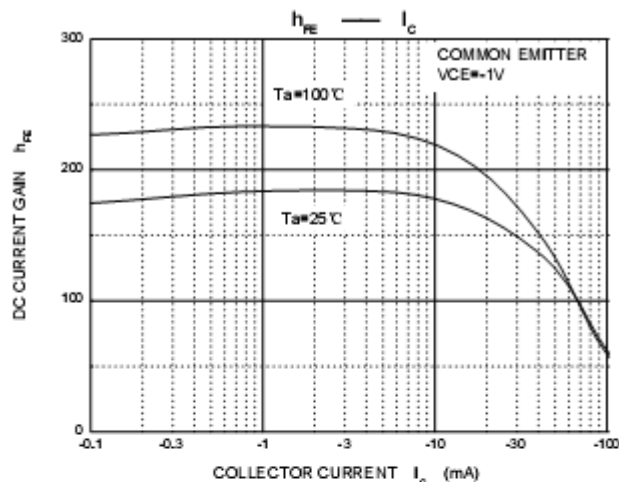
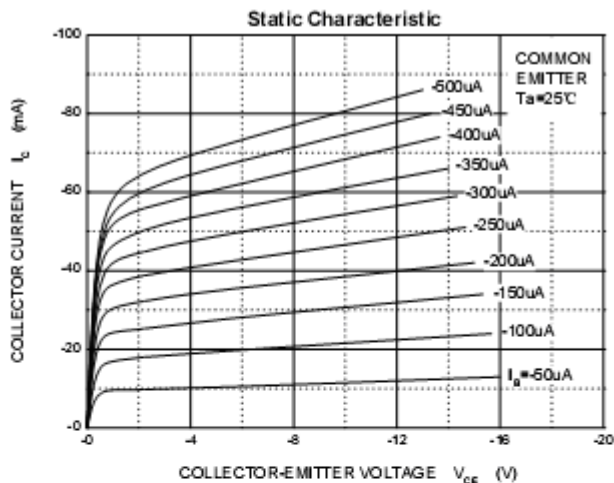
Symbol	Parameter	Value	Unit
V_{CB0}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current	-200	mA
P_C	Total Device Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	625	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55 ~ +150	$^{\circ}\text{C}$



SOT23-3L

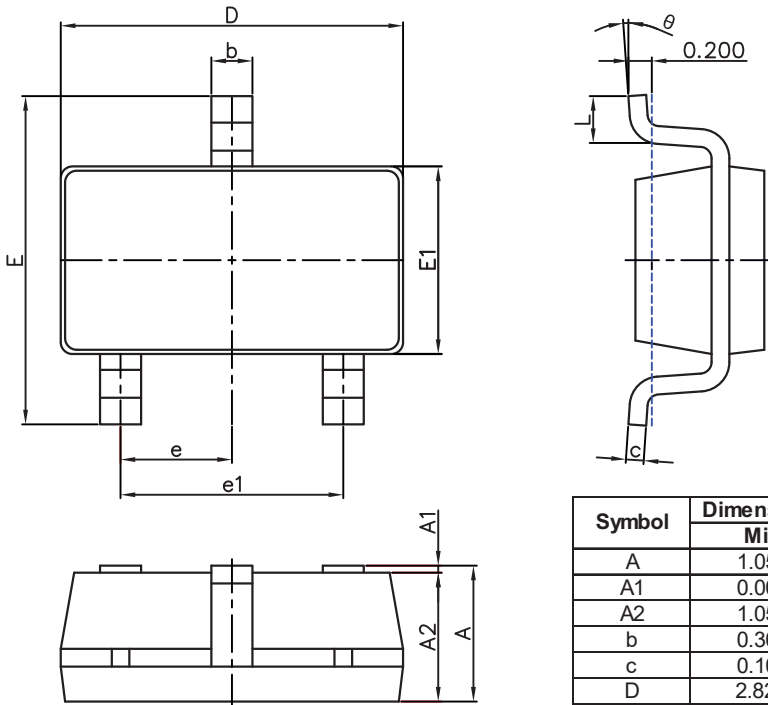
ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB}=-40\text{V}, I_E=0$		-0.1	μA
Collector cut-off current	I_{CEX}	$V_{CE}=-30\text{V}, V_{BE(off)}=-3\text{V}$		-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$		-0.1	μA
DC current gain	$h_{FE(1)}$	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100	300	
	$h_{FE(2)}$	$V_{CE}=-1\text{V}, I_C=-50\text{mA}$	60		
	$h_{FE(3)}$	$V_{CE}=-1\text{V}, I_C=-100\text{mA}$	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$		-0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$		-0.95	V
Transition frequency	f_T	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	300		MHz
Delay Time	t_d	$V_{CC}=-3\text{V}, V_{BE}=-0.5\text{V}$		35	nS
Rise Time	t_r	$I_C=-10\text{mA}, I_{B1}=-I_{B2}=-1\text{mA}$		35	nS
Storage Time	t_s	$V_{CC}=-3\text{V}, I_C=-10\text{mA},$		225	nS
Fall Time	t_f	$I_{B1}=-I_{B2}=-1\text{mA}$		75	nS



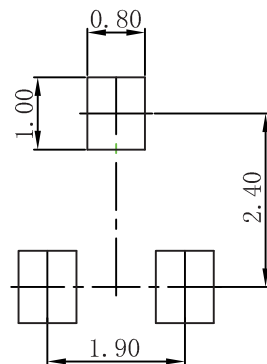


SOT23-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
K	0°	8°	0°	8°

SOT23-3L Suggested Pad Lay out



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.