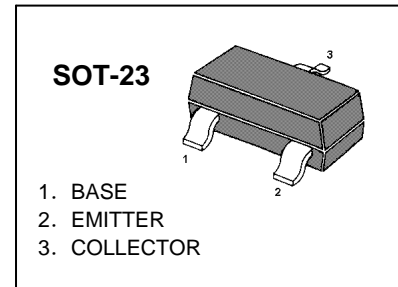


# MMBT3906

## TRANSISTOR (PNP)

### FEATURES

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



**MARKING: 2A**

### MAXIMUM RATINGS ( $T_a=25$ unless otherwise noted)

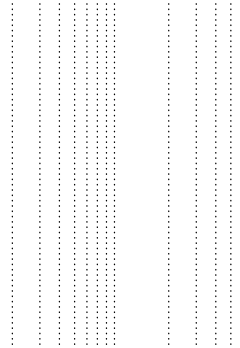
Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	-40	V
$V_{CEO}$	Collector-Emitter Voltage	-40	V
$V_{EBO}$	Emitter-Base Voltage	-5	V
$I_C$	Collector Current	-200	mA
$P_C$	Total Device Dissipation	200	mW
$R_{JA}$	Thermal Resistance Junction to Ambient	625	/W
$T_J$	Junction Temperature	150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

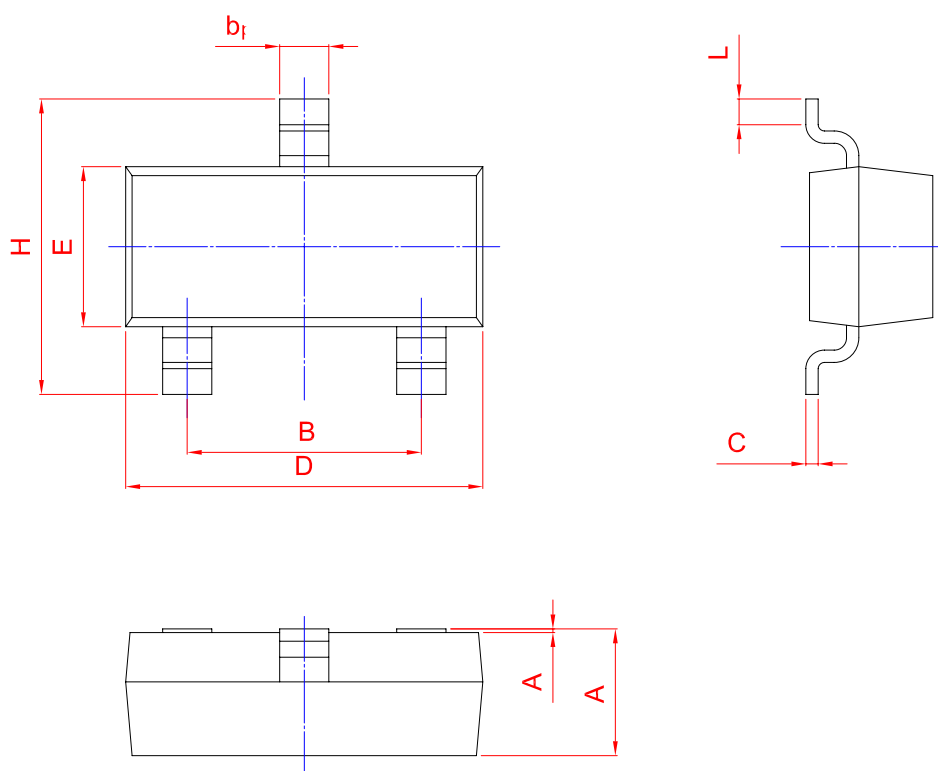
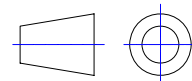
### ELECTRICAL CHARACTERISTICS ( $T_a=25$ unless otherwise specified)

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

## Typical Characteristics

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UNIT	A		$b_p$	C	D	E	$H_E$	$A_1$	$L_p$
mm	1.40		0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95		0.35	0.08	2.70	1.20	2.20	0.013	0.20