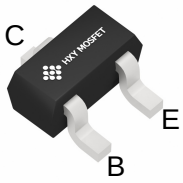
MMBT3906T

PNP Plastic-Encapsulate Transistors

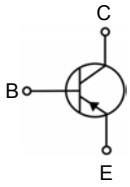
Feartures

- Collector Current: I_C=0.2A
- Power Dissipation of 150mw

1. BASE
2. EMTTER
3. COLLECTOR



SOT-523
(SOT-416)



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
MMBT3906T	SOT-523 (SOT-416)	3N	3000

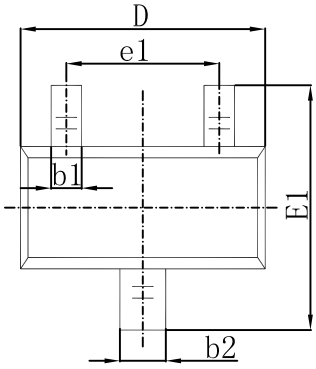
Maxmim Ratings (Ta=25℃unless otherwise noted)

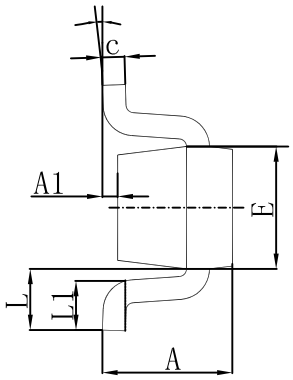
Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-200	mA
Collector Power Dissipation	P_C	150	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	833	℃/W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-55～+150	℃

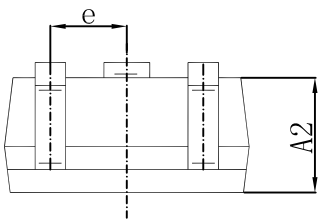
Electrcal Charcteristics (Ta=25℃unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA,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=-10μA,I_C=0	-5			V
Collector cut-off current	I_{CBO}	V_{CB}=-30V,I_E=0			-0.1	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V,I_C=0			-0.1	μA
Collector cut-off current	I_{CEX}	V_{CB}=-30V,$V_{BE(off)}$=-3V			-0.05	μA
DC current gain	$h_{FE(1)}$	V_{CE}=-1V,I_C=-0.1mA	60			
	$h_{FE(2)}$	V_{CE}=-1V,I_C=-1mA	80			
	$h_{FE(3)}$	V_{CE}=-1V,I_C=-10mA	100		300	
	$h_{FE(4)}$	V_{CE}=-1V,I_C=-50mA	60			
	$h_{FE(5)}$	V_{CE}=-1V,I_C=-100mA	30			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=-10mA,I_B=-1mA			-0.25	V
	$V_{CE(sat)2}$	I_C=-50mA,I_B=-5mA			-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C=-10mA,I_B=-1mA	-0.65		-0.85	V
	$V_{BE(sat)2}$	I_C=-50mA,I_B=-5mA			-0.95	V
Transition frequency	f_T	V_{CE}=-20V,I_C=-10mA,f=100MHz	250			MHz
Collector output capacitance	C_{obo}	V_{CB}=-5V,I_E=0,f=1MHz			4.5	pF
Input capacitance	C_{iob}	V_{EB}=-0.5V,I_E=0,f=1MHz			10	pF
Noise figure	NF	V_{CE}=-5V,I_c=0.1mA, f Ω			4	dB
Delay time	t_d	V_{CC}=-3V, $V_{BE(OFF)}$=-0.5V			35	ns
Rise time	t_r	I_C=-10mA , I_{B1}=-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

SOT-523(SOT-416)Package Information

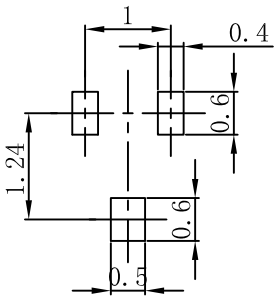






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523(SOT-416) Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

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