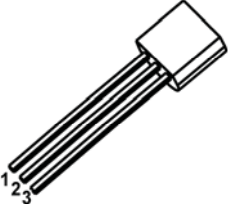
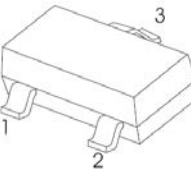
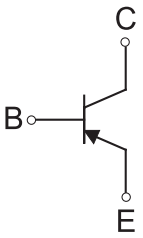


FEATURE

- PNP silicon epitaxial planar transistor for switching and Amplifier applications
- As complementary type, the NPN transistor 2N3904/MMBT3904 is Recommended

TO-92	SOT - 23	Equivalent Circuit
1. EMITTER 2. BASE 3. COLLECTOR  MARKING:2N3906	1. BASE 2. EMITTER 3. COLLECTOR  MARKING:2A	

MAXIMUM RATINGS($T_a=25^\circ\text{C}$ 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-Continuous	-0.2	A
P_C	Collector Power Dissipation	0.625	W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	Min	Typ	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}	$V_{CE} = -30\text{V}, V_{EB(off)} = -3\text{V}$			-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C=0$			-0.1	μA
DC current gain	h_{FE1}	$V_{CE} = -1\text{V}, I_C = -10\text{mA}$	100		400	
	h_{FE2}	$V_{CE} = -1\text{V}, I_C = -50\text{mA}$	60			
	h_{FE3}	$V_{CE} = -2\text{V}, I_C = -100\text{mA}$	30			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50\text{mA}, I_B = -5\text{mA}$			-0.4	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	$V_{CE} = -20\text{V}, I_C = -10\text{mA}$ $f = 100\text{MHz}$	250			MHz
Delay Time	t_d	$V_{CC} = -3\text{V}, V_{BE} = -0.5\text{V},$ $I_C = -10\text{mA}, I_{B1} = -1\text{mA}$			35	ns
Rise Time	t_r				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



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FU MO SI

2N3906 MMBT3906

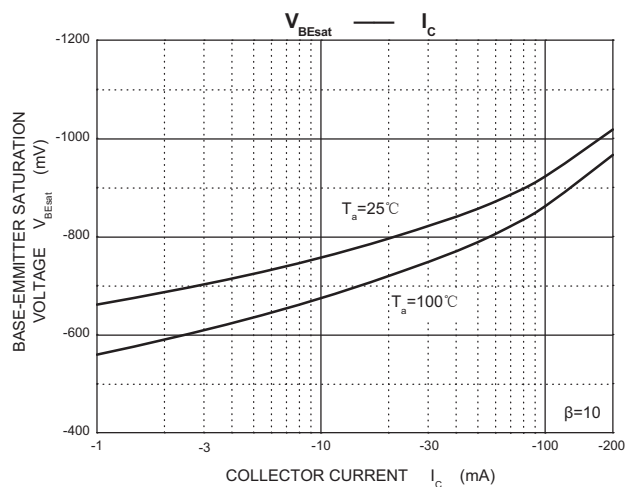
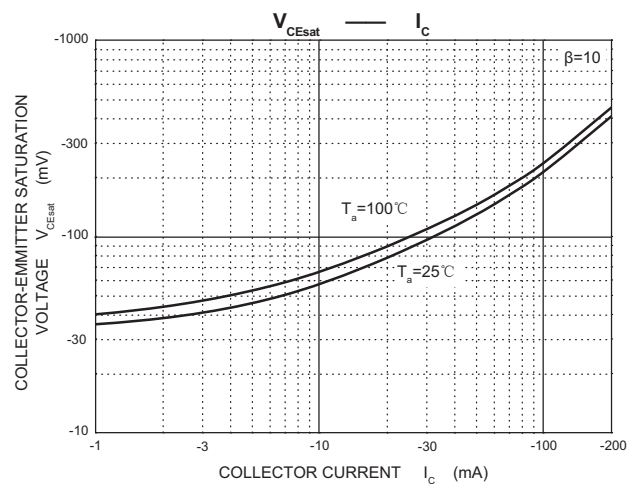
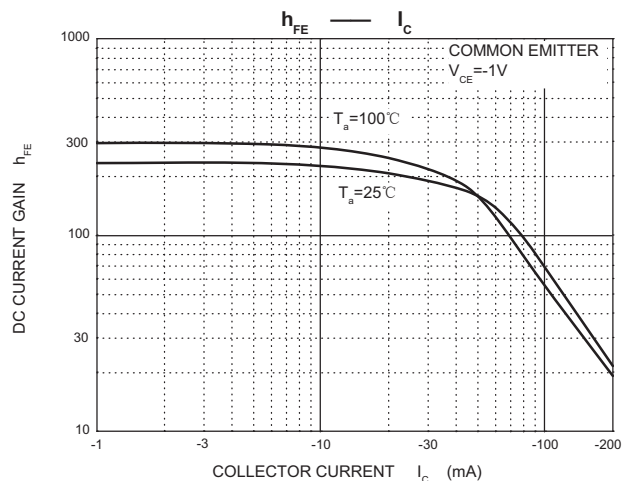
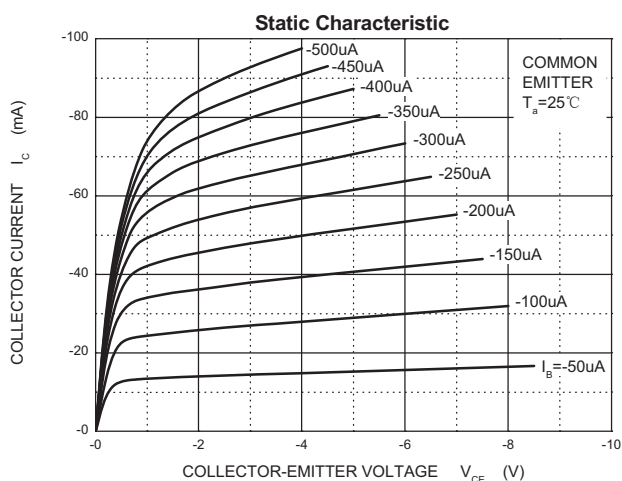
TRANSISTOR (PNP)



CLASSIFICATION OF h_{FE1}

Rank	O	Y	G
Range	100-200	200-300	300-400

Typical Characteristics





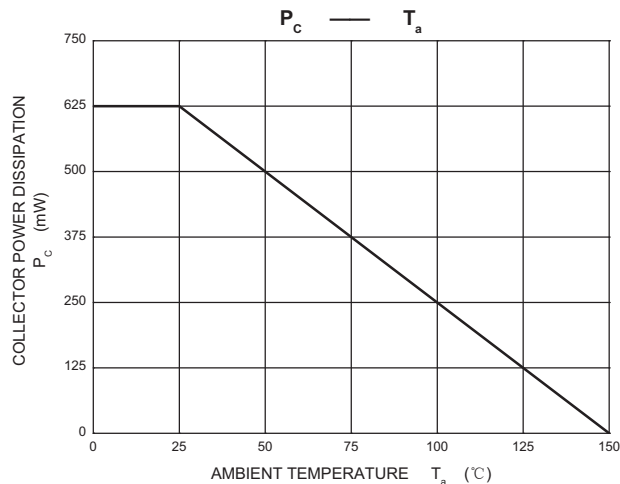
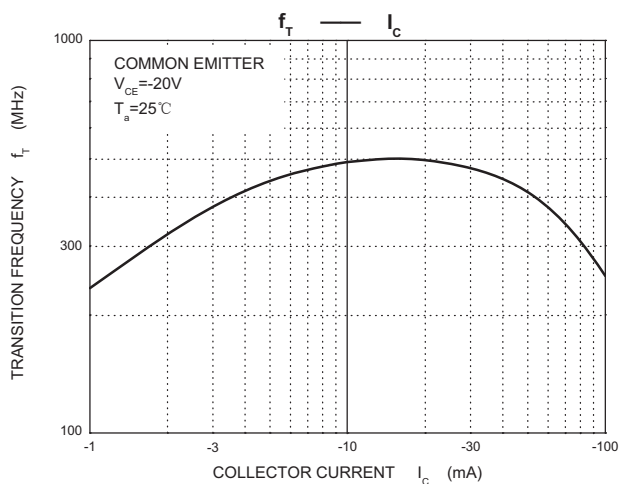
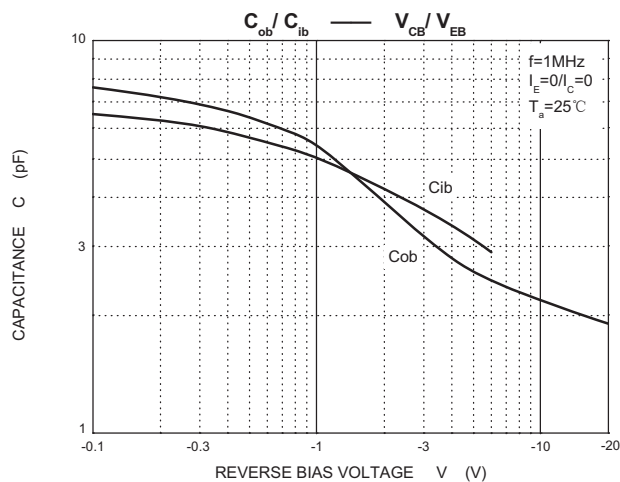
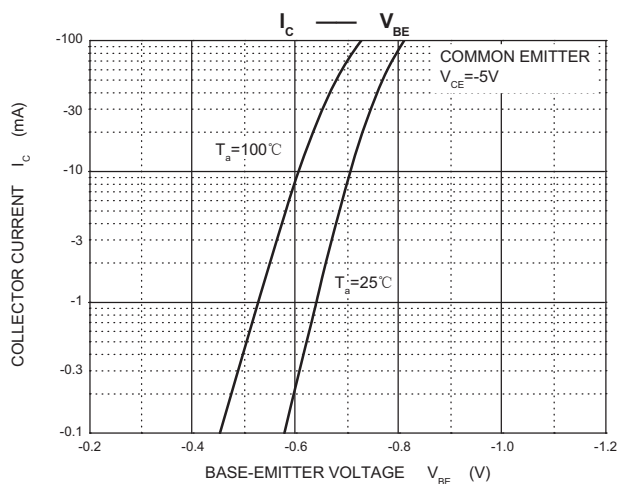
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FU MO SI

2N3906 MMBT3906

TRANSISTOR (PNP)



Typical Characteristics





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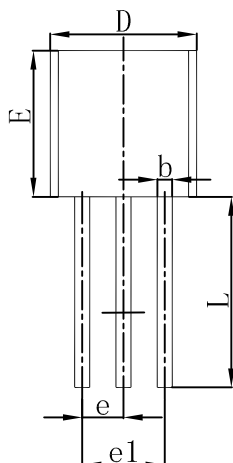
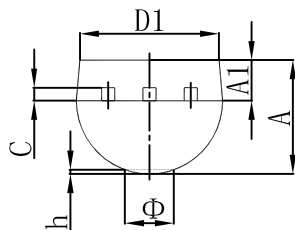
2N3906 MMBT3906

TRANSISTOR (PNP)



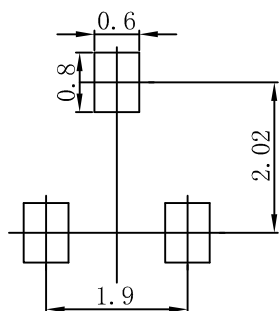
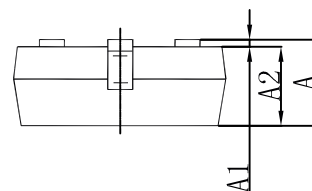
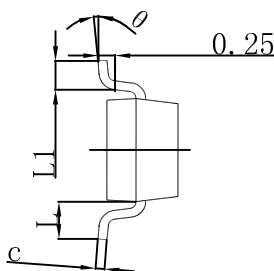
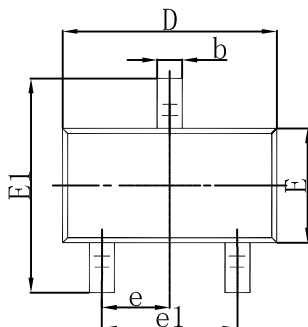
Package Outline Dimensions

TO-92



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
K		1.600		0.063
h	0.000	0.380	0.000	0.015

SOT-23



Note:

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

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°