

PNP Transistors

■ Features

- Complementary to MMBT3904
- Marking: 2A



- 1.Base
- 2.Emitter
- 3.Collector

■ Simplified outline(SOT-23)

■ Absolute Maximum Ratings Ta = 25

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V _{CB0}	-40	V
Collector - Emitter Voltage	V _{CE0}	-40	
Emitter - Base Voltage	V _{EB0}	-5	
Collector Current - Continuous	I _c	-0.2	A
Collector Power Dissipation	P _c	0.2	W
Junction Temperature	T _J	150	°C
Storage Temperature range	T _{stg}	-55 to 150	

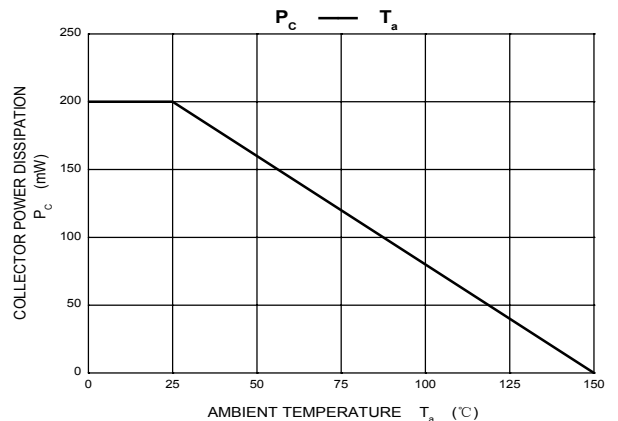
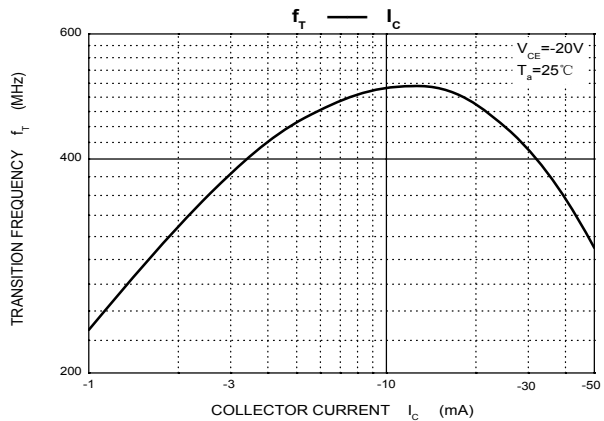
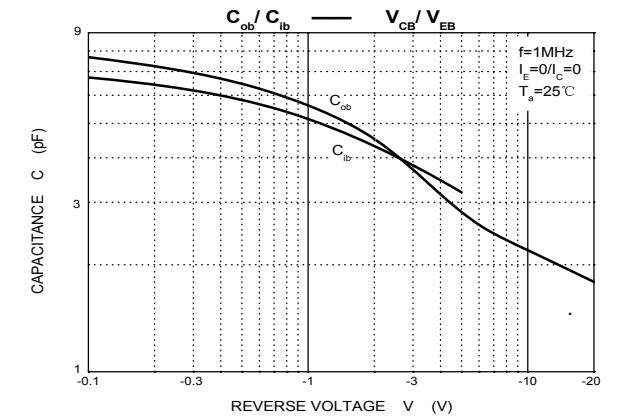
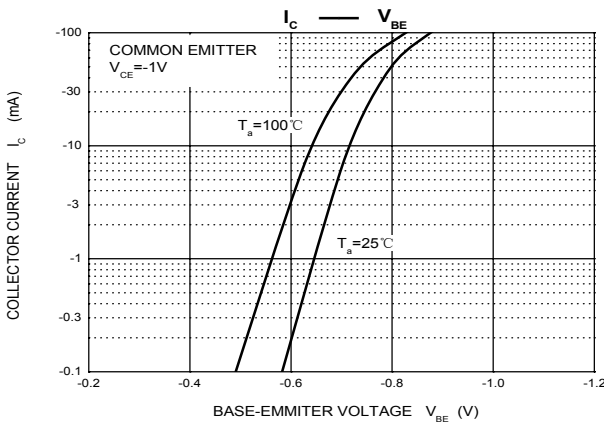
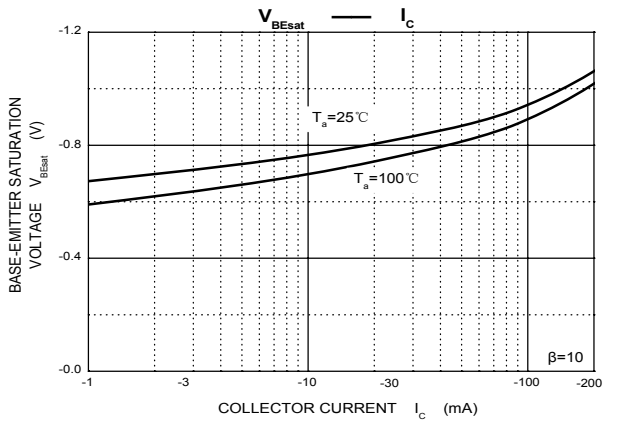
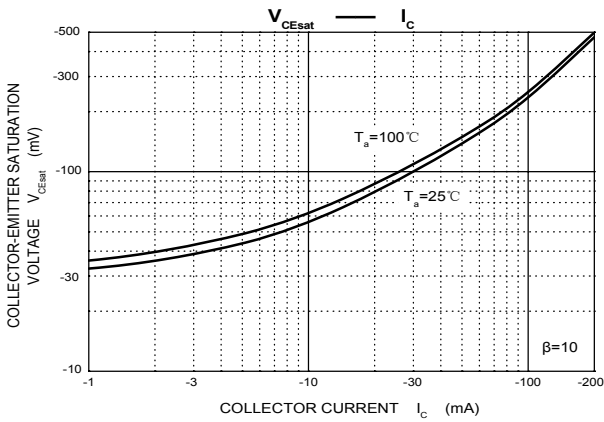
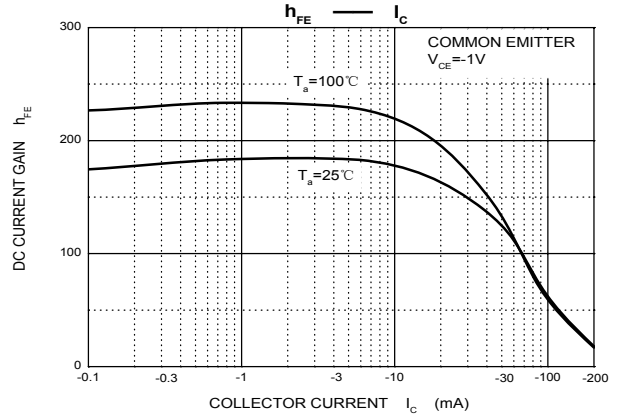
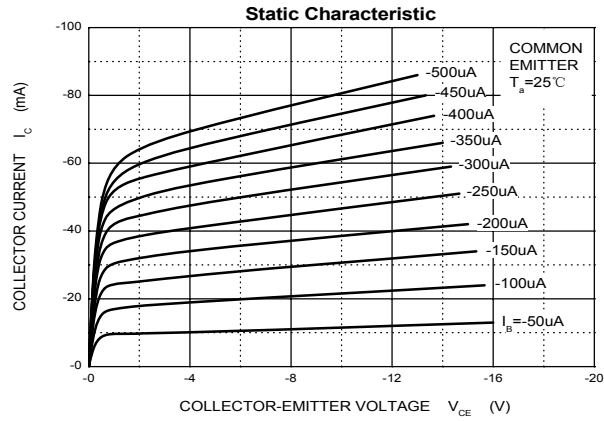
■ Electrical Characteristics Ta = 25

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V _{CB0}	I _c = -100 μA, I _E = 0	-40			V
Collector- emitter breakdown voltage	V _{CE0}	I _c = -1 mA, I _B = 0	-40			
Emitter - base breakdown voltage	V _{EB0}	I _E = -100 μA, I _C = 0	-6			
Collector-base cut-off current	I _{CB0}	V _{CB} = -40 V, I _E = 0			-100	nA
Collector- emitter cut-off current	I _{CEx}	V _{CE} = -30 V, V _{EB(off)} = 3V			-50	
Emitter cut-off current	I _{EBO}	V _{EB} = -5V, I _c = 0			-100	
Collector-emitter saturation voltage	V _{CE(sat)}	I _c = -10 mA, I _B = -1mA			-0.2	V
		I _c = -50 mA, I _B = -5mA			-0.3	
Base - emitter saturation voltage	V _{BE(sat)}	I _c = -10 mA, I _B = -1mA	-0.65		-0.85	
		I _c = -50 mA, I _B = -5mA			-0.95	
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			
Delay time	t _d	V _{CC} = -3.0V, V _{BE} = 0.5V			35	ns
Rise time	t _r	I _c = -10mA, I _{B1} = -1.0mA			35	
Storage time	t _s	V _{CC} = -3.0V, I _c = -10mA			225	
Fall time	t _f	I _{B1} = I _{B2} = -1.0mA			75	
Collector input capacitance	C _{ib}	V _{EB} = -0.5V, I _E = 0, f = 1MHz			10	pF
Collector output capacitance	C _{ob}	V _{CB} = -5V, I _E = 0, f = 1MHz			4.5	
Transition frequency	f _T	V _{CE} = -20V, I _c = -10mA, f = 100MHz	250			MHz

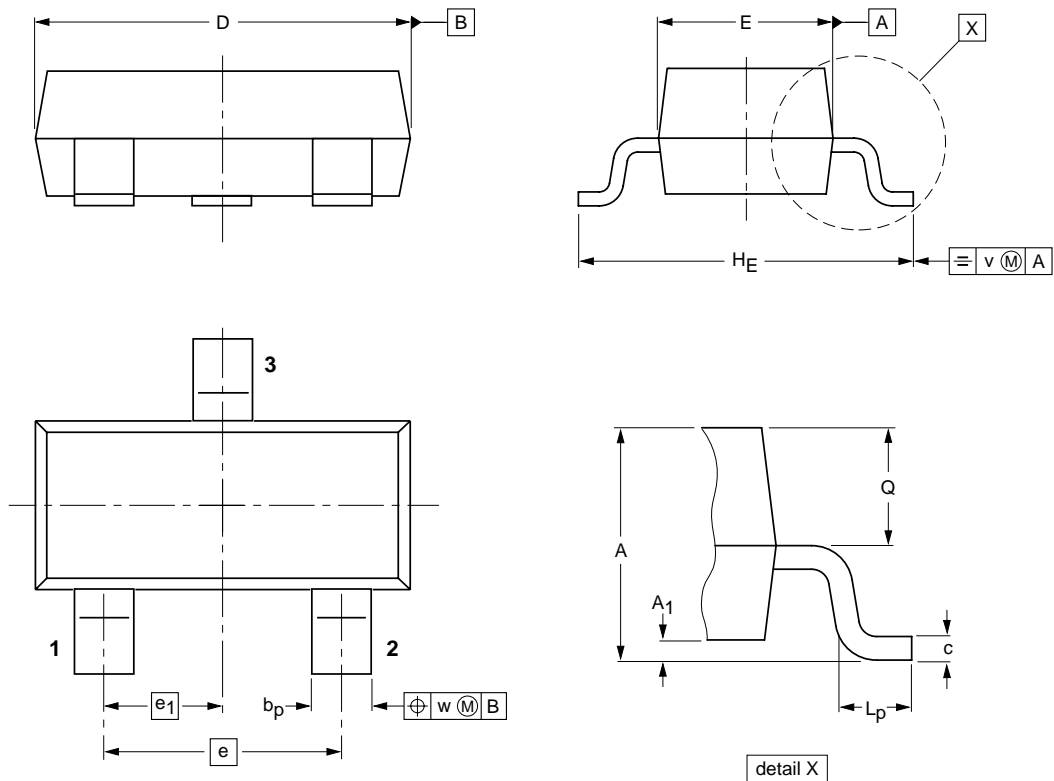
■ Classification of h_{fe}(1)

Type	MMBT3906	MMBT3906-L	MMBT3906-H
Range	100-300	100-200	200-300

■ Typical Characteristics



■ SOT-23



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max.	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w
mm	1.1 0.9	0.1	0.48 0.38	0.15 0.09	3.0 2.8	1.4 1.2	1.9	0.95	2.5 2.1	0.45 0.15	0.55 0.45	0.2	0.1