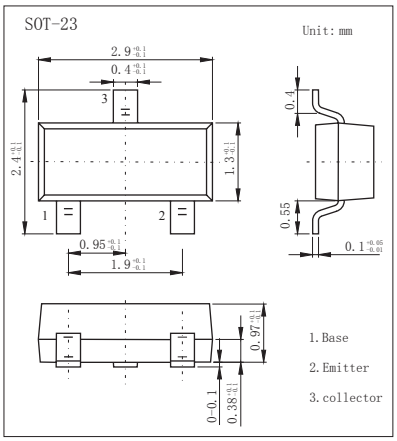
PNP Transistors

MMBT3906 (KMBT3906)



Features

- Complementary to MMBT3904
- Marking: 2A

Absolute Maximum Ratings Ta = 25

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-40	V
Collector - Emitter Voltage	V_{CEO}	-40	
Emitter - Base Voltage	V_{EBO}	-5	
Collector Current - Continuous	I_C	-0.2	A
Collector Power Dissipation	P_C	0.2	W
Junction Temperature	T_J	150	℃
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_{CBO}	I_C= -100 μA, I_E=0	-40			V
Collector- emitter breakdown voltage	V_{CEO}	I_C= -1 mA, I_B=0	-40			
Emitter - base breakdown voltage	V_{EBO}	I_E= -100 μ A, I_C=0	-6			
Collector-base cut-off current	I_{CBO}	V_{CB}= -40 V , I_E=0			-100	nA
Collector- emittercut-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	hfe（1）	V_{CE}= -1V, I_C= -10mA	100		300	
	hfe（2）	V_{CE}= -1V, I_C=-50mA	60			
	hfe（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

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Typical Characteristics