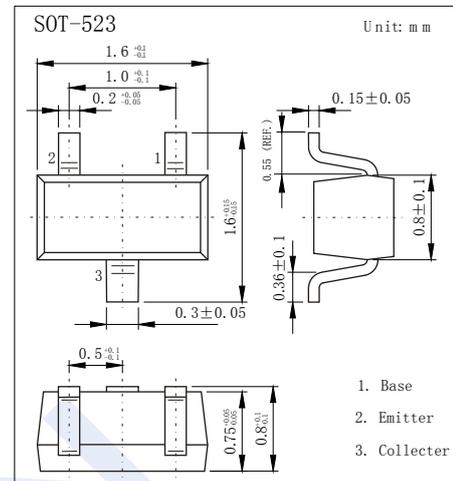


## PNP Transistors

### MMBT3906T (KMBT3906T)

#### ■ Features

- Epitaxial Planar Die Construction
- Also Available in Lead Free Version
- Complementary to MMBT3904T



#### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

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	$I_C$	-200	mA
Collector Power Dissipation	$P_C$	150	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to 150	

## PNP Transistors

### MMBT3906T (KMBT3906T)

■ Electrical Characteristics  $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	$V_{CB0}$	$I_C = -100 \mu\text{A}, I_E = 0$	-40			V
Collector- emitter breakdown voltage	$V_{CEO}$	$I_C = -1 \text{ mA}, I_B = 0$	-40			
Emitter - base breakdown voltage	$V_{EBO}$	$I_E = -100 \mu\text{A}, I_C = 0$	-5			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = -30 \text{ V}, I_E = 0$			-100	nA
Collector cut-off current	$I_{CEX}$	$V_{CB} = -30 \text{ V}, V_{BE(off)} = 3 \text{ V}$			-50	
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5 \text{ V}, I_C = 0$			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$			-0.25	V
		$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$			-0.4	
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -10 \text{ mA}, I_B = -1 \text{ mA}$	-0.65		-0.85	
		$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$			-0.95	
DC current gain	$h_{FE(1)}$	$V_{CE} = -10 \text{ V}, I_C = -0.1 \text{ mA}$	60			
	$h_{FE(2)}$	$V_{CE} = -10 \text{ V}, I_C = -1 \text{ mA}$	80			
	$h_{FE(3)}$	$V_{CE} = -10 \text{ V}, I_C = -10 \text{ mA}$	100		300	
	$h_{FE(4)}$	$V_{CE} = -10 \text{ V}, I_C = -50 \text{ mA}$	60			
	$h_{FE(5)}$	$V_{CE} = -10 \text{ V}, I_C = -100 \text{ mA}$	30			
Delay time	$t_d$	$V_{CC} = -3 \text{ V}, V_{BE(OFF)} = 0.5 \text{ V}$			35	nS
Rise time	$t_r$	$I_C = -10 \text{ mA}, I_{B1} = -1 \text{ mA}$			35	
Storage time	$t_s$	$V_{CC} = -3 \text{ V}, I_C = -10 \text{ mA}, I_{B1} = I_{B2} = -1 \text{ mA}$			225	
Fall time	$t_f$				75	
Noise figure	NF		$V_{CE} = -5 \text{ V}, I_C = -0.1 \text{ mA}$			
Collector input capacitance	$C_{ib}$	$V_{EB} = -0.5 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			10	pF
Collector output capacitance	$C_{ob}$	$V_{CB} = -5 \text{ V}, I_E = 0, f = 1 \text{ MHz}$			4.5	
Transition frequency	$f_T$	$V_{CE} = -20 \text{ V}, I_C = -10 \text{ mA}, f = 100 \text{ MHz}$	250			MHz

■ Marking

Marking	3N
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