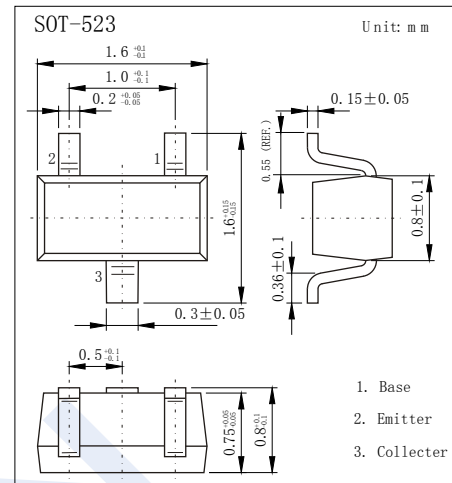


## PNP Transistors

### 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 Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V <sub>CB0</sub>	I <sub>C</sub> = -100 μA, I <sub>E</sub> = 0	-40			V
Collector- emitter breakdown voltage	V <sub>CEO</sub>	I <sub>C</sub> = -1 mA, I <sub>B</sub> = 0	-40			
Emitter - base breakdown voltage	V <sub>EB0</sub>	I <sub>E</sub> = -100 μA, I <sub>C</sub> = 0	-5			
Collector-base cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = -30 V, I <sub>E</sub> = 0			-100	nA
Collector cut-off current	I <sub>CEX</sub>	V <sub>CB</sub> = -30V, V <sub>BE(off)</sub> = 3V			-50	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = -5V, I <sub>C</sub> =0			-100	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-10 mA, I <sub>B</sub> =-1mA			-0.25	V
		I <sub>C</sub> = -50 mA, I <sub>B</sub> = -5mA			-0.4	
Base - emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-10 mA, I <sub>B</sub> =-1mA	-0.65		-0.85	
		I <sub>C</sub> = -50 mA, I <sub>B</sub> = -5mA			-0.95	
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> =- 0.1mA	60			
	h <sub>FE(2)</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -1mA	80			
	h <sub>FE(3)</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> =- 10mA	100		300	
	h <sub>FE(4)</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -50mA	60			
	h <sub>FE(5)</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -100mA	30			
Delay time	t <sub>d</sub>	V <sub>CC</sub> =-3V, V <sub>BE(OFF)</sub> = 0.5V			35	nS
Rise time	t <sub>r</sub>	I <sub>C</sub> =-10mA, I <sub>B1</sub> =-1mA			35	
Storage time	t <sub>s</sub>	V <sub>CC</sub> =-3V, I <sub>C</sub> =-10mA, I <sub>B1</sub> =I <sub>B2</sub> =-1mA			225	
Fall time	t <sub>f</sub>				75	
Noise figure	NF	V <sub>CE</sub> =-5V, I <sub>C</sub> = -0.1mA			4	
Collector input capacitance	C <sub>ib</sub>	V <sub>EB</sub> = -0.5V, I <sub>E</sub> = 0, f=1MHz			10	pF
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -5V, I <sub>E</sub> = 0, f=1MHz			4.5	
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = -20V, I <sub>C</sub> = -10mA, f=100MHz	250			MHz

■ Marking

Marking	3N
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