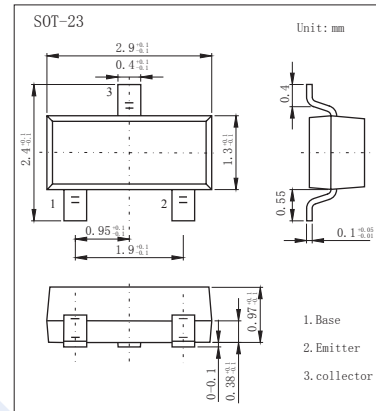


## PNP Transistors

## MMBT3906-HF (KMBT3906-HF)

## ■ Features

- Complementary to MMBT3904

■ 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	$I_C$	-0.2	A
Collector Power Dissipation	$P_C$	0.2	W
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature range	$T_{stg}$	-55 to 150	

■ 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	$V_{CE0}$	$I_C = -1 \text{ mA}$ , $I_B = 0$	-40			
Emitter - base breakdown voltage	$V_{EB0}$	$I_E = -100 \mu\text{A}$ , $I_C = 0$	-6			
Collector-base cut-off current	$I_{CBO}$	$V_{CB} = -40 \text{ V}$ , $I_E = 0$			-100	nA
Collector- emitter cut-off current	$I_{CEX}$	$V_{CE} = -30 \text{ V}$ , $V_{EB(off)} = 3 \text{ V}$			-50	
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5 \text{ V}$ , $I_C = 0$			-100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -10 \text{ mA}$ , $I_B = -1 \text{ mA}$			-0.2	V
		$I_C = -50 \text{ mA}$ , $I_B = -5 \text{ mA}$			-0.3	
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	$h_{fe} (1)$	$V_{CE} = -1 \text{ V}$ , $I_C = -10 \text{ mA}$	100		300	
	$h_{fe} (2)$	$V_{CE} = -1 \text{ V}$ , $I_C = -50 \text{ mA}$	60			
	$h_{fe} (3)$	$V_{CE} = -1 \text{ V}$ , $I_C = -100 \text{ mA}$	30			
Delay time	$t_d$	$V_{CC} = -3.0 \text{ V}$ , $V_{BE} = 0.5 \text{ V}$			35	ns
Rise time	$t_r$	$I_C = -10 \text{ mA}$ , $I_{B1} = -1.0 \text{ mA}$			35	
Storage time	$t_s$	$V_{CC} = -3.0 \text{ V}$ , $I_C = -10 \text{ mA}$			225	
Fall time	$t_f$	$I_{B1} = I_{B2} = -1.0 \text{ mA}$			75	
Transition frequency	$f_T$	$V_{CE} = -20 \text{ V}$ , $I_C = -10 \text{ mA}$ , $f = 100 \text{ MHz}$	250			MHz

## ■ Marking

Marking	2A F
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### MMBT3906-HF (KMBT3906-HF)

■ Typical Characteristics

