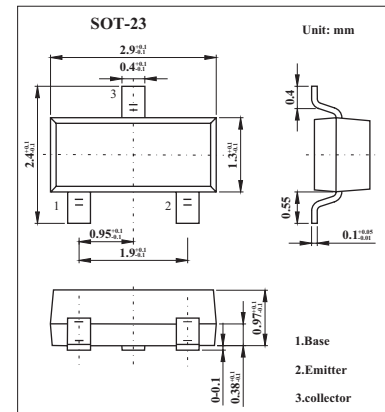


## PNP Transistors

### KMBT3906(MMBT3906)

#### ■ Features

- Epitaxial planar die construction



#### ■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Collector- Base Voltage	$V_{CB0}$	-40	V
Collector - Emitter Voltage	$V_{CEO}$	-40	V
Emitter - Base Voltage	$V_{EBO}$	-5	V
Collector Current- Continuous	$I_C$	-0.2	A
Collector Dissipation	$P_C$	0.3	W
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to 150	°C

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Collector - base breakdown voltage	$V_{CB0}$	$I_C = -100 \mu A, I_E = 0$	-40			V
Collector - emitter breakdown voltage	$V_{CEO}$	$I_C = -1 \text{ mA}, I_B = 0$	-40			V
Emitter- base breakdown voltage	$V_{EBO}$	$I_E = -100 \mu A, I_C = 0$	-5			V
Collector cut-off current	$I_{CBO}$	$V_{CB} = -40 \text{ V}, I_E = 0$			-0.1	$\mu A$
Collector cut-off current	$I_{CEO}$	$V_{CE} = -40 \text{ V}, V_{BE(off)} = -3 \text{ V}$			-50	nA
Emitter cut-off current	$I_{EBO}$	$V_{EB} = -5 \text{ V}, I_C = 0$			-0.1	$\mu A$
DC current gain	$h_{FE}$	$V_{CE} = -1 \text{ V}, I_C = -10 \text{ mA}$	100		300	
		$V_{CE} = -1 \text{ V}, I_C = -50 \text{ mA}$	60			
Collector- emitter saturation voltage	$V_{CE(sat)}$	$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$			-0.3	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$			-0.95	V
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	ns
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
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SMD Type Transistors

KMBT3906(MMBT3906)

Typical Characteristics

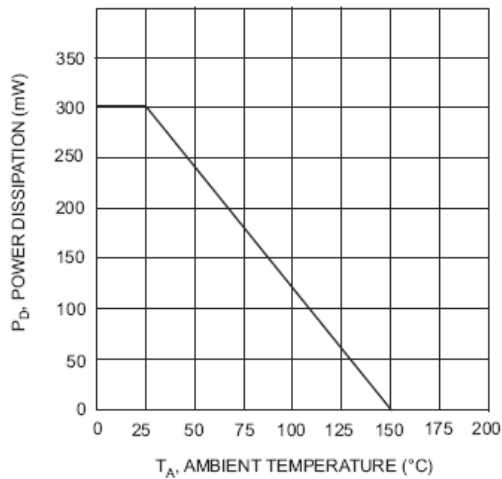


Fig.1 Max Power Dissipation vs Ambient Temperature

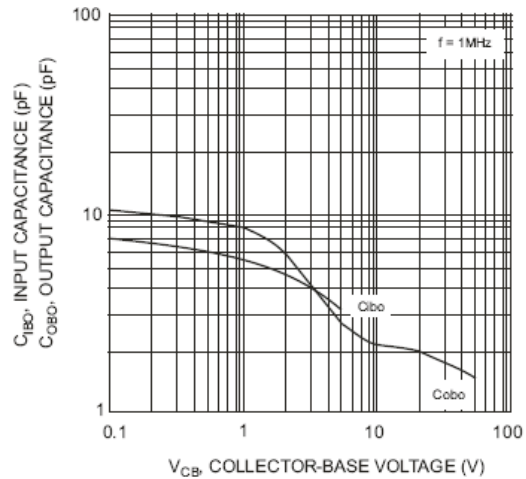


Fig.2 Input and Output Capacitance vs. Collector-Base Voltage

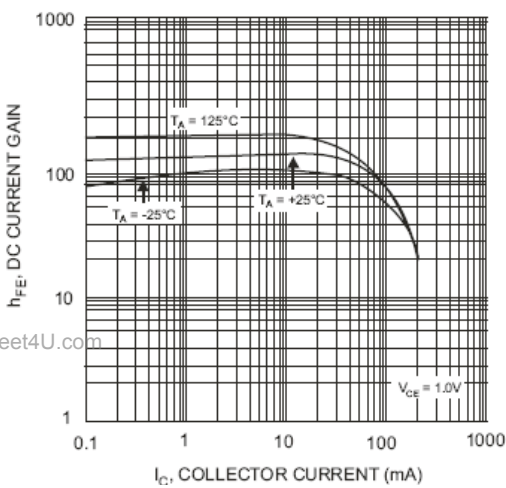


Fig.3 Typical DC Current Gain vs Collector Current

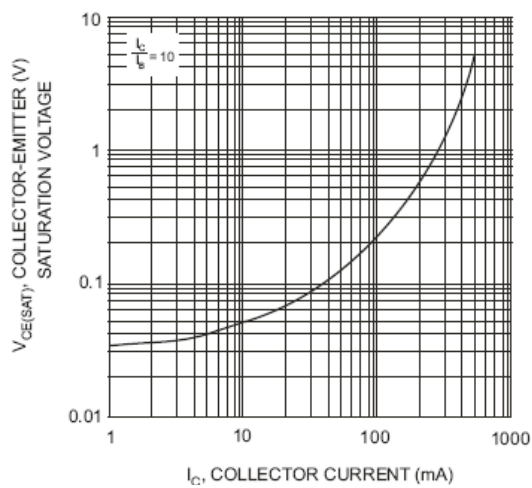


Fig.4 Typical Collector-Emitter Saturation Voltage vs. Collector Current

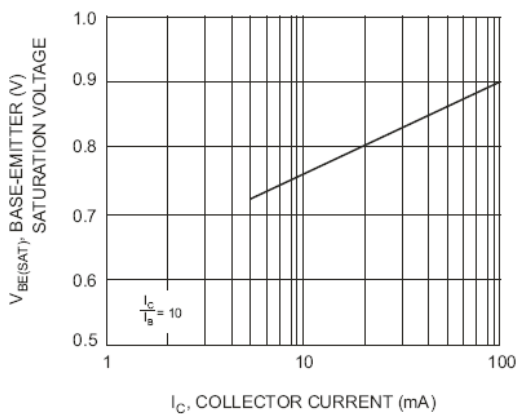


Fig.5 Typical Base-Emitter Saturation Voltage vs. Collector Current