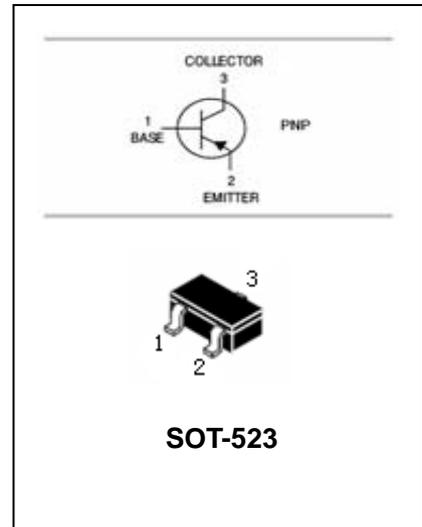


## PNP General Purpose Transistor

## MMBT3906T

### FEATURES

- Epitaxial planar die construction.
- Complementary NPN type available (MMBT3904T).
- Low Current (Max:-200mA).
- Low Voltage(Max:-40V).



### APPLICATIONS

- Ideal for medium power amplification and switching.

### ORDERING INFORMATION

Type No.	Marking	Package Code
MMBT3906T	3N	SOT-523

### MAXIMUM RATING @ Ta=25°C unless otherwise specified

SYMBOL	PARAMETER	MMBT3906T	UNIT
V <sub>CBO</sub>	collector-base voltage	-40	V
V <sub>CEO</sub>	collector-emitter voltage	-40	V
V <sub>EBO</sub>	emitter-base voltage	-5	V
I <sub>C</sub>	collector current (DC)	-200	mA
P <sub>d</sub>	Power dissipation	150	mW
R <sub>θJA</sub>	Thermal resistance, junction to Ambient	833	°C/W
T <sub>stg</sub>	storage temperature range	-55 to +150	°C
T <sub>j</sub>	junction temperature	150	°C

## PNP General Purpose Transistor

## MMBT3906T

### ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{(BR)CBO}$	Collector-base breakown voltage	$I_C=-10\mu A, I_E=0$	-40		
$V_{(BR)CEO}$	Collector- emitter breakown voltage	$I_C=-1.0mA, I_B=0$	-40		
$V_{(BR)BEO}$	Emitter-base breakown voltage	$I_E=-10\mu A, I_C=0$	-5		
$I_{CBO}$	Collector cut-off current	$I_E=0, V_{CB}=-30V$		-50	nA
$I_{EBO}$	Emitter cut-off current	$I_C=0, V_{EB}=-5V$		-50	nA
$I_{CEX}$	collector cut-off current	$V_{CE}=-30V, V_{EB(OFF)}=-3.0V$		-50	nA
$I_{BL}$	Base cut-off current	$V_{CE}=-30V, V_{EB(OFF)}=-3.0V$		-50	nA
$h_{FE}$	DC current gain	$V_{CE}=-1V, I_C=-0.1mA$ $V_{CE}=-1V, I_C=-1mA$ $V_{CE}=-1V, I_C=-10mA$ $V_{CE}=-1V, I_C=-50mA$ $V_{CE}=-1V, I_C=-100mA$	60 80 100 60 30	300	
$V_{CE(sat)}$	collector-emitter saturation voltage	$I_C=-10mA, I_B=-1mA$ $I_C=-50mA, I_B=-5mA$		-250 -400	mV
$V_{BE(sat)}$	base-emitter saturation voltage	$I_C=-10mA; I_B=-1mA$ $I_C=-50mA; I_B=-5mA$	-650	-850 -950	mV
$C_{obo}$	Output capacitance	$I_E=0, V_{CB}=-5V, f=1MHz$		4.5	pF
$C_{ibo}$	Input capacitance	$I_C=0, V_{BE}=-0.5V, f=1MHz$		10	pF
$f_T$	transition frequency	$I_C=-10mA, V_{CE}=-20V, f=100MHz$	250		MHz
$t_d$	delay time	$I_C=-10mA, I_{B1}=-1mA, V_{BE(off)}=-0.5V$	-	35	ns
$t_r$	rise time	$V_{CC}=-3.0V$	-	35	ns
$t_s$	storage time	$V_{CC}=-3.0V, I_C=-10mA$	-	225	ns
$t_f$	fall time	$I_{B1}=I_{B2}=-1mA$	-	75	ns

# PNP General Purpose Transistor

# MMBT3906T

TYPICAL CHARACTERISTICS @  $T_a=25^\circ\text{C}$  unless otherwise specified

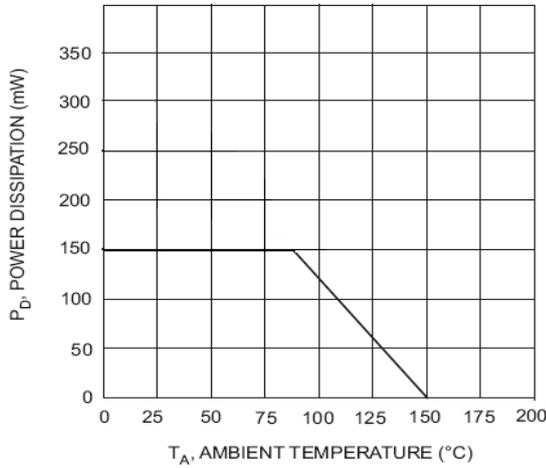


Fig. 1, Max Power Dissipation vs Ambient Temperature

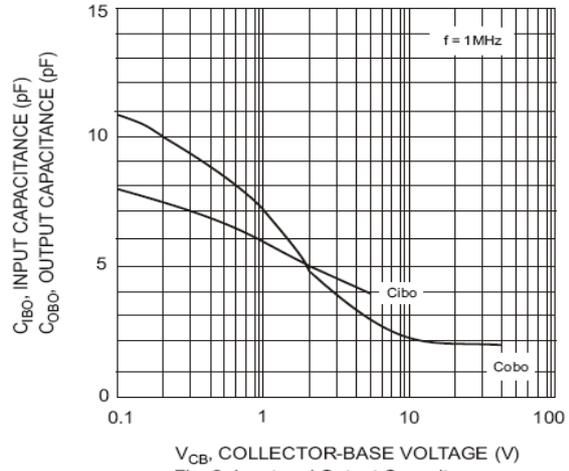


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

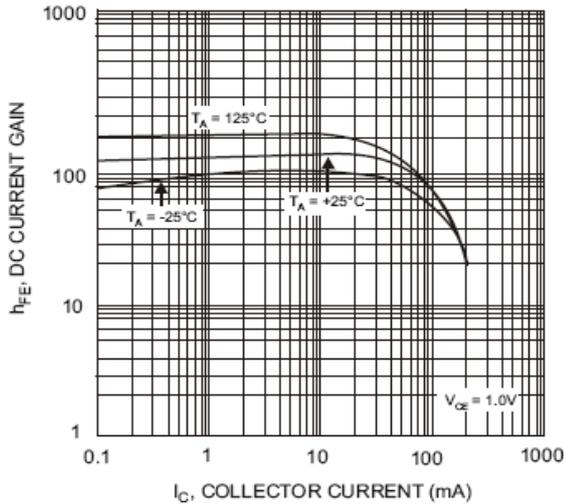


Fig. 3, Typical DC Current Gain vs Collector Current

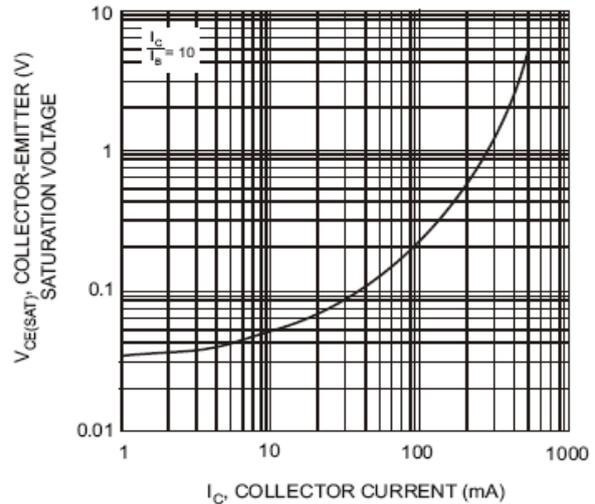


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

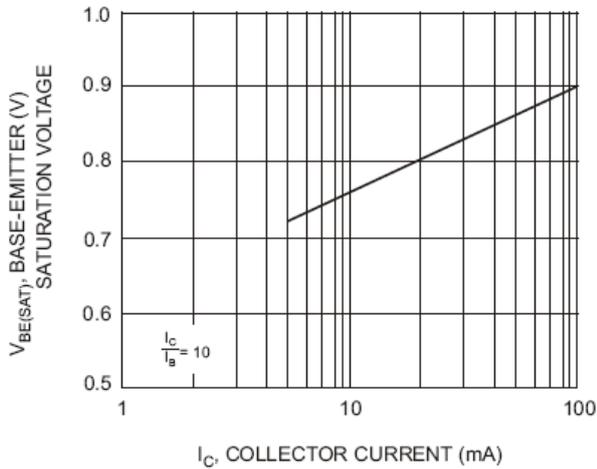


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

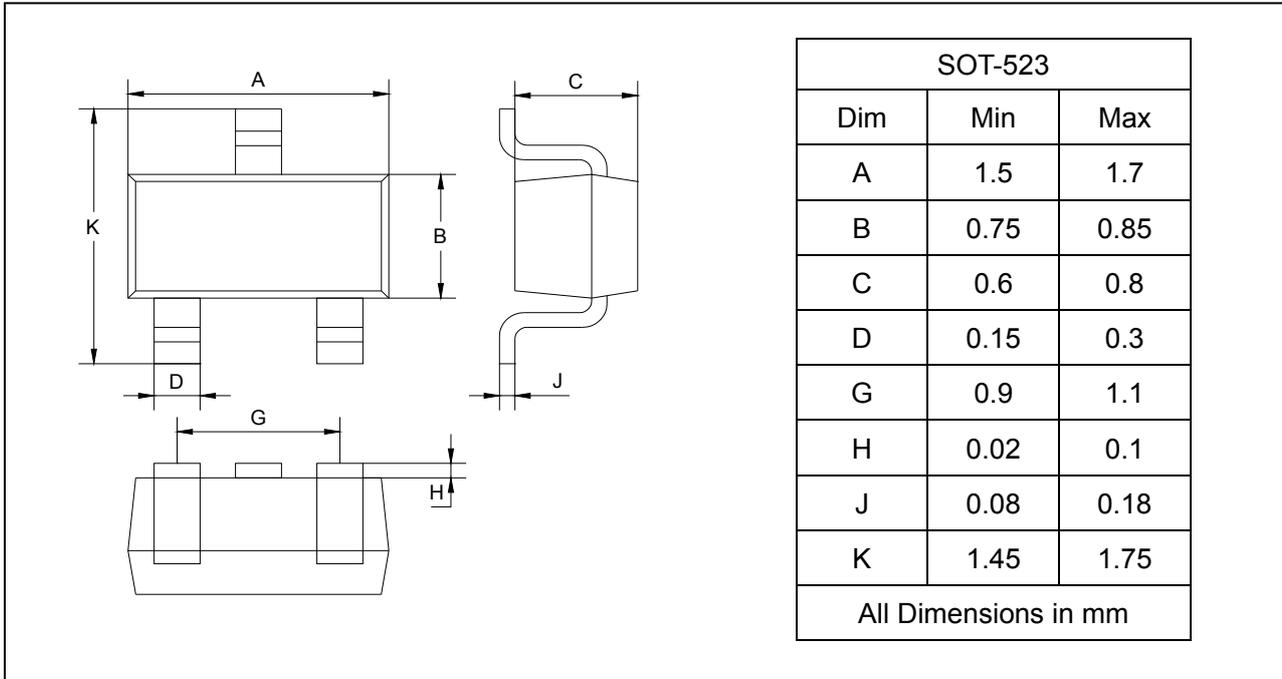
## PNP General Purpose Transistor

## MMBT3906T

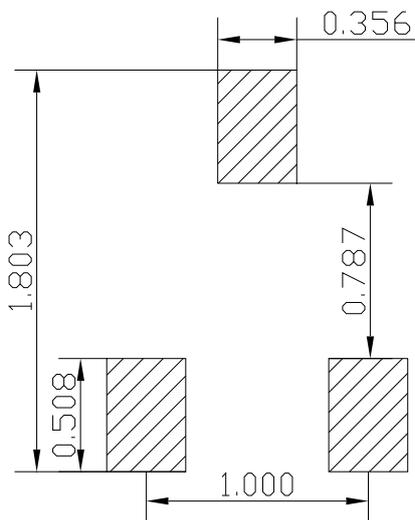
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-523



### SOLDERING FOOTPRINT



Unit : mm

### PACKAGE INFORMATION

Device	Package	Shipping
MMBT3906T	SOT-523	3000/Tape&Reel