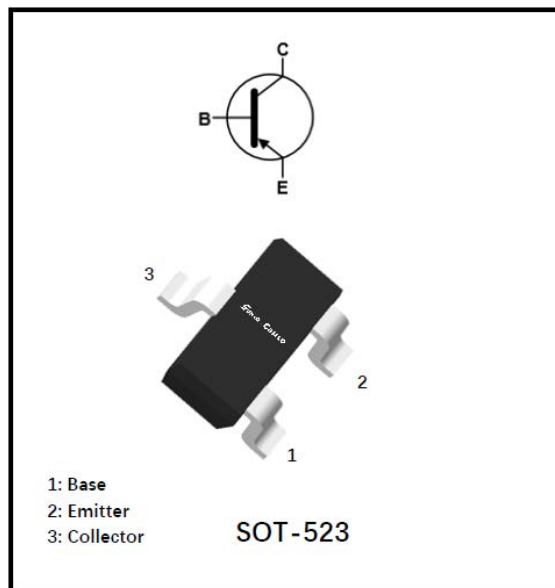


PNP General Purpose Amplifier



Features

- Moisture Sensitivity Level 1
- Surface mount package ideally Suited for Automatic Insertion
- Epoxy meets UL-94 V-0 flammability rating, halogen-free

Mechanical Data

- **Package:** SOT-523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 3N

■Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -1.0\text{mA}$, $I_E = 0$	-40
Collector-Base Voltage	V_{CBO}	V	$I_C = -10\mu\text{A}$, $I_E = 0$	-40
Emitter-Base Voltage	V_{EBO}	V	$I_E = -10\mu\text{A}$, $I_C = 0$	-5
Collector Current	I_C	mA		-200
Collector Power Dissipation	P_C	mW		150
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	°C/W		833
Operation Junction Temperature	T_J	°C		-55 to +150
Storage Temperature	T_{STG}	°C		-55 to +150

MMBT3906T

■Electrical Characteristics (Ta=25℃ unless otherwise specified)

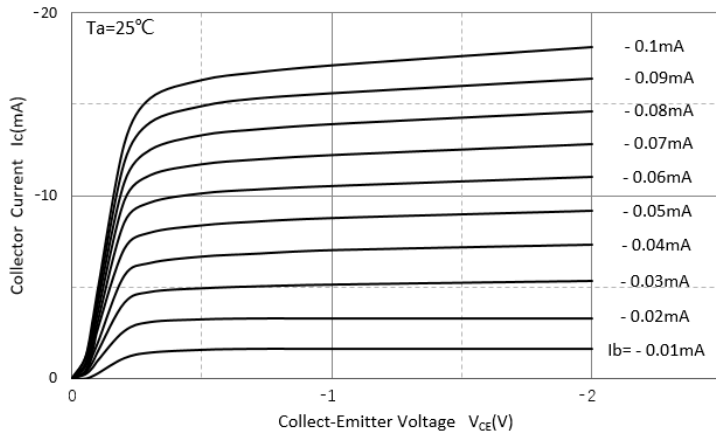
Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	$I_C=-1.0mA$, $I_B=0$	-40	
Collector-Base Voltage	V_{CBO}	V	$I_C=-10\mu A$, $I_E=0$	-40	
Emitter-Base Voltage	V_{EBO}	V	$I_E=-10\mu A$, $I_C=0$	-5	
Collector-base Cut-off Current	I_{CBO}	μA	$V_{CB}=-40V$ dc		-0.1
Emitter-base cut-off current	I_{EBO}	μA	$V_{EB}=-5V$ dc		-0.1
Collector-emitter Cut-off Current	I_{CEX}	μA	$V_{CE}=-30V$ dc, $V_{EB}=-3V$ dc		-0.05
DC Current Gain	h_{FE}		$I_C=-0.1mA$, $V_{CE}=-1.0V$ dc	60	
			$I_C=-1.0mA$, $V_{CE}=-1.0V$ dc	80	
			$I_C=-10mA$, $V_{CE}=-1.0V$ dc	100	300
			$I_C=-50mA$, $V_{CE}=-1.0V$ dc	60	
			$I_C=-100mA$, $V_{CE}=-1.0V$ dc	30	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=-10mA$, $I_B=-1.0mA$		-0.25
			$I_C=-50mA$, $I_B=-5.0mA$		-0.4
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=-10mA$, $I_B=-1.0mA$	-0.65	-0.85
			$I_C=-50mA$, $I_B=-5.0mA$		-0.95
Collector-base Output Capacitance	C_{obo}	pF	$V_{CB}=-5.0V$ dc, $f=1.0MHz$, $I_E=0$		4.5
Transition frequency	f_T	MHz	$I_C=-10mA$, $V_{CE}=-20V$, $f=100MHz$	250	
Delay Time	t_d	ns	$V_{CC}=-3.0V$, $V_{BE}=-0.5V$, $I_C=-10mA$, $I_{B1}=-1.0mA$	35	
Rise Time	t_r	ns		35	
Storage Time	t_s	ns	$V_{CC}=-3.0V$, $I_C=-10mA$, $I_{B1}=I_{B2}=-1.0mA$	225	
Fall Time	t_f	ns		75	

■ Ordering Information (Example)

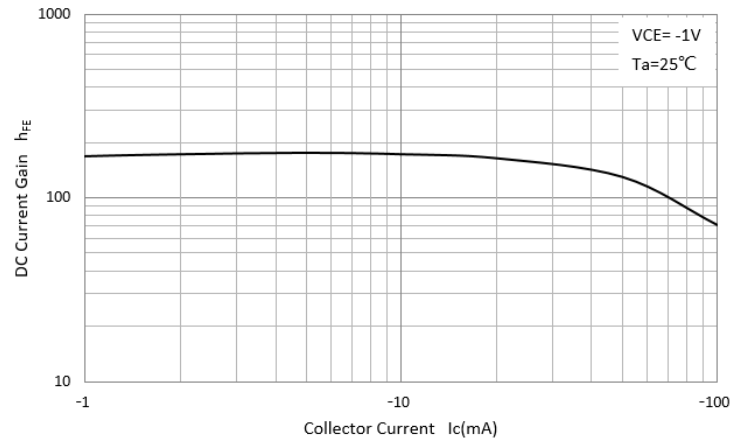
Preferred P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
MMBT3906T	F2	Approximate 0.0027	3000	30000	120000	7" reel

■ Characteristics (Typical)

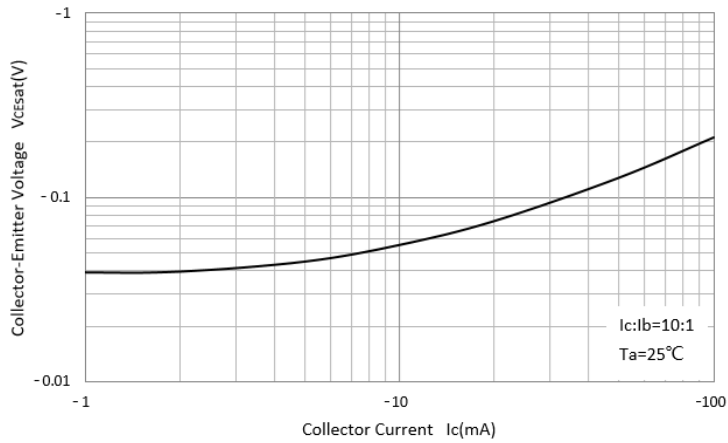
Static Characteristic



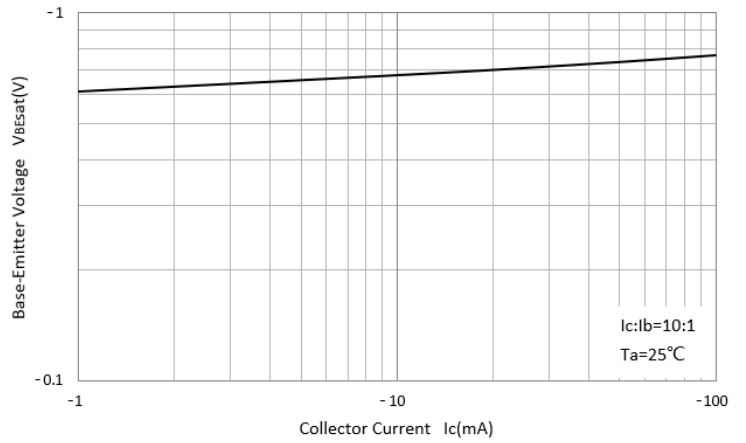
DC Current Gain



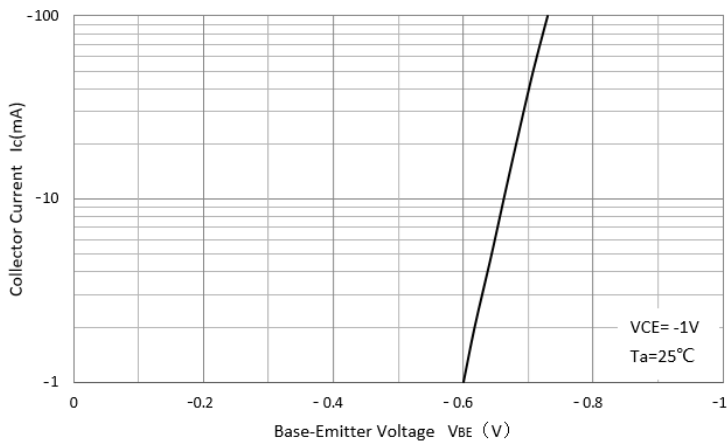
Collector-Emitter Saturation Voltage



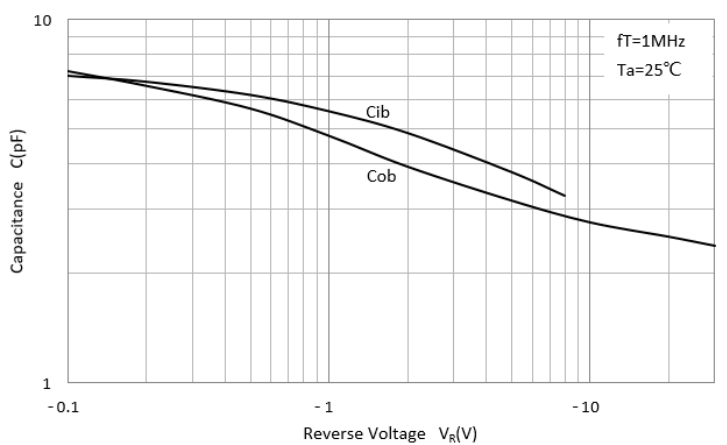
Base-Emitter Saturation Voltage



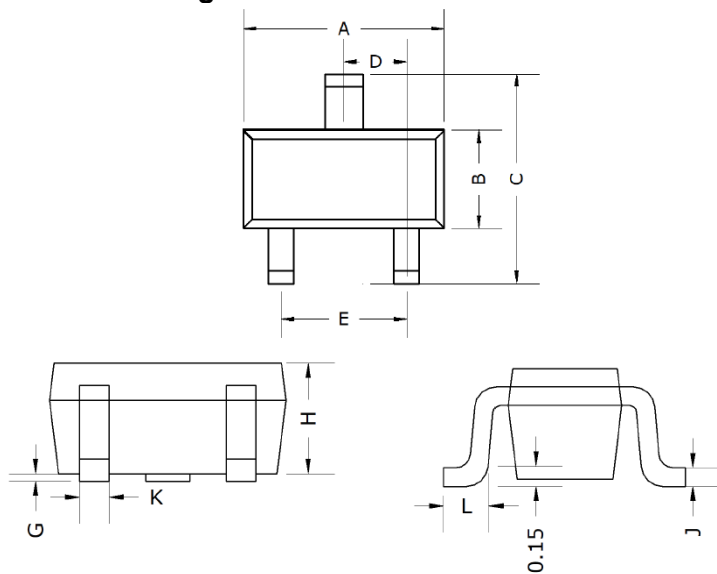
Base-Emitter On Voltage



$C_{ob}/C_{ib}-V_{CB}/V_{EB}$

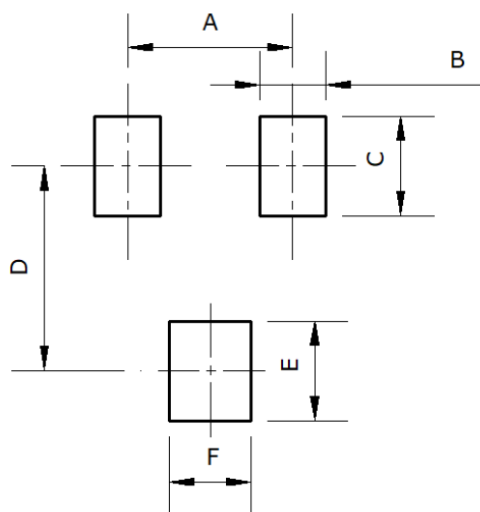


■ SOT-523 Package Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.059	0.067	1.50	1.70
B	0.030	0.033	0.75	0.85
C	0.057	0.069	1.45	1.75
D	0.020TYP		0.50TYP	
E	0.035	0.043	0.90	1.10
G	0.000	0.004	0.00	0.10
H	0.024	0.031	0.60	0.80
J	0.004	0.008	0.10	0.20
K	0.006	0.014	0.15	0.35
L	0.010	0.018	0.26	0.46

■ SOT-523 Suggested Pad Layout



DIMENSIONS	
DIM	MM (TYP)
A	1.00
B	0.40
C	0.60
D	1.24
E	0.60
F	0.50

Disclaimer

The information presented in this document is for reference only. Shanghai Sunco Electronics Co., Ltd reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Russiansunco or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.russiansunco.com](http://www.russiansunco.com) , or consult your nearest Russiansunco's sales office for further assistance.