

## NPN General Purpose Amplifier transistors

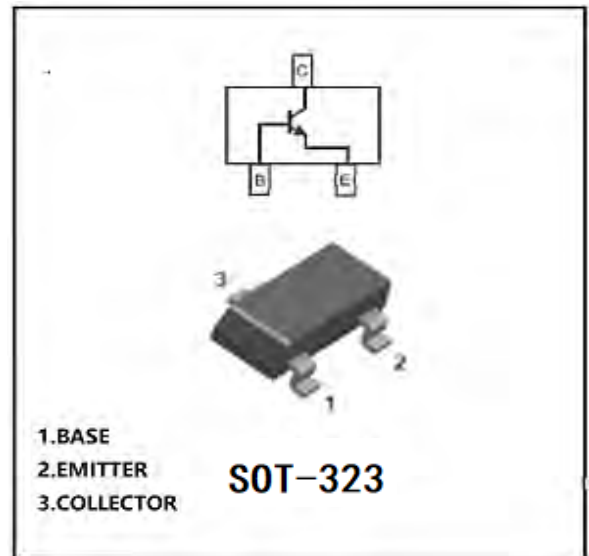
### Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- High Conductance
- Surface Mount Package Ideally Suited for Automatic Insertion

### Mechanical Data

- **Package:** SOT-323  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:**

MMSTA05	1H
MMSTA06	1GM



### Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$ MMSTA05 MMSTA06	60 80	V
Collector-Emitter Voltage	$V_{CEO}$ MMSTA05 MMSTA06	60 80	V
Emitter-Base Voltage	$V_{EBO}$	4	V
Collector Current	$I_C$	500	mA
Collector Power Dissipation	$P_C$	200	mW
Operation Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C



# MMSTA05 ~ MMSTA06

## Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Max
Collector-base breakdown voltage	V <sub>CBO</sub>	V	IC=100μA,IE=0 MMSTA05 MMSTA06	60 80	
Collector-emitter breakdown voltage	V <sub>CEO</sub>	V	IC =1mA,IB=0 MMSTA05 MMSTA06	60 80	
Emitter-base breakdown voltage	V <sub>EBO</sub>	V	IE=100μA,IC=0	4	
Collector-base cut-off current	I <sub>CBO</sub>	nA	V <sub>CB</sub> =60V,IE=0, V <sub>CB</sub> =80V,IE=0, MMSTA05 MMSTA06		100 100
Collector-emitter cut-off current	I <sub>CEO</sub>	nA	V <sub>CE</sub> =60V,IB=0		100
Emitter-base cut-off current	I <sub>EBO</sub>	nA	V <sub>EB</sub> =3V,IC=0		100
DC current gain	h <sub>FE</sub>		V <sub>CE</sub> =1V,IC=10mA	100	400
	h <sub>FE</sub>		V <sub>CE</sub> =1V,IC=100mA	100	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V	IC=100mA,IB=10mA		0.25
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	V	IC=100mA,IB=10mA		1.2

## Other Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	F <sub>t</sub>	MHz	V <sub>CE</sub> =2V,IC=10mA,f=100MHz	100	

## Ordering Information (Example)

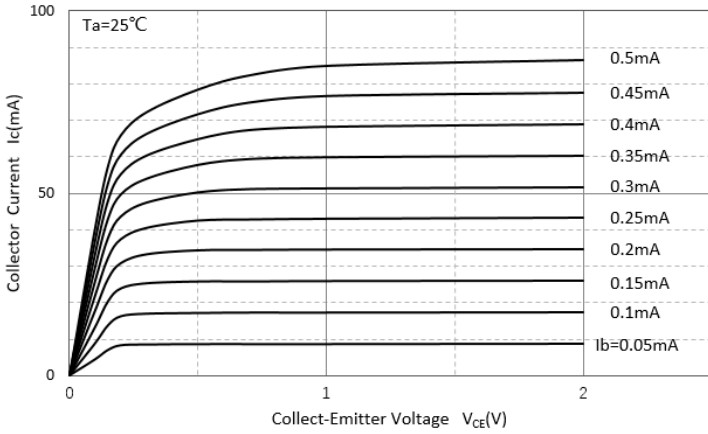
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMSTA05 MMSTA06	F2	Approximate 0.005	3000	30000	120000	7" reel



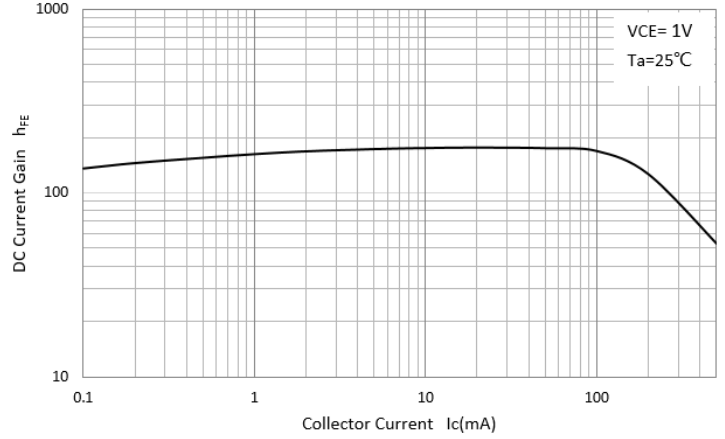
# MMSTA05 ~ MMSTA06

## Typical Characteristics

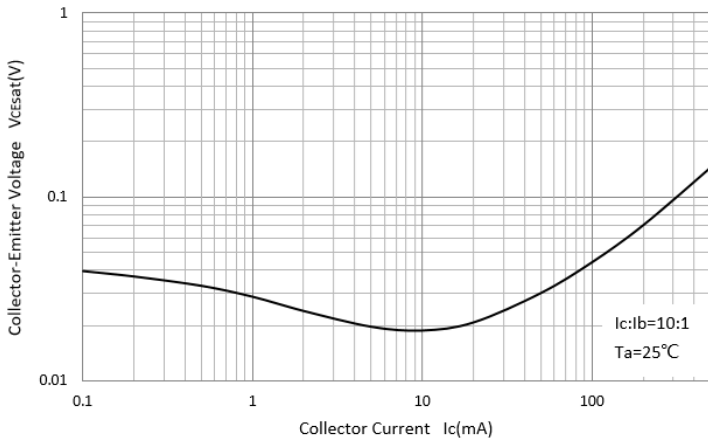
Static Characteristic



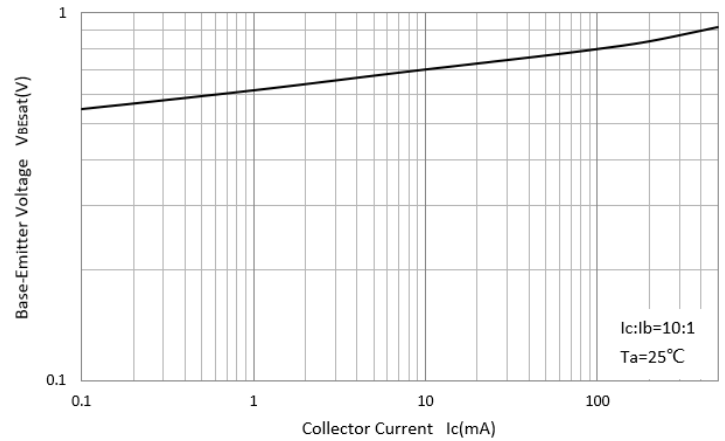
DC Current Gain



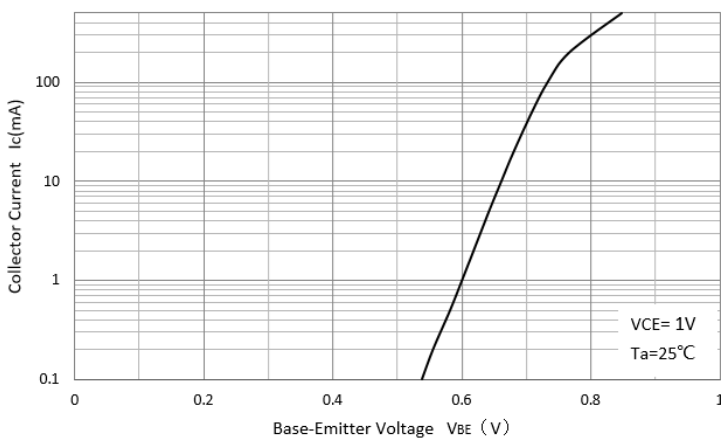
Collector-Emitter Saturation Voltage



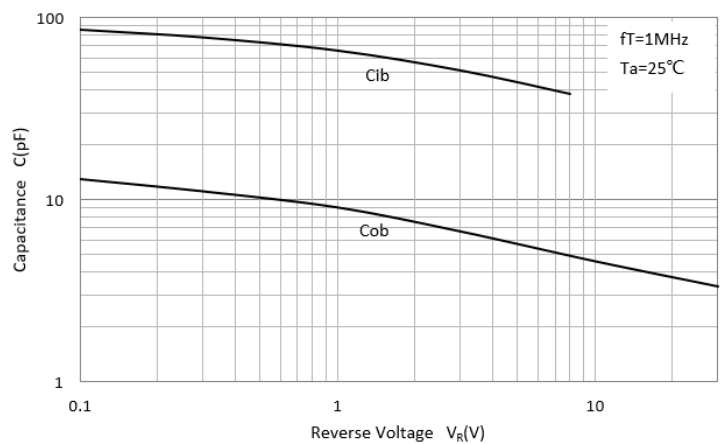
Base-Emitter Saturation Voltage



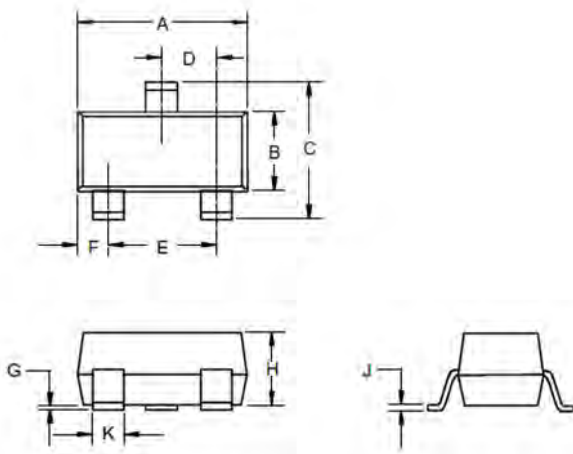
Base-Emitter On Voltage



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



## SOT-323 Package Outline Dimensions



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

## SOT-323 Soldering Footprint

