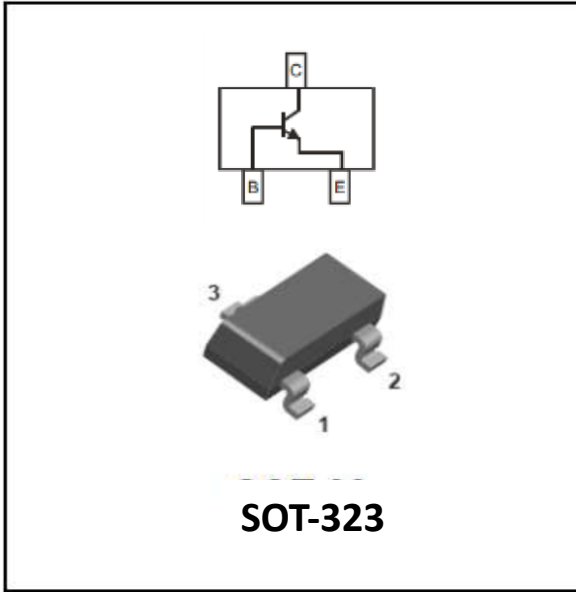


## NPN General Purpose Amplifier



### 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:** K2N

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

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	$V_{CB0}$	V	$I_C=10\mu A, I_E=0$	60
Collector-Emitter Voltage	$V_{CE0}$	V	$I_C=1mA, I_B=0$	40
Emitter-Base Voltage	$V_{EB0}$	V	$I_E=10\mu A, I_C=0$	6
Collector Current	$I_C$	mA		200
Collector Power Dissipation	$P_C$	mW		200
Operation Junction Temperature	$T_j$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150



### ■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=10μA,IE=0	60	
Collector-emitter breakdown voltage	V <sub>CEO</sub>	V	IC =1mA,IB=0	40	
Emitter-base breakdown voltage	V <sub>EBO</sub>	V	IE=10μA,IC=0	6	
Collector-Base cut-off current	I <sub>CBO</sub>	nA	VCE=30V,IE=0		100
Collector-Emitter cut-off current	I <sub>CEX</sub>	nA	VCE=30V, VEB=3V,		50
DC current gain	h <sub>FE</sub>		VCE=1V,IC=100uA	40	
	h <sub>FE</sub>		VCE=1V,IC=1mA	70	
	h <sub>FE</sub>		VCE=1V,IC=10mA	100	300
	h <sub>FE</sub>		VCE=1V,IC=50mA	60	
	h <sub>FE</sub>		VCE=1V,IC=100mA	30	
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V	IC=50mA,IB=5mA		0.3
Base-emitter saturation voltage	V <sub>BE(sat)*</sub>	V	IC=50mA,IB=5mA		0.95

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

Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	f <sub>T</sub>	MHz	VCE=20V,IC=10mA,f=100MHz	300	
Delay time	t <sub>d</sub>	ns	VCC=3V,IC=100uA, VBE(off)=0.5V ,IB1=1mA		35
Rise time	t <sub>r</sub>	ns			35
Storage time	t <sub>s</sub>	ns	VCC=3V,IC=10mA, IB1=-IB2=1mA		200
Fall time	t <sub>f</sub>	ns			50

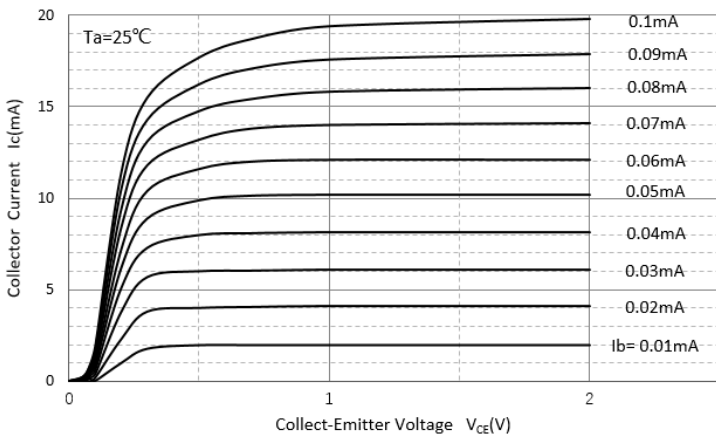
### ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMST3904	F2	Approximate 0.005	3000	30000	120000	7" reel

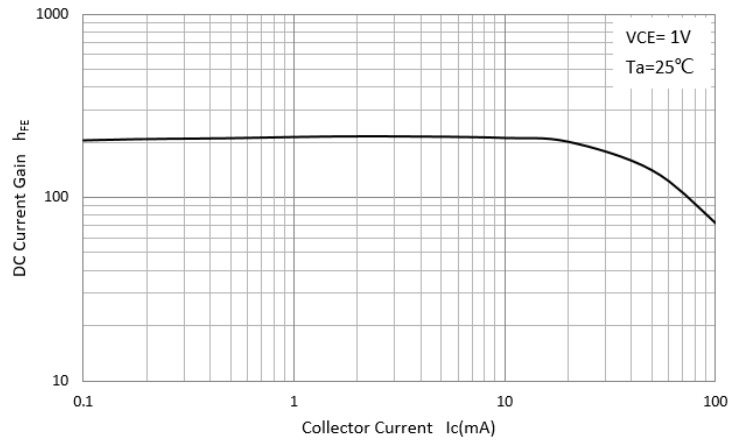


## ■ Characteristics(Typical)

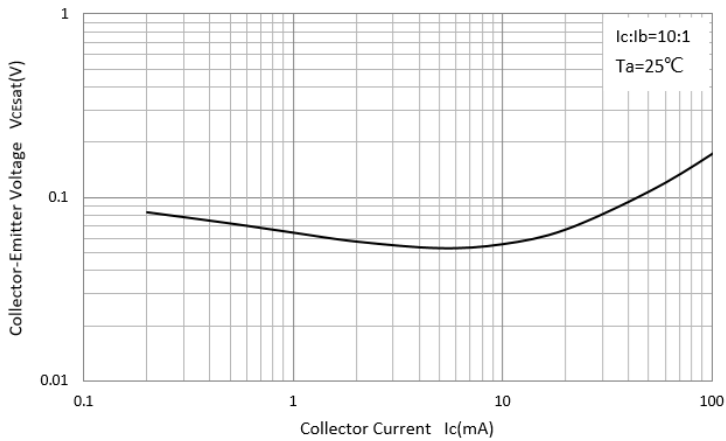
### Static Characteristic



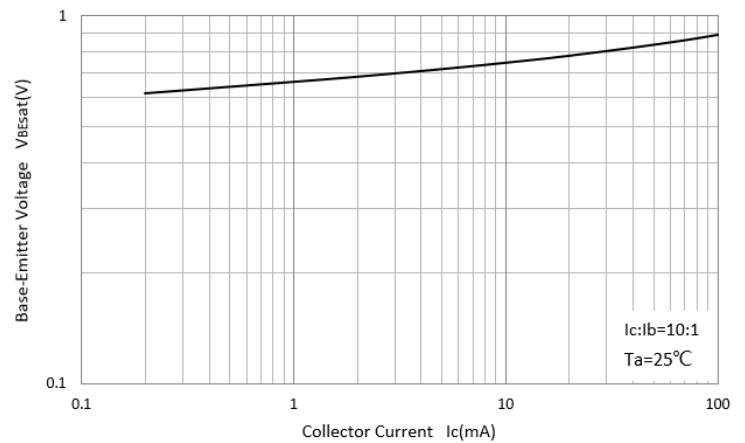
### DC Current Gain



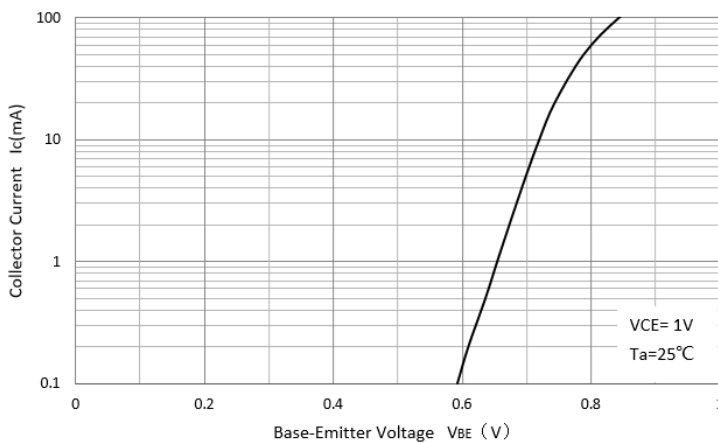
### Collector-Emmitter Saturation Voltage



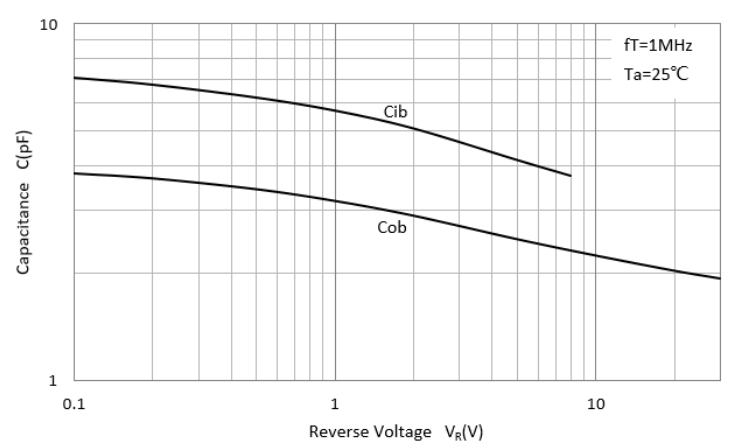
### Base-Emmitter Saturation Voltage



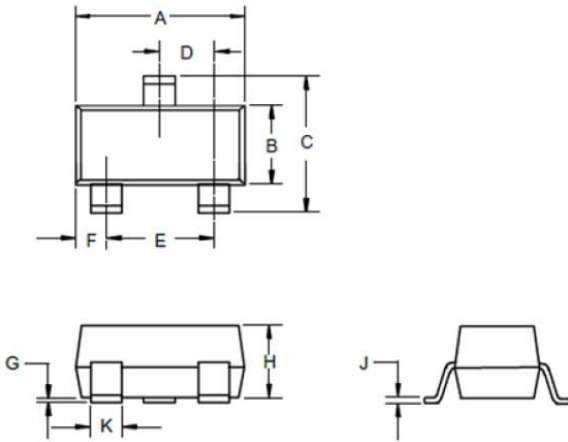
### Base-Emmitter On Voltage



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

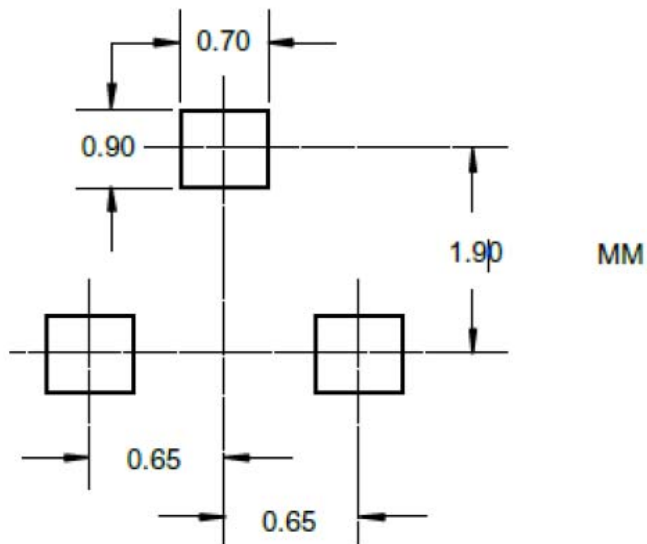


## ■SOT-323 Package Outline Dimensions



DIMENSIONS					
DIM	INCHES		MM		NOTE
	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





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