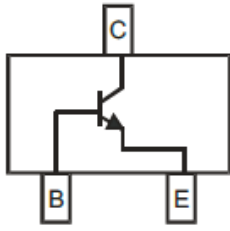


## NPN Silicon High Voltage Transistor



**SOT-323**

### Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- High Conductance
- High Breakdown Voltage
- Surface Mount Package Ideally Suited for Automatic Insertion
- Part no. with suffix "Q" means AEC-Q101 qualified

### Application

- General purpose Switching and linear amplification

### Mechanical Data

- **Package:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K3M

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

Item	Symbol	Unit	Value
Collector-Base Voltage	$V_{CBO}$	V	300
Collector-Emitter Voltage	$V_{CEO}$	V	300
Emitter-Base Voltage	$V_{EBO}$	V	5
Collector Current	$I_C$	mA	100
Collector Power Dissipation (*)	$P_C$	mW	200
Thermal Resistance Junction to Ambient (*)	$R_{thJA}$	K/W	625
Operation Junction Temperature	$T_j$	°C	-55 to +150
Storage Temperature	$T_{stg}$	°C	-55 to +150

(\*) Device mounted on FR-4 PCB 1.0 x 1.0 x 0.06 inch



## ■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C=100\mu A, I_E=0$	300		
Collector-emitter breakdown voltage	$V_{CEO}$	V	$I_C=1mA, I_B=0$	300		
Emitter-base breakdown voltage	$V_{EBO}$	V	$I_E=100\mu A, I_C=0$	5		
Collector-base cut-off current	$I_{CBO}$	$\mu A$	$V_{CB}=200V, I_E=0$			0.5
Emitter-base cut-off current	$I_{EBO}$	$\mu A$	$V_{EB}=5V, I_C=0$			0.5
DC current gain	$h_{FE}$		$V_{CE}=10V, I_C=1mA$	25		
	$h_{FE}$		$V_{CE}=10V, I_C=10mA$	40		300
	$h_{FE}$		$V_{CE}=10V, I_C=30mA$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=20mA, I_B=2mA$			0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=20mA, I_B=2mA$			1.0

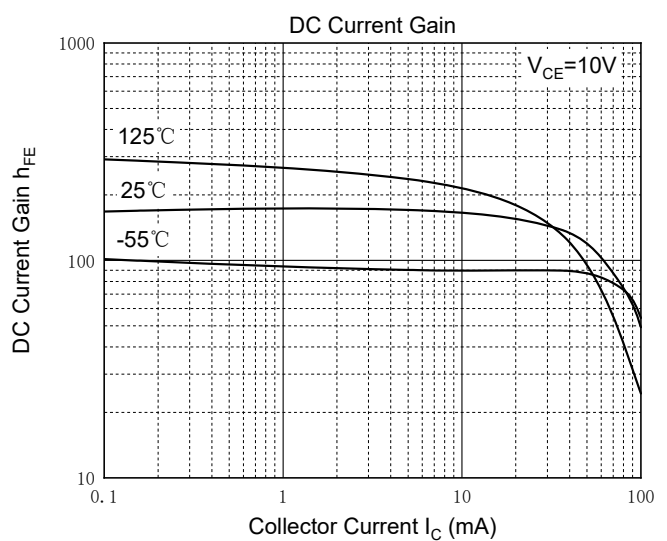
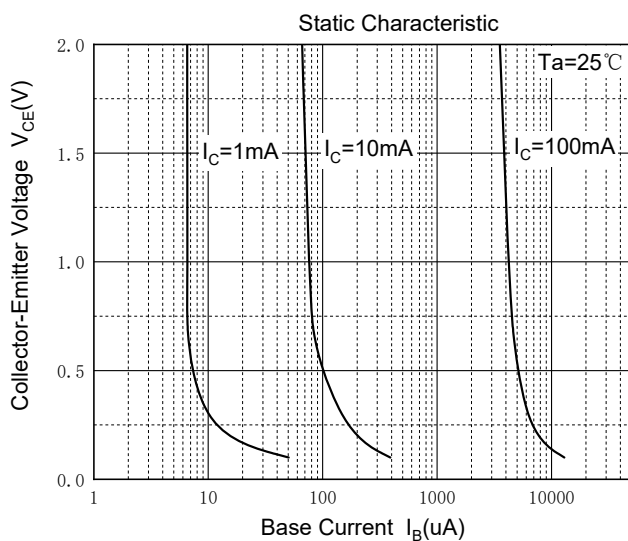
## ■ Other Characteristics (Ta=25°C Unless otherwise specified)

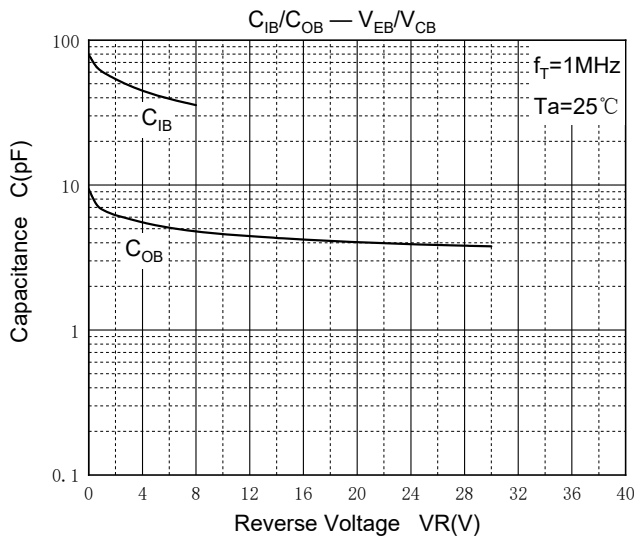
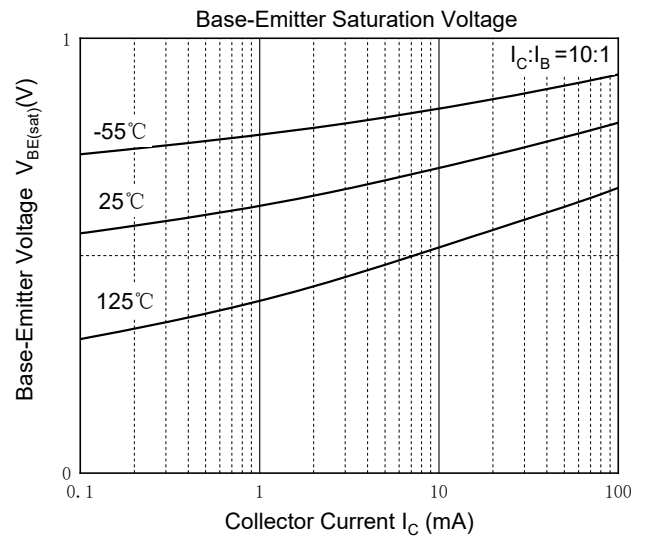
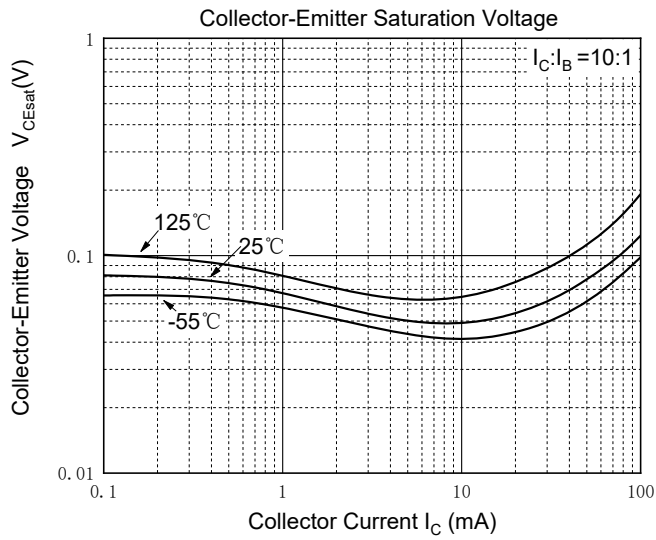
Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	$f_t$	MHz	$V_{CE}=20V, I_C=10mA, f=30MHz$	50	

## ■ Ordering Information (Example)

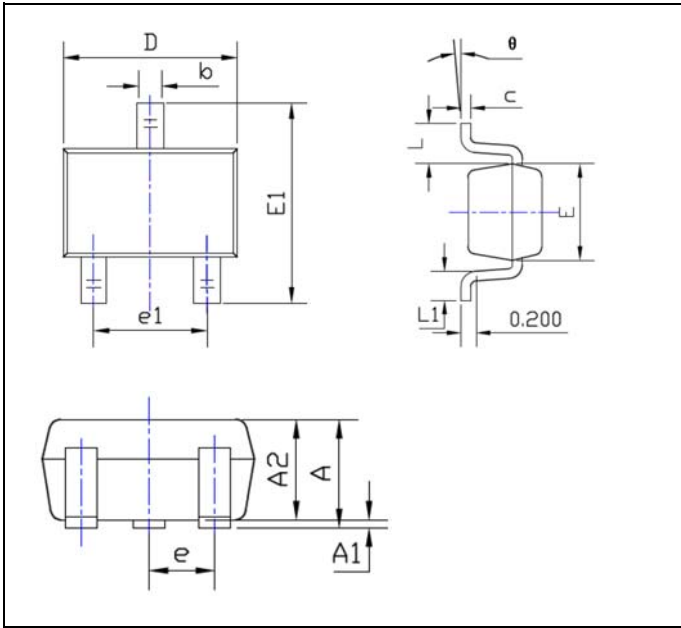
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMSTA42Q	F2	Approximate 0.006	3000	30000	120000	7" reel

## ■ Characteristics (Typical)



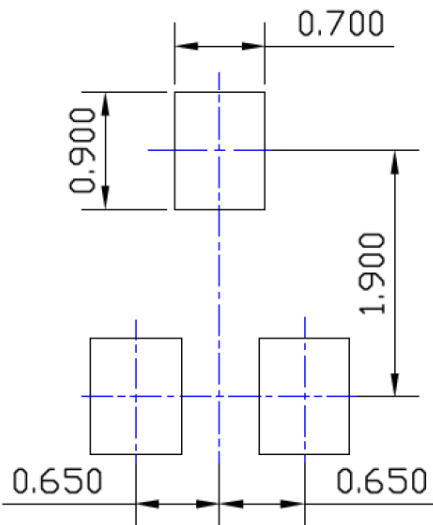


## ■ SOT-323 Package Outline Dimensions



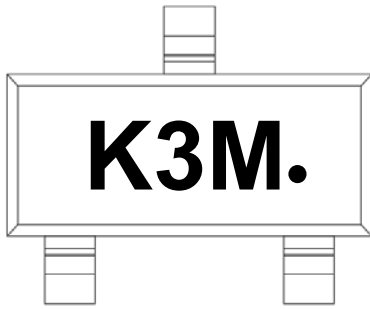
SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

## ■ SOT-323 Soldering Footprint



Unit: mm

## ■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. K3M is Marking Code
4. Body color: Black



---

**Disclaimer**

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology 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 automotive electronics, are not designed for use in medical, life-saving, lifesustaining, or military, Yangjie 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.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.