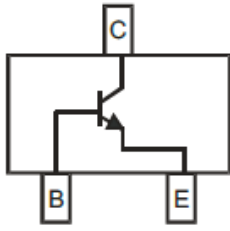


NPN Silicon High Voltage Transistor



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}	μA	$V_{CB}=200V, I_E=0$			0.5
Emitter-base cut-off current	I_{EBO}	μA	$V_{EB}=5V, I_C=0$			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

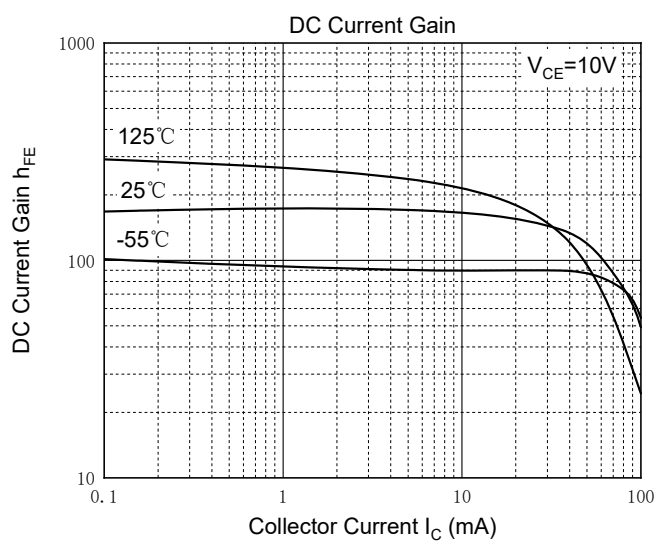
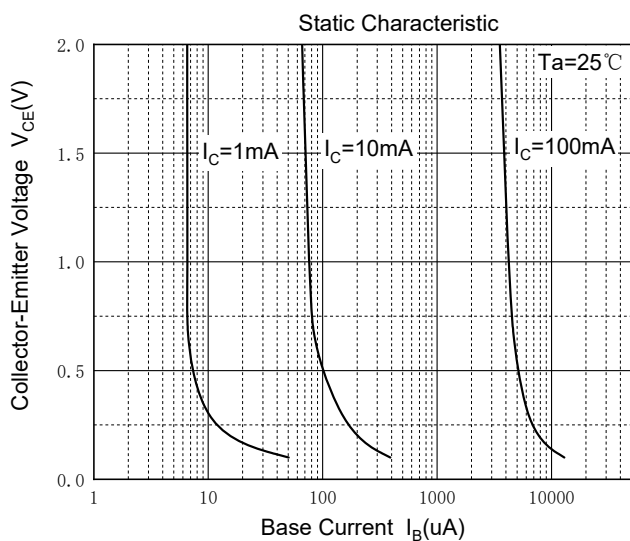
■ Other Characteristics (Ta=25°C Unless otherwise specified)

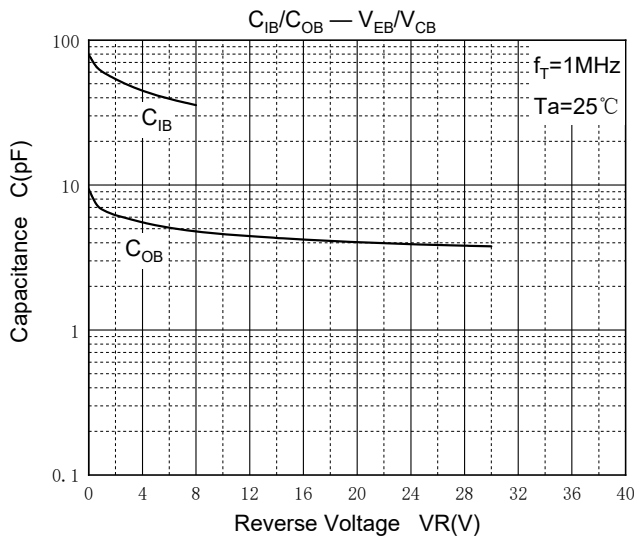
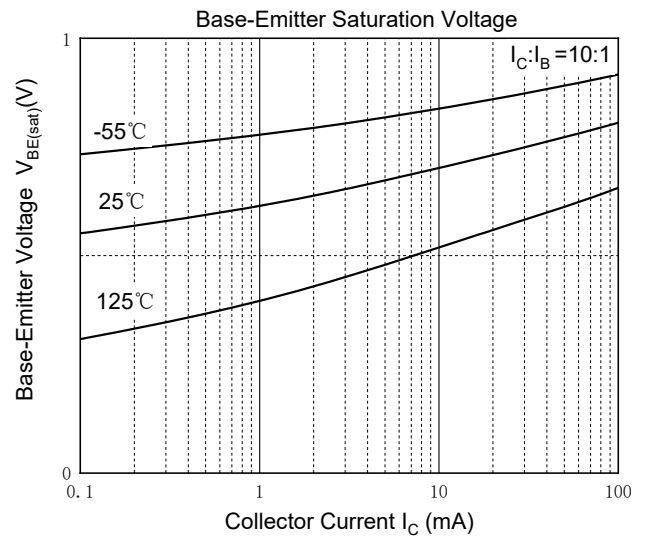
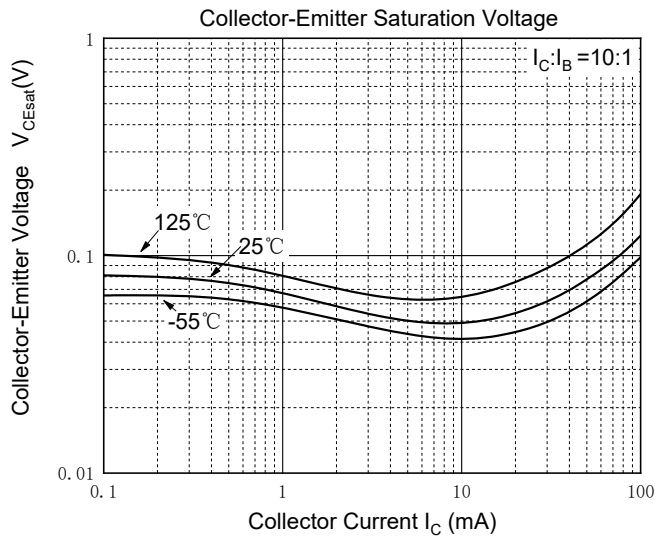
Item	Symbol	Unit	Conditions	Min	Max
Transition frequency	f_t	MHz	$V_{CE}=20V, I_C=10mA, f=30MHz$	50	

■ Ordering Information (Example)

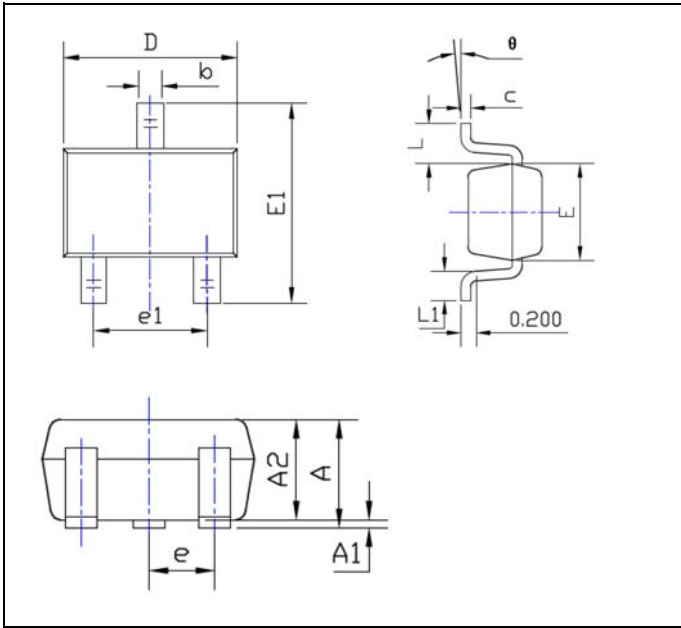
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMSTA42Q	F2	Approximate 0.006	3000	30000	120000	7" reel

■ Characteristics (Typical)



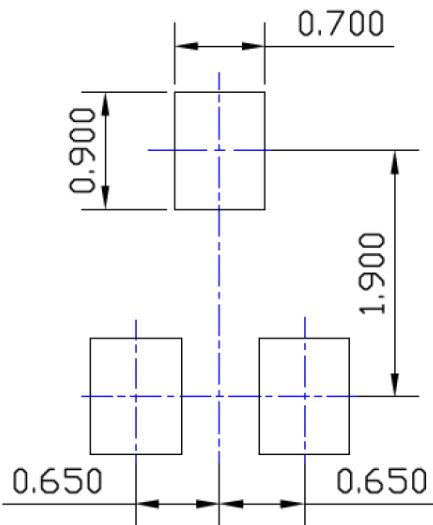


■ SOT-323 Package Outline Dimensions



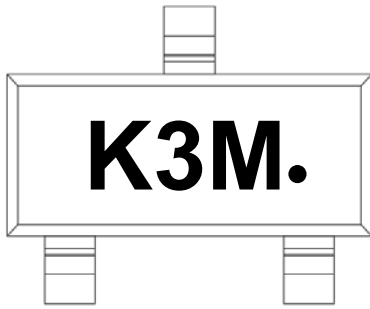
SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	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



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