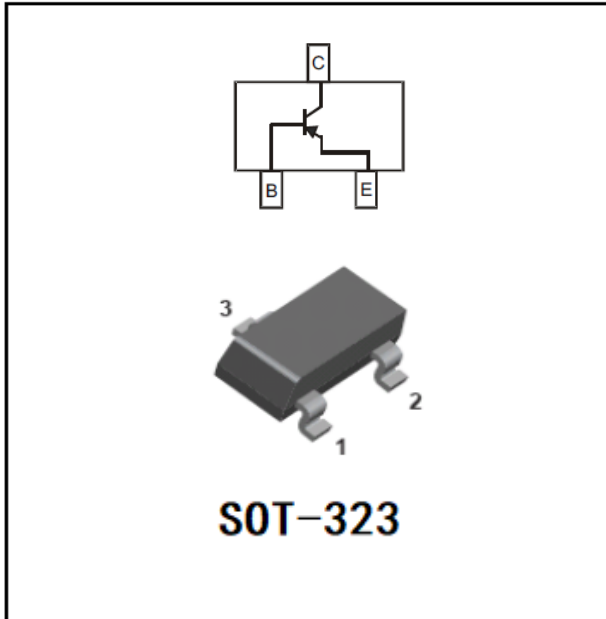


## PNP General Purpose Amplifier



### Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Part no. with suffix "Q" means AEC-Q101 qualified

### Application

- Ideal for general purpose amplification and switching

### Mechanical Data

- **Package:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K4M

### ■Maximum Ratings (Ta=25°C)

Item	Symbol	Unit	Value
Collector-Emitter Voltage	$V_{CEO}$	V	-150
Collector-Base Voltage	$V_{CBO}$	V	-160
Emitter-Base Voltage	$V_{EBO}$	V	-5.0
Collector Current	$I_C$	mA	-600
Collector Power Dissipation (*)	$P_C$	mW	200
Thermal Resistance Junction to Ambient (*)	$R_{thJA}$	K/W	625
Operation Junction Temperature	$T_j$	°C	150
Storage Temperature	$T_{stg}$	°C	-55 to +150

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



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## ■Electrical Characteristics (T<sub>a</sub>=25°C)

Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V <sub>CEO</sub>	V	I <sub>C</sub> = -1.0mA, I <sub>B</sub> =0	-150	
Collector-Base Voltage	V <sub>CBO</sub>	V	I <sub>C</sub> = -100uA, I <sub>E</sub> =0	-160	
Emitter-Base Voltage	V <sub>EBO</sub>	V	I <sub>E</sub> = -10uA, I <sub>C</sub> =0	-5	
Collector-Base Cut-off Current	I <sub>CBO</sub>	nA	V <sub>CB</sub> = -120V, I <sub>E</sub> =0		-50
Emitter-Base Cut-off Current	I <sub>EBO</sub>	nA	V <sub>EB</sub> = -3V, I <sub>C</sub> =0		-50
DC Current Gain	h <sub>FE</sub>		V <sub>CE</sub> = -5.0V, I <sub>C</sub> = -1.0mA	50	
			V <sub>CE</sub> = -5.0V, I <sub>C</sub> = -10mA	60	300
			V <sub>CE</sub> = -5.0V, I <sub>C</sub> = -50mA	50	
Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	V	I <sub>C</sub> = -50mA, I <sub>B</sub> = -5.0mA		-0.5
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	V	I <sub>C</sub> = -50mA, I <sub>B</sub> = -5.0mA		-1.0
Transition frequency	f <sub>T</sub>	MHZ	I <sub>C</sub> = -10mAdc, V <sub>CE</sub> = -10V, f=100MHZ	100	300

## ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMST5401Q	F2	Approximate 0.005	3000	30000	120000	7" reel

## ■Characteristics(Typical)

Fig.1 - Static characteristic

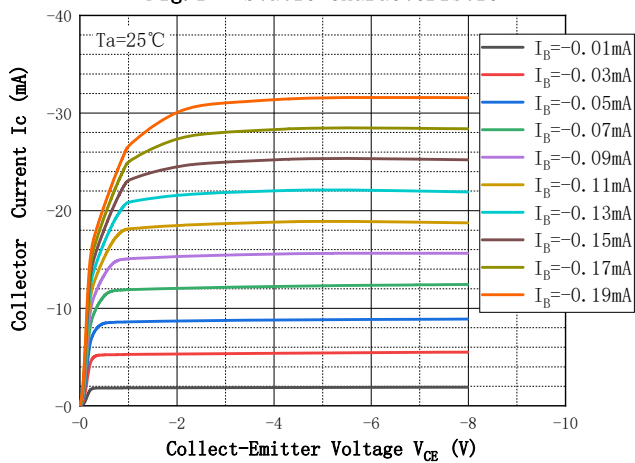
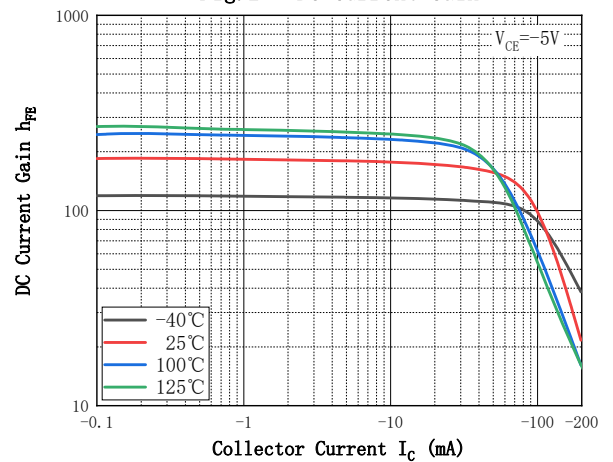


Fig.2 - DC Current Gain





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Fig. 3 - Collect-Emmitter Saturation Voltage

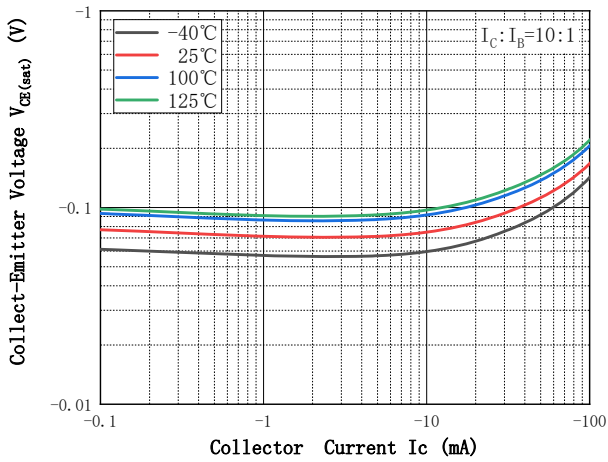


Fig. 4 - Base-Emmitter Voltage

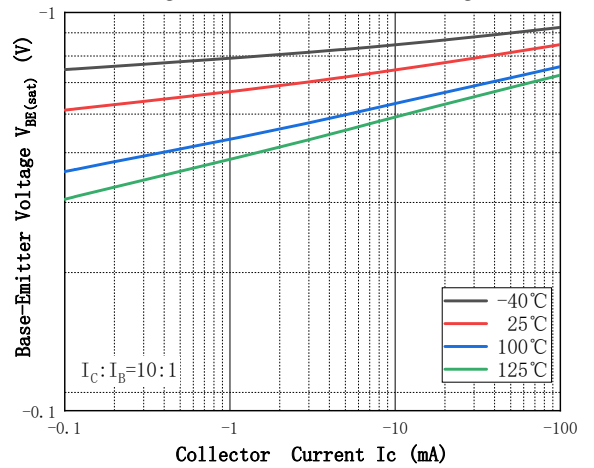


Fig. 5 - Base-Emmitter On Voltage

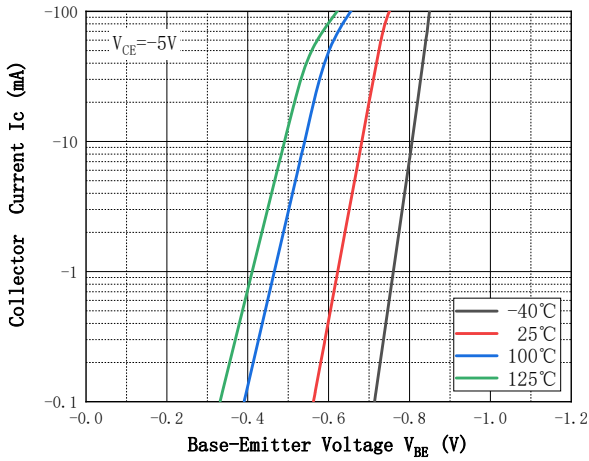
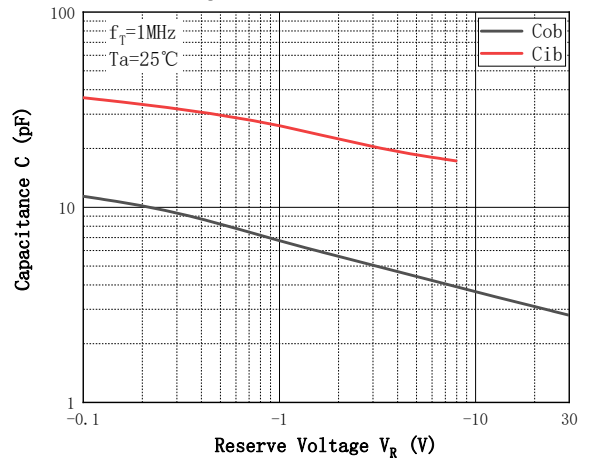


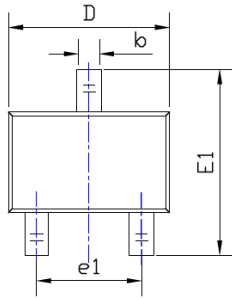
Fig. 6 - Cob/Cib—VCB/VEB



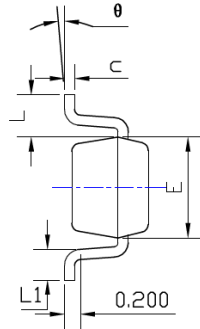


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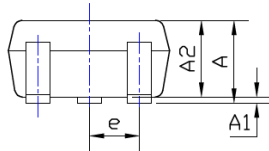
## ■SOT-323 Package Outline Dimensions & Suggested Pad Layout



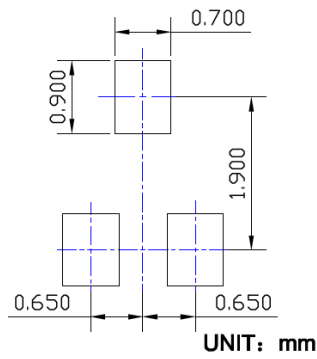
TOP VIEW



SIDE VIEW



SIDE VIEW



UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

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
theta	0°	8°	0°	8°

- NOTE:**  
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.



## MMST5401Q

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