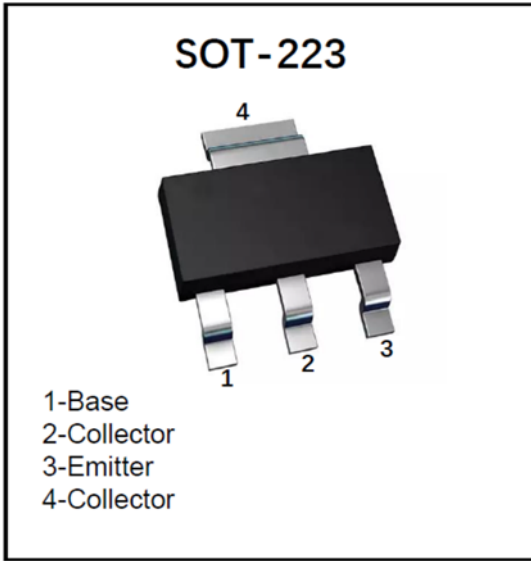


## NPN Transistor



### Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insert ion

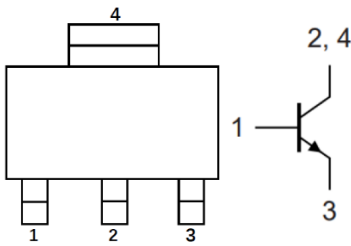
### Application

- Signal amplification
- Switching circuit

### Mechanical data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■Equivalent circuit



### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				ZT4401
Collector-base voltage	$V_{CBO}$	V	$I_C=100\mu\text{A}$ , $I_E=0$	60
Collector-emitter voltage	$V_{CEO}$	V	$I_C=1\text{mA}$ , $I_B=0$	40
Emitter-base voltage	$V_{EBO}$	V	$I_E=100\mu\text{A}$ , $I_C=0$	6
Collector current	$I_C$	mA		600
Power dissipation	$P_D$	W		0.5
Operation junction temperature	$T_J$	$^\circ\text{C}$		-55 to +150
Storage temperature	$T_{STG}$	$^\circ\text{C}$		-55 to +150



# PZT4401

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

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =100μA, I <sub>E</sub> =0	60		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0	40		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =100μA, I <sub>C</sub> =0	6		
Collector-base cut-off current	I <sub>CBO</sub>	nA	V <sub>CB</sub> =60V			50
Emitter-base cutoff current	I <sub>EBO</sub>	nA	V <sub>EB</sub> =6V			50
DC current gain	h <sub>FE1</sub>		V <sub>CE</sub> =1V, I <sub>C</sub> =0.1mA	20		
	h <sub>FE2</sub>		V <sub>CE</sub> =1V, I <sub>C</sub> =1mA	40		
	h <sub>FE3</sub>		V <sub>CE</sub> =1V, I <sub>C</sub> =10mA	80		
	h <sub>FE3</sub>		V <sub>CE</sub> =1V, I <sub>C</sub> =150mA	100		300
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	V	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA			0.4
			I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			0.75
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	V	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA			0.95
			I <sub>C</sub> =500mA, I <sub>B</sub> =50mA			1.2

## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	250
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	50

Note1: The device is installed and tested on 25.4 \* 25.4 \* 1.5mm P.C.B.

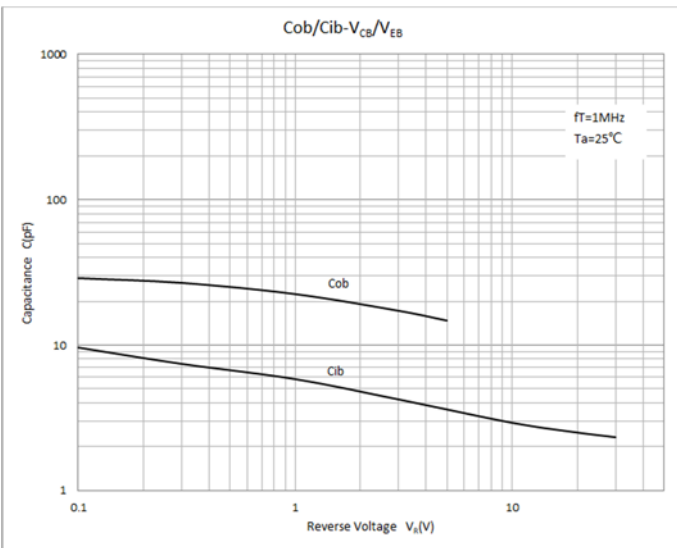
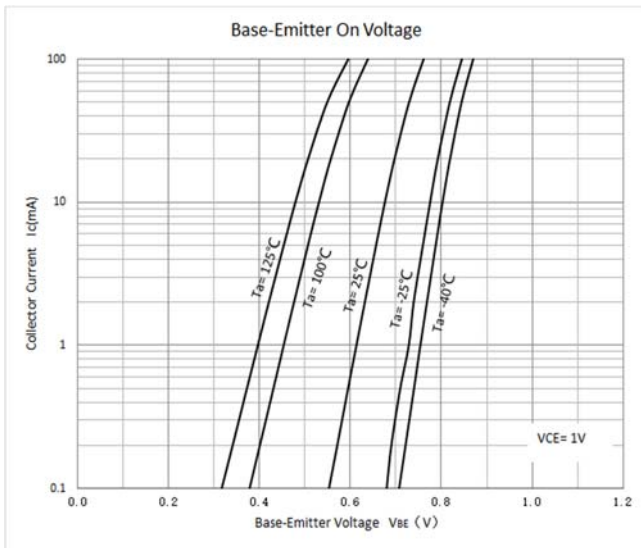
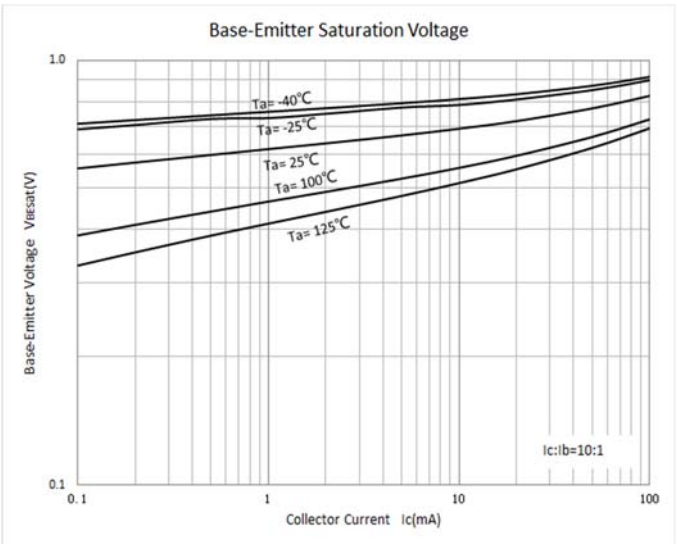
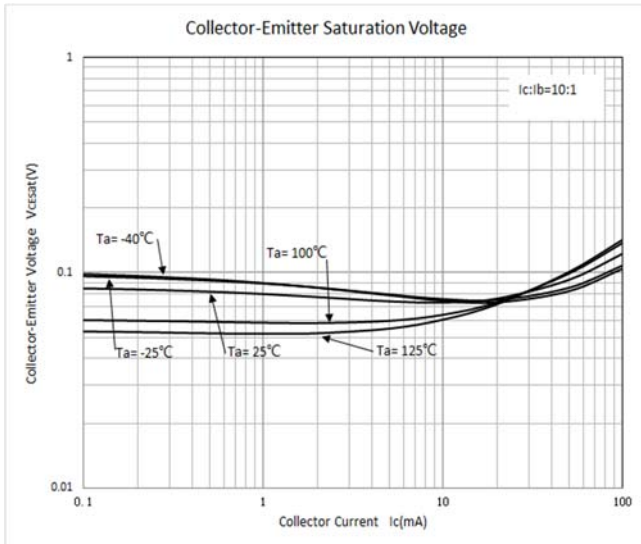
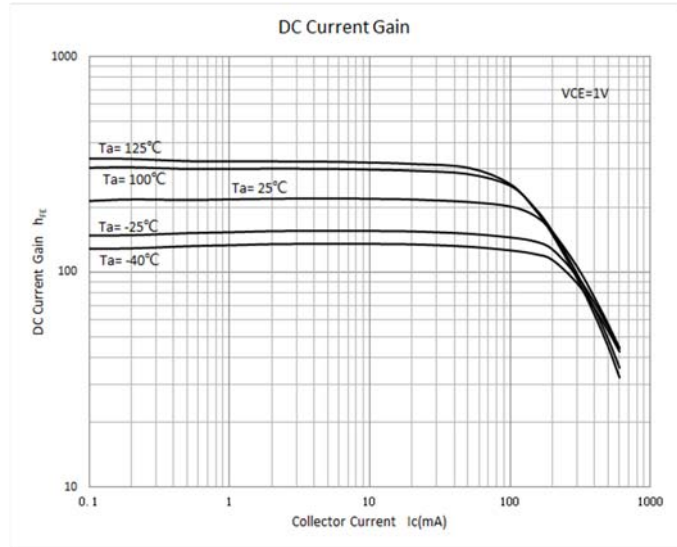
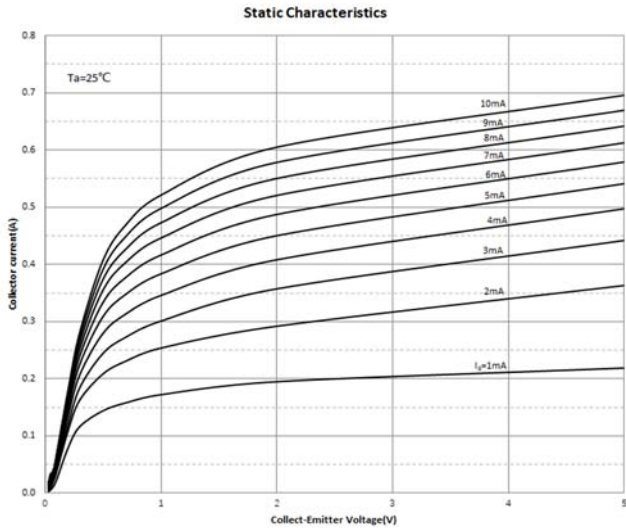
## ■ Ordering Information

Preferred P/N	Package code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PZT4401	F2	Approximate 0.11	2500	5000	25000	13" reel



# PZT4401

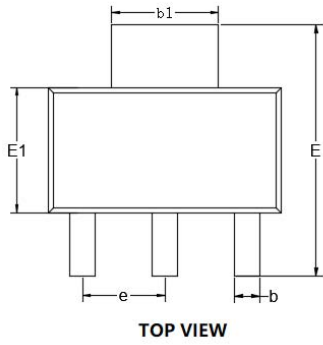
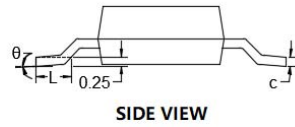
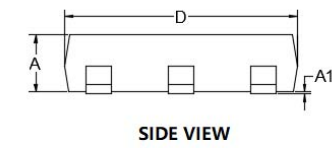
## ■ Characteristics(Typical)





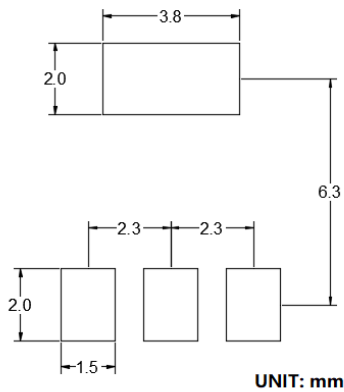
# PZT4401

## ■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MM	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
$\theta$	0°	10°	0°	10°

## ■ Suggested Pad Layout





## PZT4401

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