

NPN Transistor



Features

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

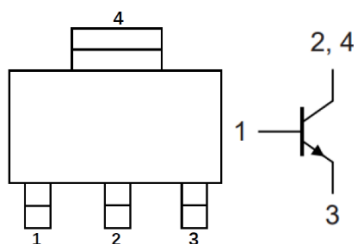
Application

- 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				CZT31C
Collector-base voltage	V_{CBO}	V	$I_C=10\text{mA}$, $I_E=0$	100
Collector-emitter voltage	V_{CEO}	V	$I_C=100\mu\text{A}$, $I_B=0$	100
Emitter-base voltage	V_{EBO}	V	$I_E=100\mu\text{A}$, $I_C=0$	5
Collector current	I_C	A		3
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



CZT31C

RoHS
COMPLIANT

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =10mA, I _E =0	100		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =100uA, I _B =0	100		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100uA, I _C =0	5		
Collector-base cut-off current	I _{CBO}	mA	V _{CB} =100V			0.2
Collector-emitter cutoff current	I _{CEO}	mA	V _{CE} =60V			0.3
Emitter-base cutoff current	I _{EBO}	mA	V _{EB} =5V			1.0
DC current gain	h _{FE}		V _{CE} =4V, I _C =1A	25		
			V _{CE} =4V, I _C =3A	10		100
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =3A, I _B =375mA			1.2
Base-Emitter Voltage	V _{BE(ON)}	V	I _C =3A, V _{CE} =4V			1.8

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	250
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	50

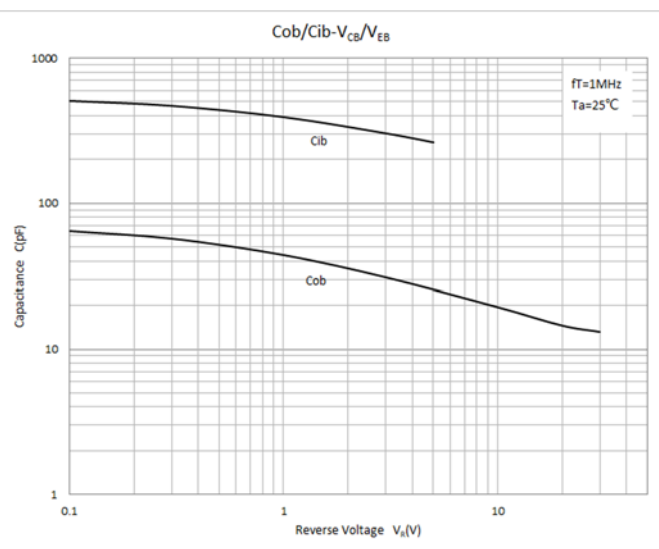
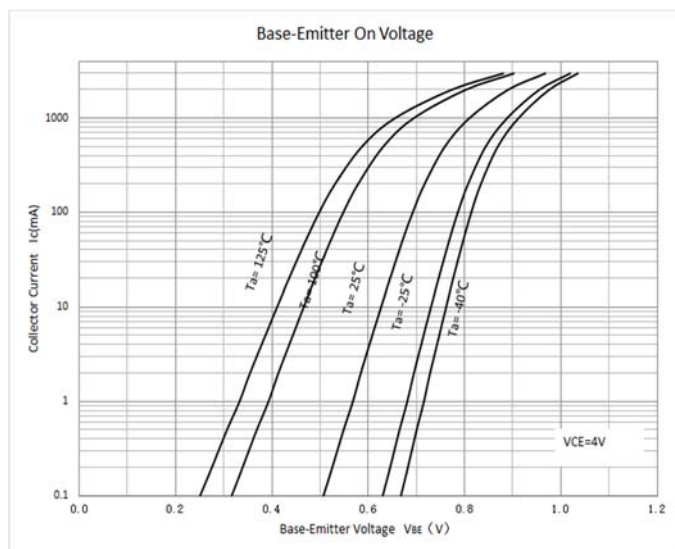
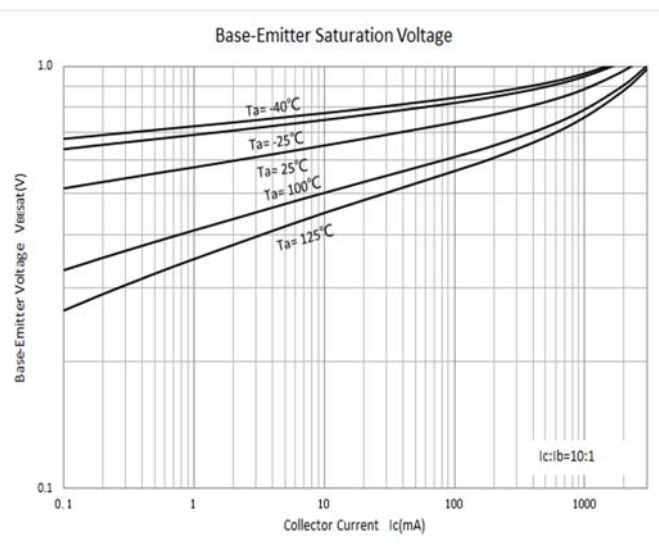
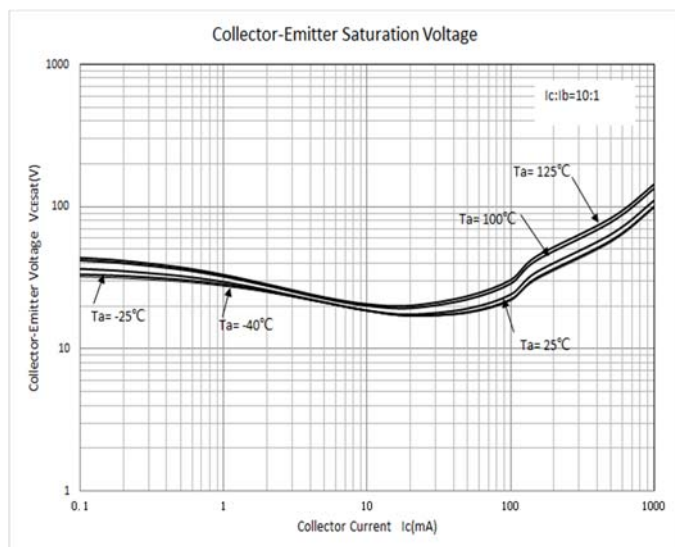
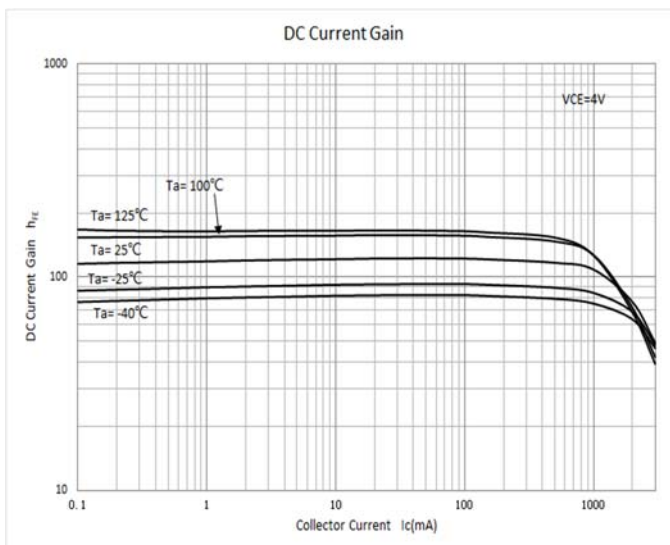
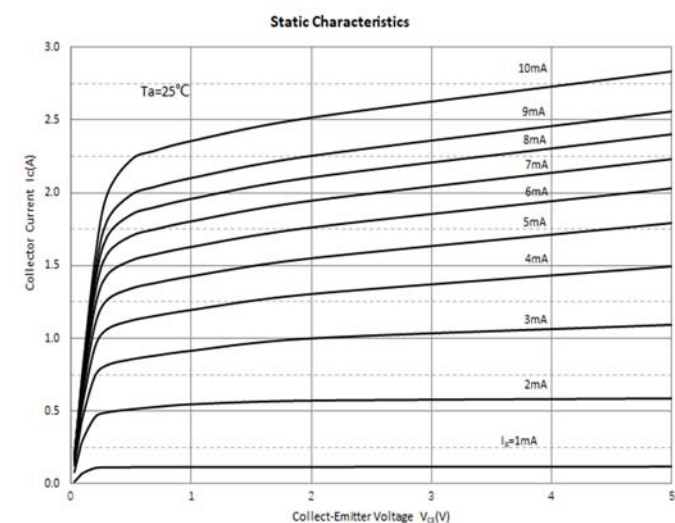
Note1: The device is installed and tested on 25.4 * 25.4 * 1.5mm P.C.B.

■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
CZT31C	F2	Approximate 0.11	2500	5000	25000	13" reel



■ Characteristics(Typical)

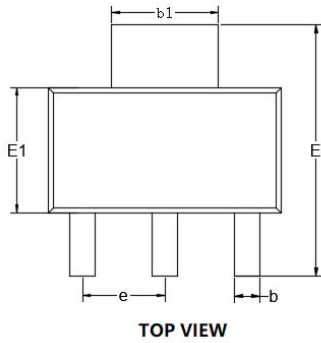
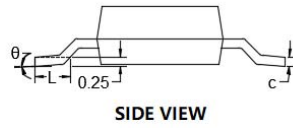
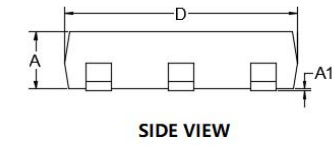




CZT31C

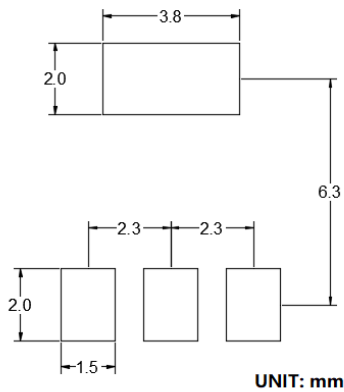
RoHS
COMPLIANT

■ 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
θ	0°	10°	0°	10°

■ Suggested Pad Layout





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