



NO.	ECAB2412182
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Acknowledgement Book

Customer : _____

Production name: SMD SEAM SEALING X'TAL 3.2*2.5

Nominal Freq. : 16.000000 MHz

Customer P/N : _____

ECEC P/N : M16000c346

Receiver

Please return one after acknowledgement

JinHua East Crystal Electronic Co.,Ltd.

Approved By	MFG	QA	PE/RD
总经理: 骆红莉	副总: 郭雄伟	副总: 黄文俊	部长: 王晓东
2024/12/27	2024/12/27	2024/12/27	2024/12/27

公司名称: **东晶电子金华有限公司**

Corporation: JinHua East Crystal Electronic Co.,Ltd.

地址: 浙江省金华市宾虹路二段555号

ADD: No 555,Sec 2,Binghong Road Jinhua Zhejiang , P.R.C

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BOOK OF MODIFICATION

No.	DATE	CONTENT OF MODIFICATION	REASON OF MODIFICATION	PAGE	ITEM	APPROVE
0	2024/12/27	INITIAL RELEASED				
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ECEC	ECEC P/N: M16000c346	No:	ECAB2412182
		Date:	2024/12/27

SPECIFICATION OF QUARTZ CRYSTAL UNITS

1.HOLDER TYPE: **SMD SEAM SEALING X'TAL 3.2*2.5**
16.000000 MHz

2. ELECTRICAL SPECIFICATIONS

Standard atmospheric conditions

Unless otherwise specified, the standard range of atmospheric conditions for making measurement

- Ambient temperature : 25±3℃
- Relative humidity : 40% ~ 70%

If there is any doubt about the results ,measurement shall be made within the following limits .

- Ambient temperature : 25±3℃
- Relative humidity : 40% ~ 70%

Electrical characteristics measured by S&A250B or equivalent .

The crystal is using AT CUT (thickness shear mode).

3.ELECTRICAL CHARACTERISTICS

	Parameters	SYM	Electrical Spec				Notes
			MIN	TYP	MAX	UNITS	
1	Nominal Frequency	FL	16.000000			MHz	
2	Oscillation mode	-	Fundamental			-	
3	Load Capacitance	CL	9			pF	
4	Frequency Tolerance	-	±10			ppm	at 25±3℃
5	Operating Temperature	-	-40	~	85	℃	
6	Temperature drift (TC)	-	±25			ppm	-40℃ ~ +85℃
	Temperature drift (TC)	-					
8	Equivalent Resistance Rr	Rr	-	-	60	Ω	
9	Drive Level	DL	0.01	10	100	uW	
10	Shunt Capacitance C0	C0	-	-	2.00	pF	
11	Insulation Resistance	-	500	-	-	MΩ	at DC 100V
12	Aging	-	±3			ppm	Year
13	Storage Temperature Range	-	-55	~	125	℃	

■ **FACTORY LOCATION**

ECEC CORPOTATION
No 555,Sec 2,Binghong Road Jinhua Zhejiang , P.R.C

JinHua East Crystal Electronic Co.,Ltd.	DESIGN	INSPECTION
	郑紫薇	王晓东



ECEC P/N: M16000c346

No:

ECAB2412182

Date:

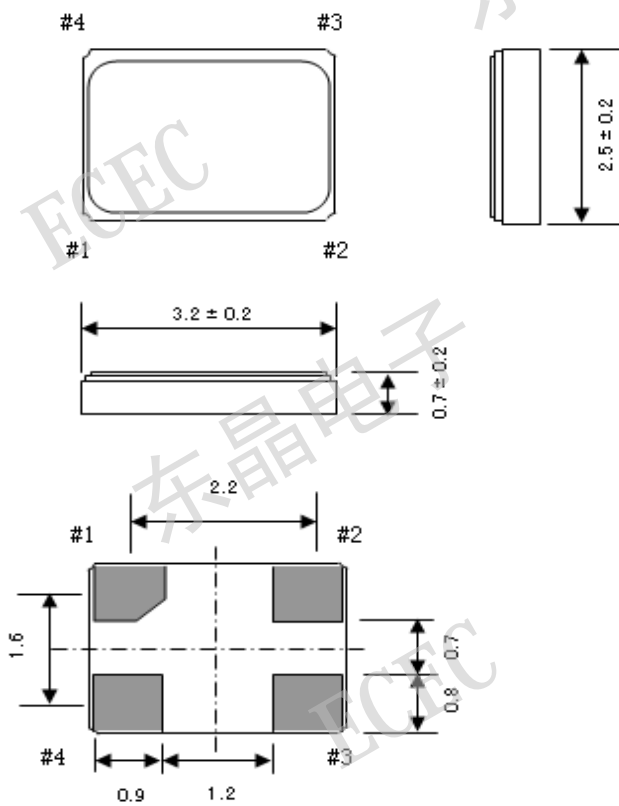
2024/12/27

4.DIMENSIONS AND MARKING

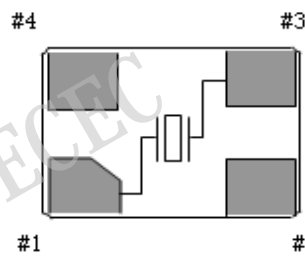
4-1 HOLDER TYPE

SMD SEAM SEALING X'TAL 3.2*2.5
16.000000 MHz

4-2 DIMENSION (mm)

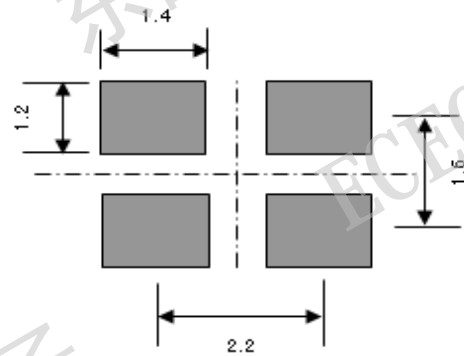


***Internal Connections(Top View)**



#1,#3 connected to quartz element
#2,#4 connected to the cover

***Suggested solder pad layout**



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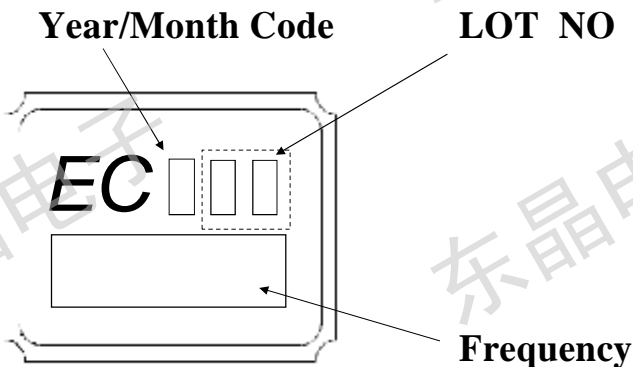
郑紫薇

INSPECTION

王晓东

ECEC	ECEC P/N: M16000c346	No: ECAB2412182
		Date: 2024/12/27

4-3 MARKING



Frequency: as shown in the table

EX)

Frequency	4.000MHz	16.9344MHz	40.000MHz
Frequency Code	4000	16934	40000

Year/Month code:as shown in the table

EX) December of 2020 shall be marked as "z"

Four year 1 cycle

Year										Month											
										Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2001	2009	2017	2025	2033	2041	2049	2057	2065	2073	A	B	C	D	E	F	G	H	J	K	L	M
2002	2010	2018	2026	2034	2042	2050	2058	2066	2074	N	P	Q	R	S	T	U	V	W	X	Y	Z
2003	2011	2019	2027	2035	2043	2051	2059	2067	2075	a	b	c	d	e	f	g	h	j	k	l	m
2004	2012	2020	2028	2036	2044	2052	2060	2068	2076	n	p	q	r	s	t	u	v	w	x	y	z
2005	2013	2021	2029	2037	2045	2053	2061	2069	2077	A	B	C	D	E	F	G	H	J	K	L	M
2006	2014	2022	2030	2038	2046	2054	2062	2070	2078	N	P	Q	R	S	T	U	V	W	X	Y	Z
2007	2015	2023	2031	2039	2047	2055	2063	2071	2079	a	b	c	d	e	f	g	h	j	k	l	m
2008	2016	2024	2032	2040	2048	2056	2064	2072	2080	n	p	q	r	s	t	u	v	w	x	y	z

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ECEC

ECEC P/N: M16000c346

No:

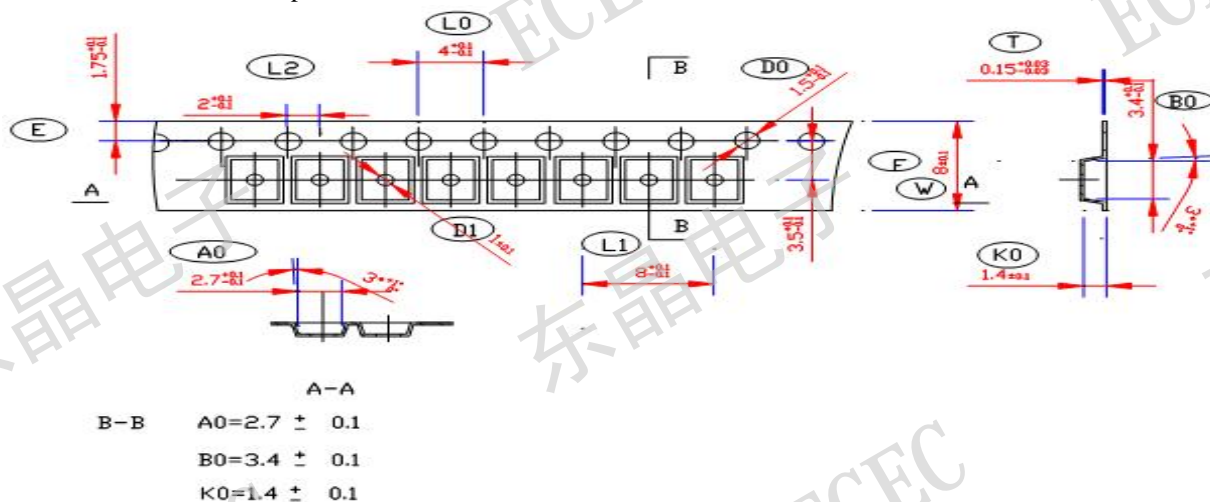
ECAB2412182

Date:

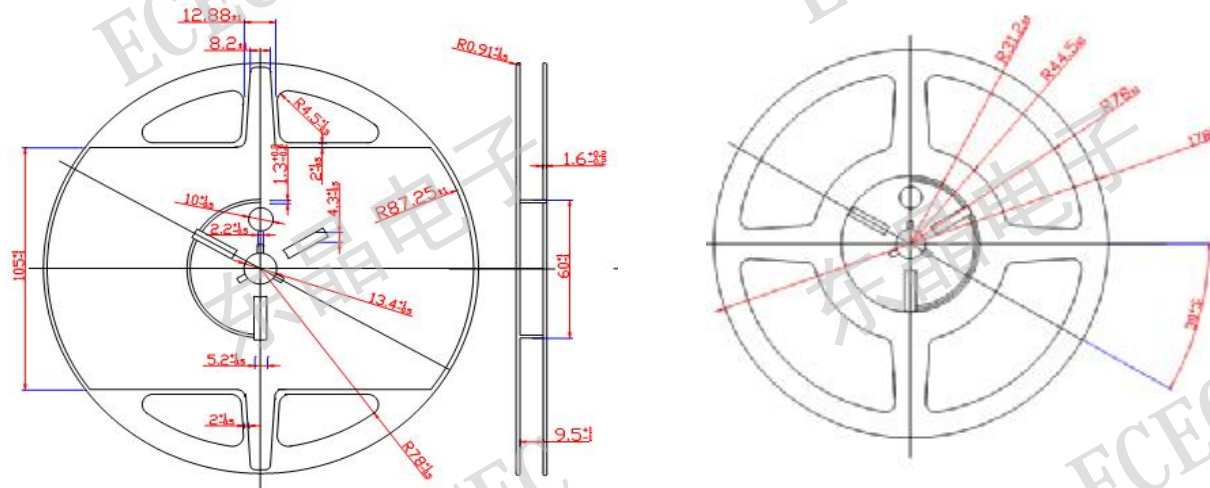
2024/12/27

4-4 PACKING

4-4-1 Dimensions of the tape



4-4-2 Dimensions of the reel

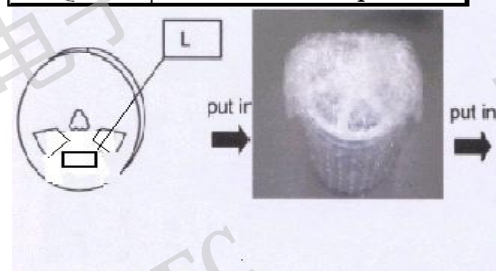


4-4-3 Packing and Label

QUARTZ CRYSTAL UNITS	
P/O	
P/N	
HOLD	
FREQ.	MHz
Q'TY	Kpcs



Box type(Reel quantity)	Box size(L×W×H) mm
Atype (Reel x 5pcs max)	200×200×140
Btype (Reel x 6~15pcs)	200×200×255
Ctype (Reel x 16~30pcs)	395×200×255
Dtype (Reel x 31~60pcs)	395×400×255



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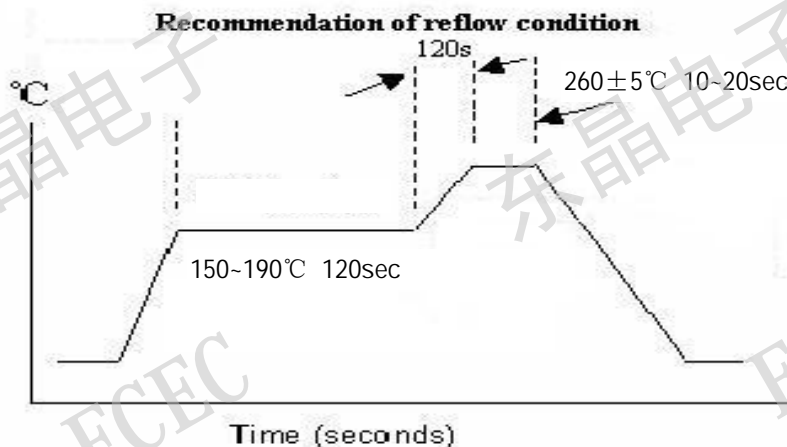
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5-5.REFLOW(WAVE)SOLDERING

Following profile of heat stress is applied to resonator,then being place in the natural condition for 1 hour,resonator shall be measured.



5-6.SOLDERING DIP

Terminals/lead-wires of specimen shall be dipped into solder melter tank at +260°C±5°C for 3 sec.

Dipping depth shall be 2mm from the bottom of specimens body.(After applying ROSIN FLUX) soldering portion shall be covered in over 95% of Terminals/lead-wires dipped.

5-7.HUMIDITY

Electrical characteristics shall be satisfied after letting it alone at 65±2°C in humidity of 90~95% for 500 hours.

5-8.STORAGE IN LOW TEMPRATURE

Electrical characteristics shall be satisfied after letting it alone at -40±2°C for 500 hours.

5-9.STORAGE IN HIGH TEMPRATURE

Electrical characteristics shall be satisfied after letting it alone at 85±2°C for 500 hours.

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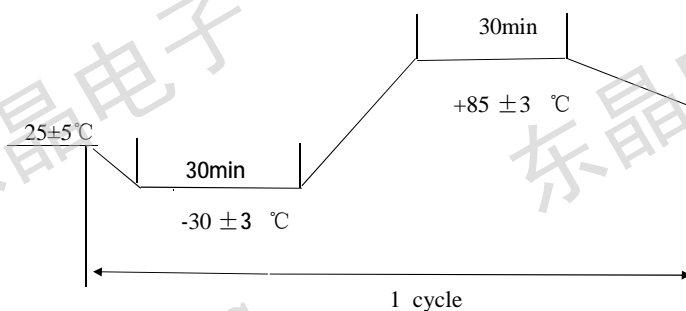
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5-10.TEMPERATURE CYCLE

Electrical characteristics shall be satisfied after supplying the following temperature cycle(30cycle).Temperature shift from low to high, high to low shall be done in 1°C/sec.



Spec of the reliability test

List 1

Item	ΔF	ΔCI
5-1	≅5PPM MAX	≅5Ω or 20% MAX
5-2		
5-5		
5-7		
5-8		
5-9		
5-10		

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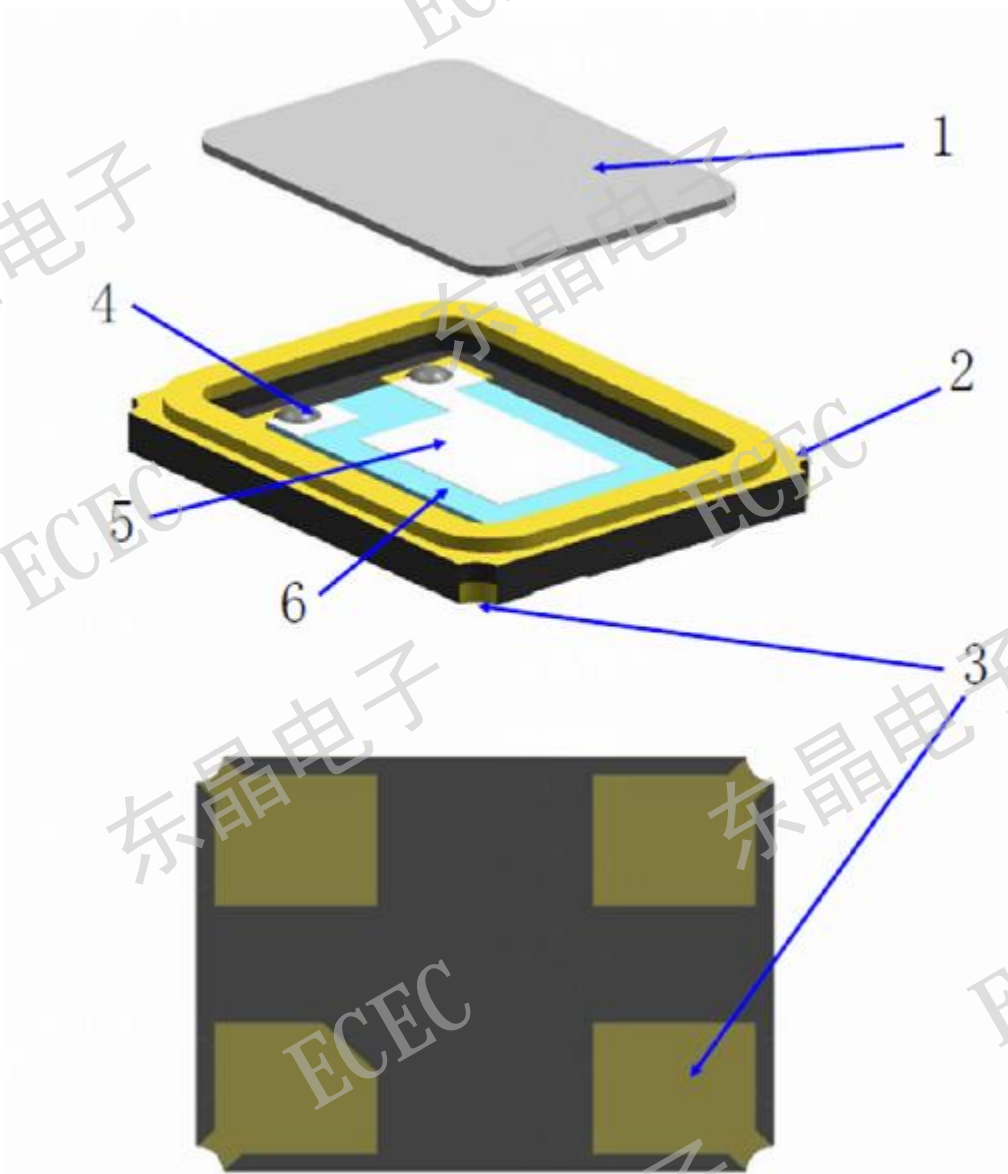
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6. Structure Illustration



No.	Items	Materials
1	LID(Cap)	Fe ALLOY
2	PKG(Base)	CERAMIC+Au PLATING
3	External Electrode	Au PLATING
4	Conductive Adhesive	Ag+Slicon
5	Internal Electrode	Ag
6	Element(Blank)	SiO2

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