

APPROVAL SHEET

深圳市江波龙电子有限公司

Item : S3225A Crystal

Spec. no : S3225A-012000-T12-BDD-YLA

Freq : 12.000 MHz

Customer Approved	Checked By	Issued By
		

請自發行日起2週內簽回此份規格書，若未簽回，則視為同意此規格。

友桂電子股份有限公司

YOKETAN CORPORATION

E-mail: yoketec@ms14.hinet.net http:// www.yoketant.com.tw

台灣台中工廠 : (42760) 台中市潭子區台中加工出口區南二路28號-2

Tel: 886-4-25333353 Fax: 886-4-25338675

台灣台北公司 : (24250) 新北市新莊區新北大道三段5號9樓之3

Tel: 886-2-85227548 Fax: 886-2-85227546

中國深圳公司 : (518112) 深圳市龍崗區布吉街道百合星城百合酒店及
住宅樓D棟15I

Tel: 86-755-25936978 Fax: 86-755-25907970

中國無錫公司 : (214011) 無錫市崇安區廣益路291號哥倫布廣場A座708室

Tel: 86-510-88708842 Fax: 86-510-88211895



RoHS Compliant



SPECIFICATION OF CRYSTAL UNITS

YOKETAN CORP.

Customer : 江波龙

SPEC NO : S3225A-012000-T12-BDD-YLA

Date : 6-Feb-18

1 General

1-1 Enclosure:	S3225A (Lead Free Parts)
1-2 Application:	
1-3 Overtone Order :	Fundamental
1-4 Crystal unit Frequency :	12.000 MHz
1-5 Frequency Deviation :	
1-5-1 At Reference Temperature :	$\pm 10\text{ppm at } 25 \pm 3^{\circ}\text{C}$
1-5-2 At Operating Temperature :	$\pm 20\text{ppm in 1-6(Refer to } 25^{\circ}\text{C)}$
1-6 Operating Temperature Range :	$-40^{\circ}\text{C to } +85^{\circ}\text{C}$
1-7 Storage Temperature Range :	$-55^{\circ}\text{C to } +125^{\circ}\text{C}$

2 Circuit

2-1 Circuit :	S&A 250B
2-2 Load Capacitance :	$12\text{pF} \pm 0.3\text{pF}$
2-3 Level of Drive :	100uW

3 Electrical Performance

3-1 Equivalent Series Resistance:	Less than 120 ohms
3-2 Electrostatic Capacitance :	3.0pF Max.
3-3 Insulation Resistance :	More than 500Mohms at DC100V
3-4 Aging:	$\pm 2\text{ppm/year Max.}$

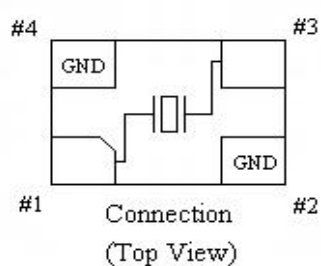
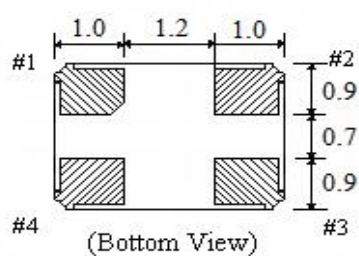
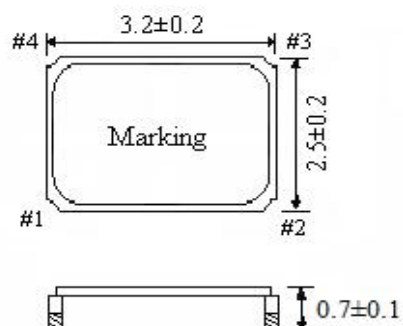
4 Marking

. 12.0Y

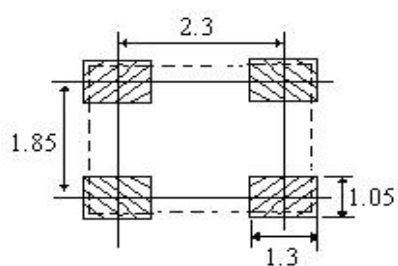
SPECIFICATION OF CRYSTAL UNITS

YOKETAN CORP.

Dimensions

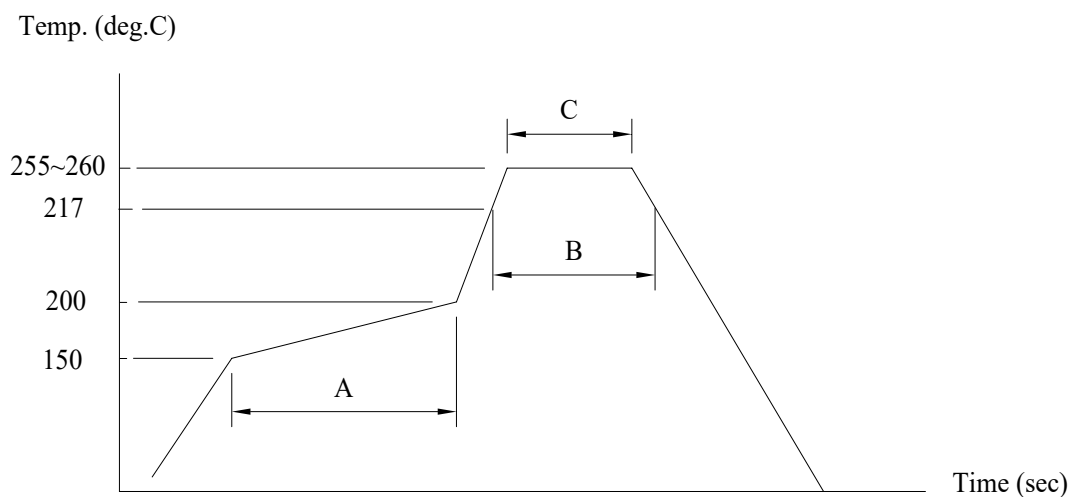


Recommended Soldering Pattern



	Date	Name	Unit : mm	
Drawn	21.Dec.2016	Leo	Title	Drawing No.
Checked	21.Dec.2016	Iris	Dimension of External	PKX-322507-1221
Approved	21.Dec.2016	Wan		

Soldering Reflow



(A)→Preheating area : 150~200°C, 60~120sec.

(B)→Heating area : 217°C, 60~150sec.

(C)→Peak temperature : 255~260°C, 30sec. Max.

Ramp-up rate (217→260°C) : 3°C/sec. Max.

Ramp-down rate (260→217°C) : 6°C/sec. Max.

Time 25°C→260°C : 480sec. Max.

*Referance JEDEC J-STD-020

Note:

The crystal characteristics may be affected and destroyed at worst by additional production process as ultrasonic welding or molding encapsulation.... Please be sure to check if this process affects any damage to crystal products prior to use.

SPECIFICATION OF CRYSTAL & OSC UNITS

YOKETAN CORP.

Reliability Test (applicable to SMD type OSC and X'tal)

Condition B.2

Test Items	Test Condition	Specification	
		General OSC (Note:1)((Note:3)	General X'tal (Note:2)
1. Gross Leak Test	Electronic test fluid 125°C/30sec	No continuous bubble	
2. Fine Leak Test	Bombing of He 4.5kg/cm ² for 1.5 hours	Less than 1*10 ⁻⁸ atm.c.c./sec, Helium	
3. Drop Test	a ~19.999MHz(Fund.) → 75 cm height b. 20~29.999MHz(Fund.) → 50 cm height c. 30~ MHz(Fund.) → 20 cm height on hard wooden surface / 3 times (thickness more than 30 mm)	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
4. Vibration Test	Freq. range: 10~55Hz Peak to peak amplitude:1.5mm 3 direction(X,Y,Z) , each 60min.	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
5. Shearing Test	Weight : 5N, Test duration : 10±1 sec	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
6. Substrate Bending Test	Test duration : 5±1 sec Amount of substrate : 3mm	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
7. Resistance to Soldering Test	IR Reflow furnace with the condition 2 times. Peak temp.260±3°C , 10sec(Min.)	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
8. Low Temp. Exposure Test	-40±3°C , 240±12 hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
9. Aging Test	125±3°C , 240±12hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
10. High Temp. & Humidity Test	+85°C±5°C & 85%±5% R.H. , 240±12 hrs	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$
11. Temperature Cycling Test	-40±3°C/15±3min ~ +85±3°C/15±3min 15cycles	$\Delta F \leq \pm 10\text{PPM}$, Duty within spec.	$\Delta F \leq \pm 10\text{PPM}$, $\Delta \text{C.I.} \leq \pm 10\text{ohms}$

Note:1 → For communication application the spec. demanded " $\Delta F \leq \pm 5 \text{ PPM}$, Duty within spec." °

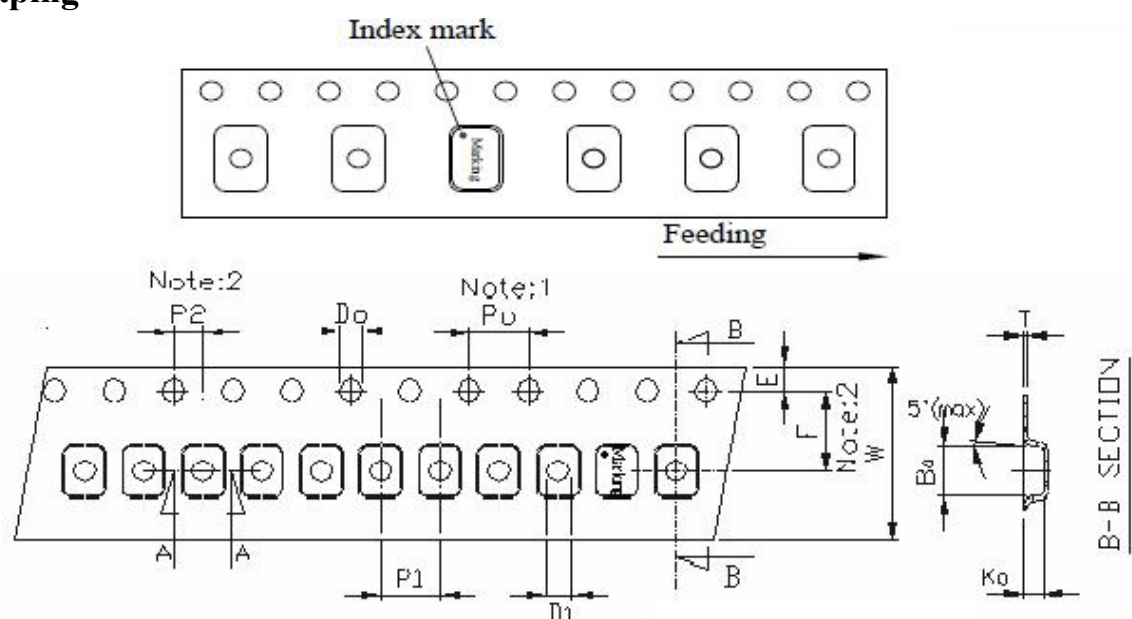
Note:2 → For communication application the spec. demanded " $\Delta F \leq \pm 5 \text{ PPM}$, $\Delta \text{C.I.} \leq \pm 5 \text{ ohms}$ " °

Note:3 → For TCXO series products demanded " $\Delta F \leq \pm 2 \text{ PPM}$, Duty(Vpp) within spec." °

SPECIFICATION OF TAPE & REEL

YOKETAN CORP.

Taping



Unit: mm

Symbol	Spec.
K1	-
Po	4.0 ± 0.10
P1	4.0 ± 0.10
P2	2.0 ± 0.10
Do	1.55 ± 0.05
D1	1.0 (MIN)
E	1.75 ± 0.10
F	3.50 ± 0.10
10Po	40.0 ± 0.10
W	8.0 ± 0.20
T	0.25 ± 0.05

$Ao = \frac{2.70 \pm 0.10}{mm}$
 $Bo = \frac{3.40 \pm 0.10}{mm}$
 $Ko = \frac{1.0 \pm 0.10}{mm}$

Notice:

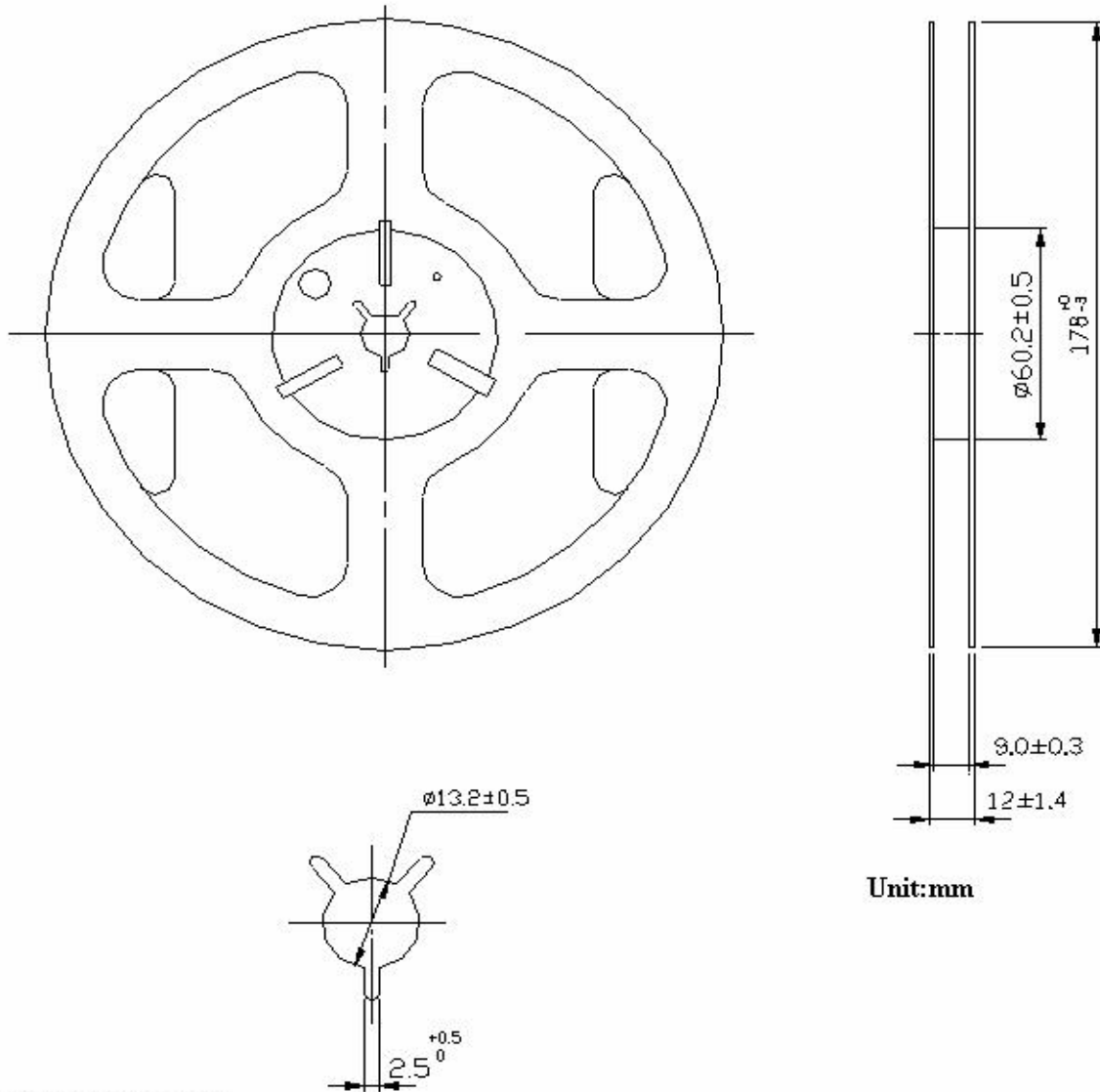
- 1.10 Sprocket hole pitch cumulative tolerance is $\pm 0.1mm$
2. Pocket position relative to sprocket hole measured as true position of pocket not pocket hole.
3. Ao & Bo measured on a place 0.3mm above the bottom of the pocket to top surface of the carrier.
4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
5. Carrier camber shall be not than 1mm per 100mm through a length of 250mm.

	Date	Name	Unit : mm	
Drawn	11.Jan.2018	Leo	Title	Drawing No.
Checked	11.Jan.2018	Iris	Tape & Reel Dimension	C009-020310-X-1106
Approved	11.Jan.2018	Wan		

SPECIFICATION OF TAPE & REEL

YOKETAN CORP.

Reel



Unit:mm

Q'ty:3000pcs/reel

	Date	Name	Unit : mm	
Drawn	22.Jan.2007	Leo	Title	Drawing No.
Checked	22.Jan.2007	Iris	Tape & Reel Dimension	C009-0709-A-1001
Approved	22.Jan.2007	Wan		