YOKE®

APPROVAL SHEET

Item : S3215C Crystal

Spec. no : S3215C-032768-12-20-CA

Freq : 32.768 KHz

Customer Approved	Checked By	Issued By
	陳慧美	

友桂電子股份有限公司

YOKETAN CORPORATION

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RoHS Compliant

YOKE®

REVISION HISTORY

Rev	Revise page	Revise Contents	Date	Ref.No.	Reviser
A	N/A	INITIAL ISSUE	2012/7/19	N/A	Aki Hsieh
A	Page.3	Add marking	2013/7/2	N/A	Aki Hsieh

SPECIFICATION OF CRYSTAL UNITS

YOKETAN CORP.

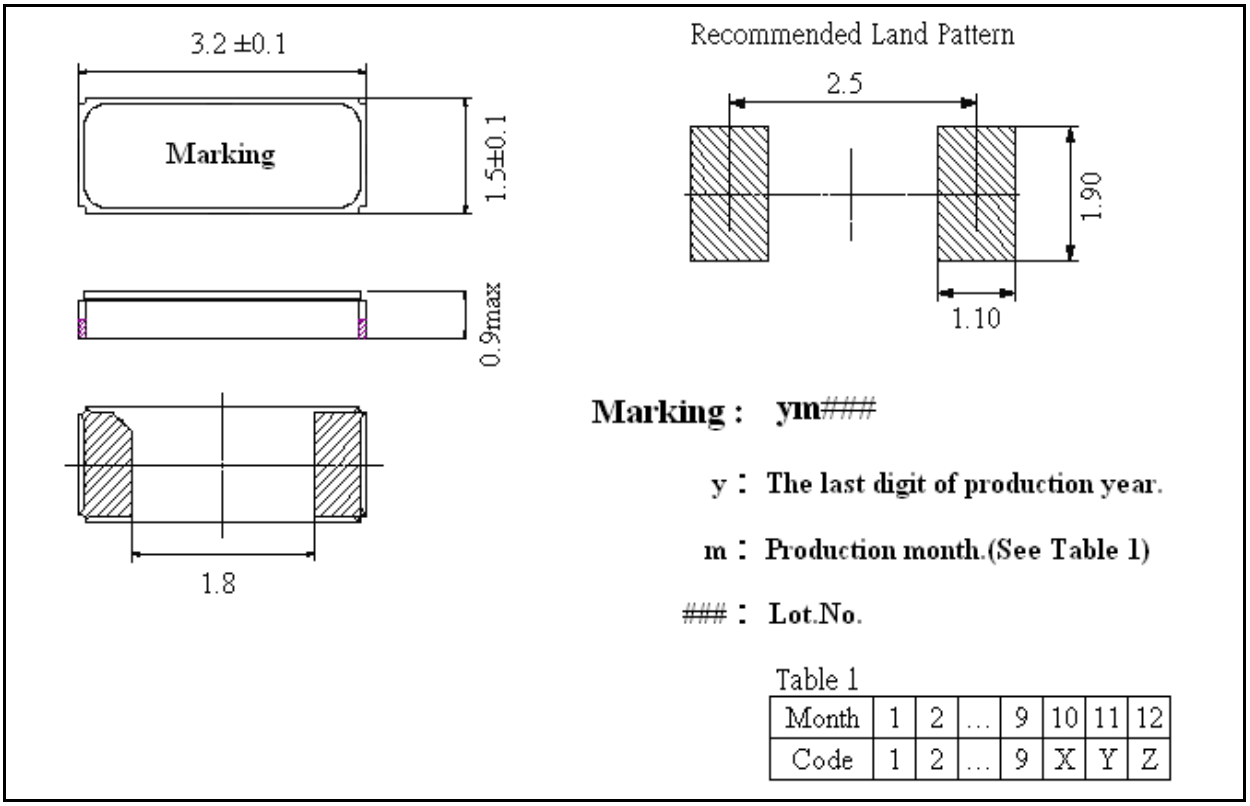
Customer ：捷盛

SPEC NO: S3215C-032768-12-20-CA
(Lead Free Parts)
Date: 19-Jul-12

SPECIFICATION OF CRYSTAL UNITS

1	Nominal frequency	32.768 KHz
2	Frequency tolerance	± 20ppm at 25 ± 2 ℃
3	Temperature characteristics	
	-Turnover temperature	25 ± 5 ℃
	-Temperature Coefficient	$-0.045x10^{-6}/℃^{2}$ Max.
4	Operating temperature	-40 to +85 degrees
5	Equiverent series resistance	70k ohms Max.
6	Load capacitance	12.5pF
7	Shunt capacitance	2.0pF Max.
8	Drive level	1.0uW Max.
9	Storage temperature	-55 to +125 degrees
10	Aging(First year)	± 3ppm Max.
11	Unit Net of Weight	0.012g ± 0.0006g

12 Dimension (unit: mm)



Marking : ym###

y： The last digit of production year.

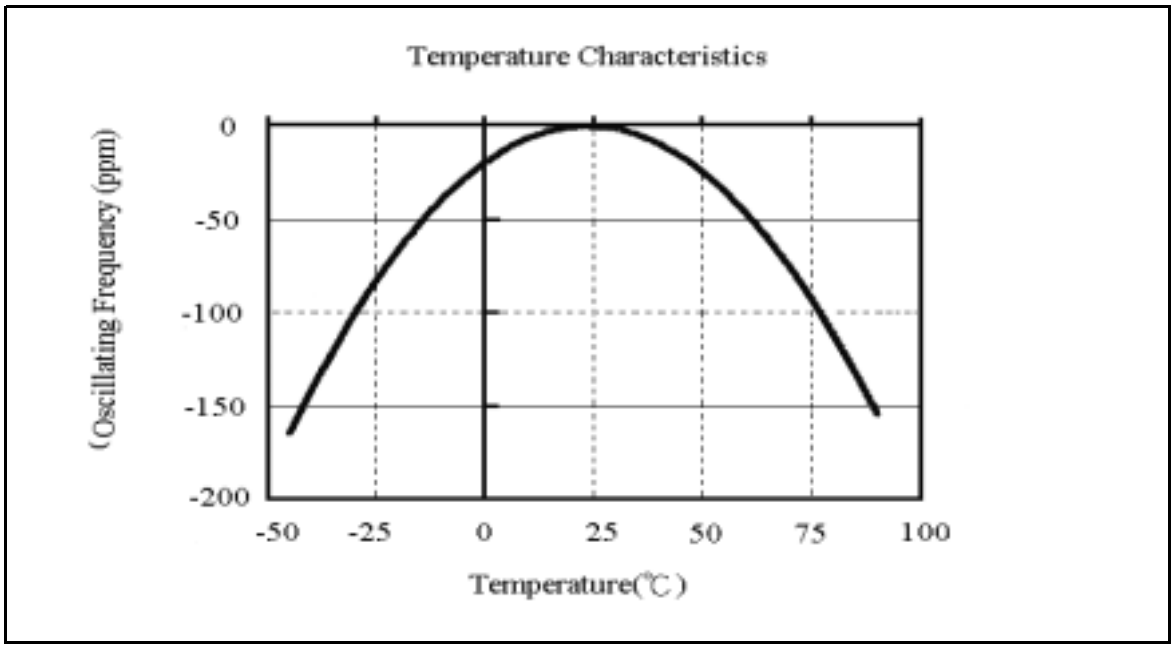
m： Production month.(See Table 1)

###： Lot.No.

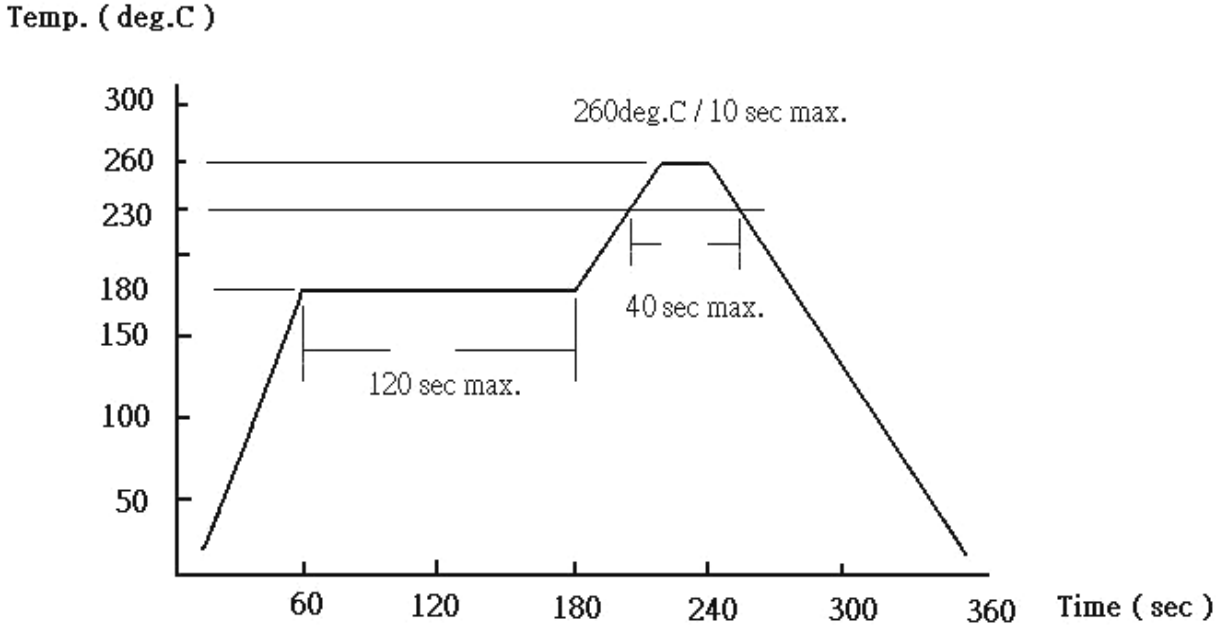
Table 1

Month	1	2	…	9	10	11	12
Code	1	2	…	9	X	Y	Z

13 Frequency VS Temperature



14 Soldering Reflow



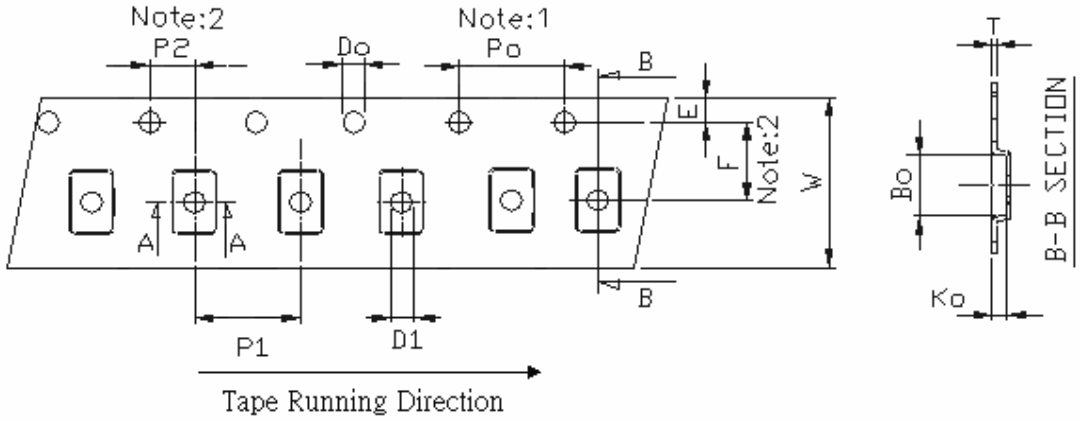
SPECIFICATION OF CRYSTAL UNITS YOKETAN CORP.

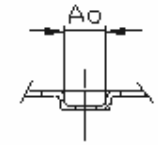
Reliability Test (applicable to 49(50) type .U type and Tuning Fork X'tal)

Test Items	Test Condition	Specification	
		Dip	SMD
1. Gross Leak Test	FC-40 125℃/30sec	No continuous bubble	
2. Fine Leak Test	Bombing of He 4kg/cm^2 for 2 hours	Less than 5*10^-8atm.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)	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
4. Vibration Test	Freq. range: 10~55Hz Peak to peak amplitude:1.5mm 3 direction(X,Y,Z)，each 60min.	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
5. Resistance to Soldering Test	a. IR Reflow furnace with the condition 2 times. Peak temp.260±3℃，10±1 sec.	NA	△F≦±10PPM , C.I within spec. For SMD type only.
	b. Dip terminals in a 245±5℃ solder station(pool) Dipping depth 0.5mm(Min) Dipping time 5±0.5 sec.	At least 90% by 30X magnification of each dipped area shall be covered by fresh solder. For DIP type only.	NA
6. Bending Test	Bending cycle : 1 cycle 0° - > 45° -> 0° -> 45° - > 0°	△F≦±5PPM , C.I within spec. For DIP type only.	NA
7. Shearing Test	Weight : 5N, Test duration : 10±1 sec	NA	△F≦±10PPM , C.I within spec. For SMD type only.
8. Low Temp. Exposure Test	-40±3℃, 240±12 hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
9. Aging Test	85±3℃, 240±12hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
10. High Temp. & Humidity Test	+85℃±5℃& 85%±5% R.H. , 240±12 hrs	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.
11. Temperature Cycling Test	-25±3℃/15±3min ~ +85±3℃/15±3min 15cycles	△F≦± 10PPM , C.I within spec.	△F≦±10PPM , C.I within spec.

SPECIFICATION OF TAPE & REEL YOKETAN CORP.

Taping





Ao= 1.90± 0.10 mm

Bo= 3.60± 0.10 mm

Ko= 1.0± 0.10 mm

Unit: mm

Symbol	Spec.
K1	–
Po	4.0± 0.10
P1	4.0± 0.10
P2	2.0± 0.05
Do	1.50± 0.10
D1	$1.0^{+0.2}_{-0}$
E	1.75± 0.10
F	5.50± 0.05
10Po	40.0± 0.10
W	12.0± 0.2
T	0.30± 0.05

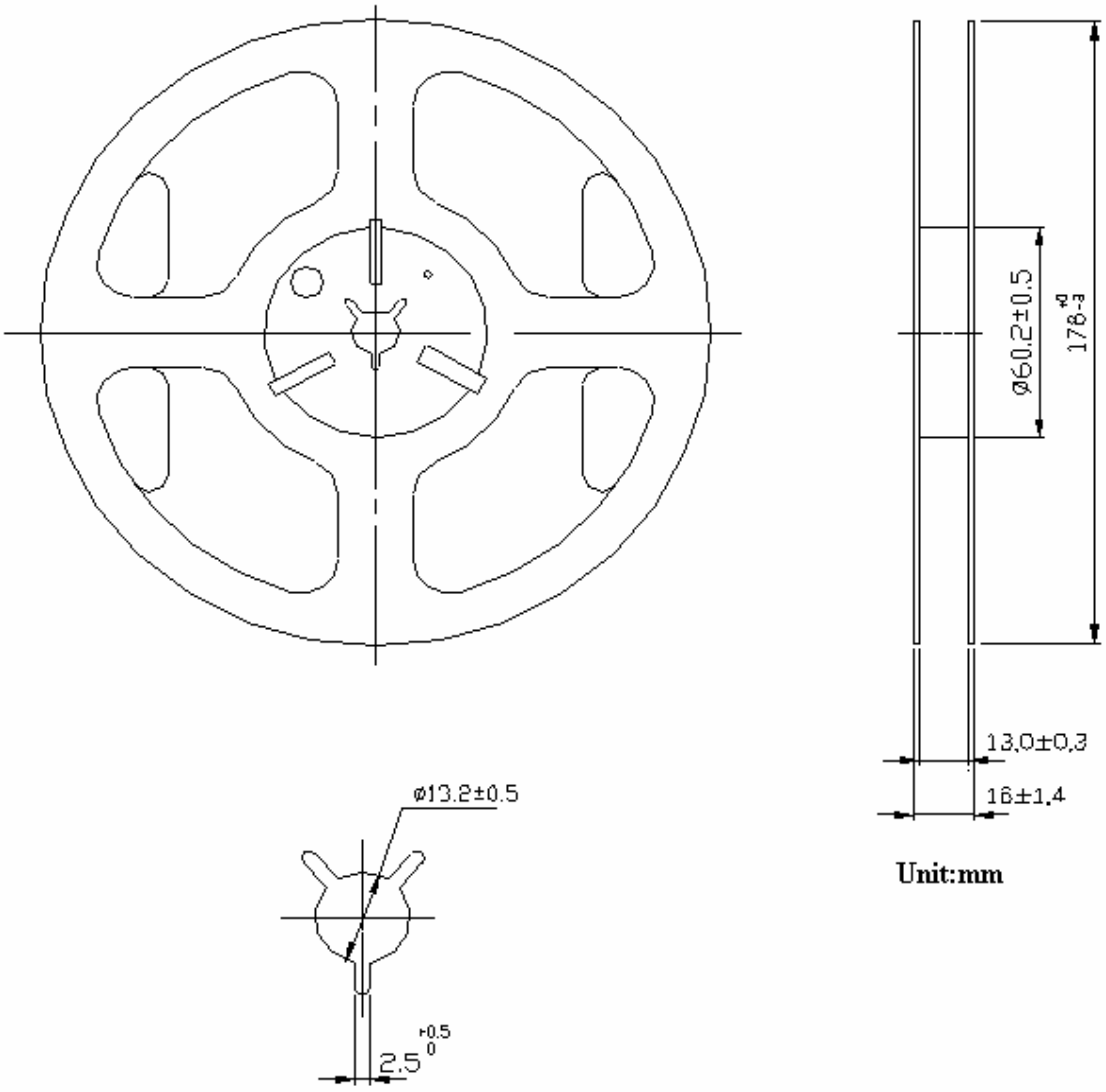
Notice:

1. 10 Sprocket hole pitch cumulative tolerance is ±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	**18.Jan.2007**	Leo	Title	Drawing No.
Checked	**18.Jan.2007**	Iris	**Tape & Reel Dimension**	**C009-010310-X-1001**
Approved	**18.Jan.2007**	Wan		

SPECIFICATION OF TAPE & REEL YOKETAN CORP.

Reel



Unit:mm

Q'ty:3000pcs/reel

	Date	Name	Unit : mm	
Drawn	**18.Jan.2007**	Leo	Title	Drawing No.
Checked	**18.Jan.2007**	Iris	**Tape & Reel Dimension**	**C009-0713-X-1001**
Approved	**18.Jan.2007**	Wan		