ShenzhenYangXing Technology Co.,Ltd.

SPECIFICATION

Type	QUARTZ CRYSTAL UNITS
Product name	YSX306GA
Ordering code	X803832768KID4GI
Description	32.768KHZ-6PF-20PPM
page	Total 8

APPROVED	CHECK	DESIGNER
Kevin	Sandy	Andy

APPROVAL SIGNATURE

Customer	
Customer P/N	
Description	

APPROVED	CHECK	DESIGNER

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REV.	Description of Revision History	Date	Engineer	Reviewer
A	The latest revision	2020 07 06	MAZHANJUN	CAI ANDY

CRYSTAL SPECIFICATION

1. Description Tuning Fork Quartz Crystal
2. Nominal Frequency 32.768KHz
3. Oscillation Mode Fundamental
4. Cutting Mode x +2° cut
5. Measurement Instrument S&A 250B(Calculated FL)
6. Electrical Characteristics

[1]Operation Conditions

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Operating Temperature Range	Topt	-40		85	℃	
Storage Temperature Range	Tstg	-55		125	℃	
Load Capacitance	CL		6		pF	
Drive Level	DL		0.1		uW	

[2]Frequency Stability :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Tolerance	dF/Fo	-20		20	ppm	Refer to Center Frequency@25±3℃
Stability Over Temperature	dF/F25		-0.036		ppm/℃²	Refer to Operating Temperature
Aging	dF/F25	-5		5	ppm	Per Year

dF/Fo:Frequency Deviation Refer to Center Frequency

dF/F25:Frequency Deviation Refer to 25℃ Frequency

[3]Electrical Performance

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Equivalent Series Resistance	ESR			50	KΩ	@Series
Shunt Capacitance	C0			5	pF	
Insulation Resistance	IR	500			MΩ	@DC 100 Volt

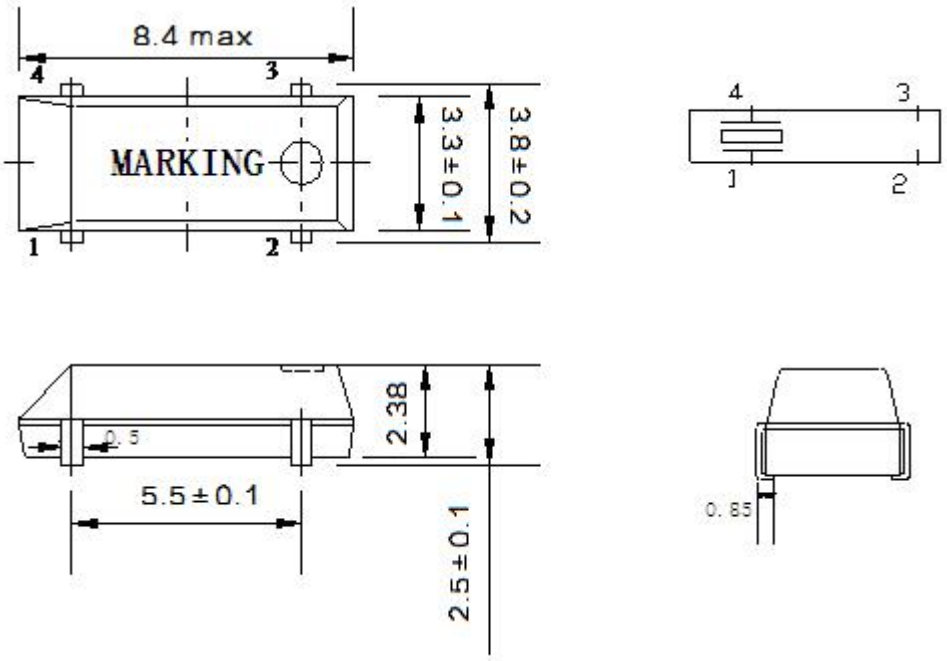
7. Wording :Laser

Marking Generally 32.768. Refer to with Customer’s requirement.

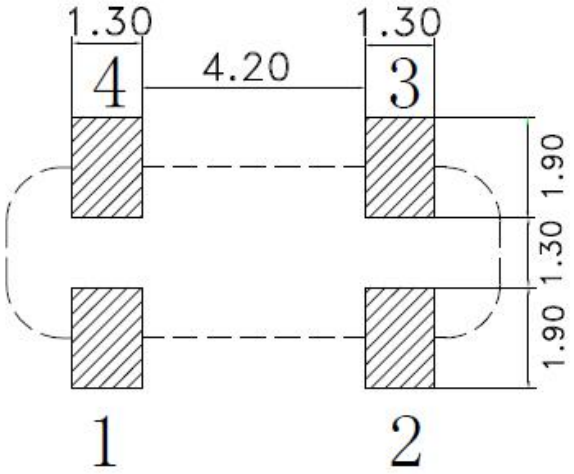
32.768

8. Outline drawing (unit：mm)

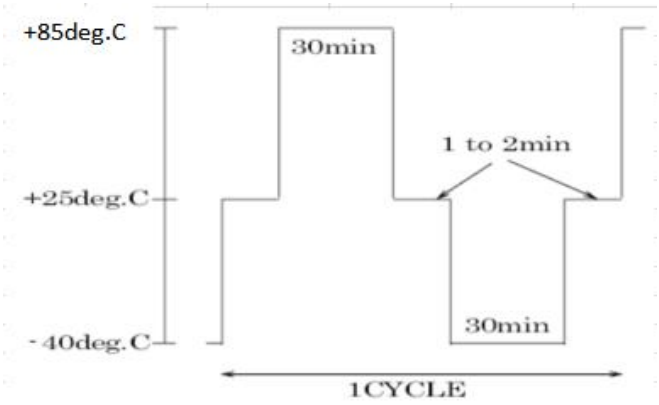
8.1 Dimension

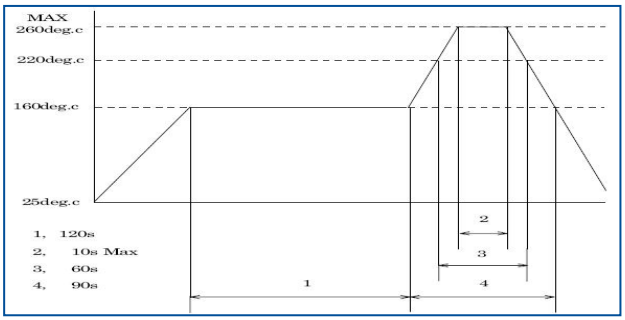


Recommended soldering pattern



9. Reliability Specification

Test Items	Test Method and Condition	Requirements
Vibration	(1)Vibration Frequency 10 to 55Hz (2)Vibration Amplitude 1.5mm (3) Cycle Time 1-2min(10-55-10Hz) (4)Direction X.Y.Z (5)Duration 2h/each direction	Frequency Change:±10ppm Max. Resistance Change: ±15% or 5kohm Max.
Shock	3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm	Frequency Change:±10ppm Max. Resistance Change: ±15% or 5kohm Max.
Hermetic seal	Helium leak detector Checked:before the molded crystal uints	less than 1 × 10 EXP(-7) mbar.l/sec.
Weldability	Dip the leads of crystal units into the solution (7-10%) of rosin 3±1s,then dip into tank 5~10S s. Temperature of solder melted tank is 245℃±5℃	The dipped surface of the leads should be at least 95% covered with continuous new solder coating
High temperature	96 hours at 125℃±2℃ After being left at room temperature for 2 hours, the test is carried out.	Frequency Change:±10ppm Max. Resistance Change: ±25% or 10kohm Max.
Low temperature	96 hours at -40℃±2℃ After being left at room temperature for 2 hours, the test is carried out.	Frequency Change:±10ppm Max. Resistance Change (: ±15% or 5kohm Max.
High temperature and humidity	96 hours at 60℃±2℃,relative humidity 90-100% After being left at room temperature for 2 hours, the test is carried out.	Frequency Change:±10ppm Max. Resistance Change: ±25% or 10kohm Max.
Temperature cycle	After supplying the following temperature cycle 	Frequency Change:±10ppm Max. Resistance Change: ±25% or 10kohm Max.

Reflow soldering		After 24h past from frequency test, Frequency Change:±10ppm Max. Resistance Change: ±25% or 10kohm Max. Notice: 1、Using the infrared lamp at soldering process may cause uneven temperature rise on plastic surface of the parts, so that please keep the package temperature within left conditions. 2、DO NOT dip the plastic part into solder

10. Handling Notice for Standard Tuning Fork Crystal (Cylindrical Type)

10.1. Shock resistance

It may deteriorate the characteristics or cause of no oscillation if excess physical shock given. Please be careful not to drop. Please use under condition to minimize the shocks as much as possible.

Please review the conditions if it is used by auto mounting or after the conditions are changed.

10.2. Heat and humidity resistance in storage

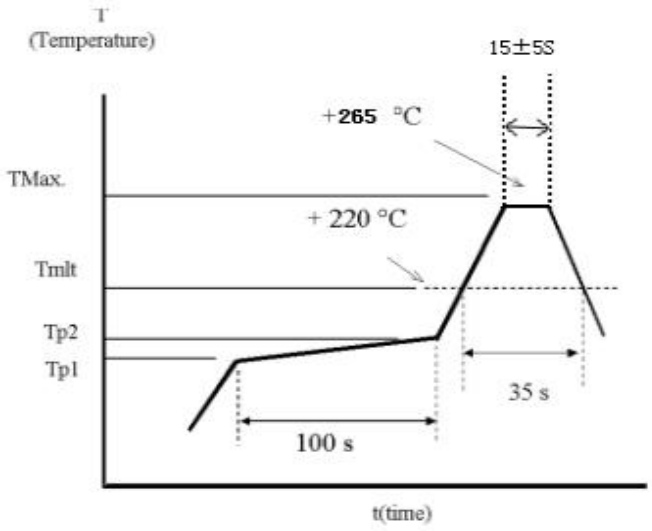
Storing the crystal products under higher or lower temperature or high humidity for a long period may deteriorate the characteristics of crystal units.

Please store and use the crystal products at the normal temperature and humidity.

10.3. Solder heat resistance

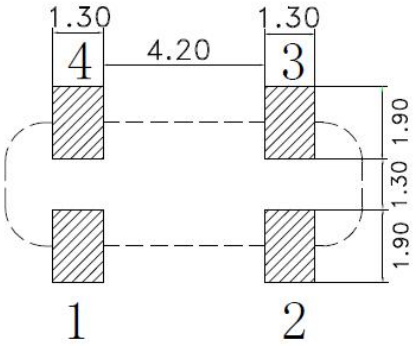
Please review the condition or consult us about flow solder process.

Our soldering condition is under 265ºC within 15±5sec



10.4. Mounting method to PCB

When the crystal products need to be lay down please fix to PCB securely. Recommended size of solder plate as shown below.



10.5 Ultrasonic cleaning and ultrasonic soldering

Soldered by ultrasonic cannot be guaranteed, because crystal may be sympathetic vibrated and may damage. Please study at your side about ultrasonic cleaning.

10.6. Drive level

Applying excessive drive level to the crystal units may cause deterioration of characteristics or damage. Less then 1.0μW is recommended to this products. More than 2.0μW cannot be guaranteed.

10.7.Solder paste should be more than 150μm thickness.

10.8. Storage environment

10.8.1 To storage the reel at +15℃ to +35℃,25%RH to 65%RH of Humidity.

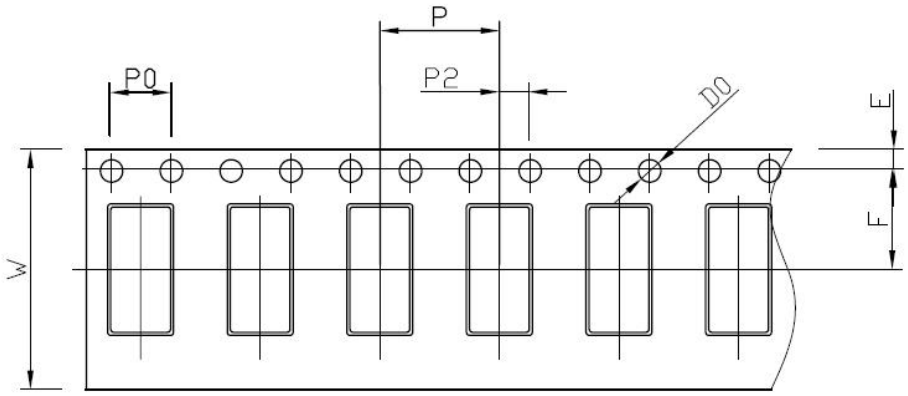
10.9.2 To open the packing just before using.

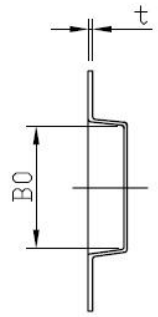
10.9.3 Not to expose the sun.

10.9.4 Not to storage with some erosive chemicals.

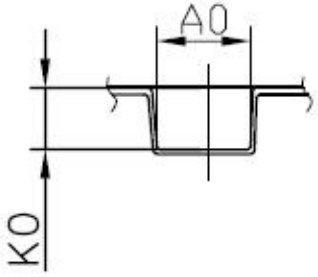
10.9.5 Nothing is allowed to put on the reel or carton to prevent mechanical damage.

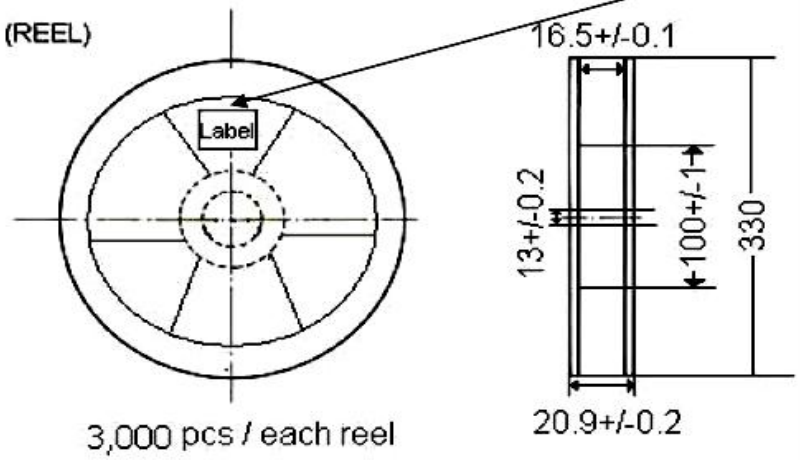
11. Packing Desrciption





Symbol	Spec	Symbol	Spec
W	16.00±0.3	**A_0**	3.90+0.1/-0
E	1.75±0.1	**B_0**	8.30+0.1/-0
F	7.50±0.1	**K_0**	2.70+0.1/-0
D_0	1.50+0.1		
D_1	1.50+0.1		
P	8.00±0.1		
P_0	4.00±0.1		
P_2	2.00±0.1		
t	0.30±0.05		





unit : mm

FREQUENCY	
MODE	
CUSTOMER P/N	
CL	
Δf/f0	
QTY	
QC	