RoHS Compliant
Directive 2002/95/EC

SPECIFICATION

Customer:

Item:	CRYSATL UNIT
Type:	NX3225SA
Nominal Frequency:	26MHz
Customer's Spec. No.:	---
NDK Spec. No.:	EXS00A-CS00030-1

Receipt

Charge:

Sales		Tel.
Engineer	Engineering Dept.1 : T. Asamizu	Tel. 81-(0)4-2900-6631

Approved	K. Sakuma
Checked	I. Miyahara
Drawn	T. Asamizu

Revision Record

Rev.	Rev. Date	Items	Contents	Remarks
---	07. May.2011	Issue	---	---

1. Customer's Spec. No. : ---

2. NDK Spec. No. : EXS00A-CS00030-1

3. Type : NX3225SA

4. Electrical Characteristics

4.1. Nominal Frequency	: 26MHz
4.2. Overtone mode	: Fundamental
4.3. Adjustment tolerance	: $\pm 8 \times 10^{-6}$ Max. (at 25 °C)
4.4. Tolerance Over the Temperature Range	: $\pm 12 \times 10^{-6}$ Max. (at -30 to 85 °C) The reference temperature shall be 25 °C *Sampling inspection level : S-3, AQL0.65%,Judgment (Ac0,Re1)
4.5. Equivalent Series Resistance(Rr)	: 40Ω max
4.6. Shunt Capacitance (C0)	: 1.6 pF ± 0.3 pF
4.7. Motional Capacitance (C1)	: 6.0 fF ± 0.7 fF
4.8. Insulation Resistance	: Terminal to terminal insulation resistance must be 500MΩ min. when DC100V+/-10% is supplied.

5. Measurement Circuit

5.1. Frequency Measurement

Measurement Circuit	: π - Network
Load Capacitance (CL)	: 10 ± 0.02pF
Level of Drive	: 10μW (100μW max.)

5.2. Resistance Measurement

Measurement Circuit	: π - Network
Load Capacitance (CL)	: Series
Level of Drive	: 10μW (100μW max.)

6. Other Characteristics

6.1. Seal Characteristics	: 1.1×10^{-9} Max. [Pa × m^3/s] with Helium leak-detector
6.2. Storage Temperature Range	: -40 to 85 °C

7. Data Sheet

Data sheets are not presented because above characteristics are guaranteed.

8. Applied Drawing

8.1. Dimension of external	: EXD14B-00451
8.2. Marking Drawing	: EXH11B-00027
8.3. Taping and Reel Drawing	: EXK17B-00247
8.4. Reliability guarantee items	: EXS30B-00250

9. Notice

9.1. Order items are manufactured according to specification. As to conditions, which are not indicated in this specification and unpredictable such as applied condition and oscillation margin, please check them beforehand.

9.2. Unless we receive request for modification within 3 weeks from the issue date of this NDK specification sheet, we will supply products according to this specification. Also, if you'd like to modify specification of order, which has been placed with delivery request within 3 weeks from the issue data of this specification sheet, we would like to discuss with you separately.

9.3. In no event shall the company be liable for any product failure resulting from an inappropriate handling or operation of the product beyond the scope of its guarantee.

9.4. Where any change to the process condition is made due to the change(s) in the production line, inform personnel of the specifications.

9.5. Should this specification data give rise to any disputes relating to any intellectual property rights or any other rights of a third person, the company shall not indemnify anyone for any damage. Their disclosure must not be construed as the grant of a license to use any of the intellectual property rights owned by the company.

9.6. If you intend to use products listed on this specification for applications that may result in loss of life or assets (controls relating to safety, medical equipment, aeronautical equipment, space equipment, etc.), please do not fail to advise us of your intention beforehand.

9.7. In the company's production process whatever amount of ozone depleting substances (ODS) as specified in the Montreal protocol is not used.

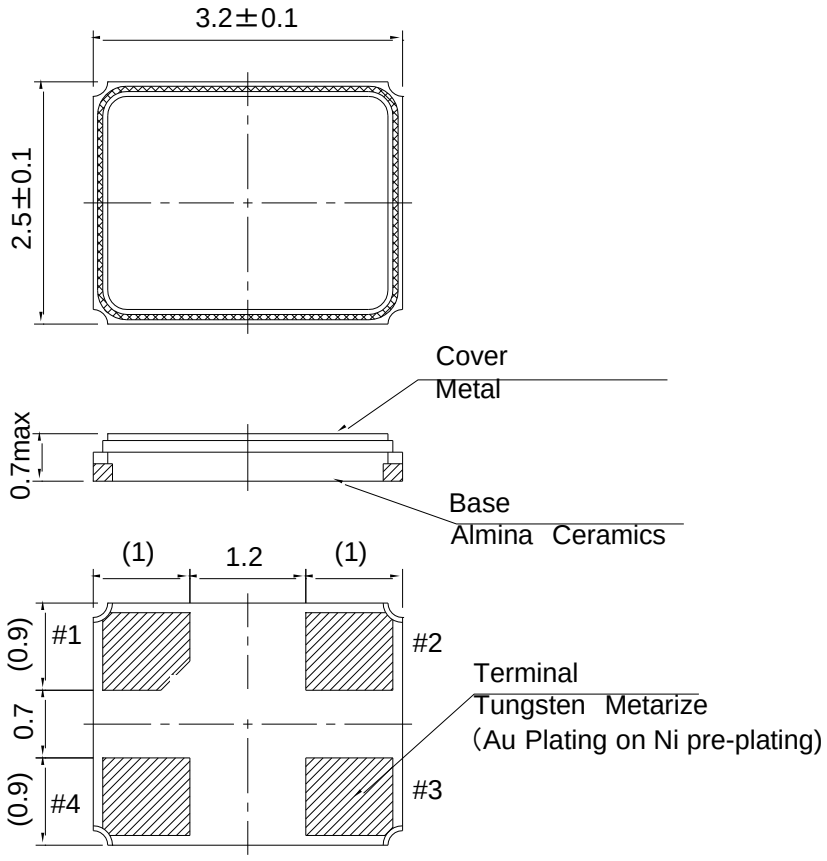
9.8. Information contained in this specification must not be quoted, reproduced or used for other purposes including processing either in part or in full without obtaining prior approval from the company.

10. Prohibited items

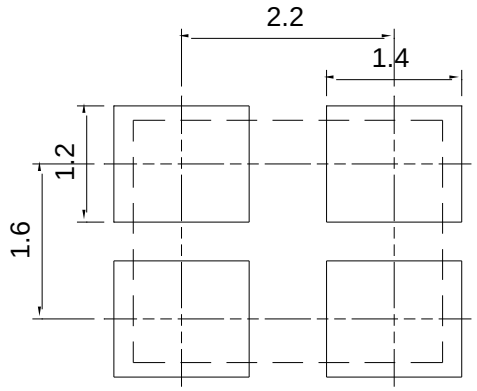
Be sure to use the product under the following conditions. Otherwise, the characteristics deterioration or destruction of the product may result.

(1) Reflow soldering heat resistance
Peak temperature: 265°C, 10 sec
Heating: 230°C or higher, 40 sec
Preheating: 150°C to 180°C, 120 sec
Reflow passage times: Three times

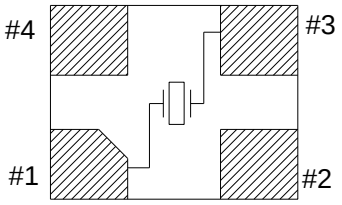
(2) Manual soldering heat resistance
Pressing a soldering iron of 400°C on the terminal electrode for four seconds (twice).



LAND PATTERN (TYPICAL)



PIN CONNECTION（TOP VIEW）



※ #1,#3 : Xtal
#2,#4 : GND (CONNECTION COVER)

	Date of Revise	Charge	Approved	Reason

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	2.Feb.2009	H.Ouchi	Dimension:mm	±0.1	- / -
Designed	2.Feb.2009	H.Ouchi	Title: **NX3225SA Dimension Drawing**	Drawing No.: **EXD14B-00451**	Rev.
Checked					
Approved	2.Feb.2009	K.Ueki			

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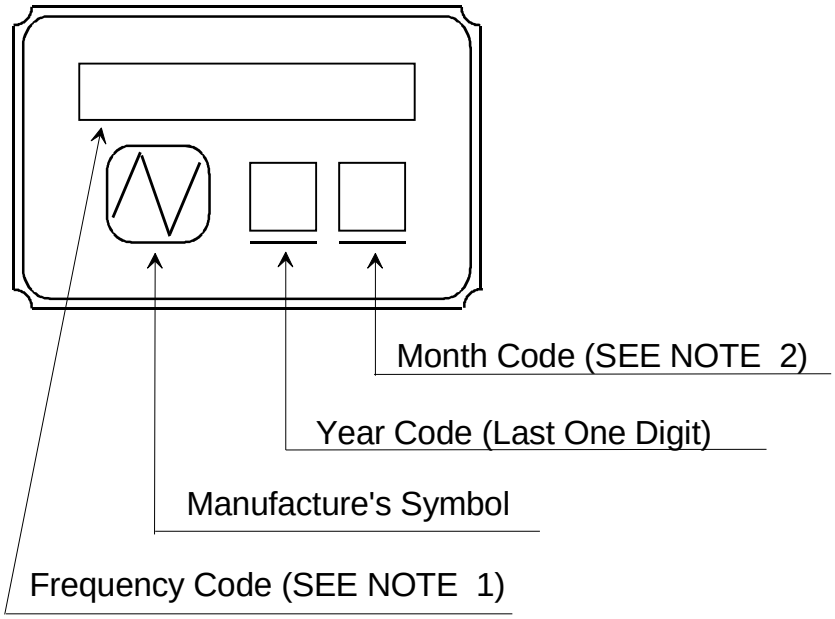

NOTE

1. Frequency Code

Marking Frequency is consist of five digits, first five digits of Nominal Frequency

Example

Nominal Frequency	28.636363 MHz
Frequency Code	28.636

2. Month Code Table

Month	1 Jan.	2 Feb.	3 Mar.	4 Apr.	5 May.	6 Jun.	7 Jul.	8 Aug.	9 Sep.	10 Oct.	11 Nov.	12 Dec.
Month Code	1	2	3	4	5	6	7	8	9	X	Y	Z

*Marking digits are not include a decimal point and dot mark.

	Date of Revise	Charge	Approved	Reason
B	9.Nov.2000	H.Yagishita	T.Ishii	Change Form

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	3.Aug.1999	Y.Morizumi	Dimension:mm		/
Designed	3.Aug.1999	Y.Morizumi	Title	Drawing No.	Rev.
Checked	----------	----------	**Crystal Holder Marking**	**EXH11B-00027**	B
Approved	3.Aug.1999	T.Ishii			

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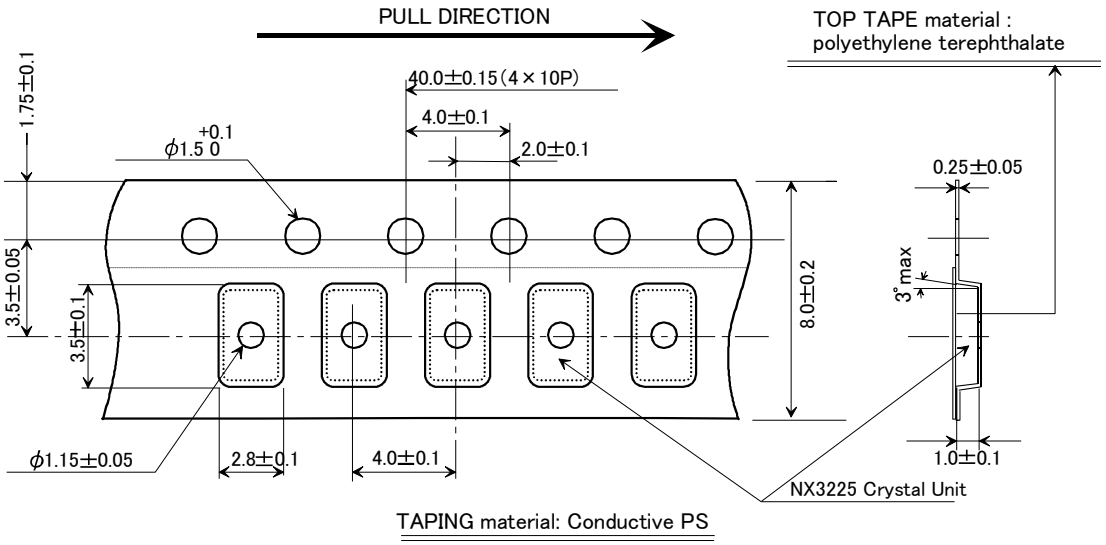
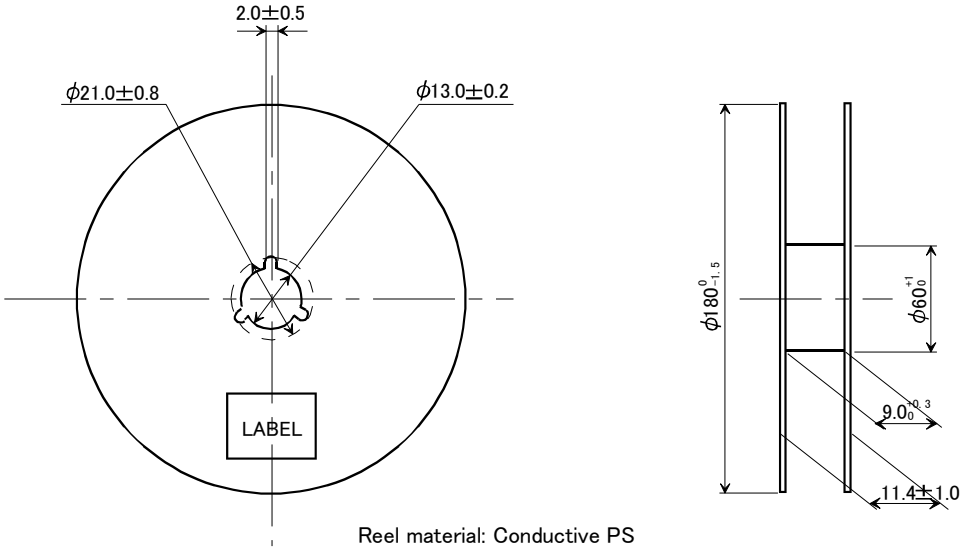
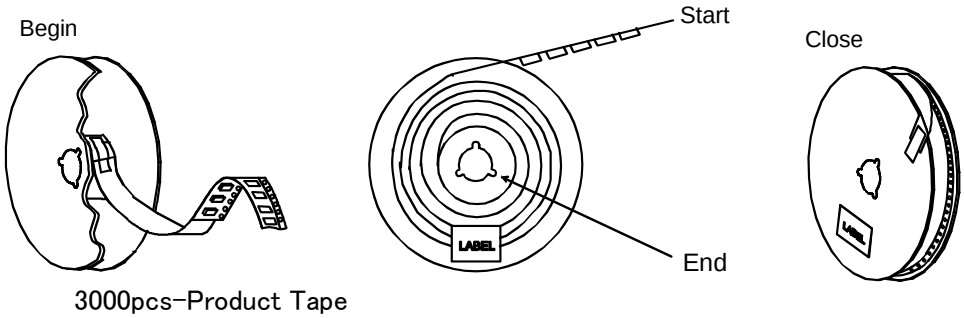


TAPING material: Conductive PS



Reel material: Conductive PS

EIAJ standard reel



3000pcs-Product Tape

	Date of Revise	Charge	Approved	Reason
A				

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	30.Jun.2006	H.Yagishita	Dimension:mm	---	- / -
Designed	30.Jun.2006	H.Yagishita	Title	Drawing No.	Rev.
Checked	30.Jun.2006	K.Kubota	**NX3225 Series Taping and Reel Spec.**	**EXK17B-00247**	
Approved	30.Jun.2006	T.Ishii			

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Reliability assurance item

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No.	Test Item	Test Methods	Specification Code
1	High Temperature Storage	+85±3°C 720h	A
2	Low Temperature Storage	-40±3°C 500h	A
3	Temperature Humidity	+85±3°C 80~85%RH 500h	A
4	Temperature Cycling	-40±3°C / +85±3°C It is 1000 cycles using 30 minutes each as 1 cycle.	A
5	Vibration	Frequency Range : 10~2000Hz Amplitude or Acceleration : 1.52mm or 196m/s^2 1 cycle : 20 minutes Test time : Three mutually perpendicular axes each 4 hours.	A
6	Shock	Devices are shocked to half sine wave (29418m/s^2, 0.3msec) six mutually perpendicular axis each 1 times.	A
7	Drop	Preparation : Test pieces should be fixed on the dummy load with 200g weight. Condition : Height 1.5m onto concrete Drop times : 10 times in 6 mutually perpendicular axes	A
8	Solderability	Pre-heat temperature : +150±10°C Pre-heat time : 60~120s When the temperature of the specimen is reached at +215±3°C, it shall be left for 30±1sec. Peak temperature 240±5°C Material: Pb-free (Sn-3.0Ag-0.5Cu) Flux : Rosin resin methyl alcohol solvent (1 : 4)	B
9	Reflow resistance	Pre-heat temperature : +150~180°C Pre-heat time : 90±30s Heat temperature : more than +230°C Pre-heat time : less than 30s Peak temperature : +260±5°C Peak time : less than 10s	A

Specification code	Specification
A	$\Delta f/f \leq \pm$ 3 ppm $\Delta CI/CI \leq \pm$ 15 % or 5 Ω make use larger value
B	The electrodes should be covered by a new solder at least 90% of immersed area.