



RoHS Compliant
Directive 2011/65/EU

REFERENCE SPECIFICATION

Customer: _____

Item: _____ Crystal Unit

Type: _____ NX3225SA

Nominal Frequency: _____ 21.948717 MHz

Customer's Spec. No.: _____

NDK Spec. No.: _____ EXS00A-CS10343

For your reference we submit this specification.
Please study and keep in your related document file.

Revision Record						
Rev.	Date	Items	Contents	Approved	Checked	Drawn
---	8.Nov.2016	Issue	---	M.Sato	---	R.Omomo

1. Customer's Spec. No. :
 2. NDK Spec. No. : EXS00A-CS10343
 3. Type : NX3225SA
 4. Electrical Specifications

	Parameters	SYM.	Electrical Spec.				Notes
			min	typ	max	Units	
1	Nominal frequency	f_{nom}	21.948717			MHz	
2	Overtone order	-	Fundamental			-	
3	Frequency tolerance	-	-15	-	+15	$\times 10^{-6}$	at +25°C
4	Frequency versus temperature characteristics	-	-50	-	+50	$\times 10^{-6}$	at -40~+125°C The reference temperature shall be +25°C
5	Equivalent resistance	-	-	-	50	Ω	IEC π -Network Series
6	Load capacitance	C_L	-	12	-	pF	IEC π -Network
7	Level of drive	-	-	10	200	μ W	
8	Insulation resistance	-	500	-	-	M Ω	When terminal to terminal and terminal to cover were applied at DC100V \pm 15V.
9	Operating temperature range	T_{opr}	-40	-	+125	°C	
10	Storage temperature range	T_{str}	-40	-	+125	°C	
11	Air-tightness	-	-	-	1.1×10^{-9}	Pa m ³ /s	Helium leak detector

5. Examination results document

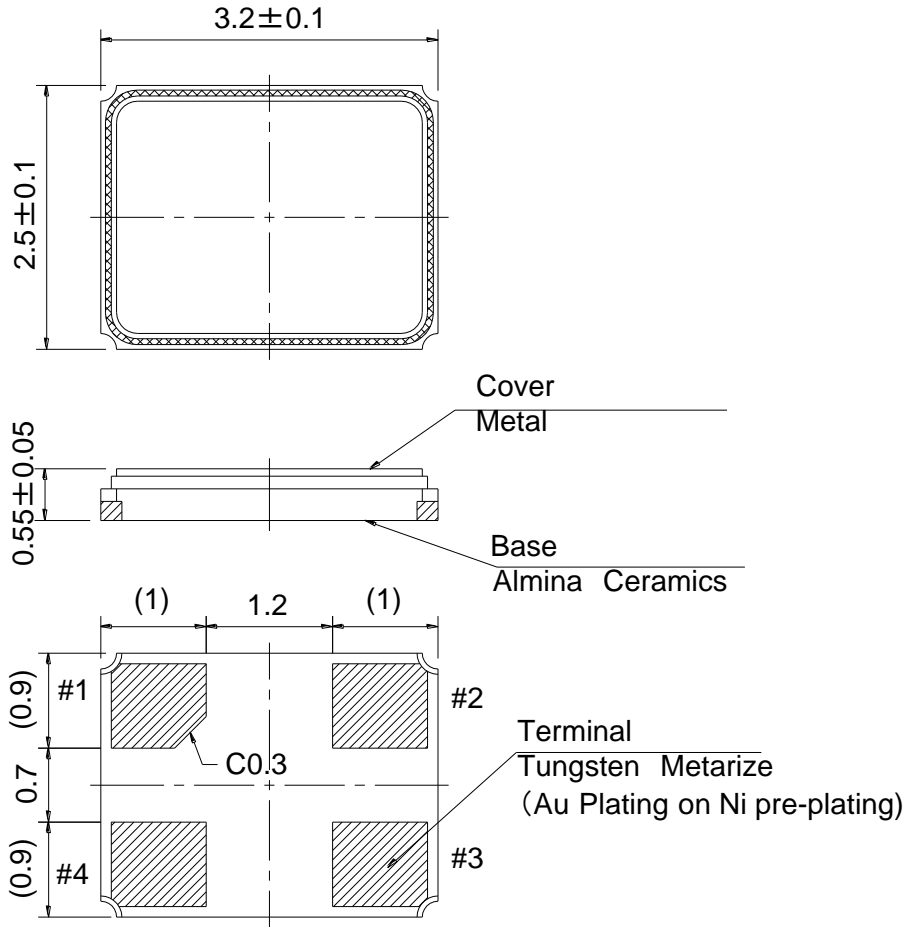
Since a performance is guaranteed, an examination results document does not submit.

6. Application drawing

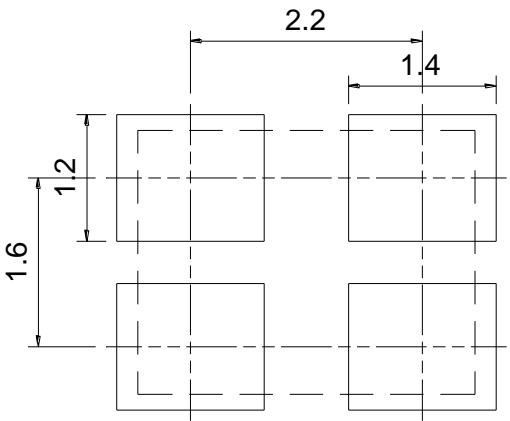
- 6.1 External dimension : EXD14B-00370
 6.2 Taping and reel figure : EXK17B-00098
 6.3 Holder marking : EXH11B-00317
 6.4 Reliability assurance Item : EXS30B-00499
 6.5 Recommendation reflow profile : EXS30B-00344

7. Notice

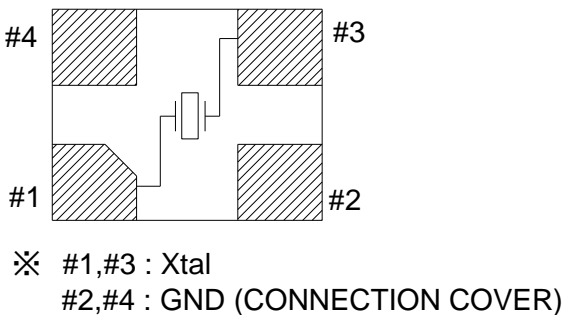
Order items are manufactured according to specification. As to conditions, which are not indicated in the specification and unpredictable such as applied condition and oscillation margin, please check them beforehand.



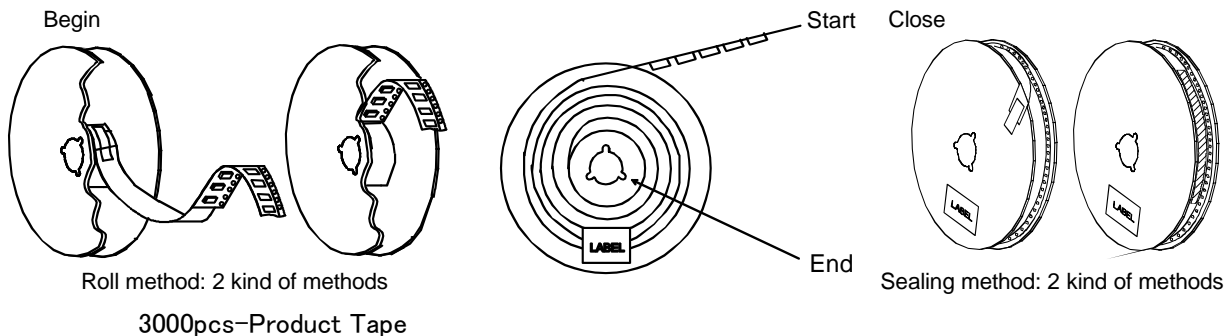
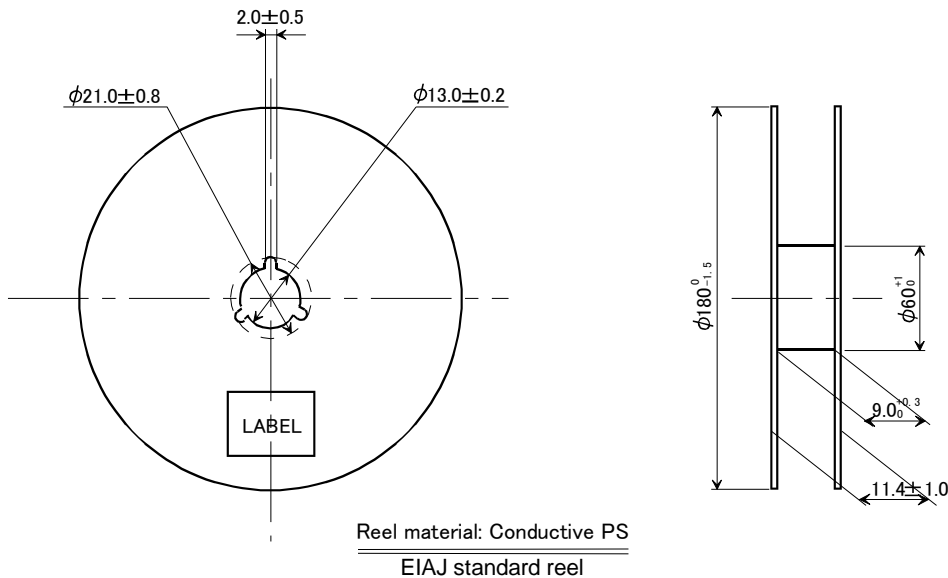
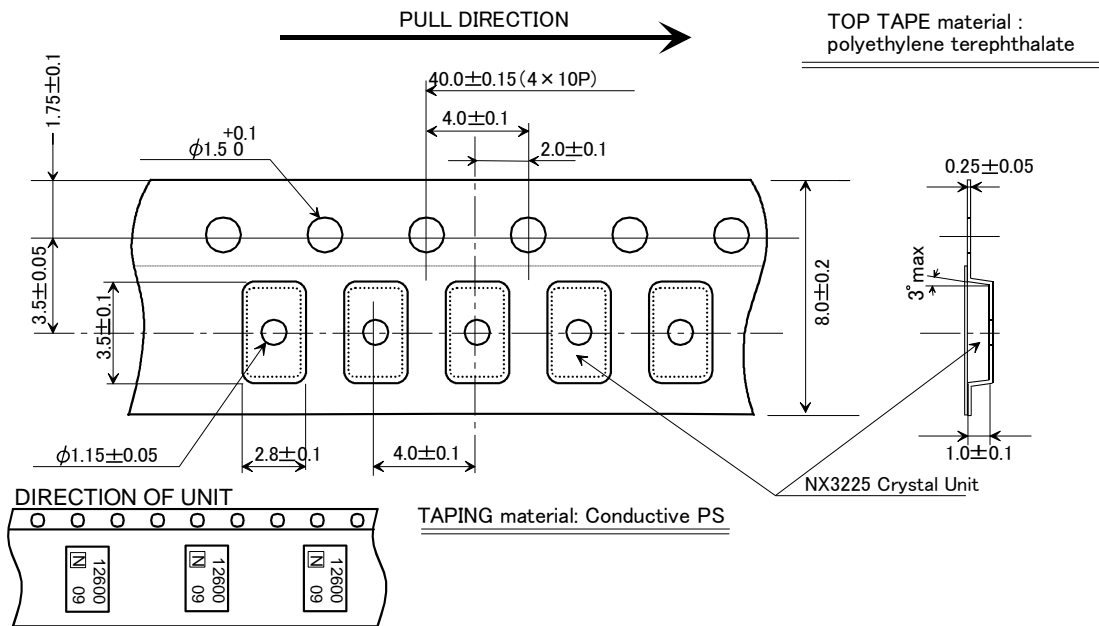
LAND PATTERN (TYPICAL)



PIN CONNECTION (TOP VIEW)

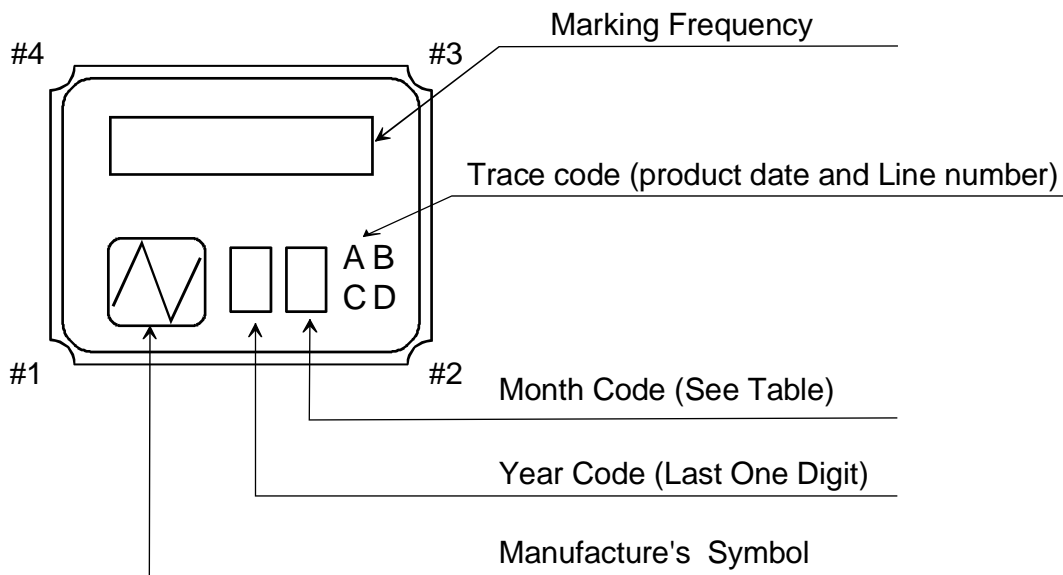


	Date of Revise	Charge	Approved	Reason	
A	4.Sep.2007	R.Shariman	K.Kubota	Add Tolerance.	
	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	25.Oct.2005	S.Mizusawa	Dimension:mm	±0.1	- / -
Designed	25.Oct.2005	S.Mizusawa	Title NX3225SA Dimension Drawing	Drawing No. EXD14B-00370	Rev. A
Checked					
Approved	25.Oct.2005	S.Mizusawa			



	Date of Revise	Charge	Approved	Reason
I	22 Aug. 2012	T. Shimizu	K. Oguri	Top cover tape leader line was deleted.
	Date	Name	Third Angle Projection	Tolerance
Drawn	3.Sep.2001	K.Oguri	Dimension:mm	Scale
Designed	3.Sep.2001	K.Oguri	Title	Drawing No.
Checked			NX3225 Series Taping and Reel Spec.	EXK17B-00098
Approved	3.Sep.2001	K.Miyashita		
				I

NIHON DEMPA KOGYO CO., LTD.



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
D	10. Dec 2014	Y.Sakurai	H.Kobayashi	Added terminal number information.
	Date	Name	Third Angle Projection	Tolerance
Drawn	16.Jan.2006	I.Miyahara	Dimension:mm	Scale
Designed	16.Jan.2006	I.Miyahara	Title	Drawing No.
Checked	16.Jan.2006	---	Crystal Holder Marking	EXH11B-00317
Approved	16.Jan.2006	K.Okamoto		
				D

NIHON DEMPA KOGYO CO., LTD.

Reliability assurance item

(page: 1/1)

No.	Test Item	Test Methods	Specification Code
1	High Temperature Storage	+125±3°C 1000h	A,D
2	Low Temperature Storage	-40±3°C 1000h	A,D
3	Temperature Humidity	+85±3°C 80~85%RH 1000h	A,D
4	Temperature Cycling	-55±5°C / +125±5°C It is 1000 cycles using 30 minutes each as 1 cycle.	A,D
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.	B,D
6	Shock	Devices are shocked to half sine wave (49000m/s ² , 0.15msec) six mutually perpendicular axis each 1 times.	B,D
7	Drop	Devices are dropped from the height 75cm onto iron plate. Execution 3 times random drops.	B,D
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. Material: H63A (Silver 2~3%) Flux : Rosin resin methyl alcohol solvent (1 : 4)	C
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	B,D

Specification code	Specification
A	$\Delta f/f \leq \pm 20$ ppm $\Delta CI/CI \leq \pm 15$ % or 5 Ω make use larger value
B	$\Delta f/f \leq \pm 10$ ppm $\Delta CI/CI \leq \pm 15$ % or 5 Ω make use larger value
C	The electrodes should be covered by a new solder at least 90% of immersed area.
D	After testing unless cracking of materials view of eyes and unless break of seal.

Recommendation reflow condition

1.IR reflow condition

