RoHS Compliant
Directive 2011/65/EU

REFERENCE SPECIFICATION

Customer: ELTECH

Item: Crystal Unit

Type: NX8045GE

Nominal Frequency: 3.579545 MHz

Customer's Spec. No.:

NDK Spec. No.: (S1-4085-3030-16)

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

Charge:

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Engineer	1st Engineering Dept. M.Harada	Tel. : (81)-4-2900-6631 e-Mail : harada@ndk.com

Revision Record

Rev.	Date	Items	Contents	Approved	Checked	Drawn
---	9. Jun. 2014	Issue	---	H.Kobayashi	---	M.Harada

1.Customer specifications number :

2.NDK specification number : (S1-4085-3030-16)

3.Type : NX8045GE

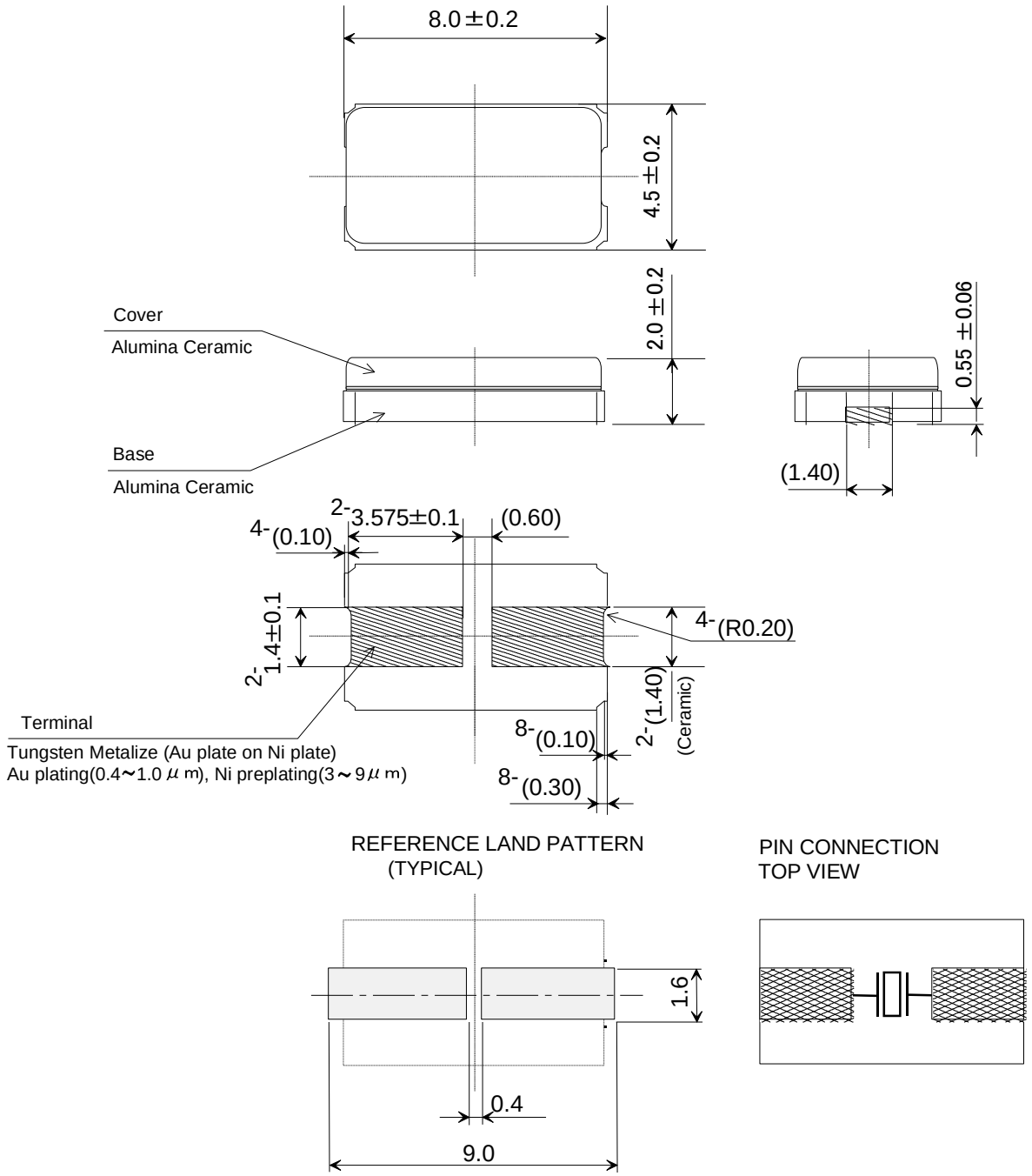
4.Electrical characteristics

	Parameters	SYM.	Electrical Spec.				Notes
			min	typ	max	Units	
1	Nominal frequency	f_{nom}	3.579545			MHz	
2	Overtone order	-	Fundamental			-	AT-CUT
3	Frequency tolerance	-	-30	-	+30	$\times 10^{-6}$	at +25°C
4	Frequency versus temperature characteristics	-	-30	-	+30	$\times 10^{-6}$	at -40~+85°C The reference temperature shall be +25°C
5	Equivalent resistance		-	-	500	Ω	π-Network / Series
6	Load capacitance	C_L	-	16	-	pF	π-Network
7	Level of drive		-	50	500	μW	
8	Insulation resistance	-	500	-	-	MΩ	When terminal to terminal at DC100V ±15V.
9	Operating temperature range	T_{opr}	-40	-	+85	°C	
10	Storage temperature range	T_{str}	-40	-	+125	°C	
11	Air-tightness	-	-	-	3.0×10^{-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-00490
6.2 Taping and reel figure : EXK17B-00014
6.3 Holder marking : EXH11B-00099
6.4 Reliability assurance Item : EXS30B-00053
6.5 Recommendation reflow profile : EXS30B-00344

7. Notice
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.



	Date of Revise	Charge	Approved	Reason
A	18.Jan.2012	R.Shariman	K.Ueki	Add terminal tolerance

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	18.Jan.2011	R.Shariman	Dimension:mm		/
Designed	18.Jan.2011	R.Shariman	Title	Drawing No.	Rev.
Checked	18.Jan.2011	N.Yamamoto	**NX8045GE** Dimension of External	**EXD14B-00490**	**A**
Approved	18.Jan.2011	K.Ueki			

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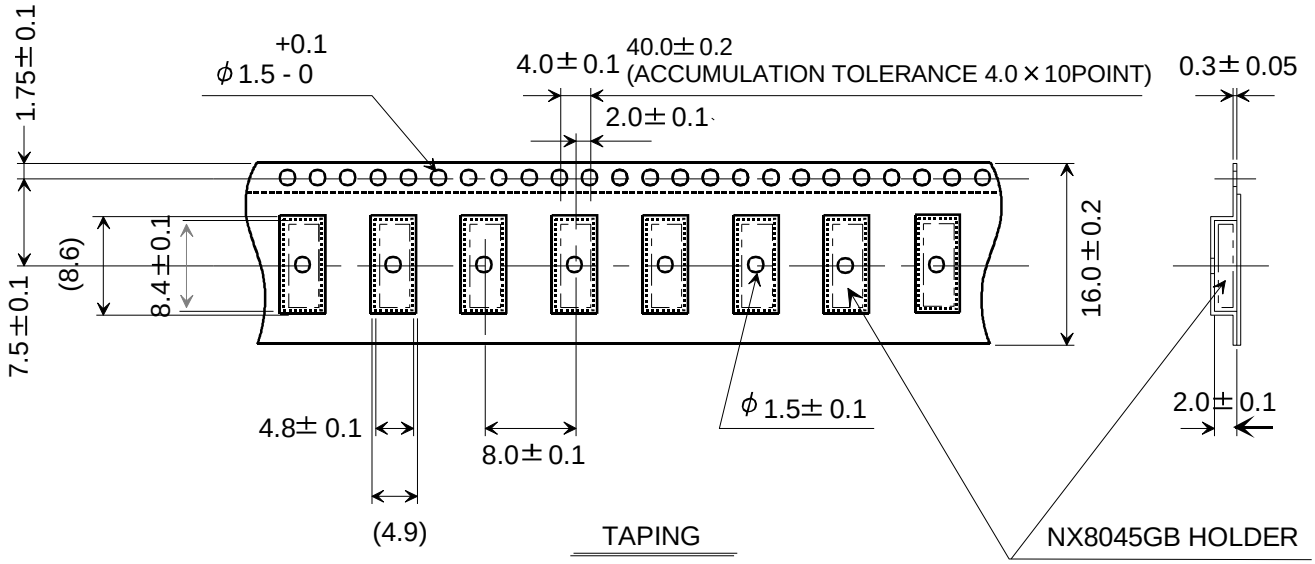
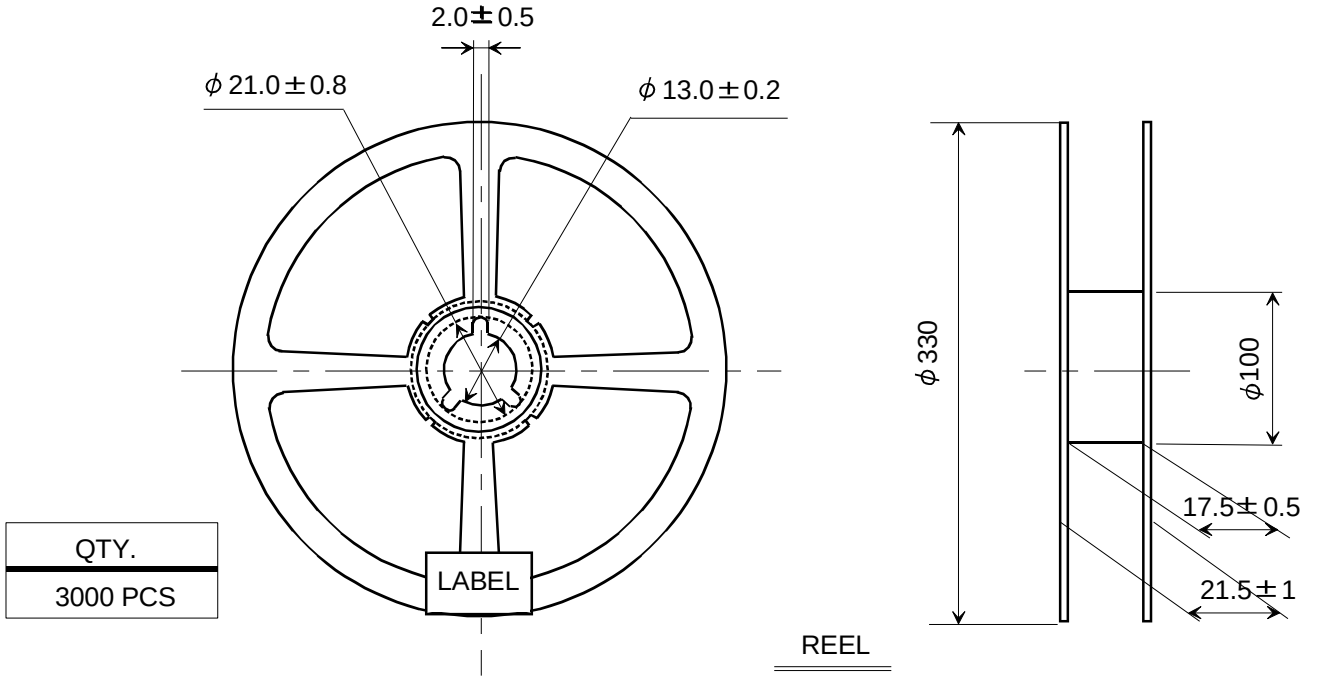
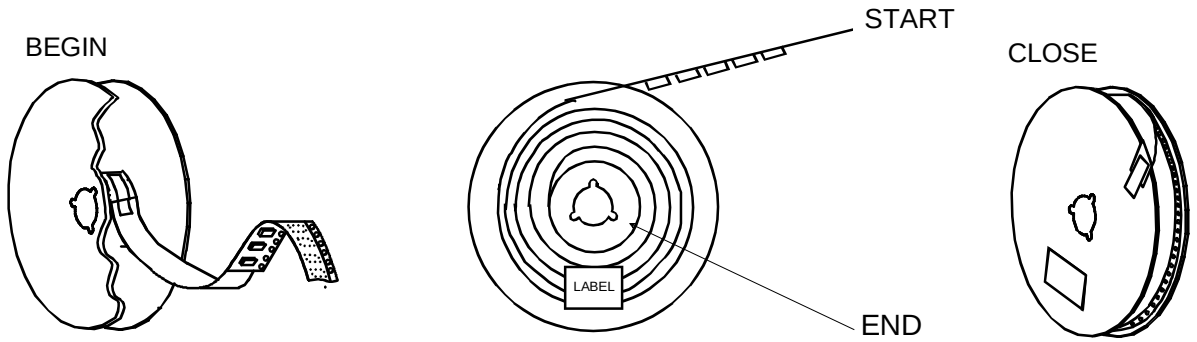




QTY.
3000 PCS



	Date of Revise	Charge	Approved	Reason
B	12.Apr.2002	K.Nakashima	M.Miura	Correct diameter of hole of pocket

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	7.Oct.1999	K.Nakashima	Dimension:mm		/
Designed	7.Oct.1999	K.Nakashima	Title: **NX8045GB TAPING AND REEL SPEC.**	Drawing No.: **EXK17B-00014**	Rev.: B
Checked	----------	----------			
Approved	7.Oct.1999	M.Okamoto			

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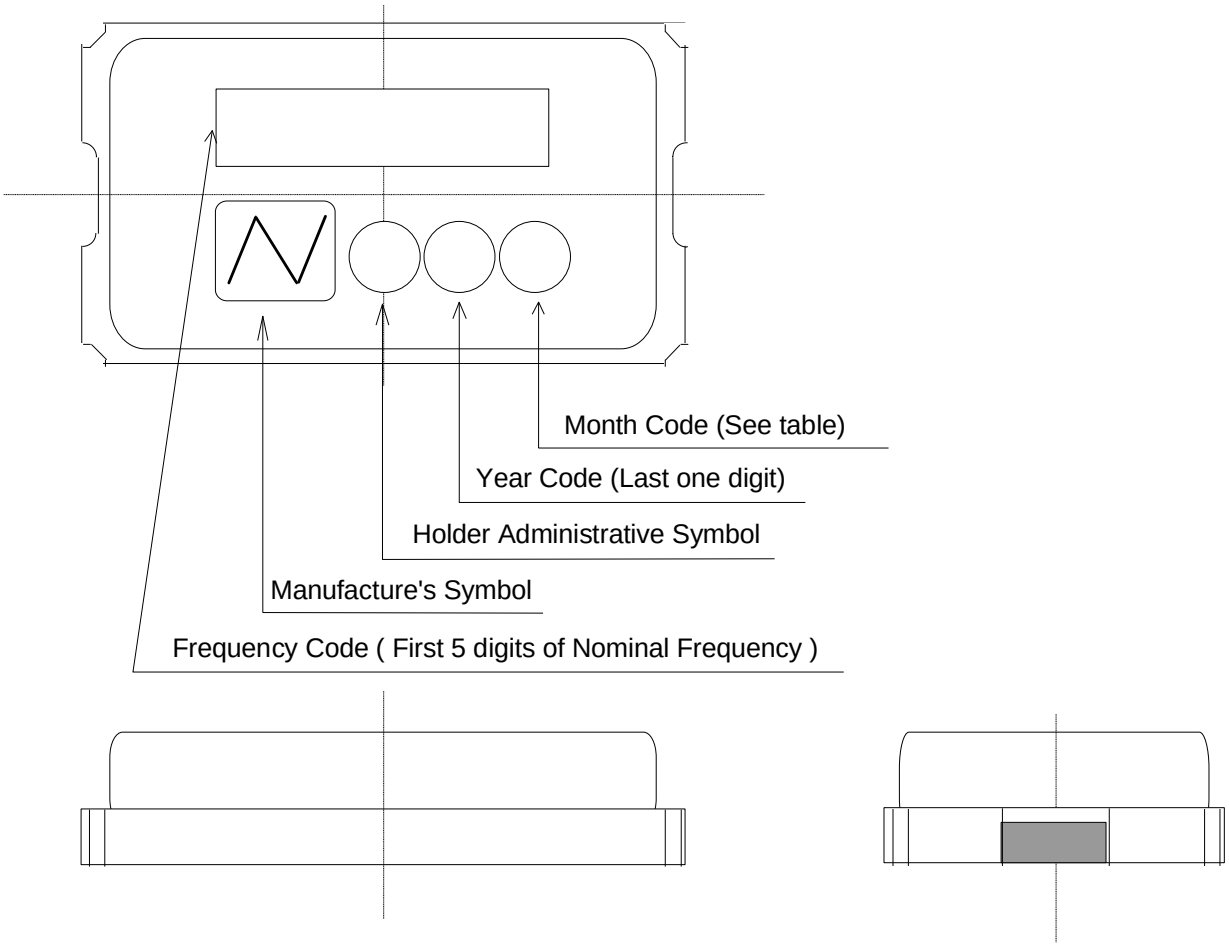

1. Marking contents

Example

Frequency Code	16.000

2. Marking contents

Month	1	2	3	4	5	6	7	8	9	10	11	12
Month Code	1	2	3	4	5	6	7	8	9	X	Y	Z

3. Marking contents

Administrative symbol	S

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

	Date of Revise	Charge	Approved	Reason

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	30.JULY.2001	N.Yamamoto	Dimension:mm		/
Designed	30.JULY.2001	N.Yamamoto	Title	Drawing No.	Rev.
Checked	30.JULY.2001	M.Miura	**NX8045GB Marking**	**EXH11B-00099**	
Approved	30.JULY.2001	T.Ishii			

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Reliability assurance item

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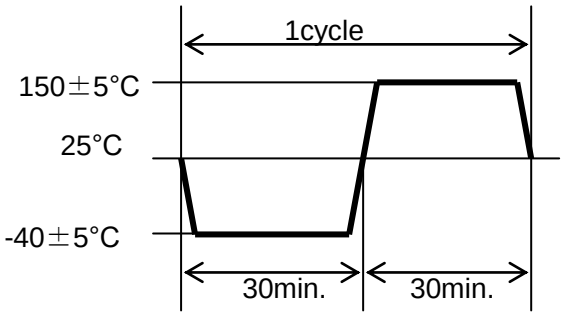
No.	Test item	Test methods	Spec. code
1	Drop	Devices are dropped from the height 75cm onto iron plate. Execution 3 times random drops.	A
2	Shock	Acceleration:49000m/s^2(5000G) Duration:0.15msec Half-Sine pulse 1 Shocks in 6 mutually perpendicular planes, Total 6 shocks	A
3	Vibration	Frequency range: 10 to 2000 Hz Amplitude or Acceleration : 1.52 mm or 196m/s^2(20G) Sweep time: 20 minutes Test time: 4 hours×3	A
4	Electrode adherent strength	See remark (1).	B
5	Solderability	Pre-heat temperature: 150°C Pre-heat Time: 60~120sec. Peak temperature: 240±5°C 215°C Over time: 10~30sec.	C
6	Resistance to soldering heat	Pre-heat temperature: 150°C Pre-heat Time: 60~120sec. Peak temperature: 260±5°C Test time: 10sec. max.	A,B
7	Resistance to cold	Leave at –40°C ±2°C for 1000 hours.	A
8	Resistance to heat	Leave at +150°C ±2°C for 1000 hours.	A
9	Humidity	Device are left in temperature at +85°C with relative humidity of 80~85% for 1000 hours.	A,D
10	Thermal shock	Device are left into the following temperature cycle as shown in (Figure1) for 1000 consecutive cycle.  (Figure1)	A,B

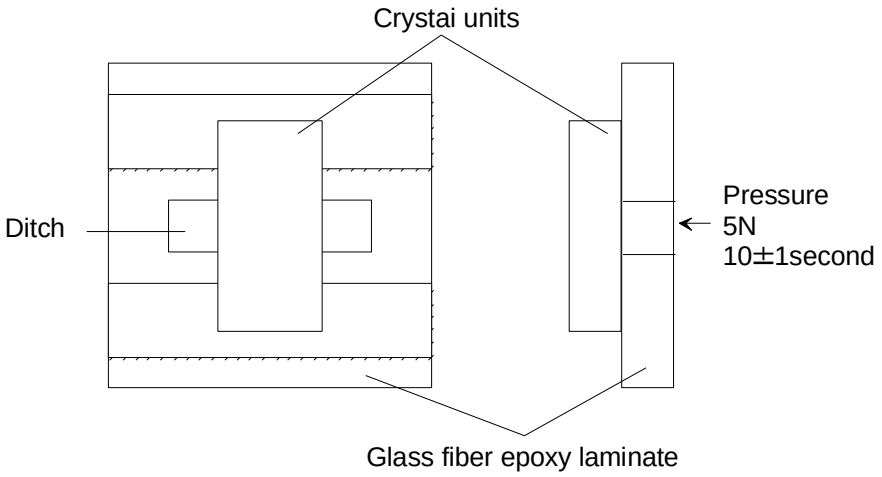
Reliability assurance item

Spec. code	Specification
A	Frequency tolerance and series resistance should be cleared.
B	After testing unless cracking of materials view of eyes and unless break of seal.
C	The leads shall acquire a new solder coat cover at 90 % of immersed area.
D	Insulation resistance shall be greater than 500 MΩ

Remark (1) Electrode adherent strength.

1) Test method condition

Using the solder, soldering Iron or reflow soldering bath shall be used for soldering on test fixture (Glass fiber epoxy laminate : Thickness 1.6mm+/-0.2mm) shown below.



2) Specified value

No peel of electrode, no crack, no other abnormality

Recommendation reflow condition

1.IR reflow condition