Crystal Bridge to the Future

RoHS Compliant
Directive 2011/65/EU

REFERENCE SPECIFICATION

Customer :

Item:	Crystal Unit
Type:	NX8045GB
Nominal Frequency:	(Undeveloped frequency) 6.5536 MHz
Customer's Spec. No.:	
NDK Spec. No.:	EXS00A-CG07020

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
---	17. Nov. 2017	Issue	---	M.Sato	---	K.Nakashima

NIHON DEMPA KOGYO CO., LTD.

1.Customer specifications number :

2.NDK specification number : EXS00A-CG07020

3.Type : NX8045GB

4. Electrical Specifications

	Parameters	SYM.	Electrical Spec.				Notes
			min	typ	max	Units	
1	Nominal frequency	f_{nom}	6.5536			MHz	
2	Overtone order	-	Fundamental			-	
3	Frequency tolerance	-	-50	-	+50	$\times 10^{-6}$	at 25°C
4	Frequency versus temperature characteristics	-	-50	-	+50	$\times 10^{-6}$	at -40～+85°C The reference temperature shall be +25°C
5	Equivalent resistance	-	-	-	250	Ω	π -network/Series
6	Load capacitance	C_L	-	16	-	pF	π -network
7	Level of drive	-	-	50	500	μW	
8	Operating temperature range	T_{opr}	-40	-	+85	°C	
9	Storage temperature range	T_{str}	-40	-	+85	°C	
10	Insulation resistance	-	500	-	-	MΩ	When terminal to terminal and terminal to cover were applied at DC100V ±15V.
11	Air-tightness	-	-	-	3.0×10^{-9}	Pa m^3/s	Helium leak detector

5. Examination results document

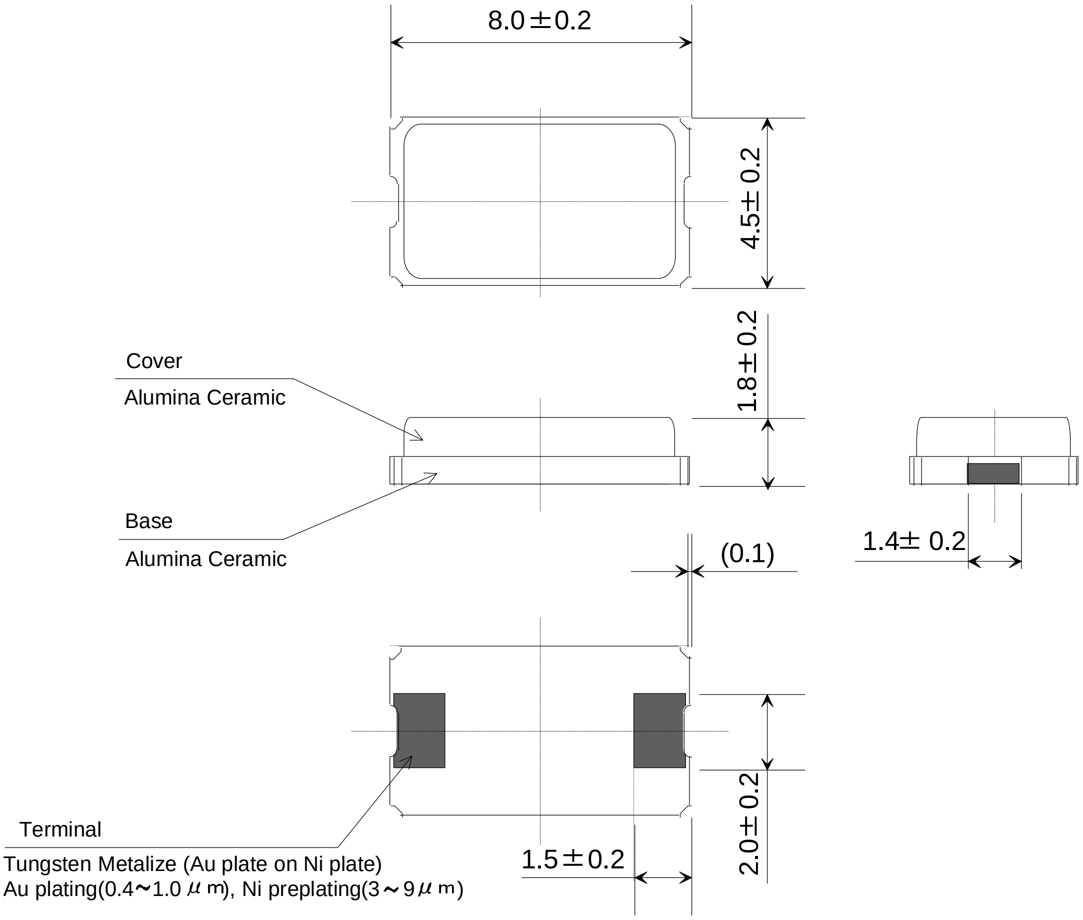
Since a performance is guaranteed, an examination results document does not submit.

6. Application drawing

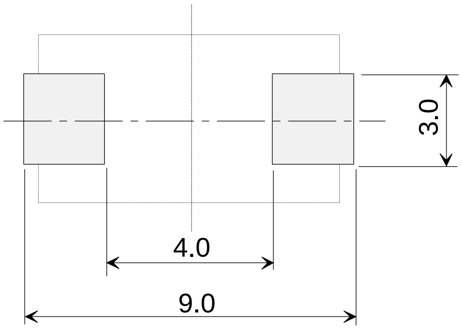
6.1 External dimension : EXD14B-00066
6.2 Taping and reel figure : EXK17B-00007
6.3 Holder marking : EXH11B-00043
6.4 Reliability assurance Item : EXS30B-00095
6.5 Recommendation reflow profile : EXS30B-00344

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. Because development is not completed as for this frequency, the standard value of this reference specifications is a provisional value. Because the change is possible by a development result.



REFERENCE LAND PATTERN
(TYPICAL)



	Date of Revise	Charge	Approved	Reason
B	1.Nov.2000	K.Nakashima	M.Miura	Change Form

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	1.Oct.1999	K.Nakashima	Dimension:mm		/
Designed	1.Oct.1999	K.Nakashima	Title	Drawing No.	Rev.
Checked	----------	----------	**NX8045GB** Dimension of External	**EXD14B-00066**	B
Approved	1.Oct.1999	M.Okamoto			

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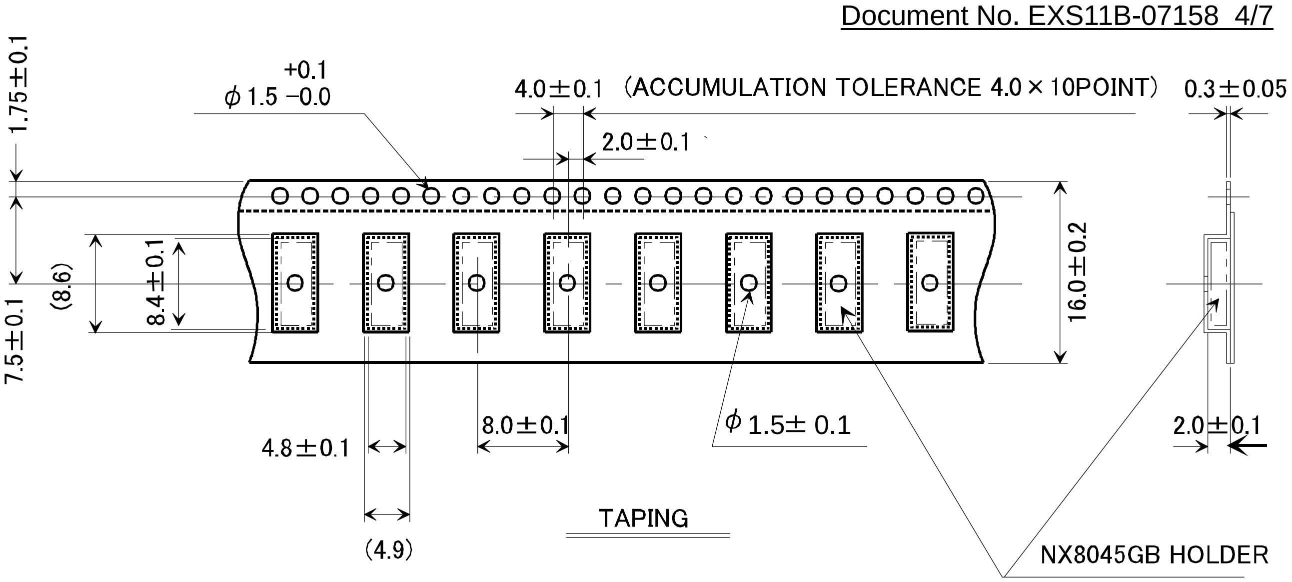

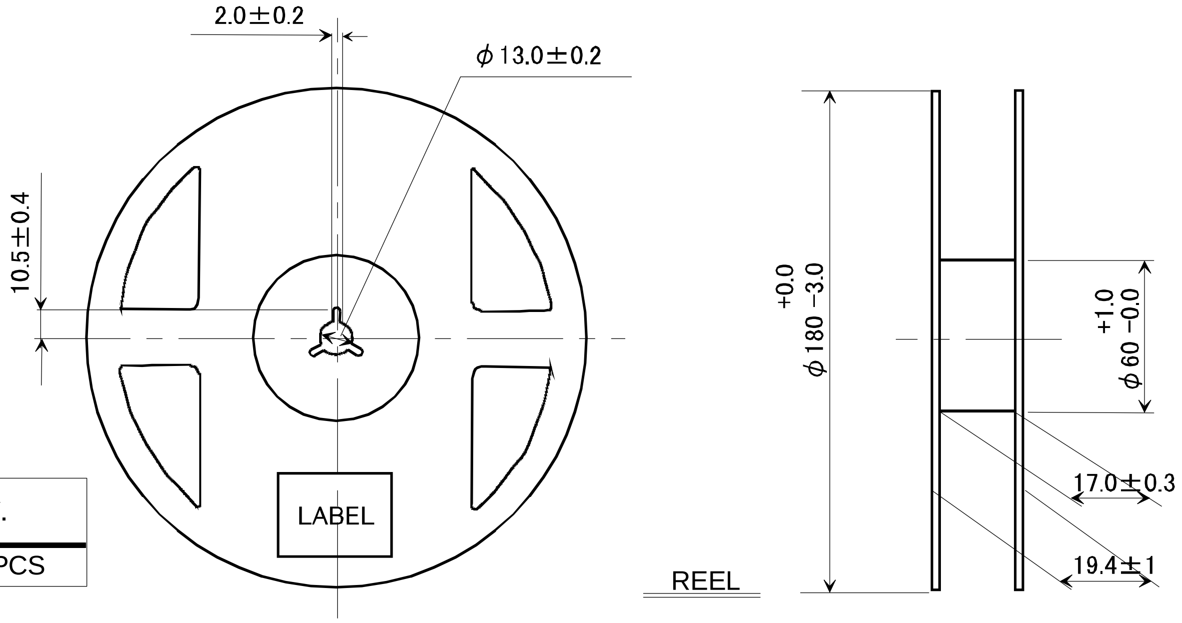

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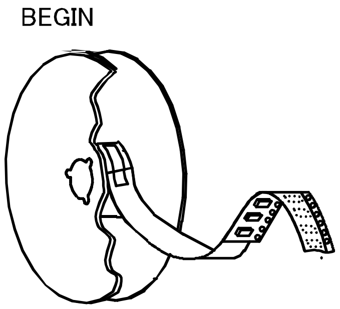
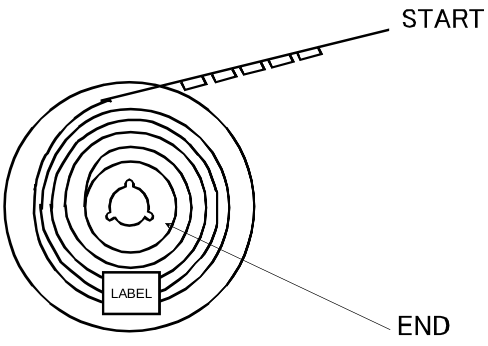
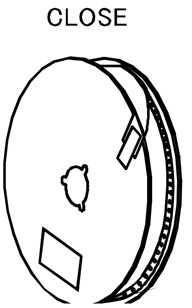
1000 PCS







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

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	26.Mar.1999	K.Nakashima	Dimension:mm		/
Designed	26.Mar.1999	K.Nakashima	Title NX8045GB(TPR72-R/ TPR88-R)	Drawing No.	Rev.
Checked	-	-	TAPING AND REEL SPEC.	EXK17B-00007	C
Approved	26.Mar.1999	M.Okamoto			

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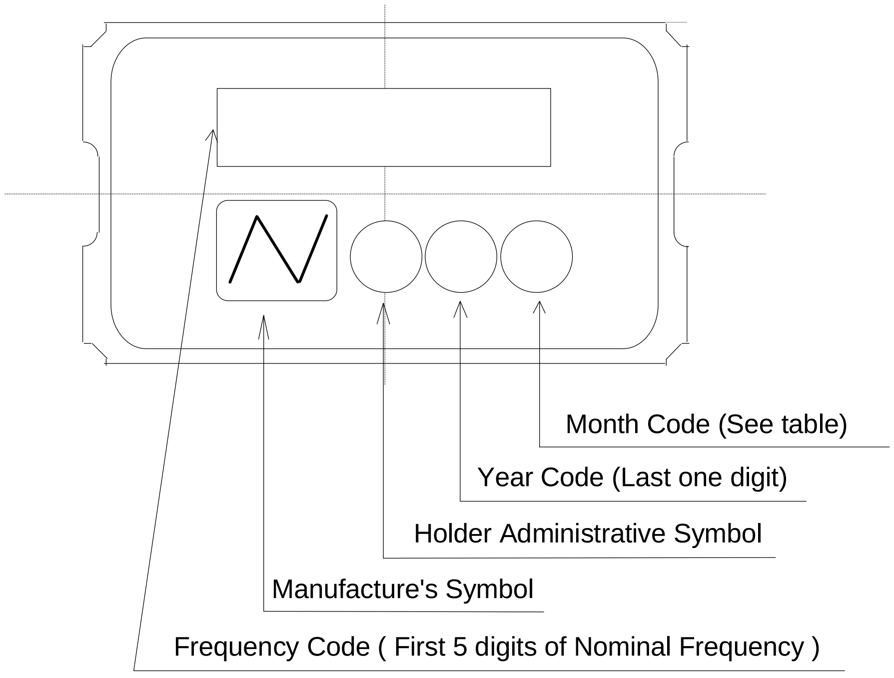

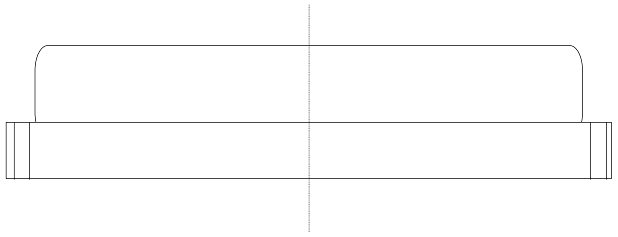

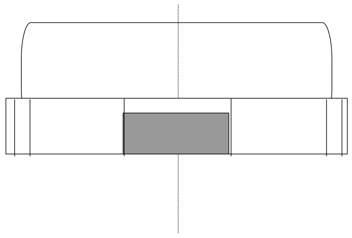

1. Marking contents

Example

Frequency Code	14.318

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	D

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

	Date of Revise	Charge	Approved	Reason
A	1.Nov.2000	K.Nakashima	M.Miura	Change Form

	Date	Name	Third Angle Projection	Tolerance	Scale
Drawn	1.Oct.1999	K.Nakashima	Dimension:mm		/

			Title	Drawing No.	Rev.
Designed	1.Oct.1999	K.Nakashima	**NX8045GB Marking**	**EXH11B-00043**	A
Checked	----------	----------			
Approved	1.Oct.1999	M.Okamoto			

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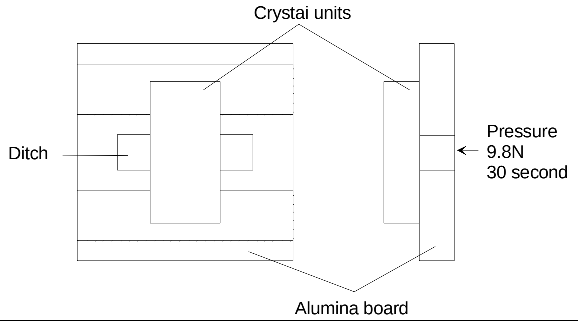
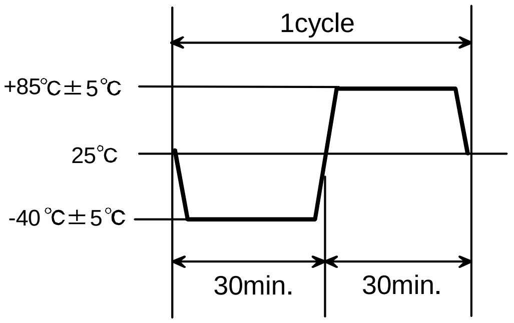
No.	Test item	Test methods	Spec. code
1	Drop	Devices are dropped from the height 75cm onto wooden block. (more than 30mm thickness.) Execution 3 times random drops.	A
2	Shock	Devices are shocked to half sine wave 981m/s^2 (100G) three mutually perpendicular axis each 3 times.	A
3	Vibration	Frequency range : 10 to 55 Hz Amplitude : 1.5 mm Sweep time : 1 min. Test time : 2.0 hours	A
4	Electrode adherent strength	Reflow soldering shall be used for soldering on test fixture (Glass fiber epoxy laminate : Thickness 1.6mm+/-0.2mm) shown below. (220~240°C) Be careful to happen the heat shock. 	B
5	Solderability	Pre-heat temperature : 150°C Pre-heat Time : 60~120sec. Peek temperature : 240±5°C Solderind temperature : Over 215°C Test time : 10~30 sec.	C
6	Resistance to soldering heat	Pre-heat temperature : 150°C Pre-heat Time : 60~120sec. Test temperature : 260±5°C Test time : 10 sec. Max.	A,B
7	Resistance to cold	Leave at –40°C ±2°C for 500 hours.	A
8	Resistance to heat	Leave at +85°C ±2°C for 500 hours.	A
9	Humidity	Device are left in temperature at +60°C with relative humidity of 90~95% for 500 hours.	A,D
10	Thermal shock	Device are left into the following temperature cycle as shown in (Figure1) for 100 consecutive cycle.  (Figure1)	A,B

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.

Recommendation reflow condition

1.IR reflow condition