

Preliminary Specifications

Note: This is a draft specification and may be changed.

Drawing No.	USY1M-H1-24027-00
Issued Date.	Apr,05, 2024

Messrs: Digikey

Note : Specifications are subject to change and part numbers will be revised in case of specifications change.

Product Type	Quartz Crystal
Series	CX1612DB
Frequency	32000kHz
Customer Part Number	-
Customer Specification Number	-
KYOCERA Part Number	CX1612DB32000D0WRZC1
Remarks	Pb-Free, RoHS Compliant, MSL 1

Customer Approval

Approval Signature	Approved Date	
	Department	
	Person in charge	

Seller

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Design Department	Quality/Assurance	Approved by	Examined by	Written by
KYOCERA Corporation Corporate Electronic Components Group Electronic Devices Division	E.Kimura	A.Iwaguchi	N.Sugihara	H.Yasunaga

Revision History

Rev.No.	Description of revision	Date	Approved by	Examined by	Written by
00	First Edition	Apr,05,2024	A.Iwaguchi	N.Sugihara	H.Yasunaga

Preliminary

1. APPLICATION

This specification sheet is applied to quartz crystal "CX1612DB"

2. KYOCERA PART NUMBER

CX1612DB32000D0WRZC1

3. RATINGS

Items	SYMB.	Rating	Unit	Remarks
Operating Temperature Range	Topr	-40 to +105	°C	
Storage Temperature Range	Tstg	-40 to +105	°C	

4. CHARACTERISTICS

ELECTRICAL CHARACTERISTICS

Items	Electrical Specification					Test Condition	Remarks
	SYMB.	Min.	Typ.	Max.	Unit		
Operating frequency		-	32	-	MHz		
Mode of vibration		Fundamental			-		
Nominal Temperature	T _{NOM}		25(TBD)		°C		
Load capacitance	CL		8.0		pF		
Frequency Tolerance	dF	-30	-	+30	ppm	+25±3 °C	
Frequency Temperature Characteristics	dFT					-40 to 105 °C	
Frequency Ageing Rate	Fa	-2		+2	ppm	+25±3 °C, 1year	
Effective series resistance	ESR	-	-	60	Ω		
Drive level	Pd	0.01	-	200	μW		
Insulation resistance	IR	500	-	-	MΩ	100 V (DC)	

5. Measurement Condition

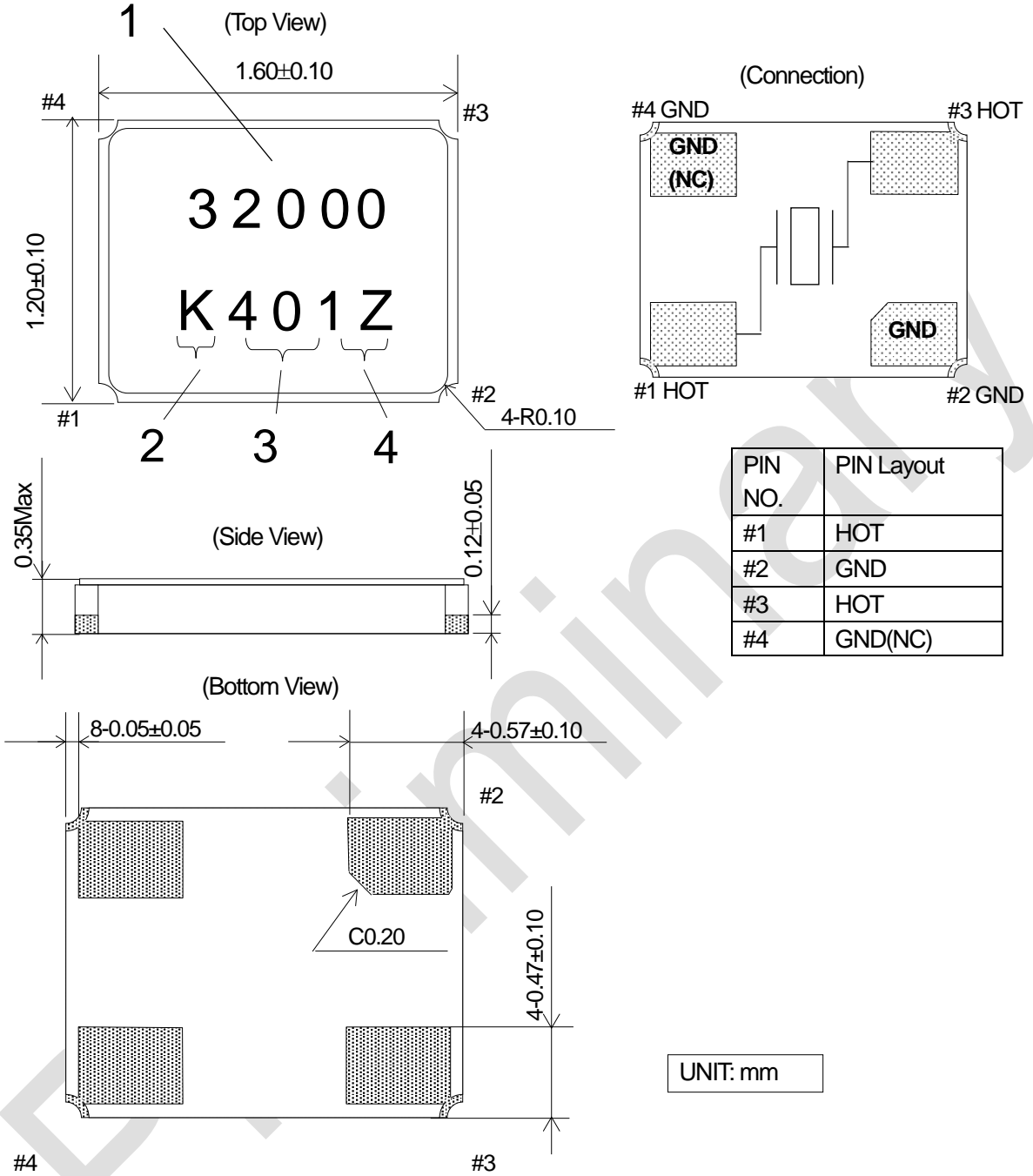
5.1 Frequency measurement

Measuring instrument : IEC PI-Network Test Fixture
IEC 60444-8 STD (Pi circuit 41901A)

5.2 Equivalent series resistance (ESR) measurement

Measuring instrument : IEC PI-Network Test Fixture
Load Capacitance : Series

6. APPEARANCES, DIMENSIONS
OUTLINE DIMENSION (not to scale)

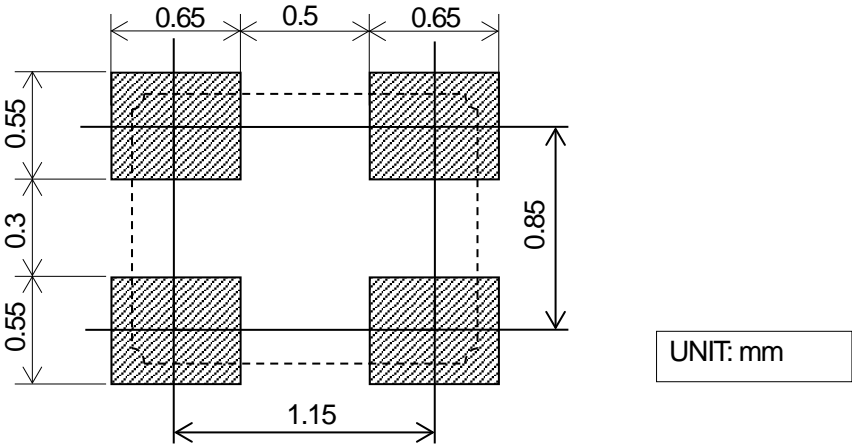


MARKING

- | | |
|----------------------------|--|
| (1) Nominal Frequency | First 5digits of the frequency are indicated. |
| (2) Identification | [K] is to indicate 1Pin direction. |
| (3) Date Code | Last 1 Digit of YEAR and WEEK (Ex) 2024,Jan,03→ 401 |
| (4) Manufacturing Location | Y: Japan(Yamagata Higashine) Z: Japan(Shiga Higashiomii) |

*The font of marking is for reference only.

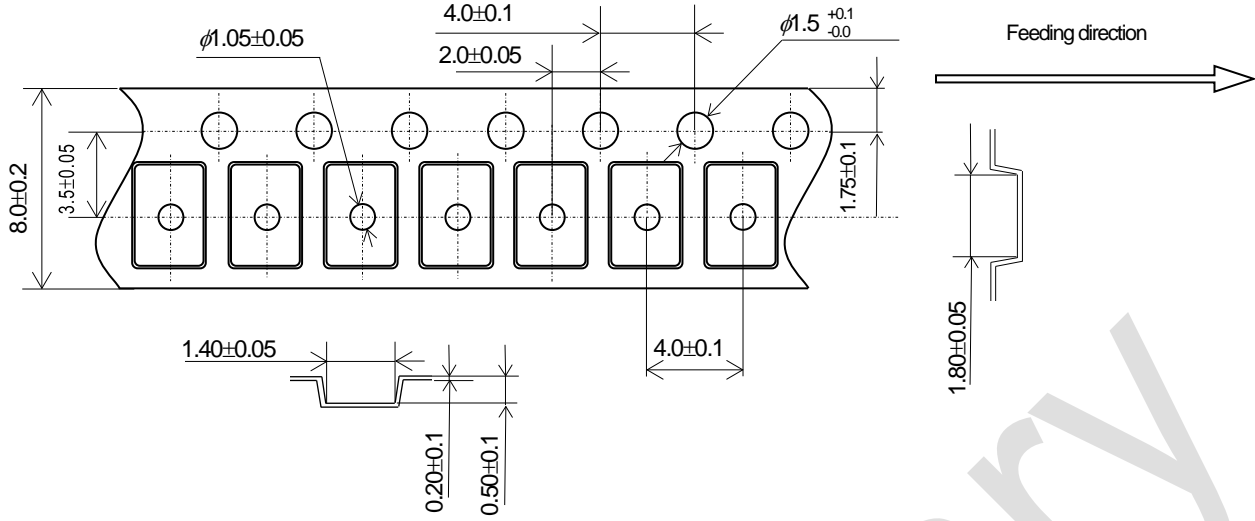
7. RECOMMENDED LAND PATTERN (not to scale)



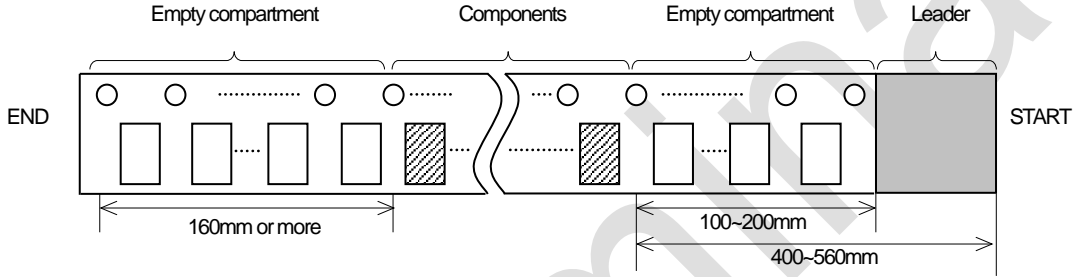
Preliminary

8. TAPING&REEL

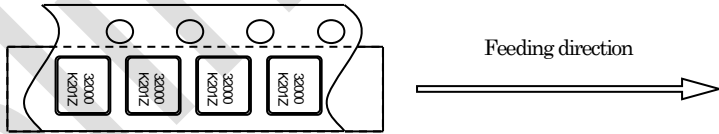
8-1.Dimensions



8-2.Leader and trailer tape

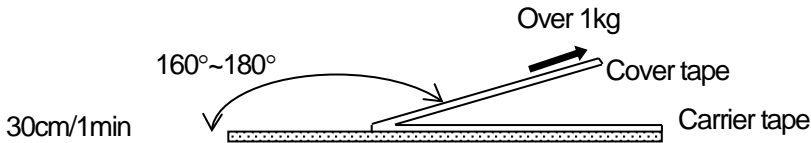


8-3.Direction (Orientation shall be checked from the top cover tape side)

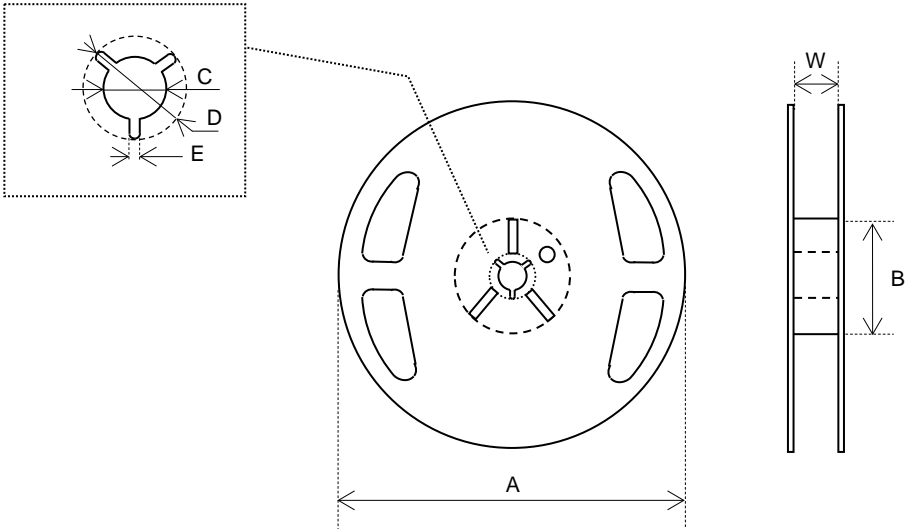


8-4.Specification

1. Material of the carrier tape is either polystyrene or A-PET (ESD).
2. Material of the cover tape is polyester (ESD).
3. The seal tape shall not cover the sprocket holes and not protrude from the carrier tape.
4. Tensile strength of carrier tape: 10N or more.
5. The R of the corner of each cavity is 0.2RMAX.
6. The alignment between centers of the cavity and sprocket hole shall be 0.05mm or less.
7. The orientation shall be checked from the top cover tape side as shown in 7-3.
8. Peeling force of cover tape: 0.1 to 1.0N.
9. The component will fall out naturally when cover tape is removed and set upside down.



8-5.Reel Specification



φ180 Reel (5,000 pcs Max.)

Symbol	A	B	C
Dimension	φ180 +0/-3	φ60 +1/-0	φ13±0.2
Symbol	D	E	W
Dimension	φ21±0.8	2.0±0.5	9±1.0

(Unit: mm)

φ330 Reel (21,000 pcs Max.)

Symbol	A	B	C
Dimension	φ330±2.0	φ100±1.0	φ13±0.2
Symbol	D	E	W
Dimension	φ21±0.8	2.0±0.5	9.4±1.0

(Unit: mm)

9. Cautions for use

(1) Soldering upon mounting

There is a possibility to influence product characteristics when Solder paste or conductive glue comes in contact with product lid or surface.

(2) When using mounting machine

Please minimize the shock when using mounting machine to avoid any excess stress to the product.

(3) Conformity of a circuit

We strongly recommend to make sure that Negative resistance (Gain) of IC is designed to be 5 times the ESR (Equivalent Series Resistance) of crystal unit.

(4) Application instructions

This product is designed to be used for general electronic device and is not designed in the high reliability application listed below.

Please inform the department in charge when using the product for following applications.

Utility in nuclear power plant	Traffic signal control system
Utility in space	security and disaster-prevention
Aircraft	Transporter (car, train, ship, etc.)
under water or ground	Medical
other - applications requires same environmental status as above.	

This product must not be used in every application which are primary - intended to damage human race or their property.

Arms (missile, bomb and other application to damage human)

Weapons (transports act for combat)

Controller with primary – intended to military use.

(5) This product is not applicable for mording.

10. Storage conditions

Please store product in below conditions, and use within 6 months.

Temperature +18 to +30°C, and Humidity of 20 to 70 % in the packaging condition.

11. Manufacturing location

KYOCERA Corporation Shiga Higashiomi Plant

KYOCERA Corporation Yamagata Higashine Plant

12. Quality Assurance

Location

KYOCERA Corporation Yamagata Higashine Plant: Quality Assurance Division

KYOCERA Corporation Shiga Higashiomi Plant: Quality Assurance Division

13. Quality guarantee

In the case when KYOCERA Corporation rooted failure occurred within 1 year after its delivery, substitute product will be arranged based on discussion. Quality guarantee of product after 1 year of its delivery is waived.

14. Others

In case of any questions or opinions regarding the Specification, please have it in written manner within 45 days after issued date.