

Date: 2005/ 9/21

Messrs: Atheros**Specification**

AVX Catalog PN	CX-96F-040.000-E0107
Customer specification Number	-
Product	Quartz Crystal
Model	CX-96F
Frequency	40000kHz
Part Number	CX5032SB40000LOWZK01

[STAMP]

Sales office

KYOCERA Corporation

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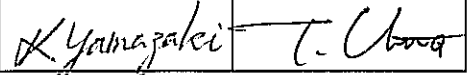
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DesignKYOCERA KINSEKI Yamagata Co.
Quartz Crystal Division**Issued by**

K.Yamazaki

Approved by

T.Ueta



Recycled paper is being used for the conservation of nature.

Date: 2005/ 9/21

Change History

Rev	DESCRIPTION	DATE	DRAWN	CHECKED	APPROVED
0	Spec release	2005/ 9/21	<i>K. Yamazaki</i>	<i>[Signature]</i>	<i>T. Ueta</i>

1. APPLICATION

This specification sheet is applied to quartz crystal "CX-96F".

2. PART NUMBER

CX5032SB40000LOWZK01

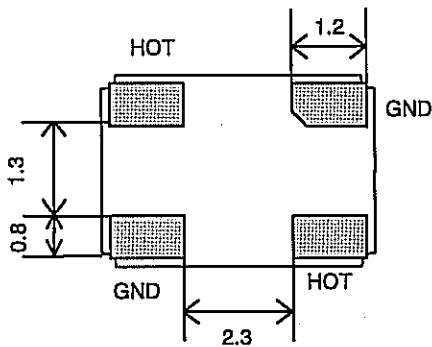
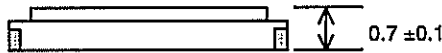
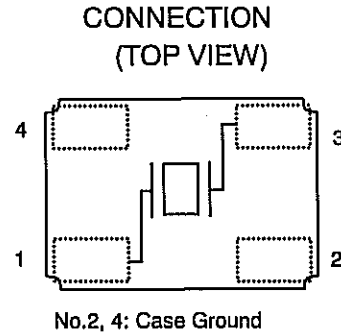
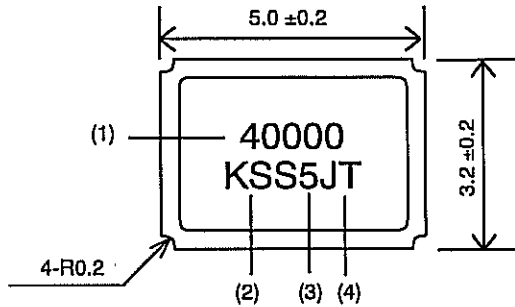
3. RATINGS

Items	SYMB.	Rating	Unit	Remarks
Operating Temperature	Topr	0~+85	°C	
Storage Temperature Range	Tstg	-40~+85	°C	

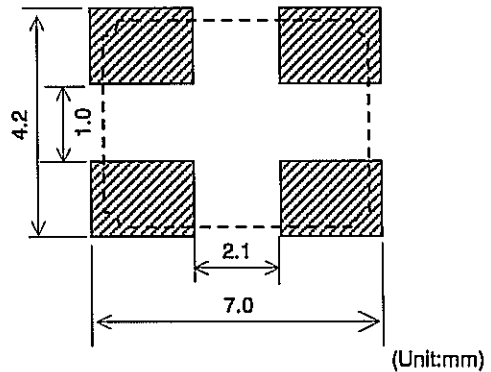
4. CHARACTERISTICS**4-1 ELECTRICAL CHARACTERISTICS**

Items	Electrical Specification					Test Condition	Remarks
	SYMB.	Min.	Typ.	Max.	Unit		
Mode of Vibration		Fundamental					
Nominal Frequency	F0		40		MHz		
Nominal Temperature	T _{NOM}		25		°C		
Load Capacitance	CL		15.0		pF		
Frequency Tolerance	df/F	-18.0		18.0	PPM	0~+85°C	
Frequency Ageing Rate		-2.0		2.0		1 year	
Equivalent Series Resistance	ESR			25	Ohms		
Drive Level	Pd	0.01		0.5	mW		
Insulation Resistance	IR	500			M ohms	100V(DC)	

5. APPEARANCES, PHYSICAL DIMENSION
OUTLINE DIMENSION (not to scale)



RECOMMENDED LAND PATTERN



MARKING

(1) Nominal Frequency Move the number of maximum indication beams of the frequency to five digits, and omit less than kHz.

(2) Identification

(3) Lot number

Year: Last 1 digit

Month: Refer to the following table

Month	1	2	3	4	5	6	7	8	9	10	11	12
Mark	A	B	C	D	E	F	G	H	J	K	L	M

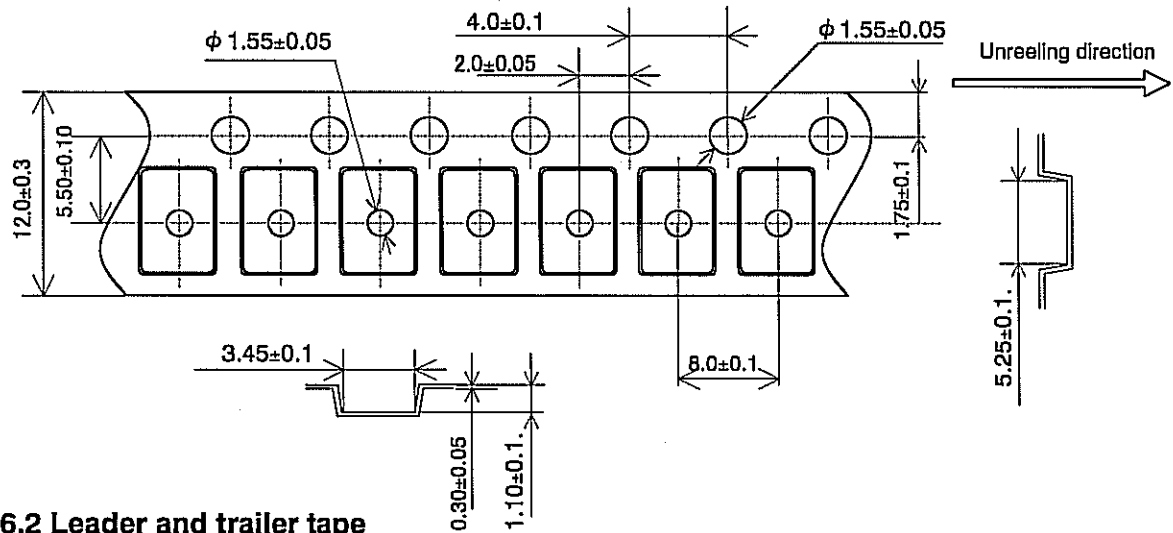
Example) SEP. 2005: 5J

(4) Manufacturing Location

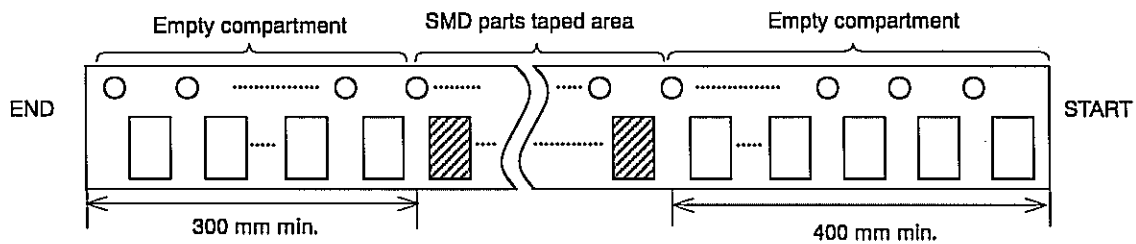
T: KYOCERA KINSEKI (Thailand) Co., Ltd.

6. TAPING & REEL

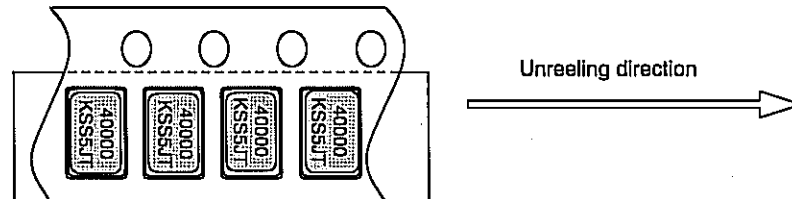
6.1 Carry tape dimension



6.2 Leader and trailer tape

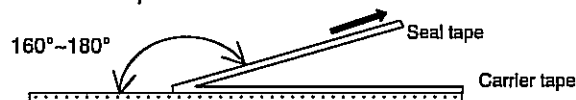


6.3 Direction (The direction shall be seen from the top cover tape side)

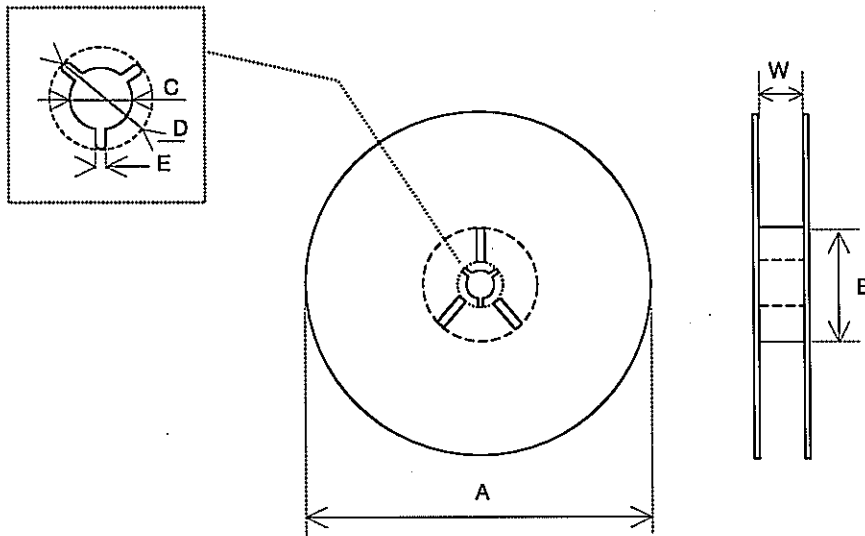


6.4 Taping specification

1. Material of the carrier tape shall be polystyrene or A-PET (ESD).
2. Material of the seal tape shall be polyethylene.
3. The seal tape shall not cover the sprocket holes. And not protrude from the carrier tape.
4. Tensile strength of the tape : $10N\{1.02kgf\}$ or more.
5. The R of the corner without designation is $0.2R_{MAX}$.
6. Disalignment between centers of the cavity and sprocket hole shall be $0.05mm$ or less.
7. Peeling force of the seal tape (Peeling speed $300mm/min.$): 0.1 to $0.7N\{10.2$ to $71.4gf\}$.
8. Packing quantity is $1000\sim 5000$ pieces.



6.5 Reel specifications



In the case of $\phi 180$ Reel (1,000 pcs. Max.)

Symbol	A	B	C	D
Dimension	$\phi 180$	$\phi 80$	$\phi 13$	$\phi 21$
Symbol	E	W		
Dimension	2	12.8		

(Unit : mm)

In the case of $\phi 330$ Reel (1,000 ~ 5,000 pcs.)

Symbol	A	B	C	D
Dimension	$\phi 330$	$\phi 80$	$\phi 13$	$\phi 21$
Symbol	E	W		
Dimension	2.0	13.5		

(Unit : mm)

7. Environmental requirements

After following test, frequency shall not change more than $\pm 2.0 \times 10^{-6}$ and CI, $\pm 20\%$ or 5 Ohms of large value.

7.1 Resistance to Shock

Test condition

Natural dropped from height 100cm onto hard wood board in 3 times

7.2 Resistance to Vibration

Test condition

frequency : 10-55 -10 Hz
 Amplitude : 1.5 mm
 Cycle time : 15 minutes
 Direction : X,Y,Z (3 directions), 2 h each.

7.3 Resistance to Heat

Test condition

The quartz crystal unit shall be stored at a temperature of $+85 \pm 2$ °C for 500 h.
 Then it shall be subjected to standard atmospheric conditions for 1 h, after which measurement shall be made.

7.4 Resistance to Cold

Test condition

The quartz crystal unit shall be stored at a temperature of -40 ± 2 °C for 500 h.
 Then it shall be subjected to standard atmospheric conditions for 1 h, after which measurement shall be made.

7.5 Thermal Shock

Test condition

The quartz crystal unit shall be subjected to 500 successive change of temperature cycles, each as shown in table below, Then it shall be subjected to standard atmospheric conditions for 1h, after which measurements shall be made.

Cycle : -40 ± 2 °C (30 min.) $\sim 25 \pm 2$ °C (5 min.)
 $\sim +85 \pm 2$ °C (30 min.) $\sim 25 \pm 2$ °C (5 min.)

7.6 Resistance to Moisture**Test condition**

The quartz crystal unit shall be stored at a temperature of 60 ± 2 °C with relative humidity of 90 % to 95 % for 240 h. Then it shall be subjected to standard atmospheric conditions for 1h, after which measurements shall be made

8. Soldering condition

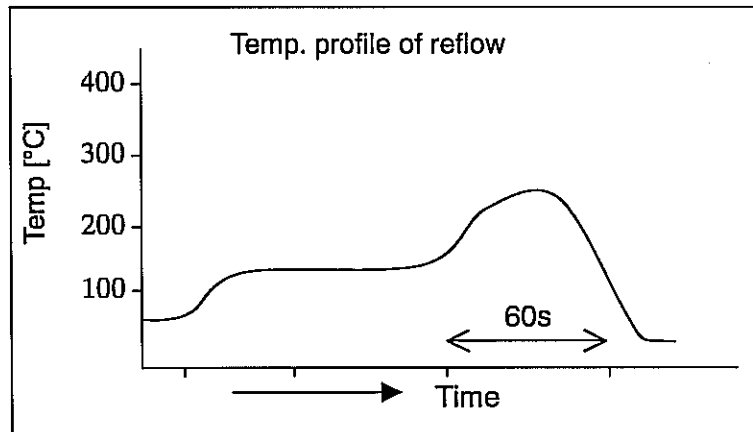
1) Material of solder

Kind: lead free solder paste

Melting point: 220 ± 5 °C

2) Temp.profile of reflow soldering system

	Temp [°C]	Time[sec.]
Peak	260 ± 5	10 (max.)
Preheating	180 (typ.)	100 (typ.)
Total	—	200 (max.)



Date: 2005/ 9/21

9. Quality Assurance

Location

Kyocera Kinseki (Thailand) Co., Ltd.: Kyocera Kinseki (Thailand) Co., Ltd
Quality Assurance Division

Quality guarantee

When the failure by the responsibility of our company occurs clearly after delivery within 1 year, a substitute article etc. is appropriated gratuitously and this is guaranteed. However, when passing 1 year after delivery, there is a case where I am allowed to consider as onerous repair after both consultation.

10. Cautions for use

(1) Automatic mounting machine use

Please use after affirmation that select the mounting machine model with a shock small if possible in the case of use of an automatic mounting machine, and it does not have breakage. There is a risk of a crystal oscillating child's breakage occurring and not functioning normally by too much shock etc.

(2) Conformity of a circuit

In case of use of an oscillation circuit, please insert in a crystal oscillating child in series resistance 5 time as many as the standard value of equivalent in-series resistance, and confirm oscillating. Please remove resistance which inserted after the notes above-mentioned examination in the crystal oscillating child in series, and use it.

11.Storage conditions

Storage at prolonged high temperature or low temperature and the storage by high humidity cause degradation of frequency accuracy, and degradation of soldering nature. Storage is performed at the temperature of 18-30 degrees C, and the humidity of 20-70 Percent in the state of packing, and a term is 6 months.

12.Others

When any questions and opinions are in the written matter of these delivery specifications, I will ask connection of you from the our company issue day within 45 days. In a connection no case, a written matter is consented to it and employed within a term.