Specifications

Drawing No.	USY1N-H1-15380-00 1 / 6
Issued Date.	Jul,28,2015

Messrs: Digi-key

Note: Part Number will be revised in case of specification change.

Product Type	Tuning Fork Crystal
Series	ST3215SB
Frequency	32.768 kHz
Customer Part Number	-
Customer Specification Number	-
KYOCERA Part Number	ST3215SB32768H5WZZAP
Remarks Pb-Free, RoHS Compliant, MSL 1	

Customer Approval

Approval Signature	Approved Date	
	Department	
	Person in charge	

Seller
KYOCERA Crystal Device Corporation
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Design Department	Quality Assurance	Approved by	Checked by	Issued by
KYOCERA Crystal Device Corporation Crystal Unit Application Engineering Section Crystal Units Division	S.Itou	T.Soda	A.Muraoka	Y.Nozaki

Revision History

Rev.No.	Description of revision	Date	Approved by	Checked by	Issued by
0	First Edition	Jul,28,2015	T.Soda	A.Muraoka	Y.Nozaki

1. APPLICATION

This specification sheet is applied to tuning fork crystal “ST3215SB”.

2. PART NUMBER

ST3215SB32768H5WZZAP

3. RATINGS

Items	SYMB.	Rating	Unit
Operating Temperature range	Topr	-25~+75	deg. C
Storage Temperature range	Tstg	-55~+125	deg. C

4. CHARACTERISTICS

4-1 ELECTRICAL CHARACTERISTICS

Item	Symbol	Electrical Specification				
		Condition	Min	Typ.	Max	Unit
Nominal Frequency	fo	Ta = 25 deg. C		32.768		kHz
Frequency Tolerance	df/fo	Ta = 25 deg.C	-250		250	ppm
Frequency Stability	df/T	Operating Temperature				
Aging	df/F	Ta = 25 deg. C 1year				
Load Capacitance	CL			12.5		pF
Equivalent series resistance	R1				70	kΩ
Q-Value	Q		13000			
Motional capacitance	C1		3.0		4.4	fF
Shunt capacitance	Co		0.6		1.2	pF
Turning point	Tp		20		30	deg. C
Secondary temperature Coefficient	K		-4.0			10^{-8}/degC^2
Drive level	DL			0.1	0.5	μW
Insulation resistance (between electrodes)	IR		500			MΩ

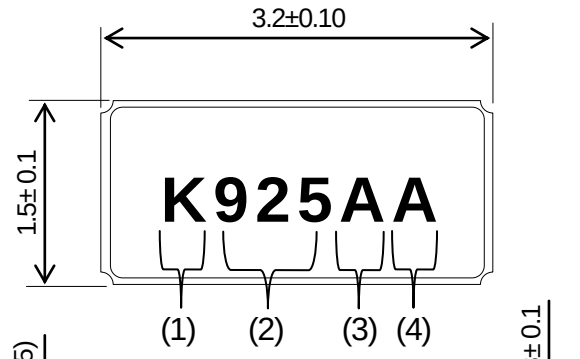
4-2 MOISTURE SENSITIVITY LEVEL

Level 1

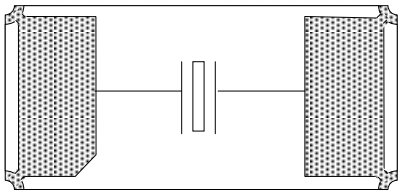
5. APPEARANCES, DIMENSIONS

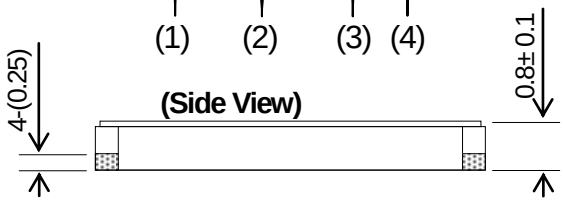
OUTLINE DIMENSIONS (not to scale)

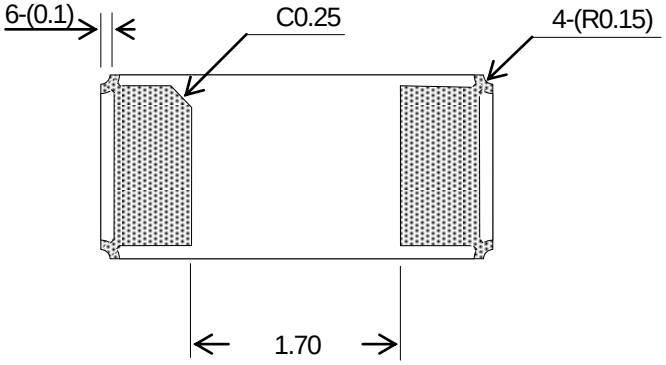
(TOP VIEW)



CONNECTION (TOP VIEW)







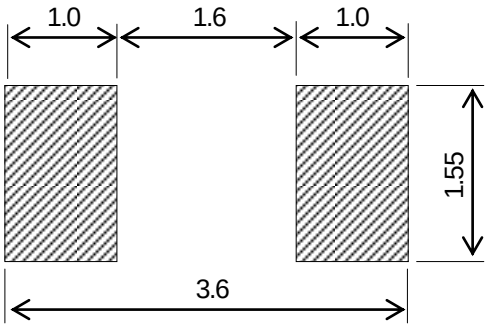
UNIT : mm

MARKING

(1)	Identification	K
(2)	Date Code(3 Digits)	Last 1 digit of year and week Code.
(3)	Load Capacitance	(Example) 12.5pF → A
(4)	Management number	Alphabet or Number 1digit.

*The font of marking above is for reference purpose.

6. RECOMMENDED LAND PATTERN



UNIT : mm

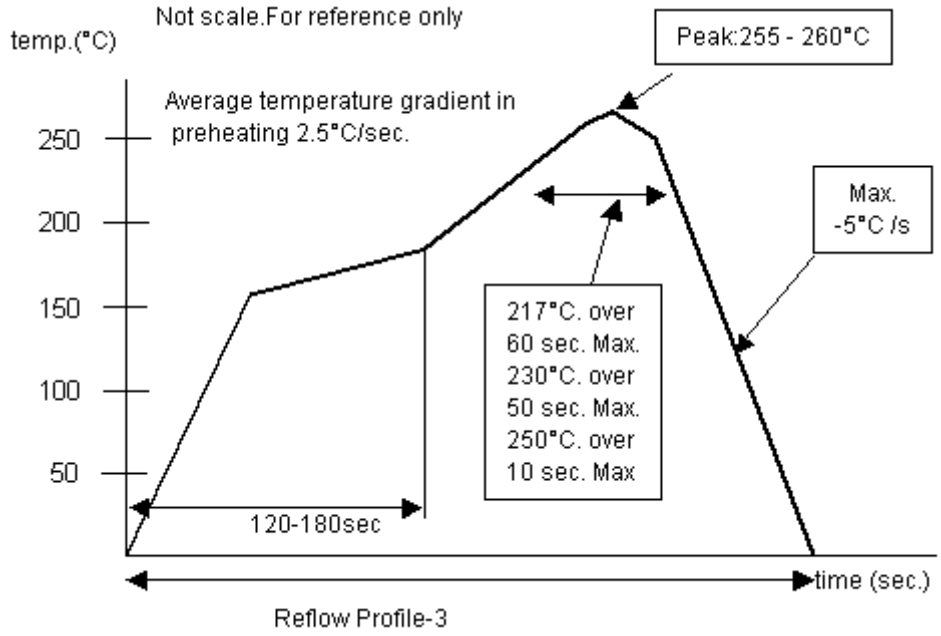
7. RELIABILITY

Frequency Stability and ESR Stability After stressing.

TEST ITEM		Frequency Stability (ppm)	ESR Stability (%)	Remarks
7.1	Low temp. use/storage	±5	±30	Ta=25 deg. C
7.2	High temp. use/storage	±5		
7.3	Shock	±20		
7.4	Vibration	±5		
7.5	Soldering iron resistance	±5		
7.6	Manual hot gas resistance	±10		
7.7	High temp. With humidity	±5		
7.8	Temperature cycle	±5		

8. REFLOW PROFILE

Pb-free reflow requirements for soldering heat resistance



Reflow Profile-3

9. Cautions for use

(1) Soldering upon mounting

Characteristics may be affected 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 3 times the ESR (Equivalent Series Resistance) of Crystal unit.

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 Crystal Device Corporation Shiga Yohkaichi Plant

12. Quality Assurance

To be guaranteed by Kyocera Crystal Device Quality Assurance Division

13. Quality guarantee

When Kyocera Crystal Device Corporation rooted failure occurs within 1 year after its delivery, substitute product will be arranged based on discussion. Quality guarantee of product after 1year of its delivery will be waivered.

14. Others

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