SPEC. NO.: A304-014

CRYSTAL SPECIFICATION

Customer :

Customer P/N :

Agent :

Agent Code :

SIWARD P/N : XTL721-A304-014

Customer Approval :

希華晶體科技股份有限公司
SIWARD CRYSTAL TECHNOLOGY CO., LTD.

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TEL: (04)25347909 EXT 1340/1341

研發部/R & D DEPT.
TEL: (04)25347909 EXT 1521

DATE : 2018/03/08

Approved By : Steve Chen

Checked By : Tom Tang

Designer : Sally Lin

Address:1-1,LANE 111,JUNG-SHAN RD.,SEC.3, TANTZU HSING,TAICHUNG 427,TAIWAN,R.O.C.

Rev.	Description of Revision History	Date	Designer	Checked By
1	New Publication	2015/08/28	Jo.Jo Lin	Tom Tang
2	C0 Before Changed: 0.9 ~ 1.5pF; C1: 3.9 ~ 5.3 fF.(K1601-006)	2016/01/15	Sally Lin	Tom Tang

SPEC. NO.: A304-014

CRYSTAL SPECIFICATION

1. Description : Quartz Crystal
2. Nominal Frequency : 32.768 KHz
3. Center Frequency : 32.768 KHz
4. Dimension & Drawing No. : CSF-3215 ; SXD-00344
5. Oscillation Mode : Fundamental
6. Cutting Mode :
7. Packing Style : TP-175
8. Measurement Instrument : S&A 250B(Calculated FL)
9. Electrical Characteristics :

[1] Operating Conditions :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Operating Temperature Range	Topt	-40		125	℃	
Storage Temperature Range	Tstg	-55		125	℃	
Load Capacitance	CL		12.5		pF	
Drive Level	DL		0.1	0.5	μW	

[2] Frequency Stability :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Tolerance	dF/Fo	-20		20	ppm	Refer to Center Frequency @25±3℃ DL = 0.1uW
Freq. vs Temp. Coefficient	dF/dT			-0.04	ppm/℃^2	Refer to Operating Temperature
Turnover Temperature	TT	20	25	30	℃	
Aging	dF/F25	-3		3	ppm	Per Year

dF/Fo: Frequency Deviation Refer to Center Frequency

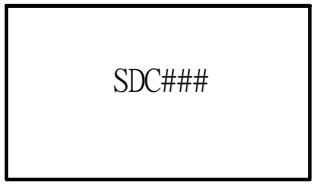
dF/F25: Frequency Deviation Refer to 25 ℃ Frequency

[3] Electrical Performance :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Equivalent Series Resistance	ESR			80000	Ω	@Series
Shunt Capacitance	C0		1.1		pF	
Motional Capacitance	C1		4.4		fF	
Quality Factor	Q	13			K	
Insulation Resistance	IR	500			MΩ	@DC 100 Volt

10. Marking : Laser

*MARKING : D ->YEAR C -> MONTH
YEAR : 1 2 3 4 5 6 7 8 9 0
CODE : A B C D E F G H J K
MONTH: 1 2 3 4 5 6 7 8 9 10 11 12
CODE : A B C D E F G H J K L M
* S -> SIWARD * ### -> Lot No



11. Remark :

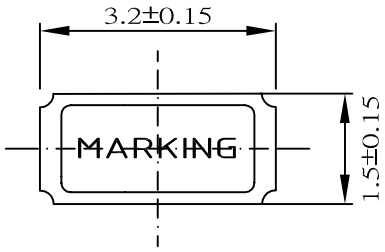
＊The component complies with Moisture Sensitivity Level 1 defined on JEDEC J-STD-020 standard.
＊Compliant with RoHS and Siward QAD-S-116 Standard.

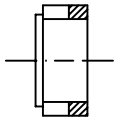
■Note

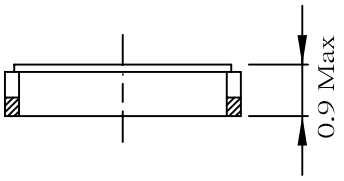
1.Tuning fork products oscillate at frequency bands that are close to the washing frequency of ultrasonic cleaning machine, which may cause resonance deteriorating the electrical characteristics in devices, and even damaging the overall structure of devices. Therefore, using ultrasonic cleaning machine to clean tuning fork devices should be avoided. If the use of this method to clean tuning fork devices is required, it's suggested to check the functionality of devices before and after the cleaning process.

2.Avoid mounting and processing by Ultrasonic welding this method has a possibility of an excessive vibration spreading inside the crystal products and becoming the cause of characteristic deterioration and not oscillating.

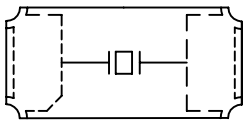
3.Manual soldering heat resistance
Pressing a soldering iron of 400°C on the terminal electrode for four seconds (twice).

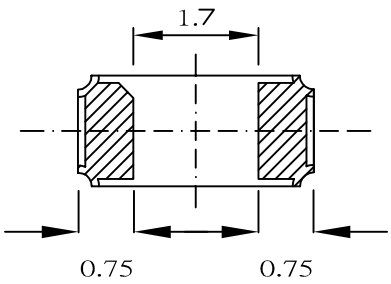




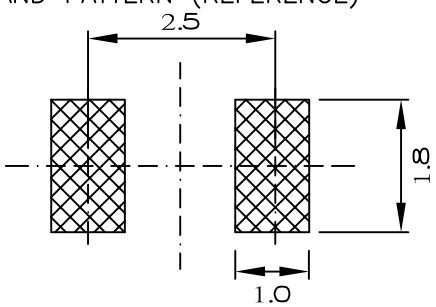


TOP VIEW



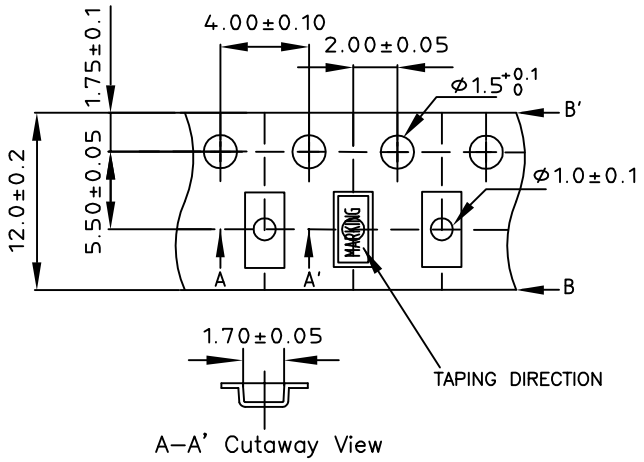


LAND PATTERN (REFERENCE)

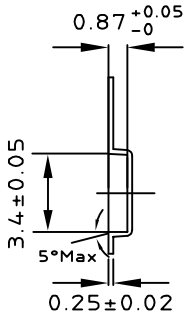


			DRAWING NAME	CSF-3215		
			DRAWING NO.	SXD-00344		
1	NEW EDITION	'14.09.24	SCALE		UNIT	mm
NO.	MODIFY CONTENTS	DATE	APPROVE	Edward	DESIGNER	Andy

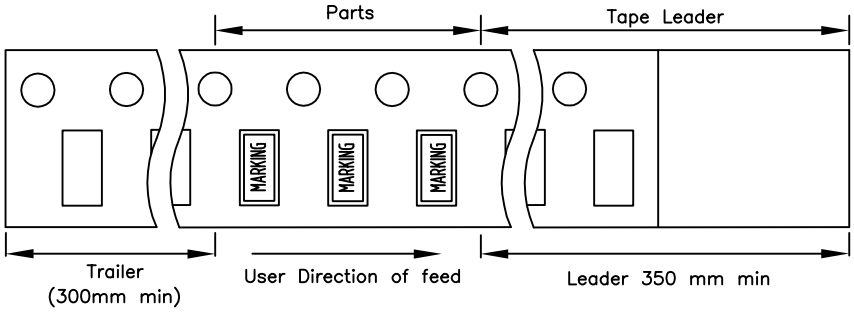
1.CARRIER TYPE



A–A' Cutaway View

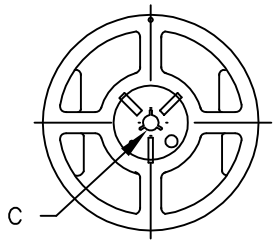


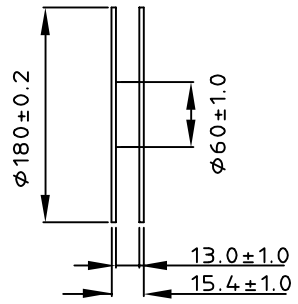
B–B' Cutaway View

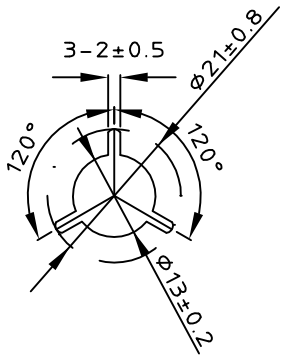


2.REEL:3000PCS

(White or Black)







C.ENLARGE

4	MODIFY DEPTH(101K1411-007)	'14.11.11	DRAWING NAME	SX-3215/SF-3215 REEL PACKING		
3	MODIFY DRAWING NAME MODIFY TAPING DIRECTION	'13.05.28	DRAWING NO.	TP-175		
1	NEW EDITION	'12.08.21	SCALE		UNIT	mm
NO.	MODIFY CONTENTS	DATE	APPROVE	John	DESIGNER	Benson