SPEC. NO.: H205-006

CRYSTAL SPECIFICATION

Customer : 正基科技股份有限公司

Customer P/N :

Agent :

Agent Code :

SIWARD P/N : XTL571200-H205-006

Customer Approval :

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

業務部/ SALE DEPARTMENT
TEL: (04)25347909
FAX: (04)25327885 / 25337396
URL HTTP://www.siward.com.tw

品質保證部/ QUALITY ASSURANCE DEPT.
TEL: (04)25347909 EXT 1340/1341

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

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

DATE : 2013/07/25

Approved By : Cat Wu

Checked By : Tom Tang

Designer :

Rev.	Description of Revision History	Date	Designer	Checked By
1	New Publication	2009/02/24	Sally Lin	Tom Tang
2	Operating Temperature Range Before Changed : -20 ~ 70 ℃. (K1011-016)	2010/11/12	Sally Lin	Tom Tang

SPEC. NO.: H205-006

CRYSTAL SPECIFICATION

1. Description : Quartz Crystal
2. Nominal Frequency : 18.432000 MHz
3. Center Frequency : 18.432000 MHz
4. Dimension & Drawing No. : SX-3225 ; SXD-00213
5. Oscillation Mode : Fundamental
6. Cutting Mode : AT cut
7. Packing Style : TP-094
8. Measurement Instrument : S&A 250B(Measured FL)
9. Electrical Characteristics :

[1] Operating Conditions :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Operating Temperature Range	Topt	-20		85	℃	
Storage Temperature Range	Tstg	-40		90	℃	
Load Capacitance	CL		20		pF	
Drive Level	DL			100	μW	

[2] Frequency Stability :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Tolerance	dF/Fo	-20		20	ppm	Refer to Center Frequency @25±3℃
Stability Over Temperature	dF/F25	-20		20	ppm	Refer to Operating Temperature
Aging	dF/F25	-3		3	ppm	Per Year

dF/Fo: Frequency Deviation Refer to Center Frequency

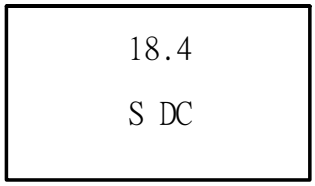
dF/F25: Frequency Deviation Refer to 25 ℃ Frequency

[3] Electrical Performance :

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Equivalent Series Resistance	ESR			100	Ω	@Series
Shunt Capacitance	C0			5	pF	
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

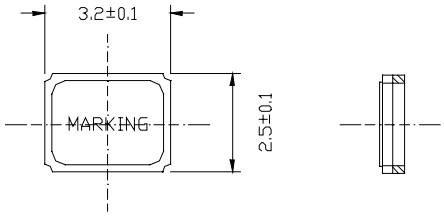


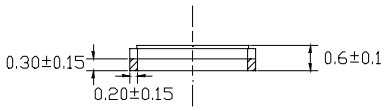
11. Remark :

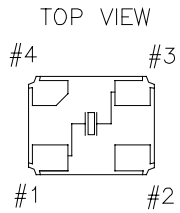
*Lead Free, RoHS compliant

■ DIMENSIONS

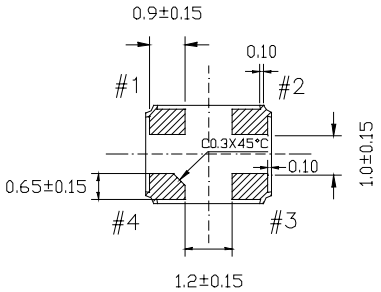
Unit: mm

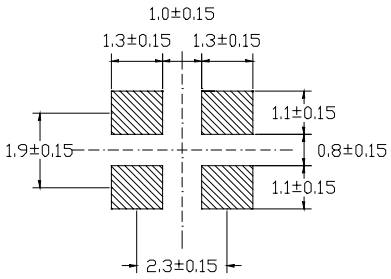




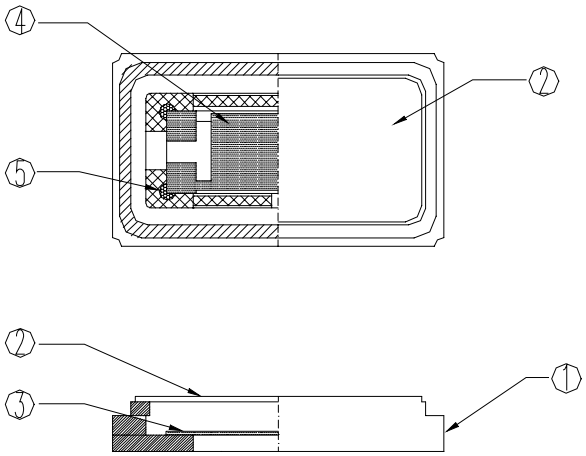


LAND PATTERN (REFERENCE)





■ STRUCTURE ILLUSTRATION



PART NAME		MATERIAL	PART NAME		MATERIAL
1.	BASE	CERAMIC	4.	ELECTRODE	Metal
2.	LID	KOVAR	5.	ADHESMES	SILVER GLUE
3.	BLANK	QUARTZ			

■RELIABILITY SPECIFICATION

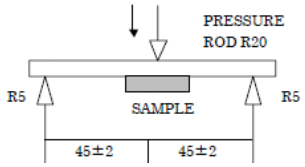
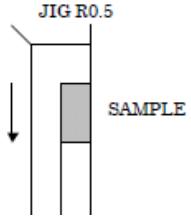
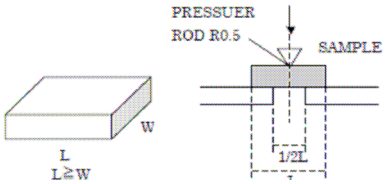
REFER TO JIS C 6701

1. ENVIRONMENTAL PERFORMANCE

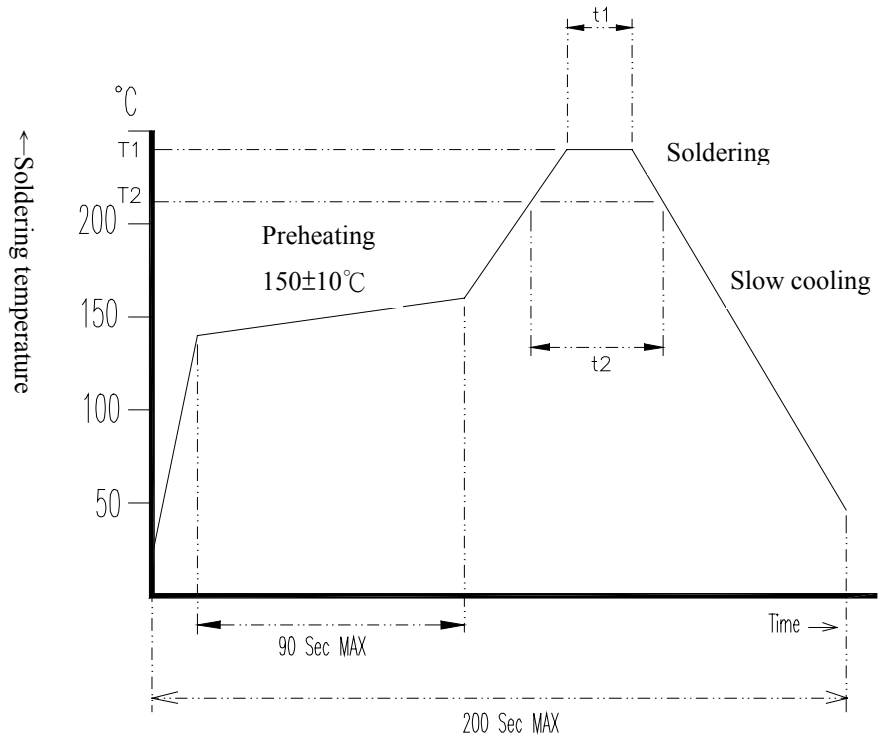
ITEM	CONDITION
1. HIGH TEMPERATURE STORAGE	STORED AT 85±2℃ FOR 720±12H. (If Customer's temperature request is higher than the standard,Temperature test must be done for customer requirements.) THEN 25±2℃ OVER 2H BEFORE TESTING.
2. LOW TEMPERATURE STORAGE	STORED AT –40±2℃ FOR 500±12H. (If Customer's temperature request is lower than the standard,Temperature test must be done for customer requirements.) THEN 25±2℃ OVER 2H BEFORE TESTING.
3. HIGH TEMP. & HUMIDITY	STORED AT 60±2℃ AND HUMIDITY 90～95% FOR 500±12 H. THEN 25±2℃ OVER 2H BEFORE TESTING.
4. TEMPERATURE CYCLE	THE CRYSTAL UNIT SHALL BE SUBJECTED TO 100 SUCCESSIVE CHANGE OF TEMPERATURE CYCLES, THEN 25 ±2℃ OVER 2 H BEFORE TESTING, EACH CYCLE AS BELLOW： TEMPERATURE DURATION 1. -40+0/-6℃ 30±3 MINUTES 2. 25℃±2℃ 2～3 MINUTES 3. 85+4/-0℃ 30 ±3 MINUTES 4. 25℃±2℃ 2～3 MINUTES

2. MECHANICAL PERFORMANCE

ITEM	CONDITION
5. SOLDERABILITY	THE LEAD IS IMMERSED IN A 260±5℃ SOLDER BATH WITHIN 2±0.6 SECONDS.
6. RESISTANCE TO SOLDERING HEAT	REFLOW CHART AS ATTACH SHEET. TWICE PASS.
7. FREE FALL	FREE DROPPING FROM 75 cm HEIGHT 3 TIMES ON A HARD WOODEN BOARD.
8. VIBRATION	FREQUENCY：10～55Hz, AMPLITUDE (TOTAL EXCURSION)：1.5mm±15%, SWEEP TIME：1MIN, 3 DIRECTION(X, Y, Z) EACH FOR 2 Hrs.
9. GROSS LEAK	STANDARD SAMPLE FOR AUTOMATIC GROSS LEAK DETECTOR, TEST PRESSURE: 0.2 Mpa
10. FINE LEAK	HELIUM BOMBING 5.0～5.5 Kgf / cm^2 FOR 2 HOURS.

11. TERMINAL STRENGTH	SHALL BE PRESSURIZED AT A SPEED OF APPROX.0.5mm/sec IN THE DIRECTION INDICATED BY THE ARROW UNTIL THE BENDING WIDTH REACHES 3mm AND HELD FOR 5 SECONDS. 
12. STICKING TENDENCY	A R0.5 JIG SHALL BE USED TO APPLY A 10N DEAD LOAD IN THE DIRECTION INDICATED BY THE ARROW TO THE ELEMENT AND RETAIN IT FOR 10 SECONDS. 
13. ELEMENT ASSEMBLY STRENGTH	A R0.5 PRESSURIZED BAR SHALL BE USED TO APPLY A 10N LOAD IN THE CENTER OF ELEMENT AND RETAIN IT FOR 10 SECONDS. 

■ SUGGESTED REFLOW PROFILE

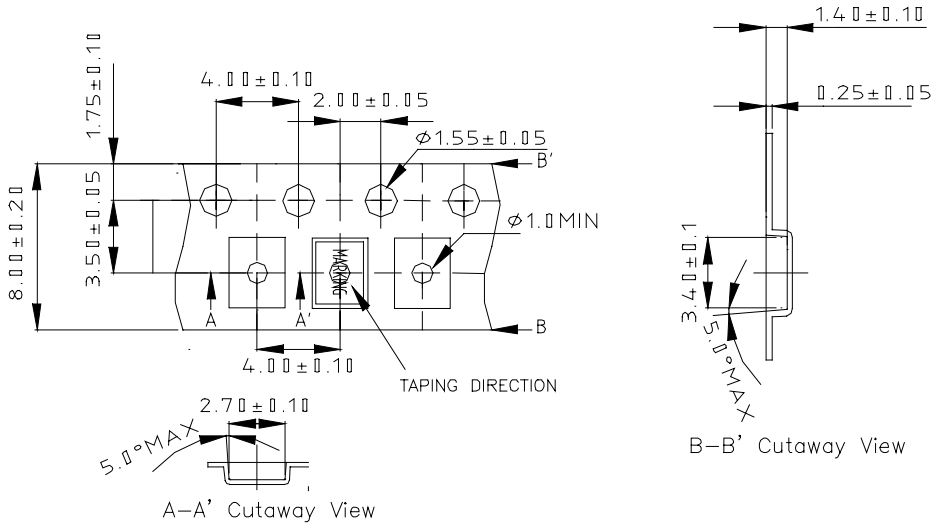


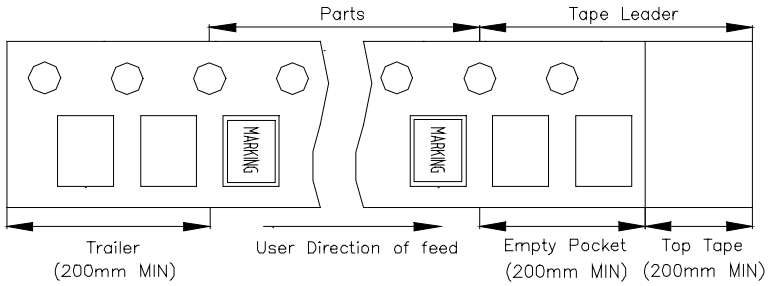
Application\Temperature Time	T1 / t1	T2 / t2
Lead Free	260±5℃ / 10 Sec Max	225Min / 60 Sec Max
Non Lead Free	240±5℃ / 10 Sec Max	200Min / 40 Sec Max

■ PACKING

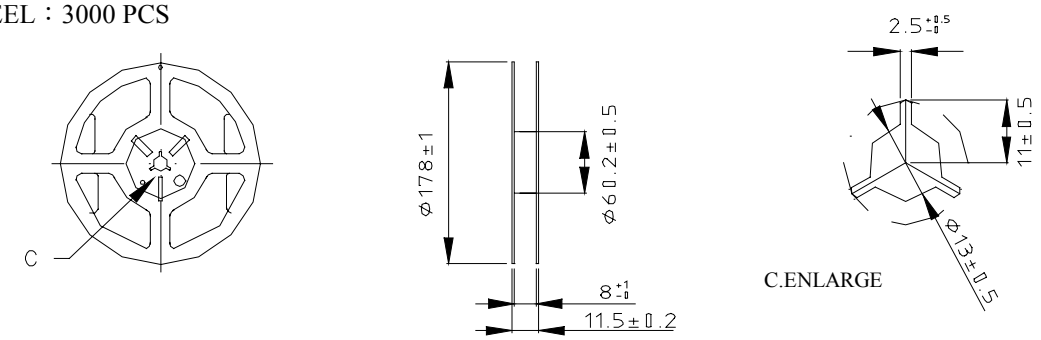
Unit: mm

1. CARRIER TYPE





2. REEL：3000 PCS



3. LABEL