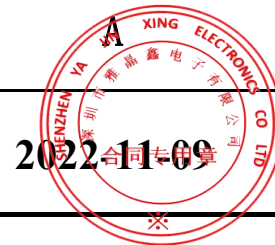


雅晶鑫電子

Shenzhen Yajingxin Electron Co.,Ltd

Customer	
Production Name	CRYSTAL SEAM 7.0 * 1.5
Customer P/N	
P/N	SX701532768K4GDCZ3T
Revision	
Print Date	2022-11-09



Drawn	Checked	Approved



RoHS Compliant

RoHS Compliant Standard

TX701532768K4GDCZ3T



● 小尺寸表面封装类型最适合高密度线路板 Most appropriate for high-density circuit board by the small surface mount type

● 嵌入具有热抵抗的柱状晶体带来高的稳定特性

Embedded with heat resistant cylinder type crystal bring highly stable characteristics

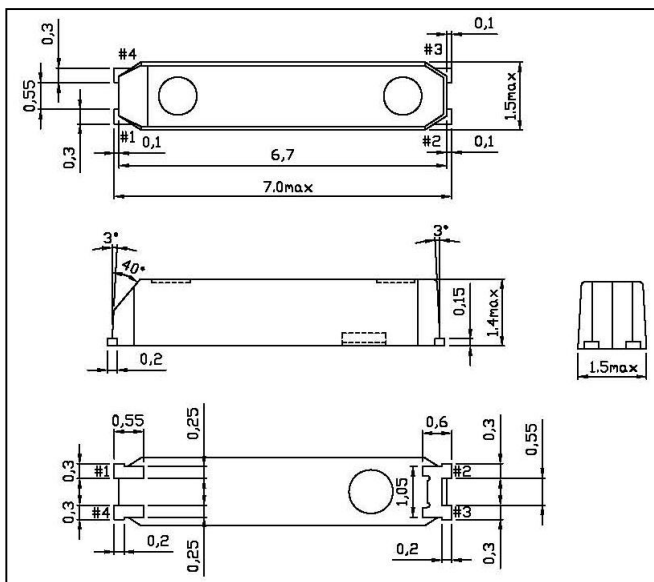
● 适合于小型移动通讯装备

Suitable for small mobile telecommunications devices

STANDARD SPECIFICATIONS 標準規格

Frequency Range	頻率範圍	32.768KHz	
Load Capacitance	負載電容	12.5pf	Need to specify
Absolute Maximum Drive Level	最大激勵電平	1.0μW Max	
Frequency Tolerance	調整頻差	±20ppm	at 25°C Need to specify
Series Resistance	諧振電阻	65Khm Max	
Turnover Temperature	拐點溫度	25±5°C	
Temperature Coefficient	二次溫度係數	[-0.035±0.01]ppm/°C ²	
Operating Temperature Range	工作溫度範圍	-40~+85°C	at 25°C
Storage Temperature Range	保存溫度範圍	-55~+125°C	
Shunt Capacitance	靜態電容	0.8pF Typical	
Aging[first year]	第一年老化率	±3ppm Max	25°C ±3°C
Insulation Resistance	絕緣阻抗	500Mohm Min.	

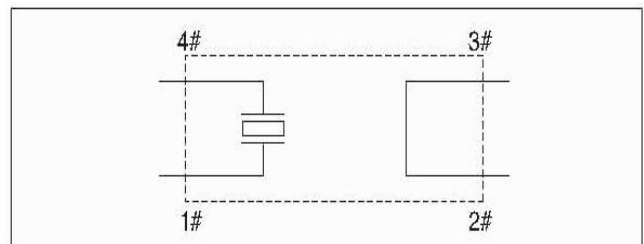
OUTLINE DIMENSIONS(unit:mm)



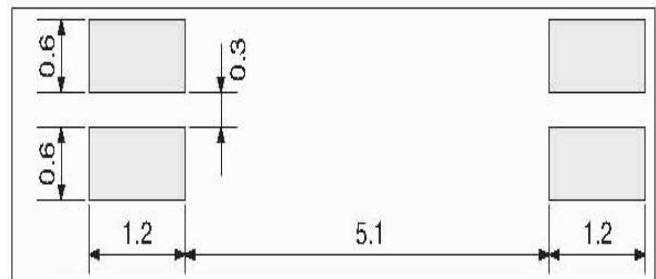
Remarks:

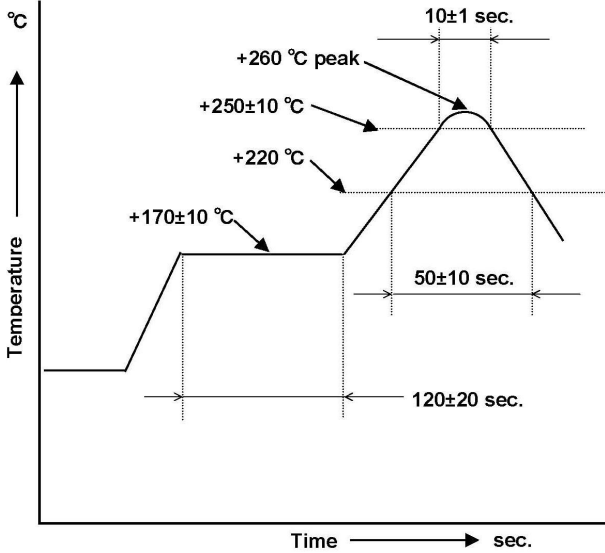
1. Do not connect #2 and #3 to external device and GND.
2. The part of the cylinder inside resin mold may be sometimes exposed, however, it does not affect the characteristics of crystal unit.
3. Please make sure that there is no pattern under TMXLF-130 on the circuit board.

INTERNAL LEAD CONNECTION



RECOMMENDED SOLDERING PATTERN(unit:mm)



No.	Test Items	Test Method and Condition	Requirements
1	振動 Vibration	(1)振動頻率Vibration Frequency 10 to 55Hz (2)振動幅度Vibration Amplitude 1.5mm (3)周期 Cycle Time 1-2min(10-55-10Hz) (4)振動方向Direction X.Y.Z (5)振動時間Duration 2h/each direction	頻率變化最大±10ppm Frequency Change:±10ppm Max. 電阻變化最大±15%或5kohm Resistance Change:±15% or 5kohm Max.
2	衝擊 Shock	從75cm高的地方自由跌落3次到30mm厚的硬木板上 3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm	頻率變化最大±10ppm Frequency Change:±10ppm Max. 電阻變化最大±15%或5kohm Resistance Change:±15% or 5kohm Max.
3	氣密性 Leakage	晶體放入氦加壓罐內，充入氦氣壓力0.5-0.6Mpa保持1小時； 然後使用氦質譜檢漏儀測試。 Put crystal units into a hermetic container and Helium for 0.5-0.6 Mpa,and keep it for 1h;Check the leakage by a Helium leak detector	漏氣率小於:1x10 ⁻⁸ Pa·m3/s Leakage:1x10 ⁻⁸ Pa·m3/s Max.
4	回流焊接 Reflow soldering	TMXLi-130、晶體可以經受圖1所示的回流焊曲線  <p>The graph shows a temperature profile for reflow soldering. The y-axis is Temperature in °C, and the x-axis is Time in seconds. The profile starts at a baseline, rises to a plateau at +170±10 °C, then rises to a peak at +250±10 °C, and finally falls back to the baseline. Key parameters are: Peak temperature: +260 °C; Plateau temperature: +170±10 °C; Time to peak: 10±1 sec.; Time at peak: 50±10 sec.; Total time to peak: 120±20 sec.</p> <p>Note: The temperature used herein means the temperature on the circuit board. Reflow : 2 times max.</p>	頻率變化最大±10ppm Frequency Change:±10ppm Max. 電阻變化最大±25%或10kohm Resistance Change:±25% or 10kohm Max.

No.	Test Items	Test Method and Condition	Requirements
5	引線強度(引線直插式晶體) Lead Strength(DIP)	用0.9kg(9N)的力持續拉晶體引線 30s±5s; 用0.45kg的力折引線成90°2次; The crystal lead with the 0.9kg(9N)power(keep it for 30s±5s) and bend the crystal lead 90° with 0.45kg power and two times	引線無異常 The crystal lead is not abnormality
6	耐高溫能力 High Temperature Endurance	晶體放置於85℃±2℃環境中 2小時後，常溫放置1-2小時 The crystal units shall be put in somewhere for 2 hours at temperature of 85℃±2℃,then keep it for 1 to 2 hours under room temperature	頻率變化最大 ±10ppm Frequency Change:±10ppm Max. 電阻變化最大:±15%或5kohm Resistance Change:±15% or 5kohm Max.
7	耐低溫能力 Low Temperature Endurance	晶體放置於-25℃環境中2小時後，常溫放置1-2小時 The crystal units shall be put in somewhere for 2 hours at temperature of -25℃,then keep it for 1 to 2 hours under room temperature	
8	耐濕性 Humidity Endurance	晶體放置於40℃、相對濕度90-95%環境中48小時後，常溫放置1-2小時 The crystal units shall be put in somewhere at 40℃ in relative humidity of 90-95% for 48 hours, then keep it for one or two hours under room temperature	
9	高低溫迴圈 Temperature Cycle	溫度從-40℃（保持30分鐘）升高到100℃（保持30分鐘），再降到-40℃（保持30分鐘）然後回到室溫25℃完成一個迴圈，共計5個迴圈 Temperature shift from low(-40℃) to high(100℃,keep 30 minutes),satisfy high(100℃) to low(-40℃,keep 30 minutes),then go up to room temperature for 5 cycles	
10	鹽霧試驗 Salt Spray Test	晶體置於鹽霧濃度5%,溫度35℃的鹽霧室中96小時後，用水洗淨擦幹表面 Put the crystal units in the salt spray room(salt density:5%)at the temperature of 35℃ for 96 hours.Then clean it with water and dry its surface.	外觀良好，可焊性良好 The appearance shall has no abnormality and soldering is good. 頻率變化最大 ±10ppm Frequency Change:±10ppm Max. 電阻變化最大:±10%或5kohm Resistance Change:±10% or 5kohm Max.

下面的說明和資訊供用戶正確理解和使用我們公司的石英晶體系列產品，預防不當的加工方式對石英晶體的損壞，確保用戶設備的可靠性

The following instructions and information are provided for the purpose of having the user understand the proper way to process our crystal products to prevent problems prior to use and enhance the reliability of the equipment to which they

PROCESSING INSTRUCTIONS

1. 石英晶體意外跌落 When dropped by mistake

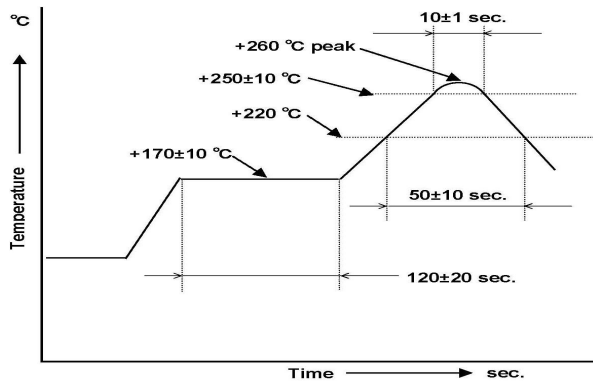
設計和製造的石英晶體本身具有耐衝擊能力,但是當石英晶體元件經受劇烈的機械衝擊,如跌落到地板上或安裝期間劇烈震動時,在使用之前需要進行電性能確認

The crystal units are designed and manufactured to resist physical shocks. However, when the crystal units are subjected to excessive impact such as being dropped onto the floor or giving shocks during processing, need to make sure its satisfactory performance before using it.

2. 焊接 Soldering

表面貼裝產品 SMD Type products

回流焊接 Reflow Soldering Profile



Note: The temperature used herein means the temperature on the circuit board.

Reflow : 2 times max.

3. 元件的安裝 MOUNTING

當使用自動安裝設備來裝配SMD晶體元件時,裝配之前要檢測自動安裝設備不會損壞元件。

安裝和焊接晶體元件後,由於機械張力,分裂開整塊線路板產生的線路板的彎曲將造成焊接的脫離或晶體元件封裝的裂開。

請確保晶體元件在線路板上的焊盤位置產生的焊接應力較小和分裂線路板對晶體元件產生的應力較小。

When using an automatic loading machine, please test and confirm to cause no damage to the crystal units before mounting. Bending the circuit board in the process of cleaving boards after mounting and soldering crystal units may cause peeling off the soldering or package cracks by mechanical stress.

Please be sure that the layout of crystal products position is on the less stressed and the cleaving process is under less stressed for the crystal units.

4. 石英晶體元件的清洗 CLEANING

(1) 惡劣的超聲波清洗或超聲波焊接可能會影響和損壞石英晶體元件。如果您對晶體元件進行了超聲波清洗,請一定在使用前確認晶體元件是否受到了影響和損壞

Crystal units may be affected and destroyed at worst by supersonic cleaning or supersonic welding. Please be sure to check if your cleaning and welding process affects any damage to crystal units before using.

(2) 有些清洗液也可能造成晶體元件的損壞,請在使用清洗液前確認該清洗液是否適用

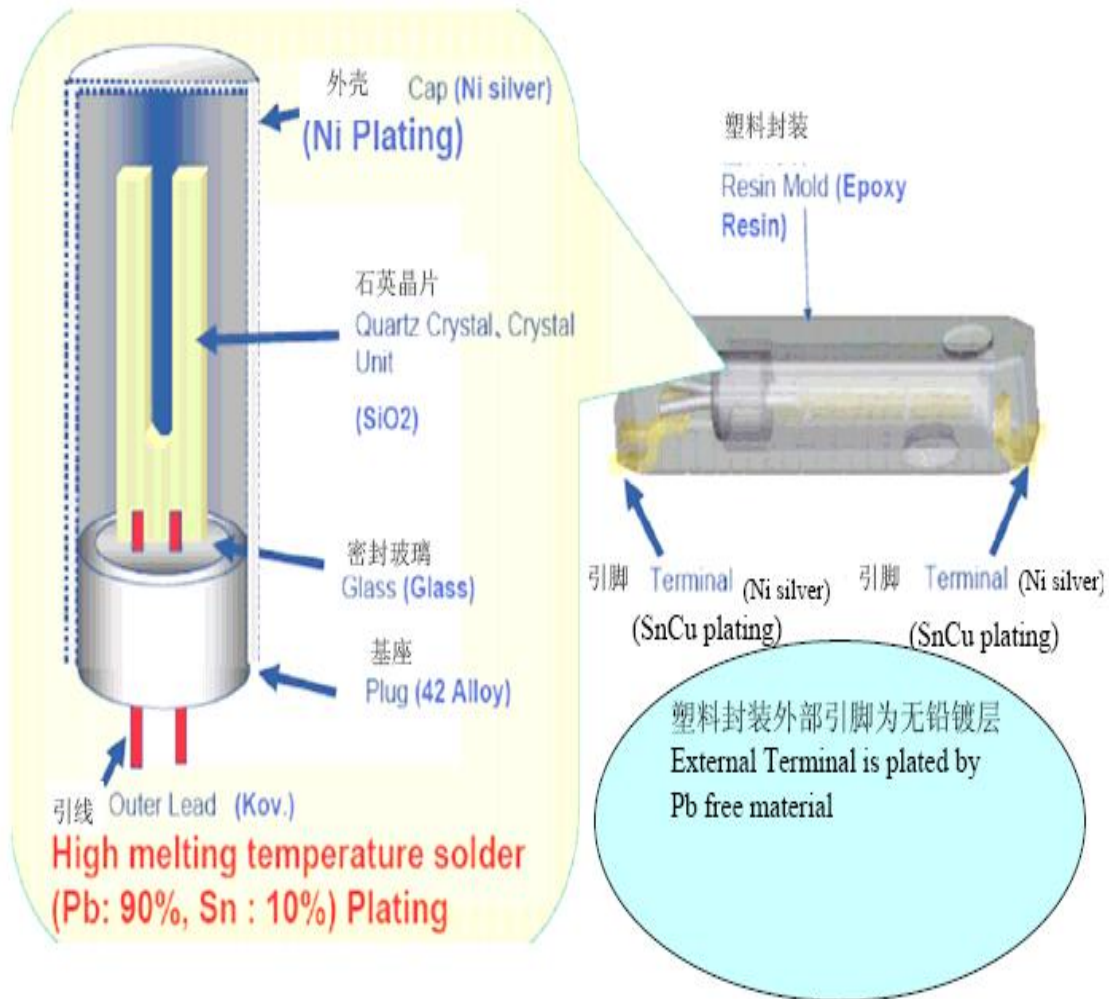
Some kinds of cleaning fluid may cause any damage to crystal units. Please be sure to check suitability of the cleaning fluid in advance.

5. 貯存 STORAGE

石英晶體元件長時間貯存在高溫或高濕環境中,可能會影響頻率的穩定性或可焊性。請將晶體元件貯存在正常的溫度和濕度環境中,避免陽光直射和露水凝結,避免貯存6個月以上再使用,拆封後儘快裝配使用。

Storage of crystal units under higher temperature or high humidity for a long term may affect frequency stability or solderability.

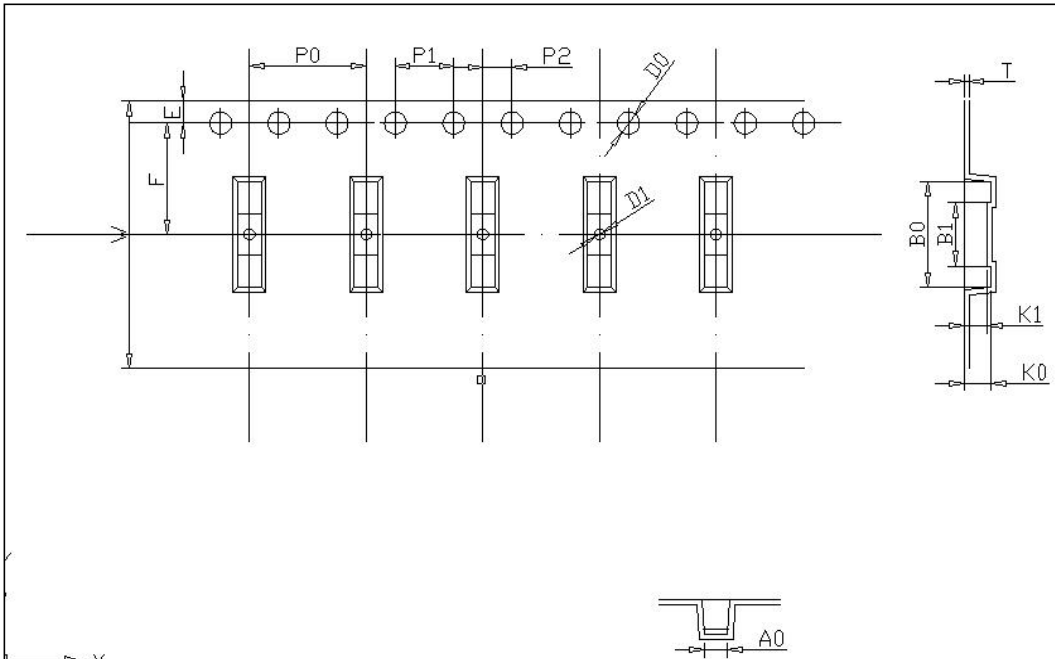
Please store the crystal units under the normal temperature and humidity without exposing to direct sunlight and dew condensation, and avoid the storage of crystal units for more than 6 months, and mount them as soon as possible after unpacking.



No	Part Name品名	Material材质	Finished Plating表面处理	Remark备注
1	cap外壳	nickel silver 镍白铜	Ni plating 镀镍	
2	epoxy树脂	epoxy molding compound 树脂料		
3	base ring 基座圈	kovar 可伐	Sn7%Pb93% plating	
4	lead 引线	kovar 可伐	Sn7%Pb93% plating	
5	tuning fork 音叉	sio ₂	Ag+Cr	
6	solder 焊锡	Sn=7%, Pb=93%		
7	pin 引脚	nickel silver 镍白铜	Cu1-3um Sn2-5um	

1. 編帶規格符合美國電子工業協會EIA-481-B電子元件編帶標準Tape and Reel form conform to EIA-481-B
2. 每盤的晶體元件數量為3000只。The quantity of crystal units per reel shall be 3000PCS.
3. 在包裝盒及載帶盤的表面貼上標籤，注明必需的資訊A "LABEL" on which necessary information is clearly written is on the surface of packing box and the reel.

載帶尺寸圖CARRIER TAPE DIMENSIONS



W	E	F	D0	D1	P0	P1	P2
16.00±0.30	1.75±0.1	7.50±0.1	1.5 ^{+0.1} ₋₀	1.0 ^{+0.1} ₋₀	8.00±0.1	4.00±0.1	2.00±0.05
A0	B0	B1	K0	K1	T	10*P ₀	
1.70±0.1	7.20±0.1	4.0±0.1	1.7±0.1	1.25±0.1	0.35±0.05	40.00±0.20	

載帶盤尺寸圖REEL DIMENSIONS

