



四川索斯特电子有限公司  
Sichuan Source-Set Electronics Co., Ltd

# 承 认 书

## SPECIFICATIONS FOR APPROVAL

客户名称:  
Customer: \_\_\_\_\_

产品名称: 石英晶体谐振器  
Description: CRYSTAL RESONATOR

产品型号: HC-49S/DIP  
SPECIES \_\_\_\_\_

标称频率: 24.000MHz 12PF  
FREQUENCY \_\_\_\_\_

料 号:  
MATERIAL CODE SCBYS24X00000YERK

| 供应商确认          |                         |                      |                                                | 客户确认           |                         |                         |                                     |
|----------------|-------------------------|----------------------|------------------------------------------------|----------------|-------------------------|-------------------------|-------------------------------------|
| 品管部<br>QC Dept | 工程部<br>Engineer<br>Dept | 业务部<br>Trade<br>Dept | <input checked="" type="checkbox"/><br>合格 PASS | 品管部<br>QC Dept | 工程部<br>Engineer<br>Dept | 采购部<br>Purchase<br>Dept | <input type="checkbox"/><br>合格 PASS |
| 郭<br>淘         | 梁<br>雄                  | 陈<br>晓<br>群          | <input type="checkbox"/><br>不合格 NG             |                |                         |                         | <input type="checkbox"/><br>不合格 NG  |

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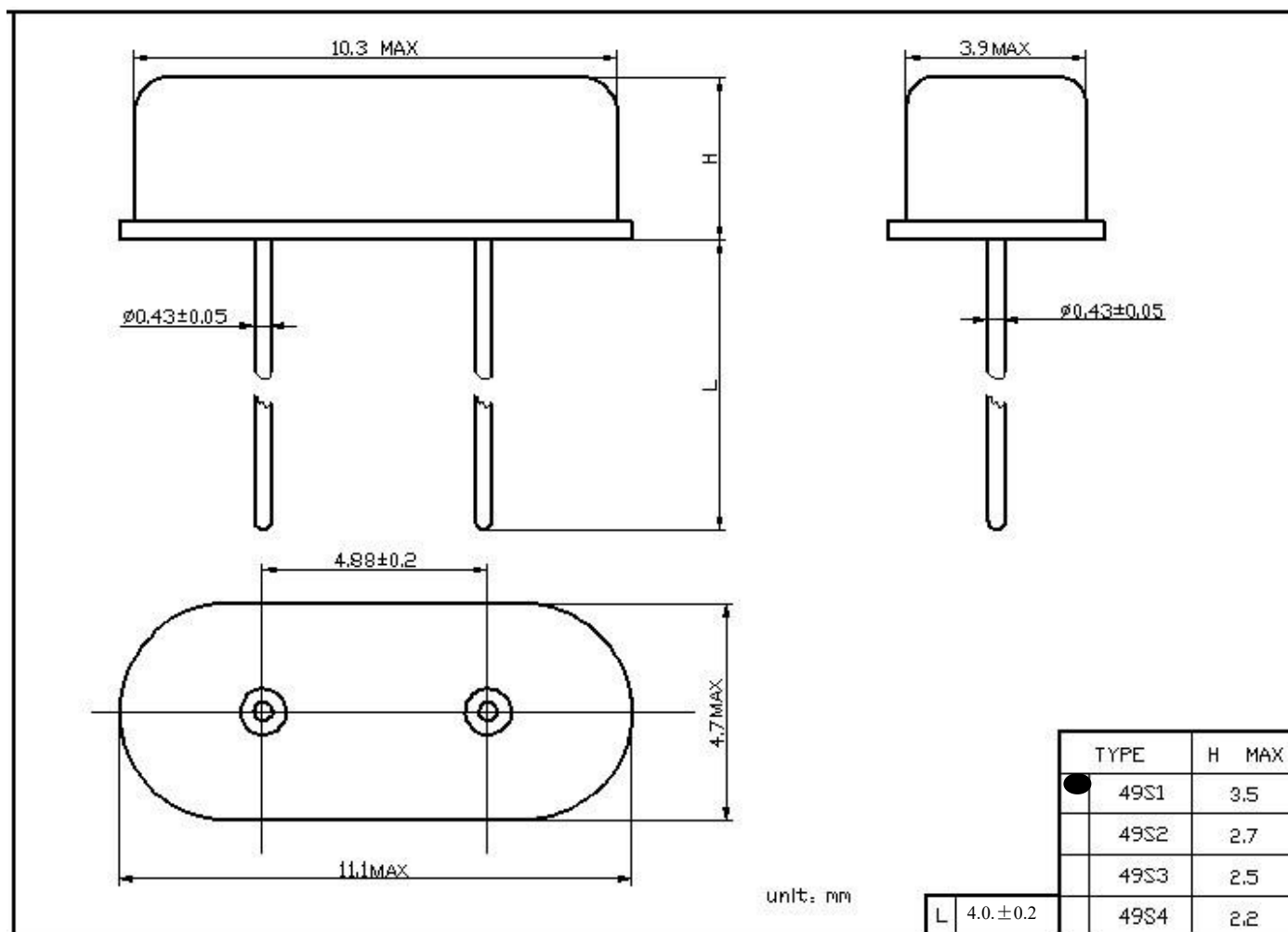
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**GENERAL SPECIFICATIONS (电气特性) :**

|                                                                                          |                                                                        |                         |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------|
| 1.Holder type:<br>(型号)                                                                   | HC-49S                                                                 |                         |
| 2.Normal Frequency:<br>(标称频率)                                                            | 24.000MHz                                                              |                         |
| 3.Oscillation Mode:<br>(振动模式)                                                            | AT                                                                     |                         |
| 4.Load Capacitance(CL):<br>(负载电容)                                                        | 12 PF                                                                  |                         |
| 5.Frequency Tolerance $25 \pm 3^{\circ}\text{C}$ :<br>(频率偏差 $25 \pm 3^{\circ}\text{C}$ ) | $\pm 20 \text{ PPM}$                                                   |                         |
| 6.Effective Series Resistance:<br>(等效电阻)                                                 | $\leq 30 \Omega$                                                       |                         |
| 7.DLD2<br>(不同功率下之最大与最小阻抗差值)                                                              | $\leq 10 \Omega$                                                       | 0.01 uW~100 uW 10 steps |
| 8.RLD2<br>(不同功率下之最大阻抗值)                                                                  | $\leq 30 \Omega$                                                       | 0.01 uW~100 uW 10 steps |
| 9.FDLD<br>(不同功率下之最大与最小 FR 差值)                                                            | $\leq 6 \text{ PPM}$                                                   | 0.01 uW~100 uW 10 steps |
| 10.Shunt Capacitance(C0):<br>(静态电容)                                                      | $\leq 7 \text{ PF}$                                                    |                         |
| 11. Typical drive level:<br>(激励功率)                                                       | 100 uW TYP.                                                            |                         |
| 12.Operation Temperature Range:<br>(工作温度范围)                                              | $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$                         |                         |
| 13.Stability Over Temperature Range:<br>(工作温度频率偏差)                                       | $\pm 30 \text{ PPM}$ at $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ |                         |
| 14.Insulation Resistance: (绝缘阻抗)                                                         | $\geq 500 \text{ M}\Omega$ at DC 100V                                  |                         |
| 15.Aging: (老化率)                                                                          | $\pm 3 \text{ PPM/Year}$                                               |                         |
| 16.Storage Temperature: (存储温度)                                                           | $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$                         |                         |
| 17.Test circuit (测试仪器)                                                                   | S&A 250B Pi-Network Crystal Measurement System                         |                         |

Remark (备注) :

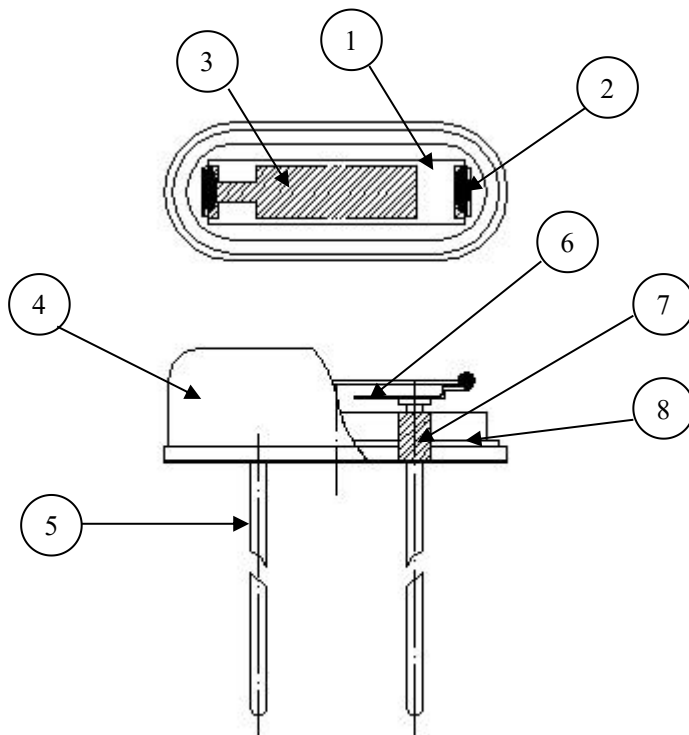
# DIMENSIONS SPECIFICATIONS (外形尺寸)



## MASK (印字)

24.000

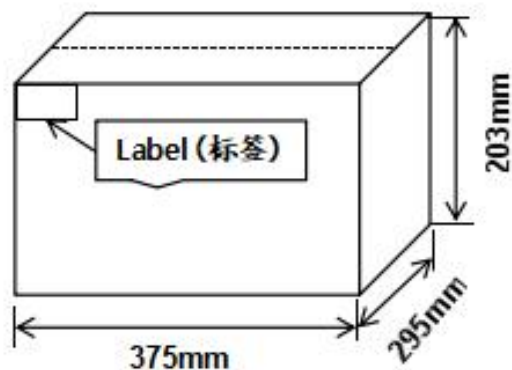
**Report of bills of materials and suppliers (物料清单)**



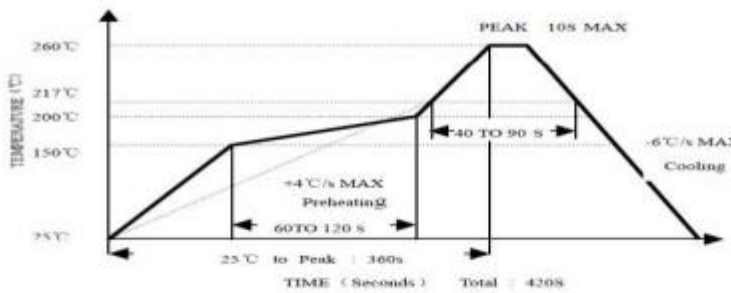
| NO. | Product name<br>部件名称 | MATERIALS<br>材质 | QTY<br>数量 |  |
|-----|----------------------|-----------------|-----------|--|
| 1   | Blank 晶片             | SIO2            | 1         |  |
| 2   | Silver paste 导电胶     | 3301F           | 2         |  |
| 3   | Silver 电极            | Ag              | 2         |  |
| 4   | Cover 外壳             | Au              | 1         |  |
| 5   | Lead 引线              | Kovar           | 2         |  |
| 6   | Pin 簧片               | C7701           | 2         |  |
| 7   | GLASS 玻璃珠            | GLASS           | 2         |  |
| 8   | Base 底板              | SPCC-SD         | 1         |  |

**Packing Method (包装样式)**

1. Packed 200 Pcs in 1 vinyl bag  
200PCS一小袋。
2. Packed 10 vinyl bag in 1 box  
10小袋一盒。
3. Packed 10 box in 1 carton  
10盒一箱
4. There are 20000Pcs in 1 carton  
总计20000PCS装一箱
5. Size of carton: 375mm\*295mm\*203mm  
外箱尺寸: 375mm\*295mm\*203mm
6. Label mode  
标签样式
  - A. P/O NO:
  - B. LOT NO:
  - C. HOLDER TYPE.
  - D. FREQUENCY:
  - E. LOAD CAP
  - F. FREQUENCY TOLERANCE
  - G. RESISTANCE
  - H. QUANTITY:



CARTON (外箱)

|   |             |                                                                                                                                                                                                                                 |    |
|---|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1 | Drop 跌落     | According to experiment of IEC 68-2-32 method Ed,quartz crystal unit shall be dropped from 75cm height on 3cm hard board for 3 times.                                                                                           | AB |
|   |             | 按IEC 68-2-32试验Ed进行，晶体从75厘米高度自由下落至3厘米硬木板，重复3次。                                                                                                                                                                                   |    |
| 2 | Reflow 回流焊  | Reflow soldering cure see the chart.                                                                                                                                                                                            | A  |
|   |             | 回流焊曲线见下图。<br>                                                                                                                                 |    |
| 3 | Leakage 气密性 | Alcohol press method:quartz crystal unit shall be immersed in the can,and pressed by 0.5kg press for 30min;Then put away press ,and dry it.Quartz crystal unit shall be test insulation resistance by 100V volts d.c for 1 min. | D  |
|   |             | 酒精加压法：晶体浸入酒精罐中，加压（压力0.5kg，时间30分钟）；撤去压力后，晾干晶体，测量引线与外壳之间绝缘电阻（100V直流电压，时间1分钟）。                                                                                                                                                     |    |
| 4 | Aging 老化    | Quartz crystal unit shall be stored at a temperature 85±2℃ for 720±12 hours(30days),and then it shall be subjected to standard atmospheric conditions for 1 hour.                                                               | A  |
|   |             | 晶体在温度85±2℃中放置720小时（30天）±12小时后，在常温常湿状态下放置1小时后测试。                                                                                                                                                                                 |    |

**Accept Level:**

**判定标准:**

| No. | specification<br>标准                                                                                                           |
|-----|-------------------------------------------------------------------------------------------------------------------------------|
| A   | Satisfying the electric characteristic; Frequency change is at the range of 5PPM and resistance change is at the range of 5Ω. |
|     | 电气性能可满足要求：频率变化量在5ppm以内,电阻变化量在5Ω以内。                                                                                            |
| B   | After each test,no visible damage shall be manifested,nor shall the hermetic seal break down                                  |
|     | 试验后，无机械损伤                                                                                                                     |
| C   | Dipping in 3 sec.A new uniform coating of solder shall covera minimum of 95% of the surface being immersed.                   |
|     | 浸锡时间3秒以内，引线挂锡面积95%以上。                                                                                                         |
| D   | Insulation resistance of leads shall be more than 500MΩ(100V DC ).                                                            |
|     | 端子之间的绝缘电阻≥500MΩ(100V DC )。                                                                                                    |