

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: 49S/SMD

SPECIES

标称频率: 6.9594MHz

FREQUENC

料号:

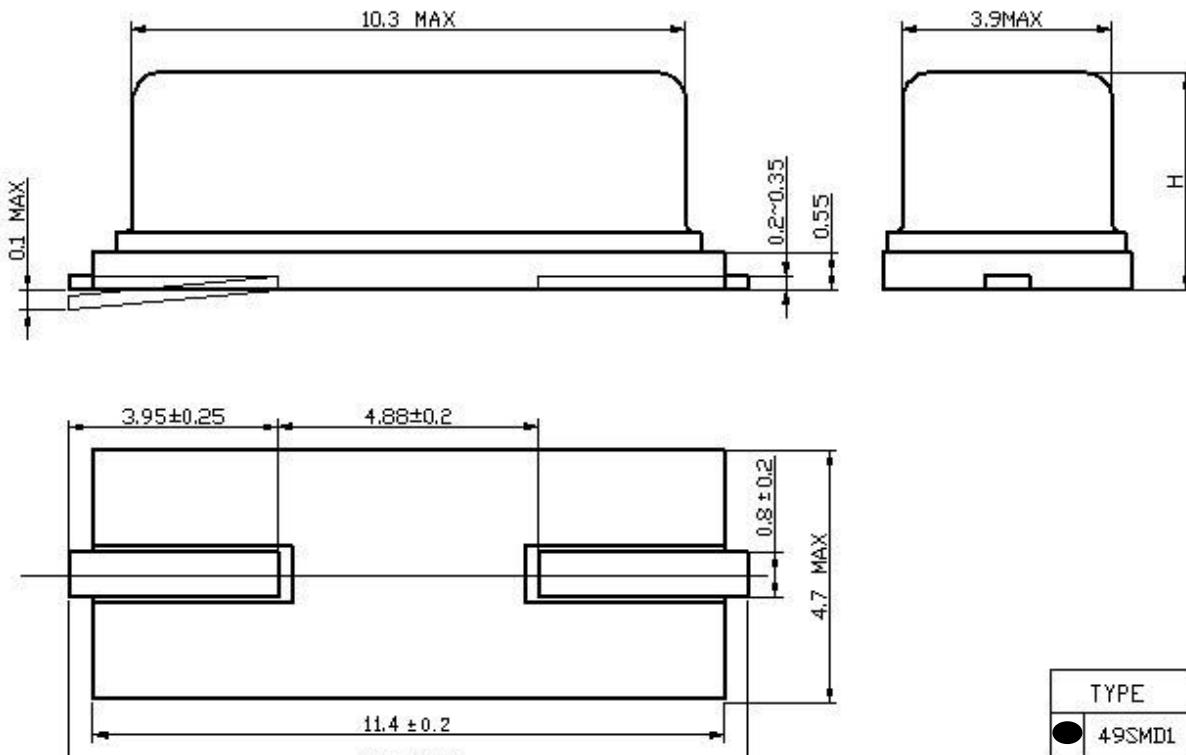
MATERIAL CODE SCBYS06X95940ELRN

供应商确认				客户确认			
品管部 QC Dept	工程部 Engineer Dept	业务部 Trade Dept	<input checked="" type="checkbox"/> 合格 PASS <input type="checkbox"/> 不合格 NG	品管部 QC Dept	工程部 Engineer Dept	采购部 Purchase Dept	<input type="checkbox"/> 合格 PASS <input type="checkbox"/> 不合格 NG
莫平会	梁雄	陈晓群					

GENERAL SPECIFICATIONS (电气特性) :

1.Holder type: (型号)	HC-49SMD	
2.Normal Frequency: (标称频率)	6.9594 MHz	
3.Oscillation Mode: (振动模式)	AT-Fundamental	
4.Load Capacitance(CL): (负载电容)	20 PF	
5.Frequency Tolerance 25±3°C: (频率偏差 25±3°C)	±20 PPM	
6.Effective Series Resistance: (等效电阻)	≤ 90 Ω	
7.DLD2 (不同功率下之最大与最小阻抗差值)	≤ 50 Ω	0.01 uW~100 uW 10 steps
8.RLD2 (不同功率下之最大阻抗值)	≤ 50 Ω	0.01 uW~100 uW 10 steps
9.FDLD (不同功率下之最大与最小 FR 差值)	≤ 10 PPM	0.01 uW~100 uW 10 steps
10.Shunt Capacitance(C0): (静态电容)	≤ 7 PF	
11.Typical drive level: (激励功率)	100 uW TYP.	
12.Operation Temperature Range: (工作温度范围)	-40°C to +85°C	
13.Stability Over Temperature Range: (工作温度频率偏差)	±30 PPM at -40°C to +85°C	
14.Insulation Resistance: (绝缘阻抗)	≥500 MΩ at DC 100V	
15.Aging: (老化率)	±5 PPM/Year	
16.Storage Temperature: (存储温度)	-40°C to +85°C	
17.Test circuit (测试仪器)	S&A 250B Pi-Network Crystal Measurement System	
Remark (备注) :		

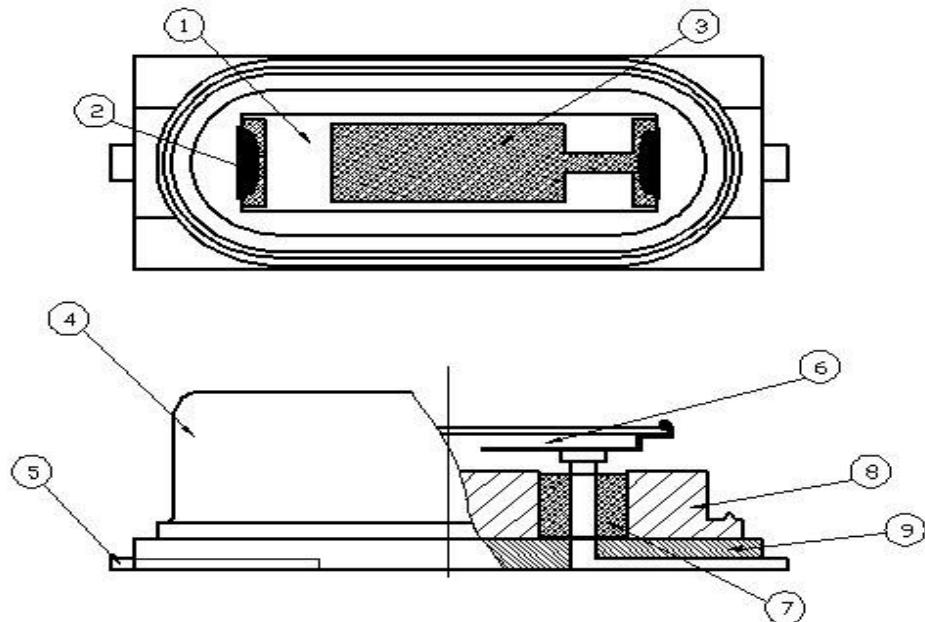
DIMENSIONS SPECIFICATIONS (外形尺寸)



MARKING (印字)

6.9594

Report of bills of materials and suppliers (物料清单及供应商)

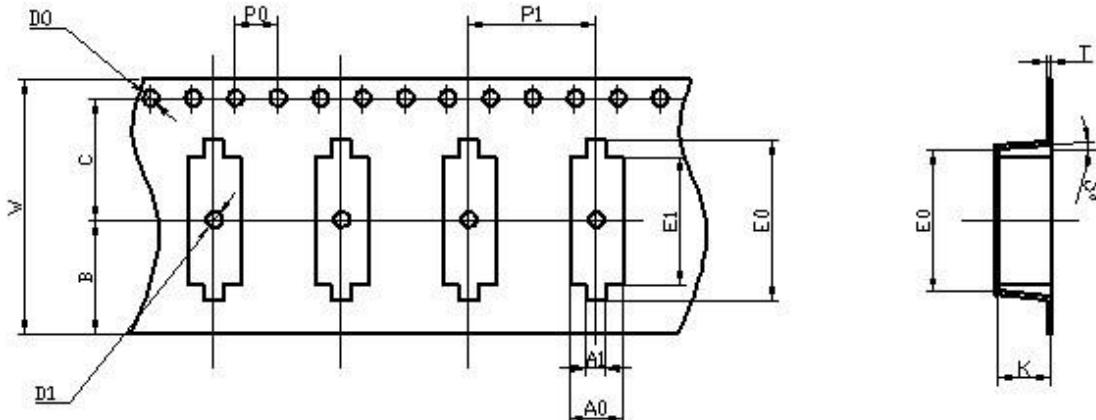


NO.	Product name 部件名称	MATERIALS 材质	QTY 数量	Supplier 供应商
1	Blank 晶片	SIO2	1	LingHaiRiTai 临海日泰
2	Silver paste 导电胶	3301F	2	THREE BOND 三键
3	Silver 电极	Ag	2	GuangYang 光洋
4	Cover 外壳	Au	1	TongLingJingSai 铜陵晶赛
5	Lead 引线	Kovar	2	
6	Pin 簧片	C7701	2	
7	GLASS 玻璃珠	GLASS	2	
8	Base 底板	SPCC-SD	1	
9	Insulation 垫片	PPA	1	TeFuLong 特富隆

地址/Addr: 四川省泸州市泸县工业园 B 区明星路 204 号 (坤羽) 五栋

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Carrier type (载带类型)

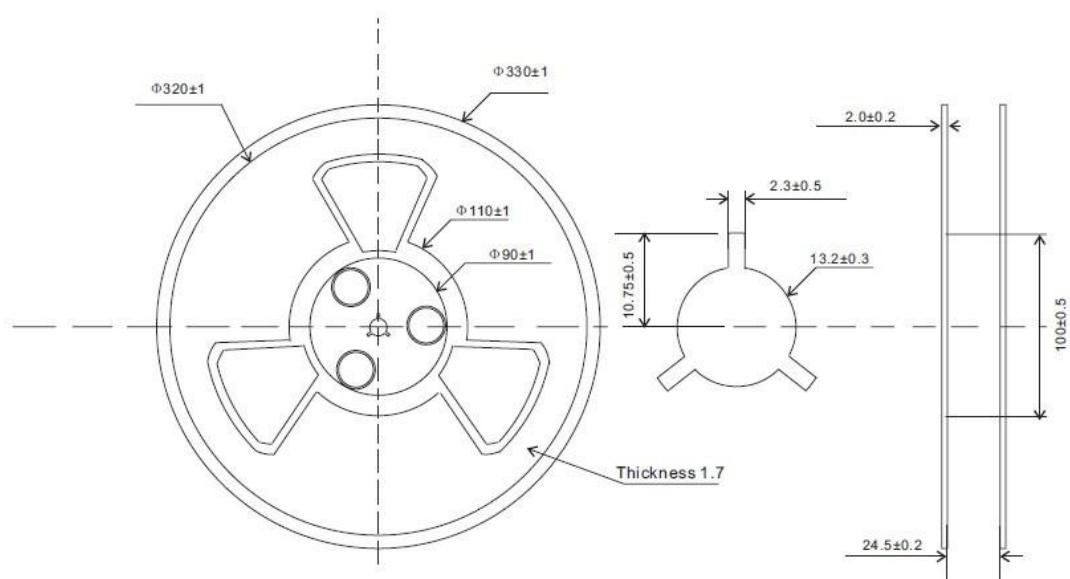


unit: mm

1000Pcs Per Reel

Symbol Dimensions	A0	A1	B	C	D0	D1	E0	E1	K	P0	P1	T	W
P8-4.35	5.0±0.1	1.8±0.1	10.7±0.2	11.5±0.2	Φ1.5±0.1	Φ1.5±0.1	15.0±0.1	12.0±0.2	4.35±0.1	4.0±0.1	8±0.1	0.4±0.05	24±0.5
P8-3.40	5.0±0.1	1.8±0.1	10.7±0.2	11.5±0.2	Φ1.5±0.1	Φ1.5±0.1	15.0±0.1	12.0±0.2	3.40±0.1	4.0±0.1	8±0.1	0.4±0.05	24±0.5
● P12-4.35	5.0±0.1	1.8±0.1	10.7±0.2	11.5±0.2	Φ1.5±0.1	Φ1.5±0.1	15.0±0.1	12.0±0.2	4.35±0.1	4.0±0.1	12±0.1	0.4±0.05	24±0.5
● P12-3.40	5.0±0.1	1.8±0.1	10.7±0.2	11.5±0.2	Φ1.5±0.1	Φ1.5±0.1	15.0±0.1	12.0±0.2	3.40±0.1	4.0±0.1	12±0.1	0.4±0.05	24±0.5

Reel (载盘)



PACKING METHOD(包装样式)

1、Packed 1000 pcs in per reel.

1000pcs一卷盘

2、Packed 1 reel in 1 box, Size of carton:340mm*335mm*35mm

1卷盘装一盒，纸盒尺寸：340mm*335mm*35mm

3、Packed 10 box in 1 carton

10盒一箱

4、There are 10000 pcs in 1 carton

总计10000pcs 一箱

5、Size of carton:360mm*360mm*410mm

外箱尺寸：360mm*360mm*410mm

6、Label mode

标签样式

A: Part NO.

B: Holder Type

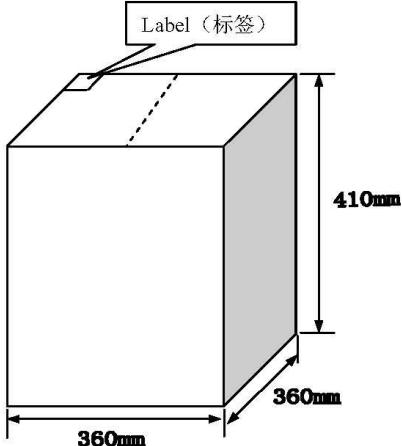
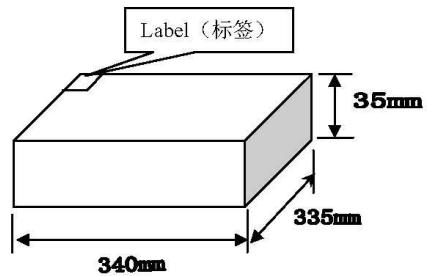
C: Frequency

D: CL

E: $\Delta f_1/f_0$

F: ESR

G: Quantity

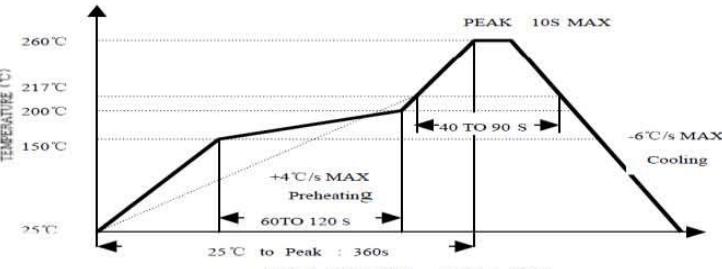


RELIABILITY SPECIFICATIONS 可靠性测试标准

NO.	ITEMS 项目	CONDITIONS 条件	SPECIFICATIO N 规格															
1	Lead Bend 端子强度	a)Pulling: According to experiment of IEC 68-2-21 Ua1 experiment,pull 10N. a)拉力: 按IEC 68-2-21中试验Ua1进行, 拉力10N。 b)Bending:According to experiment of IEC 68-2-21 method Ub.Add the burthen of 5N to lead,and 2.5±0.5mm refer to the base for 3 times . b)弯曲强度: 按IEC 68-2-21中试验Ub进行, 负荷应限制在距晶体元件本体2.5±0.5mm处开始弯曲, 所加质量负荷为5N, 弯曲次数为3次。	B															
2	Solderability 可焊性	According to experiment of IEC 68-2-20 Ta method 1 ,Solder temperature is 235 °C. 按IEC 68-2-20中试验Ta的方法1进行, 焊接温度235°C。	C															
3	Solder heat resistance 耐焊接热	According to experiment of IEC 68-2-20 method Tb 1A:solder slit method.Solder temperature:260±5°C,dip time 5±1s。 按IEC 68-2-20试验Tb方法1A: 焊锡槽方法进行。 焊接温度: 260±5°C, 浸入时间: 5±1秒。	A															
4	Vibration 耐振性	According to experiment of 68-2-6 method Fc ,The entire frequency range,from 10Hz to 55Hz and return to 10Hz,shall be transferred in 1 min.Amplitude(total excursion):1.5mm Durtion=2 hours for each of the main axes(x,y,z). 按IEC 68-2-6试验Fc进行, 振动频率在1分钟内从10~55Hz, 再回到10Hz, 振幅1.5mm, X、Y、Z三个方向各2小时。	A															
5	Shock 耐冲击性	According to experiment of IEC 68-2-27 method Ea,the biggest acceleration :981m/s2(100g),work time :6ms, and 6 surfaces , and 3 directions for each surface, and shall be Shocked 18 times in total. 按IEC 68-2-27试验Ea进行, 最大加速度: 981m/s2 (100g),作用时间: 6ms, 6面, 每面三个方向, 共18次。	AB															
6	Cold 耐寒性	According to experiment of IEC 68-2-1 method Aa, The quartz crystal unit should be stored at a temperature -40±3 °C for 2 hours, and then it shall be subjected to standard atmospheric conditions for 1 hour,after which measurement shall be made. 按IEC 68-2-1试验Aa进行, 晶体在温度-40±3°C中放置2小时后, 在常温常湿状态下放置1小时后测试。	A															
7	Dry Heat 干热	According to experiment of IEC 68-2-2 Ba,quartz crystal unit should be stored at a temperature 85 ±2 °C for 16 hours.Then it shall be subjected to standard atmospheric conditions for 1 hour ,after which measurement shall be made. 按IEC 68-2-2试验Ba进行, 晶体在温度85±2°C中放置16小时后, 在常温常湿状态下放置1小时后测试。	A															
8	High heat and high humidity 稳 态湿热	According to experiment of IEC 68-2-3 method Ca,quartz crystal unit shoud be stored at a temperature 40±2 °C and at humidity 90~95% for 96 hours.Then it shall be subjected to standard atmospheric conditions for 1 hour. 按IEC 68-2-3试验Ca进行, 晶体在温度40±2°C, 湿度90~95%中放置96小时后, 在常温常湿状态下放置1小时后测试。	A															
9	Temperature Cycling 温度 变化	According to experiment of IEC 68-2-14 method Na,quartz crystal unit shall be made 5 temperature cycles ,and then it shall be subjetced to standard atmospheric conditions for 1 hour. 按IEC 68-2-14试验Na进行, 晶体按下表做5个温度循环后, 在常温常湿状态下放置1小时后测试。 <table border="1"> <thead> <tr> <th></th> <th>TEMPERATURE 温度</th> <th>STORE TIME 放置时间</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40±3 °C</td> <td>30min</td> </tr> <tr> <td>2</td> <td>Normal Temp(常温)</td> <td>30sec</td> </tr> <tr> <td>3</td> <td>100±3 °C</td> <td>30min</td> </tr> <tr> <td>4</td> <td>Normal Temp(常温)</td> <td>30sec</td> </tr> </tbody> </table>		TEMPERATURE 温度	STORE TIME 放置时间	1	-40±3 °C	30min	2	Normal Temp(常温)	30sec	3	100±3 °C	30min	4	Normal Temp(常温)	30sec	A
	TEMPERATURE 温度	STORE TIME 放置时间																
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4	Normal Temp(常温)	30sec																

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10	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. 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。	AB
11	Reflow 回流焊	Reflow soldering cure see the chart. 回流焊曲线见下图。 	
12	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 . 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）。	D
13	Aging 老化	Quartz crystal unit shall be stored at a temperature $85 \pm 2^\circ\text{C}$ for 720 ± 12 hours(30days),and then it shall be subjected to standard atmospheric conditions for 1 hour. 晶体在温度 $85 \pm 2^\circ\text{C}$ 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。	A

Accept Level:

判定标准：

No.	specification 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 cover a 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 $500\text{M}\Omega$ (100V DC). 端子之间的绝缘电阻 $\geq 500\text{M}\Omega$ (100V DC)。