



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: 3225 24M 12PF 10PPM
SPECIES _____

标称频率: 24.000MHz
FREQUENC _____

料 号:
MATERIAL CODE _____
SST-3225/24.000M-12PF

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	品管部 QC Dept	工程部 Engineer Dept	采购部 Purchase Dept	<input type="checkbox"/> 合格 PASS
莫 平 会	梁 雄	陈 晓 群	<input type="checkbox"/> 不合格 NG				<input type="checkbox"/> 不合格 NG

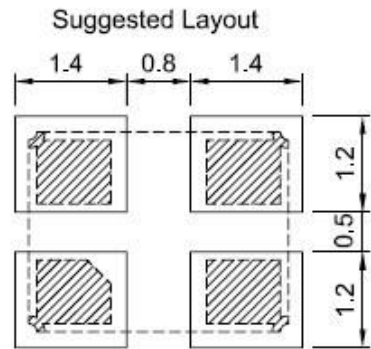
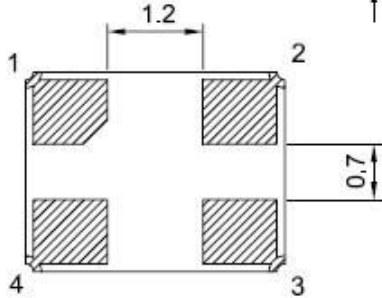
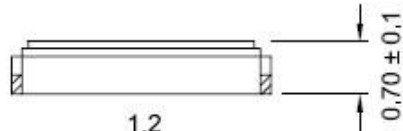
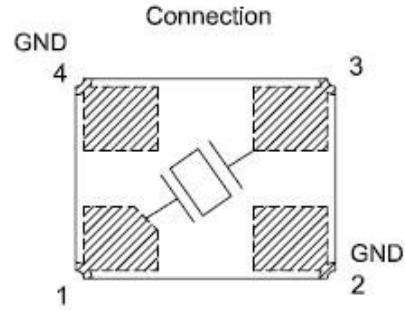
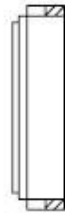
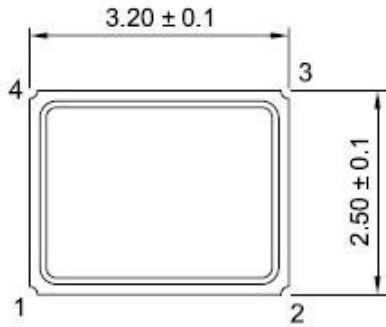
公司地址: 四川省泸州市泸县工业园 B 区明星路 204 号 (坤羽) 五栋
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GENERAL SPECIFICATIONS (电气特性) :

1.Holder type: (型号)	3225/SMD	
2.Normal Frequency: (标称频率)	24.000MHz	
3.Oscillation Mode: (振动模式)	AT-Fundamental	
4.Load Capacitance(CL): (负载电容)	12PF	
5.Frequency Tolerance 25±3℃: (频率偏差 25±3℃)	± 10 PPM	
6.Effective Series Resistance: (等效电阻)	≤ 60 Ω	
7.DLD2 (不同功率下之最大与最小阻抗差值)	≤ 7 Ω	0.01 uW~100 uW 10 steps
8.RLD2 (不同功率下之最大阻抗值)	≤ 60 Ω	0.01 uW~100 uW 10 steps
9.FDLD (不同功率下之最大与最小 FR 差值)	≤ 6PPM	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℃ to +80℃	
13.Stability Over Temperature Range: (工作温度频率偏差)	± 10 PPM at -40℃ to+80℃	
14.Insulation Resistance: (绝缘阻抗)	≥500 MΩ at DC 100V	
15.Aging: (老化率)	± 3PPM/Year	
16.Storage Temperature: (存储温度)	-40℃ to +85℃	
17.Test circuit (测试仪器)	S&A 250B Pi-Network Crystal Measurement System	
Remark (备注) :		

DIMENSIONS SPECIFICATIONS (外形尺寸)



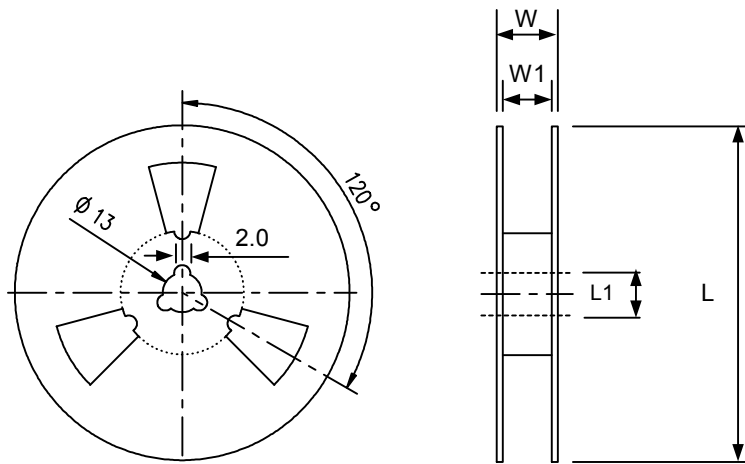
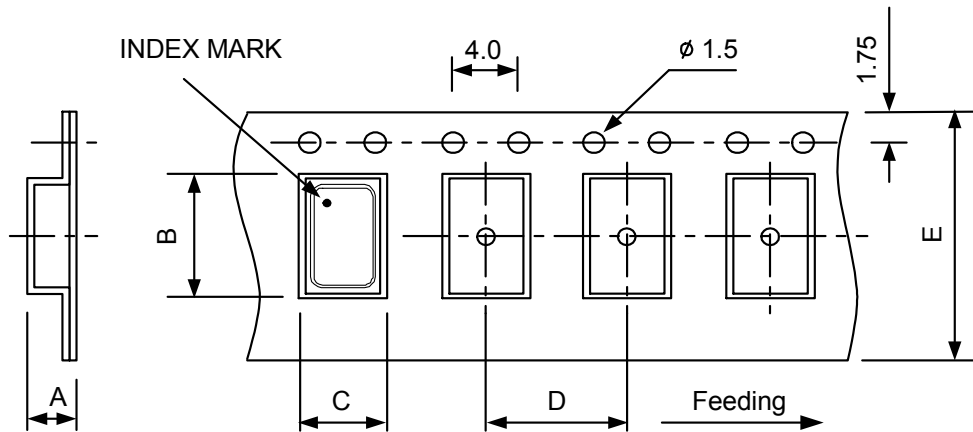
Units:mm

MARK (印字)



PACKING (包装)

Shear strength between cover and carrier tape should be 30-100g.
Carrier tape should be folded over three times with no break at all.



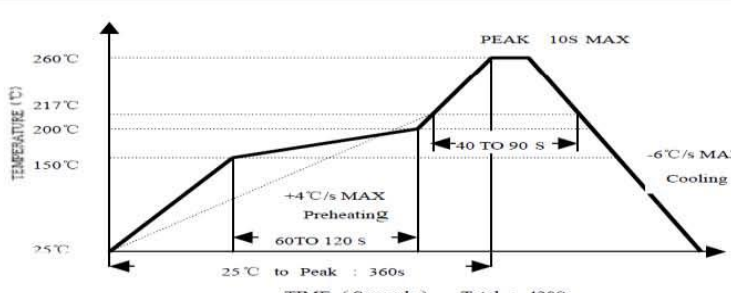
DIMENSIONS		A	B	C	D	E	L	L1	W	W1
	7050	2.15	7.9	5.4	8	16	180	13	21.5	17.5
	6035	1.5	6.4	3.9	8	12	180	13	15.4	13
	5032	1.5	5.5	3.6	8	12	180	13	15.4	13
	4025	1.5	4.4	2.8	8	12	180	13	15.4	13
	3225	1.4	3.4	2.7	4	8	180	13	11.5	8

Unit : mm

Standard Reel Quantity is 3000 pcs per reel.

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		
		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。			
2	Solderability 可焊性	According to experiment of IEC 68-2-20 Ta method 1 ,Solder temperature is 235℃. 按IEC 68-2-20中试验Ta的方法1进行, 焊接温度235℃。	C		
		According to experiment of IEC 68-2-20 method Tb 1A:solder slit method.Solder temperature:260±5℃,dip time 10±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℃, 浸入时间: 10±1秒。			
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℃,dip time 10±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℃, 浸入时间: 10±1秒。	A		
		According to experiment of 68-2-6 method Fc ,The entire frequency range,from 10Hz to 55Hz and return to 10Hz,and 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。			
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,and 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		
		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。			
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		
		According to experiment of IEC 68-2-1 method Aa, The quartz crystal unit should be stored at a temperature -40±3℃ 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℃中放置2小时后, 在常温常湿状态下放置1小时后测试。			
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℃ 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℃中放置2小时后, 在常温常湿状态下放置1小时后测试。	A		
		According to experiment of IEC 68-2-2 Ba,quartz crystal unit should be stored at a temperature 85±2℃ for 2 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℃中放置2小时后, 在常温常湿状态下放置1小时后测试。			
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℃ for 2 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℃中放置2小时后, 在常温常湿状态下放置1小时后测试。	A		
		According to experiment of IEC 68-2-3 method Ta,quartz crystal unit should be stored at a temperature 40±2℃ 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Ta进行, 晶体在温度40±2℃, 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。			
8	High heat and high humidity 稳 态湿热	According to experiment of IEC 68-2-3 method Ta,quartz crystal unit should be stored at a temperature 40±2℃ 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Ta进行, 晶体在温度40±2℃, 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		
		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。			
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。	A		
				TEMPERATURE 温度	STORE TIME 放置时间
		1		-40±3℃	30min
		2		Normal Temp(常温)	30sec
		3		100±2℃	30min
4	Normal Temp(常温)	30sec			

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.	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。	
11	Reflow 回流焊	Reflow soldering cure see the chart. 回流焊曲线见下图。	A
			
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 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)。	
13	Aging 老化	Quartz crystal unit shall be stored at a temperature 85±2°C 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°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。	

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 500MΩ(100V DC). 端子之间的绝缘电阻 ≥ 500MΩ(100V DC)。

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