



## 产 品 承 认 书

### SPECIFICATIONS FOR APPROVAL

客户名称: 深圳华秋电子有限公司  
Customer: \_\_\_\_\_

产品名称: 石英晶体谐振器  
Description: \_\_\_\_\_

物料编码: SMD3225-26000-12-10  
Part series: \_\_\_\_\_

规格型号: SMD3225 26.000MHZ 12PF 10PPM  
Specification: \_\_\_\_\_

样品数量: 10 只  
Sample quantity: \_\_\_\_\_

日 期: 2021-4-1  
Sample date: \_\_\_\_\_

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
禹  瑞	吕 宗 伟	周 柏 顺					

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## GENERAL SPECIFICATIONS (电气特性)

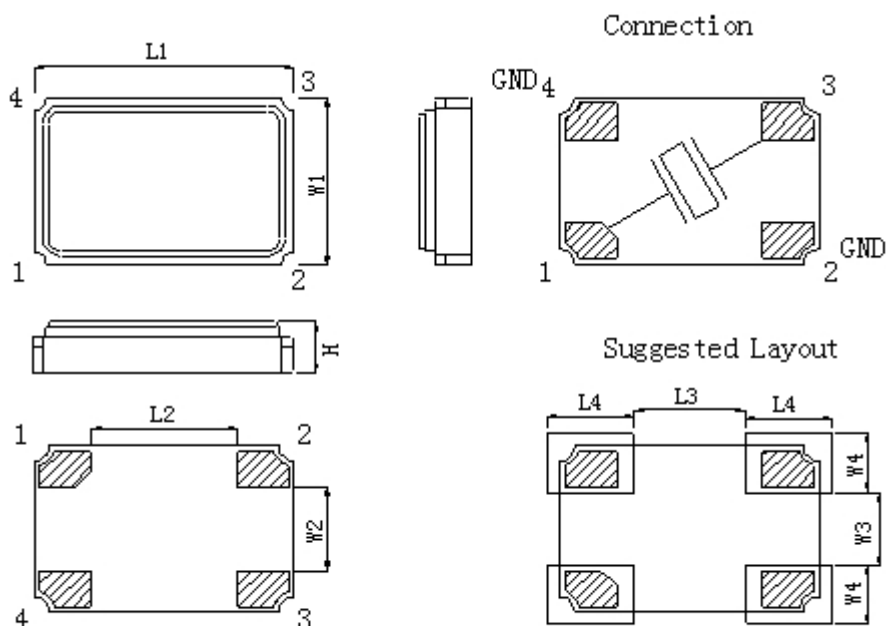
1.Holder type: (型号)	SMD3225
2.Normal Frequency: (标称频率)	26.000000MHz
3.Oscillation Mode: (振动模式)	■ Fundamental    □ 3rd
4.Load Capacitance(CL): (负载电容)	12PF
5.Frequency Tolerance 25±3℃: (频率偏差 25±3℃)	±10PPM
6.Stability Over Temperature Range: (工作温度频率偏差)	±30 PPM
7.Effective Series Resistance: (等效电阻)	≤ 80 Ω
8.Shunt Capacitance(C0): (静态电容)	≤ 5 PF
9. Typical drive level: (激励功率)	100 uW TYP.
10.Operation Temperature Range: (工作温度范围)	-40℃ to +85℃
11.Storage Temperature: (存储温度)	-40℃ to +125℃
12.Insulation Resistance: (绝缘阻抗)	≥500 MΩ at DC 100V
13.Aging: (老化率)	±3 PPM/Year
14.Leak (检漏)	1×10 <sup>-7</sup> Torr.1/sec Max
15.Test circuit (测试仪器)	S&A 250B Pi-Network Crystal Measurement System

Remark (备注):

晶振最佳储存条件: 温度: 25±5℃, 湿度: <70%。

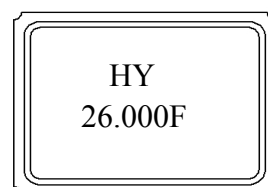
密封包装, 切勿挤压, 小心跌落。

## DIMENSIONS SPECIFICATIONS (外形尺寸)

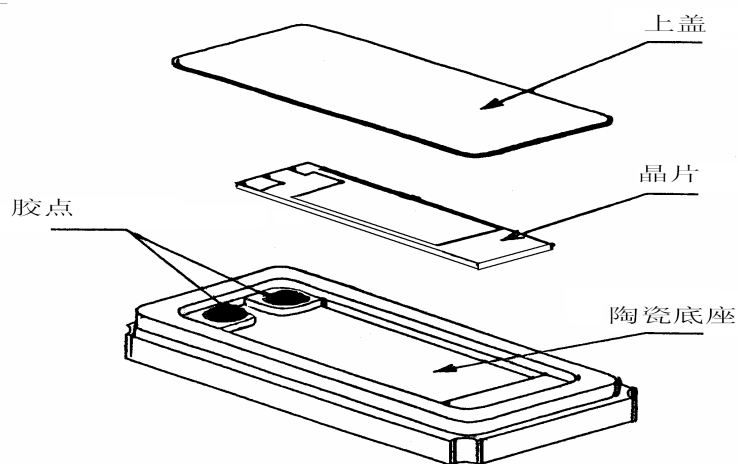


Marking #2and#4 are connected  
to metal cap of top

型 号	外形尺寸(±0.15mm)								
	L1	L2	L3	L4	W1	W2	W3	W4	H
5032	5.0	3.0	1.2	1.7	3.2	0.9	0.7	1.5	0.9
3225	3.2	1.3	0.8	1.4	2.5	0.7	0.5	1.2	0.7
2520	2.5	0.9	0.6	1.1	2.0	0.6	0.4	1.0	0.5
2016	2.0	0.7	0.5	0.9	1.6	0.5	0.3	0.8	0.5



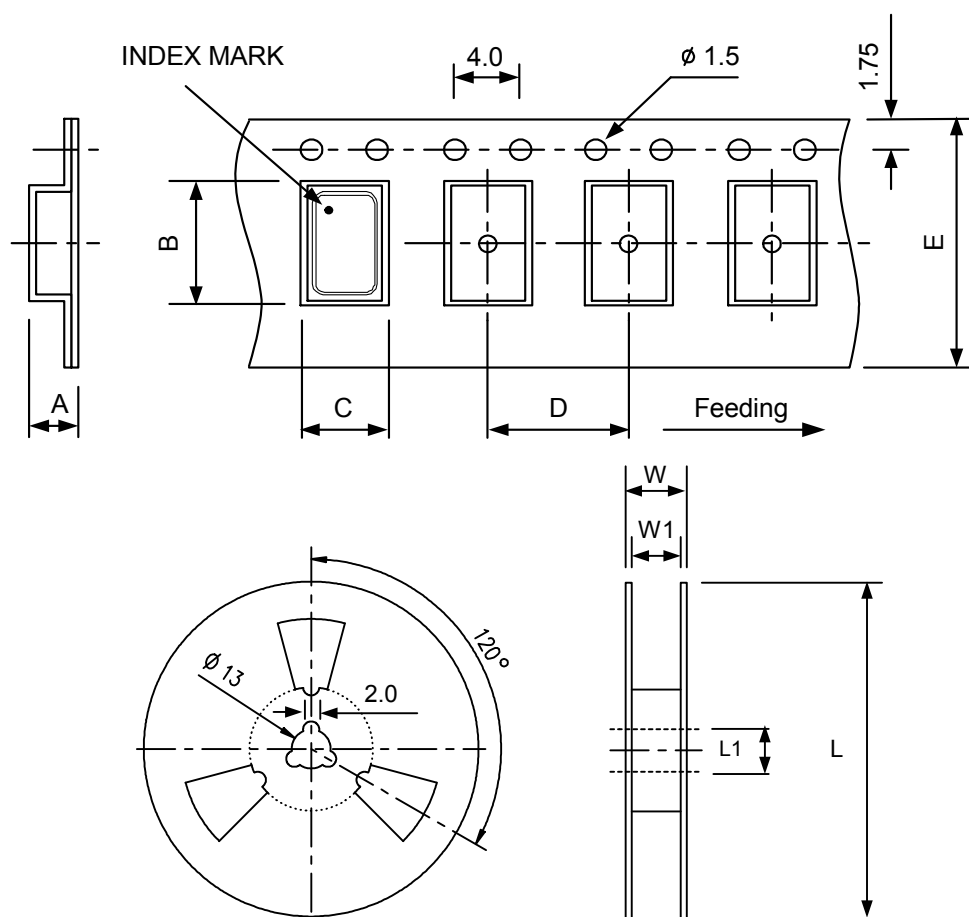
## STRUCTURE DIAGRAM (结构图示)



## 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
	<b>3225</b>	<b>1.4</b>	<b>3.5</b>	<b>2.7</b>	<b>4</b>	<b>8</b>	<b>180</b>	<b>13</b>	<b>11.5</b>	<b>8</b>
	2520	1.2	3.4	2.5	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.	B
		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。	
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℃。	
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.	A
		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。	
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).	A
		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。	
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.	AB
		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。	
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.	A
		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。	
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.	A
		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。	
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.	A
		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。	
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.	A
		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。	
		TEMPERATURE 温度	
		STORE TIME 放置时间	
		1 -40±3℃	
		2 Normal Temp(常温)	
		3 100±2℃	
		4 Normal Temp(常温)	



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.	A
		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 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 $85\pm 2^{\circ}\text{C}$ for $720\pm 12$ hours(30days), and then it shall be subjected to standard atmospheric conditions for 1 hour.	A
		晶体在温度 $85\pm 2^{\circ}\text{C}$ 中放置720小时（30天） $\pm 12$ 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 $5\Omega$ .
	电气性能可满足要求：频率变化量在5ppm以内,电阻变化量在 $5\Omega$ 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 $500\text{M}\Omega(100\text{V DC})$ .
	端子之间的绝缘电阻 $\geq 500\text{M}\Omega(100\text{V DC})$ 。