承 认 书

SPECIFICATION FOR APPROVAL

客户名称 Customer Name：	立创商城
供应商物料名称 Part Name：	石英晶体谐振器
产品描述 Description：	SMD2520 30.000MHz/10PF
供应商物料料号 Part NO.：	SX2B30.000F1010F30
供应商名称 Supplier Name ：	深圳市星通时频电子有限公司

PLEASECONFIRMOURSPECIFICATION。敬请确认规格书之内容。

CUSTOMER APPROVAL 客户审批		
物料代号 PART NO._____ 使用于机型 USED IN MODEL: _____		
工程部	品质部	采购部

(敬请承认后返回一份，谢谢！)

SUPPLIER APPROVAL 供应商审批		
DGN.制表人	CKD. 校对	APPD. 审核、签章
陈雪绵	李良	胡华才

RoHS Compliant

Revision Record				
Rev.	Revise page 修订页	Revise contents 修订内容	Rev. Date 修订日期	Reviser 修订人
A02	N/A	Initial released.	2013-1-1	Martin.Hu
A03	N/A	The version is upgraded and the content remains unchanged.	2018-2-25	Martin.Hu
B01	Page2	The version is upgraded and add revision record page.	2021-2-24	Martin.Hu

■ QUARTZ CRYSTAL UNIT SPECIFICATION

1. Crystal Unit Spec:

N0.	Item	Symb.	Electrical Spec.	Notes
1	Nominal Frequency 标称频率	f	30.000000 MHz	
2	Oscillation Mode 振荡模式		AT Fundamental	
3	Holder Type 封装		SMD2520	
4	Frequency Tolerance 常温频差	△f/f	±10PPM	at 25℃±2℃
5	Drive Level 激励功率	DL	10 μW Typical	See the 2.1
6	Load Capacitance 负载电容	CL	10PF	See the 2.2
7	Effective Resistance 谐振电阻	RR	50Ω max.	See the 2.3
8	Shunt Capacitance 静电容	C0	3 pF Max.	
9	Drive Level Dependency 激励功率依赖性	DLD2	12.5Ω max.	Sweep from 100nW to 100uW in 20 steps.
10	Temperature Drift 温度频差	f_tem	±30PPM	Over Operating Temp. Range (Reference 25℃)
11	Spurious response 寄生响应	SPDB	-3dB max.	Start -1000ppm stop 5000ppm 30 steps power applied: 10dBm
12	Operating Temperature 工作温度范围	T_use	-40～85℃	
13	Storage Temperature Range 存储温度	T_stg	-55～125℃	
14	Insulation Resistance 绝缘阻抗	IR	500 MΩ	at DC 100V
15	Aging 年老化率	f_age	±3 ppm	1st Year
16	Measurement Condition 测量条件	Measured by S&A250B or equivalen,TA=25℃±2℃，RH=40%~70%.		

2. Circuit Coditions Spec:

2.1 Drive Level (DL) 100μW max.

(If Drive Level is too high,that may cause crystal resonator abnormal oscillation or damagaed the main body of quartz)

2.2 Loading capacitance (CL) : 10PF

(The total circuit load capacitance should be equal to the crystal (CL) values, too large or too small load, will result in frequency drift.)

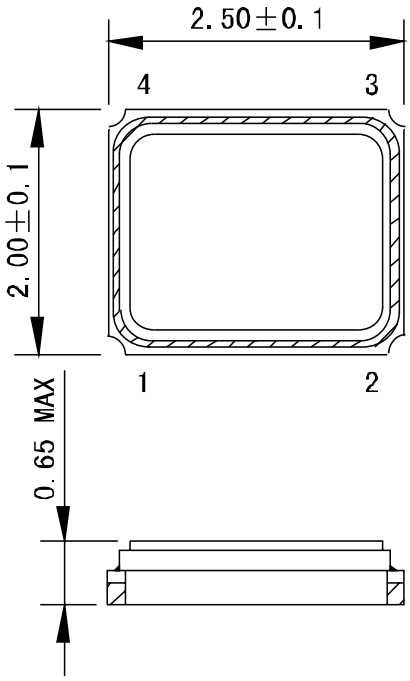
2.3 Negative Resistance (-R) ≥ 250Ω

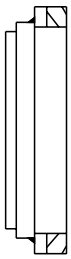
(If –R more than ESR spec of 5 times will be better. If Negative Resistance is too low, that may cause crystal resonator stop oscillation or not easy to oscillate)

■ DIMENSIONS

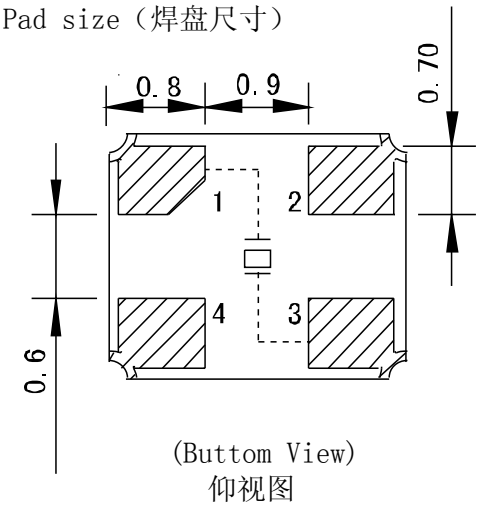
Product size（产品尺寸）

Units（单位）：mm(毫米)

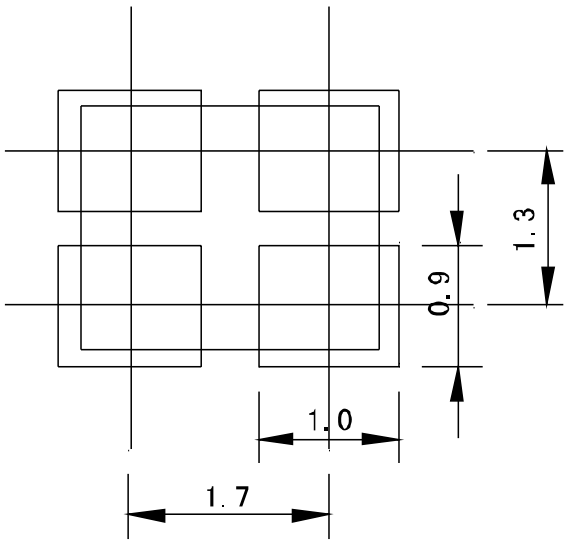




Pad size（焊盘尺寸）



(Buttom View)
仰视图

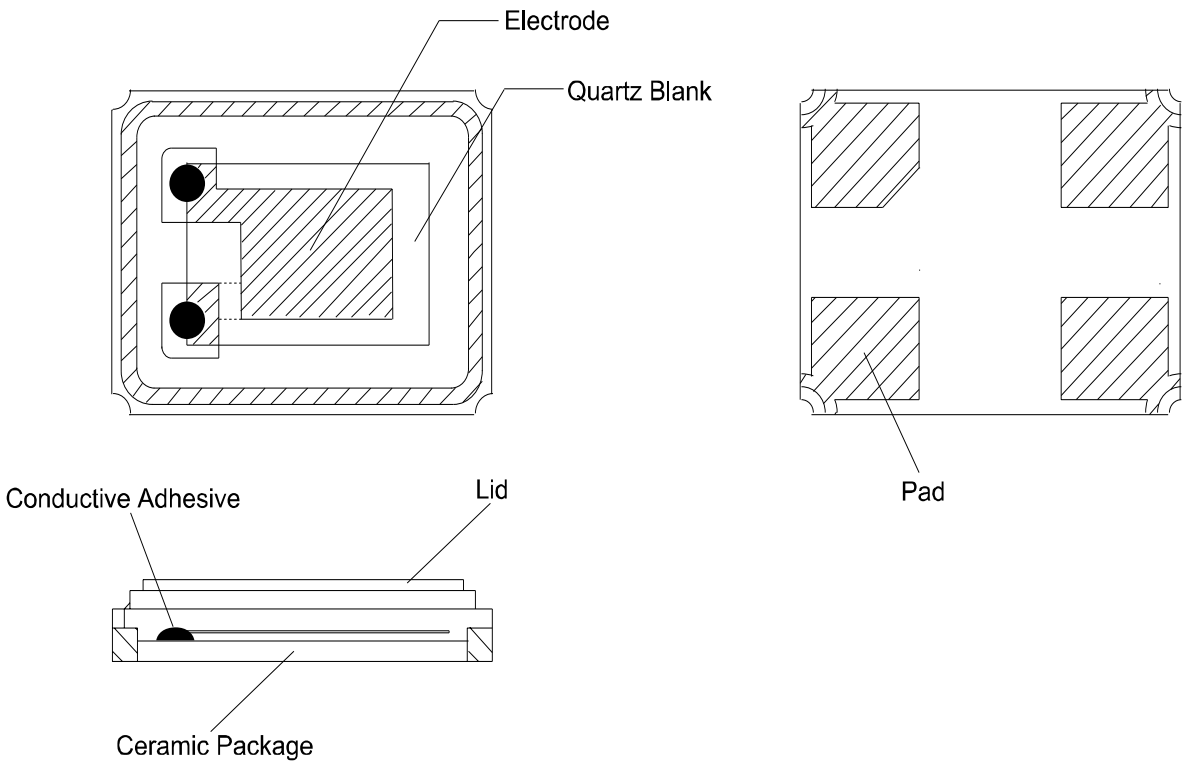


suggested solder pad layout

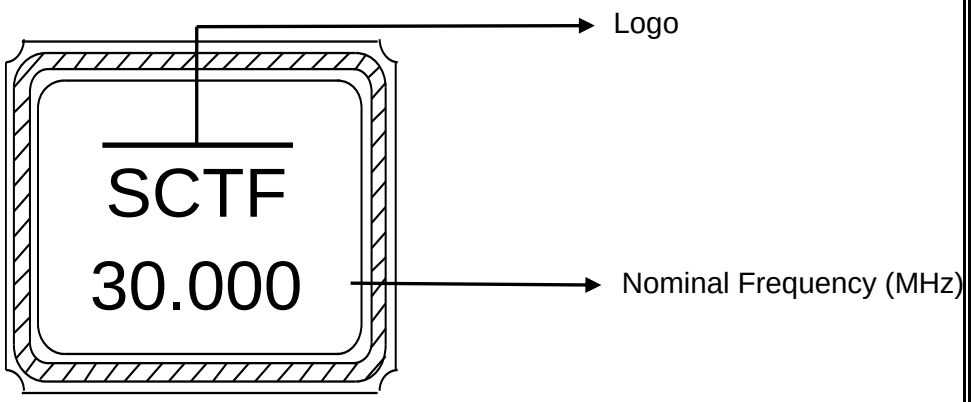
Note: #2, #4 is connected with a cover
(Please connect with GND or floating.)

■ PRODUCT STRUCTURE & MARKING

◆ Product Structure产品结构

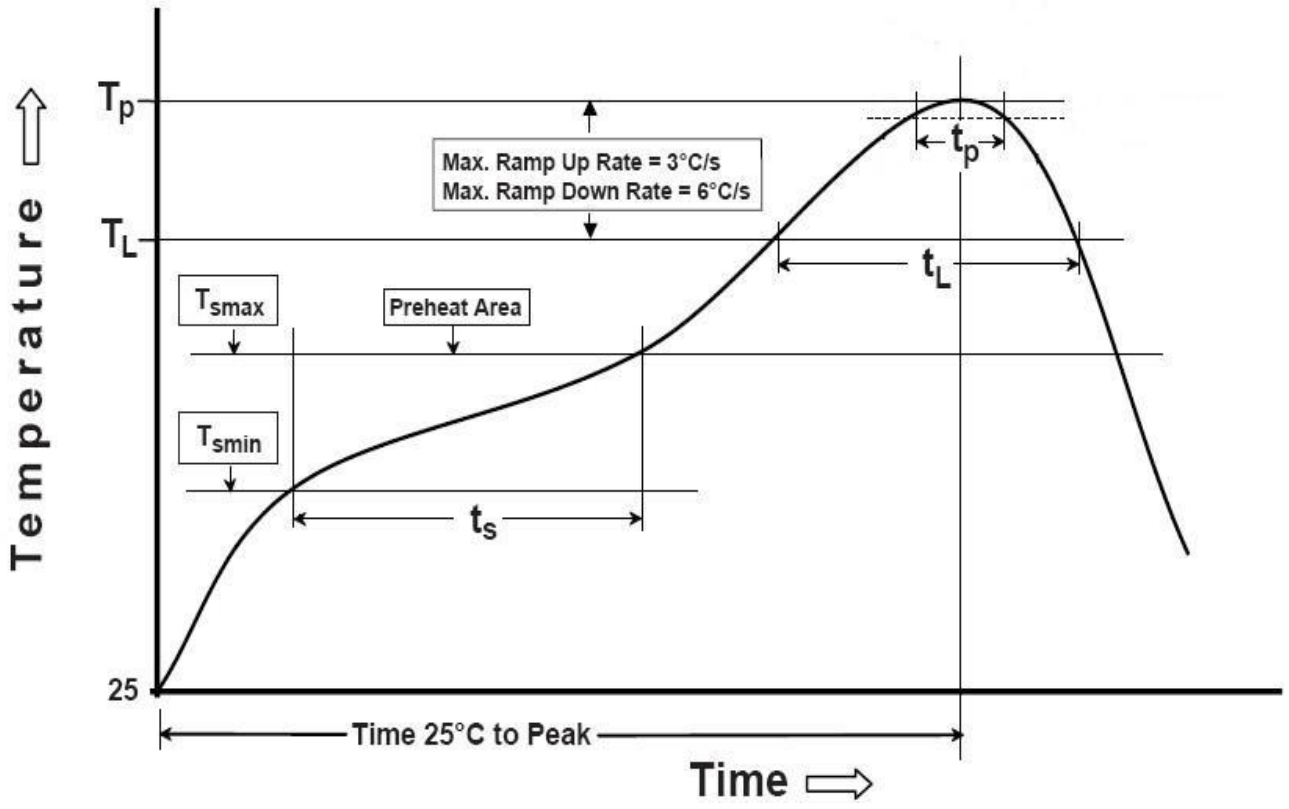


◆ Marking印字



■ REFLOW PROFILES

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak ●Temperature Min(Ts min) ●Temperature Max (Ts max) ●Time (Ts min to Ts max)	 100 °C 150 °C 60-120 seconds	 150 °C 200 °C 60-120 seconds
Ramp-up rate (T_L to Tp)	3 °C/second max.	3 °C/second max.
Time maintained above ●Liquidous temperature (T_L) ●Time (t_L) maintained above T_L	 183 °C 60-150 seconds	 217 °C 60-150 seconds
Peak package body temperature (Tp)	235℃	260℃
Time within 5 °C of the specified classification temperature (Tp)	20 seconds	30 seconds
Ramp-down rate (Tp to T_L)	6 °C/second max.	6 °C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
Suggust reflow times	**3 Times max.**	



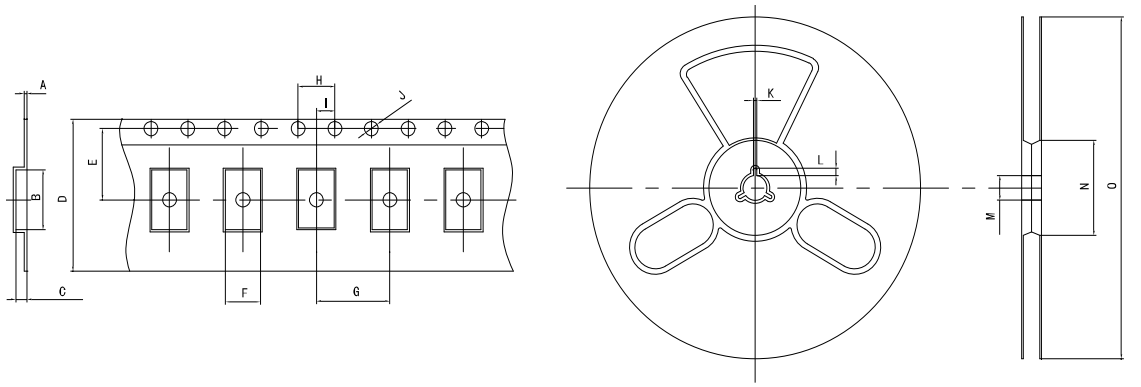
■ RELIABILITY SPECIFICATION

序号 NO.	项目 ITEM	条件 CONDITIONS	合格标准 BASIS OF VERDICT
1	跌落 DROP	100cm高处自由跌落到3cm厚木板上,3次 High:100cm;Thickness:3cm;3 times.	△FL≤±5ppm △RR≤RR(max)*10%
2	振动 VIBRATION	频率 Frequency:10~57.7Hz:幅度 Amplitude:±0.75mm 频率Frequency:57.7Hz~500Hz:加速度幅度acceleration rate:98m/s2 周期 Cycle time:10-500-10Hz：15min 振动方向 Direction:X,Y, Z 振动时间 Duration: 每个方向2小时 2 h/direction.	△FL≤±5ppm △RR≤RR(max)*10%
3	温度变化 TEMPERATURE SHOCK	-40℃±2℃（30min）←→85℃±2℃（30min）;循环10次 -40℃±2℃（30min）←→85℃±2℃（30min）;For 10 cycles	△FL≤±5ppm △RR≤RR(max)*10%
4	湿热 HUMIDITY	温度:40℃±2℃;湿度90-95%;时间:96小时 Temp:40℃±2℃;Humidity:90-95%;Times:96h	△FL≤±5ppm △RR≤RR(max)*10%
5	低温 COLD RESISTANCE	温度:-40℃±2℃;时间:96小时 Temp:-40℃±2℃;Times:96h	△FL≤±5ppm △RR≤RR(max)*10%
6	高温1 HEAT RESISTANCE 1	温度:100℃±2℃;时间:96小时 Temp:100℃±2℃;Times:96h	△FL≤±5ppm △RR≤RR(max)*10%
7	高温2 HEAT RESISTANCE 2	温度:155℃±2℃;时间:2小时 Temp:155℃±2℃;Times:2h	△FL≤±5ppm △RR≤RR(max)*10%
8	高温3 HEAT RESISTANCE 3	温度:85℃±2℃;电压:3.3V/5.0V;时间:96小时 Temp:85℃±2℃;Voltage:3.3V/5.0V;Times:96h	△FL≤±5ppm △RR≤RR(max)*10%
9	回流焊 REFLOW	150℃±5℃保持120s后升到270℃±5℃保持10s，升温和保温时间小于200s，常温放置1～2h后测定 Keep 150 ℃ ± 5 ℃ 120s and then rose to 270 ℃ ± 5 ℃ for 10s, warming and holding time is less than the 200s, placed at room temperature 1 ~ 2h after test	△FL≤±5ppm △RR≤RR(max)*10%
10	盐雾 SALT SPRAY	盐雾浓度:5%;温度:35℃;时间:24小时 Salt density:5%;Temp:35℃;Times:24h	目测无明显腐蚀现象 Visual no significant corrosion.
11	老化 AGING	温度:85℃;时间:30天 Temp:85℃;Times:30days	△FL≤±5ppm △RR≤RR(max)*10%
12	气密性 LEAKAGE	氦气(0.6~0.65MPa):10分钟 He(0.6~0.65MPa):10min	≤3*10-9Pa.m3/s
13	焊接 SOLDER	温度:260℃±5℃ Temp:260℃±5℃	浸锡率大于90% Soldering tin rate greater than 90%

■ PACKAGE

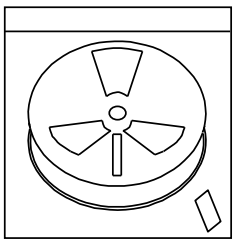
◆ **Taping Specifications编带规格**

UNIT(单位):mm(毫米)

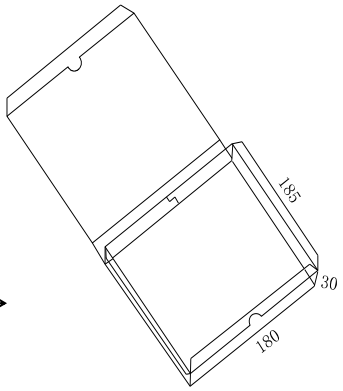


TEYE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2.5×2.0 SMD	0.30	2.80	0.75	8.00	3.50	2.30	4.00	4.00	2.00	1.50	2.00	4.00	13.00	60.00	180.00

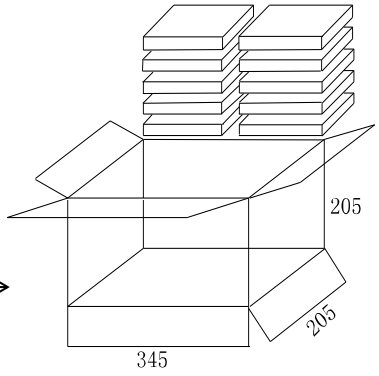
◆ **Packaging specifications包装规格**



自封袋(Bag)
3000只 = 1 轮
3000pcs = 1 Reel



内包装(Inside package)
1 轮＝1 盒
1 Reel＝1 box



外包装(Outside Package)
10 盒=1 箱
10 box=1 carton

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