

编号	SCTF2022LC930
日期	2022-9-19
版本	B01

# 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 : 压控温度补偿晶体振荡器

产品描述 Description : VC-TCXO2520 12.800MHz 3.3V ±2.0ppm

供应商物料料号 Part NO. : SX2VT12.800B010J020S

供应商名称 Supplier Name : 深圳市星通时频电子有限公司

PLEASE CONFIRM OUR SPECIFICATION。 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
吴丽红	李良	

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**产品规格书**  
**SPECIFICATION FOR APPROVAL**

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# 4 QUARTZ CRYSTAL UNIT SPECIFICATION

## ■ Electrical Specification 电气参数

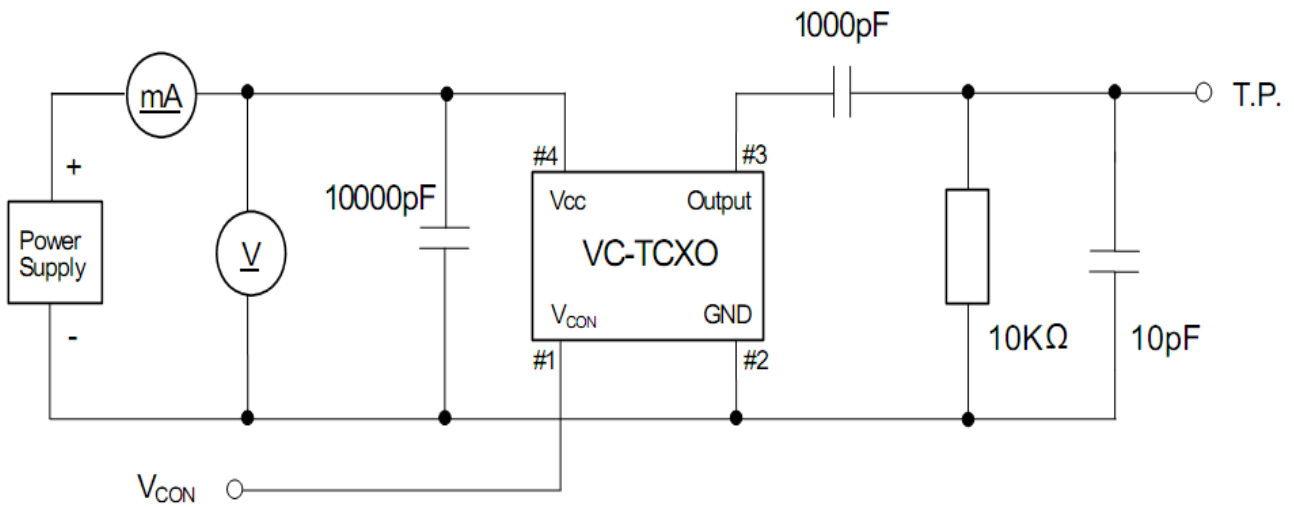
No.	Item	Symb.	Electrical spec.	Unit	Notes
1	Holder Type 封装		SMD 2520		
2	Nominal Frequency 标称频率	Fo	12.800000	MHz	
3	Supply Voltage 供电电压	Vcc	3.3	V	±5% Max.
4	Frequency Tolerance 初始频差	Fo_tol	±1.0	ppm	T_use=25±2°C , Vcon=1.5V
5	Frequency Vs Temperature Change 频率-温度特性	Fo_Tc	±2.0	ppm	T_use=-30~+85°C, Vcon=1.5V (Based on frequency at +25°C)
6	Frequency vs Load Change 频率-负载特性	Fo_Load	±0.2 Max.	ppm	±10% load change
7	Frequency vs Voltage Change 频率-电压特性	Fo_Vcc	±0.2 Max.	ppm	Voltage varied ±5% at 25°C
8	Supply Current 功耗	Icc	1.5 Max.	mA	At maximum supply voltage
9	Output Waveform 输出波形		Clipped sine wave		DC Coupled clipped sine wave
10	Output Level 输出电平	Vp-p	0.8 Min.	V	
11	Load 输出负载	Load	10KΩ//10pF		
12	Center Voltage 压控中心电压	Vcon	1.5	V	
13	Control voltage range 压控电压范围		0.5~2.5	V	
14	Pulling Range 牵引范围		±9~±15	ppm	Vcon=1.5±1V
15	Linearity 线性		10 Max.	%	
16	Start Time 起振时间	S-T	2.0 Max.	ms	
17	Phase Noise 相位噪声		-132	dBc/Hz	Offset:1KHz
			-152		Offset:100KHz
18	Operating Temperature Range 工作温度范围	T_use	-30~+85	°C	
19	Storage Temperature Range 存储温度范围	T_stg	-40~+105	°C	
20	Aging 老化	f_age	±1.0	ppm	First year at 25°C

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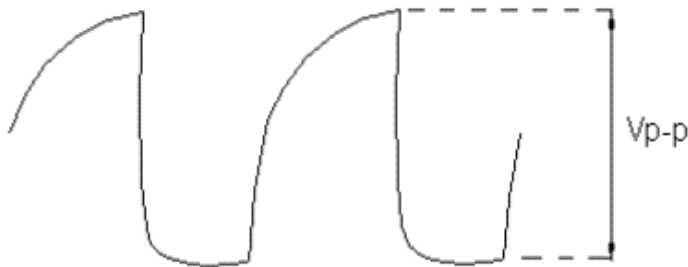
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## 5 TEST CIRCUIT、OUTPUT WAVEFORM

### ■ TESTING CIRCUIT 测试电路



### ■ WAVEFORM CONDITIONS 输出波形

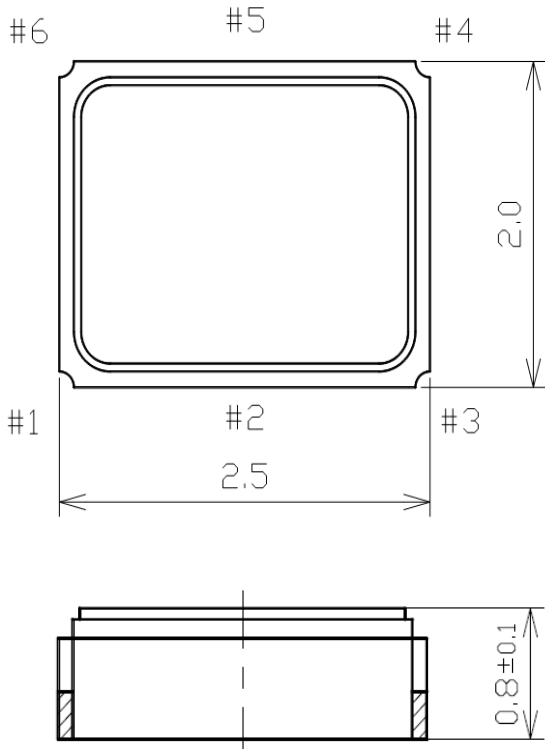


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# 6 DIMENSIONS

## ■ DIMENSIONS 产品尺寸

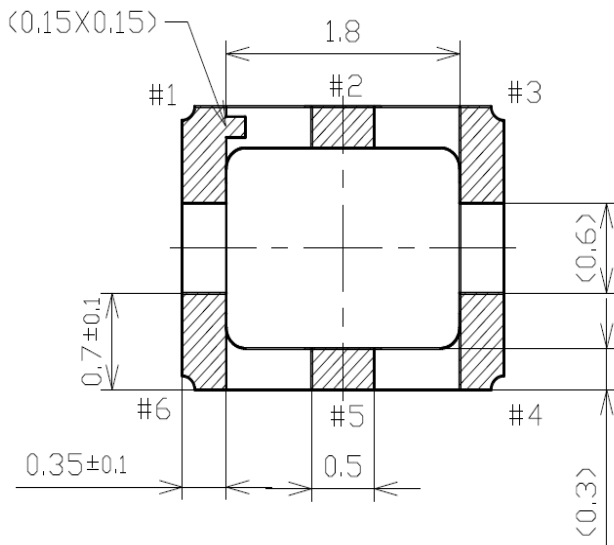
Units (单位): mm(毫米)



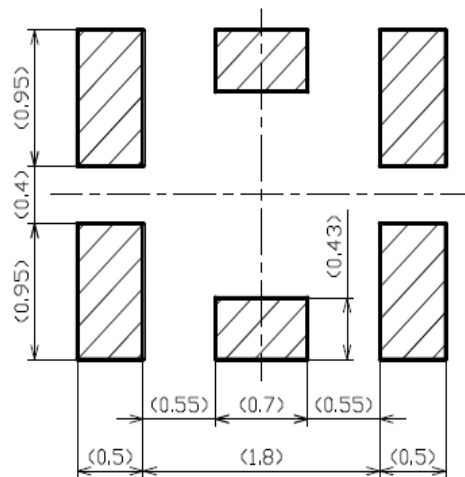
Terminal land connections	
#1	VCON
#3	GND
#4	OUTPUT
#6	VCC
#2/#5	N/C or GND

## ■ Pad size 焊盘尺寸

Bottom view



Suggested solder pad layout

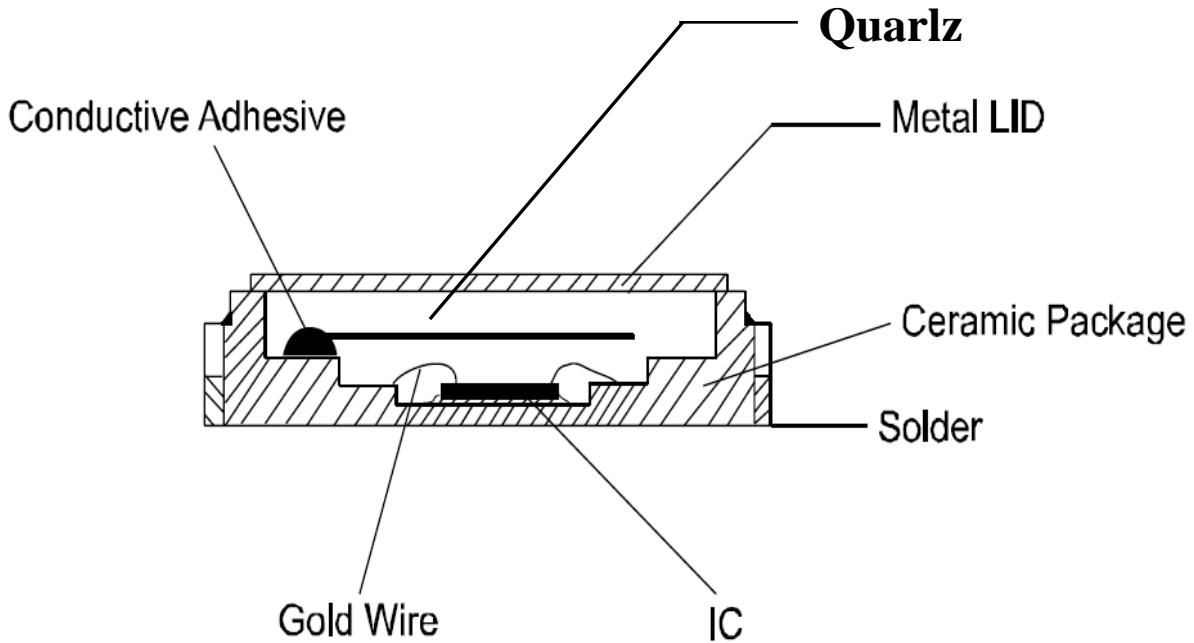


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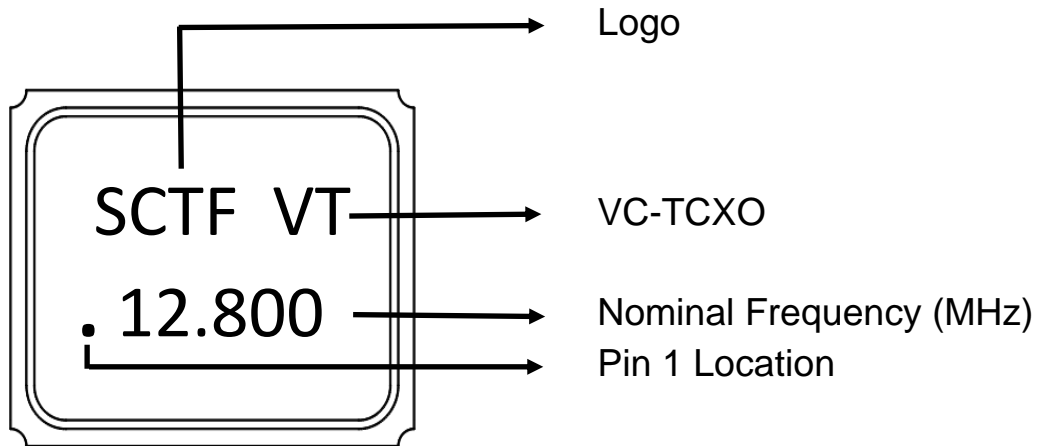
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# 7 PRODUCT STRUCTURE & MARKING

## ■ Product Structure 产品结构



## ■ Marking 印字

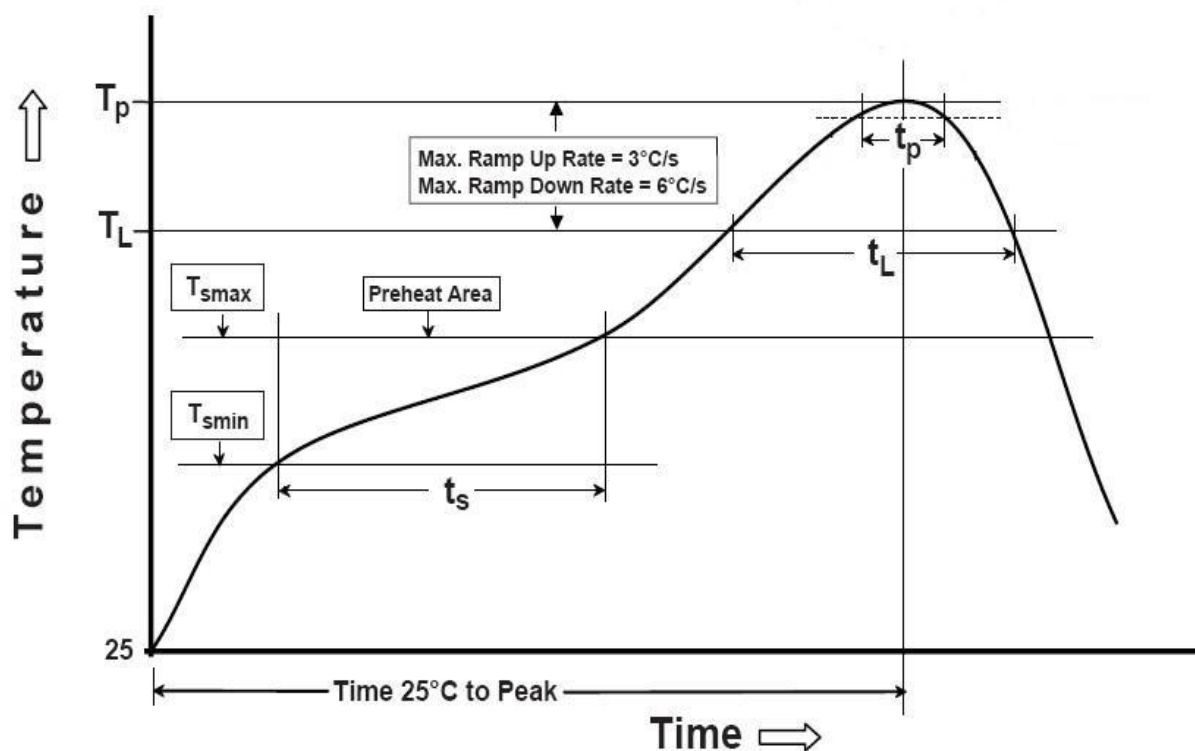


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## 8 REFLOW PROFILES

### REFLOW PROFILES 回流焊条件

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat/Soak		
● Temperature Min( $T_s$ min)	100 °C	150 °C
● Temperature Max ( $T_s$ max)	150 °C	200 °C
● Time ( $T_s$ min to $T_s$ max)	60-120 seconds	60-120 seconds
Ramp-up rate (TL to $T_p$ )	3 °C/second max.	3 °C/second max.
Time maintained above		
● Liquidous temperature (TL)	183 °C	217 °C
● Time ( $t_L$ ) maintained above TL	60-150 seconds	60-150 seconds
Peak package body temperature ( $T_p$ )	235°C	260°C
Time within 5 °C of the specified classification temperature ( $T_p$ )	20 seconds	30 seconds
Ramp-down rate ( $T_p$ to TL)	6 °C/second max.	6 °C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.
<b>Suggest reflow times</b>	<b>2 Times max.</b>	



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## 9 RELIABILITY SPECIFICATION

### ■ Environmental and mechanical characteristics 可靠性参数

No.	Item	Value *1		Test method
		Freq. Tolerance [1×10 <sup>-6</sup> ]*2	Electrical characteristics	
1	High temp. storage *3	± 2.0	Satisfy Item output level after test	+85 °C × 1 000 h
2	Low temp. storage *3	± 2.0		-40 °C × 1 000 h
3	High temperature with Humidity	± 2.0		+85 ± 2 °C × 85 ± 5 %RH × 1 000 h
4	Temp. cycle *3	± 2.0		-40 °C to +85 °C (30 min × 100 cycle/each)
5	Resistance to Soldering heat (Reflow characteristics)	± 1.0		Reflow furnace with the condition 2 times
6	Drop	± 2.0		Free drop from 750 mm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm)
7	Vibration (variable frequency)	± 1.0		10 Hz to 55 Hz 0.75 mm 55 Hz to 500 Hz acceleration 98 m/s <sup>2</sup> 10 Hz → 500 Hz → 10 Hz 15 min./cycle 6 h(2 h × 3 directions)
8	ESD (MM)	± 1.0		200pF 0Ω 200V. Discharge 3 pulses
9	ESD (HBM)	± 1.0		100pF 1.5kΩ 2000V. Discharge 3 pulses
10	Solderability	Terminals must be 95 % covered with fresh solder		Dip termination into solder bath at +235 °C for 5 s (Using Rosin Flux)

#### Notes

- 1.\*1 each test is independent.
- 2.\*2 measuring 2 h to 24 h later leaving in room temperature after each test.
- 3.\*3 Pre conditionings
  1. reflow 2 times
  2. Initial value shall be after 24 h at room temperature.

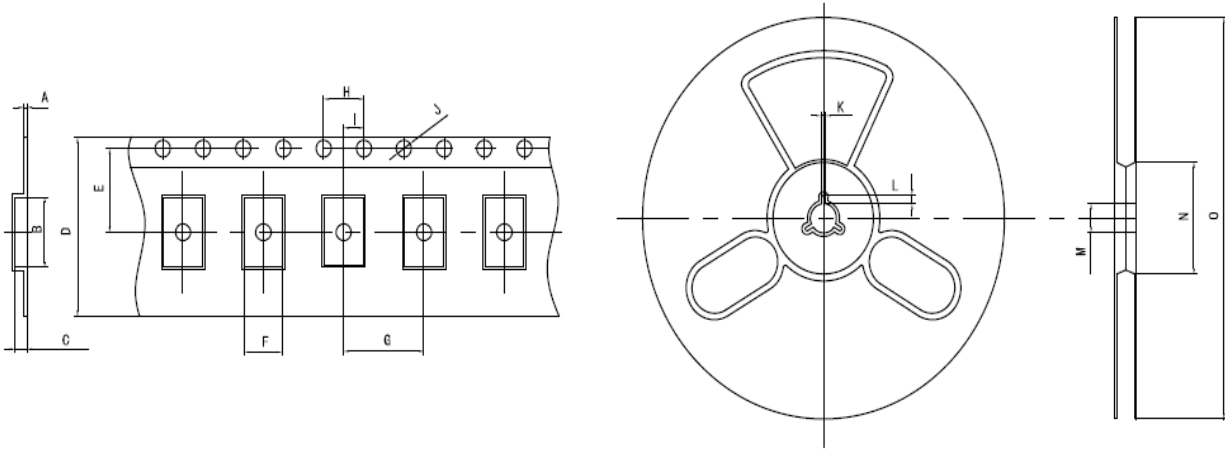
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# 10 PACKAGE

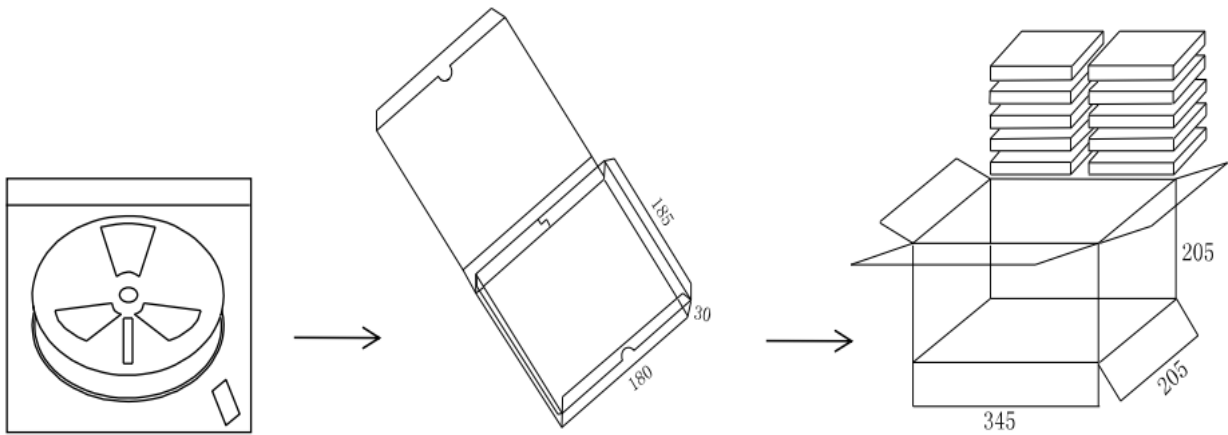
## ■ Taping Specifications 编带

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	0.25	2.80	1.15	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



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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