

编号	SCTF2022LC931
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 : 温度补偿晶体振荡器

产品描述 Description : TCXO2016 19.200MHz 3.3V ±2.0ppm

供应商物料料号 Part NO. : SX1T19.200B010J020S

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
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产品规格书
SPECIFICATION FOR APPROVAL

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3 Revised Page

Rev.	Revise page	Revise Contents	Date	Ref. No.	Reviser
1	N/A	Initial released	2022-9-19	N/A	吴丽红

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4 QUARTZ CRYSTAL UNIT SPECIFICATION

■ Electrical Specification 电气参数

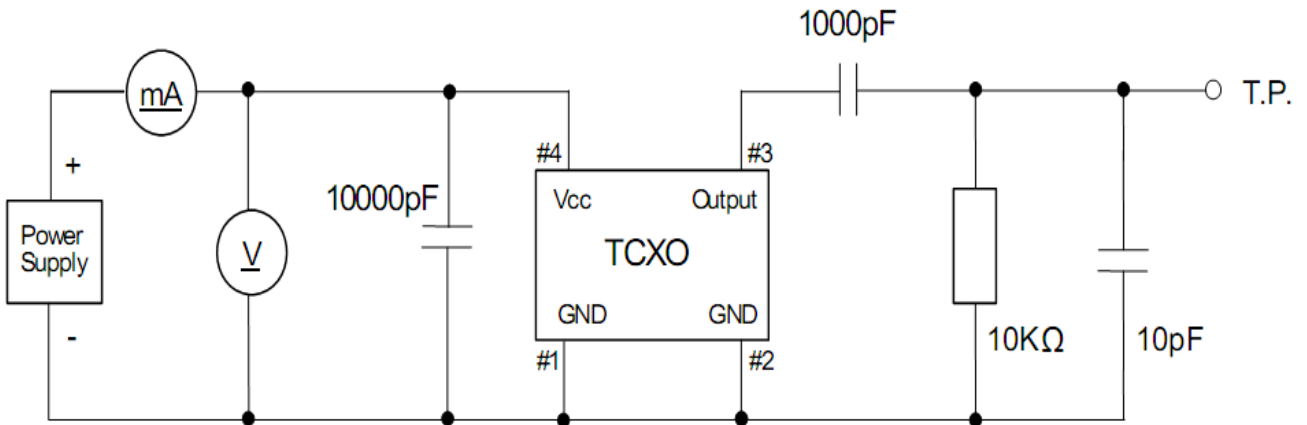
No.	Item	Symb.	Electrical spec.	Unit	Notes
1	Holder Type 封装		SMD 2016		
2	Nominal Frequency 标称频率	Fo	19.200000	MHz	
3	Supply Voltage 供电电压	Vcc	3.3	V	±5% Max.
4	Frequency Tolerance 初始频差	Fo_tol	±1.0	ppm	T _{use} = 25±2℃
5	Frequency Vs Temperature Change 频率-温度特性	Fo_Tc	±2.0	ppm	T _{use} = -30℃ ~ +85℃ (Based on frequency at +25℃)
6	Frequency vs Load Change 频率-负载特性	Fo_Load	±0.1 Max.	ppm	±10% load change
7	Frequency vs Voltage Change 频率-电压特性	Fo_Vcc	±0.1 Max.	ppm	Voltage varied ±5% at 25℃
8	Supply Current 功耗	Icc	2.0 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	Duty cycle 点空比		40~60	%	Ground level
12	Harmonics 谐波		-5.0 Max.	dBc	
13	Load 输出负载	Load	10KΩ//10pF		
14	Start Time 起振时间	S-T	2.0 Max.	ms	
15	Phase Noise 相位噪声		-130	dBc/Hz	Offset: 1KHz
			-152		Offset: 100KHz
16	Operating Temperature Range 工作温度范围	T _{use}	-30~+85	℃	
17	Storage Temperature Range 存储温度范围	T _{stg}	-40~+105	℃	
18	Aging 老化	f _{age}	±1.0	ppm	First year at 25℃
19	Others 其他	ROHS			

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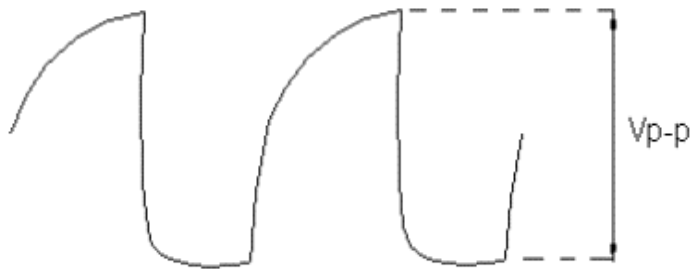
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5 TEST CIRCUIT、OUTPUT WAVEFORM

■ TESTING CIRCUIT 测试电路



■ WAVEFORM CONDITIONS 输出波形



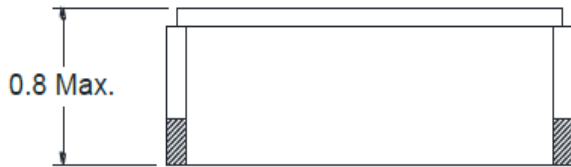
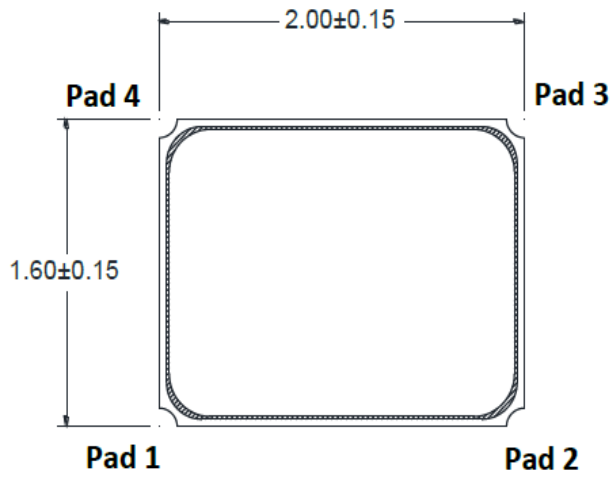
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6 DIMENSIONS

■ DIMENSIONS 产品尺寸

Units (单位): mm(毫米)

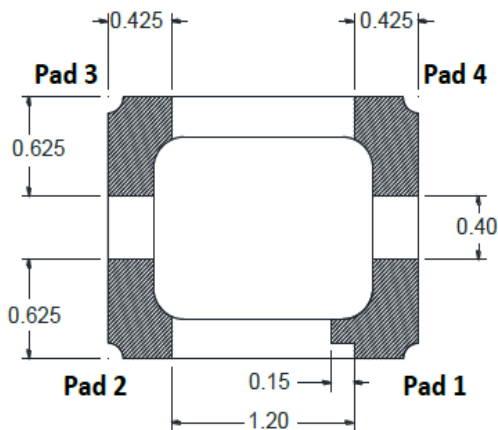


Pin Connections

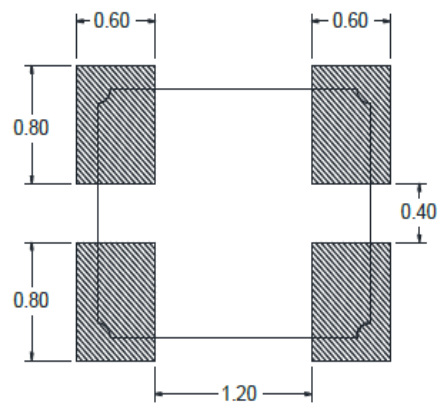
Pin No.	Connection
#1	GND
#2	GND
#3	Output
#4	V _{cc}

■ Pad size 焊盘尺寸

Bottom view



Suggested solder pad layout

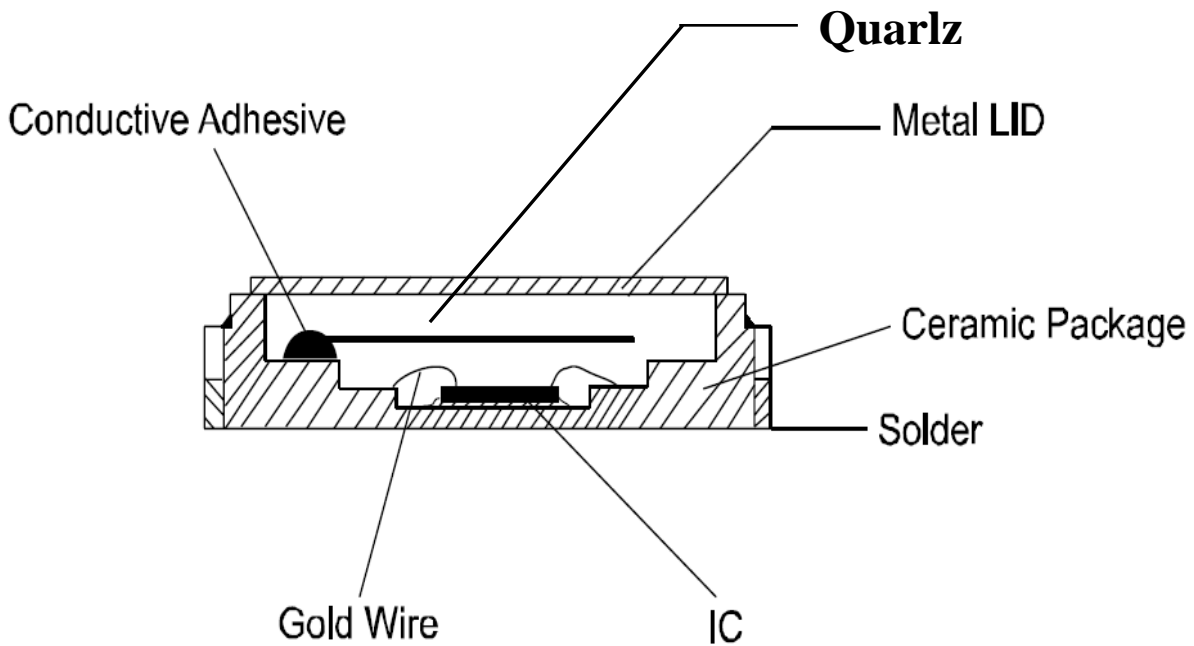


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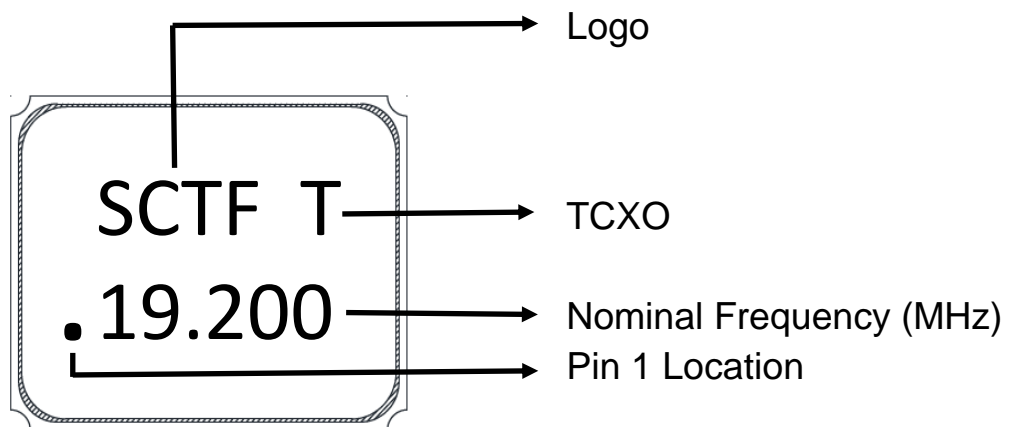
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7 PRODUCT STRUCTURE & MARKING

■ Product Structure 产品结构



■ Marking 印字

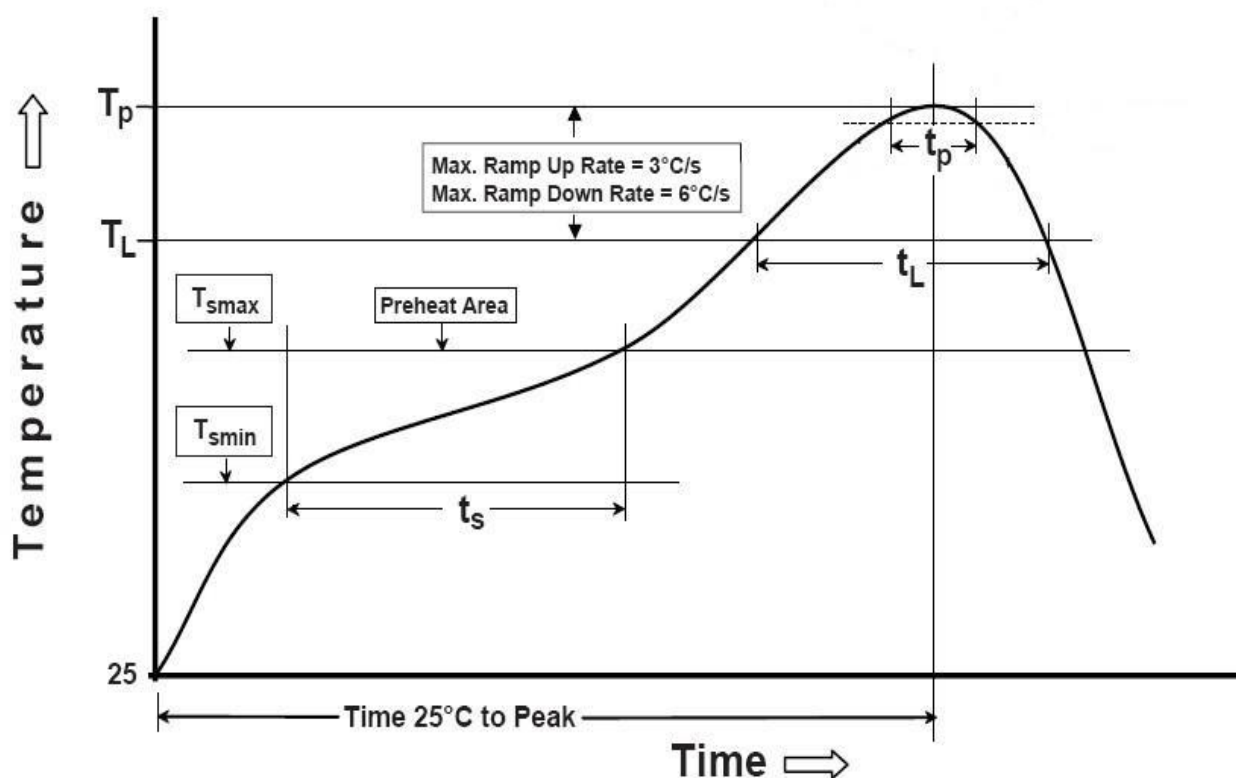


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8 REFLOW PROFILES

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.
Suggest reflow times	2 Times max.	



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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 ⁻⁶] *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 ² 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.

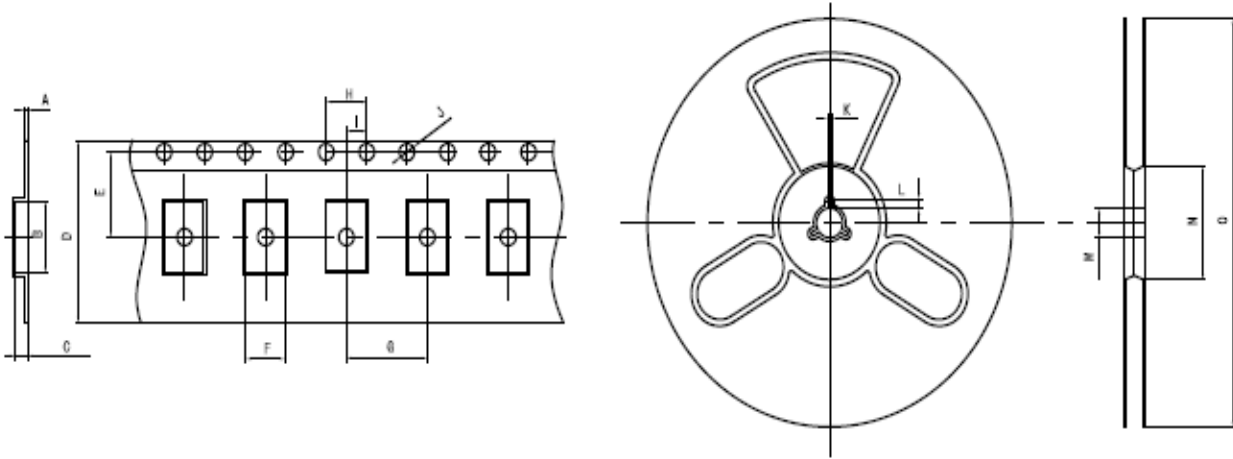
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10 PACKAGE

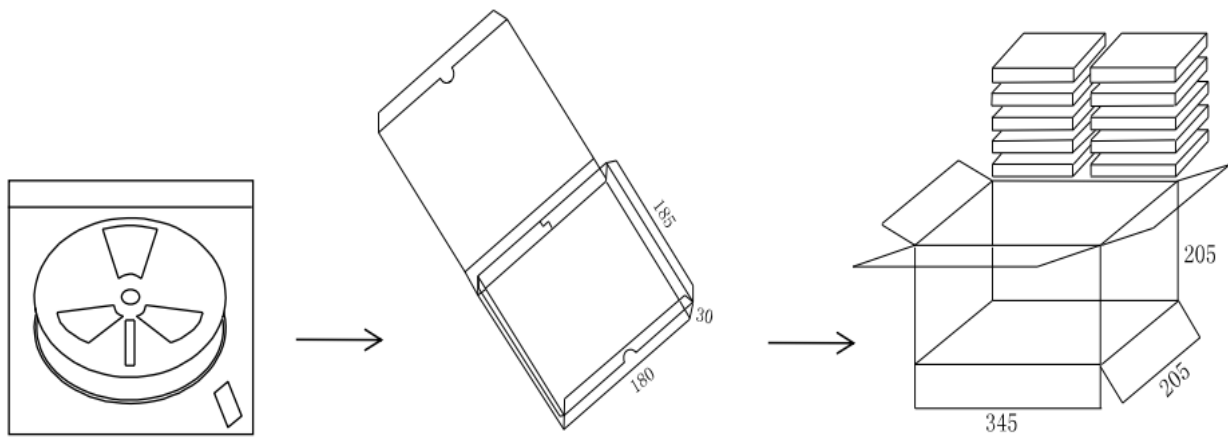
■ Taping Specifications 编带

UNIT(单位): mm(毫米)



TEYE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
2.0×1.6 SMD	0.25	2.3	0.7	8.0	3.5	1.9	4.0	4.0	2.0	1.5	2.0	4.0	13	50	180

■ 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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