

STANDARD SPECIFICATION

产品规格书

客户 Customer: _____

客户料号 Customer P/N NO.: _____

产品描述 Product Description: TCXO-2520 24.000MHZ 1.8V-3.3V ±0.5PPM
H X - C 料号 P/N. NO.: 2T024000VX

客户批准 Customer Approval :

审 核	批 准
Checked	APPROVED

(请批准后回签一份 PLEASE RETURN A COPY WITH APPROVAL)

拟 制 DESIGNER	审 核 CHECK	批 准 APPROVED
万力阳	蔡 勤	柯建平

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Spec Sheet Contents

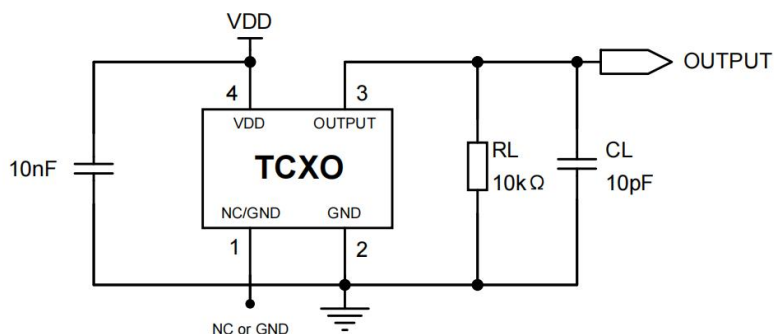
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1. 石英晶体参数规格 QUARTZ CRYSTAL UNIT SPECIFICATION

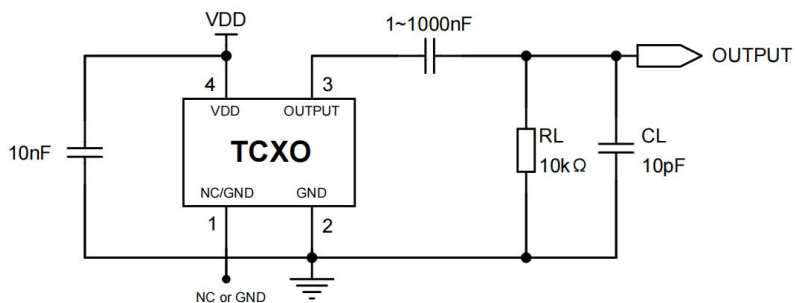
描述 Description : TCXO
产品型别 Product Type : 2T
测量设备 Measure equipment : S&A 280B
电气特性 Electrical Characteristics

NO.	项目 Item	符号 Symbol	电气特性规格 Electrical Specification				备注 Notes
			下限 Min.	中心 Typ.	上限 Max.	单位 Units	
1	标准频率 Nominal Frequency	FL	24.000				MHZ
2	输出方式 Output mode	-	Clipped Sine wave				-
3	频率偏差 Frequency Tolerance	FT	-0.5	-	0.5	ppm	
4	温度频率稳定性 Temperature frequency stability	TC	-1.5	-	1.5	ppm	-30°C to 85°C
5	工作温度 Operating Temperature		-40	-	85	°C	
6	储存温度范围 Storage Temperature	T_stg	-40	-	125	°C	
7	老化率 Aging rate	F_age		±1		ppm	First year
8	供电电压 For the pressure	Vdd	1.8~3.3±5%				V
9	电流 current	Icc			2.0	mA	
10	启动时间 Start-up time	To's'c			3	ms	More then 90%of final amplitude
11	输出电平 Output Level	-	0.8	-	-	Vp-p	Clipped sine wave(DC-coupled)
11	占空比 Duty ratio	TH/T	40	-	60	%	
12	负载变化 Load Variation	-	-	-	±0.2	ppm	Load_R//C=(10kΩ//10pF)±10%
相位噪声 Phase noise		-50dBc/Hz 1Hz offset	-80dBc/Hz 10Hz offset	-106dBc/Hz 100Hz offset	-134dBc/Hz 1KHz offset	-144dBc/Hz 10KHz offset	-152dBc/Hz 100KHz offset

2. 电路测试 CILCUIT TEST



DC Coupled Application



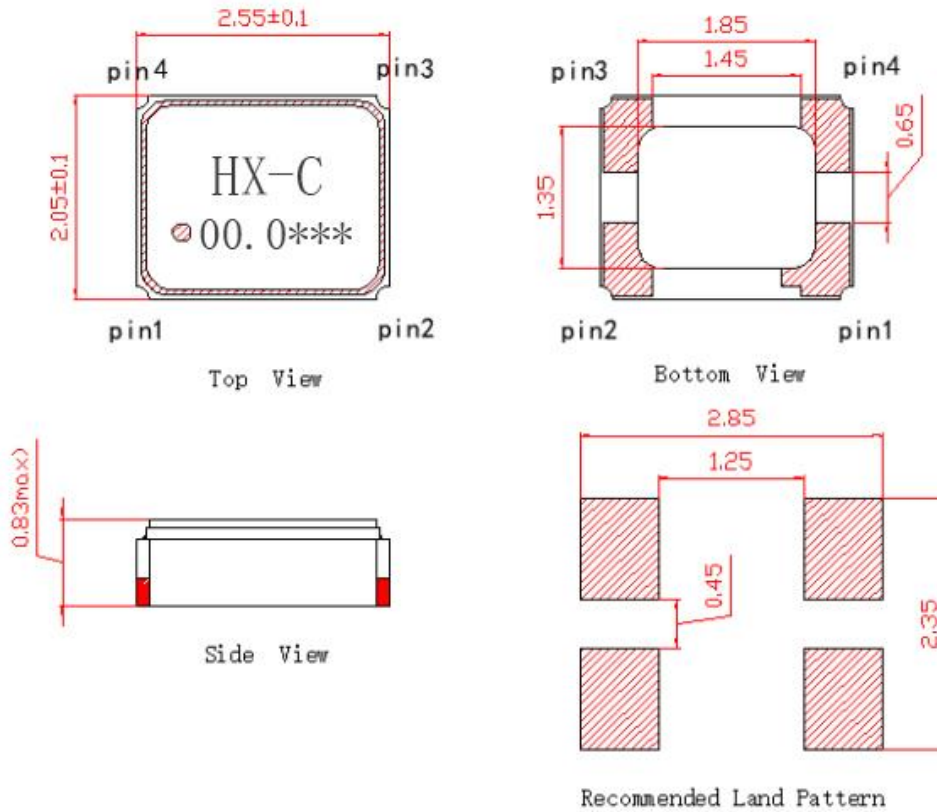
AC Coupled Application

3. 包装数量 NUMBER OF PACKAGES

类型 TYPE	尺寸 SIZE	数量 NUMBER
包装盒 Packaging	180*20*180	3000pcs
包装箱 Packing cases	240*200*200	30000pcs

4. 外形尺寸 BOUNDARY DIMENSION

(单位: mm)



Pin 1	NC or GND
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VDD

5. 印字

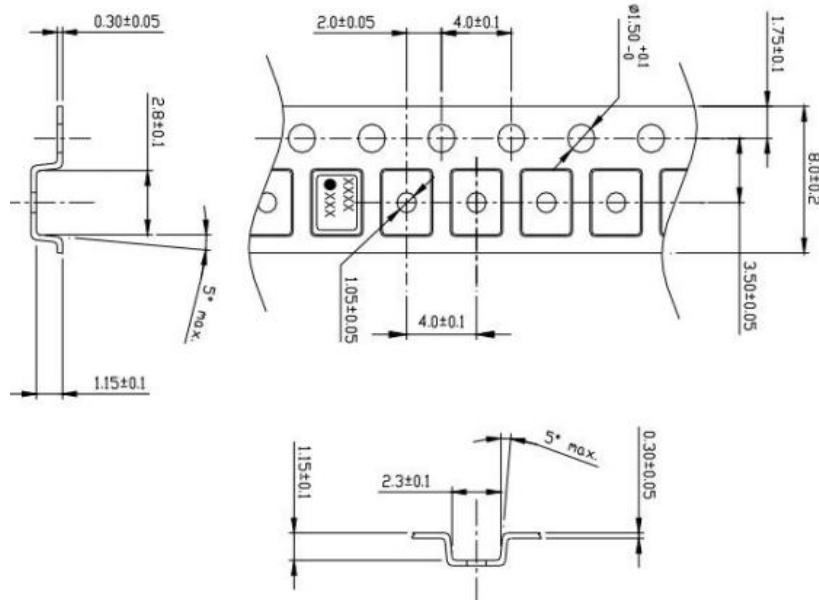


HX-C ----- LOGO
24.0 ----- 频率
V ----- 电压
* ----- 周期
. ----- Pin1

6. 编带包装 BRAID PACKAGING

(单位: mm)

1. 载带与编带盘尺寸

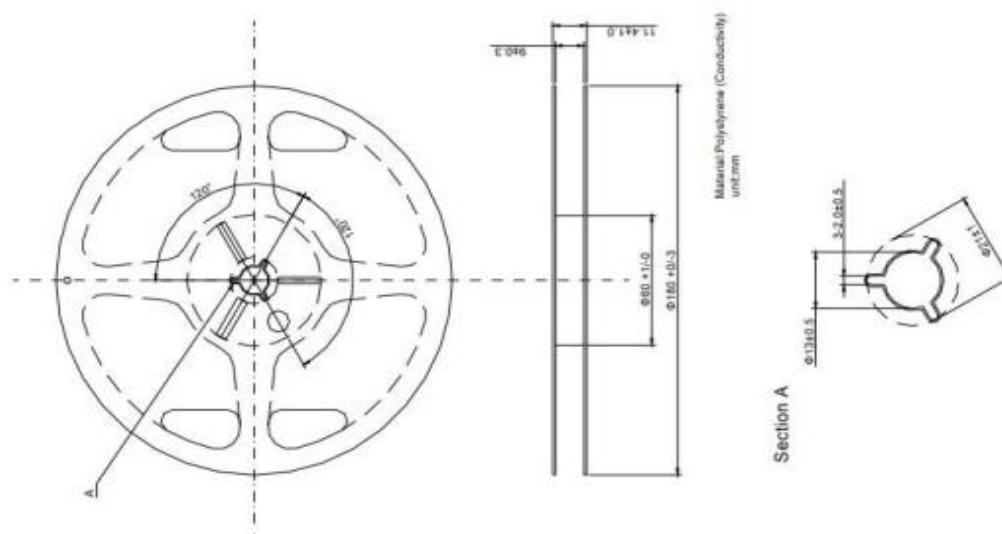


1. Clearance of an embossing tape, and a product unit: mm

Direction	Pocket size	TCXO size	Clearance
L	2.8±0.1	2.5±0.15	0.3±0.25
W	2.3±0.1	2.0±0.15	0.3±0.25
H	1.15±0.1	0.9 max.	0.25 min.

2. Quality : Polystyrene (Conductivity)

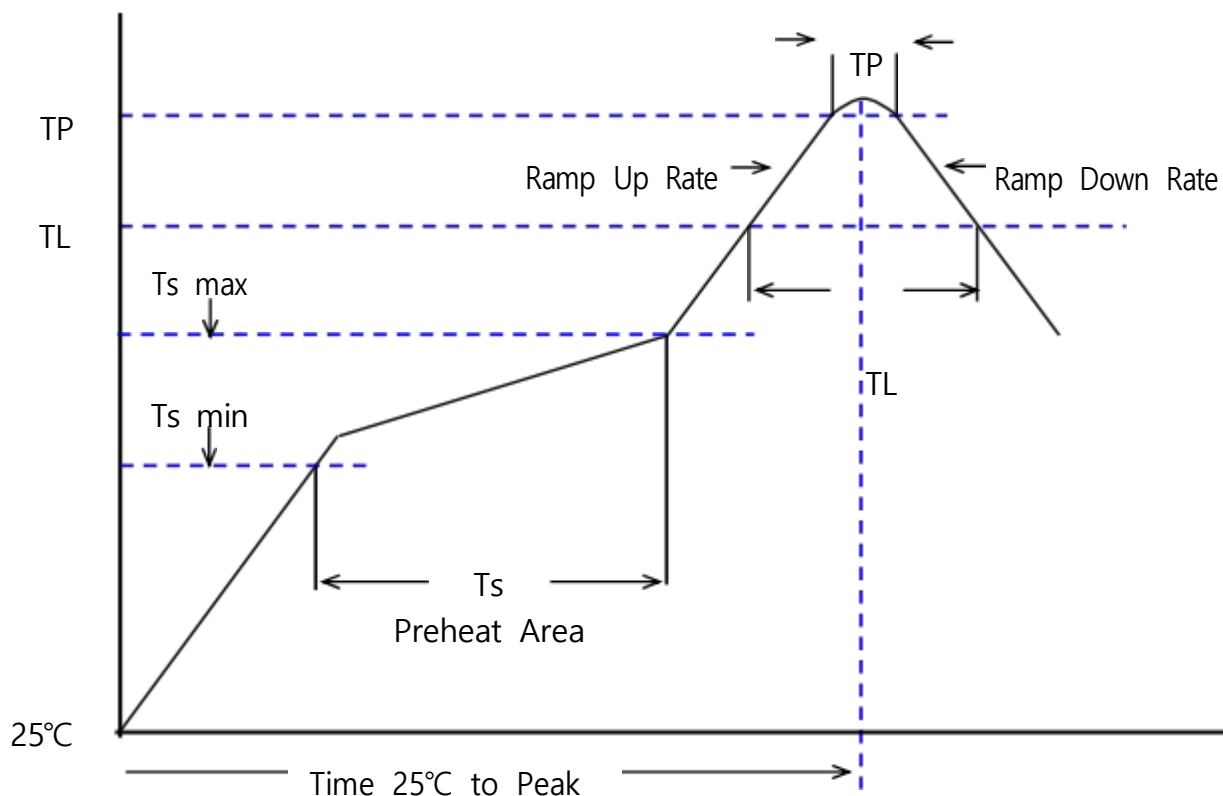
3. Tensile strength of an embossing tape : more than 14N



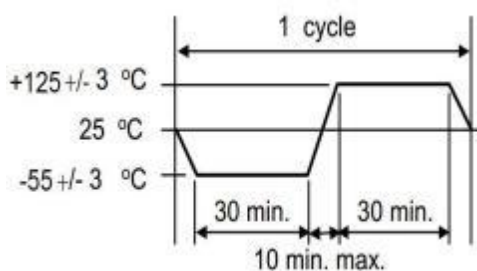
7. 回流焊温度曲线 REFLOW PROFILES

参考标准 REFER: JEDEC J-STD-020D

Profiles Feature	Pb-Free Assembly
Preheat/Soak Temperature Min (Ts min) Temperature Max (Ts max) Time (Ts) from (Ts min to Ts max)	150°C 200°C 60-120 seconds
Ramp-up rate (TL to TP)	3°C/second max.
Liquidous temperature (TL) Time (TL) maintained above TL	217°C 60-150 seconds
Peak/Classification Temperature (TP)	260±5°C
Time within 5°C of actual Peak Temperature (TP)	20~40 seconds
Ramp-down rate (TP to TL)	6°C/second max.
Time 25 °C to peak temperature	8 minutes max.
Suggest reflow times	3 Times max



8. 可靠性试验 RELIABILITY SPECIFICATION

参考标准REFER		JIS C 6701	
NO.	项目 ITEM	测试条件 CONDITIONS	判定标准 Criteria
1	跌落 FREE FALL	从150cm位置高度,自由跌落在木板上,连续3次. FREE DROPPING FROM 150 cm HEIGHT 3 TIMES ON A HARD	电器性能 满足规格要求 THE ELECTRICAL PERFORMAN CE MEET THE SPECIFIC ATIONN
2	振动 VIBRATION	振动频率: 10~2000 Hz, 振幅: 1.52mm, 时间: 每个方位三面(X、Y、Z)各振动2小时 FREQUENCY: 10 2000Hz; AMPLITUDE (TOTAL EXCURSION): 1.5mm SWEEP TIME: 2-3MIN, 3 DIRECTION(X, Y, Z) EACH FOR 2 Hrs.	
3	温度循环 TEMPERATURE CYCLE	晶体放入试验箱中, 高、低温循环10次 THE CRYSTAL UNIT SHALL BE SUBJECTED TO 10 SUCCESSIVE CHANGE OF TEMPERATURE CYCLE 	
4	冲击 IMOACT	半正弦波冲击(1000G): 持续时间: 0.5ms, X,Y,Z三轴各三次时间: 2 小时 HELIUM BOMBING: 3 TIME	
5	可焊性 SOLDERABILITY	温度: 245±5°C, 浸锡时间: 3±0.5 秒 THE LEAD IS IMMERSIED IN A 245±5°C SOLDER BATH WITHIN 3±0.5 SECONDS.	
6	稳态湿热 HIGH TEMP. & HUMIDITY	温度: 85 ±3°C, 湿度: 85 %, 保持时间: 500个小时 STORED AT 85 ±3°C AND HUMIDITY 85 % FOR 500±12H.	
7	高温存储 HIGH TEMPERATURE STORAGE	高温温度: 125±2°C, 时间: 500±12 个小时 STORED AT 125±2°C FOR 500±12H. 如果客户的温度要求是高于标准,则必须根据客户的要求测试 If Customer's temperature request is higher than the standard, Temperature test must be done for customer requirements	
8	低温存储 LOW TEMPERATURE STORAGE	低温温度: -40±2°C, 时间: 500±12 个小时 STORED AT -40±2°C FOR 500±12H. 如果客户的温度要求是低于标准,则必须根据客户的要求测试 If Customer's temperature request is lower than the standard, Temperature test must be done for customer requirements	