

(RoHS)

产 品 规 格 书

SPECIFICATION FOR APPROVAL

客户名称:

Customer Name:

产品名称:

Product Name:

贴片石英晶体谐振器

产品型号:

Product Type:

SMD 2016 (4PIN) 系列

标称频率:

Nominal Freq:

16.000000MHz~66.000000MHz

产品编号:

Part Coding

规格书编号:

Specification P/N:

客户料号:

Customer P/N:

日期:

Date:

2023-08-02

客户承认

Approved By Customer:

签章

Signature:

日期

Date:



深圳市新天源电子有限公司

SHENZHEN XINTIANYUAN ELECTRONICS CO., LTD.

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批准
Accepted

杜知清

审核
Checked

熊伟

编制
Issued

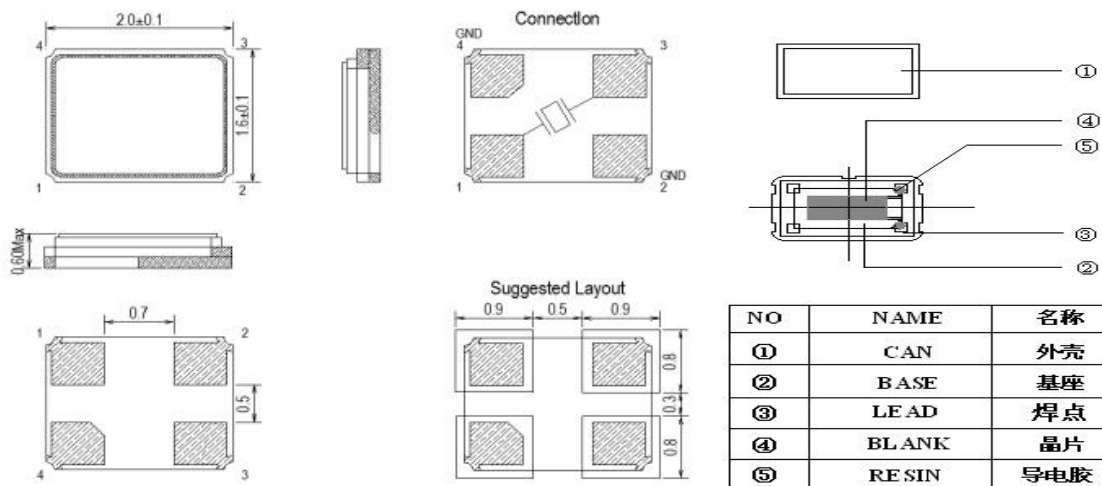
陈梅东

<p>深圳市新天源电子有限公司</p>	<p>石英晶体谐振器规格书 Specification of Quartz Crystal</p>	<p>NO:</p>
<p>Shenzhen Xintianyuan Electronics Co., Ltd.</p>	<p>无源 SMD 2016(4PIN)</p>	<p>Date: 2023/08/02</p>
<p>一、石英晶体规格参数 Quartz Crystal Specification Parameters</p>		
<p>1、产品型号 Holder Type</p>	<p>SMD 2016 (4PIN)</p>	
<p>2、标称频率 Nominal Frequency</p>	<p>16.000000MHz~66.000000MHz</p>	
<p>3、振动模式： Mode of Oscillation</p>	<p>Fundamental</p>	
<p>4、调整频差 Frequency Tolerance at 25°C±2°C</p>	<p>±10ppm at 25°C±2°C</p>	
<p>5、等效电阻 Equivalent Resistance (ESR)</p>	<p>≤50 Ω ~ 150 Ω</p>	
<p>6、负载电容 Load Capacitance (CL)</p>	<p>4pF~32pF</p>	
<p>7、温度频差 Temperature Characteristics</p>	<p>±20ppm</p>	
<p>8、工作温度范围 Operating Temperature range</p>	<p>-40~+85°C</p>	
<p>9、储存温度范围 Storage Temperature range</p>	<p>-55~+125°C</p>	
<p>10、激励功率 Drive Level</p>	<p>100uW</p>	
<p>11、静态电容 Shunt Capacitance (C0)</p>	<p><4.0pF</p>	
<p>12、绝缘电阻 Insulation Resistance</p>	<p>≥500M Ω (DC100V±15V)</p>	
<p>13、测试仪器 Measure Instrument</p>	<p>250B</p>	
<p>14、年老化率 Aging Rate a Year</p>	<p>≤±3ppm/年</p>	

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二、石英晶体尺寸、结构

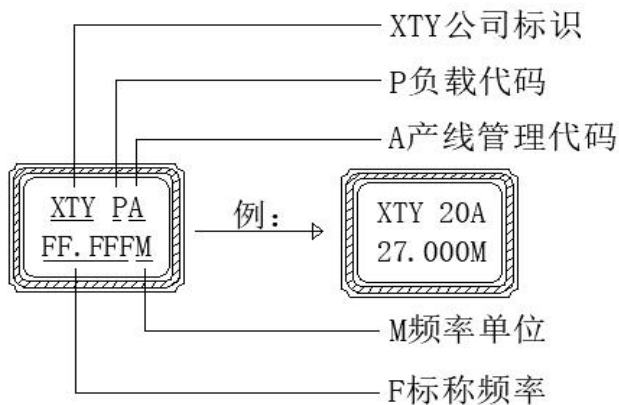
Quartz Crystal Dimensions And Structure



NO	NAME	名称
①	CAN	外壳
②	BASE	基座
③	LEAD	焊点
④	BLANK	晶片
⑤	RE SIN	导电胶

三、石英晶体印字

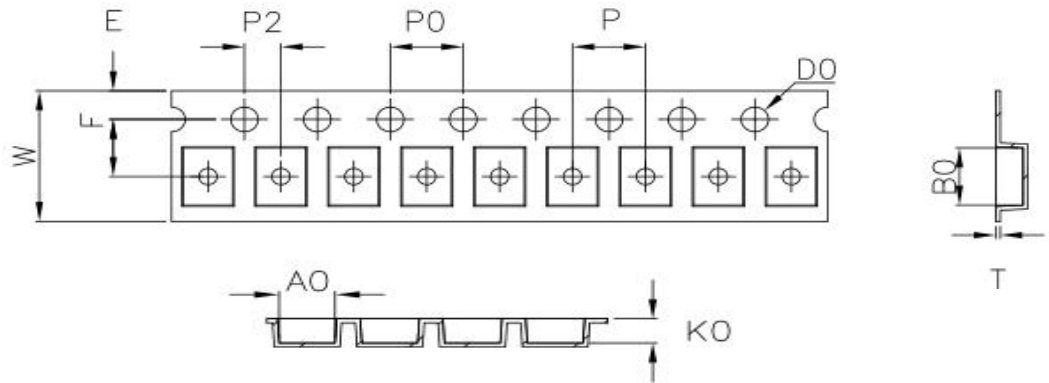
Quartz Crystal Marking



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四、包装要求 Packaging

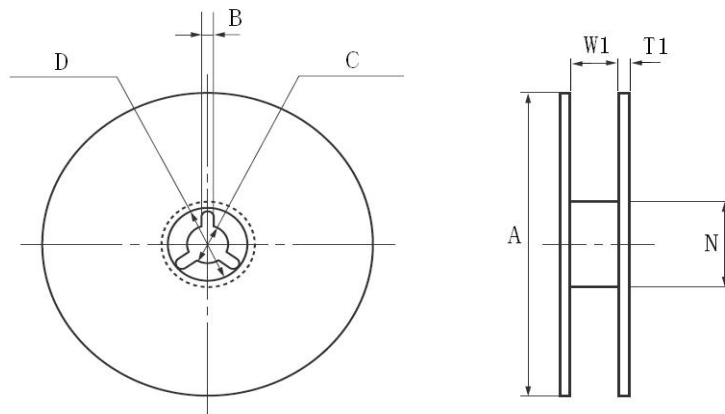
1. 编带 Tape



Type	W	E	F	T	P	P0	P2	DO	AO	KO	BO
SMD 2016	8.00	1.75	3.50	0.25	4.00	4.00	2.00	1.50	1.90	0.65	2.30

Unit:mm

2. 轮 Reel



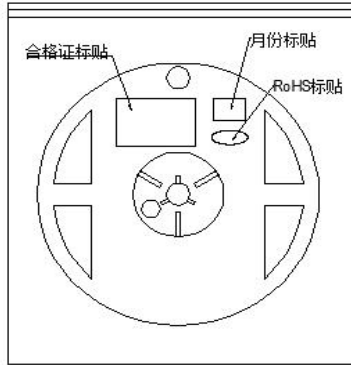
Type	A	B	C	D	N	W1	T1
SMD 2016	ø178	2.5	ø13	ø22.2	ø60	8.5	1.0

Unit:mm

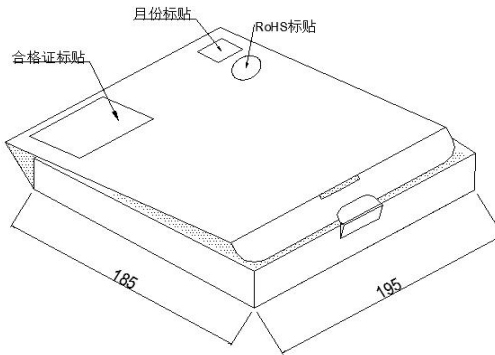
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3. 包装
Package

3000只/1卷
3000pcs/Reel



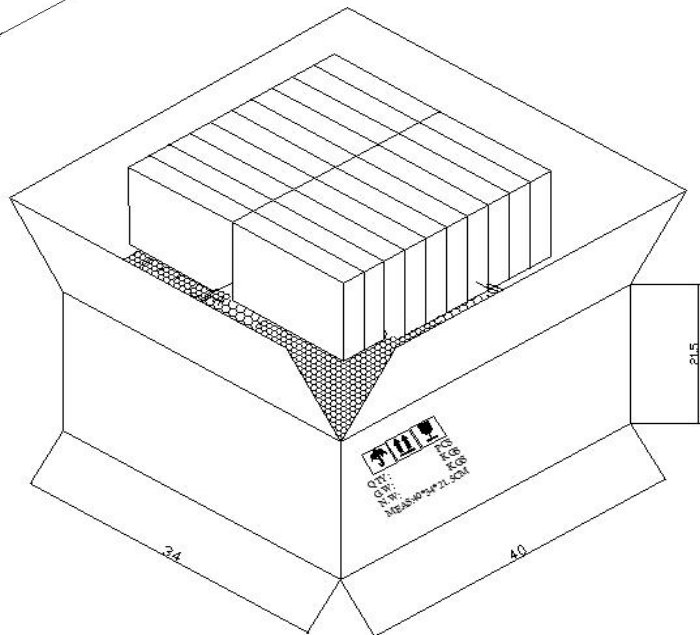
1轮=1盒
1Reel=1Box
Units: mm



合格证	
频率:	型号:
负载:	电阻:
频差:	数量:
日期:	供应商:
批号:	编号:
订单号:	料号:

包装箱
Shipping Carton

40*34*21.5 (20 Box)
27*20*32.2 (12 Box)
27*20*20 (8 Box)
Units: cm



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五、石英晶体可靠性
Reliability Test

NO.	测试项目 Test Item	可靠性条件 Testing Condition	判定标准 Determinant Criteria
1.	跌落 Dropping Test	从75cm高度跌落到30mm厚硬木板上，跌落三次 Drop the resonators from 75cm height to 30mm thick hardwood board, 3times.	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
2.	振动 Vibration	频率 Frequency:10~60Hz; 幅度 Amplitude:0.75mm; 周期 Cycle time:10-55-10Hz: 1min; 振动方向 Direction:X, Y, Z; 振动时间 Duration: 每个方向2小时 2 h/direction.	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
3.	高温 Heat Resistance	温度Temperature: $125^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 时间Time: 720 ± 24 Hours	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
4.	低温 Cold Resistance	温度Temperature: $-40^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 时间Time: 720 ± 24 Hours	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
5.	回流焊 (2次) Reflow (2times)	<p>回流焊Reflow $260^{\circ}\text{C} \pm 5^{\circ}\text{C} \leq 10\text{s}$</p>	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
6.	耐焊接热 Resistance To Soldering Heat	焊接温度Soldering Heat: $320^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 测试时间Test Time: $3.5\text{s} \pm 0.5\text{s}$;	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)
7.	气密性 Leakage	用氦质谱仪进行检测，试验气体: He; 真空度: $1 \times 10^{-3}\text{Pa}$; Helium mass-mass-spectrometer detector, and vacuum and reach $1 \times 10^{-3}\text{Pa}$;	$\leq 1 \times 10^{-8} \text{atm} \cdot \text{cc/S}$
8.	高温高湿 Constant Temperature and Humidity	在温度 $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ，湿度90%~99%，储存720小时，取出2小时后测试; Stored at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Humidity 90%~99% For a period of minimum 720hours. Then $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and 2 hours before testing	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) Appearance OK
9.	温度冲击 Temperature Shock	低温Low $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (120min) \leftrightarrow 高温High $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (120min);循环10次;For 10 cycles	$\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger)