

(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)

标称频率:
Nominal Freq: 32.000000MHz

产品编号:
Part Coding 7216-3200A1210-00

规格书编号:
Specification P/N: XTY0292-7012

客户料号:
Customer P/N: C389799

日期:
Date: 2019-06-15

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.

地 址: 深圳市宝安区石岩镇塘头宏发工业园1栋5楼

Add: 5/f.,Block 1,Hongfa Industrial Estate,Tangtou village,Shiyan Town,Baoan district,Shenzhen,Guangdong,China.

电话Tel: 0755-27650903 传真Fax: 0755-29833253

联系人: 王后勤(小姐) 手机: 13728612903

E-mail: xyt@chinaxyt.cn 网 址: [//www.chinaxyt.cn](http://www.chinaxyt.cn)

批准
Accepted

审核
Checked

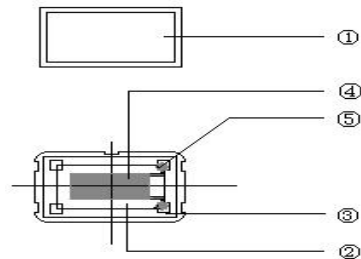
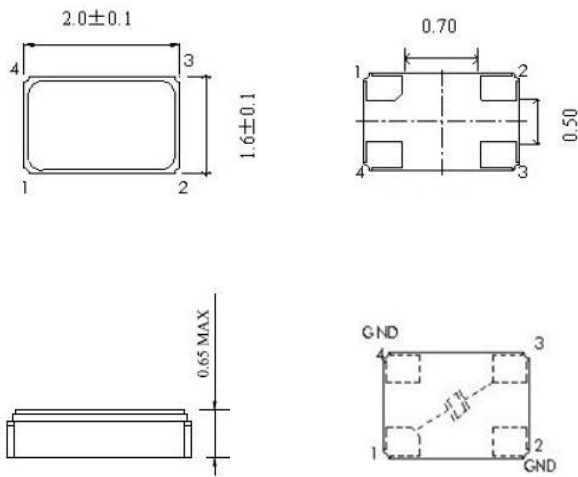
编制 陈梅东
Issued

<p>深圳市新天源电子有限公司 Shenzhen Xintianyuan Electronics Co., Ltd.</p>	<p>石英晶体谐振器规格书 Specification of Quartz Crystal</p>	<p>NO: XTY0292-7012</p>
	<p>无源 SMD 2016(4PIN)</p>	<p>Date: 2019/06/15</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>32.000000MHz</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>≤ 60 Ω</p>	
<p>6、负载电容 Load Capacitance (CL)</p>	<p>12pF</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>≥ 500MΩ (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

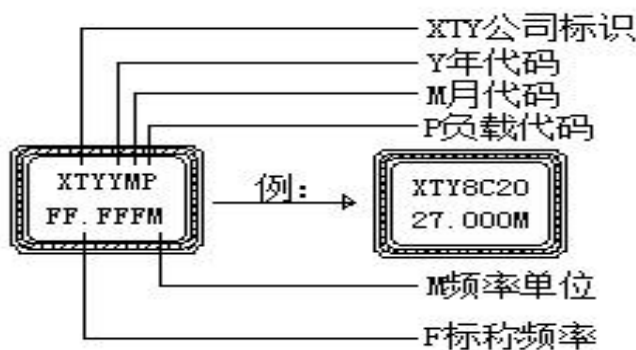
Quartz Crystal Dimensions And Structure



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

三、石英晶体印字

Quartz Crystal Marking



印字: Marking

XTY: 新天源

Y为年(year): 8:2018; 9:2019...

M为月(Month): A:1; B:2...

P为负载 CL:20: 20pF

FF. FFFM为频率Frequency: 27.000M

例8C20: 8为2018年, C为3月, 20为20pF;

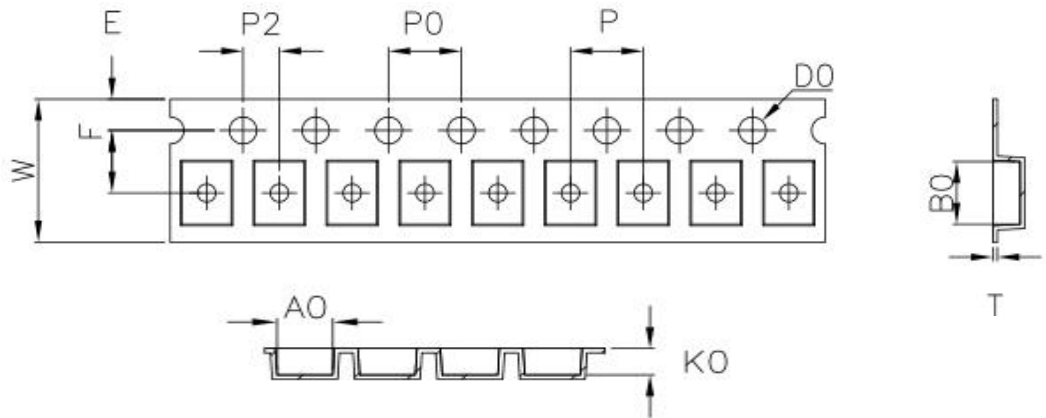
年、月、负载代码:

年	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
代码	5	6	7	8	9	0	1	2	3	4	5	6
月	1	2	3	4	5	6	7	8	9	10	11	12
代码	A	B	C	D	E	F	G	H	I	J	K	L
负载	9pF	10pF	11pF	12pF	13pF	14pF	15pF	16pF	17pF	18pF	19pF	SERIES
代码	9	10	11	12	13	14	15	16	17	18	19	S

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四、包装要求
Packaging

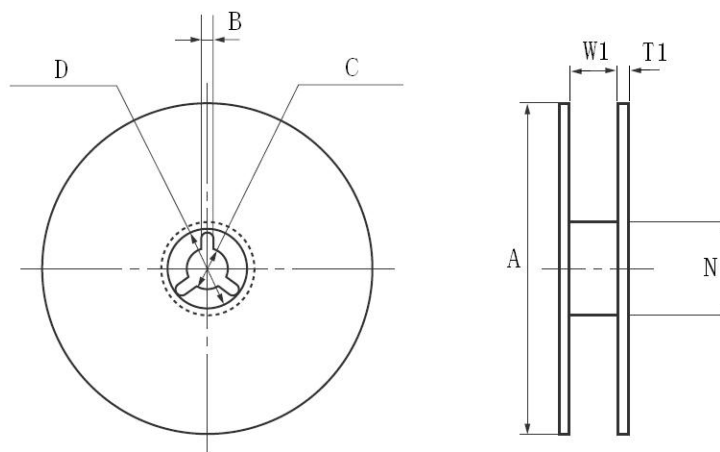
1. 编带
Tape



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

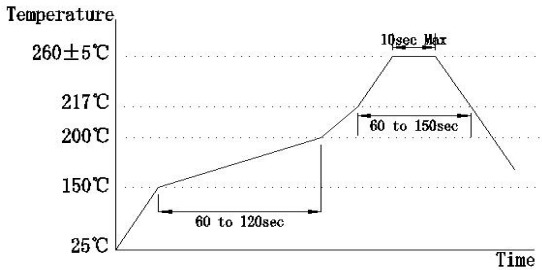


Type	A	B	C	D	N	W1	T1
SMD 2016	ø178	2.5	ø13	ø22.2	ø60	8.5	1.0

Unit:mm

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**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)