

深圳扬兴科技有限公司

产 品 规 格 书

SPECIFICATION

产 品 名 称	石英晶体谐振器 QUARTZ CRYSTAL UNITS
型 号	YSX211SL
料 号	X201616MOB4SI
标 准 参 数	SMD-2016-16MHZ-12PF- -/+10PPM
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批 准	审 核	检 验
蔡荣洪	陈涛	马占军

确 认 签 章

APPROVAL SIGNATURE

客 户		
客 户 物 料 号		
机 种 / 型 号		
批 准	审 核	检 验

深圳扬兴科技有限公司

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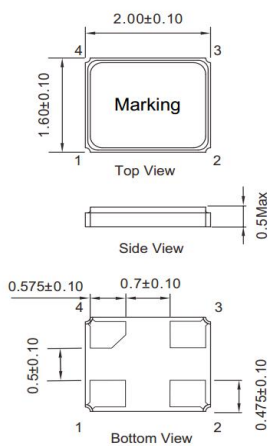
1. Absolute maximum ratings

Parameter(电气参数)	Symbol	Min. (最小值)	Typ.(典型值)	Max. (最大值)	Unit (单位)
Storage temperature (储存温度)	T_stg	-55	-	125	°C
Maximum drive level (最大激励功率)	GL	-	100	-	μW

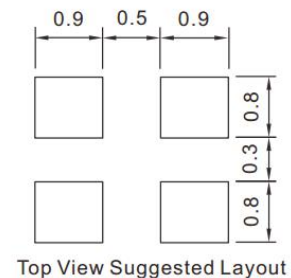
2. Specifications (characteristics)(规格参数)

Parameter(电气参数)	Symbol	Min. (最小值)	Typ.(典型值)	Max. (最大值)	Unit (单位)
Type (型号)	SEAM 2.0*1.6				
Oscillation Mode (振动模式)			<input checked="" type="checkbox"/> Fundamental	<input type="checkbox"/> 3rd	
Cutting Mode (切割方式)			<input checked="" type="checkbox"/> AT	<input type="checkbox"/> BT	<input type="checkbox"/> X +2°
Nominal frequency (标称频率)	f_nom	-	16	-	MHz
Frequency tolerance at 25°C (常温频差)	f_tol	-10	-	10	x 10 ⁻⁶
Stability Over Temperature (温度稳定性)	f_tem	-30	-	30	x 10 ⁻⁶
Load capacitance(负载电容)	CL	-	12	-	pF
Motional resistance (ESR) (等效谐振电阻)	R1	-	-	120	Ω
Shunt capacitance (静电容)	C0	-	3	-	pF
Motional capacitance (动态电容)	C1	-	5	-	fF
Level of drive (激励功率)	DL	-	100	-	μW
Operating temperature (工作温度)	T_use	-40	-	85	°C
Frequency aging (老化率)	f_age	-3	-	3	x10 ⁻⁶ /year

3. External dimensions (外观尺寸)
(Unit: mm)

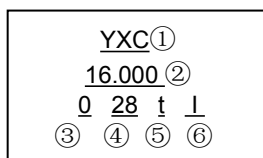


4. Footprint(Recommended) (焊盘推荐)
(Unit: mm)



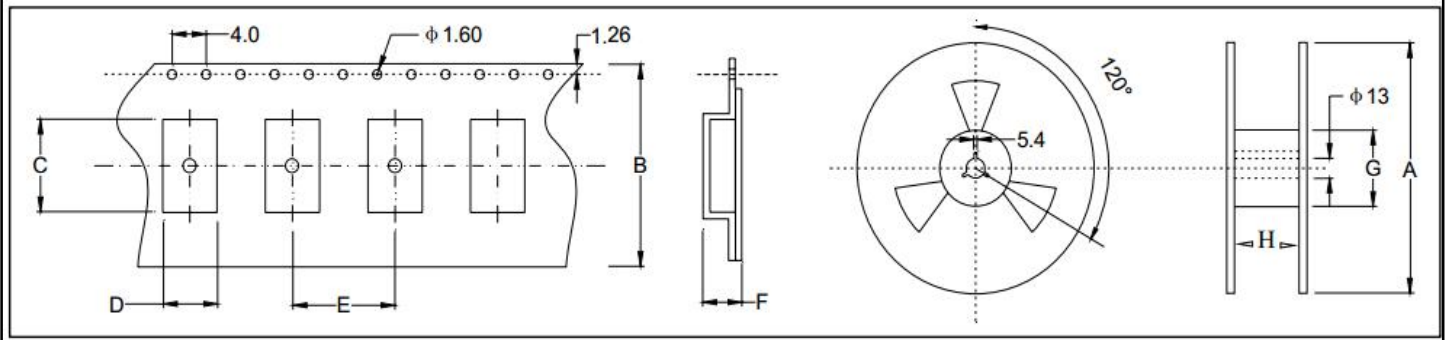
5. Marking information(丝印说明)

[1]The suffix "I" in marking stands for operating temperature range between -40°C~+85°C.



- ① YangXing LOGO
- ② Frequency
- ③ Year
- ④ Production Cycle
- ⑤ Line
- ⑥ Operating Temperature

6.Taping Specification (载带规格) (Unit: mm)



Size	A	B	C	D	E	F	G	H
SMD-2016	180±2.0	8.0±0.3	2.30±0.1	1.90±0.1	4.0±0.1	0.90±0.1	61.0±1.0	8.0±1.0

3000 pcs per reel

7. Reliability characteristic (可靠性)

序号	检测项目	测试要求	判定标准
1	Drop characteristics	Free drop from 75cm height on a hard wooden board for 3 times.	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
2	Reflow	260°C±10°C, Keep 10 sec	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
3	Mechanical shock	Device are shocked to half sine wave (100g) three mutually perpendicular axes each 3 times	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
4	Shake characteristics	Shake frequency 10~2000Hz, cyc1~2 minutes, swing 1.5mm, direction x/y/z, each 21 h all 63h test after 1 hours	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
5	Humidity characteristics	+85°C±2°C & 85%~95% R H 1000 hours	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
6	High temperature characteristics	+85°C±2°C, 1000 hours, put in room temperature, test after 1 hours.	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
7	Low temperature characteristics	-40°C±2°C, 250 hours, put in room temperature, test after 1 hours.	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
8	Temperature cycling	-40±2°C/30min~+125±2°C/30min 1000 cycles	$\Delta f/f \leq \pm 5\text{ppm}$ $\Delta Rr \leq 5\Omega$ or 15%
9	weldability	245°C±10°C, Immersion tin 2±0.5 sec	Tin leaching rate ≥ 95%
10	Salt fog	The solution concentration is required to be 5%, the temperature is 35 °C, and the duration is 72 h	No rust and delamination

8.Reflow profile (回流焊)

Pre Heating Temperature

Tp1 ~ Tp2 = + 170 °C

Heating Temperature

TMit = + 220 °C

Peek Temperature

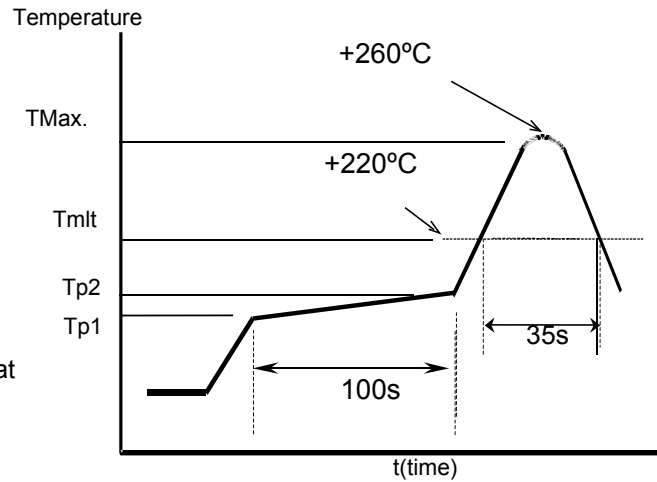
TMax. = + 260 °C

Point of measuring

In case of Solder ability

Terminal.

In case of Resistance to soldering heat
Surface.



9.Notice (注意)

- 包装 PACKING
- 包装方式应符合运输和装卸要求，特殊包装须经双方认可。
- Packing must prevent damage during transportation and handing. Specific method will be settled by mutual agreement.
- 对环境影响 INFLUENCE TO ENVIRONMENT
- 本产品在生产过程中不使用 ODS I，对臭氧层无破坏。
- This product doesn't use the class I ODS at any of production process .
- 生产厂家 MANUFACTURE
- 公司名称：深圳扬兴科技有限公司
- Shenzhen YangXing Technology Co.,Ltd.
- 其它 OTHERS
- 1. 如果您对本公司产品规格书有疑问或书中未列出，请与我方联系，协商解决及改进。
- If you have some doubt or unknowing about this specification, Please contact us for settlement or development.
- 2.我们按照产品规格书要求保证晶体品质，若客户要求具体数据，我们可提供。
- We guarantee that quartz crystal unit satisfies this specification, If you need the data, we will provide it.
- 3.变更与联络 (MODIFY AND CONTACT)
- 本产品在 设计、工艺、材料、生产厂所、关键设备、操作人员等影响产品质量的因素有变更时，应事先提供更改后的产品并经过质量认可后，方可大批量供货。
- When the quality is changed due to the changes of the design, technology, material, manufacture place, main equipment and workers, we will first supply the modified products and obtain approval from you, then start to supply mass production.
- 4.售前售后服务 (AFTER SALE SERVICE)
- 若在生产过程中遇到不良品，本公司负责调换，并及时提交不良品的分析及改进措施报告经认可。
- If the defection product was found in the production process, we will exchange and provide the improving measures in time.

Contact us

www.yxc.hk