

贴片石英晶振规格书 SMD CRYSTAL UNIT SPECIFICATIONS	
Customer 客户名称	
Customer P/N 客户料号	
Product 产品型号	石英谐振器 SEAM 3.2 * 2.5
Nominal Frequency 标称频率	16.0000MHZ
YJX P/N 雅晶鑫电子料号	TAXM16M4RFBCT2T
Issue Date 发行日期	2026-08-26

供应商签署栏 YJX Supplier confirmatio		
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客户确认签署栏 Customer confirmati		

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修订页

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1	2020-5-1	A/1	新版	陈昭昭
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◆ 电性能参数/Electrical Parameters :

No.	特性 / Characteristic	范围 / Limits	备注 / Remark
1	产品型号 Ackage Type	SEAM 3.2 * 2.5	
2	标称频率 Nominal Frequency	16.000MHz	
3	振动模式 Mode of Vibration	AT-Fund (基频)	
4	常温频差 Frequency Tolerance	±10ppm	测试温度/Measure at 25°C±3°C
5	使用温度范围 Operating Temperature Range	-40°C~+85°C	
6	温度稳定性 Frequency Stability	±20ppm	
7	储存温度范围 Storage Temperature Range	-55°C~+125°C	
8	负载电容 Load capacitance	12pF	
9	谐振电阻 Equivalent Series Resistance	40Ω Max	
10	激励功率 Drive Level	10μW Typ	100μW Max
11	绝缘电阻 Insulation Resistance	500MΩ	At 250V _{dc}
12	静电容 Shunt Capacitance	3pF Max	
13	老化率 Aging Per Year	±3ppm	
14	最小包装 Minimal packaging	3000pcs	

测试环境 Condition of test

除非另有规定，进行测量和试验的标准大气条件范围如下

Unless otherwise specified, the standard range of atmospheric conditions for making measurement and tests are as follow:

环境温度 Ambient temperature :25±5°C;

相对湿度 Relative humidity:40%~70% ;

如对测量结果有疑问，应在以下范围内测量 If there is any doubt about the results, measurement shall be made within the following limits:

环境温度 Ambient temperature :25±5°C;

相对湿度 Relative humidity:40%~70% ;

测量设备 Measure equipment

电气特性测量标准为：S&A250b 或同等标准。

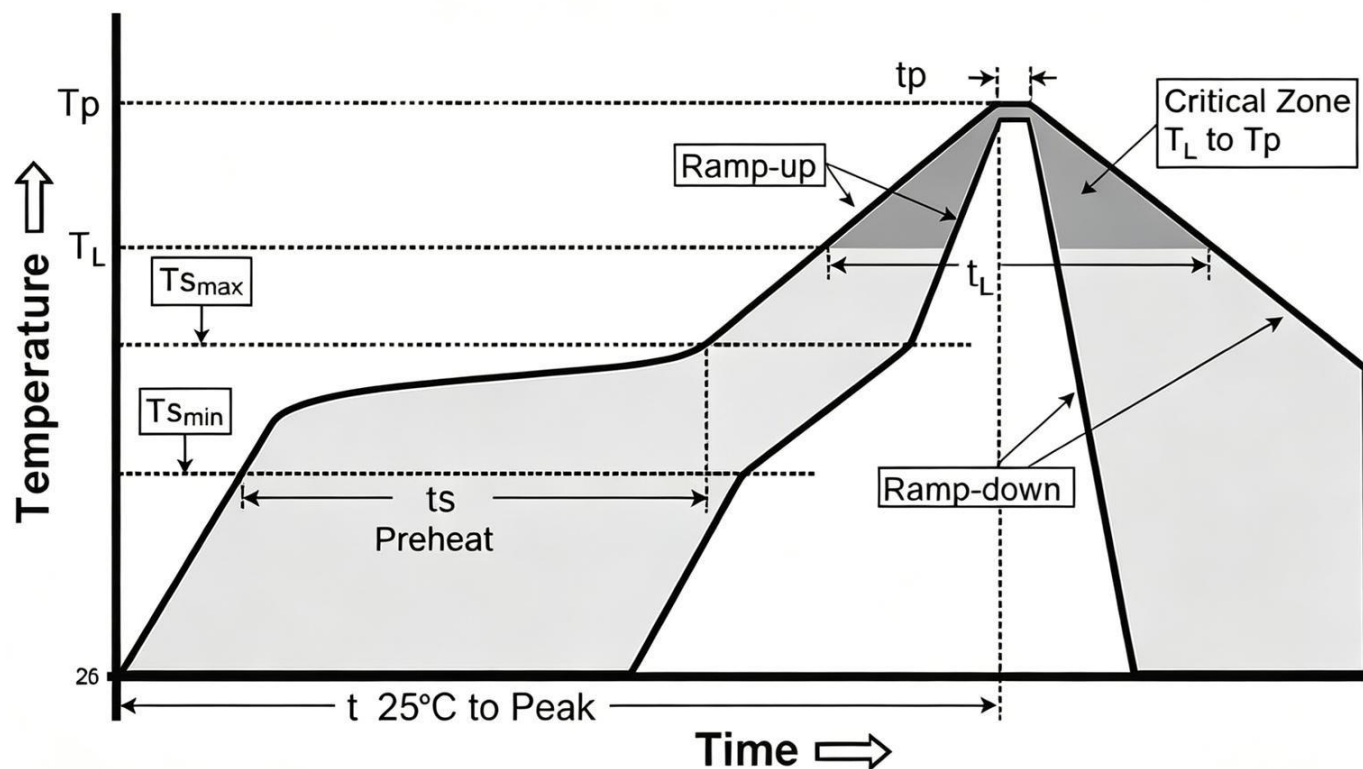
Electrical characteristics measured by : S&A 250B or equivalent.

◆ 可靠性试验 Reliability test

No.	测试项目 Item	测试条件 Test Conditions	判定标准 Basis of Verdict
1	跌落冲击 Drop Impact	75cm 高度自由下落到 3cm 厚度的硬质木板 3 次 3 Times Free Fall from 75cm height table to 3cm thickness hard wood board	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
2	模拟流焊 Reflow Soldering	$240^{\circ}\text{C} \leq T \leq 265^{\circ}\text{C}$ $t = 60 \pm 30\text{s}$ $T = 260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ $t = 40 \pm 10\text{s}$ $T(\text{max}) = 265^{\circ}\text{C}$	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
3	可焊性 Solderability	$260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 焊锡槽浸润 3 ± 0.5 秒 Temperature : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 3 ± 0.5 Seconds	新锡覆盖率 : $\geq 90\%$ Solder Coverage: $\geq 90\%$
4	耐焊接热 Solder Heat Resistance	$280^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 焊锡槽浸润 10 ± 1 秒 Temperature : $280^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 10 ± 1 Seconds	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
5	高温储存 High Temperature Storage	$100^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 烘箱中烘烤 96 ± 1 小时 Temperature : $100^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 96 ± 1 Hours	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
6	高温老化 High Temperature Aging	$85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ 之烘箱中烘烤 30 天 Temperature : $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Time: 30days	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
7	低温储存 Low Temperature Storage	$-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 环境中保持 96 ± 1 小时 Temperature: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Time: 96 ± 1 Hours	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
8	恒温恒湿 Constant Temperature & Humidity	在湿度为 90~95%, 温度为 $40 \pm 2^{\circ}\text{C}$ 环境中保持 96 小时 Temp: $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Humidity: 90~95% Times: 96 Hours	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$
9	振动 Vibration	频率 Frequency: 10~50Hz, 振幅 Amplitude: 0.75mm 频率 Frequency : 50~500Hz , 加速度幅度 Acceleration: 98m/s^2 扫频周期 Cycle : 10Hz~500Hz~10Hz , 测试时长 Time: 15min 振动方向 Vibration Direction: X、Y、Z 三轴 X, Y, Z Axis 振动测试时间 Test Duration: 每个方向2小时 2 Hours per direction	$\Delta FL \leq \pm 5\text{ppm}$, $\Delta R \leq 5\text{ohm}$ or $\leq 10\%$

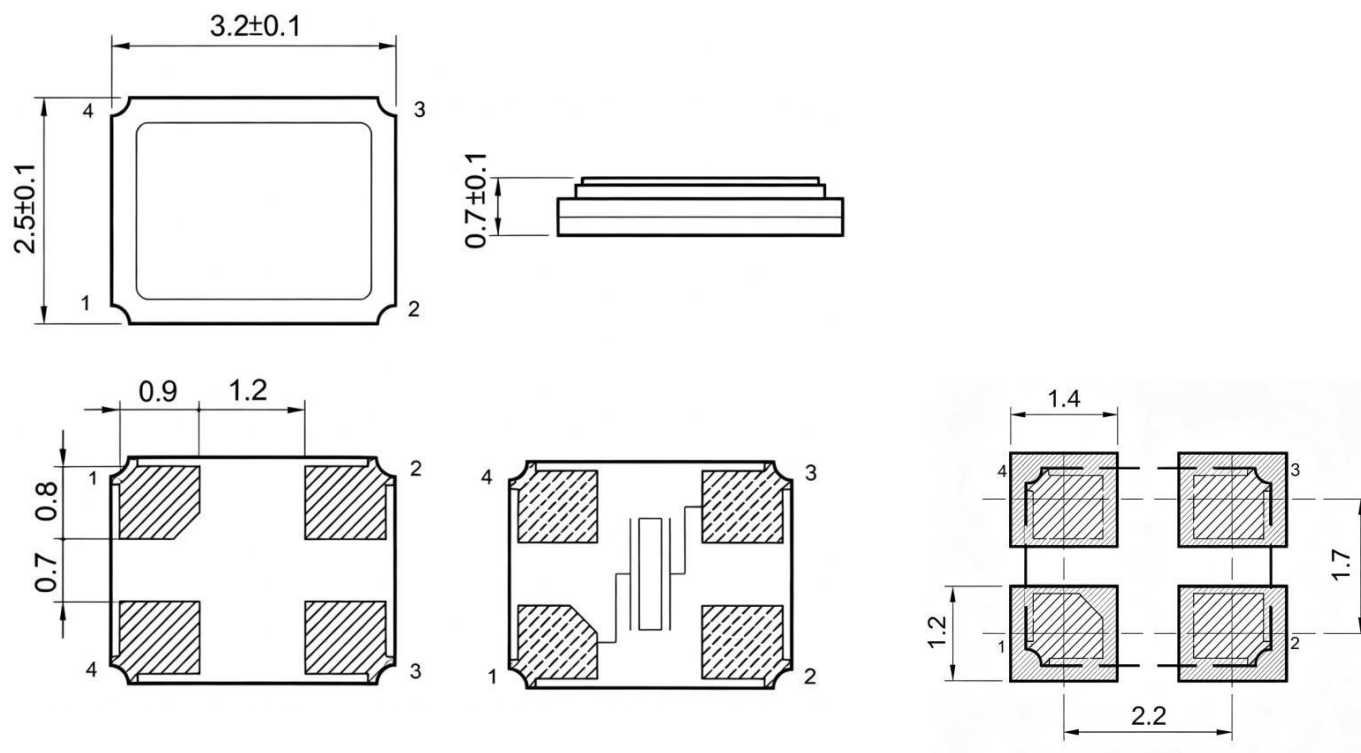
◆ 回流焊 Reelw Profiles

Profiles Feature	Pb-Free Assembly
平均升温速率 Average Ramp-up Rate (Ts max to Tp)	3°C/second max.
预热 Preheat ■ 最小温度 Temperature Min (Ts min) ■ 最高温度 Temperature Max (Ts max) ■ 时间 Time (ts min to ts max)	125°C 200°C 60~180 seconds
保持时间 Time maintained above ■ 温度 Temperature (TL) ■ 时间 Time (tL)	217°C 60~150 seconds
温度峰值 Peak/Classification Temperature (Tp)	260°C
峰值温度保持时间 Time within 5°C of actual Peak Temperature (tp)	20~40 seconds
降温速率 Ramp-down rate	6°C/second max.
升温到峰值温度时间 Time 25°C to Peak Temperature	8 minutes max.
建议回流焊时间 Suggest reflow times	3 Times max



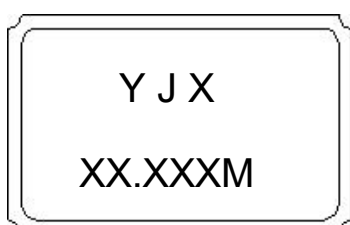
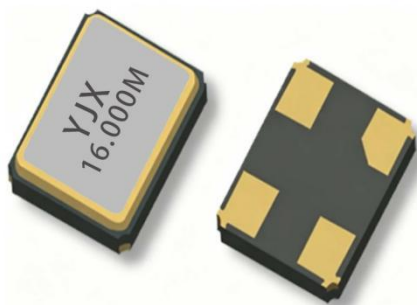
备注 Remark : 参照 To reference JEDEC J-STD-020C

◆ 外形尺寸/Outline Dimensions (unit: mm)

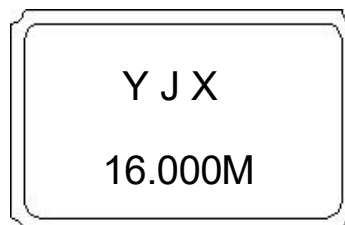


◆ 标示 Marking

频率Mhz/6 Digital, After 6 Digital: Frequency in Mhz

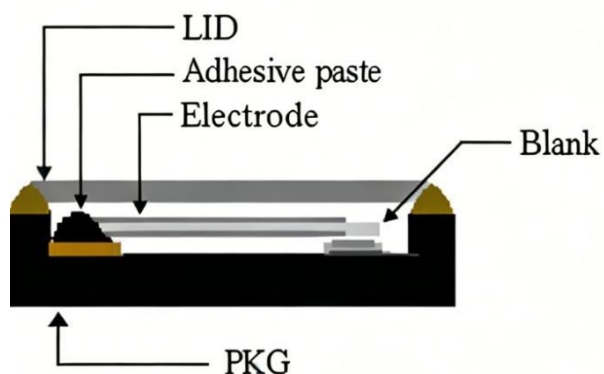
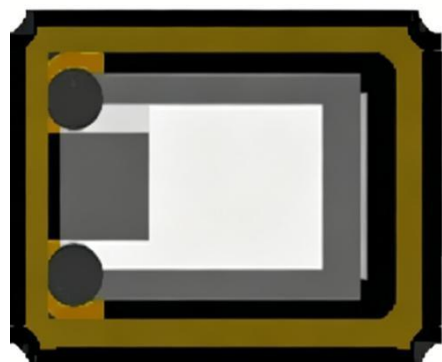


字样规则



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◆ 材质证明 Material crtific

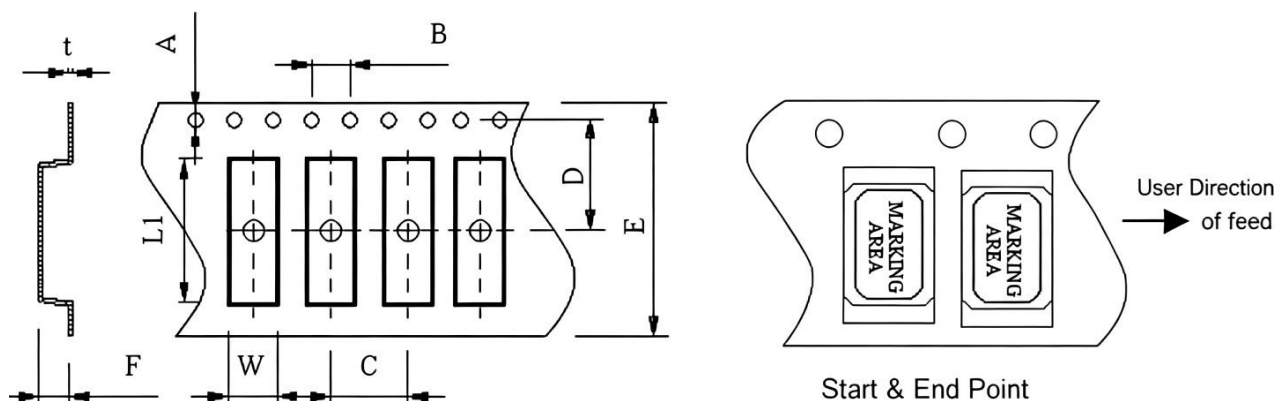


结构和材料 STRUCTURE AND MATERIA

NO.	材料 Component	材质 Materials
1	金属壳LID	可伐合金 KOVAR
2	电极Mask	银99.99 % Silver-Ag99.99%
3	石英晶片 Blank	二氧化硅 Silica SiO2
4	陶瓷底座 PKG	三氧化二铝（99.9%）Al2O3（99.9%）
5	银胶Epoxy	Silver Ag、Silicone Resin
6	引脚PIN	可伐合金镀金KOVAR Au plating

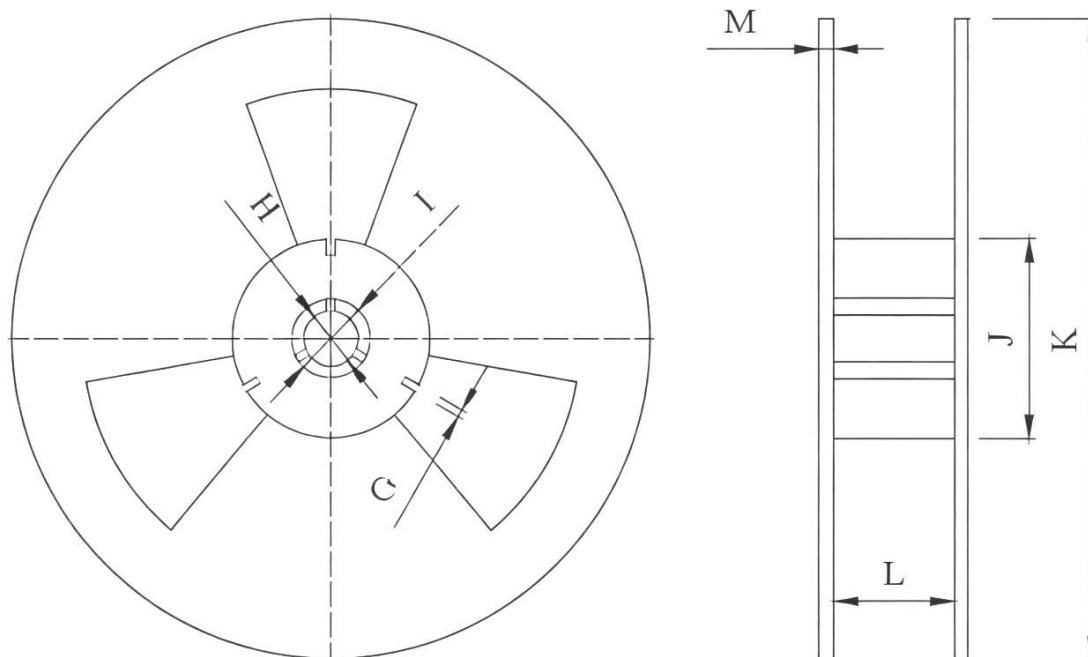
◆ 包装方式 Packing

T/R : 3000pcs/ REEL



单位units : mm:

A	B	C	D	E	F	L1	W	t
1.50	4.0	4.0	3.5	8.0	1.0	3.4	2.7	0.3



G	H	I	J	K	L	M
2.5	13.5	21.6	60.0	178	9.5	1.6

RoHS2.0 及 REACH 符合性自我申明表

雅晶鑫电子有限公司 RoHS2.0 及 REACH 符合性自我声明表 YJX Electronic Co.Ltd

Capacitor company RoHS2.0 and REACH statement of conformity 产品型号: xxxxxx

材料名称 Material nam	有毒有害物质或元素 toxic and hazardous substance										备注 Remarks
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CrVI)	多 溴 联 苯 (PBB)	多溴二 苯醚 (PBDE)	邻苯二 甲酸二 丁基酯 (DBP)	邻苯二甲 酸甲基 丁酯 (BBP)	邻邻苯二甲酸 二（2-乙基己 基）酯 (DEHP)	邻苯二甲 酸 二异 丁酯 (DIBP)	
晶片Blank	O	O	O	O	O	O	O	O	O	O	
基座PKG	O	O	O	O	O	O	O	O	O	O	
上盖LID	O	O	O	O	O	O	O	O	O	O	
银 Silver Ag	O	O	O	O	O	O	O	O	O	O	
导电胶Epoxy	O	O	O	O	O	O	O	O	O	O	

○：表示该有毒有害物质在该部件所有均质材料中的含量均在 2011/65/EU 规定的限量要求以下。

○： It indicates that the content of hazardous substance in all homogeneous materials of the component is below the limit requirement of 2011/65 / EU.

×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 2011/65/EU 规定的限量要求。

×： It indicates that the hazardous substances are in excess of the limits requirement of 2011/65 / EU in at least one homogeneous material of the part.

(供应商应将其原材料按要求进行拆分，并按照此表格进行详细标注,对不能满足标准要求的零部件进行具体的原因描述)

(The supplier shall separate its raw materials according to the requirements and mark it in detail in accordance with this form, and describe the specific reasons for the parts that can not meet the standard requirements)