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日期Date:2013-09-29

浙江永泰隆电子股份有限公司

产品ITEM: 石英晶体谐振器 QUARTZ CRYSTAL UNITS

型号TYPE: HC-49S-3PIN

标称频率NOMINAL FREQUENCY: 8.192MHz/22PF/±20ppm/80Ω

请收到我们的规格书后，签字回传。

Please confirm you received this specification, sign and fax it to us.

接收确认RECEIVING CONFIRMATION	
日期DATA	
接收RECEIVED	

拟制Prepared by: 方浩

批准Confirmed by: 王琴飞

AT-CUT CRYSTAL UNITS(Metal-can Type) AT切石英晶体谐振器 (HC-49S)



RoHS Compliant Standard **HC-49S-3PIN**



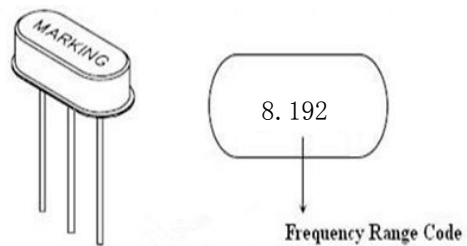
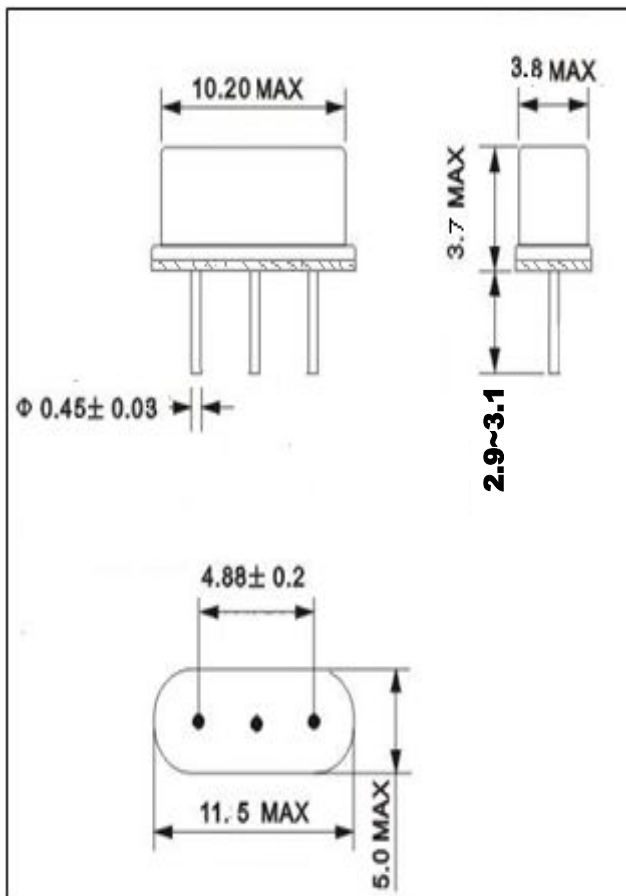
Features 特性

- 标称频率: 8.192MHz
- Nominal Frequency: 8.192MHz
- 适用于卓越的CPU时钟信号发生器
- Excellent clock signal generator for CPU's
- 适用于宽广的温度范围
- Available in extended temperature range

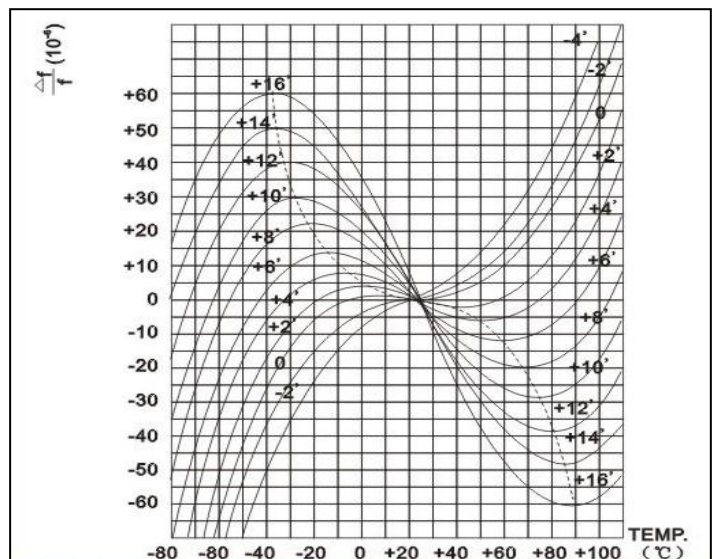
STANDARD SPECIFICATIONS 标准规格

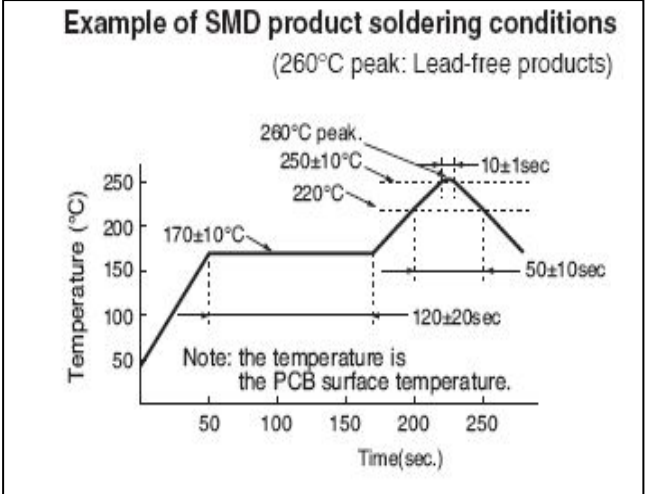
Item	Model	HC-49S-3PIN	Conditions
Nominal Frequency	标称频率	8.192MHz (Fund.)	
Frequency Tolerance	调整频差	±20ppm	at 25°C
Freq. Tol. Over Temp.	温度频差	±30ppm	-40 ~ +85°C
Operating Temp. Range	工作温度范围	-40 ~ +85°C	
Storage Temp. Range	保存温度范围	-55 ~ +105°C	
Series Resistance	谐振电阻	80ohmMax.	at 25°C
Load Capacitance	负载电容	18pF	
Shunt Capacitance	静态电容	7.0pF Max.	
Drive Level	激励电平	100 μw Max.	
Aging[first year]	第一年老化率	±3ppm Max.	25±3°C
Insulation Resistance	绝缘阻抗	500Mohm Min.	DC100V±15V

OUTLINE DRAWING OF HC-49S-3PIN (mm)



FREQUENCY VS. TEMPERATURE CURVE



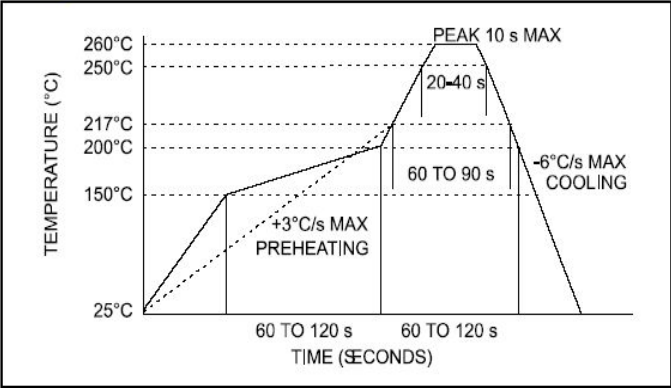
No.	Test Items	Test Method and Condition	Requirements
1	振动 Vibration	(1)振动频率Vibration Frequency 10 to 55Hz (2)振动幅度Vibration Amplitude 1.5mm (3)周期 Cycle Time 1-2min(10-55-10Hz) (4)振动方向Direction X.Y.Z (5)振动时间Duration 2h/each direction	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大:±15%或5ohm Resistance Change:±15% or 5ohm Max.
2	冲击 Shock	从75cm高的地方自由跌落3次到30mm厚的硬木板上 3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大:±15%或5ohm Resistance Change:±15% or 5ohm Max.
3	气密性 Leakage	晶体放入氦加压罐内，充入氦气压力0.5-0.6Mpa保持1小时，然后使用氦质谱检漏仪测试。 Put crystal units into a hermetic container and Helium for 0.5-0.6 Mpa,and keep it for 1h;Check the leakage by a Helium leak detector	漏气率小于:1x10 ⁻⁸ mbar.l/s Leakage:1x10 ⁻⁸ mbar.l/s Max.
4	可焊性 Solderability	将引线浸入完全熔化的焊锡锅内3-5s，焊锡温度245℃±5℃ Put the leads of crystal units into solder melted tank for 3 to 5s Temperature of solder melted tank is 245℃±5℃	浸过引线面积的95%以上被新焊锡覆盖 The dipped surface of the leads should be at least 95% covered with continuous new solder coating.
5	回流焊接 Reflow soldering	推荐使用如下图所示的回流焊曲线。 The recommended reflow soldering profile 	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大:±15%或5ohm Resistance Change:±15% or 5ohm Max.

No.	Test Items	Test Method and Condition	Requirements
7	耐高温能力 High Temperature Endurance	晶体放置于85℃±2℃环境中 2小时后，常温放置1-2小时 The crystal units shall be put in somewhere for 2 hours at temperature of 85℃±2℃,then keep it for 1 to 2 hours under room temperature	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大: ± 15%或5ohm Resistance Change:±15% or 5ohm Max
8	耐低温能力 Low Temperature Endurance	晶体放置于-25℃ 环境中2小时后，常温放置1-2小时 The crystal units shall be put in somewhere for 2 hours at temperature of -25℃,then keep it for 1 to 2 hours under room temperature	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大: ± 15%或5ohm Resistance Change:±15% or 5ohm Max
9	耐湿性 Humidity Endurance	晶体放置于40℃ 、相对湿度90-95%环境中48小时后，常温放置1-2小时 The crystal units shall be put in somewhere at 40℃ in relative humidity of 90-95% for 48 hours,then keep it for one or two hours under room temperature	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大: ± 15%或5ohm Resistance Change:±15% or 5ohm Max
10	高低温循环 Temperature Cycle	温度从-40℃（保持30分钟）升高到100℃（保持30分钟），再降到-40℃（保持30分钟）然后回到室温25℃完成一个循环，共计5个循环 Temperature shift from low(-40℃) to high(100℃,keep 30 minutes), satisfy high(100℃) to low(-40℃,keep 30 minutes),then go up to room temperature for 5 cycles	频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大: ± 15%或5ohm Resistance Change:±15% or 5ohm Max
11	盐雾试验 Salt Spray Test	晶体置于盐雾浓度5%, 温度35℃的盐雾室中96小时后，用水洗净擦干表面 Put the crystal units in the salt spray room(salt density:5%)at the temperature of 35℃ for 96 hours.Then clean it with water and dry its surface.	外观良好，可焊性良好 The appearance shall has no abnormity and soldering is good. 频率变化最大:±5ppm Frequency Change:±5ppm Max. 电阻变化最大: ± 15%或5ohm Resistance Change:±15% or 5ohm Max.

使用说明Processing Instructions

下面的说明和信息供用户正确理解和使用我们公司的石英晶体系列产品，预防不当的加工方式对石英晶体的损坏，确保用户设备的可靠性

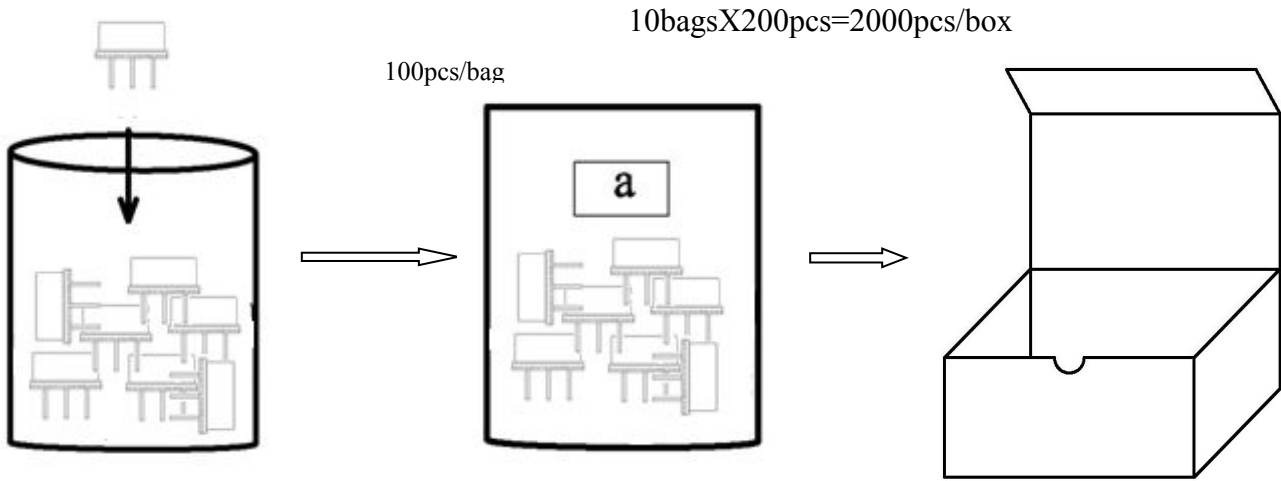
The following instructions and information are provided for the purpose of having the user understand the proper way to process our crystal products to prevent problems prior to use and enhance the reliability of the equipment to which they are applied.

No.	PROCESSING INSTRUCTIONS
1	<p>石英晶体意外跌落When dropped by mistake</p> <p>设计和制造的石英晶体本身具有耐冲击能力,但是当石英晶体组件经受剧烈的机械冲击,如跌落到地板上或安装期间剧烈震动时,在使用之前需要进行电性能确认</p> <p>The crystal units are designed and manufactured to resist physical shocks.However,when the crystal units are subjected to excessive impact such as being dropped onto the floor or giving shocks during processing,need to make sure its satisfactory performance before using it.</p>
2	<p>回流炉焊接曲线Soldering</p> <p>The REFLOW SOLDERING PROFILE as below is recommended for HC-49SM</p> <p>● REFLOW SOLDERING PROFILE</p>  <p>The graph shows a reflow soldering profile with the following parameters: Preheating at 150°C for 60 to 120 seconds with a maximum heating rate of +3°C/s; a peak temperature of 260°C for a maximum of 10 seconds; a dwell at the peak of 20 to 40 seconds; a cooling rate of -6°C/s maximum; and a final dwell at 200°C for 60 to 90 seconds. The temperature starts at 25°C and reaches 260°C.</p>
3	<p>石英晶体组件的清洗CLEANING</p> <p>(1)恶劣的超声波清洗或超声波焊接可能会影响和损坏石英晶体组件。如果您对晶体组件进行了超声波清洗,请一定在使用前确认晶体组件是否受到了影响和损坏</p> <p>Crystal units may be sffected and destroyed at worst by supersonic cleaning or supersonic welding.Please be sure to check if your cleaning and welding process sffects any damage to crystal units before using.</p> <p>(2)有些清洗液也可能造成晶体组件的损坏,请在使用清洗液前确认该清洗液是否适用</p> <p>Some kinds of cleaning fluid may cause any damage to crystal units.Please be sure to check suitability of the cleaning fluid in advance.</p>
4	<p>贮存STORAGE</p> <p>石英晶体组件长时间贮存在高温或高湿环境中,可能会影响频率的稳定性或可焊性。请将晶体组件贮存在正常的温度和湿度环境中,避免阳光直射和露水凝结,避免贮存6个月以上再使用,拆封后尽快装配使用。</p> <p>Storage of crystal units under higher temperature or high humidity for a long term may affects frequency stability or solderability. Please store the crystal units under the normal temperature and humidity without exposing to direct sunlight and dew condensation ,and avoid the storage of crystal units for more than 6 months,and mount them as soon as possible after unpacking.</p>

包装 PACKING

Packing For Pb Free Parts:

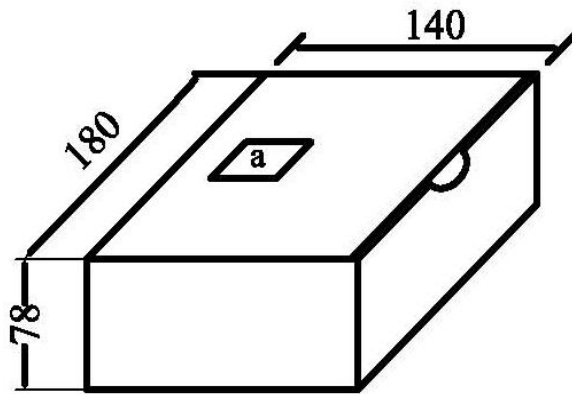
1. INNER BOX:(Unit:mm)



2.LOGO STICKER(CARTON and INNER BOX):(Unit:mm)

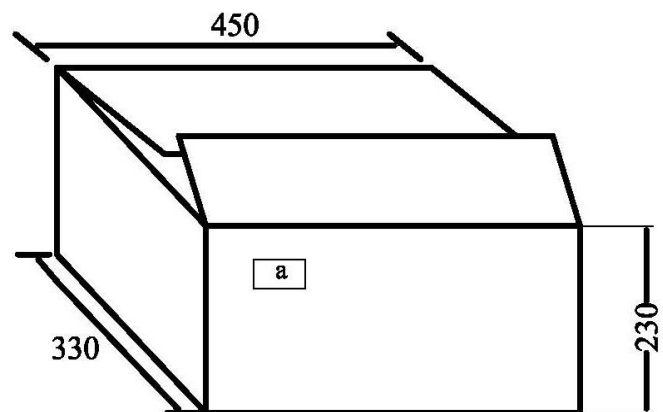
Label a

	合格证	
	TYPE	
FREQUENCY		
△/f0		
CL		
RES		
P/N		
QTY		
OQC		
DELIVERY DATE		
LEAD FREE		



PUT IN

10 INNER BOX x2000pcs=20000pcs



Revision	A	Revised	A	initial release	DOC.No.	T-PACKING-49U-01
Date	2013-9-29	records	C		Prepared by	DingLingRong
Issued by	Xi eShuangShuang	Hold Type	HC-49S-3PIN		Approved by	HeYong