

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	YT-38
料 号	Y8OGC-STU-32.768K
标准参数	DIP-32.768KHZ-12.5PF- -/+10PPM
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确 认 签 章

客 户		
客户物料号		
机种/型号		
批 准	审 核	检 验

扬 兴 签 核

制定	审核	批准
朱灿维	马占军	黄月华

深圳扬兴科技有限公司

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MHz Range Crystal unit

YT-38

Product name 系列型号

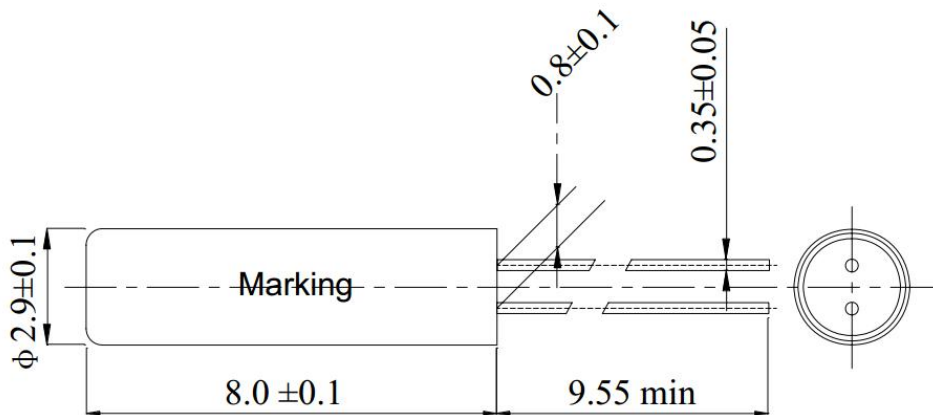
YT-38 32.76800 KHz 12.5PF +/-10PPM

Product Number / Ordering code 产品料号 Y8OGC-STU-32.768K

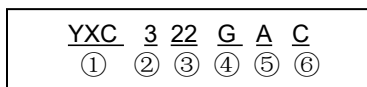
1.Specifications (characteristics)(规格参数)

Parameter(电气参数)	Symbol	Min. (最小值)	Typ.(典型值)	Max. (最大值)	Unit (单位)
Oscillation Mode (振动模式)		<input checked="" type="checkbox"/> Fundamental		<input type="checkbox"/> 3rd	
Cutting Mode (切割方式)		<input type="checkbox"/> AT		<input type="checkbox"/> BT	
				<input checked="" type="checkbox"/> X +2°	
Nominal frequency (标称频率)	f_nom	-	32.768	-	KHz
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	-	-	- 0.04	x 10 ⁻⁶ / °C ²
Load capacitance(负载电容)	CL	-	12.5	-	pF
Motional resistance (ESR) (等效谐振电阻)	R1	-	-	40	KΩ
Shunt capacitance (静电容)	C0	-	-	2	pF
Motional capacitance (动态电容)	C1	-	-	-	fF
Level of drive (激励功率)	DL	-	1	-	μW
Operating temperature (工作温度)	T_use	-20	-	70	°C
Storage temperature (储存温度)	T_stg	-55	-	125	°C
Frequency aging (老化率)	f_age	-3	-	3	x10 ⁻⁶ /year

2. External dimensions (外观尺寸) & Footprint(Recommended) (焊盘推荐) (Unit: mm)

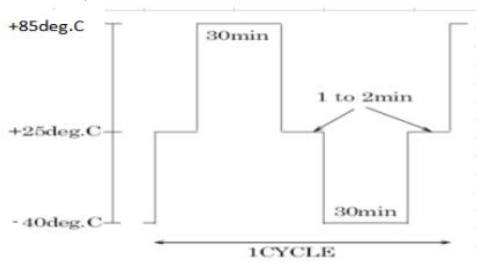


3. Marking information(丝印说明)



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

4. Reliability characteristic (可靠性)

Test Items	Test Method and Condition	Requirements
Vibration	Vibration Frequency (震动频率) 10 to 55Hz Vibration Amplitude (震动幅度) 1.5mm Cycle Time (循环时间) 1-2min(10-55-10Hz) Direction (震动方向) X.Y.Z Duration (持续时长) 2h/each direction	Frequency Change(频率变化):±5ppm Max. Resistance Change (电阻变化): k hm Max.
Drop test	3 Times free drop from 75cm height to hard wooden board of thickness more than 30mm 从 75cm 高度自由下落 3 次至厚度大于 30cm 的硬木板上)	Frequency Change(频率变化):±5ppm Max. Resistance Change (电阻变化) 5 ohm Max.
Air tightness test	The crystal is put into an alcohol pressure tank, the pressure is increased to 0.4Mpa, and the crystal is taken out after 15min. (晶体放入酒精加压罐中, 压力提升至 0.4Mpa, 保持 15min 取出) Full inspection will be conducted before shipment. (出货前会全检)	No necrosis AC=0、RE=1 无坏死不良
Weldability	Dip the leads of crystal units into the solution (7-10%) of rosin 3±1s, then dip into solder to 2~3mm at the root of the lead and lift it after 5±1S. Temperature of solder melted tank is 245°C±10°C 将晶体单元的引线浸入松香的溶液(7-10%)中 3±1s, 然后浸入焊锡至引线根部 2~3mm 处, 5±1S 后提起。焊料熔化罐的温度: 245°C±10°C	The dipped surface of the leads should be at least 95% covered with continuous new solder coating 引线的浸涂表面应至少覆盖 95% 的连续新焊料涂层。
High temperature	96 hours at 100°C±3°C (置于 100°C±3°C 下 96 小时) After being left at room temperature for 2 hours, the test is carried out. (在室温下放置 2 小时后测试)	Frequency Change (频率变化):±5ppm Max. Resistance Change (电阻变化): 5kohm Max.
Low temperature	48 hours at -40°C±3°C (置于 -40°C±3°C 下 48 小时) After being left at room temperature for 2 hours, the test is carried out. (在室温下放置 2 小时后测试)	Frequency Change (频率变化):±5ppm Max. Resistance Change (电阻变化): 5kohm Max.
High temperature and humidity	48 hours at 60°C±3°C, relative humidity 90-100% (置于 60°C±3°C 下 48 小时, 相对湿度 90-100%) After being left at room temperature for 2 hours, the test is carried out. (在室温下放置 2 小时后测试)	Frequency Change (频率变化):±5ppm Max. Resistance Change (电阻变化): 5kohm Max.
Temperature cycle	After supplying the following temperature cycle (100 time) (提供以下温度循环 (100 次)) 	Frequency Change (频率变化):±5ppm Max. Resistance Change (电阻变化): 5kohm Max.
Lead strength	In the lead 1.00 Kg tensile force was applied at the end to keep more than 5 seconds(对引脚部分施持续加 1kg 的拉力 5 秒钟, 测试晶体的变化)	Frequency Change (频率变化):±5ppm Max. Resistance Change (电阻变化): 5kohm Max.

Not recommended reflow furnace welding, If it is to be used, the maximum temperature shall not exceed 230°C.

5. Handling Notice for Standard Tuning Fork Crystal (Cylindrical Type)

5.1. Shock resistance

It may deteriorate the characteristics or cause of no oscillation if excess physical shock given. Please be careful not to drop. Please use under condition to minimize the shocks as much as possible.

Please review the conditions if it is used by auto mounting or after the conditions are changed.

5.2. Heat and humidity resistance in storage

Storing the crystal products under higher or lower temperature or high humidity for a long period may deteriorate the characteristics of crystal units.

Please store and use the crystal products at the normal temperature and humidity.

5.3. Solder heat resistance

Standard type crystal products use Material have a 230°C melting point.

Heating up the package more than 230°C may deteriorate the characteristics or cause of no oscillation the products. If the crystal products need to be soldered at temperature of more than +230°C, please study heat-resistance products or SMD products.

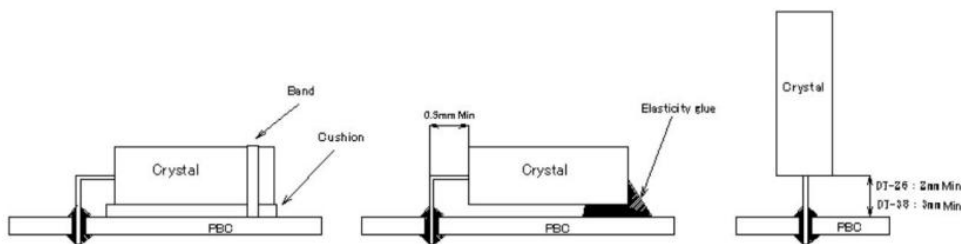
Please review the condition or consult us about flow solder process.

Our soldering condition is under 280°C within 3sec or 320°C within 2sec for lead parts use the soldering iron .Please don't solder the crystal unit (case) directly. It may cause of deteriorate the characteristics.

5.4. Mounting method to PCB

When the crystal products need to be lay down please fix to PCB securely.

If the crystal is used with mechanical vibration location, please put cushion in between PCB or fix with elasticity glue (Silicon etc) as shown in below figure. Please don't gluing hermetic seal grass. When the crystal products need to be mounted vertically, gap between crystal units and PCB more than 3mm for 3×8 type , more than 2mm for 2×6 type is recommended.



5.5. Lead process

When the lead needs to be cut please maintenance the cutter. When the lead needs to be bent or repaired please be careful not to giving excess pressure at the root of the lead to avoid crack of the hermetic seal glass. Also please be careful not to giving excess pressure at sealing to avoid sealing tightness deteriorate.

Leave more than 0.5 mm of lead from the case.

5.6. Ultrasonic cleaning and ultrasonic soldering

Soldered by ultrasonic cannot be guaranteed, because crystal may be sympathetic vibrated and may damage. Please study at your side about ultrasonic cleaning.

5.7. Drive level

Applying excessive drive level to the crystal units may cause deterioration of characteristics or damage. Less then 1.0μW is recommended to this products. More than 2.0μW cannot be guaranteed.

6. 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、生产场所、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