石 英 晶 体 谐 振 器

QUARTZ CRYSTAL UNIT

规 格 书

SPECIFICATION

规　格　CRYSTAL32.768KHz

SPEC.

料　号

PART NO.　(HH********)

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QUARTZ CRYSTAL SPECIFICATIONS	

1. **1.GENERAL**

1.1 HOLDER TYPE	:	3x8/2x6
1.2 MODE OF VIBRATION	:	3RD CUT
1.3 OSCILLATION MODE	:	FUND/3RD/5TH
1.4 TEST FACILITIES	:	S&A 250B
1.5 STORAGE TEMPERATURE	:	-20℃ TO +70℃
1.6 DRIVER LEVEL		10 μW

2. **2.ELECTRICAL PARAMETER**

2.1 NORMAL FREQUENCY	32.768KHZ
2.2 FREQUENCY TOLERANCE（25℃±2℃）	±20ppm
2.3 TEMPERATURE STABILITY	±20 ppm
2.4 OPERATING TEMPERATURE RANGE	-10℃ TO + 70℃
2.5 LOAD CAPACITANCE	12.5PF
2.6 MOTIONAL CAPACITANE	MIN
2.7 SHUNT CAPACITANCE	7PF MAX
2.8 EFFECTIVE SERIES RESISTANCE	30 Ω
2.9 INSULATION RESISTANCE	500M OHMS MIN AT DC 100V

3. **3.MECHANICAL PARAMETER**

3.1 SOLDERABILITY

95%COVERAGE BY USING 90/10 SOLD AT 245℃ FOR 5 SEC. DIPING AFTER IMMERSION IN ALPHA 611 FLUX FOR 5 SEC.

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QUARTZ CRYSTAL SPECIFICATIONS	

Ⅰ MECHANICAL ENDURANCE 机械特性

Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour.
试验产品应在室温下放置 1 小时后方可进行以下试验。

1 SHOCK 抗击测试

Electrical characteristics shall be satisfied after dropping three time from the height of 50 cm onto Hard wooden board .
产品从 50 cm 高度自由落下到硬木板 3 次电气参数仍符合要求。

2 VIBRATION 抗振测试

Electrical characteristics shall be satisfied after supplying following Vibration .
电气性能应满足以下的振动要求。

(1)VIBRATION FREQUENCY	振动频率 10—55Hz
(2)REPEATED PERIOD	周 期 1—2min
(3)FULL CYCLE	全 振 幅 1.5mm P—P
(4)DIRECTION	振动方向 X.Y.Z
(5)TIME	振动时间 2hours/each direction 2 小时/每个方向

3 STRENGTH OF TERMINALS/LEAD—WIRES 引脚与基座底部的强度测试

-1 PULLING 拉力测试

a)Body of specimen shall be fixed, and 900g of tension weight shall be supplied gradually to axial direction of terminals/lead-wires for 30 sec .
产品应固定在 900g 的拉力的情况下逐渐延基座底部/引线脚中轴方向拉 30 秒钟。

b)After above test a), there is no observation of any visual damages on the specimen.
经过 a)的测试，产品应没有任何可以目测到的损坏。

-2 BENDING 弯曲度测试

a)Body of specimen shall be fixed, and 90degree bending shall be given, being supplied 225gs tension weight .
After that, terminals/lead-wires shall be straightened gradually .
Then the same bending and straightening shall be supplied to the opposite direction in the same axial . (Refer to Fig-1)
产品固定后，以 90º的弯曲并供以 225g 的拉力，然后沿同一轴线并与相反的方向 90 º的弯曲及伸直。（如图 1 所示）

b)After above test a), there is no observation of any visual damages on the specimen .
通过 a)测试后，晶体上应没有任何可以目测到的损坏。

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QUARTZ CRYSTAL SPECIFICATIONS

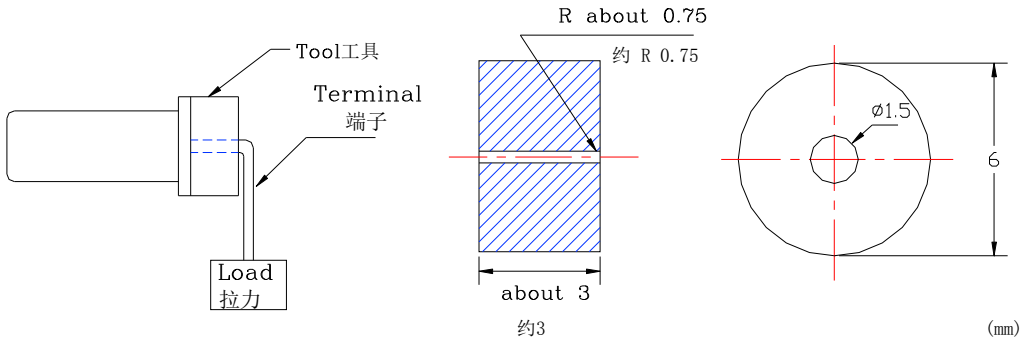

FIG-1

4 SEALING TIGHTNESS 气密性测试

There is no observation of gas bubble after specimen put in hot water at +90℃—+95℃ for 5 min .

晶体置于+90℃—+95℃的热水中 5 分钟，应没有气泡产生。

5 SOLDERING DIP 浸锡测试

Terminals/lead-wires of specimen shall be dipped into solder melted tank at +230℃—±5℃ for 3sec . Dipping depth shall be 2mm from the bottom of specimens body . (After applying ROSIN flux) Soldering portion shall be covered in over 90% of terminals/lead-wires dipped .

将晶体引线脚置于+230℃—±5℃的锡桶中 3 分钟，基座底部离锡表面 2mm，（加上松香焊剂后）引线脚的沾锡率为 90％以上。

6 SOLDER HEATING 沾锡耐热性测试

Terminals/lead-wires of specimen shall be dipped into solder melted tank at

$$+350℃\text{—}\pm 10℃ \quad \text{for} \quad 3\ ^{+1}_{-0} \quad \text{sec} .$$

Electrical characteristics shall be satisfied after dipping depth shall be 2mm from edge of terminals/lead-wires .

将已沾锡的产品的引线脚置于+350℃—±10℃的锡桶中 3-4 秒钟后 基座底部离锡表面 2mm，电气性能仍符合要求。

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QUARTZ CRYSTAL SPECIFICATIONS	

Ⅱ ENVIRONMENTAL ENDURANCE 环境特性

Provided that measurement shall be carried out after letting it alone in the room temperature for 1 hour .

必须将试验产品在室温下放置 1 小时后方可进行测试。

1 HUMIDITY 耐湿测试

Electrical characteristics shall be satisfied after letting it alone at 60℃—±2℃ in humidity of 90—95% for 250 hours .

试验产品在温度为 60℃—±2℃，相对湿度 90—95%的试验箱内放置 250 小时后电气性能仍符合要求。

2 STORAGE IN LOW TEMPERATURE 低温储存测试

Electrical characteristics shall be satisfied after letting it alone at -30℃—±2℃ for 250 hours .

试验产品在温度为-30℃—±2℃的试验箱中放置 250 小时后电气性能仍符合要求。

3 STORAGE IN HIGH TEMPERATURE 高温储存测试

Electrical characteristics shall be satisfied after letting it alone at +85℃—±2℃ for 250 hours .

试验产品在温度为+85℃—±2℃的试验箱中放置 250 小时后电气性能仍符合要求。

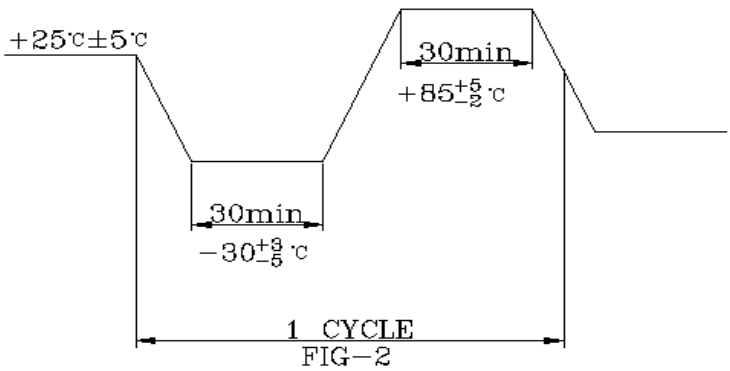
4 TEMPERATURE CYCLE 温度变换测试

Electrical characteristics shall be satisfied after supplying the following temperature cycle (3cycles) .

Temperature shift from low to high, high to low shall be done in 1℃/min (Refer to Fig-2) .

电气性能应满足以下温度周期要求（3 个周期）

温度变换从低到高，从高到低变化量为 1℃/分。（如图 2 所示）



FIG—2

PIG — 2

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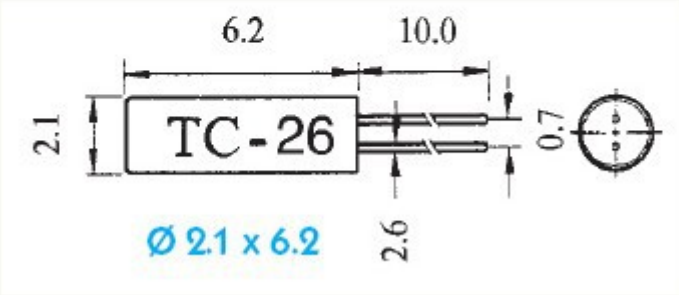
2、TC-26 32.768 kHz Ø 2.1 x 6.2



1、TC-38 32.768 kHz Ø 3.0 x 8.2