

(RoHS) 产 品 规 格 书

SPECIFICATION FOR APPROVAL

客户名称:
Customer Name: _____

产品名称:
Product Name: 石英晶体谐振器

产品型号:
Product Type: HC-49SMD

标称频率:
Nominal Freq: 20.000000MHz

产品编号:
Part Coding 5M0-2000A2020-01

规格书编号:
Specification P/N: XTY0292-5015

客户料号:
Customer P/N: C389694

日期:
Date: 2019-06-12

客户承认
Approved By Customer:

签章
Signature:

日期
Date:



深圳市新天源电子有限公司

SHENZHEN XINTIANYUAN ELECTRONICS CO., LTD.

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批准
Accepted

审核
Checked

编制
Issued

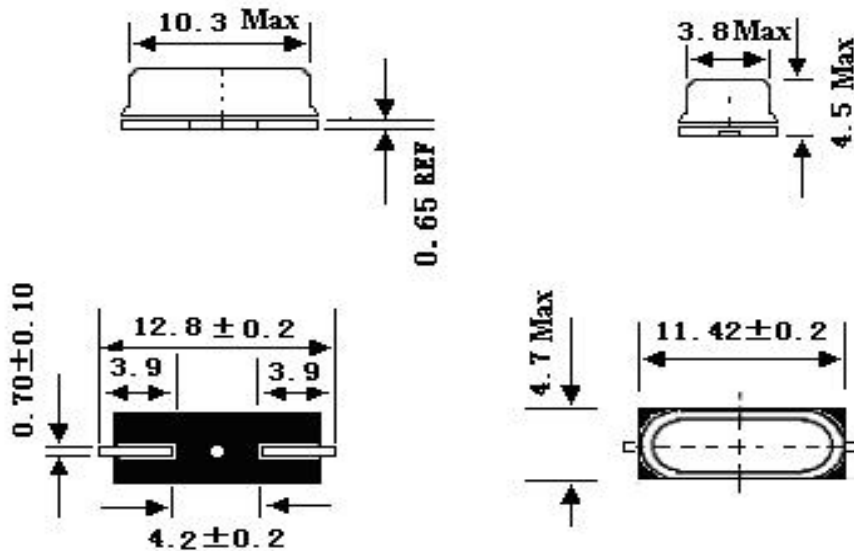
陈梅东

| | | |
|--|---|-------------------------|
| <p>深圳市新天源电子有限公司 Shenzhen Xintianyuan Electronics Co., Ltd.</p> | <p>石英晶体谐振器规格书 Specification of Quartz Crystal</p> | <p>NO: XTY0292-5015</p> |
| <p>HC-49SMD</p> | | <p>Date: 2019/06/12</p> |
| <p>一、石英晶体规格参数 Quartz Crystal Specification Parameters</p> | | |
| <p>1、产品型号 Holder Type</p> | <p>HC-49SMD</p> | |
| <p>2、标称频率 Nominal Frequency</p> | <p>20.000000MHz</p> | |
| <p>3、振动模式： Mode of Oscillation</p> | <p>Fundamental</p> | |
| <p>4、调整频差 Frequency Tolerance at 25°C ± 2°C</p> | <p>± 20ppm at 25°C ± 2°C</p> | |
| <p>5、等效电阻 Equivalent Resistance (ESR)</p> | <p>≤ 30 Ω</p> | |
| <p>6、负载电容 Load Capacitance (CL)</p> | <p>20pF</p> | |
| <p>7、温度频差 Temperature Characteristics</p> | <p>± 20ppm</p> | |
| <p>8、工作温度范围 Operating Temperature range</p> | <p>-20~+70°C</p> | |
| <p>9、储存温度范围 Storage Temperature range</p> | <p>-40~+85°C</p> | |
| <p>10、激励功率 Drive Level</p> | <p>100uW</p> | |
| <p>11、静态电容 Shunt Capacitance (C0)</p> | <p>< 4.0pF</p> | |
| <p>12、绝缘电阻 Insulation Resistance</p> | <p>≥ 500M Ω (DC100V ± 15V)</p> | |
| <p>13、测试仪器 Measure Instrument</p> | <p>KH1240</p> | |
| <p>14、年老化率 Aging Rate a Year</p> | <p>≤ ± 3ppm/年</p> | |

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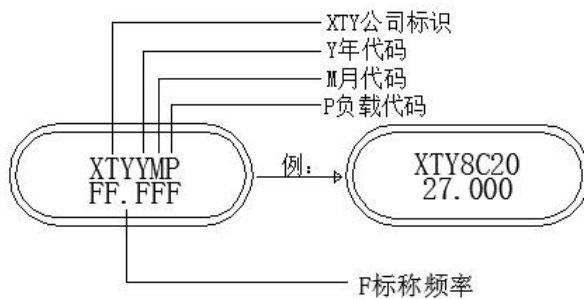
二、石英晶体尺寸、结构

Quartz Crystal Dimensions And Structure



三、石英晶体印字

Quartz Crystal Marking



印字: Marking

XTY: 新天源

Y为年 (year): 8:2018; 9:2019...

M为月 (Month): A:1; B:2...

P为负载 CL:20: 20pF

FF.FFFM为频率Frequency: 27.000M

例8C20: 8为2018年, C为3月, 20为20pF;

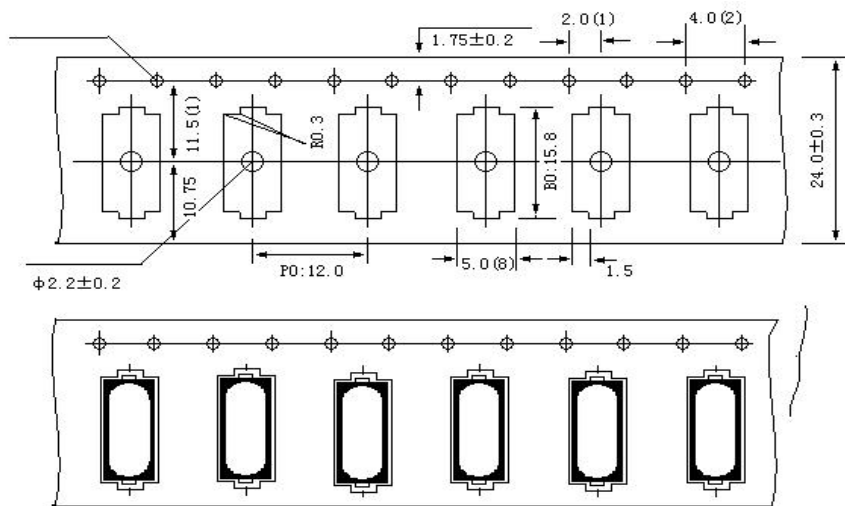
年、月、负载代码:

| | | | | | | | | | | | | |
|----|------|------|------|------|------|------|------|------|------|------|------|--------|
| 年 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
| 代码 | 5 | 6 | 7 | 8 | 9 | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
| 月 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 代码 | A | B | C | D | E | F | G | H | I | J | K | L |
| 负载 | 9pF | 10pF | 11pF | 12pF | 13pF | 14pF | 15pF | 16pF | 17pF | 18pF | 19pF | SERIES |
| 代码 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | S |

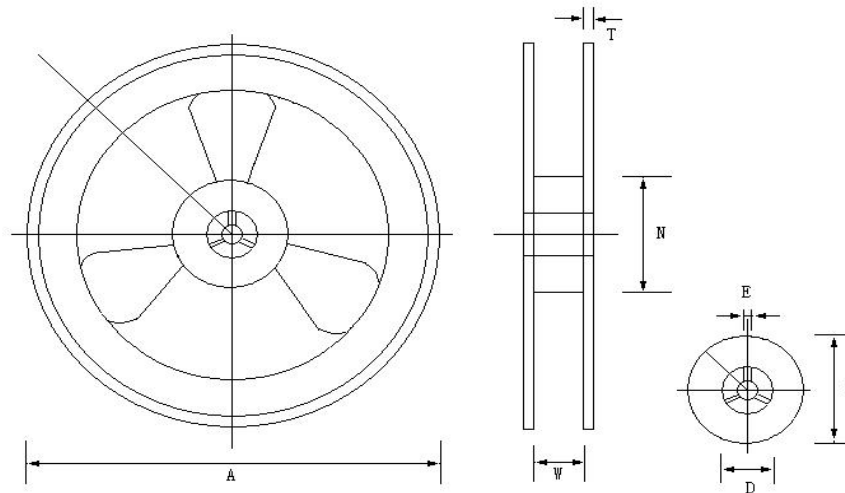
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四、包装要求
Packaging

1. 编带
Tape



2. 轮
Reel

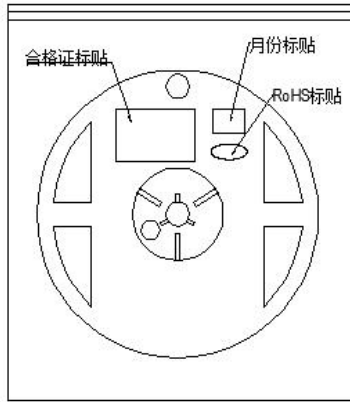


| Symbol | A | W | N | C | D | E | T |
|------------|-----------|------|-----------|-----------|-----------|-----------|-----------|
| Dimensions | 330 | 24 | 99 | 20.2 | 13.5 | 2.5 | 2.3 |
| Tolerances | ± 2.0 | +1/0 | ± 1.0 | ± 1.0 | ± 0.5 | ± 0.5 | ± 0.5 |

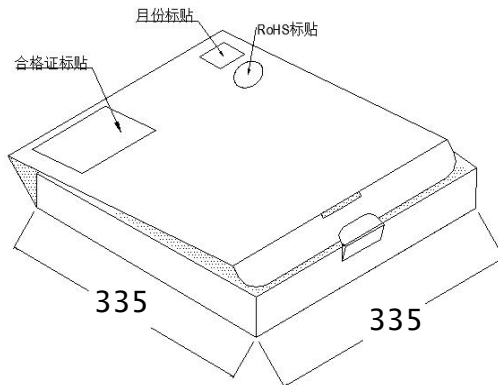
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| | HC-49SMD | Date: 2019/06/12 |

3. 包装
Package

1000只/1卷
1000pcs/Reel

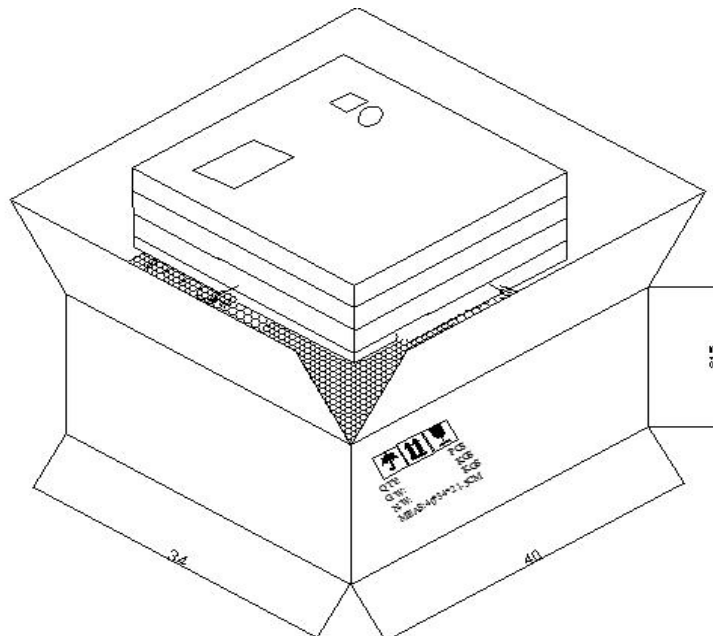


1轮=1盒
1Reel=1Box
Unit: mm



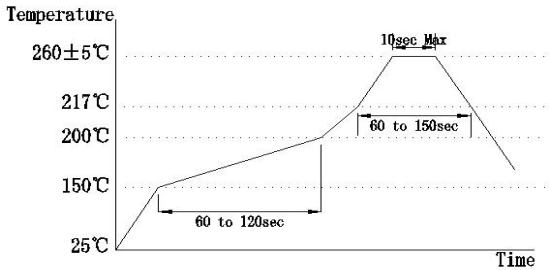
| 合格证 | |
|------|------|
| 频率: | 型号: |
| 负载: | 电阻: |
| 频差: | 数量: |
| 日期: | 供应商: |
| 批号: | 编号: |
| 订单号: | 料号: |

包装箱
Shipping Carton
40*34*21.5 (5 Box)
Unit: cm



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五、石英晶体可靠性
Reliability Test

| NO. | 测试项目 Test Item | 可靠性条件 Testing Condition | 判定标准 Determinant Criteria |
|-----|---|---|--|
| 1. | 跌落 Dropping Test | 从75cm高度跌落到30mm厚硬木板上, 跌落三次 Drop the resonators from 75cm height to 30mm thick hardwood board, 3times. | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 2. | 振动 Vibration | 频率 Frequency:10~60Hz; 幅度 Amplitude:0.75mm; 周期 Cycle time:10-55-10Hz: 1min; 振动方向 Direction:X, Y, Z; 振动时间 Duration: 每个方向2小时 2 h/direction. | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 3. | 高温 Heat Resistance | 温度Temperature: $125^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 时间Time: 720 ± 24 Hours | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 4. | 低温 Cold Resistance | 温度Temperature: $-40^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 时间Time: 720 ± 24 Hours | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 5. | 回流焊 (2次) Reflow (2times) |  <p>回流焊Reflow $260^{\circ}\text{C} \pm 5^{\circ}\text{C} \leq 10\text{s}$</p> | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 6. | 耐焊接热 Resistance To Soldering Heat | 焊接温度Soldering Heat: $320^{\circ}\text{C} \pm 10^{\circ}\text{C}$ 测试时间Test Time: $3.5\text{s} \pm 0.5\text{s}$; | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |
| 7. | 气密性 Leakage | 用氦质谱仪进行检测, 试验气体: He; 真空度: $1 \times 10^{-3}\text{Pa}$; Helium mass-mass-spectrometer detector, and vacuum and reach $1 \times 10^{-3}\text{Pa}$; | $\leq 1 \times 10^{-8}\text{atm} \cdot \text{cc/S}$ |
| 8. | 高温高湿 Constant Temperature and Humidity | 在温度 $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$, 湿度90%~99%, 储存720小时, 取出2小时后测试; Stored at $60^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Humidity 90%~99% For a period of minimum 720hours. Then $25^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and 2 hours before testing | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) Appearance OK |
| 9. | 温度冲击 Temperature Shock | 低温Low $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (120min) \leftrightarrow 高温High $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (120min); 循环10次; For 10 cycles | $\Delta FL \leq \pm 5\text{ppm}$ $\Delta RS \leq \pm 10\%$ or 5Ω (whichever is larger) |