

# 承 认 书

SPECIFICATION FOR APPROVAL

客户名称: Customer 深圳立创商务电子有限公司

货 名: Description HC-49SSMD 石英晶体谐振器

客户料号: Part No \_\_\_\_\_

物料编号: Code No 9BT100001D2060C3

频 率: Frequency 10.000MHz

日 期: Date 2021-02-05

备 注: RoHS compliance with Directive (EU) 2015/863

| 制作(Prepare by) | 检查(Check by) | 批准 (Approve by) |
|----------------|--------------|-----------------|
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|                             |  |
|-----------------------------|--|
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| 批准日期<br>Approval date       |  |

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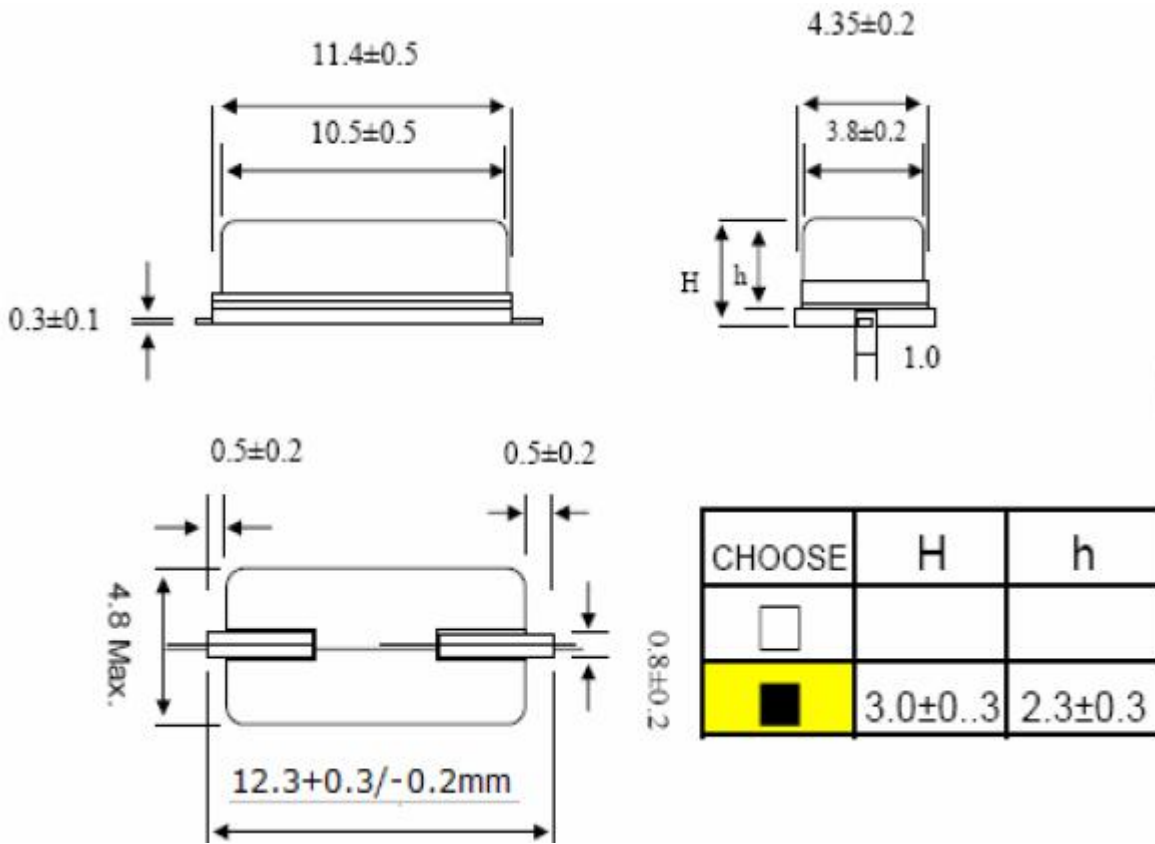
## 1、 Specifications

|    |                                      |                   |
|----|--------------------------------------|-------------------|
| 1  | 规格型号 Holder Type                     | HC-49SBSMD        |
| 2  | 标称频率 Nominal Frequency               | 10.000MHz         |
| 3  | 振动模式 Mode of Oscillation             | 基频                |
| 4  | 调整频差 Frequency Tolerance at 25°C     | ±20ppm            |
| 5  | 温度频差 Temperature Frequency Stability | ±30ppm            |
| 6  | 工作温度 Operating Temperature Range     | -20~70°C          |
| 7  | 贮存温度 Storage Temperature Range       | -40~90°C          |
| 8  | 负载电容 Load Capacitance                | 13.5 pF           |
| 9  | 静电容 Shunt capacitance                | ≤7 pf             |
| 10 | 等效电阻 Equivalent Series Resistance    | 60 Ω Max          |
| 11 | 激励功率 Drive Level                     | 50 uW             |
| 12 | 绝缘阻抗 Insulation Resistance           | 500MΩ min./DC100V |

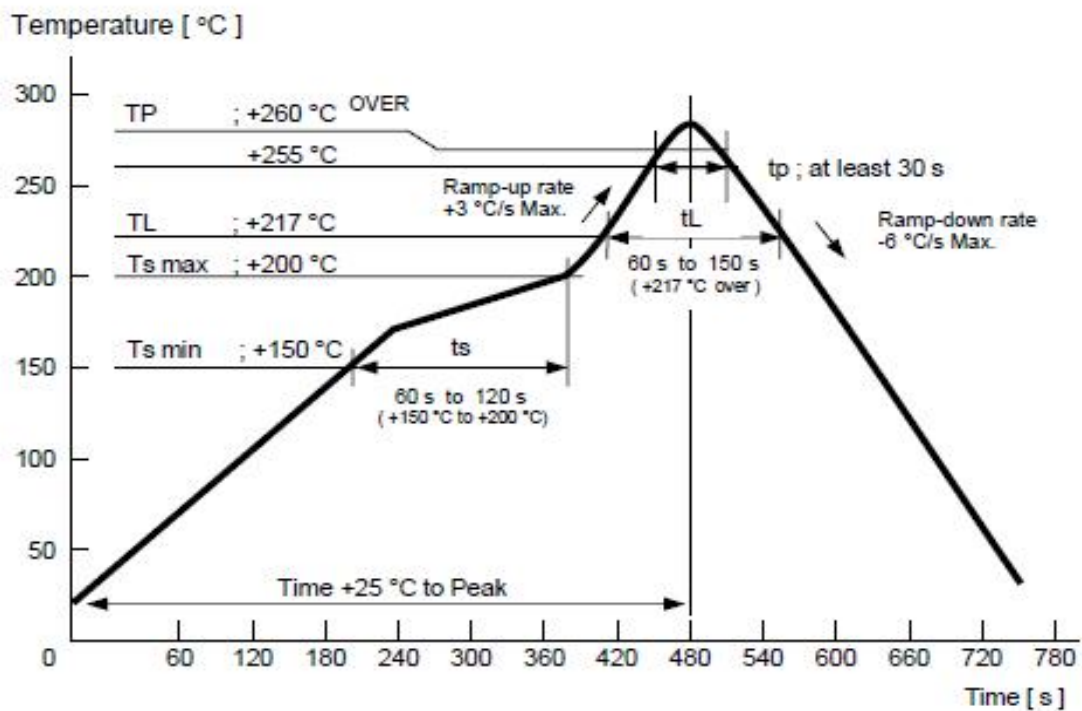
## 2、 Frequency stability over temperature range (AT cut)

| Temperature Range | Frequency Stability |       |         |        |        |        |        |        |
|-------------------|---------------------|-------|---------|--------|--------|--------|--------|--------|
|                   | ±3PPM               | ±5PPM | ±7.5PPM | ±10PPM | ±20PPM | ±30PPM | ±50PPM | ±70PPM |
| 0°C~+50°C         | ☆                   | ☆     | ☆       | ☆      | ☆      | ☆      | ☆      | ☆      |
| -10°C~+60°C       |                     |       | ☆       | ☆      | ☆      | ☆      | ☆      | ☆      |
| -20°C~+70°C       |                     |       |         | ☆      | ☆      | ☆      | ☆      | ☆      |
| -30°C~+70°C       |                     |       |         |        | ☆      | ☆      | ☆      | ☆      |
| -40°C~+85°C       |                     |       |         |        |        | ☆      | ☆      | ☆      |
| -40°C~+125°C      |                     |       |         |        |        | ☆      | ☆      | ☆      |

### 3、Dimensions (unit:mm)



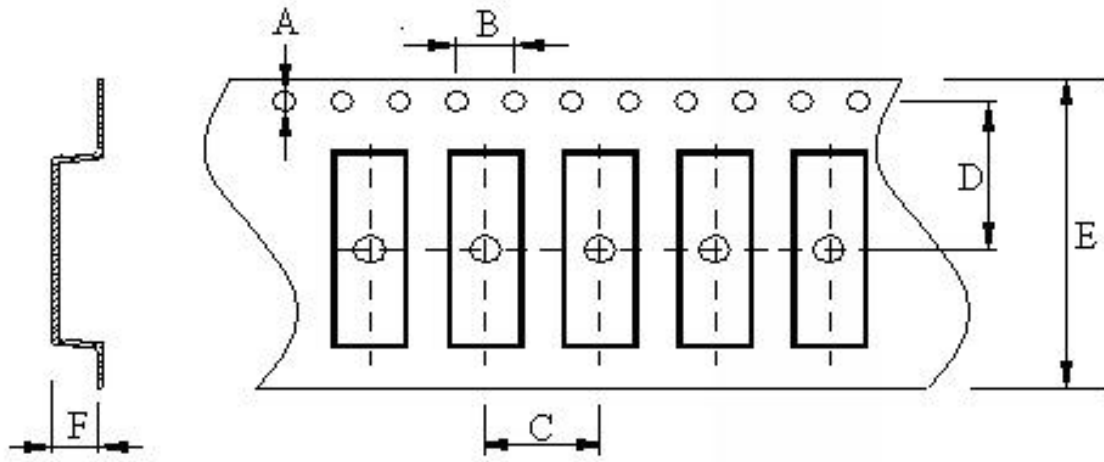
### 4、 Recommended Reflow profile



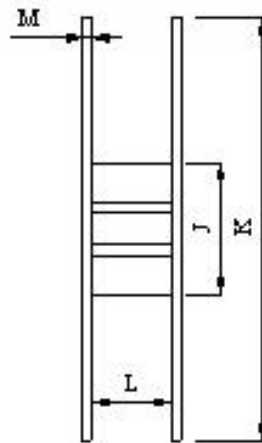
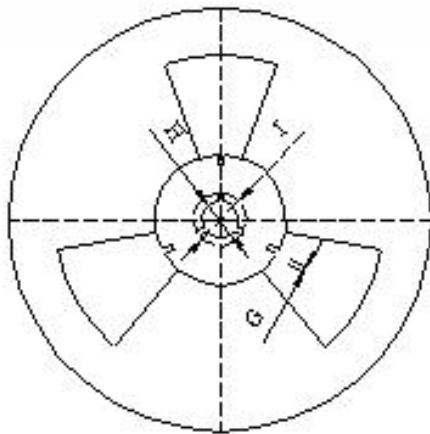
## 5、Reliability specifications

| NO | Item                         | Condition  | Standard   |
|----|------------------------------|--|--|
| 1. | Drop Test                    | Free drop from 75 cm height on a hard wooden board for 3 times. (Board is thickness more than 30 mm.)                              | Frequency change:<br>≤5ppm<br>Rr as specification  |
| 2. | Mechanical Shock             | Half sine wave, 1000G, 0.5mS, three times for all 3 directions   | Frequency change:<br>≤5ppm<br>Rr as specification  |
| 3. | Vibration                    | Frequency range:10~55hz<br>Amplitude:1.52mm<br>Sweep time:1mintutes<br>perpendicular axes each test time:2Hrs                      | Frequency change:<br>≤5ppm<br>Rr as specification  |
| 4. | Solderability                | Temperature:245℃ ± 5℃<br>Immersing depth:0.5mm minimum<br>Immersion time:5 ± 1sec.<br>Flux:Rosin resin methyl alcohol solvent(1:4) | 90% exhibit tin ok                                 |
| 5. | Resistance to soldering heat | Test temperature:260℃ ± 5℃<br>Test time :10 ± 1sec.  | Frequency change:<br>≤10ppm<br>Rr as specification |
| 6. | High Temp & Humidity         | 85±3℃ & RH85%, 500 ± 12 hours  | Frequency change:<br>≤10ppm<br>Rr as specification |
| 7. | Low temperature storage      | -40±3℃, 500 ± 12 hours   | Frequency change:<br>≤10ppm<br>Rr as specification |
| 8. | High temperature storage     | +85±3℃, 500 ± 12 hours   | Frequency change:<br>≤10ppm<br>Rr as specification |
| 9. | Temperature cycling          | -40±3℃/10min~+85±3℃/10min, 100cycles   | Frequency change:<br>≤10ppm<br>Rr as specification |

6、Tape & Reel ( unit: mm )



| A        | B       | C        | D        | E        | F       |
|----------|---------|----------|----------|----------|---------|
| 1.55±0.1 | 4.0±0.1 | 12.0±0.1 | 11.5±0.1 | 24.0±0.3 | 3.5±0.2 |



| G       | H        | I        | J         | K       | L        | M       |
|---------|----------|----------|-----------|---------|----------|---------|
| 2.2±0.5 | 13.0±0.2 | 20.2±1.0 | 100.0±1.0 | 330±2.0 | 24.5±0.3 | 2.3±0.5 |

## 7、Packing

1. 每盘数量 Capacity of a plastic reel : 1000 PCS
2. 每内箱数量 Capacity per inner box : 1000 PCS (A reel inner)
3. 每大箱数量 Capacity per outer carton : 10000 PCS (10× inner box) .

