



深圳市科源信科技有限公司
Shenzhen KeYuanXin Technology CO.,LTD

产品规格书

SPECIFICATION FOR APPROVAL

深圳市福田区振华路118号华丽装饰一栋西座306A
306A Block West Building 1, Huali Decoration
NO.118 Zhenhua Road Futian District Shenzhen
电话 TEL: 4008-735-535 传真 FAX: 0755-23616323



Product Name: Crystals

Product Type: HC-49S

Nominal Freq: 24.5760MHz

ProvideBrand: KKST

P/N: KCR24576H03R

Customer P/N:

Approved By Customer

Signature: _____ Date: _____



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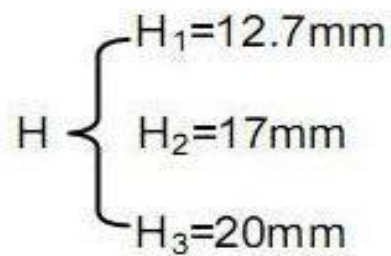
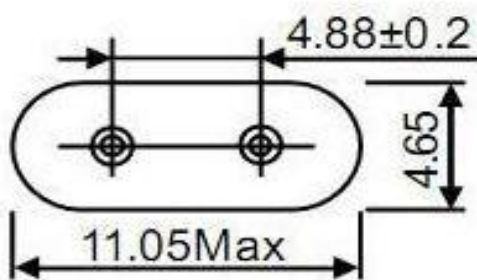
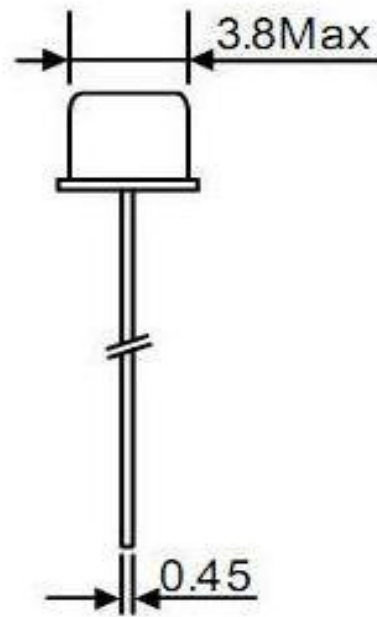
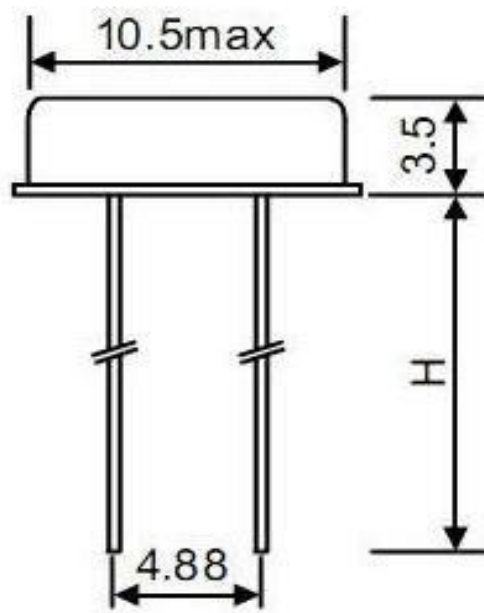
N0.1 Product specification and features

| | |
|-------------------------------------|------------------------------|
| 1.1 General characteristics | |
| Nominal frequency | 24.576000MHz |
| Overtone order | Fundamental |
| Type | HC-49S |
| Operating temperature | -20~70 °C |
| Storage temperature | -40~85 °C |
| 1.2 Electric characteristics | |
| Adjustment tolerance: (at+25°C) | ±20 ppm |
| Tolerance over the temperature: | ±20 ppm |
| Load capacitance | 20.0 pF |
| Drive level | 10.0 μW |
| Shunt capacitance | 7.0pF Max |
| Equivalent resistance | 100.0 Ω Max |
| Insulation resistance | 500 MΩ Min 100VDC±15VDC |
| Aging | ±3ppm/Year |
| 1.3 Other characteristics | |
| SPDB | <-3 dB |

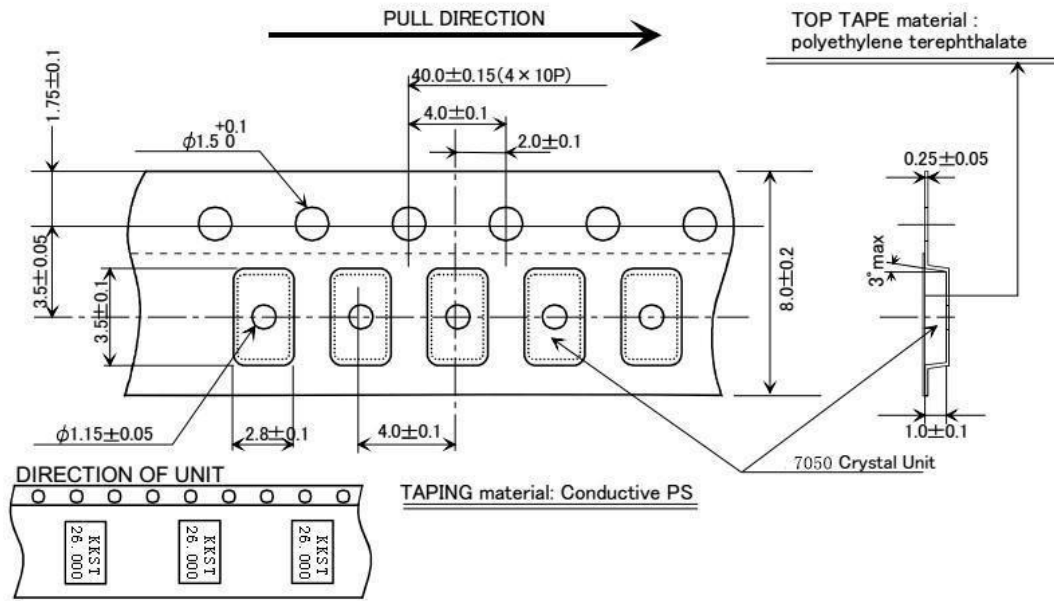
NO.2 Outline dimensions、Appearances

2.1 Product outline dimension(mm)

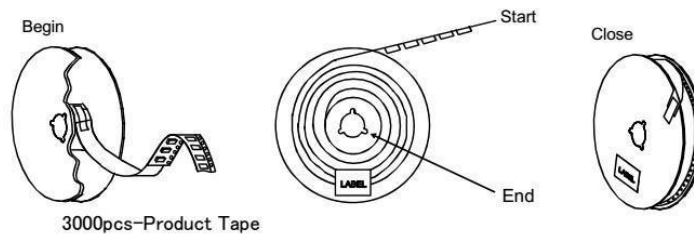
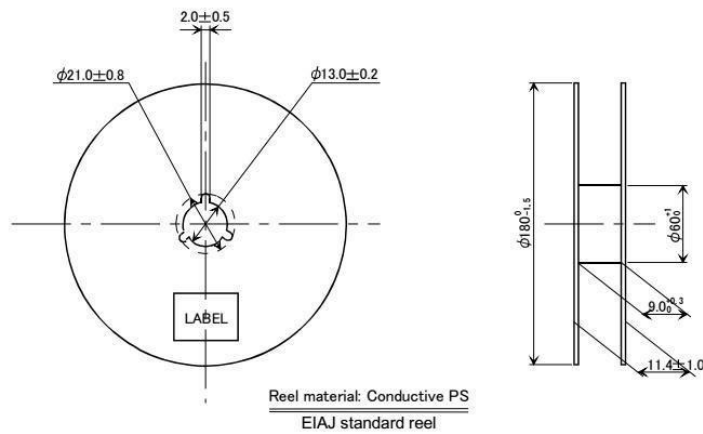
HC-49S



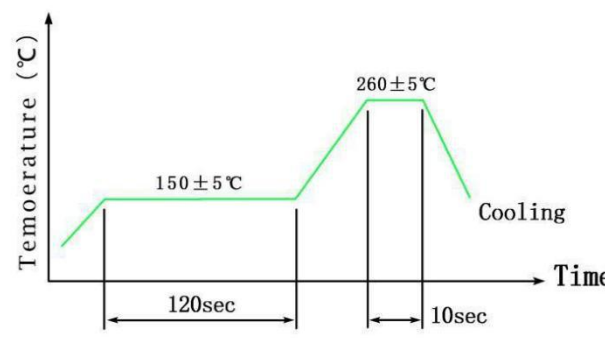
2.2 Carrier Dimensional Drawing (mm)



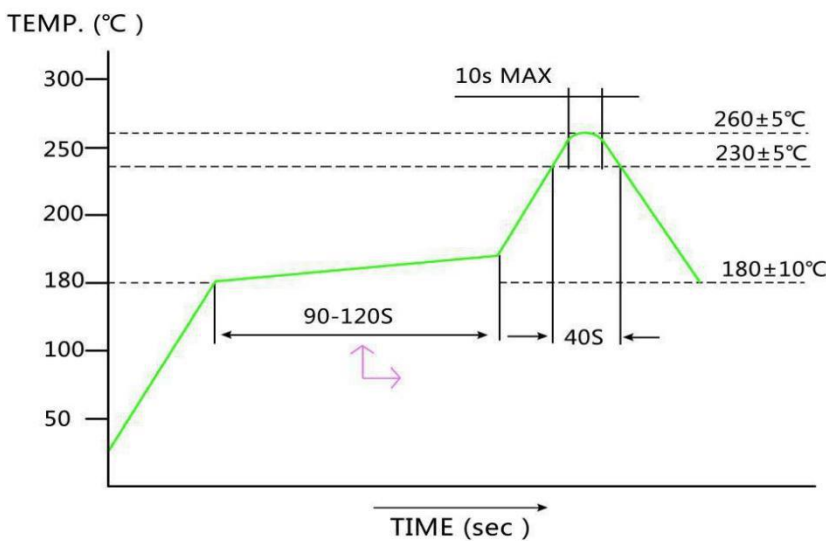
2.3 Reel Dimensional Drawing (mm)



NO.3 Product reliability

| Item | Condition | Result |
|------|--|--------|
| A1 | Cold resistance Stored at $-40\pm 2^{\circ}\text{C}$ for 1000 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 1~2 hrs before testing | (I) |
| A2 | Heat resistance Stored at $85\pm 2^{\circ}\text{C}$ for 1000 ± 2 hrs then $25\pm 2^{\circ}\text{C}$ 1~2 hrs before testing | (I) |
| A3 | Salt Mist Test Spray the $35^{\circ}\text{C}\pm 2^{\circ}\text{C}$ salt water (salt density 5%) to crystal for 48 ± 2 hrs,then clean by water | (I) |
| A4 | Humidity Resistance Result Steady temperature: $60\pm 2^{\circ}\text{C}$;humidity: 90 ~ 95 % RH; time:500h | (I) |
| A5 | Mechanical Shock $14700\text{m}/\text{S}^2$ 0.5sec 5times in each of 6 direction | (I) |
| A6 | Aging Stored at $85\pm 3^{\circ}\text{C}$ for 720 ± 12 Hrs then $25\pm 2^{\circ}\text{C}$ 1~2 Hrs before testing Stored at $25\pm 2^{\circ}\text{C}$ for 1 ± 0.03 year | (I) |
| A7 | Leakage Fine leak: Helium leak test *JIS C 6701 10.6 | (V) |
| A8 | <p>Temperature Cycle $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$, Dewell 30Min, 100 cycles</p>  <p>The graph shows Temperature (°C) on the y-axis and Time on the x-axis. The cycle consists of three segments: a ramp up to $150\pm 5^{\circ}\text{C}$, a dwell at $150\pm 5^{\circ}\text{C}$ for 120sec, a ramp up to $260\pm 5^{\circ}\text{C}$, a dwell at $260\pm 5^{\circ}\text{C}$ for 10sec, and a cooling ramp. The label 'Cooling' is placed next to the final downward slope.</p> | (I) |

3.1 Mechanism characteristics

| | | |
|-------------------|--|-------------|
| <p>B.1</p> | <p>Drop Test Device are dropped from a height of 100 cm onto 20mm thickness stainless plate executing 3 times of random drops</p> | <p>(I)</p> |
| <p>B.2</p> | <p>Resistance of Vibration Frequency: 10~55Hz, amplitude(total excursion): 1.5mm±15%,3 direction (X,Y,Z) each 2 hr</p> | <p>(I)</p> |
| <p>B.3</p> | <p>Resistance to soldering heat (Hand soldering method) Temperature: 370~400°C; Time: 3~4sec; Frequency: 2 times; Soldering iron: 60W/Min</p> | <p>(I)</p> |
| <p>B.4</p> | <p>Solderability 240±2°C, 3±0.5sec</p> | <p>(II)</p> |
| <p>B.5</p> | <p>Reflow) Resistance to soldering heat (Reflow) 260± 5°C; 10S; 2Times</p> <p style="text-align: center;">Reflow</p>  <p>TEMP. (°C)</p> <p>300</p> <p>250</p> <p>200</p> <p>180</p> <p>100</p> <p>50</p> <p>90-120S</p> <p>10s MAX</p> <p>260±5°C</p> <p>230±5°C</p> <p>180±10°C</p> <p>40S</p> <p>TIME (sec)</p> | <p>(I)</p> |



| Item | Result NO. | Specification Requirements |
|------|------------|--|
| 1 | (I) | Frequency variation $< \pm 10 \text{ppm}$ Resistance variation $< 5 \Omega$ or 15% of RR spec., select the bigger value |
| 2 | (II) | The covering rate of Tin-plating is more than 95% |
| 3 | (III) | There is no bubbles after the Crystal is dipped in the water Insulation Resistance: $500 \text{ M}\Omega$ Min $100 \text{VDC} / \pm 15 \text{VDC}$ |
| 4 | (IV) | The Crystal is no crackle under the observation of 10 times Magnifier. |
| 5 | (V) | $1 * 10^{-9} \text{Pa.m}^3/\text{s}$ Max |

NO.4 Package specification

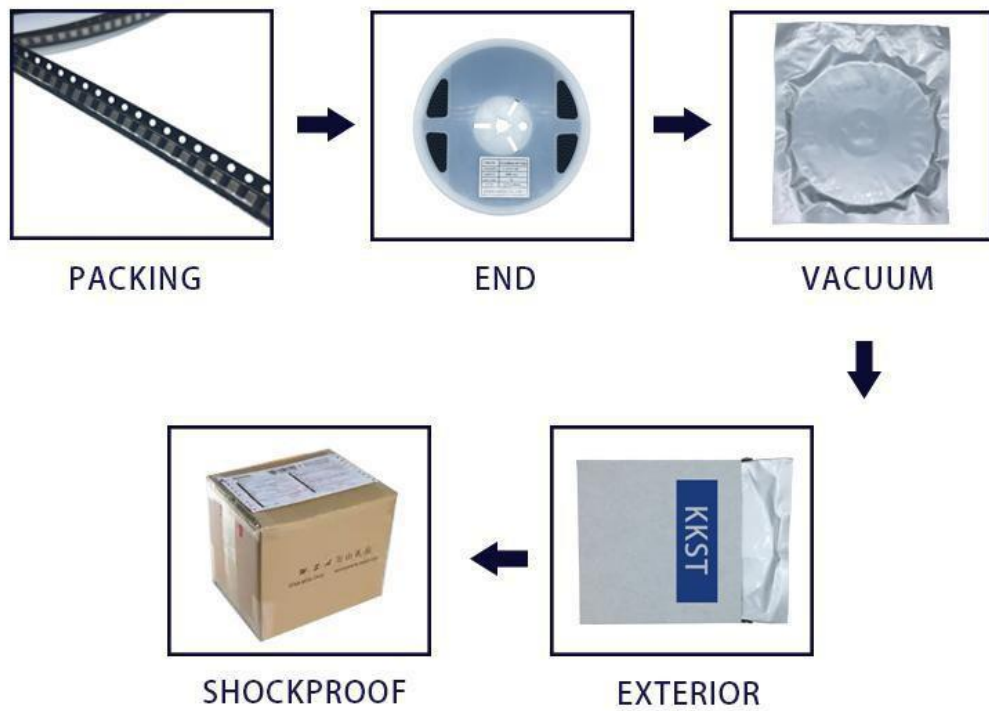
4.1 Marking



4.2 Label

| | | |
|------------------------------|--------------|--------------------|
| KEYUANXIN TECHNOLOGY GO.,LTD | | |
| Item | Crystal | QTY: 200PCS |
| P/N | KCR24576H03R | |
| FREQUENCY | 24.576MHz | DATE: 2018-03-9 |
| | | |

4.3 Package specification





KEYUANXIN TECHNOLOGY GO.,LTD

浏览网址：www.szkyx.cn