



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:

16.3840MHz

ProvideBrand:

KKST

P/N:

KCR16384H03R

Customer P/N:

Approved By Customer

Signature: _____

Date: _____



CONTENT

NO.1 Product specification and features

NO.2 Product outline dimension

NO.3 Product reliability

NO.4 Package specification



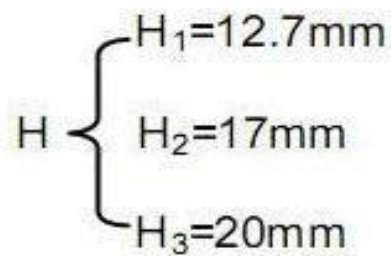
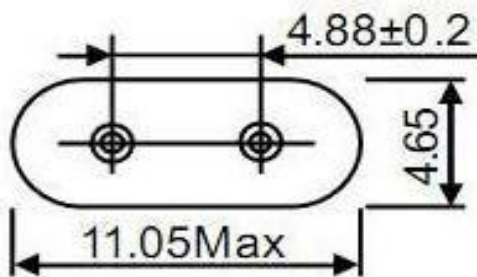
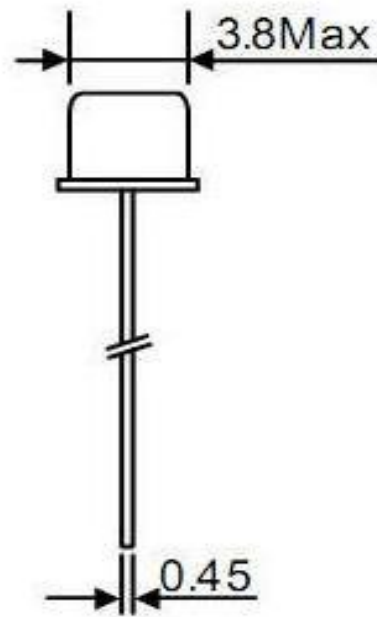
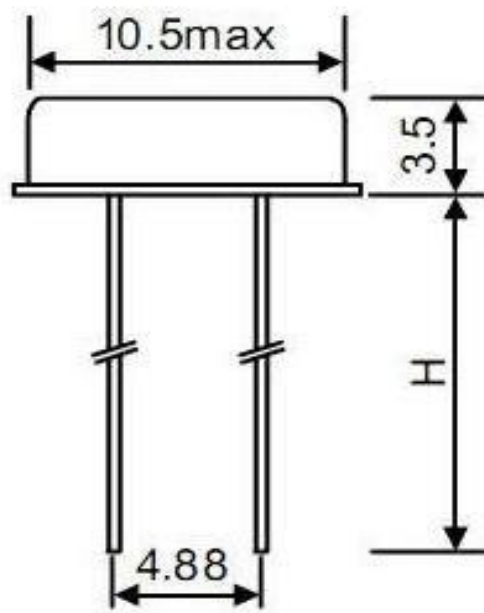
N0.1 Product specification and features

1.1 General characteristics	
Nominal frequency	16.384000MHz
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

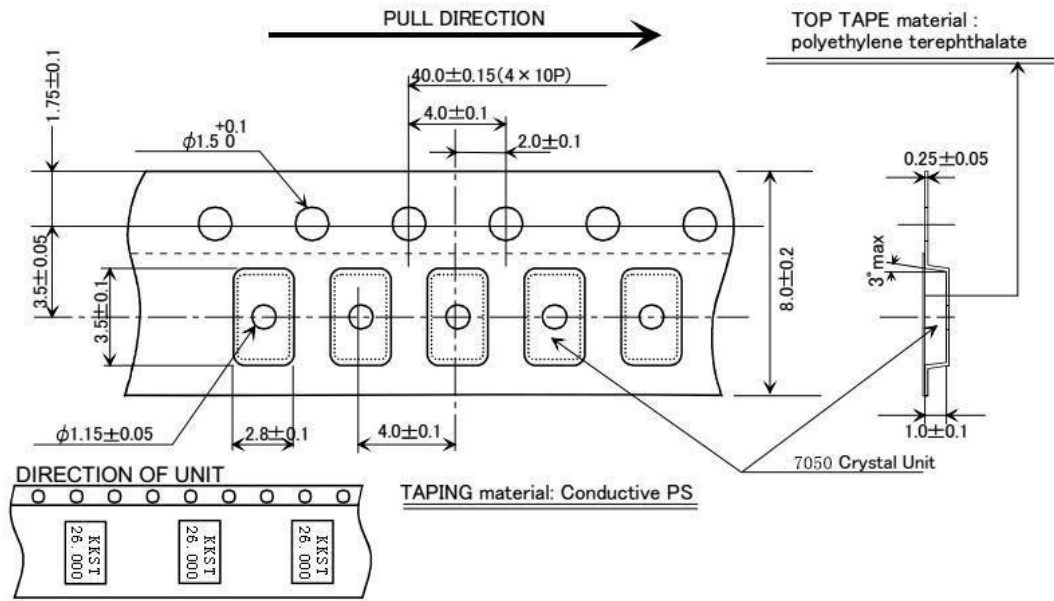
NO.2 Outline dimensions、Appearances

2.1 Product outline dimension(mm)

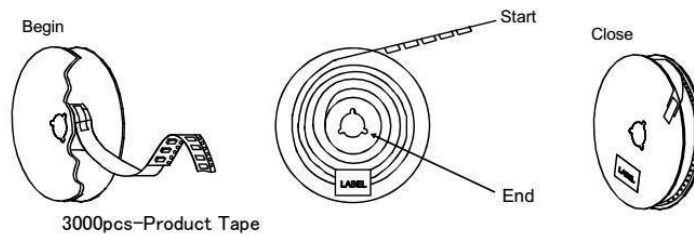
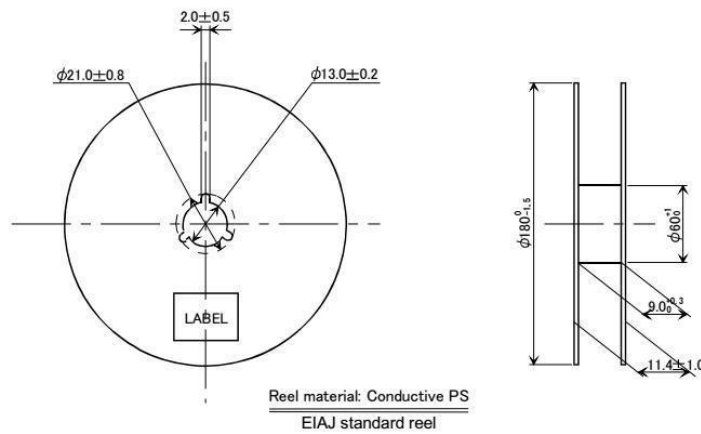
HC-49S



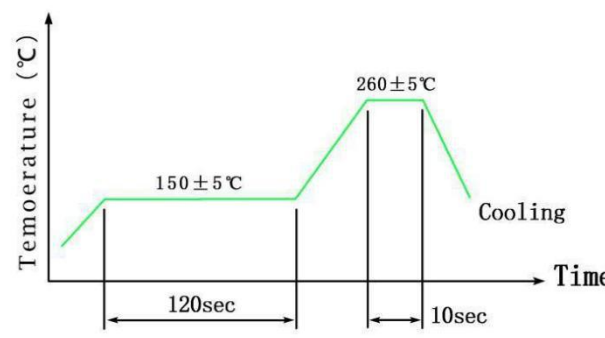
2.2 Carrier Dimensional Drawing (mm)



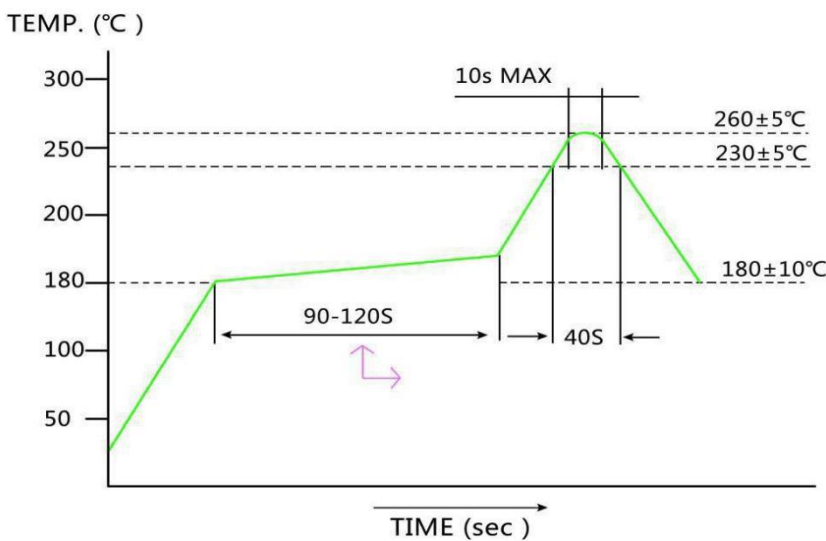
2.3 Reel Dimensional Drawing (mm)



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 $< \pm 10$ 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)	$1 \times 10^{-9} \text{ Pa}\cdot\text{m}^3/\text{s}$ Max

NO.4 Package specification

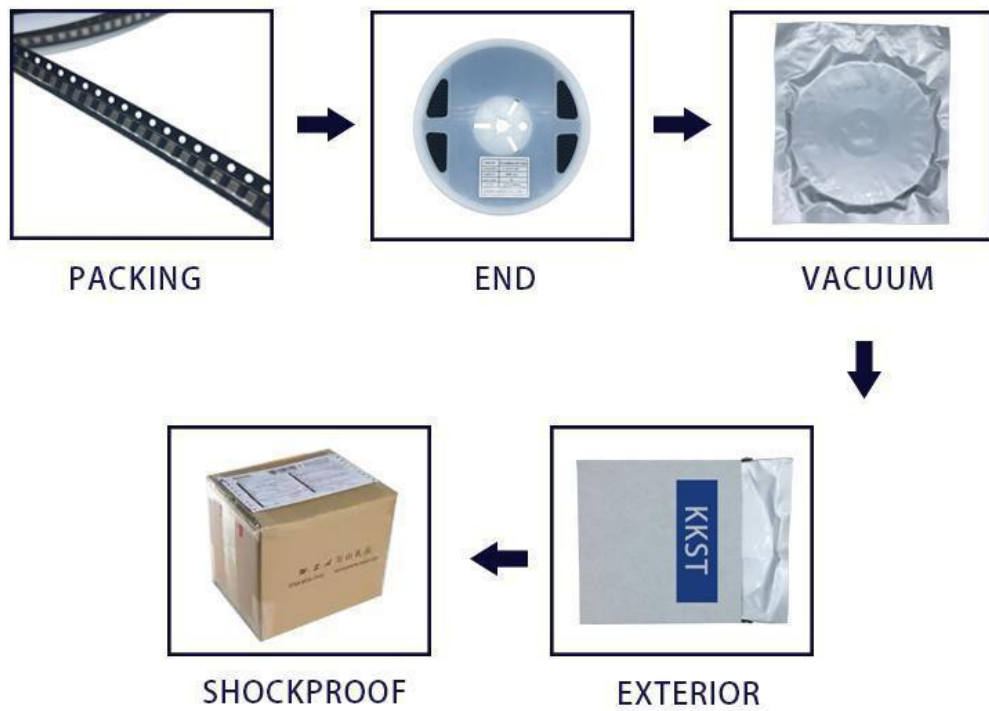
4.1 Marking



4.2 Label

KEYUANXIN TECHNOLOGY GO.,LTD		
Item	Crystal	QTY: 200PCS
P/N	KCR16384H03R	
FREQUENCY	16.3840MHz	DATE: 2018-03-9

4.3 Package specification





KEYUANXIN TECHNOLOGY GO.,LTD

浏览网址：www.szkyx.cn