



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
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NO.118 Zhenhua Road Futian District Shenzhen
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KEYUANXIN TECHNOLOGY GO.,LTD

Product Name: Crystals

Product Type:

HC-49S

Nominal Freq:

4. 0000MHz

ProvideBrand:

KKST

P/N:

KCR04000H03R

Customer P/N:

Approved By Customer

Signature:

Date:



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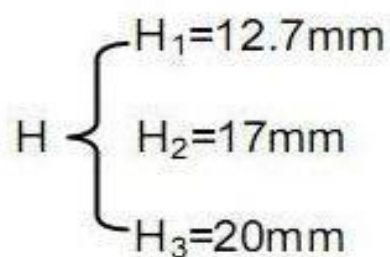
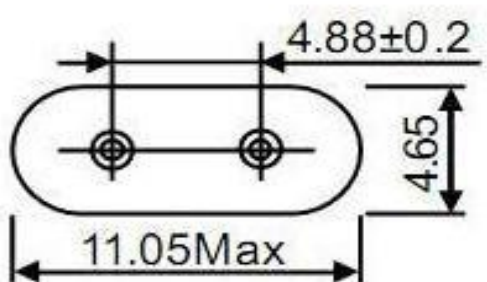
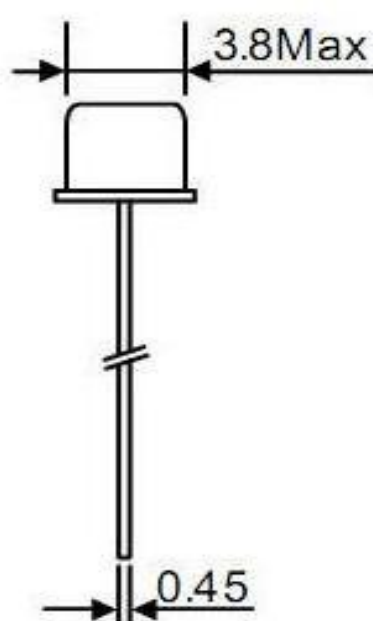
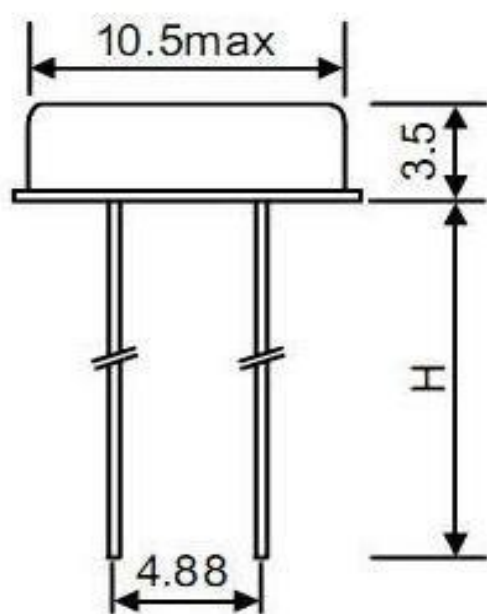
N0.1 Product specification and features

1.1 General characteristics		
Nominal frequency	4.000000MHz	
Overtone order	Fundamental	
Type	HC-49S	
Operating temperature	-20~70℃	
Storage temperature	-40~85℃	
1.2 Electric characteristics		
Adjustment tolerance: (at+25℃)	±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 M Ω Min	100VDC±15VDC
Aging	±3ppm/Year	
1.3 Other characteristics		
SPDB	<-3 dB	

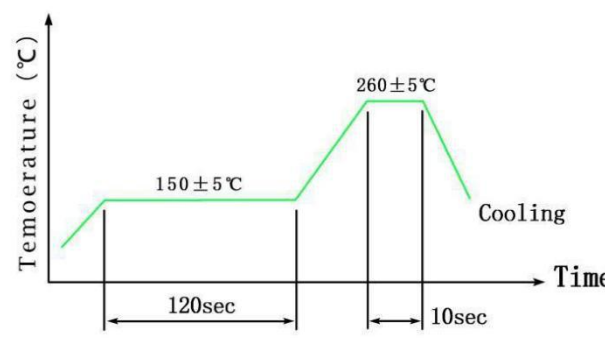
NO.2 Outline dimensions、Appearances

2.1 Product outline dimension(mm)

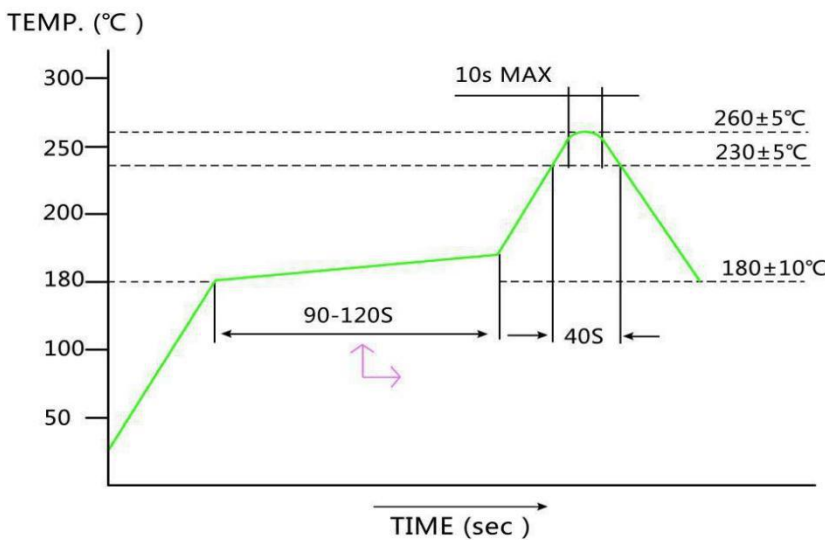
HC-49S



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	Temperature Cycle -40°C ~ 85°C , Dewell 30Min, 100 cycles  The graph shows Temperature (°C) on the y-axis and Time on the x-axis. The cycle consists of a ramp up to $150\pm 5^{\circ}\text{C}$, a dwell of 120sec, a ramp up to $260\pm 5^{\circ}\text{C}$, a dwell of 10sec, and a cooling ramp. The label 'Cooling' is placed next to the final downward slope.	(I)

3.1 Mechanism characteristics

B.1	Drop Test Device are dropped from a height of 100 cm onto 20mm thickness stainless plate executing 3 times of random drops	(I)
B.2	Resistance of Vibration Frequency: 10~55Hz, amplitude(total excursion): 1.5mm±15%,3 direction (X,Y,Z) each 2 hr	(I)
B.3	Resistance to soldering heat (Hand soldering method) Temperature: 370~400℃; Time: 3~4sec; Frequency: 2 times; Soldering iron: 60W/Min	(I)
B.4	Solderability 240±2℃, 3±0.5sec	(II)
B.5	Reflow) Resistance to soldering heat (Reflow) 260± 5℃; 10S; 2Times Reflow  The graph shows a temperature profile for reflow soldering. The y-axis is labeled 'TEMP. (°C)' with values 50, 100, 180, 200, 250, 300. The x-axis is labeled 'TIME (sec)'. - The temperature starts at 50°C and rises to 180°C. - A horizontal segment at 180°C is labeled '90-120S'. - The temperature then rises to a peak of 260±5°C. - A horizontal segment at the peak is labeled '10s MAX'. - The temperature then falls to 180±10°C. - A horizontal segment at 180±10°C is labeled '40S'. - Horizontal dashed lines indicate levels at 260±5°C and 230±5°C.	(I)



Item	Result NO.	Specification Requirements
1	(I)	Frequency variation $\leq \pm 10\text{ppm}$ 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)	$1 \times 10^{-9}\text{Pa.m}^3/\text{s}$ Max

NO.4 Package specification

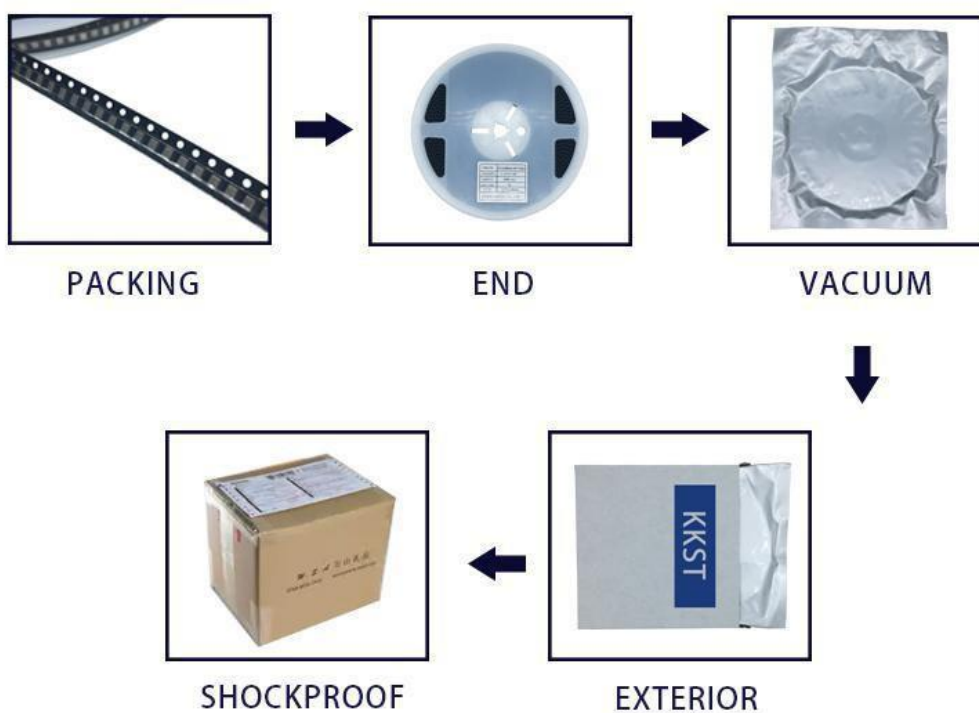
4.1 Marking



4.2 Label

KKST KEYUANXIN TECHNOLOGY GO.,LTD		
Item	Crystal	QTY: 200PCS
P/N	KCR04000H03R	
FREQUENCY	4.000MHz	DATE: 2018-03-9
		

4.3 Package specification





KEYUANXIN TECHNOLOGY GO.,LTD

浏览网址：www.szkyx.cn