



Issue	December 21, 2024
Rev.	1.0
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# CRYSTAL UNIT SPECIFICATIONS

**客户批准 Customer Approval**

(请批准后回签一份 **Please Return A Copy With Approval**)

<b>Customer</b>	
<b>Customer P/N</b>	
<b>Product</b>	<b>CRYSTAL RESONATORS</b>
<b>Spec</b>	<b>HC-49U-3L/500.0K~200.000M</b>
<b>A-Crystal P/N</b>	<b>AHL Series</b>

<b>Drawn</b>	<b>Checked</b>	<b>Approved</b>
<i>Caoqiang</i>	<i>Fengying</i>	<i>Tanlong</i>



**ZHEJIANG A-CRYSTAL**  
ELECTRONIC TECHNOLOGY CO., LTD.



## 1. ELECTRICAL SPECIFICATIONS

### 1.1 Hold Type: HC-49U-3L

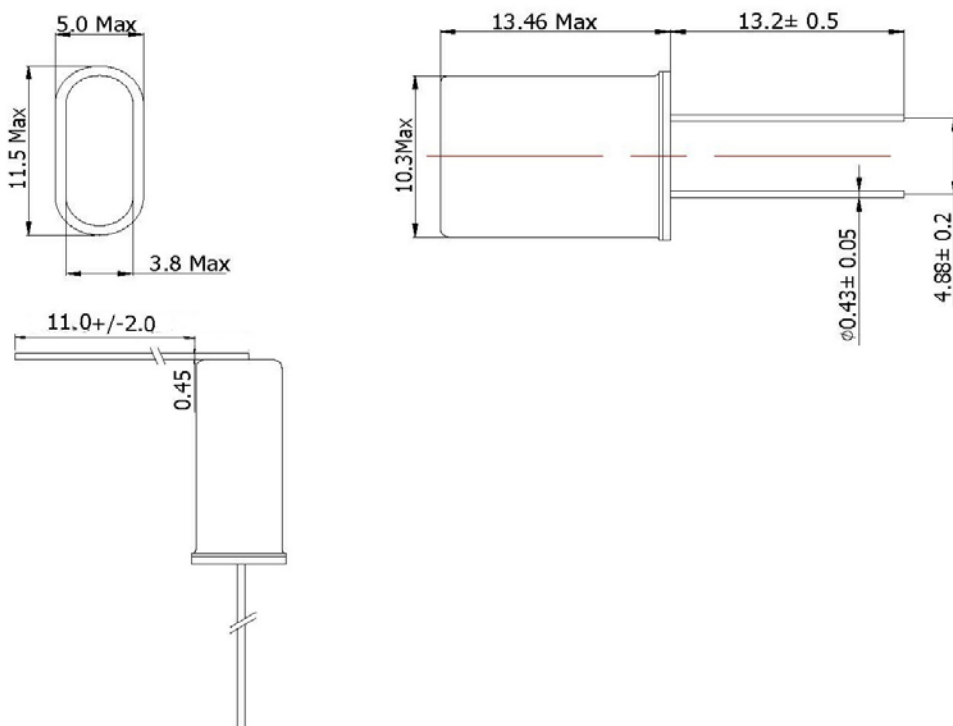
No.	Item	Symb	Electrical Specification				Remark
			Min.	Type	Max.	Units	
1	Nominal Frequency	F0	500.0K		200.00	MHz	
2	Mode of Vibration	<span style="background-color: black; color: black;">■</span> Fundamental $\triangle$ 3rd Overtone $\triangle$ 5th Overtone					
3	Frequency Tolerance	$\Delta F/F_0$	$\pm 10$	$\pm 30$	$\pm 50$	ppm	at 25°C $\pm$ 3°C
4	Operating Temperature Range	T <sub>OPR</sub>	-20 -40	-	+70 +85	°C	
5	Frequency Stability	T <sub>C</sub>	$\pm 30$	-	$\pm 50$	ppm	
6	Storage Temperature	T <sub>STG</sub>	-40	-	+85	°C	
7	Load capacitance	CL	6~specify			pF	
8	Equivalent Series Resistance	ESR	Seepage 1			$\Omega$	
9	Drive Level	DL	-	-	100	$\mu$ W	
10	Insulation Resistance	IR	500	-	-	M $\Omega$	At 100V <sub>DC</sub>
11	Shunt Capacitance	C <sub>0</sub>	-	-	7	pF	
12	Aging Per Year	F <sub>a</sub>	-5	-	+5	ppm	First Year
13	Package type	13.46*11.5*5.0					

#### Seepage1

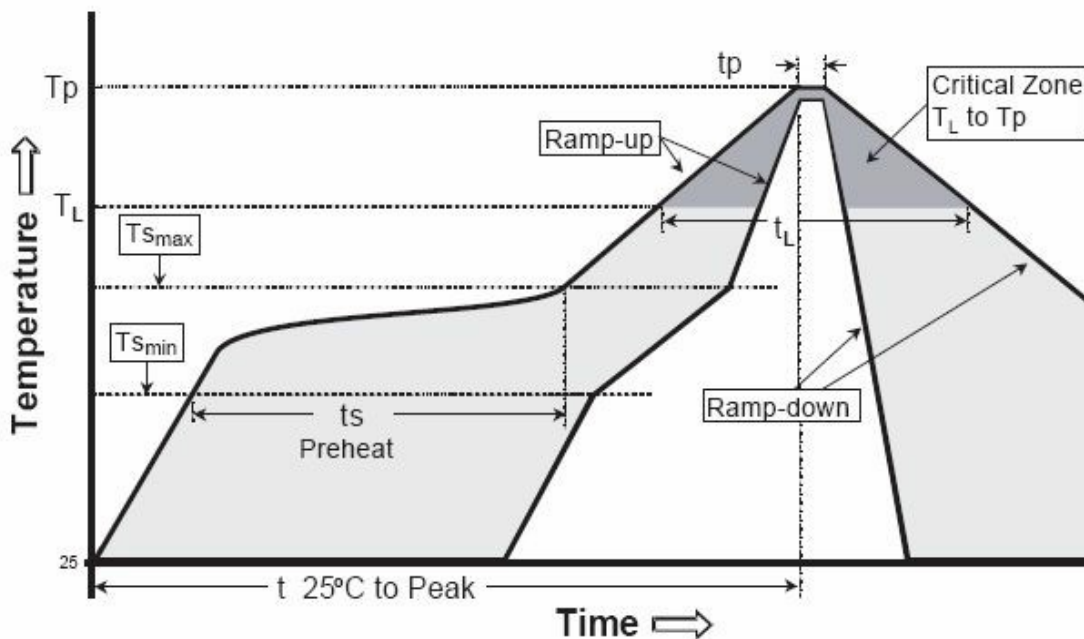
Frequency Range	Mode of Vibration	ESR ( $\Omega$ ) Max
0. 500MHz $\leq$ F0<1. 8432MHz	Fund	<3000
1. 8432MHz $\leq$ F0<3.000MHz	Fund	<500
3. 100MHz $\leq$ F0<4. 900MHz	Fund	<100
5. 000MHz $\leq$ F0<12. 000MHz	Fund	<40
12. 10MHz $\leq$ F0<40. 000MHz	Fund	<30
20. 100MHz $\leq$ F0<100. 000MHz	3rd OT	<40
100. 100MHz $\leq$ F0<150. 000MHz	5rd OT	<80
150. 100MHz $\leq$ F0 $\leq$ 200. 000MHz	7th OT	<100



1.2 Dimension (Unit: mm)



1.3 The soldering requirements



$T_s = 180^\circ\text{C} / 70 \sim 100\text{sec}$ ,  $T_L = 240^\circ\text{C} / 20 \sim 50\text{sec}$ ,  $T_p = 250^\circ\text{C} / 7 \sim 8\text{sec}$



## 2. PACKING

### 2.1 Section of package

Package is made of corrugated paper with thickness of 0.8cm. Package has 10 inner boxes, each box has 2 Tray

#### 2.1.1 Quantity of package

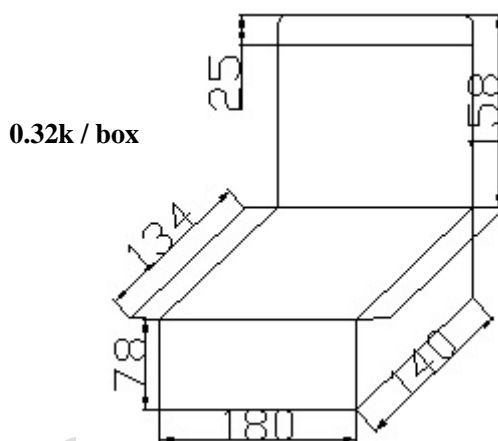
Each Tray 160 pieces of Crystal Resonators

Per inner box 2 Tray (0.16k/tray)

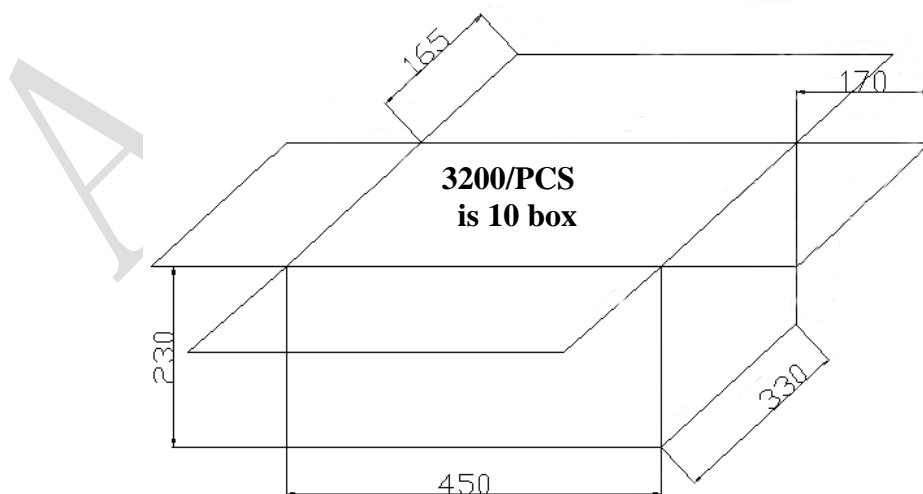
Per package 10 inner boxes

(3200 pieces of Crystal Resonators)

#### 2.1.2 Inner Box Dimensions (Unit: mm)



#### 2.1.3 Dimensions and Mark (Unit: mm)





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**ELECTRONIC TECHNOLOGY CO., LTD.**



### 3. Products Code

#### 3.1 DIP Crystal Resonators/MHz

公司代码 浙江一晶	产品型号 (2位)	工作频率 (全频点位数)	负载电容 (1位字母)	调整频差 (1位字母)	温度频差 (1位字母)	工作温度 (1位字母)	其它
A-crystal Logo	Package	Nominal Frequency	Load Capacitance	Frequency Tolerating	Freq Temp Characteristics	Operating Temperture Range	Others
A	HL (HC-49U-3L)	8.000M	A = 12.5PF	01=5PPM	A=10PPM	1=0~50	Special
		12.000M	B = 10PF	02=10PPM	B=15PPM	2=-10~60	
			C = 9PF	03=20PPM	C=20PPM	3=-10~70	
			D = 8PF	04=30PPM	D=25PPM	4=-20~70	
			E = 7PF	05=40PPM	E=30PPM	5=-30~85	
			F = 6PF	06=50PPM	F=50PPM	6=-40~85	
			G = 16PF	07=100PPM	G=100PPM	7=-40~105	
			H = 18PF			8=-40~125	
			J = 20PF				
			K = 22PF				
			L = 30PF				