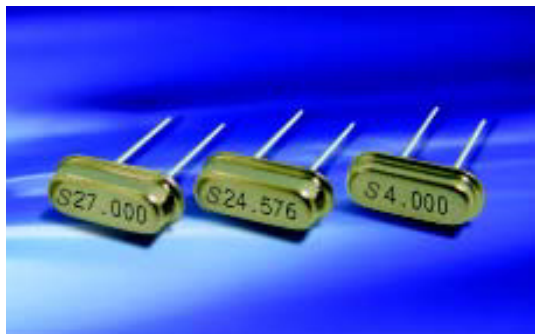


## ● Crystal Resonator (晶体谐振器) – Led Type (引线型)

### ● HC-49/US



#### ● Applications 用途:

Personal computer, Notebook, Add-on card, Monitor, USB stick, CATV sets, HDD, Wireless communication, Digital Camera, Set top boxes, Automobile, Fire control, Industry automation, Instrument, etc. 个人电脑, 笔记本电脑, 扩充卡, 显示屏, U盘、高频头、硬驱、无线通讯, 数码相机, 机顶盒, 汽车, 消防, 工业自动化, 仪表等等。

#### ● Features 特征:

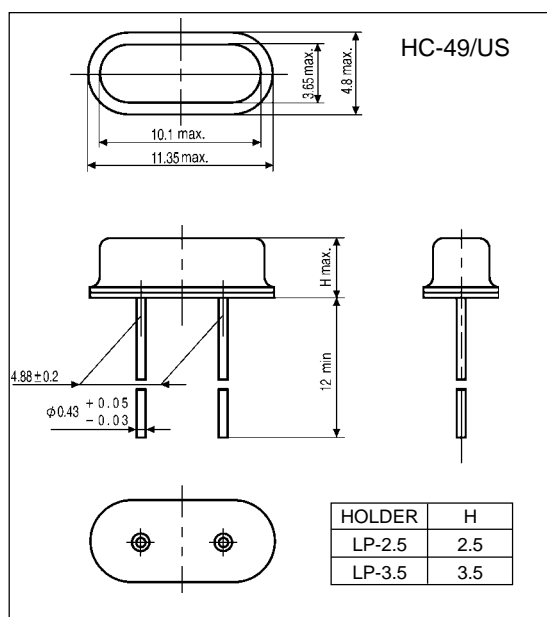
- Low profile metal package. 矮背型金属封装。
- Excellent frequency aging stability. 具备优质的频率老化特性。
- High heat & shock resistance. 高耐热耐冲击电阻。

#### ● Typical specifications 规格参数

Type	型号	LP-3.5 / LP-2.5		
Frequency range	频率范围	3.5 ~ 40MHz	26 ~ 80MHz	30 ~ 50MHz
Cut / Vibration mode	切型 / 振荡	(AT)Fundamental (基频)	(AT)3rd overtone (三次泛音)	(BT)Fundamental (基频)
Frequency tolerance (at +25°C)	调整频差	$\pm 10, \pm 15, \pm 20, \pm 30, \pm 50 \times 10^{-6}$		$\pm 30, \pm 50 \times 10^{-6}$
Frequency stability	温度频差	$\pm 30, \pm 50 \times 10^{-6}$ Typical, See Table 1 (见表1)		$\pm 100 \times 10^{-6}$
Operating temperature range	工作温度	-10 ~ +60°C (-40 ~ +85°C), See Table 1 (见表1)		-10 ~ +60°C
Equivalent series resistance	等效电阻	See Table2 (见表2)		
Load capacitance	负载电容	Series, 10pF, 12pF, 16pF, etc.		
Shunt capacitance	静电容	5pF max.		
Level of drive	激励功率	10 $\mu$ (100 $\mu$ W max.)		
Aging	老化率	$\pm 3, \pm 5$ ppm/year		
Storage temperature range	储存温度	-55 ~ +125°C		

- Please consult for other specifications. (若有其它规格需求请告知)

#### ● Outline Dimensions [Unit: mm] 外形尺寸



#### ● Table1: Frequency stability (ref. to 25°C) 频率稳定性

O.P Temp.	$\pm 2.5$ ppm	$\pm 5$ ppm	$\pm 10$ ppm	$\pm 20$ ppm	$\pm 30$ ppm
0 ~ +50°C	●	●	●	●	●
-10 ~ +60°C	●	●	●	●	●
-20 ~ +70°C		●	●	●	●
-40 ~ +85°C			●	●	●

#### ● Table2: Equivalent series resistance (ESR) 等效电阻

AT Fund.(MHz)	ESR( $\Omega$ )	AT Fund.(MHz)	ESR( $\Omega$ )
3.500 ~ 3.799	180	16.000 ~ 19.999	40
3.800 ~ 4.499	150	20.000 ~ 40.000	30
4.500 ~ 5.999	120	<b>AT 3rd Overtone</b>	<b>ESR(<math>\Omega</math>)</b>
6.000 ~ 7.999	80	26.000 ~ 39.999	100
8.000 ~ 9.999	70	40.000 ~ 80.000	80
10.000 ~ 11.999	60	<b>BT Fund. (MHZ)</b>	<b>ESR(<math>\Omega</math>)</b>
12.000 ~ 15.999	50	30.000 ~ 50.000	40