



<b>Specification</b>	<b>AXX49S</b>	Issue: 01	Date: 2005-01-15
<b>Oscillator type : Quartz Crystal Unit HC-49/U with low profile</b>			

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	3.579		90	MHz	
Crystal cut	AT/BT				
Mode	AT1	3.579 ~ 35		MHz	AT Fundamental mode
	BT1	20 ~ 40		MHz	BT Fundamental mode
	AT3	25 ~ 90		MHz	AT 3 <sup>rd</sup> overtone
Load capacitance C <sub>L</sub>	5 ~ 50 pF or Series			pF	See ordering code
Adjustment tolerance	± 5 ~ ± 50			ppm	See ordering code
Frequency stability					
Frequency stability over temperature range	± 3 ~ ± 50			ppm	See Table 1
operating temperature range (steady state)	-40		+105	°C	See Table 1
long term (aging)		± 2	± 5	ppm	per year
Resonance resistance R <sub>r max</sub>				Ω	See Table 2
Motional capacitance C <sub>1</sub>				fF	
Static capacitance C <sub>0</sub>			7	pF	
Drive level	0,01	100	1000	μW	
Insulation resistance	500			MΩ	100 V DC
Storage temperature range	-45		+105	°C	
Enclosure (see drawing)	HC-49S				IEC 60122-3 Type CU 01
Can height	S: 3.5 max S1: 2.5 max			mm mm	
Flange width	max. 4.85			mm.	
SMD configuration					See type HC-49SMD
marking	Frequency (MHz) AXX49S wwAXyy				Side 1  Date Code & MfG Code
Packing	Bulk / Tape & reel				T&R On request

**Notes:**

1. Terminology and test conditions are according to IEC standard IEC60122-1, unless otherwise stated
2. Measurement technique according to IEC 60444-5 or equivalent

**Table 1: Frequency Stability over Temperature**

	ppm	± 3	± 5	± 7	± 10	± 15	± 20	± 30	± 50
°C	Code	1	2	3	4	5	6	7	8
-10 ~ + 60	A	●	●	●	●	●	●	●	●
-20 ~ + 60	B		●	●	●	●	●	●	●
0 ~ + 70	C		●	●	●	●	●	●	●
-10 ~ + 70	D		●	●	●	●	●	●	●
-20 ~ + 70	E		●	●	●	●	●	●	●
-30 ~ + 60	F			●	●	●	●	●	●
-20 ~ + 85	G				●	●	●	●	●
-30 ~ + 70	H				●	●	●	●	●
0 ~ + 85	I				●	●	●	●	●
-40 ~ + 85	J					●	●	●	●
-40 ~ + 90	K						●	●	●
-40 ~ + 105	L							●	●

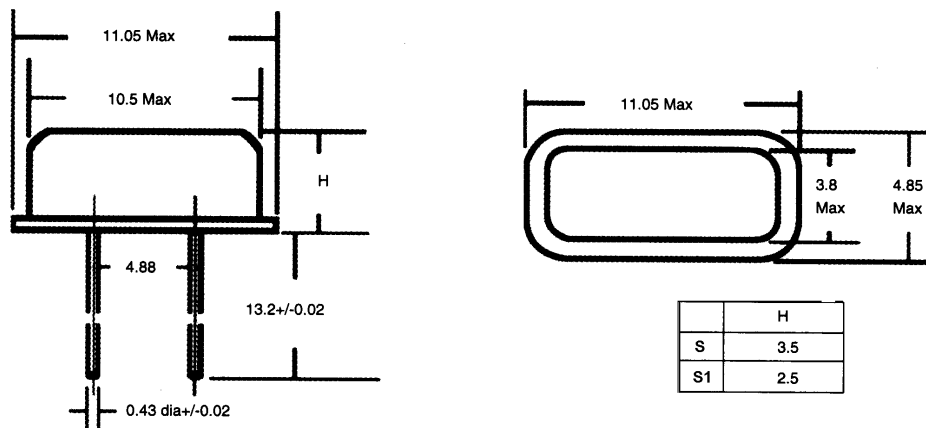
**Table 2: Resistance R<sub>r</sub>**

Frequency [MHz]	Mode	R <sub>rmax</sub> [Ω]
3.579 ~ 3.999	AT1	150
4.0 ~ 4.999	AT1	130
5.0 ~ 5.999	AT1	120
6.0 ~ 7.999	AT1	100
8.0 ~ 9.999	AT1	80
10.0 ~ 14.999	AT1	60
15.0 ~ 35	AT1	40
20 ~ 40	BT1	40
25 ~ 90	3 <sup>rd</sup>	70

## Ordering Code:

Type	Frequency	Load capacitance	Mode	Adjustment Tolerance	Freq. stability over temperature	Packing
S or S1 = Height options	[MHz]	SR: Series 18: 18 pF	AT1 BT1 AT3	[±ppm]	Code :Table 1	B: Bulk T&R: Tape & Reel
<b>AXX49S</b>	<b>4.000</b>	<b>18</b>	<b>AT1</b>	<b>10</b>	<b>A3</b>	<b>T&amp;R</b>

## Enclosure drawing :



## Environmental conditions

Test	IEC 60068 Part ...	IEC 61178-1 clause ...	Test conditions
Visual inspection, dimensions		4.5 4.6	Enclosure styles as in IEC 60122-3, if applicable
Sealing tests	2-17	4.8.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20	4.8.3	Test Ta (235 ± 5)°C Method 1 Test Tb Method 1A, 5s
Shock	2-27	4.8.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Bump	2-29	4.8.6	Test Eb, 4000 bumps per Axes, 40g, 6 ms
Free fall	2-32	4.8.9	Test Ed procedure 1, 2 drops from 1m height
Vibration, sinusoidal	2-6	4.8.7	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 1 kHz, 10g
Rapid change of temperature	2-14	4.8.5	Test Na, 10 cycles at extremes of operating temperature range
Dry heat	2-2	4.8.11	Test Ba, 16 h at upper temperature indicated by climatic category
Damp heat, cyclic	2-30	4.8.12	Test Db variant 1 severity b), 55°C/95% r.H., 6 cycles
Cold	2-1	4.8.13	Test Aa, 2 h at lower temperature indicated by climatic category
Climatic sequence	1-7	4.8.14	Sequence of 4.8.11, 4.8.12 (1 <sup>st</sup> cycle), 4.8.13, 4.8.12 (5 cycles)
Damp heat, steady state	2-3	4.8.15	Test Ca, 56 days
Endurance tests - ageing - extended aging		4.9.1 4.9.2	30 days @ 85°C 1000h, 2000h, 8000h @85°C