AXTAL ADVANCED XTAL PRODUCTS

Specification	AXX50	Rev.: 2	Date: 2014-05-09

Type: **Quartz Crystal Unit in package HC-50/U (with plugs)**

Parameter	min.	typ.	Max.	Unit	Condition
Frequency range	1.6 18 30 90 120		40 120 190 190 200	MHz MHz MHz MHz MHz	Fundamental 3rd overtone 5th overtone 7th overtone 9th overtone
Crystal cut	AT				
Load capacitance C_L	Series or 5 pF to 50 pF				
Adjustment tolerance @25°C	± 5 to ± 50			ppm	See ordering code
Frequency stability					
Frequency stability over temperature	± 3 to ± 50			ppm	See table 1 and ordering code
Operating temperature range	0°/50° to -55°/+105°			°C	
Long term (aging) per year		±2	±3	ppm	@ 40°C
Series resonance resistance R_1				Ω	See chart
Motional capacitance C_1				fF	Note 3
Static capacitance C_0			7	pF	
Nominal drive level		100		µW	
Drive level dependence (DLD)	According to				IEC 60444-6
Unwanted responses SF = Rspur/R1					Note 3
Insulation resistance	100			MΩ	100 V DC
Storage temperature range	-55		+105	°C	
Enclosure (see drawing)	HC-50/U		HC-50/11		IEC 60122-3
Can height H max, LK max	13.4		11.2	mm	
Pin diameter D	1.07 max.			mm	
Pin length W	6.3 max.			mm	
Packing	bulk				
RoHS compliant	YES				

Notes:

1. Terminology and test conditions are according to IEC standard IEC60122-1 or MIL-C3098
2. Measurement technique according to IEC 60444-5 or equivalent
3. On request. Please consult factory

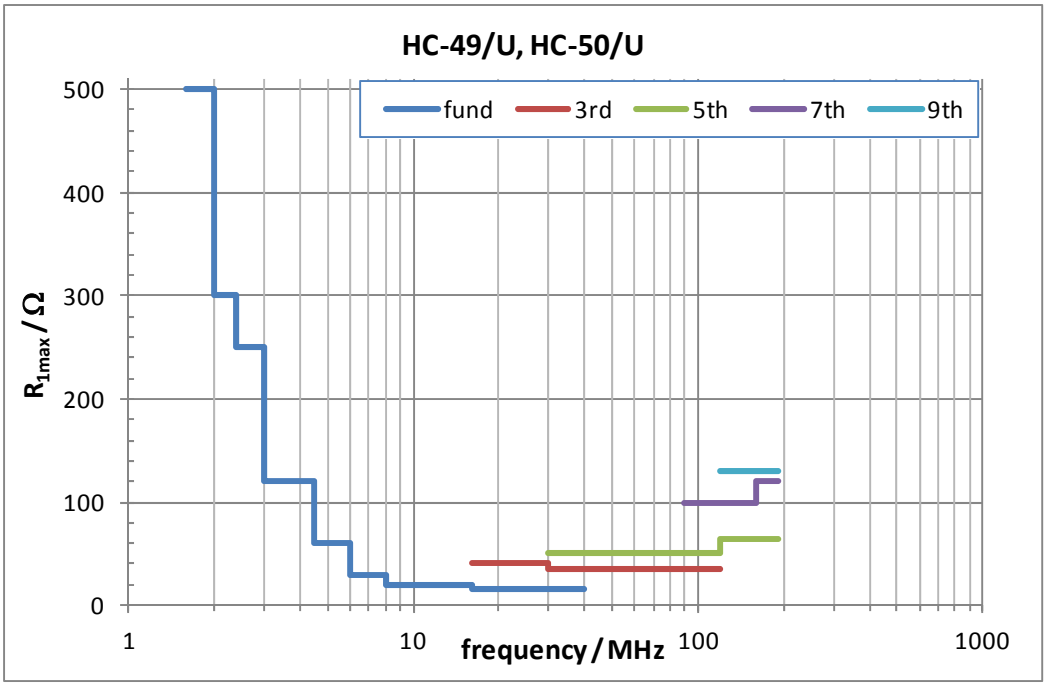
Table 1: Frequency stability over temperature

Temperature Range [°C]	ppm Code	±3 03	±4 04	±5 05	±7 07	±10 10	±15 15	±20 20	±25 25	±30 30	±40 40	±50 50
0 … +50	**0A**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
-10 … +60	**1B**	**-**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
-20 … +70	**2C**	**-**	**-**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
-30 … +80	**3E**	**-**	**-**	**-**	**O**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
-40 … +85	**4F**	**-**	**-**	**-**	**-**	**-**	**O**	**X**	**X**	**X**	**X**	**X**
-55 … +105	**5G**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**O**	**X**	**X**	**X**

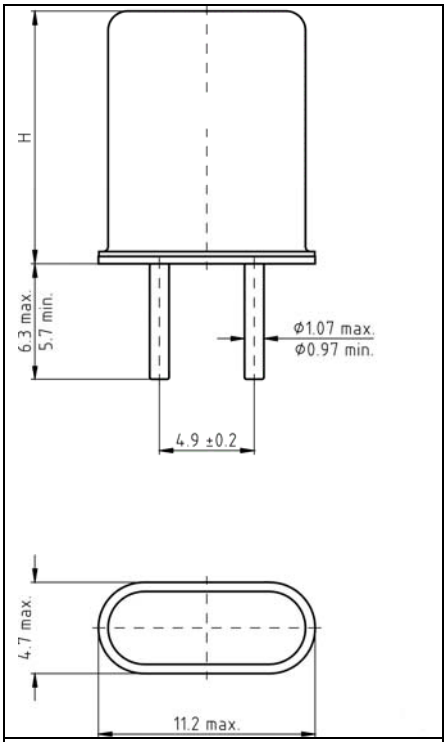
X = available*, **O** = available on request, **-** not available

*Other temperature ranges on request

Maximum series resonance resistance $R_{1\ max}$ [Ω]



Enclosure drawings



HC-50/U

Ordering Code

Model	Frequency	Load Cap	Mode	Adjustment	Stability		Package Option
AXX50	[MHz]	[pF] or S= Series	1 = Fund 3,5,…OT	[ppm]	[ppm]	[Code]	_[blank] = HC-50 T11 = HC-50
AXX50	10.000	18	1	05	05	1B	

Example for HC-50/U: AXX50-10.000-18-1-05-05-1B
Example for HC-50/11: AXX50-10.000-18-1-05-05-1B-T11

Environmental conditions

Test	IEC 60068-2 Part …	IEC 60122-1 Clause …	Test conditions
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
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
Endurance tests - ageing - extended aging		 4.9.1 4.9.2	 30 days @ 85°C 1000h, 2000h, 8000h @85°C

Revision History

Rev.	Date [dd.mm.yyyy]	Remarks	Author	Checked
1	15.01.2005	First issue	BN	BN
2	09.05.2014	Major editorial changes, order code changed	BN	BN