

Specification	AXX52 (AXUM-1)	Rev.: 2	Date: 2014-05-09
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Type: Quartz Crystal Unit in miniature package HC-52/U (UM-1) and its SMD version with Clip (Jacket)

Parameter	min.	typ.	Max.	Unit	Condition
Frequency range	3.5		45	MHz	Fundamental
	16		120	MHz	3 rd overtone
	60		190	MHz	5 th overtone
	90		190	MHz	7 th overtone
	120		200	MHz	9 th 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 $SF = R_{spur}/R_1$					Note 3
Insulation resistance	100			MΩ	100 V DC
Storage temperature range	-55		+105	°C	
Enclosure (see drawing)	HC-52/U		UM-1		IEC 60122-3
Can height H max	8.8		8.0	mm	
Flange width B max.	3.3		3.0	mm	
Lead diameter D nom.	0.45		0.35	mm	
SMD configuration	Package option J				See ordering code
Overall length LC	12.6		11.9	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

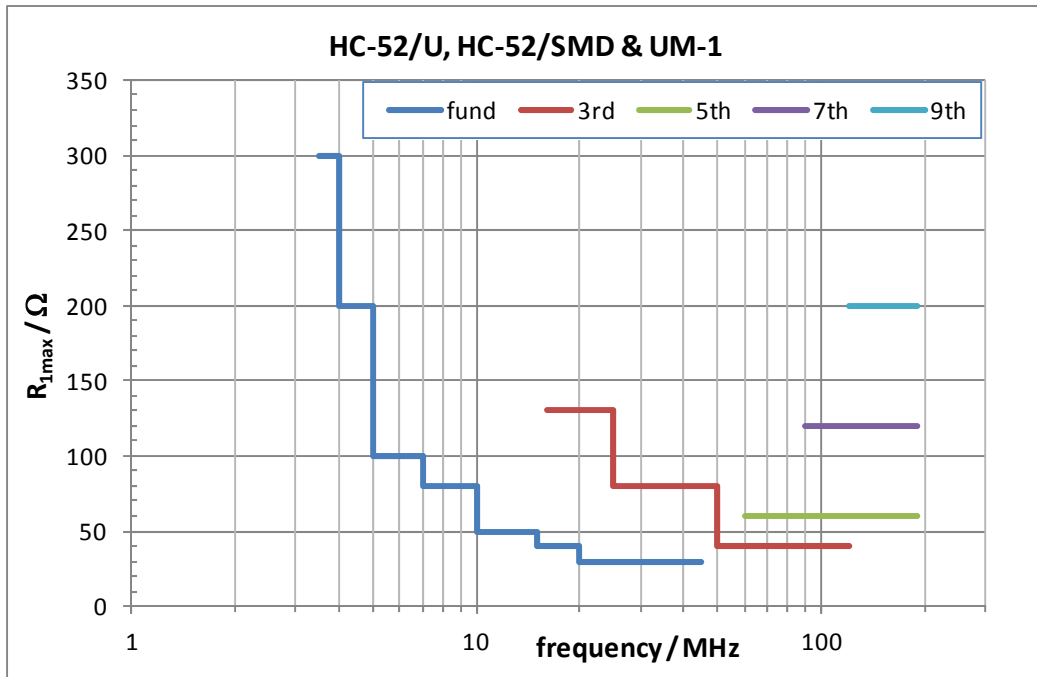
Table 1: Frequency stability over temperature

Temperature Range [°C]	ppm	±3	±4	±5	±7	±10	±15	±20	±25	±30	±40	±50
	Code	03	04	05	07	10	15	20	25	30	40	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	-	-	-	-	-	-	-	X	X	X	X

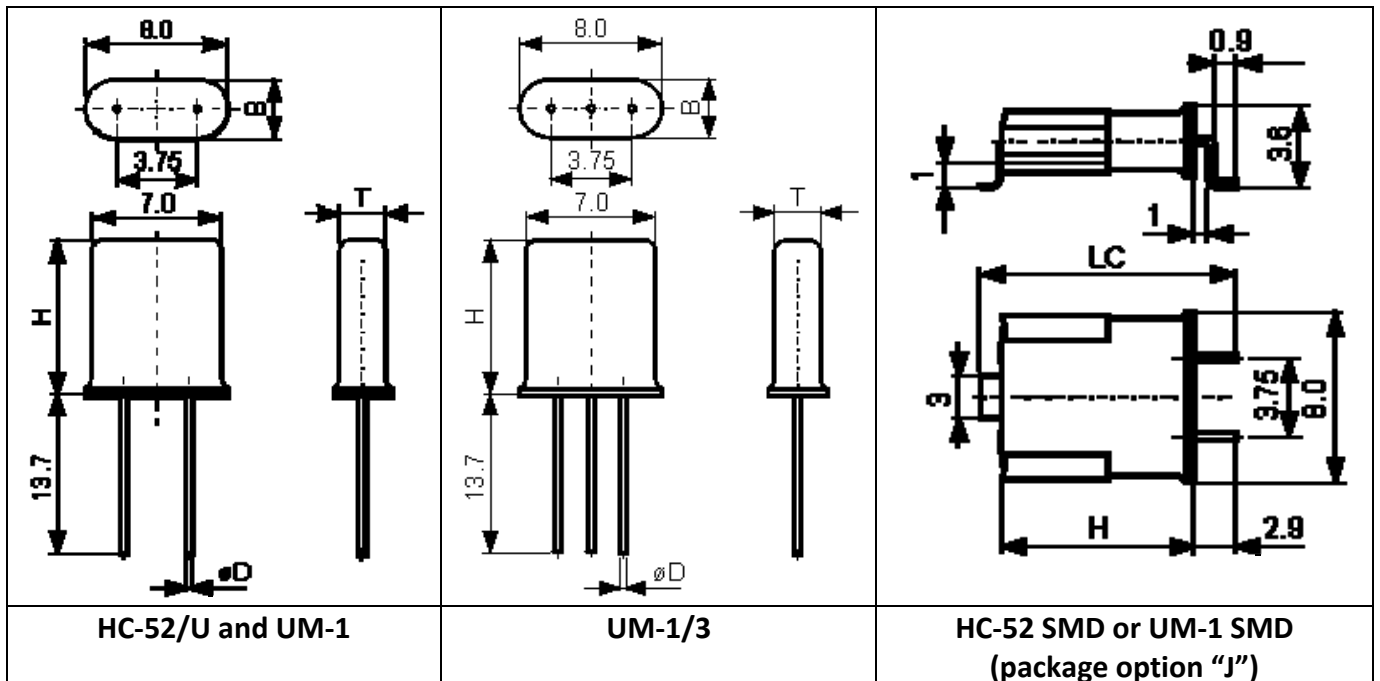
X = available*, O = available on request, - not available

*Other temperature ranges on request

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



Enclosure drawings



Ordering Code

Model	Frequency	Load Cap	Mode	Adjustment	Stability		Package Option
AXX52 AXUM1	[MHz]	[pF] or S= Series	1 = Fund 3,5,...OT	[ppm]	[ppm]	[Code]	_[blank] = HC-52/U or UM-1 3 = UM-1/ 3-pin J = Clip (jacket)
AXX52	10.000	18	1	05	05	1B	

Example for HC-52/U: AXX52-10.000-18-1-05-05-1B

Example for UM-1: AXUM1-10.000-18-1-05-05-1B

Example for UM-1 (3-pin): UM-1-10.000-18-1-05-05-1B-3

Example for HC-52/SMD: AXX52-10.000-18-1-05-05-1B-J

Example for UM-1/SMD: AXUM1-10.000-18-1-05-05-1B-J

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