

# HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series



Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

**FEATURES:**

- High reliability & Low Cost
- Tight stability & extended temperature
- Proven resistance welded metal package

**APPLICATIONS:**

- Home electronics
- Computers, modems, and communications
- High-precision TCXO and clock applications
- Microprocessors

▷ **STANDARD SPECIFICATIONS:**

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	3.579545		70		
Operation mode	3.579545		24.0	MHz	Fundamental AT-cut (Standard)
	24.01		70.00		3 <sup>rd</sup> OT AT-cut (Standard)
	24.01		50.00		Fundamental AT-cut or BT-cut (See options)
Operating Temperature	0		+70	°C	See options
Storage Temperature	-55		+125	°C	
Frequency Tolerance	-50		+50	ppm	See options
Frequency Stability over the Operating Temperature ( ref. to +25°C)	-50		+50	ppm	See options
Equivalent series resistance (R1)	See table 1 below			Ω	
Shunt capacitance (C0)			7	pF	
Load capacitance (CL)		18		pF	See options
Drive Level		100	1000	μW	
Aging @ 25°C per year			±5	ppm	
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V
Drive Level Dependency (DLD, Minimum 7 points tested: from 1μW to 500μW)			±10	ppm	Δfrequency (Max – Min)
			25% of Max ESR	Ω	ΔESR (Max – Min)
			Max ESR in Table 1	Ω	Max ESR over DLD range

**Table 1**

Frequency (MHz)	ESR(Ω) max.
3.579 - 4.999 (Fund.)	180
5.000 - 5.999 (Fund.)	120
6.000 - 7.999 (Fund.)	100
8.000 - 8.999 (Fund.)	80
9.000 - 9.999 (Fund.)	60
10.000 - 15.999 (Fund.)	50
16.000 - 50.000 (Fund.)	40
24.01 - 31.999 (3rd O/T)	100
32.000 - 70.00 (3rd O/T)	80

REVISED: 11.8.2016



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 ISO9001-2008  
 CERTIFIED

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11.5 x 5.0 x 3.5 mm

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABL -  MHz -  -  -  -  -  -

**Frequency in MHz**  
Please specify the frequency in xx.xxxxMHz.  
e.g. 14.3181MHz

**Packaging**  
Blank: Bulk  
T: Tape & Reel  
TRAY: Tray

**Load Capacitance (pF)**  
Please specify CL (Minimum 10pF) in pF or S for series

**Value Added**

I	Insulator Tab
L2	Middle 3rd lead
QXX	Trimmed leads
Q15	for 0.15" length

**Custom ESR if other than standard**  
R  
□: Specify a value in Ω (e.g.: R40)

**Oscillation Mode**  
F: Fund. AT>24MHz  
FB: Fund. BT>24MHz

**Operating Temp.**

A: -10°C ~ +60°C
B: -20°C ~ +70°C
C: -30°C ~ +70°C
N: -30°C ~ +85°C
D: -40°C ~ +85°C
J*: -40°C ~ +105°C
K*: -40°C ~ +125°C
L*: -55°C ~ +125°C

**Freq. Tolerance**

H5: ± 5 ppm
1: ± 10 ppm
7: ± 15 ppm
2: ± 20 ppm
3: ± 25 ppm
4: ± 30 ppm

**Freq. Stability**

U**: ± 10 ppm
G: ± 15 ppm
X: ± 20 ppm
W: ± 25 ppm
Y: ± 30 ppm
H: ± 35 ppm
Q: ± 100 ppm
R: ± 150 ppm

NOTE:

\* Frequency stability ±50ppm, ±100ppm, ±150ppm only. Contact ABRACON for tighter frequency stability.

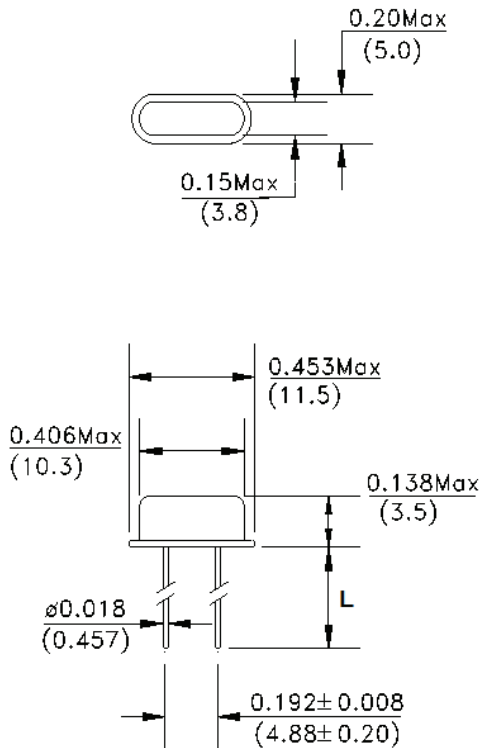
\*\* Contact ABRACON for availability of ±10ppm with other operating temperature options.

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## OUTLINE DRAWING:

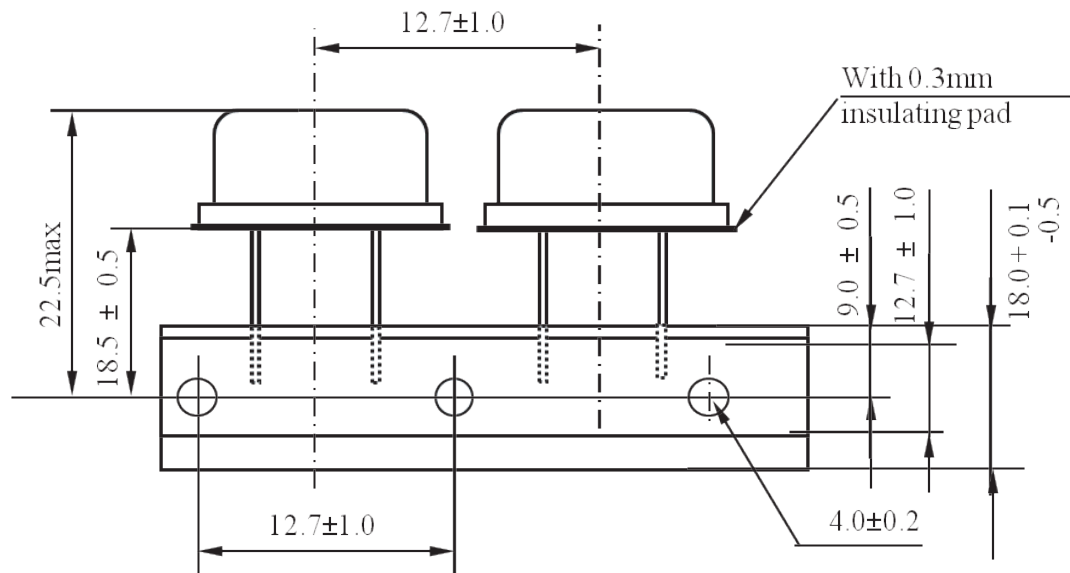


L	Packaging
5.5mm Min	Bulk
20.0 ± 0.5mm	Tape & Reel

Dimensions: inch (mm)

## TAPE & REEL:

T= Tape and reel (1,000pcs/reel)



Dimensions: mm

**ATTENTION:** Abracon LLC products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.

REVISED: 11.8.2016