

# HC/49US (AT49) MICROPROCESSOR CRYSTAL

## ABL2 Series



RoHS/RoHS II



11.5 x 5.0 x 2.5 mm

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

### FEATURES:

- Reduced height at 2.5mm
- High reliability & Low Cost
- Tight stability & extended temperature
- Proven resistance welded metal package

### APPLICATIONS:

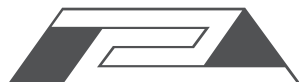
- Home electronics
- Computers, modems, and communications
- High-precision TCXO and clock applications
- Microprocessors

## 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



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## OPTIONS AND PART IDENTIFICATION:

ABL2 -  MHz -  -  -    -  -  -

### Frequency in MHz

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

### Load Capacitance (pF)

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

### Custom ESR if other than standard

R  
□: Specify a value in  $\Omega$   
(e.g.: R40)

### Packaging

Blank: Bulk  
T: Tape & Reel  
TRAY: Tray

### Value Added

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

### 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: $\pm 5$ ppm
1: $\pm 10$ ppm
7: $\pm 15$ ppm
2: $\pm 20$ ppm
3: $\pm 25$ ppm
4: $\pm 30$ ppm

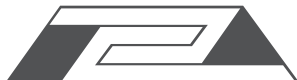
### Freq. Stability

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

#### NOTE:

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

\*\* -10 to +60C only.

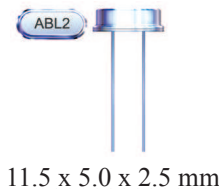


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ABL2 Series

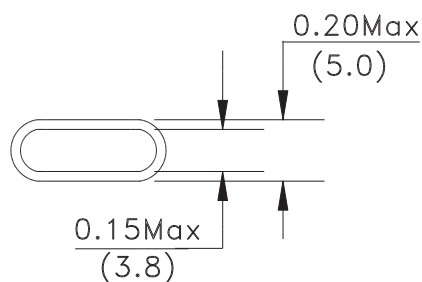


RoHS/RoHS II

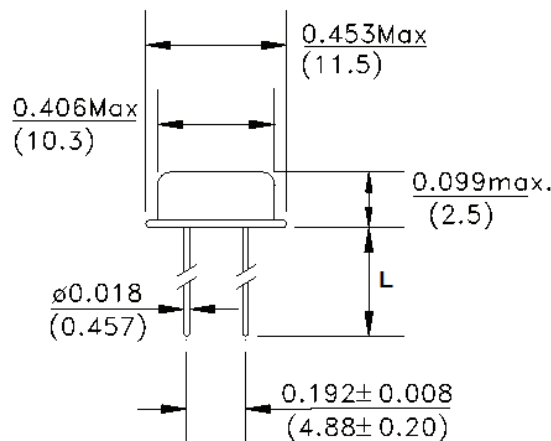


11.5 x 5.0 x 2.5 mm

## OUTLINE DIMENSIONS:



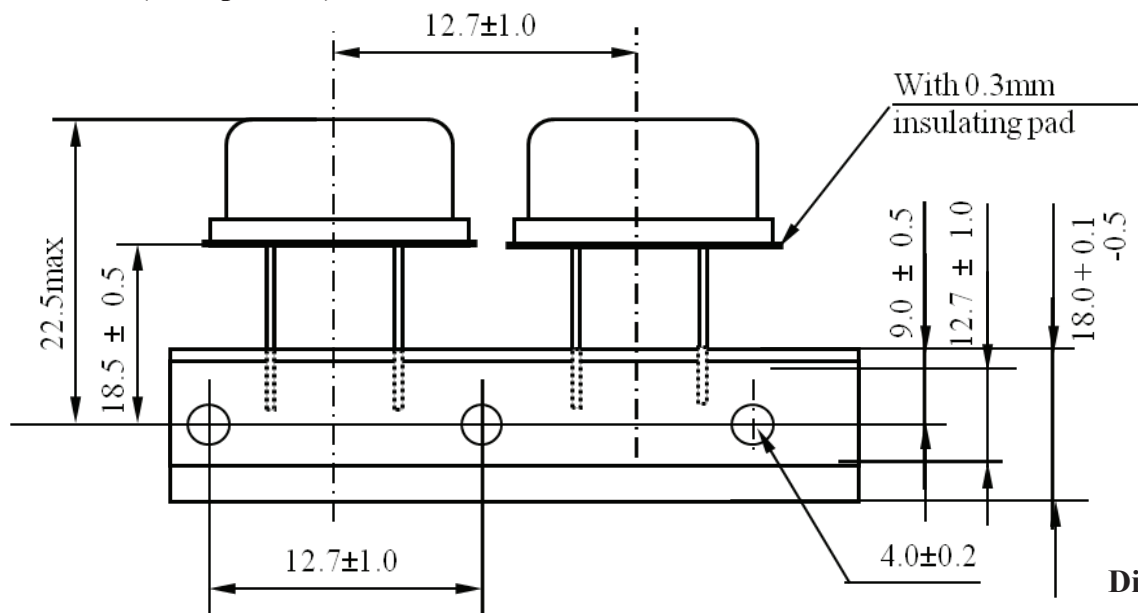
L	Packaging
5.5mm Min	Bulk
20.0 ± 0.5mm	Tape & Reel



Dimensions: inch (mm)

## TAPE & REEL:

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



Dimensions: mm

**ATTENTION:** Abracon Corporation's 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 Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS  
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CERTIFIED



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