

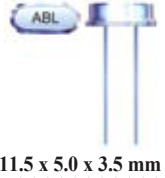
# HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series

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



RoHS Compliant



11.5 x 5.0 x 3.5 mm

## FEATURES:

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

## APPLICATIONS:

- Home electronics
- Computers, modems, and communications
- Automotive and industrial
- 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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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

**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 Ω (e.g.: R40)

**Packaging**  
Blank: Bulk  
T: Tape & Reel  
P: Foam  
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: ± 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.

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



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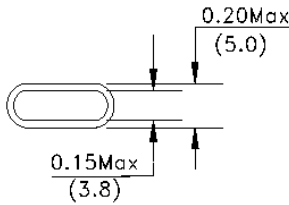


RoHS  
Compliant

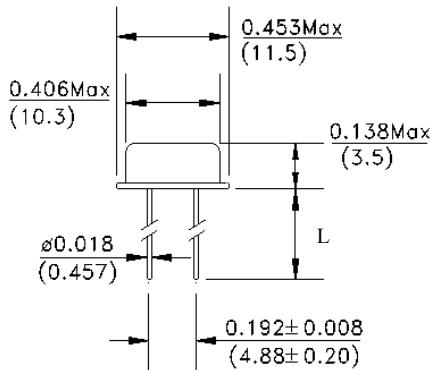


11.5 x 5.0 x 3.5 mm

## OUTLINE DRAWING:



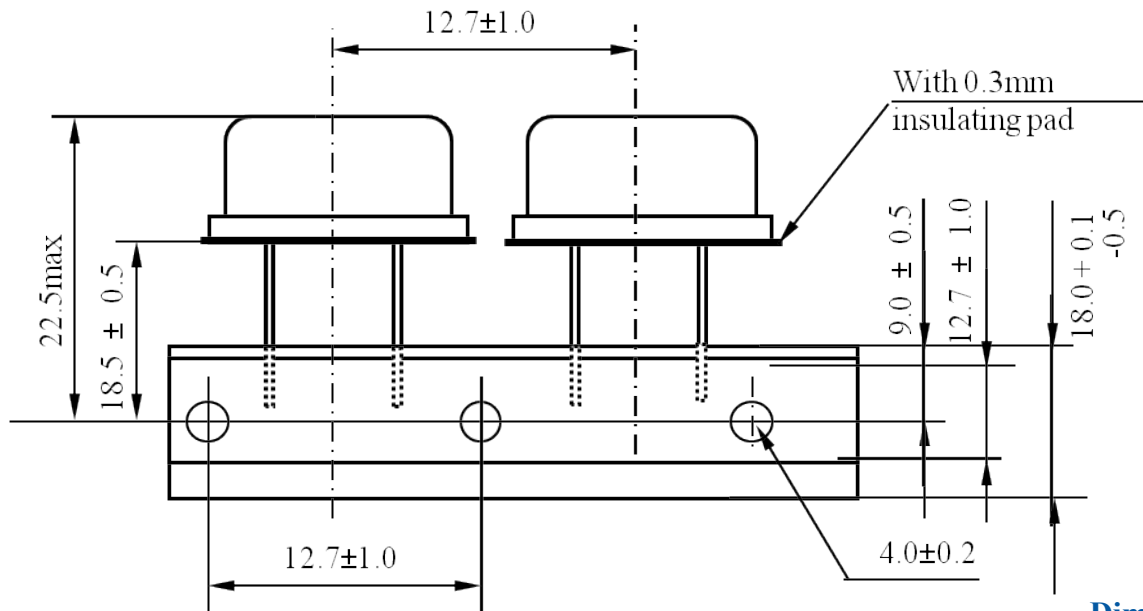
L	Packaging
12.8mm Min	Bulk
20.0 ± 0.5mm	Tape & Reel



Dimensions: inch (mm)

## TAPE & REEL:

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



Dimensions: mm

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