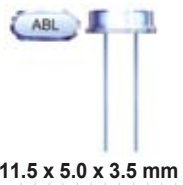


HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series



RoHS
Compliant



11.5 x 5.0 x 3.5 mm

FEATURES:

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

APPLICATIONS:

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

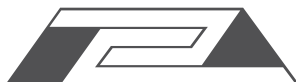
STANDARD SPECIFICATIONS:

PARAMETERS

ABRACON P/N	ABL Series
Frequency	3.579545 MHz to 70 MHz
Operation Mode	AT cut (Fundamental or 3rd OT) or BT cut (See options) 3.579545MHz - 24.0MHz (Fundamental) (Standard) 24.01 - 70.00MHz (3rd- Overtone) (Standard) 24.01MHz - 50.00MHz (Fund. AT or BT) (See options)
Operating Temperature	0°C to + 70°C (see options)
Storage Temperature	- 55°C to + 125°C
Frequency Tolerance at +25°C	± 50 ppm max. (see options)
Frequency Stability over the Operating Temp. (Ref to +25°C)	± 50 ppm max. (see options)
Equivalent Series Resistance	See Table 1
Shunt Capacitance C ₀	7pF max.
Load Capacitance C _L	18pF (see options)
Drive Level	1 mW max., 100µW typical
Aging at 25°C ± 3°C Per Year	± 5ppm max.
Insulation Resistance	500 MΩ min at 100Vdc ± 15V
Drive level dependency (DLD), minimum 7 points tested	1µW to 500µW Change in frequency (Maximum - Minimum) over DLD range < ±10ppm Change in ESR (Maximum - Minimum) over DLD range < 25% of Max ESR value Maximum ESR over DLD range < Max ESR value

TABLE 1: ESR

FREQUENCY (MHz)	ESR (Ω)
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:

(Left blank if standard)

ABL - Frequency - - R - - - - -

Frequency
XX.XXXX MHz

Load Capacitance
Please specify CL in pF or S for Series (minimum 10pF)

ESR
RXXX (Value in Ω)

Operating Temp.	
A	-10°C to +60°C
B	-20°C to +70°C
C	-30°C to +70°C
N	-30°C to +85°C
D	-40°C to +85°C
J*	-40°C to +105°C
K*	-40°C to +125°C
L*	-55°C to +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

Packaging	
T	Tape & Reel
P	Foam
TRAY	Tray

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

Mode	
F	Fund. AT>24MHz
FB	Fund BT>24MHz

NOTE:

Fundamental BT frequency stability ± 100 ppm max.at -10° C to +60° C only.

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

** -10 to +60C only.



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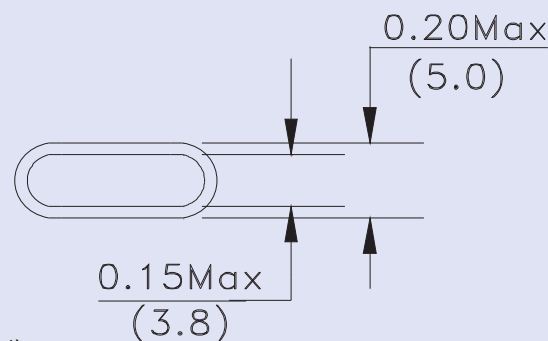
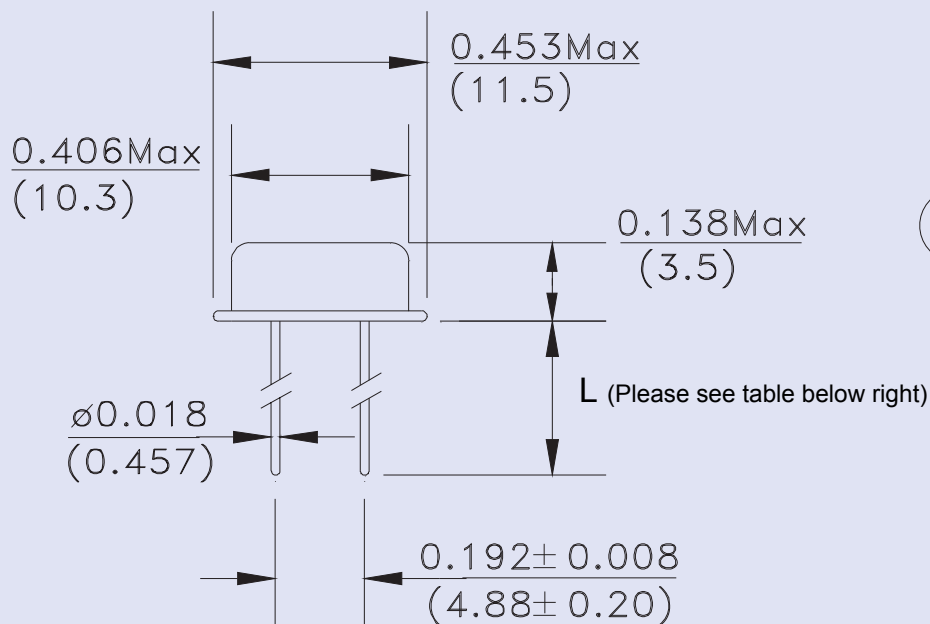


RoHS
Compliant



11.5 x 5.0 x 3.5 mm

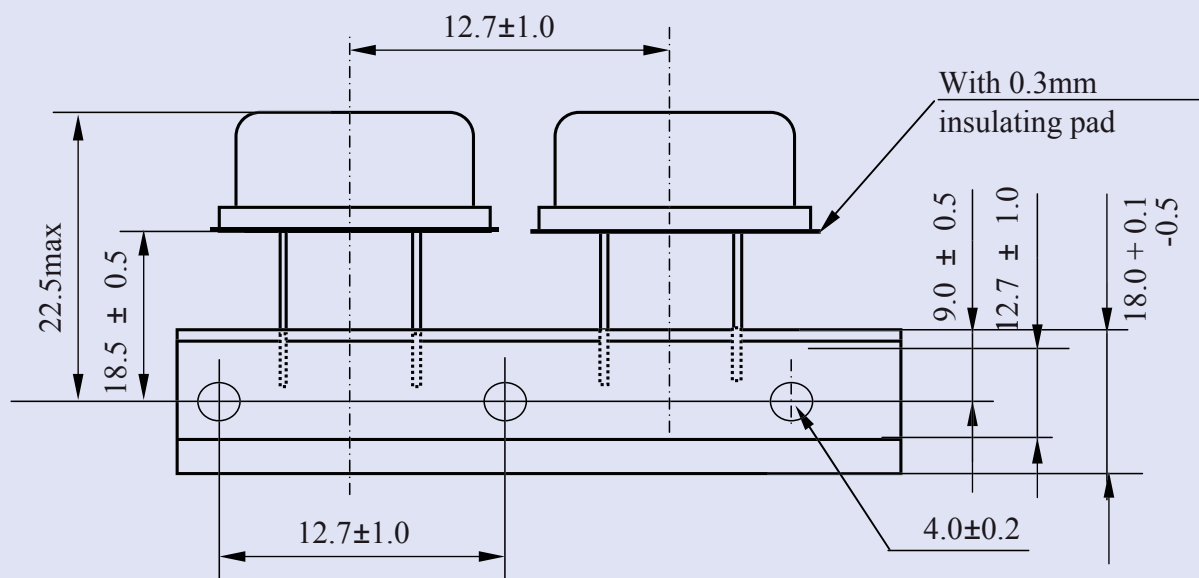
OUTLINE DRAWING:



L	Packaging
13.0mm Min	Bulk
20.0 $\pm$ 0.5mm	Taping & Reel

Dimensions: mm

TAPE & REEL: T = Tape and reel 1,000pcs/reel



Dimensions: mm