

# HC/49US (AT49) SMD LOW PROFILE CRYSTAL



11.5 x 4.7 x 4.2 mm

ABLS



RoHS  
Compliant

## FEATURES:

- Suitable for RoHS reflow
- Available for tight stability & extended temperature range

## APPLICATIONS:

- Computers, Modems, Microprocessors
- Automotive and Industrial
- Wireless Applications

## STANDARD SPECIFICATIONS:

### PARAMETERS

ABRACON P/N	ABLS Series
Frequency	3.579545 MHz to 75 MHz
Operation Mode	AT cut (Fundamental or 3rd OT) or BT cut (See options) 3.579545MHz - 24.0MHz (Fundamental: Standard) 24.01MHz - 75.00MHz (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 <sub>0</sub>	7pF max.
Load Capacitance C <sub>L</sub>	18pF (see options)
Drive Level	1 mW max., 100 μW typical
Aging at 25°C (first year)	± 5ppm max.
Insulation Resistance	500 MΩ min at 100Vdc ± 15V
Spurious Responses	-3dB max.
Drive level dependency (DLD)	from 1 μW to 500 μW (minimum 7 points tested)

TABLE 1: STANDARD ESR

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 - 75.00 (3rd O/T)	80

## OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ABLS - [ ] MHz - [ ] - R [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Frequency in MHz
e.g. 3.579545 MHz 14.31818 MHz 26.000 MHz

Load Capacitance
Please specify CL (8 to 33pF) in pF or S for Series Please contact ABRACON for other values

ESR if other than STD
Specify a value in Ω

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 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
Blank: Bulk
T: Tape & Reel (1k)
T2: Tape & Reel (250)

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

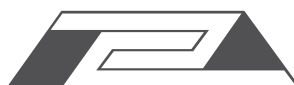
\* -10 to +60° C only.

\*\* Option A, B, and 0 to +70° C only.

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

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

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Revised: 04.07.11

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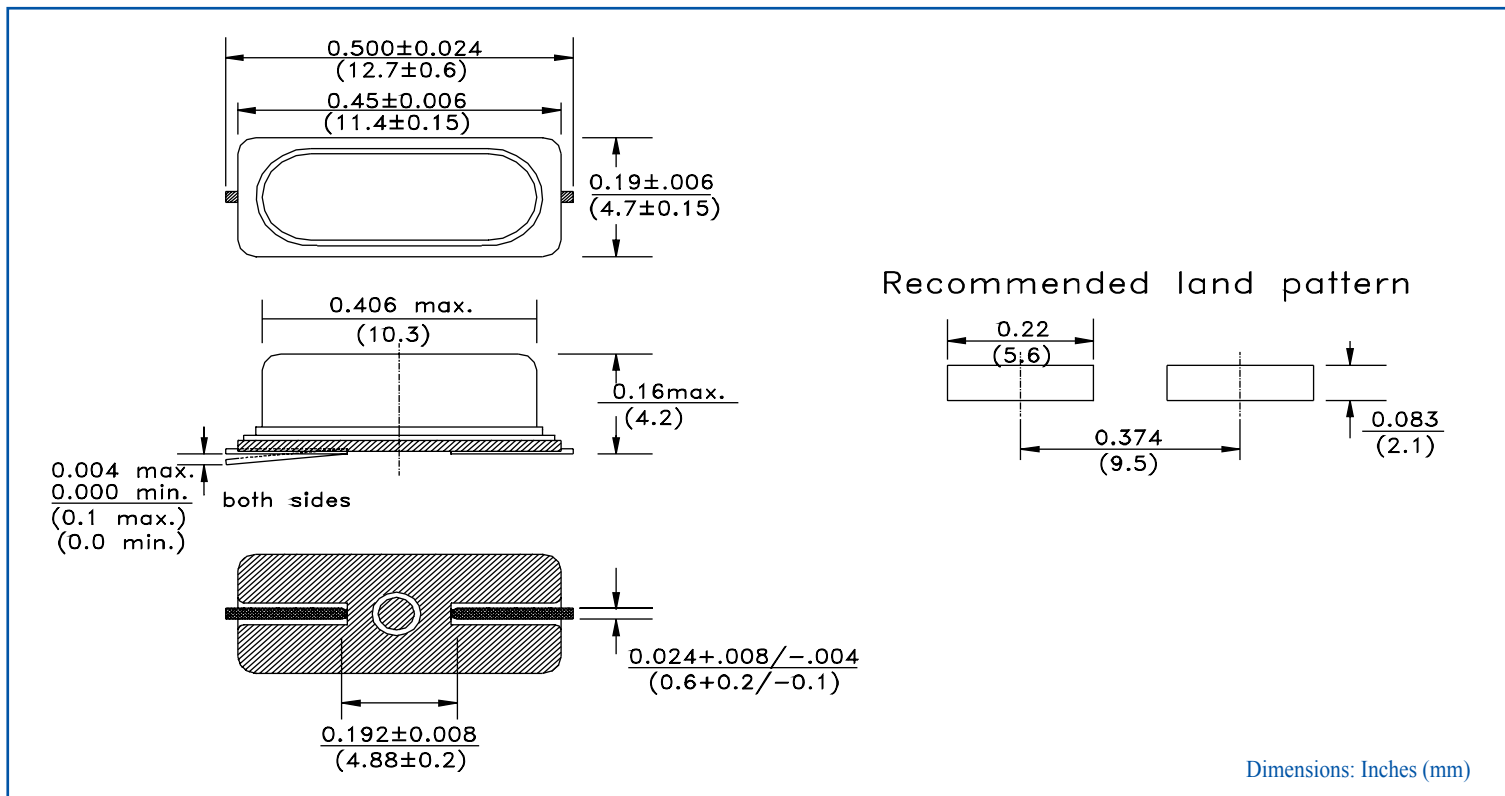
11.5 x 4.7 x 4.2 mm

ABLS

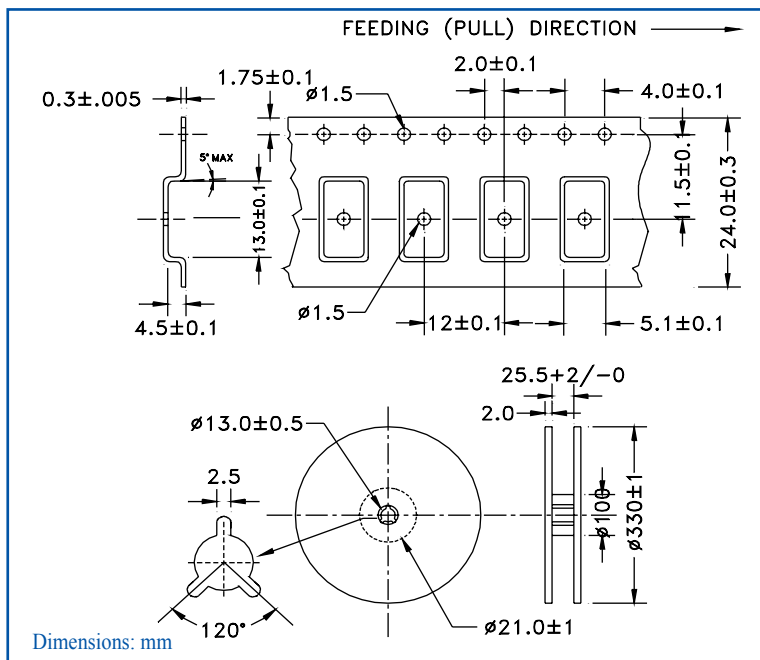


RoHS  
Compliant

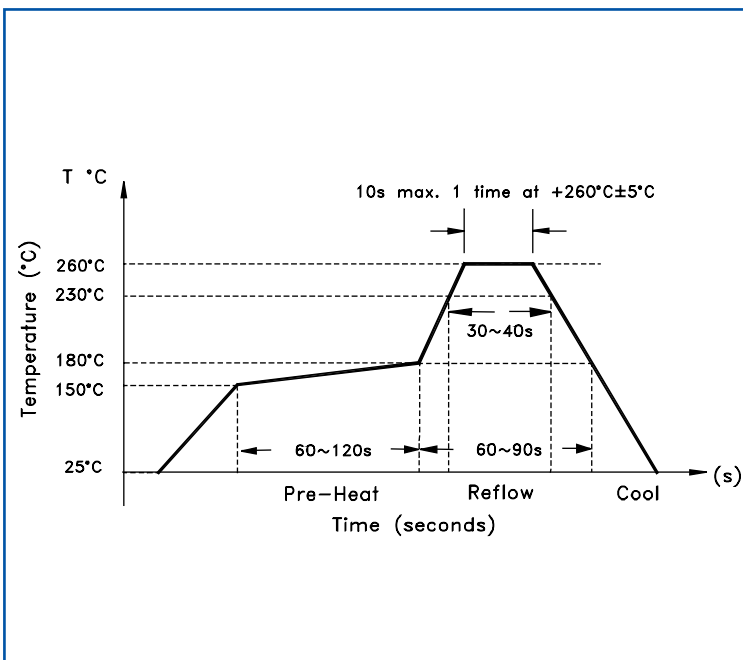
## OUTLINE DRAWING:



## TAPE & REEL:



## REFLOW PROFILE:



Need a test socket for the ABLS series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, click here [P/N: AXS-1147-02-02](#)

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