

# 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., 100µW 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 1µW to 500µW (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. 3.579545MHz  
14.31818MHz  
26.000MHz

**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, E, 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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## 11.5 x 4.7 x 4.2 mm



**RoHS**  
Compliant

0.500±0.024  
(12.7±0.6)

0.45±0.006  
(11.4±0.15)

0.19±.006  
(4.7±0.15)

0.406 max.  
(10.3)

0.16 max.  
(4.2)

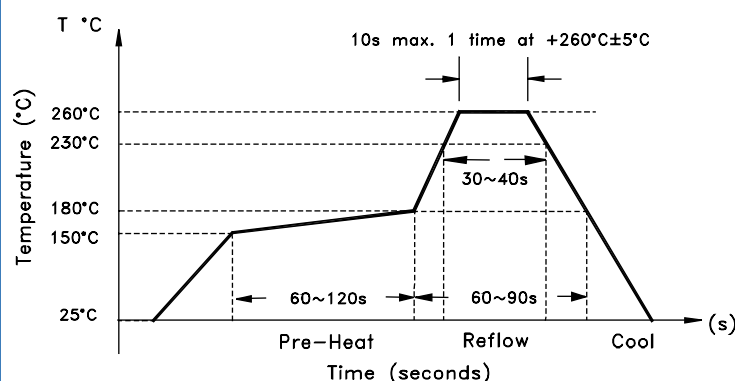
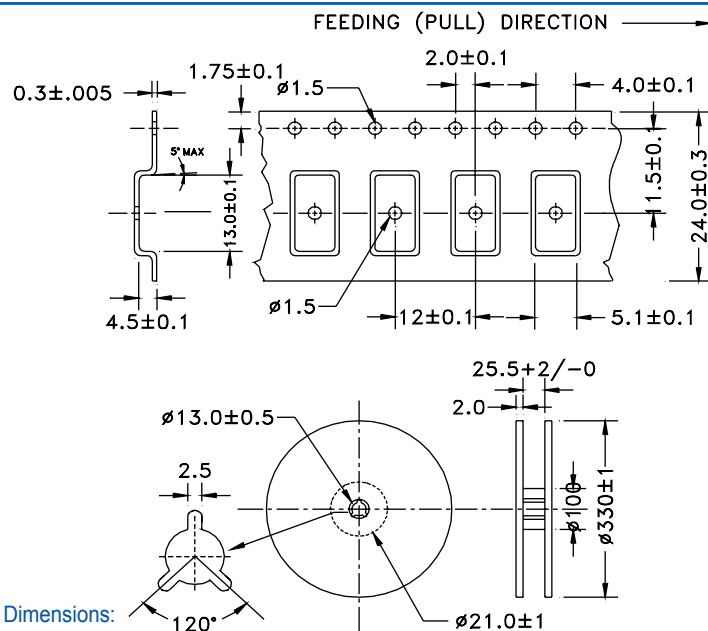
0.004 max.  
0.000 min.  
(0.1 max.)  
(0.0 min.)  
both sides

0.192±0.008  
(4.88±0.2)

0.024+.008/-0.004  
(0.6+0.2/-0.1)

Dimensions: Inches (mm)

## 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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