

HC/49US (AT49) SMD LOW PROFILE CRYSTAL



11.5 x 4.7 x 4.2 mm

ABLS



RoHS
Compliant

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

FEATURES:

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

APPLICATIONS:

- Computers, Modems, Microprocessors
- Wireless Applications

STANDARD SPECIFICATIONS:

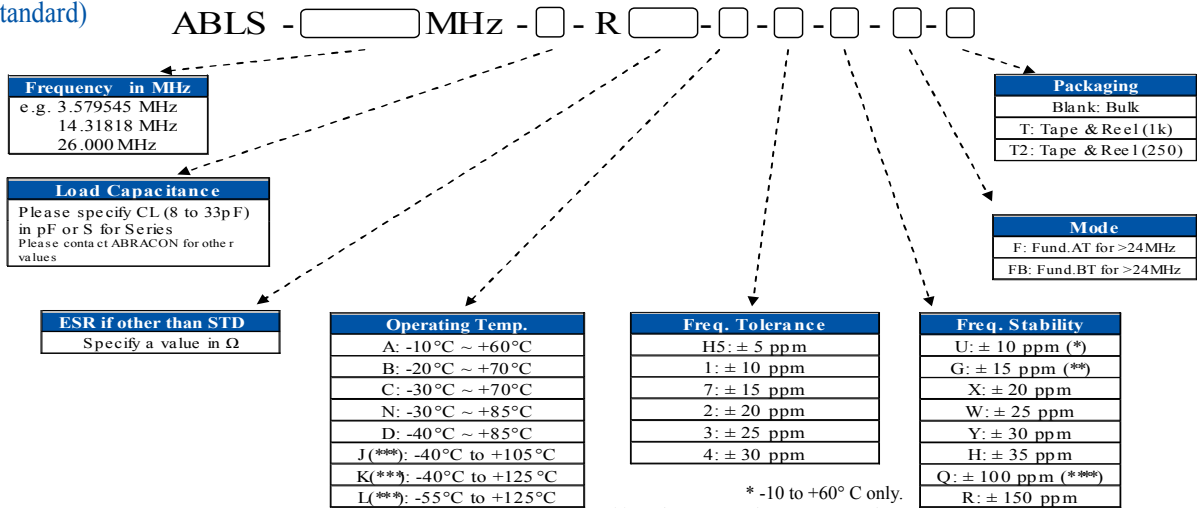
PARAMETERS	
ABRACON P/N	ABLS Series
Frequency	3.579545 MHz to 75 MHz
Operation Mode	AT cut (Fundamental or 3rd OT) or BT cut (See options) 3.579545MHz - 24.0MHz (Fundamental: Standard) 24.01MHz - 75.00MHz (3rd- Overtone: Standard) 24.01MHz - 50.00MHz (Fund. AT or BT: See options)
Operating Temperature	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 ₀	7pF max.
Load Capacitance C _L	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)

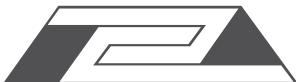


* -10 to +60° C only.
** Option A, B, and 0 to +70° C only.

*** 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.

ABRACON IS
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Revised: 04.07.11

11.5 x 4.7 x 4.2 mm



Technical drawing of a mechanical part with dimensions:

- Top width: 0.406 max. (10.3)
- Right height: 0.16 max. (4.2)
- Left height: 0.004 max. (0.1 max.) / 0.000 min. (0.0 min.)
- Text: both sides

Figure 10 illustrates dimensioning a part with a hole. The drawing shows a rectangular part with a central hole. Dimension lines indicate the distance from the hole center to the right edge and the hole diameter. Tolerances are given in both fractional and decimal forms.

For the distance from the hole center to the right edge:

$$\frac{0.192 \pm 0.008}{(4.88 \pm 0.2)}$$

For the hole diameter:

$$\frac{0.024 + 0.008 / -0.004}{(0.6 + 0.2 / -0.1)}$$

Technical drawing of a mechanical part, showing three views: front view, top view, and side view. The drawing includes dimensions and tolerances.

Front View Dimensions:

- Overall length: 24.0 ± 0.3
- Overall width: 4.5 ± 0.1
- Top row of holes: 0.3 ± 0.005 (hole diameter), 1.75 ± 0.1 (pitch), 2.0 ± 0.1 (pitch), 4.0 ± 0.1 (pitch), 1.5 ± 0.1 (pitch), 5.1 ± 0.1 (pitch).
- Bottom row of holes: 1.5 ± 0.1 (pitch), 12 ± 0.1 (pitch), 5.1 ± 0.1 (pitch).
- Central slots: 1.5 (width), 13.0 ± 0.1 (height), 5° MAX (angle).

Top View Dimensions:

- Overall diameter: $\phi 21.0 \pm 1$
- Central hole diameter: $\phi 13.0 \pm 0.5$
- Distance from center to hole center: 2.5
- Angle: 120°

Side View Dimensions:

- Overall height: $25.5 + 2 / - 0$
- Distance from top to hole center: 2.0
- Distance from hole center to bottom: $\phi 100$
- Overall diameter: $\phi 330 \pm 1$

The graph illustrates the temperature profile for reflow soldering. The Y-axis represents Temperature in degrees Celsius (°C), ranging from 25°C to 260°C. The X-axis represents Time in seconds, divided into three main phases: Pre-Heat, Reflow, and Cool.

- Pre-Heat:** The temperature rises from 25°C to 150°C. This phase is labeled "Pre-Heat" and has a duration of 60~120s.
- Reflow:** The temperature rises from 150°C to 260°C. This phase is labeled "Reflow" and has a duration of 30~40s. A note indicates a maximum of 1 time at +260°C±5°C for 10s max.
- Cool:** The temperature decreases from 260°C back to 25°C. This phase is labeled "Cool" and has a duration of 60~90s.



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