



THE DATASHEET OF ABLS-16.000MHZ-D-4-T

HC/49US (AT49) SMD LOW PROFILE CRYSTAL



11.5 x 4.7 x 4.2 mm

ABLS

Pb 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:

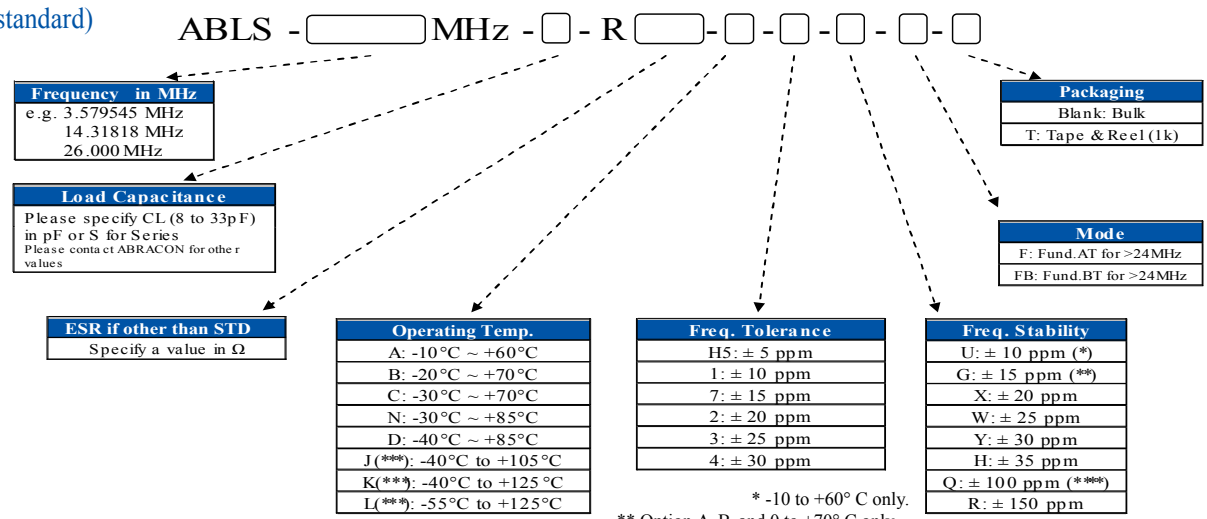
PARAMETERS	
ABRACON P/N	ABLS Series
Frequency	3.579545 MHz to 75 MHz
Operation Mode	AT cut (Fundamental or 3rd OT) or BT cut (See options) 3.579545MHz - 24.0MHz (Fundamental: Standard) 24.01MHz - 75.00MHz (3rd- Overtone: Standard) 24.01MHz - 50.00MHz (Fund. AT or BT: See options)
Operating Temperature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



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11.5 x 4.7 x 4.2 mm



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Technical drawing of a rectangular component with dimensions in inches and millimeters. The drawing includes a top view, a side view, and a cross-sectional view. Dimensions are given as nominal values with tolerances in parentheses.

Top View Dimensions:

- Overall width: 0.500 ± 0.024 (12.7 $\pm$ 0.6)
- Inner width: 0.45 ± 0.006 (11.4 $\pm$ 0.15)
- Height: 0.19 ± 0.006 (4.7 $\pm$ 0.15)

Side View Dimensions:

- Width: 0.406 max. (10.3)
- Height: 0.16 max. (4.2)
- Surface finish: 0.004 max. , 0.000 min. (0.1 max.), (0.0 min.)
- Feature: both sides

Cross-sectional View Dimensions:

- Width: 0.192 ± 0.008 (4.88 $\pm$ 0.2)
- Height: $0.024 + 0.008 / -0.004$ (0.6 + 0.2 / -0.1)

Recommended land pattern:

- Width: 0.22 (5.6)
- Height: 0.083 (2.1)
- Distance between lands: 0.374 (9.5)

Dimensions: Inches (mm)

Dimensions: Inches (mm)

FEEDING (PULL) DIRECTION →

0.3±0.005

1.75±0.1

2.0±0.1

4.0±0.1

1.5±0.1

24.0±0.3

13.0±0.1

5° MAX

4.5±0.1

12±0.1

5.1±0.1

Ø1.5

Ø1.5

Ø13.0±0.5

2.5

120°

Ø21.0±1

25.5+2/-0

2.0

Ø100

Ø330±1

Dimensions: mm

Dimensions: mm

Temperature (°C)

260°C

230°C

180°C

150°C

25°C

10s max. 1 time at +260°C±5°C

30~40s

60~120s

60~90s

Pre-Heat

Reflow

Cool

Time (seconds)

(s)

Figure 1 is a graph showing the temperature profile of the polymerization reaction. The Y-axis represents Temperature (°C) with markers at 25°C, 150°C, 180°C, 230°C, and 260°C. The X-axis represents Time (seconds) with markers for Pre-Heat, Reflow, and Cool phases. The profile shows a ramp up to 150°C (60~120s), a slow ramp to 180°C, a rapid ramp to 260°C, a dwell at 260°C (30~40s), and a ramp down (60~90s).



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