



**THE DATASHEET OF
ABLS2-24.000MHZ-D4YF-T**



HC/49US (AT49) LOW PROFILE SURFACE MOUNT MICROPROCESSOR CRYSTAL

ABLS2



RoHS
Compliant



11.4 x 4.7 x 3.3 mm

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

FEATURES:

- Suitable for RoHS compliant reflow
- Low height reduced to 3.3mm
- Available suitable for thin equipment
- Tight stability & extended temperature

APPLICATIONS:

- Computers, Modems, Microprocessors
- Wireless Applications

STANDARD SPECIFICATIONS:

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|---|---|---------|---------|-------|---|
| Frequency Range | 3.579545 | ----- | 24.00 | MHz | Fundamental AT (Standard) |
| | 24.01 | ----- | 50.00 | | Fundamental AT or BT (See options) |
| | 24.01 | ----- | 70.00 | | 3 rd Overtone (Standard) |
| Operation Mode | Fundamental or 3 rd Overtone | | | | |
| Operating Temperature | 0 | ----- | +70 | °C | See options |
| Storage Temperature | -55 | ----- | +125 | °C | |
| Frequency Tolerance @+25°C | -50 | ----- | +50 | ppm | See options |
| Frequency Stability over the Operating Temperature (ref. to +25°C) | -50 | ----- | +50 | ppm | See options (For BT cut, ±100ppm max.at -10° C to +60° C only) |
| Equivalent series resistance (R1) | See table 1 below | | | Ω | |
| Shunt capacitance (C0) | ----- | ----- | 7 | pF | |
| Load capacitance (CL) | ----- | 18 | ----- | pF | Standard (See options if other than STD) |
| Drive Level | ----- | 100 | 1000 | μW | |
| Aging | -5 | ----- | +5 | ppm | @25°C±3°C First year |
| Insulation Resistance | 500 | ----- | ----- | MΩ | @ 100Vdc ± 15V |
| Drive level dependency (DLD) | Minimum 7 points tested: from 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) |
|--------------------------|---------|
| 3.579545 - 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 |

HC/49US (AT49) LOW PROFILE SURFACE MOUNT MICROPROCESSOR CRYSTAL

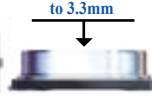
ABLS2



RoHS
Compliant



Reduced height to 3.3mm



11.4 x 4.7 x 3.3 mm

Options and Part Identification

(left blank if standard)

ABLS2 - MHz - - - - -

Frequency in MHz

Please specify the frequency in MHz. e.g. 14.31818MHz

Load Capacitance (pF)

Please specify CL (Minimum 10pF) in pF or S for series

Custom ESR if other than standard

R
□: Specify a value in Ω (e.g.: R40)

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 ~ +105°C |
| K*: -40°C ~ +125°C |
| L*: -55°C ~ +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

Oscillation Mode

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

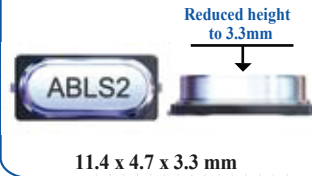
NOTE: Fundamental BT frequency stability ± 100ppm max. at -10° C to +60° C only.

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

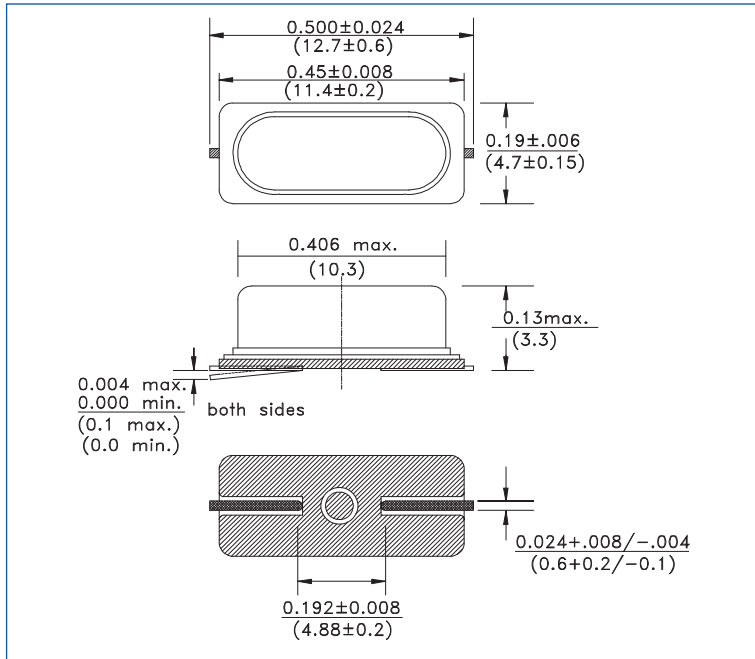
** Contact ABRACON for availability of ±10ppm with other Operating Temperature options.

HC/49US (AT49) LOW PROFILE SURFACE MOUNT MICROPROCESSOR CRYSTAL

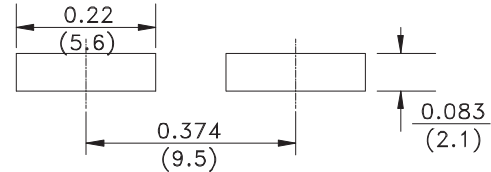
ABLS2



OUTLINE DRAWING:

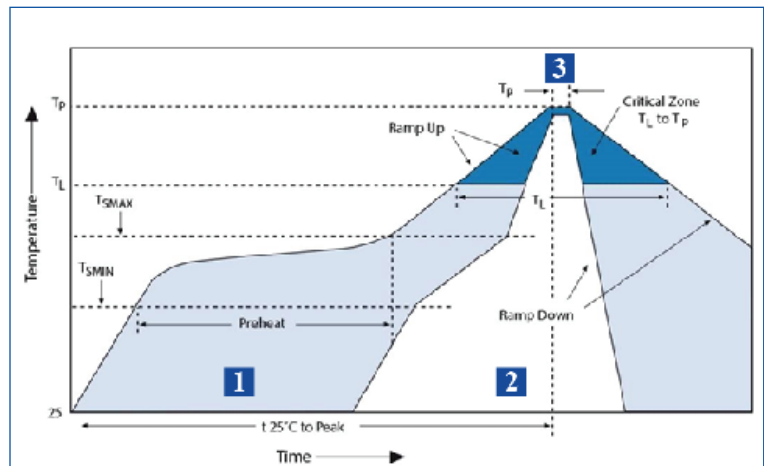
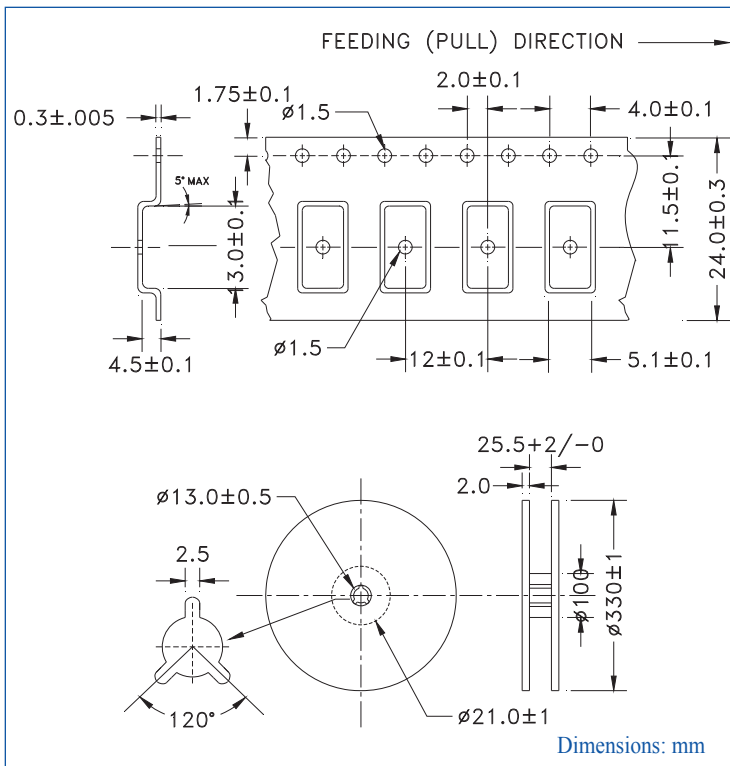


Recommended land pattern



TAPE & REEL: T = tape and reel (1000pcs/reel)

Reflow Profile



| Zone | Description | Temperature | Time |
|------|-------------|---|---------------|
| 1 | Preheat | $T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C | 60 ~ 120 sec. |
| 2 | Reflow | T_L 230°C | 30 ~ 40 sec. |
| 3 | Peak Heat | T_p 260°C | 10 sec. MAX |

ATTENTION: Abracon products are COTS - Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon is required. Please contact Abracon for more information.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View ABL52-24.000MHZ-D4YF-T on WIN SOURCE](#)
- ⊖ [Abracon LLC Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management