



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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HC49/US (AT49) LOW PROFILE SMD MICROPROCESSOR CRYSTAL



11.4 x 4.7 x 2.5mm

ABLS3



**RoHS
Compliant**

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 2.5 mm
- Tight stability & extended temperature options

APPLICATIONS:

- Computers, Modems, Microprocessors
- Wireless Applications

STANDARD SPECIFICATIONS:

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|---|---|---------|-----------|-------|---|
| Frequency Range | 6.000000 | ----- | 24.000000 | MHz | Fundamental AT (Standard) |
| | 24.000001 | ----- | 50.000000 | | Fundamental AT or BT (See options) |
| | 24.000001 | ----- | 70.000000 | | 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) |
|--------------------------|---------|
| 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 |

REVISED: 06.01.2018



5101 Hidden Creek Lane Spicewood TX 78669
 Phone: 512-371-6159 | Fax: 512-351-8858
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www.abracon.com

ABRACON IS
 ISO9001-2015
 CERTIFIED

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11.4 x 4.7 x 2.5mm

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➤ OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ABLS3 - MHz - - - - -

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

Packaging
Blank: Bulk
T: Tape & Reel

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

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

Custom ESR if other than standard
R Ω
☒: 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

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

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

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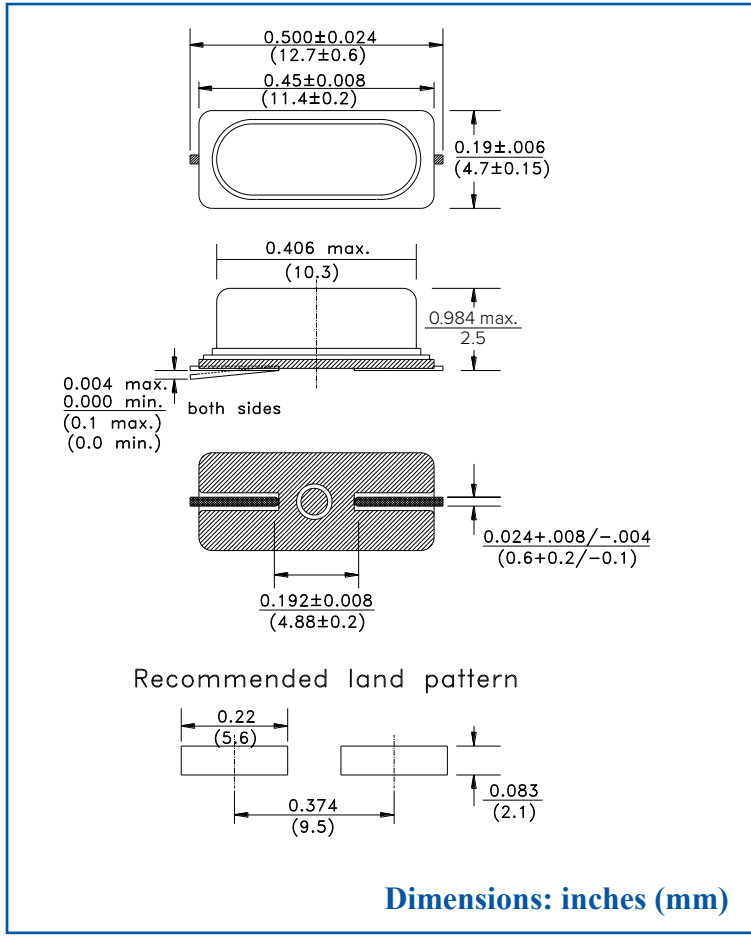


11.4 x 4.7 x 2.5mm

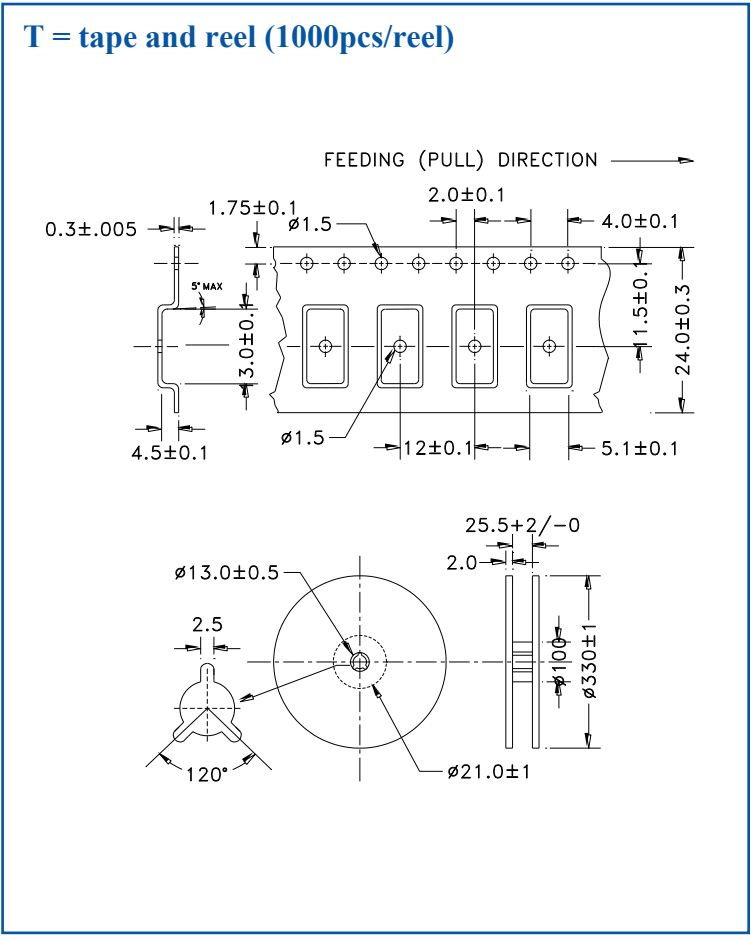
ABLS3

Pb **RoHS**
Compliant

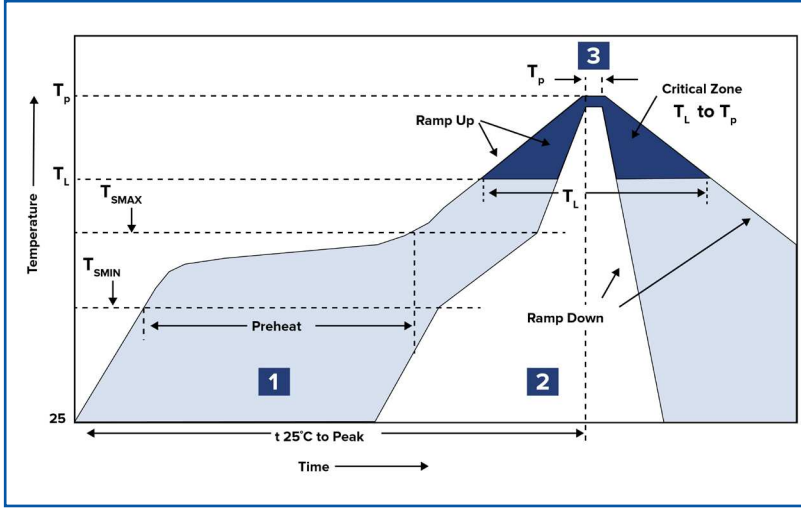
OUTLINE DRAWING:



TAPE & REEL:



REFLOW PROFILE:



| Zone | Description | Temperature | Time |
|------|-------------|--|---------------|
| 1 | Preheat | T _S MIN ~ T _S MAX 150°C ~ 180°C | 60 ~ 120 sec. |
| 2 | Reflow | T _L 230°C | 30 ~ 40 sec. |
| 3 | Peak Heat | T _P 260°C±5°C | 10 sec. MAX. |

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