



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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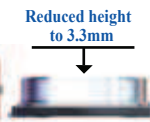


HC/49US (AT49) LOW PROFILE SURFACE MOUNT MICROPROCESSOR CRYSTAL

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

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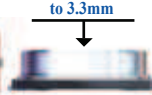
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Reduced height to 3.3mm



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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.

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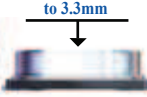


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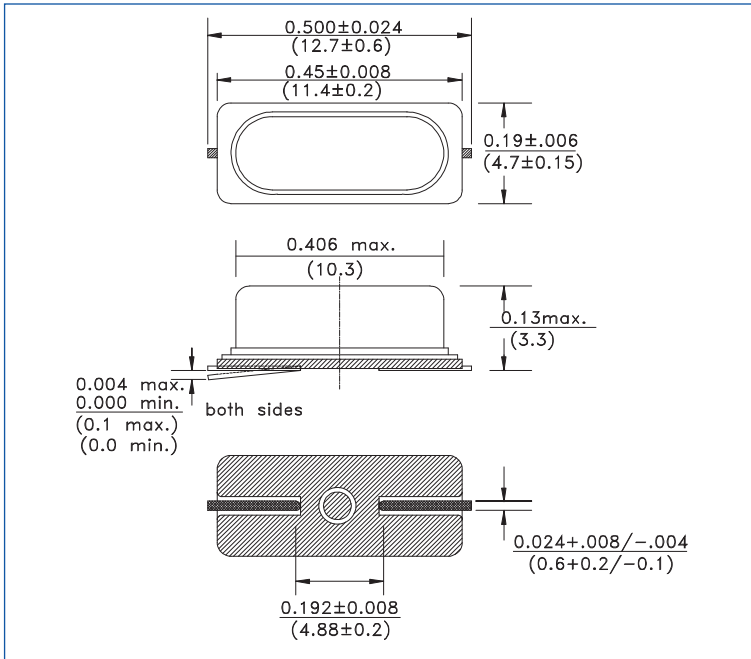


11.4 x 4.7 x 3.3 mm

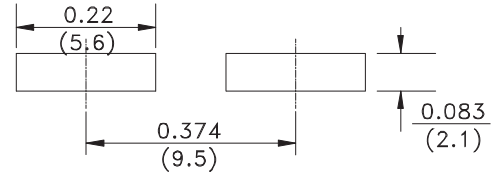
Reduced height to 3.3mm



OUTLINE DRAWING:

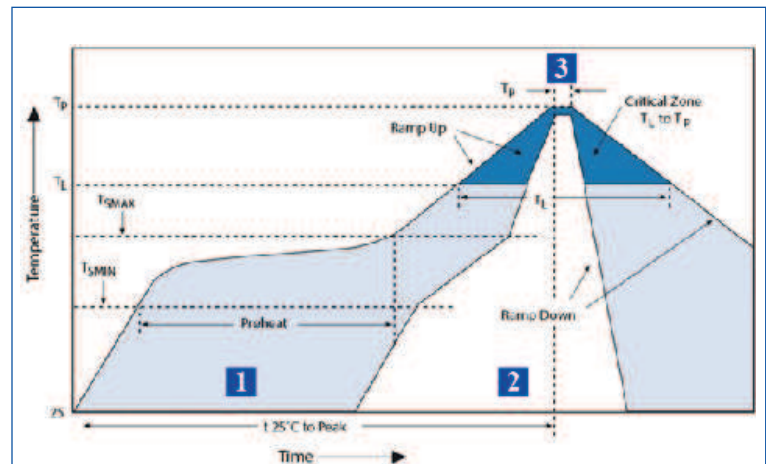
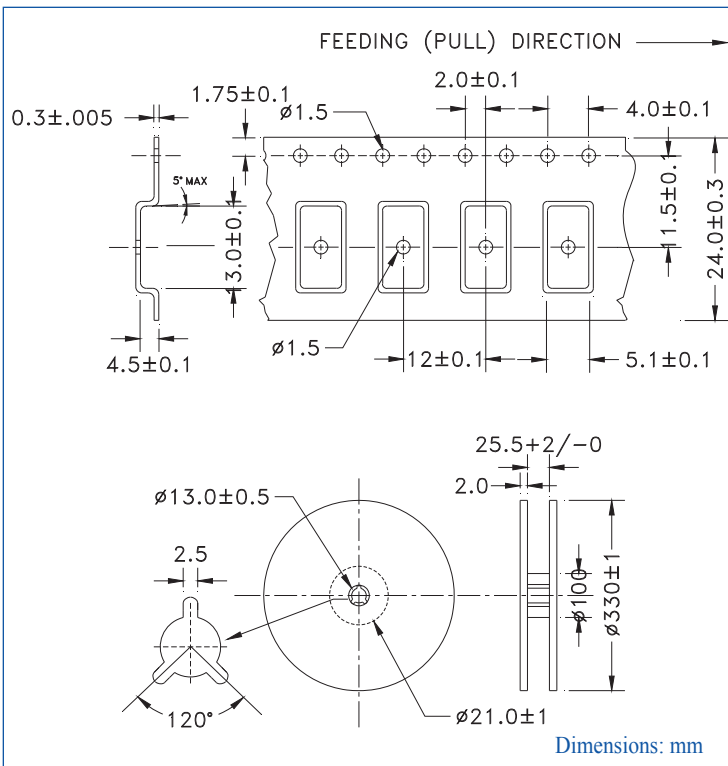


Recommended land pattern



TAPE & REEL: T = tape and reel (1000pcs/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	10 sec. MAX

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