Ultra-low ESR HC49/US (AT49)SMD MICROPROCESSOR CRYSTAL



11.5 x 4.8 x 4.2 mm

ABLS-LR

RoHS Compliant

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

FEATURES:

- Ultra low ESR as low as 20 ohms for 4MHz, 85% lower than typical SMD Low Profile HC49S Crystals
- Low negative resistance(-R) IC design can ensure high oscillation margin
- Tight stability and automotive grade temperature available
- Hermetically resistance weld sealed

APPLICATIONS:

- Low negative resistance u-controller design for low frequency
- Wide range of automotive applications
- Industrial applications

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range		3		36	MHz	
Operation Mode			Fundamental			
Operating Temperature		0		+70	ºC	See options
Storage Temperature		-55		+125	ºC	
Frequency Tolerance @+25°C		-50		+50	ppm	See options
Frequency Stability over the Operating Temperature (ref. to +25°C)	3.0~3.579545MHz	-100		+100	ppm	Standard only
	3.579545~36MHz	-50		+50		See options
Equivalent series resistance (R1)			See table 1 below		Ω	
Shunt capacitance (C0)				7	pF	
Load capacitance (CL)			18		pF	See options
Drive Level			100	1000	µW	
Aging		-5		+5	ppm	@25°C±3°C First year
Insulation Resistance		500			MΩ	@ 100Vdc ± 15V
Spurious Response				-3	dB	
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) Max.
3.000000	100
3.072000	100
3.276800	75
3.500000 ~ 4.000000MHz	40
4.000001 ~ 4.500000MHz	30
4.500001 ~ 5.999999MHz	25
6.000000 ~ 7.499999MHz	20
7.500000 ~ 12.999999MHz	15
13.000000 ~ 36.000000MHz	10

OPTIONS & PART IDENTIFICATION: (Left blank if standard)

ABLS - LR- [ ] MHz - [ ] - [ ] [ ] [ ] - [ ]

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

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

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

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

NOTE:
* Frequency stability R option (±150ppm) only. Contact ABRACON for tighter frequency stability.
** For -10 to +60C only.

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Visit www.abracon.com for Terms and Conditions of Sale

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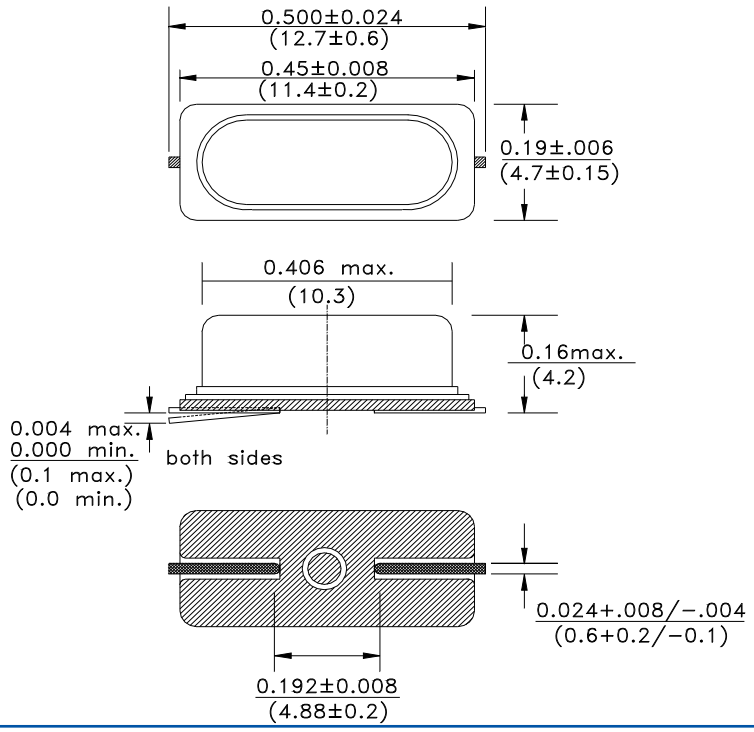


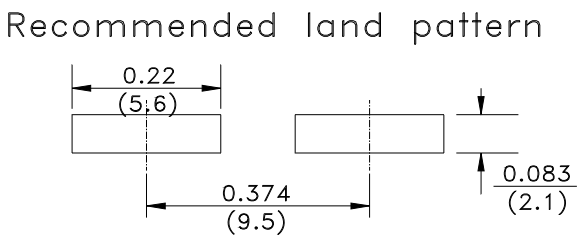
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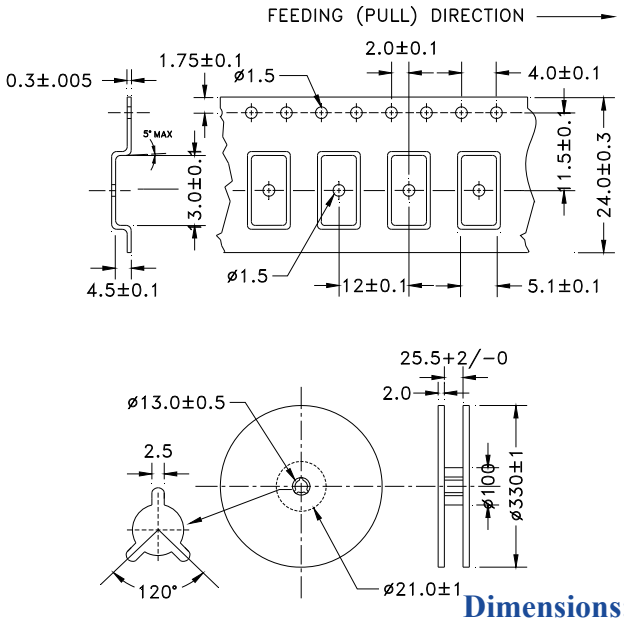
OUTLINE DRAWING:





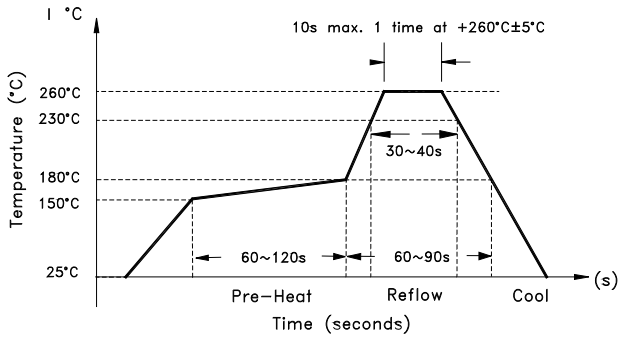
Dimensions: inches (mm)

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



Dimensions: mm

REFLOW PROFILE:



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