

# HC49/U, HC51/U CRYSTAL

AB



**RoHS**  
Compliant



11.5 x 5.0 x 13.5 mm

## FEATURES:

- High precision availability
- Resistance welded
- Ideal for large pullability application
- Wide frequency range

## APPLICATIONS:

- CPU, Memory
- Computer, printer
- Data communication (1MHz)
- Data input - output machine (1MHz)

## STANDARD SPECIFICATIONS:

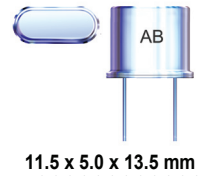
### PARAMETERS

ABRACON P/N:	AB Series
Frequency range:	1.8432 MHz to 60 MHz (HC49/U) 850 kHz to 1.800 MHz (HC51/U)
Operation mode:	850 kHz - 24.000MHz (Fundamental), 24.01MHz - 66.00MHz (3rd OT), 66.01MHz - 122.00MHz (5th OT), 122.01MHz - 160.00MHz (7th OT)
Operating temperature:	0° C to + 70° C (see options)
Storage temperature:	-55°C to +125°C
Frequency tolerance:	± 50 ppm max. (see options)
Frequency stability over the operating temperature (Ref to +25° C):	± 100 ppm max. (see options)
Equivalent series resistance (R1):	see table 1
Shunt capacitance C0:	7 pF max.
Load capacitance CL:	18 pF (see options)
Drive level:	1 mW max., 100µW Typical
Aging @ 25° C per a year :	± 5 ppm max.
Insulation resistance:	500 M Ω min. at 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: Standard ESR

FREQUENCY (MHz)	Operation Mode	ESR (Ω) max	
1.000 - 1.799	HC49/U Fund	2000	
1.800 - 1.999		750	
2.000 - 2.399		550	
2.400 - 2.999		350	
3.000 - 3.699		200	
3.700 - 4.199		100	
4.200 - 4.899		70	
4.900 - 5.999		50	
6.000 - 7.999		40	
8.000 - 9.999		35	
10.000 - 12.499		30	
12.50 - 50.00		25	
24.00 - 66.00		HC49/U (3rd OT)	40
66.01 - 122.0		HC49/U (5th OT)	80
122.01 - 160	HC49/U (7th OT)	120	
850 kHz - 899 kHz Fund	HC51/U	1000	
900 kHz - 1.5 MHz Fund		800	





## OPTIONS AND PART IDENTIFICATION:

[Left blank if standard]

**AB - Frequency - [ ] - R[ ][ ][ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]**

Frequency
XX.XXXX MHz

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

ESR
RXXX (Value in Ω)

Table 2

CODES	TRIMMED L in(mm)
Q45	0.45 (11.43)
Q40	0.40 (10.16)
Q35	0.35 (8.89)
Q30	0.30 (7.62)
Q25	0.25 (6.35)
Q20	0.20 (5.08)
Q15	0.15 (3.81)
Q10	0.10 (2.54)
Q115	0.115 (2.92)

Use appropriate code numbers for other trimmed lengths not listed.  
(Ex: Q14 for 0.14 inch (3.55 mm))

Operating Temp.
A -10°C to +60°C
B -20°C to +70°C
C -30°C to +70°C
N -30°C to +85°C
D -40°C to +85°C

Freq. Tolerance
1 ± 10 ppm
7 ± 15 ppm
2 ± 20 ppm
3 ± 25 ppm
4 ± 30 ppm

Freq. Stability
options for AT-Cut only*
U ± 10 ppm**
G ± 15 ppm
X ± 20 ppm
W ± 25 ppm
Y ± 30 ppm
H ± 35 ppm
Z ± 50 ppm

\*: Frequency stability ± 100ppm max. at -10° C to +60° C only for BT cut.  
Value added options L, L1, L2 and L3 must be accompanied with packing option TY.  
\*\*: -10°C to +60°C only

Packaging
T Tape & Reel
P Foam
TY Tray packing

Quality factor option
QXXXk value in minimum

Quality factor must be accompanied by a k value

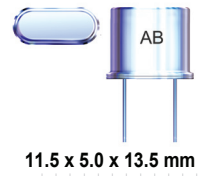
Value Added
I Insulator Tab
V Vinyl Sleeve
QXX Trimmed leads See Table 2
L 3rd lead welded
L1 3rd lead soldered
L2 Middle 3rd lead
M formed leads for surface-mount
MJ Metal jacket

Operation Mode
F Fund. AT>24MHz
FB Fund. BT>24MHz
O 3rd OT>66MHz



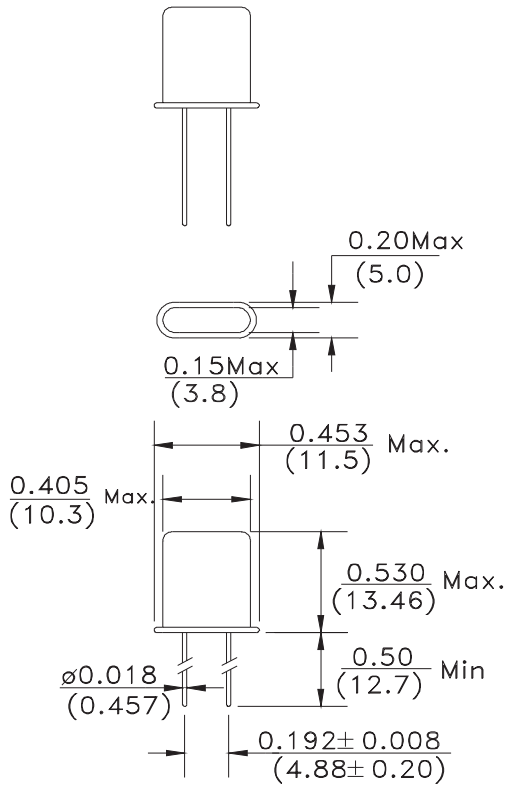
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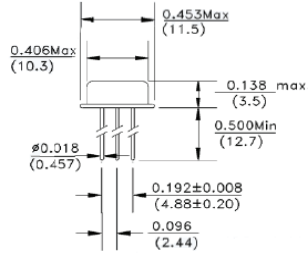


11.5 x 5.0 x 13.5 mm

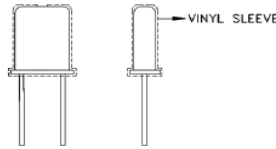
## OUTLINE DIMENSIONS



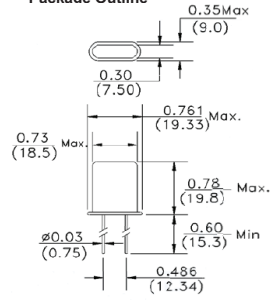
Middle Third Lead For Option L2



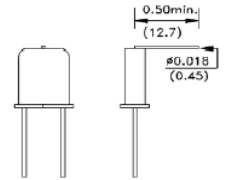
Vinyl Sleeve For Option V



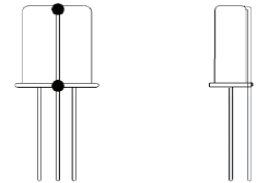
HC51U Package Outline



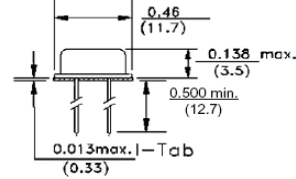
Third-Lead For Option L and L1



Third-Lead For Option L3

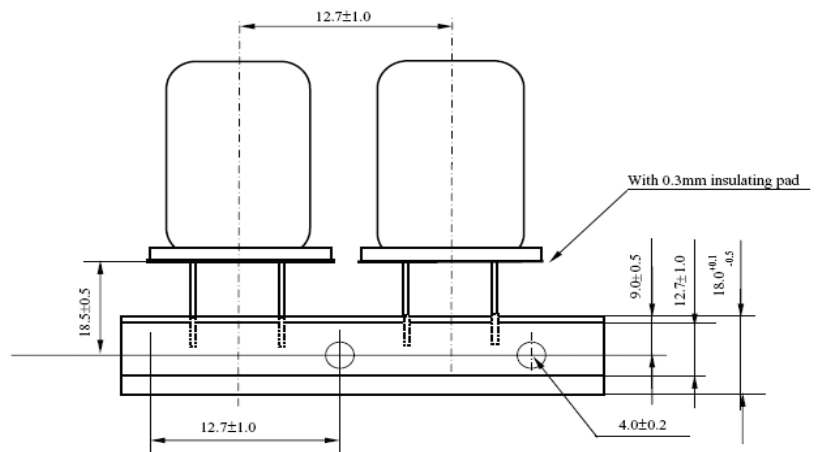
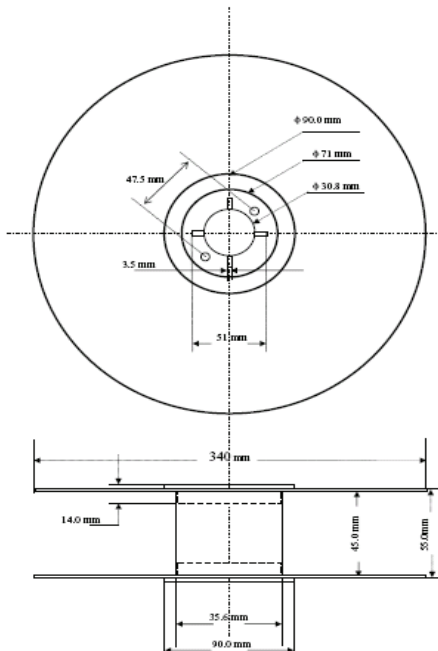


Insulator Tab For Option I



Dimension : inch (mm)

## TAPE & REEL: 1000pcs/reel



Dimension : mm

