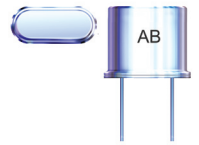


HC49/U, HC51/U CRYSTAL

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

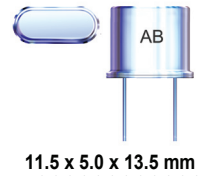
| FREQUENCY (MHz) | Operation Mode | ESR (Ω) max | |
|------------------------|-----------------|-----------------|----|
| 1.000 - 1.799 | HC49/U Fund | 2000 | |
| 1.800 - 1.999 | | 750 | |
| 2.000 - 2.399 | | 550 | |
| 2.400 - 2.999 | | 350 | |
| 3.000 - 3.699 | | 200 | |
| 3.700 - 4.199 | | 100 | |
| 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 | |

HC49/U, HC51/U CRYSTAL

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11.5 x 5.0 x 13.5 mm

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 ± 100 ppm 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 |

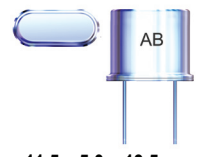


HC49/U, HC51/U CRYSTAL

AB

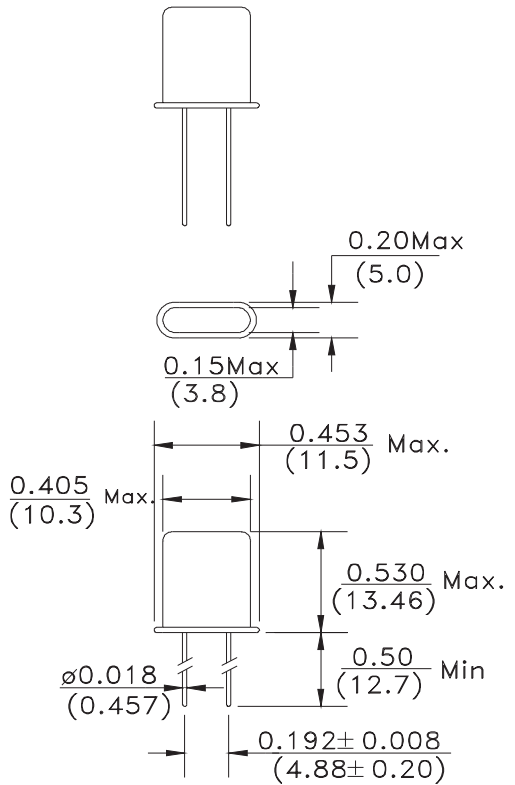


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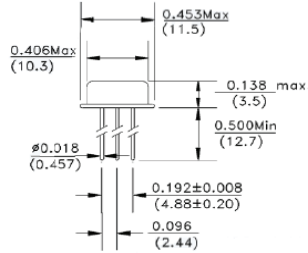


11.5 x 5.0 x 13.5 mm

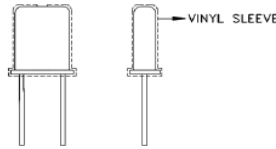
OUTLINE DIMENSIONS



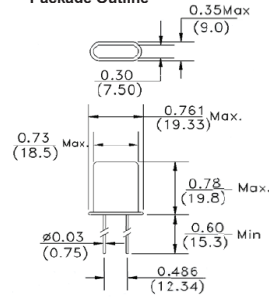
Middle Third Lead
For Option L2



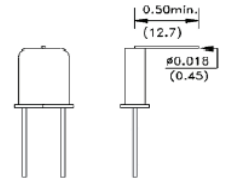
Vinyl Sleeve
For Option V



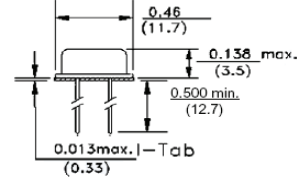
HC51U
Package Outline



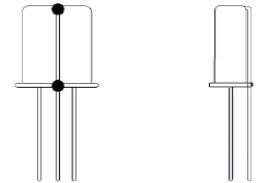
Third-Lead
For Option L and L1



Insulator Tab
For Option I

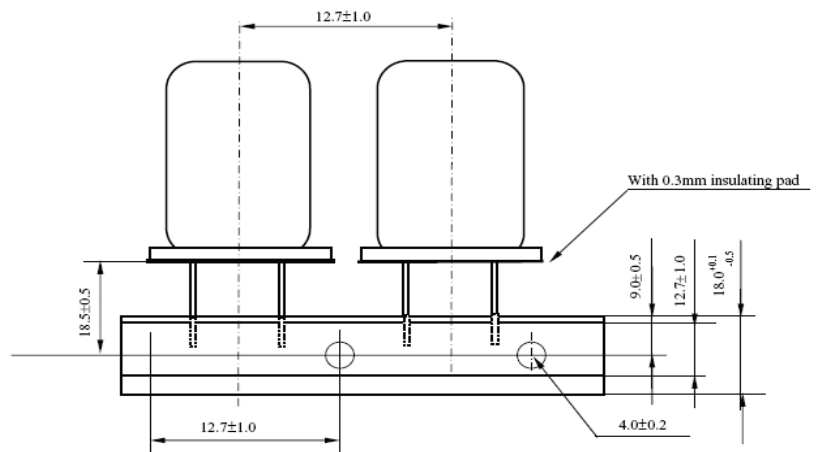
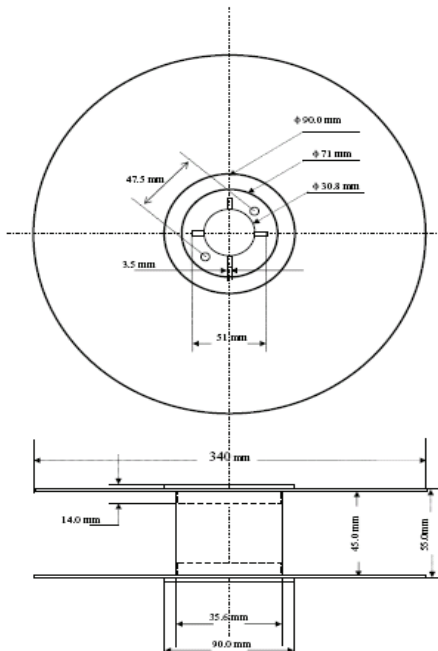


Third-Lead
For Option L3



Dimension : inch (mm)

TAPE & REEL: 1000pcs/reel



Dimension : mm

ABRACON IS
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CERTIFIED



ABRACON
CORPORATION

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