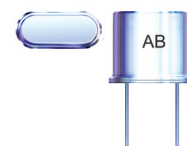


# HC49/U CRYSTAL

AB



RoHS/RoHS II Compliant



11.5 x 5.0 x 13.46mm

Moisture Sensitivity Level (MSL) – This product is not Moisture Sensitive - MSL = 1

## FEATURES:

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

## APPLICATIONS:

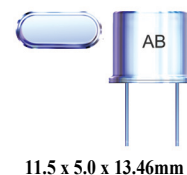
- CPU, Memory
- Computer, printer
- Data communication (1MHz)
- Data input - output machine (1MHz)

## STANDARD SPECIFICATIONS:

| Parameters                                                                | Minimum                                                                                                                                                                                     | Typical | Maximum | Units | Notes                 |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|---------|-------|-----------------------|
| Frequency Range                                                           | 1.8432                                                                                                                                                                                      |         | 160.000 | MHz   |                       |
| Operation Mode                                                            | Fundamental                                                                                                                                                                                 |         |         |       | 1.8432MHz – 24.000MHz |
|                                                                           | 3 <sup>rd</sup> Overtone                                                                                                                                                                    |         |         |       | 24.01MHz – 66.00MHz   |
|                                                                           | 5 <sup>th</sup> Overtone                                                                                                                                                                    |         |         |       | 66.01MHz – 122.00MHz  |
|                                                                           | 7 <sup>th</sup> Overtone                                                                                                                                                                    |         |         |       | 122.01MHz – 160.00MHz |
| 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)       | -100                                                                                                                                                                                        |         | +100    | ppm   | 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@25°C±3°C                                                            |                                                                                                                                                                                             |         | ±5      | ppm   | First year            |
| Insulation Resistance                                                     | 500                                                                                                                                                                                         |         |         | M Ω   | @100Vdc±15V           |
| Drive level dependency (DLD), minimum 7 points tested: from 1μW to 500μW. | Change in frequency (Maximum - Minimum) over DLD range < ±10ppm;<br>Change in ESR (Maximum - Minimum) over DLD range < 25% of Max ESR value;<br>Maximum ESR over DLD range < Max ESR value. |         |         |       |                       |

Table 1

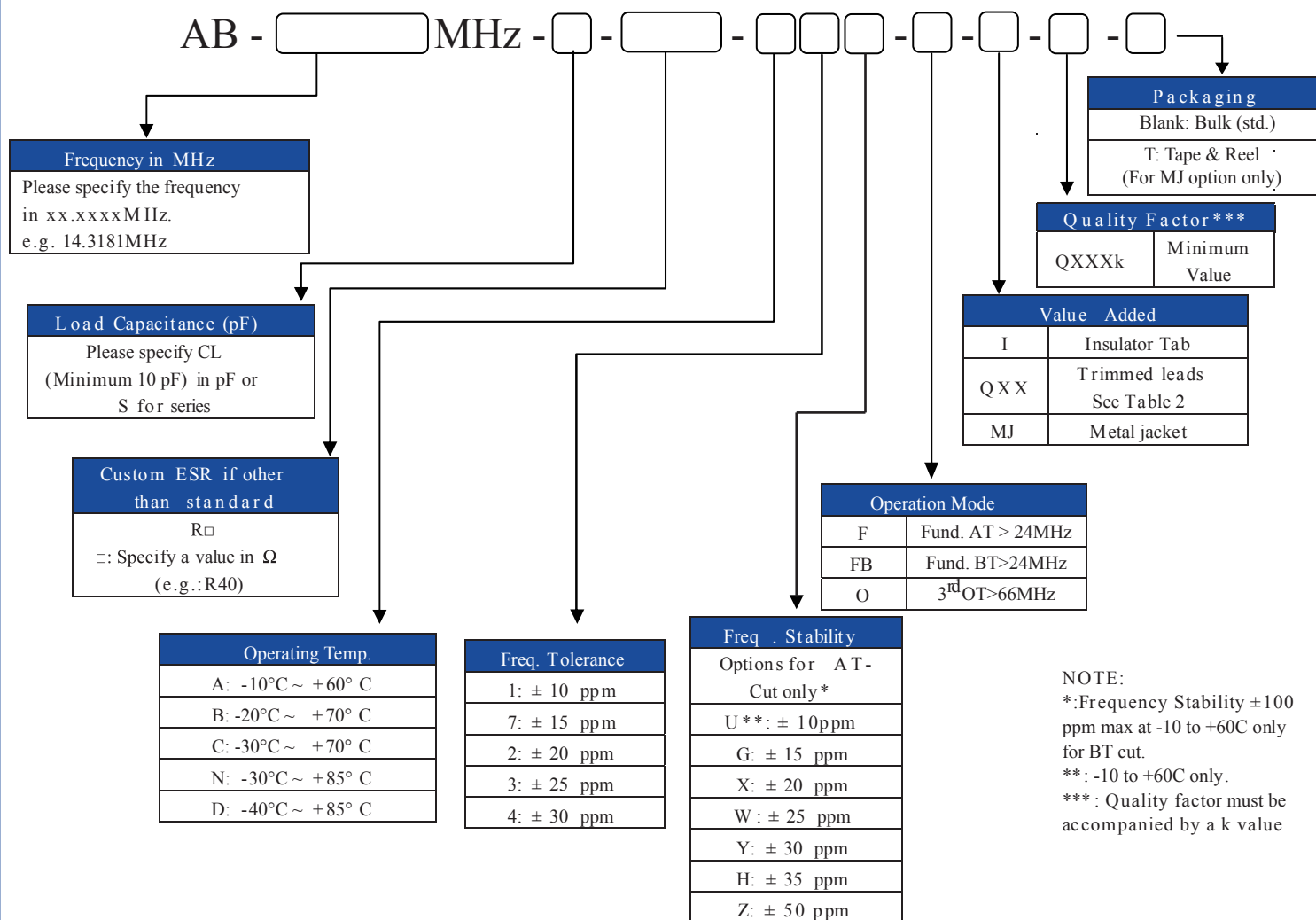
| FREQUENCY (MHz) | Operation Mode        | ESR (Ω) max |
|-----------------|-----------------------|-------------|
| 1.8432-1.999    | HC49/U<br>Fundamental | 750         |
| 2.000-2.399     |                       | 550         |
| 2.400-2.999     |                       | 350         |
| 3.000-3.699     |                       | 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          |
| 66.01-122.00    | HC49/U (5th OT)       | 80          |
| 122.01-160.00   | HC49/U (7th OT)       | 120         |



11.5 x 5.0 x 13.46mm

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)



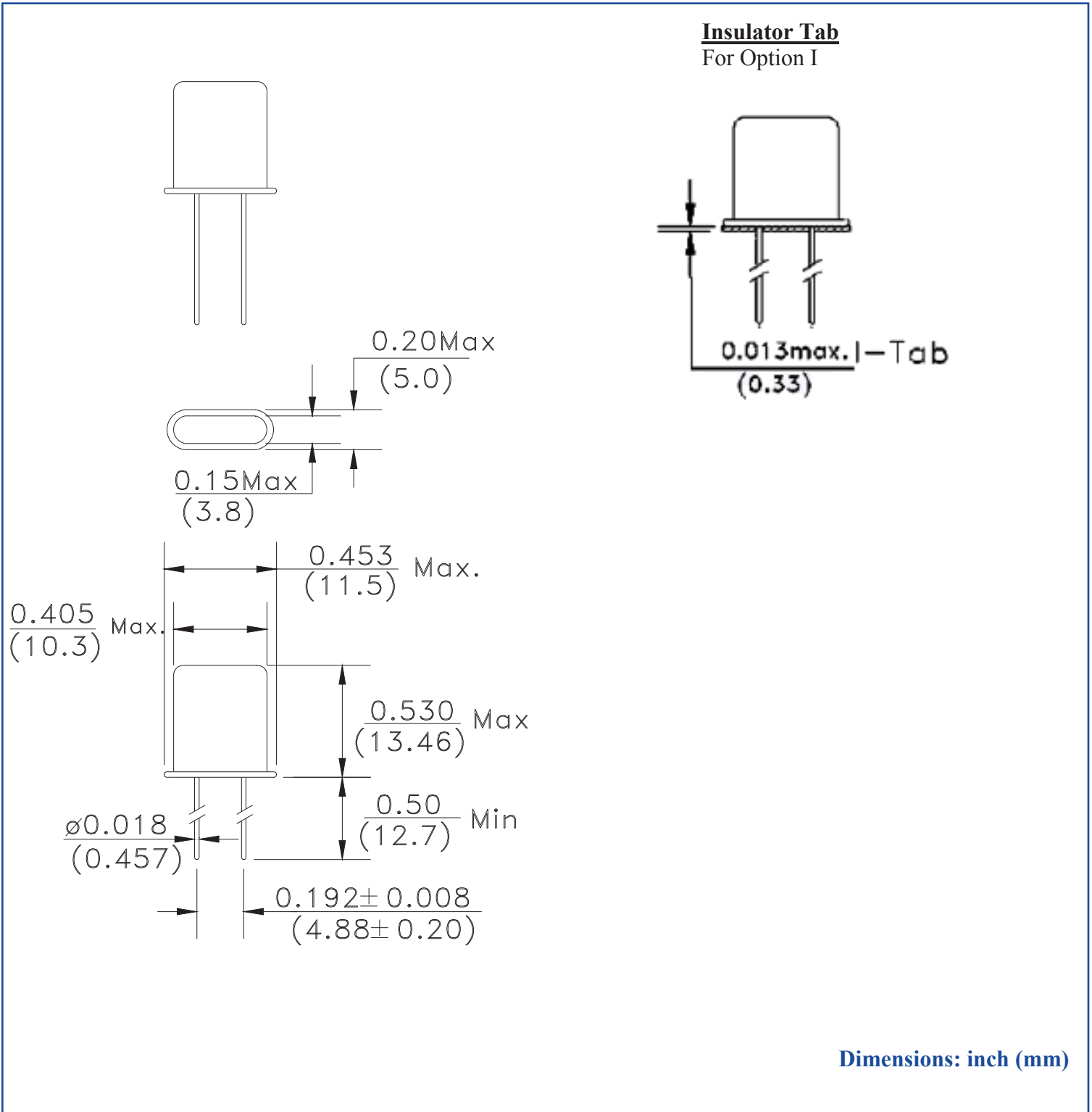
NOTE:  
\*:Frequency Stability ±100 ppm max at -10 to +60C only for BT cut.  
\*\*: -10 to +60C only.  
\*\*\*: Quality factor must be accompanied by a k value

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)     |

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

## ➤ OUTLINE DRAWING:



# HC49/U CRYSTAL

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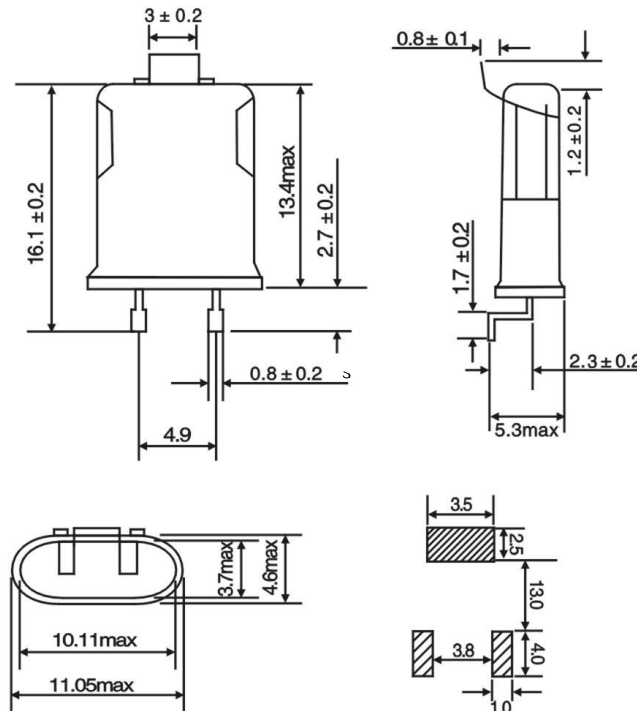
Pb RoHS/RoHS II Compliant



## OUTLINE DIMENSION CONTD...

### Metal Jacket Formed Leads

For Option MJ

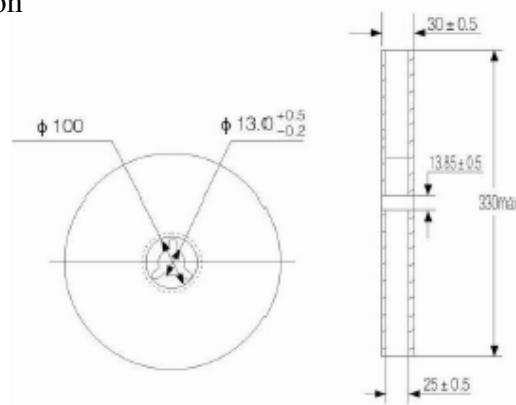
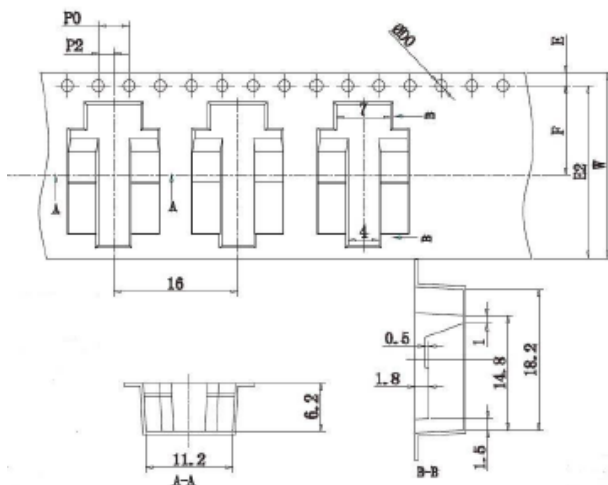


Dimensions: mm

## TAPE & REEL:

T: 1,000 pcs/reel

Tape and reel packaging applies only to MJ (metal jacket) option



Dimensions: mm

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