

# HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series



RoHS  
Compliant



11.5 x 5.0 x 3.5 mm

## FEATURES:

- High reliability & Low Cost
- Tight stability & extended temperature
- Proven resistance welded metal package

## APPLICATIONS:

- Home electronics
- Computers, modems, and communications
- Automotive and industrial
- High-precision TCXO and clock applications
- Microprocessors

## STANDARD SPECIFICATIONS:

### PARAMETERS

|   |   |
|---|---|
| ABRACON P/N   | ABL Series  |
| Frequency   | 3.579545 MHz to 70 MHz  |
| Operation Mode  | AT cut (Fundamental or 3rd OT) or BT cut (See options)<br>3.579545MHz - 24.0MHz (Fundamental) (Standard)<br>24.01 - 70.00MHz (3rd- Overtone) (Standard)<br>24.01MHz - 50.00MHz (Fund. AT or BT) (See options) |
| Operating Temperature                                       | 0°C to + 70°C (see options)   |
| Storage Temperature   | - 55°C to + 125°C   |
| Frequency Tolerance at +25°C                                | ± 50 ppm max. (see options)   |
| Frequency Stability over the Operating Temp. (Ref to +25°C) | ± 50 ppm max. (see options)   |
| Equivalent Series Resistance                                | See Table 1   |
| Shunt Capacitance C <sub>0</sub>                            | 7pF max.  |
| Load Capacitance C <sub>L</sub>                             | 18pF (see options)  |
| Drive Level   | 1 mW max., 100µW typical  |
| Aging at 25°C ± 3°C Per Year                                | ± 5ppm max.   |
| Insulation Resistance                                       | 500 MΩ min at 100Vdc ± 15V  |
| Drive level dependency (DLD), minimum 7 points tested       | 1µW to 500µW<br>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: ESR

| FREQUENCY (MHz)          | ESR (Ω) |
|--------------------------|---------|
| 3.579 - 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      |



# HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series



RoHS  
Compliant

ABL

11.5 x 5.0 x 3.5 mm

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABL - Frequency -  - R -  -  -  -  -  -

| Frequency   |
|-------------|
| XX.XXXX MHz |

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

| ESR                       |
|---------------------------|
| RXXX (Value in $\Omega$ ) |

| 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  |
| J*              | -40°C to +105°C |
| K*              | -40°C to +125°C |
| L*              | -55°C to +125°C |

| Freq. Tolerance |              |
|-----------------|--------------|
| H5              | $\pm 5$ ppm  |
| 1               | $\pm 10$ ppm |
| 7               | $\pm 15$ ppm |
| 2               | $\pm 20$ ppm |
| 3               | $\pm 25$ ppm |
| 4               | $\pm 30$ ppm |

| Freq. Stability |               |
|-----------------|---------------|
| U**             | $\pm 10$ ppm  |
| G               | $\pm 15$ ppm  |
| X               | $\pm 20$ ppm  |
| W               | $\pm 25$ ppm  |
| Y               | $\pm 30$ ppm  |
| H               | $\pm 35$ ppm  |
| Q               | $\pm 100$ ppm |
| R               | $\pm 150$ ppm |

| Packaging |             |
|-----------|-------------|
| T         | Tape & Reel |
| P         | Foam        |
| TRAY      | Tray        |

| Value Added |                                |
|-------------|--------------------------------|
| I           | Insulator Tab                  |
| L2          | Middle 3rd lead                |
| QXX<br>Q15  | Trimmed leads for 0.15" length |

| Mode |                |
|------|----------------|
| F    | Fund. AT>24MHz |
| FB   | Fund BT>24MHz  |

### NOTE:

Fundamental BT frequency stability  $\pm 100$ ppm max.at -10° C to +60° C only.

\* Frequency stability  $\pm 50$ ppm,  $\pm 100$ ppm,  $\pm 150$ ppm only. Contact ABRACON for tighter frequency stability.

\*\* -10 to +60C only.



# HC/49US (AT49) MICROPROCESSOR CRYSTAL

ABL Series

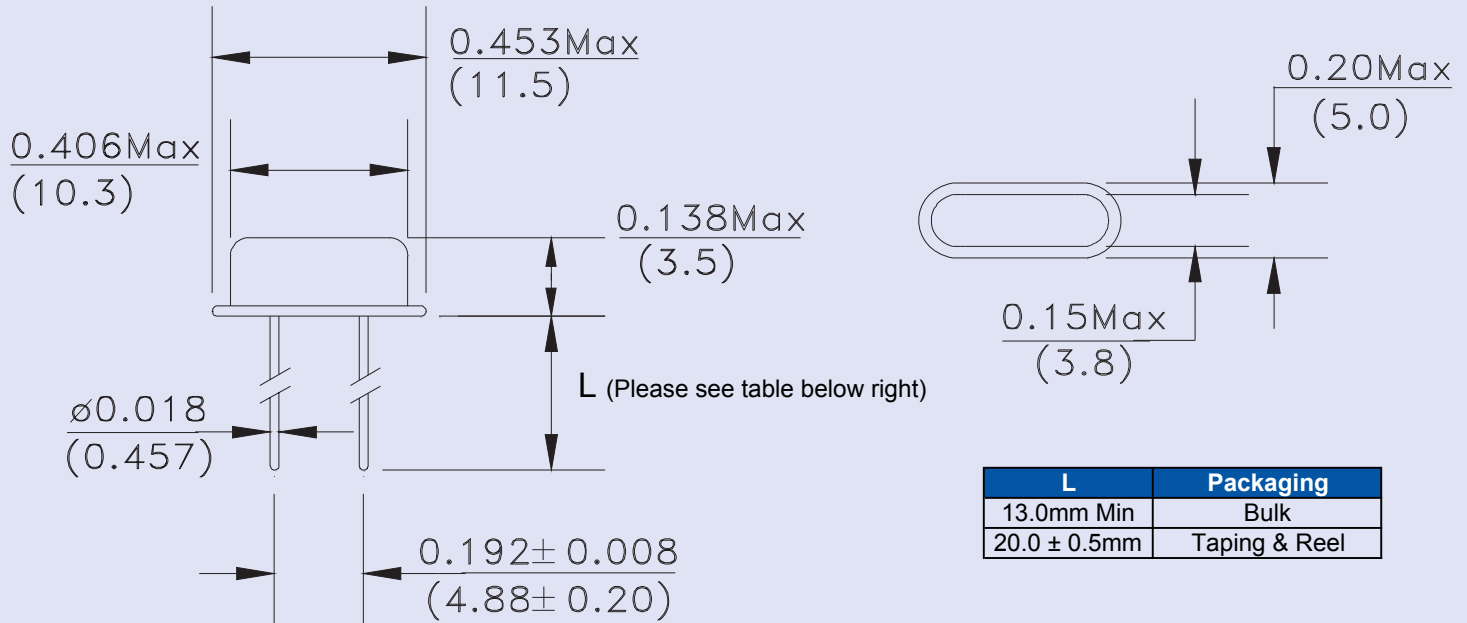


RoHS  
Compliant



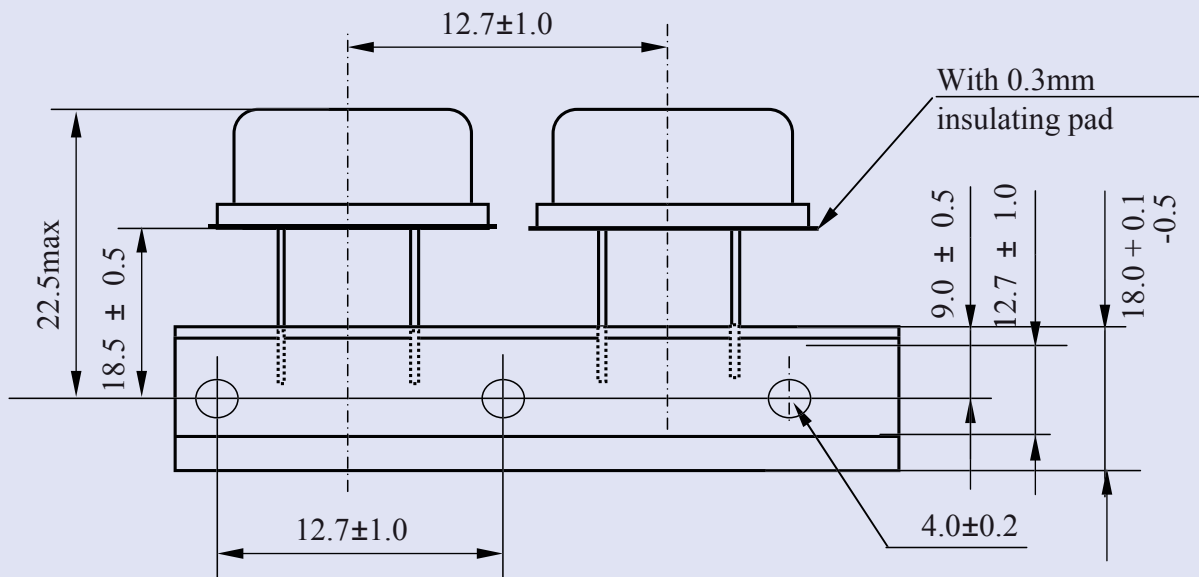
11.5 x 5.0 x 3.5 mm

## OUTLINE DRAWING:



Dimensions: mm

## TAPE & REEL: T = Tape and reel 1,000pcs/reel



Dimensions: mm