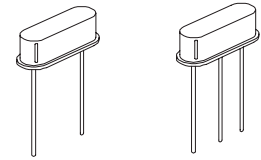




## LP Crystal Series



- HC-49/US Low Profile Metal Thru-Hole Crystals
- Available in 3 heights, LP49: 3.5mm, LP24: 2.5mm, LP21: 2.1mm and with 3rd Case Pin: 3LP49

**3.200 MHz – 70.000 MHz**

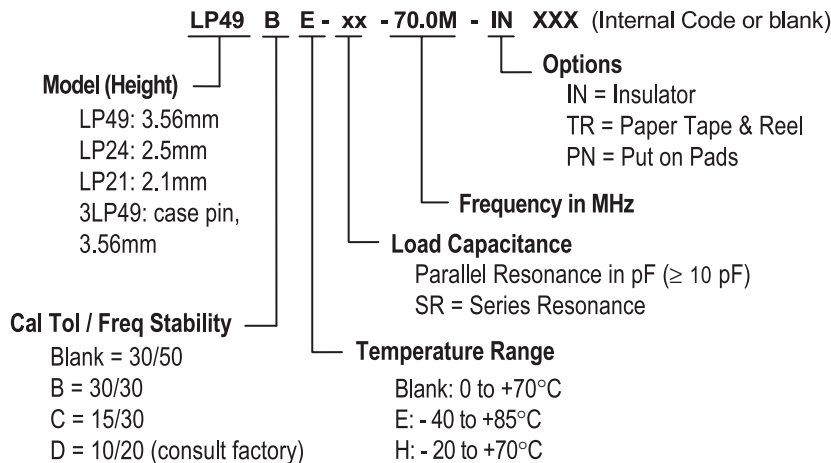
### Standard Specifications

<b>Calibration Frequency Tolerance at 25°C</b>	± 30 PPM is standard, tighter tolerances available
<b>Operating Temperature Range (OTR)</b>	0 to +70°C is standard, but can be extended to -40 to +85°C
<b>Frequency Stability (FS) over OTR</b>	± 50 PPM is standard, tighter tolerances available
<b>Drive Level</b>	50 µW is standard, customer may specify
<b>Aging at 25°C</b>	± 5 PPM per year is standard, customer may specify ± 1 PPM
<b>Shunt Capacitance</b>	7 pF maximum
<b>Pullability</b>	

May be specified by customer in terms of frequency shift required over a certain range of load capacitance (e.g. +100 PPM from CL=12 to CL=18 pF) or as motional capacitance ( f F )

### Part Numbering Guide

Portions of the part number that appear after the frequency may not be marked on part (C of C provided)



### ESR Values

Oscillation Mode	Frequency Range (MHz)	Maximum ESR (Ohms)
Fundamental	3.200 – 4.999	300
AT Cut	5.000 – 7.999	120
	8.000 – 11.999	70
	12.000 – 30.000	50
3rd Overtone	25.000 – 70.000	100
AT Cut		

Consult factory for lower ESR

Consult factory for available frequencies and specs.

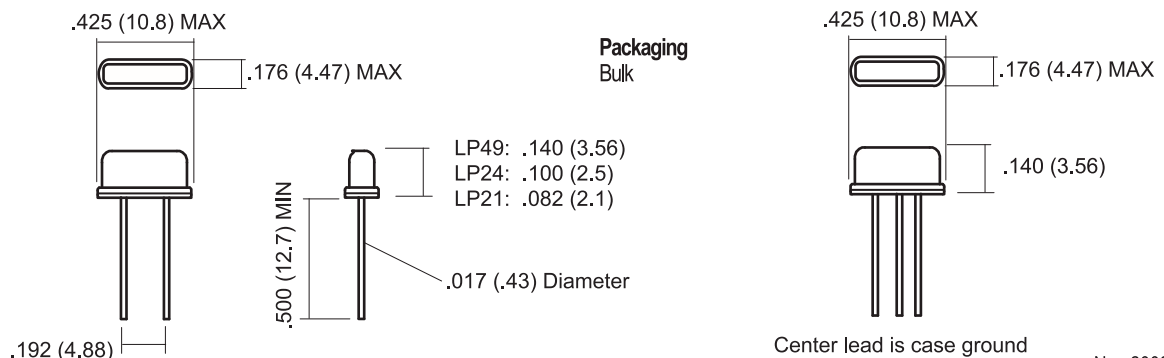
Not all options available for all frequencies. A special part number may be assigned.

### Mechanical: inches (mm)

not to scale

### 3LP49

Due to part size and factory abilities, part marking may vary from lot to lot and may contain our part number or an internal code.



Nov 2003