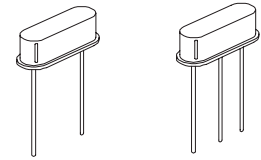




## LP Crystal Series



- 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**

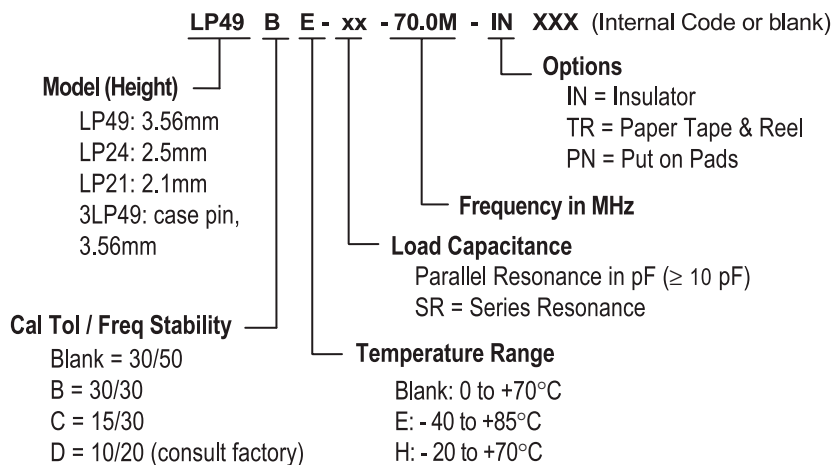
### Standard Specifications

<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.

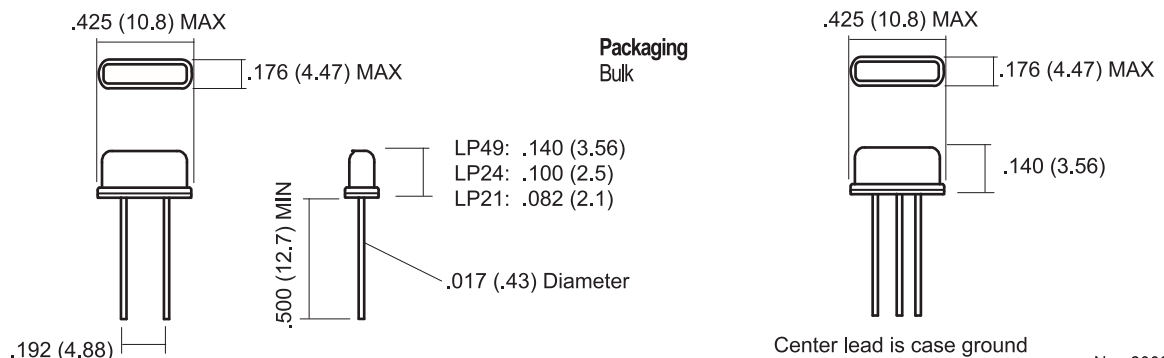
Not all options available for all frequencies. A special part number may be assigned.

### 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.



Center lead is case ground

Nov 2003