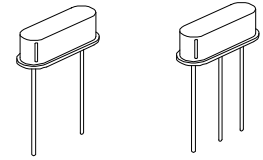




# LP Crystal Series



- 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

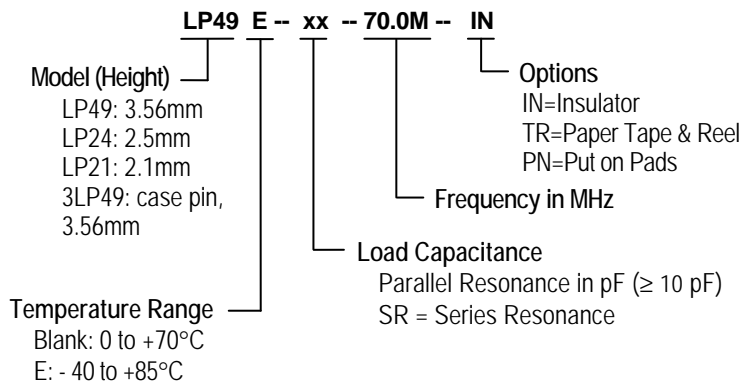
**3.200 MHz – 70.000 MHz**

### Standard Specifications

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

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



### ESR Values

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

Consult factory for lower ESR

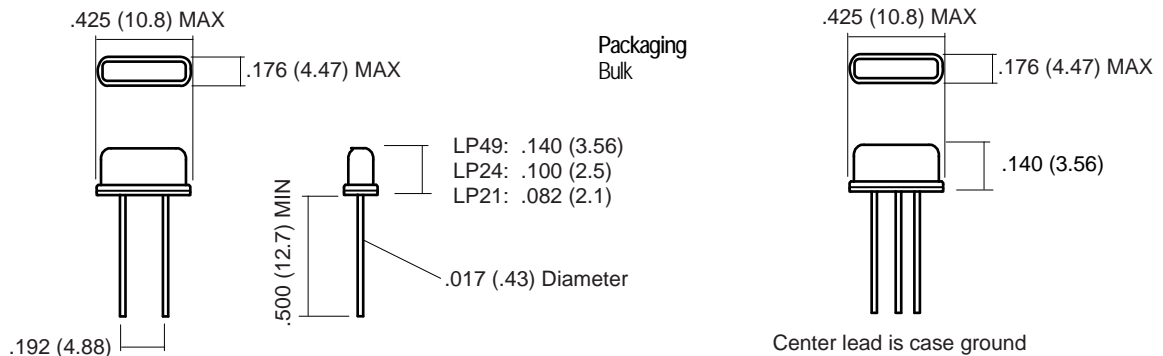
Consult factory for available frequencies and specs.  
Not all options available for all frequencies. A special part number may be assigned.

### 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.



May 2002