LF crystal units
Very low frequency
100kHz ~ 1.8432MHz

- standard and custom frequencies
- UM-1, HC-49, HC-51 packages
- BT, CT, GT cuts

The production of low frequency quartz crystal units requires the use of specific cuts and blank designs to achieve a reasonably small unit size. These cuts may be BT, CT, GT etc and the blanks may be co-planar, contoured or photo-etched. Oscillation mode is always fundamental. These combinations produce ESR values significantly higher than the conventional AT cut.

Electrical specification

case style	UM-1	HC-49/U	HC-51/U
frequency range	455kHz ~ 1.8432MHz	200kHz ~ 1.8432MHz	100kHz ~ 1.8432MHz
adjustment tolerance	±100ppm at +25°C		
temperature tolerance	±100ppm		
operating temperature	(-10 +60)°C		
storage temperature	(-40 +85)°C		
load	customer specified		
shunt capacitance C_0	7.0pF max.		
drive level	(0.5 ~ 10)milli.W		
Q factor	80,000 typical		
ageing	±5ppm first year max.		
insulation resistance	500Meg. ohm min. at+100Vd.c.		

Ordering information

EXAMPLE	LF crystal, 1.8432MHz, load 20pF, ±100ppm at +25°C, ±100ppm(-10 +60)°C
TFC PART NUMBER	XLF 1.8432M H U
XLF	crystal series: LF
1.8432M	frequency: 1.8432M = 1.8432MHz, frequency range from (100kHz ~ 1.8432)MHz
H	load capacitance: H = 20pF
U	case style: U = UM-1
OPTIONS	
load capacitance	C: 10pF, D: 12pF, E: 15pF, F: 16pF, G: 18pF, H: 20pF, J: 32pF, S: series
case style	U: UM-1, 49: HC-49/U, 51: HC-51/U

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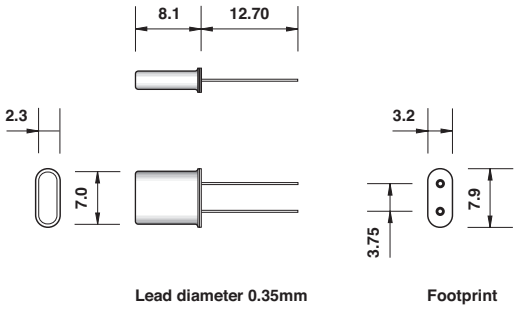
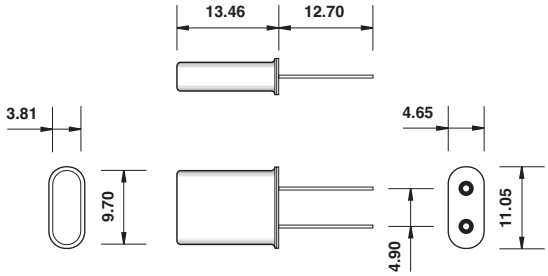
LF crystal units

UM-1 dimensions(mm)



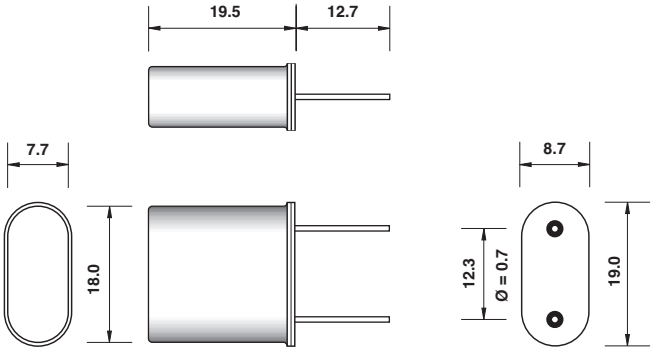
Lead diameter 0.35mm Footprint

HC-49/U dimensions(mm)



Lead diameter 0.43 Footprint

HC-51/U dimensions(mm)



Lead diameter 0.7mm Footprint

ESR - equivalent series resistance

CASE	FREQUENCY RANGE MHz	ESR(Ω)
UM-1	(455 ~ 799)kHz	<4K
	800kHz ~ 1.27MHz	<3K
	1.8432MHz	<900
HC-49/U	(200 ~ 300)kHz	<5K
	(301 ~ 900)kHz	<3K
	901kHz ~ 1.8432MHz	<900
HC-51/U	(100 ~ 179)kHz	<5K
	(180 ~ 400)kHz	<3K
	(401 ~ 900)kHz	<2K
	900kHz ~ 1.0MHz	<900

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