

## CFPX-98 CRYSTALS

ISSUE 7; 1 NOVEMBER 2010 – RoHS 2002/95/EC

### Description

- SMD 4 pad version of the HC49/3.5H
- Resistance welded, hermetically sealed in an inert atmosphere, glass to metal seals on leads
- Please see our 88SMX for a 6 pad version of this package
- Please see our HC49/4HSMX for standard stock items in this package type

### General Specifications

- Load Capacitance (CL): 10pF to 75pF or Series
- Drive Level: 500µW max
- Ageing: ±5ppm typ per year
- Shunt Capacitance (C<sub>0</sub>): 7pF max

### Standard Frequency Tolerances and Stabilities

- ±30ppm, ±50ppm, ±100ppm

### Operating Temperature Ranges

- 0 to 50°C
- -10 to 60°C
- -20 to 70°C
- -40 to 85°C
- -55 to 105°C

### Storage Temperature Range

- -55 to 125°C

### Environmental

- Shock: 981m/s<sup>2</sup>, 6ms, 3 times in each of 3 mutually perpendicular planes
- Vibration: 10Hz-60Hz, 0.75mm amplitude, 60Hz-500Hz, 98.1m/s<sup>2</sup>, 30mins in 3 mutually perpendicular planes

### Packaging

- Loose in bulk pack, 100pcs per bag
- Tape and reel in accordance with EIA-481-D, 1kpcs per reel (please see pages 372 & 373)

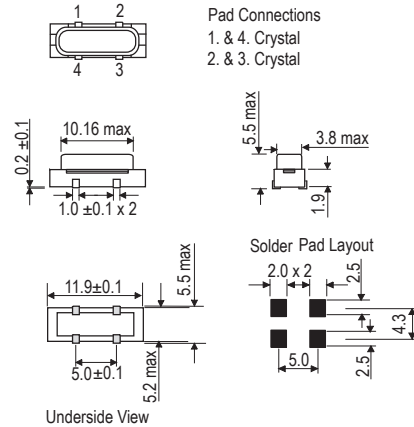
### Ordering Information (\*minimum required)

- Frequency\*
- Model\*
- Frequency Tolerance (@25°C)\*
- Frequency Stability (over operating temperature range)\*
- Operating Temperature Range\*
- Load Capacitance\*
- Overtone\*

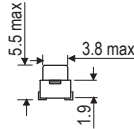
### Example

- 10.0MHz CFPX-98  
50/50/-40 to 85C/10 FUND

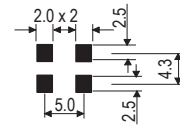
### Outline (mm)



Pad Connections  
1. & 4. Crystal  
2. & 3. Crystal



Solder Pad Layout



Underside View



**Electrical Specifications – maximum limiting values**

Frequency Range	Frequency Tolerance @25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature Range		ESR Max	Vibration Mode
			Minimum	Maximum		
3.2 to <4.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	300Ω	Fundamental AT cut
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-30 to 80°C	±25ppm			
		-40 to 85°C	±30ppm			
		-55 to 105°C	±100ppm			
4.0 to <5.5MHz		0 to 50°C	±15ppm	±100ppm	130Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-30 to 80°C	±25ppm			
		-40 to 85°C	±30ppm			
		-55 to 105°C	±100ppm			
5.5 to <8.0MHz		0 to 50°C	±15ppm	±100ppm	60Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-30 to 80°C	±25ppm			
		-40 to 85°C	±30ppm			
		-55 to 105°C	±100ppm			
8.0 to 40.0MHz		0 to 50°C	±15ppm	±100ppm	40Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-30 to 80°C	±25ppm			
		-40 to 85°C	±30ppm			
		-55 to 105°C	±100ppm			
27.0 to 50.0MHz	Inclusive with Frequency Stability	0 to 50°C	±50ppm	±100ppm	40Ω	Fundamental BT cut
		-10 to 60°C	±70ppm			
		-20 to 70°C	±100ppm			
26.0 to 100.0MHz	±10ppm to 100ppm	0 to 50°C	±15ppm	±100ppm	100Ω	3rd Overtone AT cut
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-30 to 80°C	±25ppm			
		-40 to 85°C	±50ppm			
		-55 to 105°C	±100ppm			

Note: For any other frequencies / specification please contact our sales offices

