

ISSUE 4; September 2021

### Description

- 4 x 2.5mm SMD crystal in a hermetically sealed ceramic package with a seam sealed metal lid. Often used in Bluetooth, ZigBee and similar RF applications.

### Frequency Parameters

- Frequency: 12.0MHz to 50.0MHz
- Frequency Tolerance:  $\pm 10.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Tolerance Condition: @ 25°C
- Frequency Stability:  $\pm 10.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing:  $\pm 3\text{ppm}$  max per year @ 25°C
- Developed Frequencies: 12.0MHz, 13.0MHz, 13.560MHz, 14.318180MHz, 14.74560MHz, 16.0MHz, 16.93440MHz, 18.4320MHz, 19.66080MHz, 20.0MHz, 24.5760MHz, 25.0MHz, 26.0MHz, 27.0MHz, 27.120MHz & 29.020MHz.

### Electrical Parameters

- Load Capacitance (CL): 9.0pF to 30.0pF
- Shunt Capacitance (C0): 5pF max
- Drive Level: 100µW max

### Operating Temperature Ranges

- 10 to 60°C
- 20 to 70°C
- 40 to 85°C

### Environmental Parameters

- Storage Temperature Range: -40°C to 90°C
- Drop: 75cm drop (3 times) onto hard wooden board.
- Vibration: 1.5mm amplitude, 10Hz-55Hz, 1min in 3 mutually perpendicular planes, duration 2hrs each plane.

### Manufacturing Details

- RoHS Terminations: NiAu
- RoHS Reflow: 260degC 10s

### Ordering Information

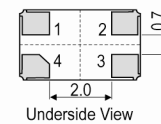
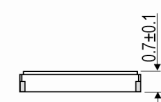
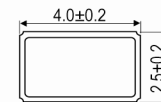
- Frequency\*
- Model\*
- Frequency Tolerance (@ 25°C)\*
- Frequency Stability (over operating temperature range)\*
- Operating Temperature Range\*
- Load Capacitance\*
- Overtone
- (\*minimum required)
- Example
- 20.0MHz CFPX-201
- 50/50/-10 to 60C/10 FUND

### Compliance

- RoHS Status (2015/863/EU): Compliant
- REACH Status: Compliant
- MSL Rating (JDEC-STD-033): Not Applicable



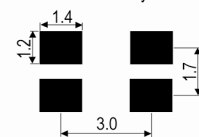
### Outline (mm)



#### Pad Connections

- Crystal
  - GND & Lid
  - Crystal
  - GND & Lid
- Note: pads 2 & 4 should be connected to GND for correct operation.

#### Solder Pad Layout



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**Packaging Details**

- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000

**Electrical Specification - maximum limiting values**

Frequency Min	Frequency Max	Temperature Range	Stability (Min*)	Over Tone Order	ESR
		°C	ppm		Ω
12.0MHz	12.999999MHz	-10 to 60	±10	Fundamental	100
		-20 to 70	±15		100
		-40 to 85	±15		100
13.0MHz	18.999999MHz	-10 to 60	±10	Fundamental	80
		-20 to 70	±15		80
		-40 to 85	±15		80
19.0MHz	39.999999MHz	-10 to 60	±10	Fundamental	60
		-20 to 70	±15		60
		-40 to 85	±15		60
40.0MHz	50.0MHz	-10 to 60	±10	Fundamental	50
		-20 to 70	±15		50
		-40 to 85	±15		50

\*Stability Maximum values ±50ppm

*This document was correct at the time of printing; please contact your local sales office for the latest version.*

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