

CFPX-228 CRYSTALS

ISSUE 2; 1 NOVEMBER 2010 - RoHS 2002/95/EC

Description

- Replacement for the 3SMX
- Standard 6 x 3.5mm crystal
- Available in a 2 or 4 pad package
- Ceramic package with a seam sealed metal lid, hermetically sealed

General Specifications

- Load Capacitance (CL): 10pF to 30pF or Series
- Drive Level: 100µW max
- Ageing: ±3ppm max per year at 25°C
- Shunt Capacitance (C₀): 7pF max

Standard Frequency Tolerances and Stabilities

- ±10ppm to ±100ppm

Operating Temperature Ranges

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

Storage Temperature Range

- -55 to 125°C

Environmental

- Drop Test: Unit dropped from height of 100cm onto hard wooden plate (>30mm thickness), three times. JIS-C-0044
- Vibration: MIL-STD-883F: 2007.3 Frequency range 20 to 2000Hz, peak amplitude 1.52mm, peak acceleration 20G, 20min/axis X, Y & Z, total test time 4 hrs

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)

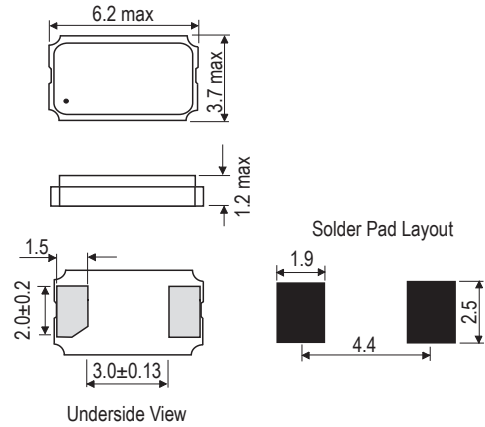
Ordering Information (*minimum required)

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

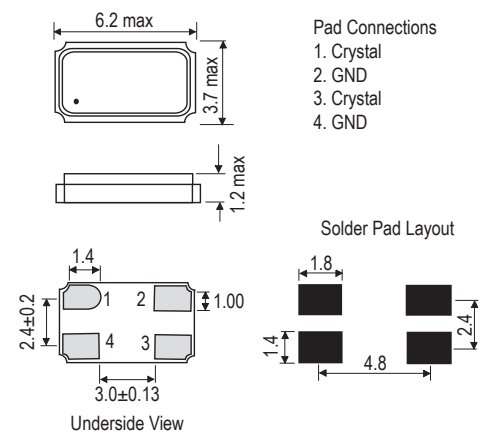
Example

- 10.0MHz CFPX-228
50/50/-40 to 85C/10 FUND

Outline (mm) CFPX-228-A



Outline (mm) CFPX-228-B





Electrical Specification - 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		
8.0 to 10.0MHz	±10ppm to ±50ppm	0 to 50°C	±15ppm	±100ppm	150Ω	Fundamental AT cut
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>10.0 to 12.0MHz		0 to 50°C	±15ppm		80Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>12.0 to 15.0MHz		0 to 50°C	±15ppm		60Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>15.0 to 20.0MHz		0 to 50°C	±15ppm		50Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>20.0 to 30.0MHz		0 to 50°C	±15ppm		40Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>30.0 to 40.0MHz		0 to 50°C	±15ppm		30Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>40.0 to 52.0MHz		0 to 50°C	±15ppm		20Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
40.0 to 52.0MHz		0 to 50°C	±15ppm		100Ω	3rd Overtone AT cut
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>52.0 to 80.0MHz		0 to 50°C	±15ppm		80Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			
>80.0 to 133.0MHz		0 to 50°C	±15ppm		70Ω	
		-10 to 60°C	±20ppm			
		-20 to 70°C				
		-40 to 85°C	±30ppm			

Note: For any other frequency / specification combinations, please contact our sales offices

