SURFACE MOUNT QUARTZ CRYSTALS

CFPX-5000 Crystals

ISSUE 2; 11 JUNE 1999

Delivery Options

- Please contact our sales office for current leadtimes

Holder Style

- CFPX-5000 series crystals are encapsulated in a ceramic resistance welded hermetic package

General Specifications

- Load Capacitance (C_L): 10pF to 50pF or Series
- Drive Level: 0.1mW max
- Static Capacitance (C_0): 7pF max

Standard Frequency Tolerances and Stabilities

- ±5ppm, ±7.5ppm, ±10ppm, ±15ppm, ±20ppm, ±30ppm

Operating Temperature Ranges

- 0 to 50°C, –30 to 80°C, –10 to 60°C, –40 to 90°C, –20 to 70°C, –55 to 105°C

Storage Temperature Range

- –55 to 125°C

Ageing

- ±2ppm max. during first year
- ±5ppm max. during 10 years

Environmental Specification

- Bump: IEC 60068-2-29 Test Eb, 1000±10 bumps at 400m/s² (40gn) in each of 3 mutually perpendicular planes
- Vibration: IEC 60068-2-6 Test Fc Procedure B4, 1-60Hz 1.5mm displacement, 60 to 500Hz 98.1m/s² acceleration, 30 minutes in each of three mutually perpendicular planes at 1 octave per minute
- Shock: IEC 60068-2-27 Test Ea, 981m/s² acceleration for 6ms duration, 3 shocks in each direction along 3 mutually perpendicular axes
- Damp Heat: IEC 60068-2-3 Test Ca (Steady State), Duration 56 days, recovery time 12 hours
- Change of temperature: IEC 60068-2-14 Test Na (Rapid Change), (MIL-STD-202 Method 107), 10 cycles of 30 minutes duration each for –55/125°C cycle
- SMD: Infra-red (class C, test category 1 as defined in classification BS CECC 00802; 1994). Profile in accordance with figure 3. Testing to be performed in accordance with BS CECC 00802, IEC 60068-2-20 and IEC 60068-2-58
- Solderability: IEC 60068-2-20 Test Ta Method (solder bath), (MIL-STD-202 Method 208), Temperature 235°C
- Sealing: IEC 60068-2-17 Test Qk (Fine Leak), (MIL-STD-202 Method 112 Test Condition C) IEC 60068-2-17 Test Qc (Gross Leak), (MIL-STD-202 Method 112 Test condition D)

Internal Construction

- Options are available for a ruggedised crystal mount assembly for the most stringent applications

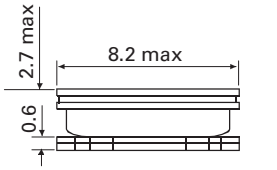
Marking

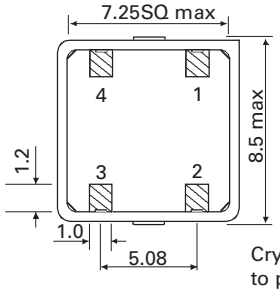
- Includes Frequency

Minimum Order Information Required

- Frequency + Holder + Frequency Tolerance @ 25°C + Frequency Stability + Operating Temperature Range + Circuit Condition + Overtone Order

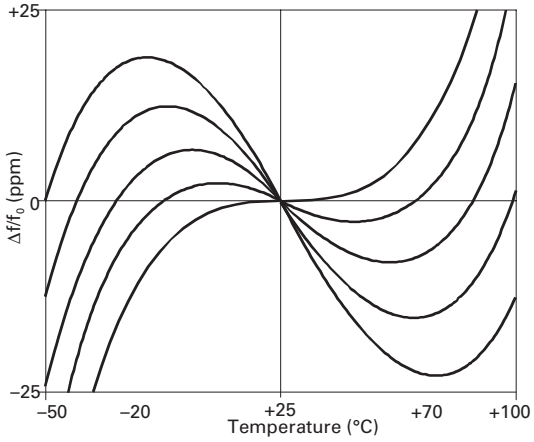
Outline in mm





Crystal connected to pads 2 and 4

Typical Frequency Vs Temperature Curves for various angles of AT-cut crystals



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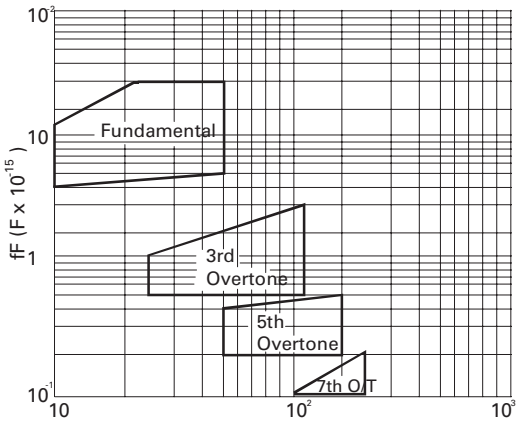
Electrical Specification – maximum limiting values

Frequency Range	Frequency Tolerance @ 25°C ±2°C (from)	Operating Temperature Range	Frequency Stability Available Over Operating Temperature		ESR max.	Vibration Mode
			Minimum	Maximum		
10.0 to 15.0MHz	±10ppm	0 to 50°C	±5ppm	±100ppm	30Ω	Fundamental AT cut
		–10 to 60°C	±7.5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±15ppm	±100ppm		
		–40 to 90°C	±20ppm	±100ppm		
		–55 to 105°C	±30ppm	±100ppm		
15.0 to 52.0MHz	±10ppm	0 to 50°C	±5ppm	±100ppm	20Ω	Fundamental AT cut
		–10 to 60°C	±7.5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±15ppm	±100ppm		
		–40 to 90°C	±20ppm	±100ppm		
		–55 to 105°C	±30ppm	±100ppm		
25.0 to 150.0MHz	±10ppm	0 to 50°C	±5ppm	±100ppm	40Ω	3rd Overtone AT cut
		–10 to 60°C	±7.5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±15ppm	±100ppm		
		–40 to 90°C	±20ppm	±100ppm		
		–55 to 105°C	±30ppm	±100ppm		
60.0 to <200.0MHz	±10ppm	0 to 50°C	±5ppm	±100ppm	60Ω	5th Overtone AT cut
		–10 to 60°C	±7.5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±15ppm	±100ppm		
		–40 to 90°C	±20ppm	±100ppm		
		–55 to 105°C	±30ppm	±100ppm		
120.0 to 250.0MHz	±10ppm	0 to 50°C	±5ppm	±100ppm	100Ω	7th Overtone AT cut
		–10 to 60°C	±7.5ppm	±100ppm		
		–20 to 70°C	±10ppm	±100ppm		
		–30 to 80°C	±15ppm	±100ppm		
		–40 to 90°C	±20ppm	±100ppm		
		–55 to 105°C	±30ppm	±100ppm		

Motional Capcitance



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