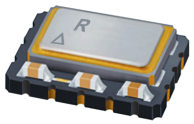
CFPT9000

SMD Temperature Compensated Crystal Oscillator (PLUTO)

A series of surface mountable 7.0x5.0mm Temperature Compensated Voltage Controlled Crystal Oscillators (TCVCXOs) for medium to high volume applications where small size and high performance are prerequisites.



Product description

The CFPT9000 uses Rakon's proprietary ASIC 'Pluto™', a single chip oscillator and analogue compensation circuit, capable of sub 0.2ppm performance over an extended temperature range. Its ability to function down to a supply voltage of 2.4V and low power consumption makes it particulary suitable for mobile applications.

Applications

- Communications
- Other

Features

- Sub 0.2ppm stability over extended temperature range
- Wide frequency range

Specifications

1.0 SPECIFICATION REFERENCES

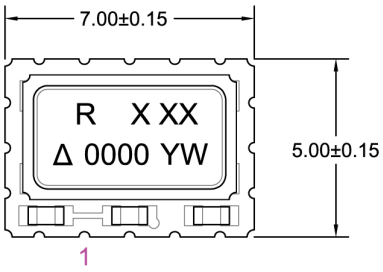
Line	Parameter	Description
1.1	Model description	CFPT9000
1.2	Part number format	Exxxx(LF)(T), issue A (YYYY-MM-DD)
1.3	RoHS compliant	Yes, part numbers with suffix 'LF' (non-RoHS version available upon request)
1.4	Package size	7.0mm x 5.0 x 2.25 mm. Please select footprint version P1~P4 in model code builder (for details see model drawings). P1: 10 pad (default) P2: 10 pad (inline) P3: 8 pad P4: 4 pad

2.0 FREQUENCY CHARACTERISTICS

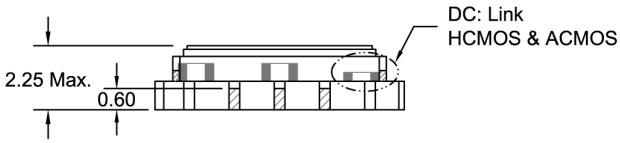
Line	Parameter	Test Condition	Value	Unit
2.1	Nominal frequency range	Frequency range available (note 1)	1.2 to 40	MHz
2.2	Frequency calibration	Initial calibration @ 25°C	±1 max	ppm
2.3	Reflow shift	Measured ≥ 60 minutes after reflow	±1 max	ppm
2.4	Frequency stability over temperature	Reference to (Fmax + Fmin)/2	±0.2 to 2.5	ppm
2.5	Temperature range	Operating temperature range over which temperature stability is measured (wider than -40 to 85°C available on request)	-40 to 85	°C
2.6	Supply voltage stability	±10% variation, reference to frequency at nominal supply voltage, typical value	±0.2	ppm
2.7	Load sensitivity	HCMOS, ACMOS: ±5pF variation, clipped sinewave / sinewave: ± 10% variation, reference to frequency at nominal load, typical value	±0.2	ppm
2.8	Long term stability	First year, ≤ 20MHz	±1 max	ppm
2.9	Long term stability	First year, > 20MHz	±2 max	ppm
2.10	Long term stability	10 years, ≤ 20MHz	±3 max	ppm
2.11	Long term stability	10 years, > 20MHz	±5 max	ppm
2.12	Acceleration sensitivity	Gamma vector, 3-axes, 30-1500Hz, typically less than...	2	ppb/g

Drawing Name: CFPT9000 Model Drawing - P1

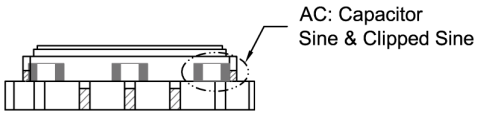
MODEL DRAWING



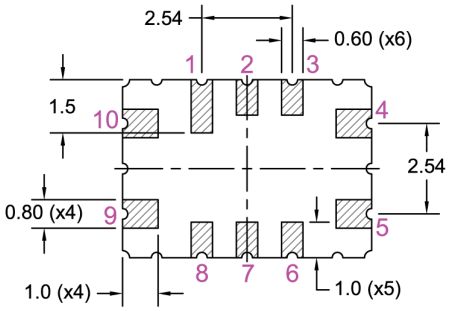
TOP VIEW



FRONT VIEW (DC)



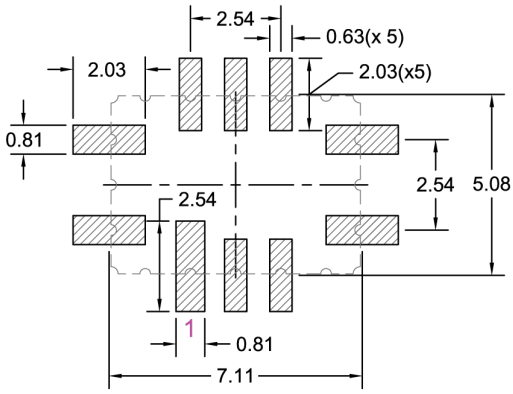
FRONT VIEW (AC)



BOTTOM VIEW

NOTE:
Pin connections are detailed in the specification.

RECOMMENDED PAD LAYOUT - TOP VIEW

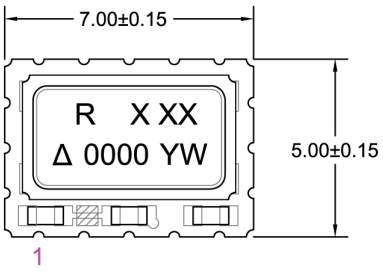


TITLE: CFPT9000 Model 10P Standard (P1)	FILENAME: CAT704	TOLERANCES:	
RELATED DRAWINGS:	REVISION: A	XX = ±0.5	
	DATE: 03-Aug-12	X.X = ±0.2	
	SCALE: 5 : 1	X.XX = ±0.10	
	Millimetres	X.XXX = ±0.05	
		X° = ±1.0°	
		Hole = ±0.10	

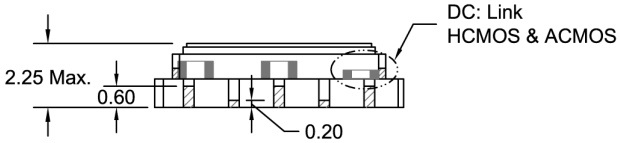
rakon

Drawing Name: CFPT9000 Model Drawing - P2

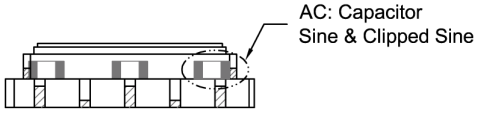
MODEL DRAWING



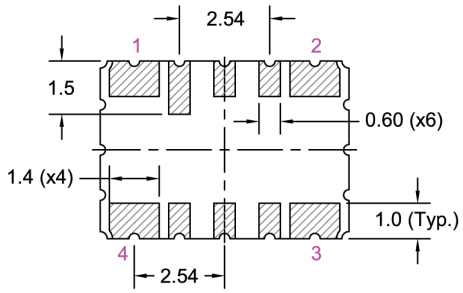
TOP VIEW



FRONT VIEW (DC)



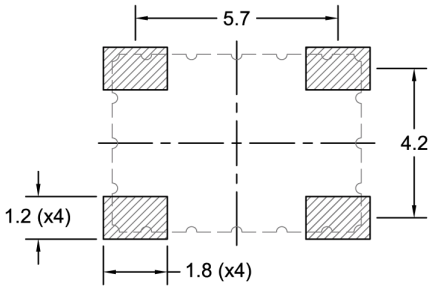
FRONT VIEW (AC)



BOTTOM VIEW

NOTE:
Pin connections are detailed in the specification.

RECOMMENDED PAD LAYOUT - TOP VIEW

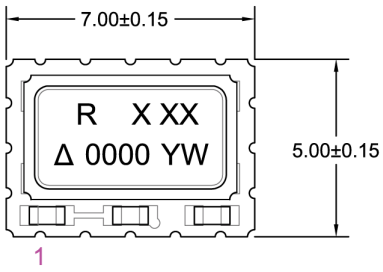


TITLE: CFPT9000 Model 10P Inline (P2)	FILENAME: CAT705	TOLERANCES:	
RELATED DRAWINGS:	REVISION: A	XX = ±0.5	
	DATE: 03-Aug-12	X.X = ±0.2	
	SCALE: 5 : 1	X.XX = ±0.10	
	Millimetres	X.XXX = ±0.05	
		X° = ±1.0°	
		Hole = ±0.10	

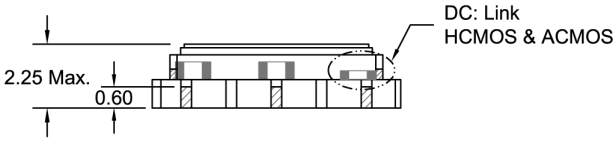
rakon

Drawing Name: CFPT9000 Model Drawing - P3

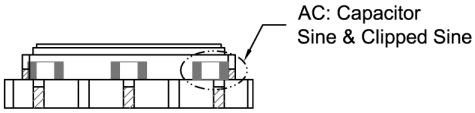
MODEL DRAWING



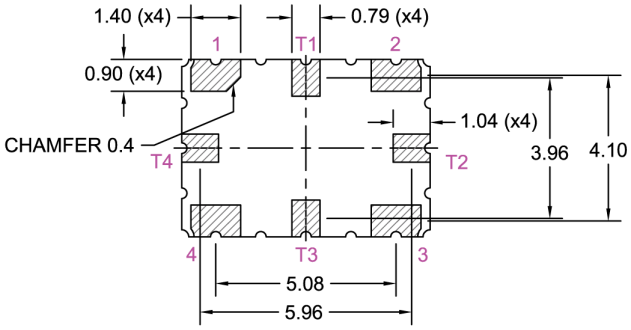
TOP VIEW



FRONT VIEW (DC)



FRONT VIEW (AC)

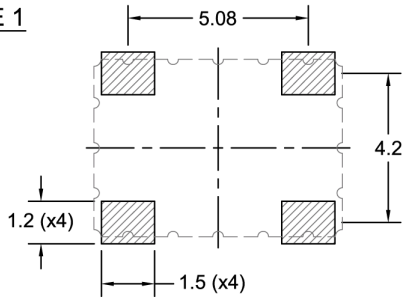


BOTTOM VIEW

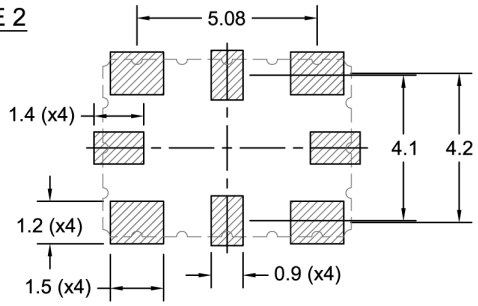
NOTE:
Pin connections are detailed in the specification.

RECOMMENDED PAD LAYOUT - TOP VIEW

TYPE 1



TYPE 2

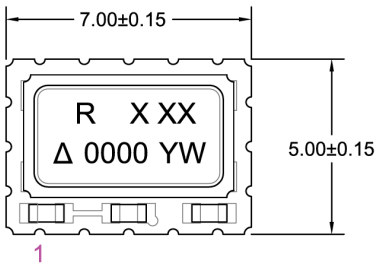


TITLE: CFPT9000 Model 8P (P3)	FILENAME: CAT706	TOLERANCES:
RELATED DRAWINGS:	REVISION: A	XX = ±0.5
	DATE: 03-Aug-12	X.X = ±0.2
	SCALE: 5 : 1	X.XX = ±0.10
	Millimetres	X.XXX = ±0.05
		X° = ±1.0°
		Hole = ±0.10

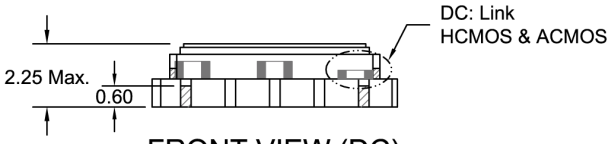
rakon

Drawing Name: CFPT9000 Model Drawing - P4

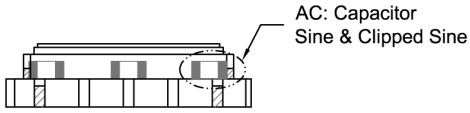
MODEL DRAWING



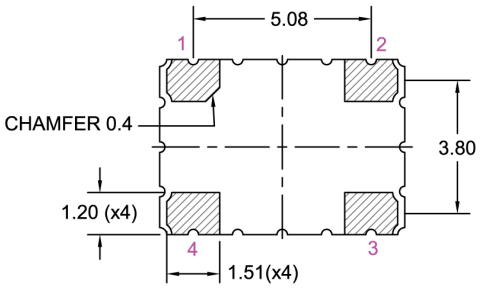
TOP VIEW



FRONT VIEW (DC)



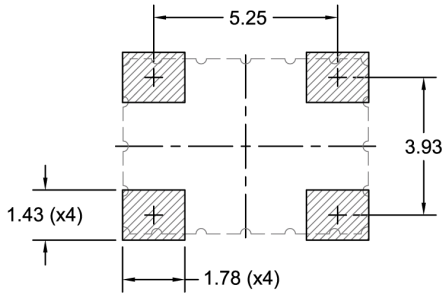
FRONT VIEW (AC)



BOTTOM VIEW

NOTE:
Pin connections are detailed in the specification.

RECOMMENDED PAD LAYOUT - TOP VIEW



TITLE: CFPT9000 Model 4P (P4)	FILENAME: CAT707	TOLERANCES:
RELATED DRAWINGS:	REVISION: A	XX = ±0.5
	DATE: 03-Aug-12	X.X = ±0.2
	SCALE: 5 : 1	X.XX = ±0.10
	Millimetres	X.XXX = ±0.05
		X° = ±1.0°
		Hole = ±0.10

rakon