

# CFPO-4: High Stability OCXO

ISSUE 3; 1 APRIL 2002

## Description

- High stability OCXO

## Package Outlines

- 40.0 x 30.0 x 20.0mm (40)
- 51.0 x 41.0 x 25.0mm (51)
- 50.8 x 50.8 x 25.0mm (50)

## Supply Voltage

- Standard 12V (12)
- Optional 9V (9), 15V (15)

## Frequency Ranges

- 2.0 to 16.3840MHz (CFPO-4, -A1, -A2)
- 2.0 to 40.0MHz (CFPO-4, -A3, -A4)

## Input Current @ 12V (Power Consumption)

- Warm up:  $\leq 500\text{mA}$  ( $\leq 6\text{W}$ )
- @ 25°C:  $\leq 150\text{mA}$  ( $\leq 1.8\text{W}$ ) (calm air)

## Warm Up Time @ 25°C (typical)

- $\leq \pm 1 \times 10^{-8}$  after 10 minutes (calm air)

## Retrace after 24 hours off @25°C

- $\leq \pm 5 \times 10^{-9}$  after 60 minutes

## Output Compatibility

- Sine  $\geq 3$  dBm (50Ω) (S)
- HCMOS (C)

## Phase Noise @ 10.0MHz (sine output)

- 10Hz  $\leq -115\text{dBc/Hz}$
- 100Hz  $\leq -135\text{dBc/Hz}$
- 1kHz  $\leq -150\text{dBc/Hz}$
- 10kHz  $\leq -155\text{dBc/Hz}$

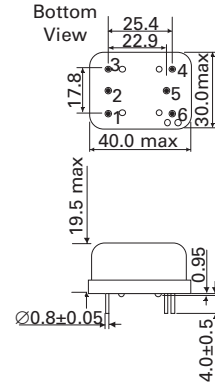
## Environmental Specification (non-operating)

- Storage Temperature Range: -55 to 90°C
- Shock: 50g for 11ms
- Vibration: 10g for 10 to 500Hz

## Marking Includes

- Model number (including options)
- Frequency
- Serial Number
- Date Code (Year/Week)

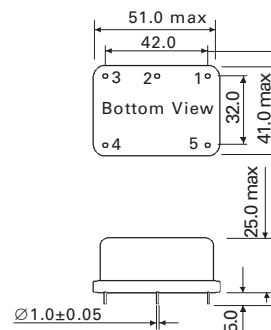
## Outline in mm - Package 40



Pin	Function
1.	Input frequency control
2.	Output reference voltage
3.	Input supply (+)
4.	Output signal
5.	Mechanical GND and (-) supply

All tolerances  $\pm 0.2\text{mm}$

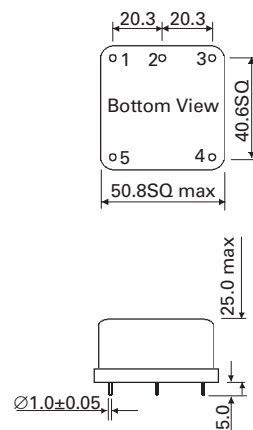
## Outline in mm - Package 51



Pin	Function
1.	Mechanical GND and supply
2.	Frequency control input
3.	Ref.voltage output
4.	Supply input
5.	Signal output

All tolerances  $\pm 0.2\text{mm}$

## Outline in mm - Package 50



Pin	Function
1.	Input frequency control
2.	Output ref. voltage
3.	Output signal
4.	Mechanical ground and (-) supply
5.	Input supply (+)

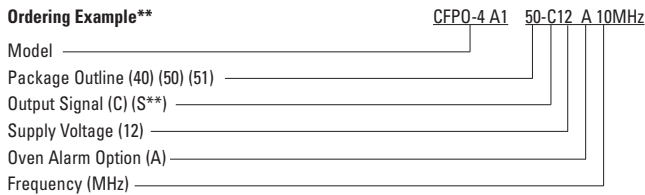
All tolerances  $\pm 0.2\text{mm}$

OCXOs

### Electrical Specification

Operating Temperature Range	Stability within Temperature Range pk to pk	Long Term Stability @ 25°C after 30 days operation			Frequency Adjustment from 0V to V Ref(*) (pk-pk)	Frequency Stability Vs Supply Voltage Change (±5%) and Load Change (1 to 2 HCMOS)	Model Number
		Per Day	Per Month	Per Year			
-20 to 75°C	$\leq 3 \times 10^{-9}$	$\leq 7 \times 10^{-11}$	$\leq 2 \times 10^{-9}$	$\leq 1.2 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-4 A1
-20 to 75°C	$\leq 5 \times 10^{-9}$	$\leq 1 \times 10^{-10}$	$\leq 3 \times 10^{-9}$	$\leq 1.5 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-4 A2
-20 to 75°C	$\leq 1 \times 10^{-8}$	$\leq 2 \times 10^{-10}$	$\leq 6 \times 10^{-9}$	$\leq 3 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 5 \times 10^{-10}$	CFPO-4 A3
-20 to 75°C	$\leq 1 \times 10^{-8}$	$\leq 3 \times 10^{-10}$	$\leq 1 \times 10^{-8}$	$\leq 5 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 5 \times 10^{-10}$	CFPO-4 A4

#### Ordering Example\*\*

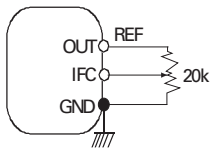


\*\* Sine available in package 40 from 8.19MHz to 16.384MHz

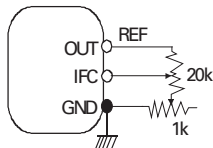
(\*) V ref. = Voltage Reference: +7.0±0.2V

### External Frequency Adjustment

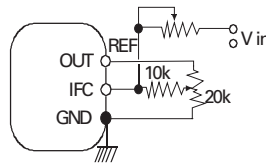
Manual freq. adjust.  
Stability  $< 1 \times 10^{-8}$



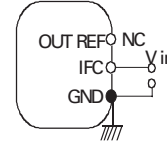
Fine manual freq. adjust.  
Stability  $< 1 \times 10^{-10}$



Freq. control voltage and manual adjust



Ext. freq. control voltage



All potentiometers must be 10 turns type with temperature coefficient 50ppm/°C