

CFPO-DO Series

ISSUE 1; 19 OCTOBER 2004

Description

- The CFPO-DO series are a range of Super Single Oven OCXO's designed as a compact and smart frequency source/time keeping reference for all synchronization systems including global positioning system (GPS) based equipment

CFPO-DO series key performances are:-

- Holdover better than 7µs over 24 hours
- Frequency stability over operating temperature range (see table text)
- Frequency stability versus change of all operating conditions (pressure, supply, load, etc.)

Package Options (metal leaded package, hermetically sealed)

- CFPO-DO-1 50.8 x 50.8 x 25.0mm (50)
- CFPO-DO-2 51.0 x 41.0 x 25.0mm (51)
- CFPO-DO-3 51.0 x 41.0 x 19.05mm (51B)
- CFPO-DO-4 40.0 x 30.0 x 20.0mm (40)

Supply Options

- Standard: 12V ±5% (12)

Standard Frequencies

- 10.0, 12.8, 13.0MHz

Frequency Ranges

- 8.192 to 15.0MHz
- Initial tolerance @ 25°C Fo ±1x10⁻⁷

Power Consumption

- Warm-up: ≤750mA
- @25°C: ≤250mA (calm air)

Warm Up Time @ 25°C (typical)

- ±1 x 10⁻⁸ after 10 mins

Retrace after 24 Hours off @25°C (typical)

- ±3 x 10⁻⁹ after 60 minutes

Frequency Adjustment

- ≥ ±3 x 10⁻⁷ from 0V to reference voltage, monotonic & standard positive slope (negative slope optional). Sufficient to cover 10 years ageing

Oven Alarm "logic level" signal (optional) (A)

- Logic "0" during warm-up time and if oven is not operating
- Logic "1" when temperature regulation is operating

Reference Voltage

- Standard Reference voltage output +8V
- Optional +5.0V or +6.2V (except Package 40)

Output Compatibility

- Sinewave +7dBm ±2dBm into 50Ω load (S)
- Squarewave optional (C)

Harmonic Distortion

- Harmonics & sub-harmonics ≤ -30dBc
- Non-Harmonics ≤ -75dBc

Environmental Specification (non-operating)

- Storage temperature range -55 to 85°C
- Shocks - half-sine 50g 11ms / 3 per direction IEC 68-2-27 Test Ea / Severity 50A
- Vibration - 10g / 10-500Hz IEC 68-2-06 Test Fc / Severity 500/10

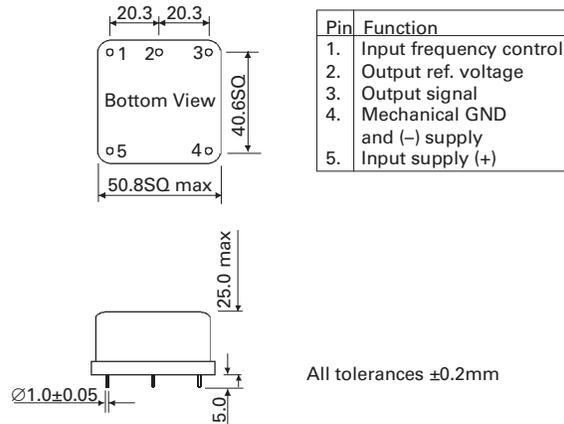
Marking (printed label on top of can)

- C-MAC or Customer's Logo
- C-MAC or Customer's Part Number
- Nominal Frequency (Fo) in MHz
- Serial Number (1 letter & 5 numbers)
- Date Code (4 digits for year and week)

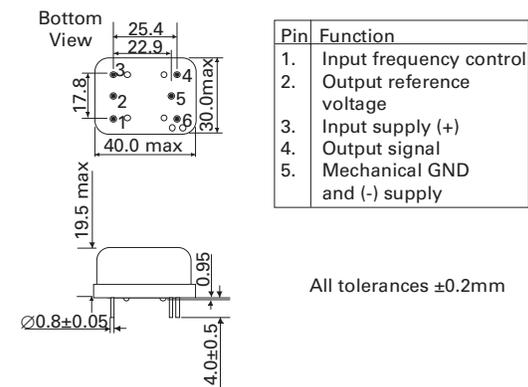
Phase Noise @ 10.0MHz typical (sinewave)

- 10Hz -125dBc/Hz
- 100Hz -145dBc/Hz
- 1kHz -155dBc/Hz
- 10kHz -158dBc/Hz

Outline in mm - Package 50 (without Oven Alarm)



Outline in mm - Package 40 (with Oven Alarm)



OCXOs

Electrical Specification

Operating Temperature Range	Stability within Temperature Range pk to pk	Long Term Stability (after 1 week operation)				Frequency Stability Vs Supply Voltage Change ($\pm 5\%$) and Load Change ($50\Omega \pm 10\%$)	Standard Package Type (max height)	Model Number
		Per Day	Per Month	Per Year	Over 10 Years			
-20 to 70°C	$\leq 1 \times 10^{-10}$	$\leq \pm 5 \times 10^{-11}$	$\leq \pm 1.5 \times 10^{-9}$	$\leq \pm 1.2 \times 10^{-8}$	$\leq \pm 6 \times 10^{-8}$	$\leq \pm 5 \times 10^{-11}$	(50) 25mm	CFPO-D0-1
	$\leq 2 \times 10^{-10}$	$\leq \pm 7 \times 10^{-11}$	$\leq \pm 2 \times 10^{-9}$	$\leq \pm 1.5 \times 10^{-8}$	$\leq \pm 7.5 \times 10^{-8}$	$\leq \pm 1 \times 10^{-10}$	(51) 25mm	CFPO-D0-2
	$\leq 5 \times 10^{-10}$	$\leq \pm 1 \times 10^{-10}$	$\leq 3 \times 10^{-9}$	$\leq \pm 2 \times 10^{-8}$	$\leq \pm 1 \times 10^{-7}$	$\leq \pm 1 \times 10^{-10}$	(51B) 19.05mm	CFPO-D0-3
	$\leq 1 \times 10^{-9}$	$\leq \pm 2 \times 10^{-10}$	$\leq 5 \times 10^{-9}$	$\leq \pm 5 \times 10^{-8}$	$\leq \pm 3 \times 10^{-7}$	$\leq \pm 5 \times 10^{-10}$	(40) 20mm (*)	CFPO-D0-4

Ordering Example CFPO-D0-1 50 S 12 A 8.0 10.0MHz

Model Number _____

Package Outline 50, 51, 51B, 40 (see above table) _____

Output Signal (S) (Sine is standard) (C)(HCMOS optional) _____

Supply Voltage (12) (12V is standard) _____

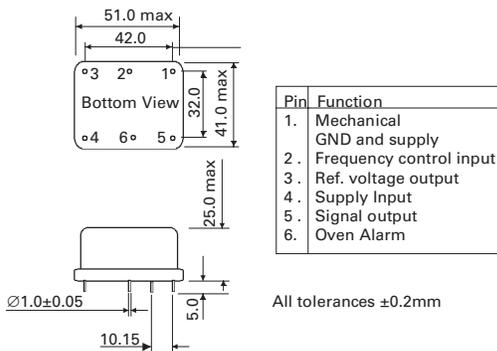
Oven Alarm Option (A) _____

Reference Voltage (8.0V standard, optional = 5V or 6.2V with packages 50 & 51
No Reference for all models = N) _____

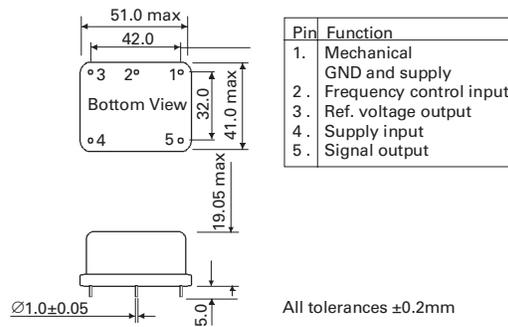
Frequency (MHz) _____

For non standard options such as different temperature ranges, negative slope EFC, cold start-up please contact our sales office. (*) Package height 16mm max will be available from mid 2005

Outline in mm - Package 51 (with Oven Alarm)



Outline in mm - Package 51B (without Oven Alarm)



OCXOs