

CFPO-DO SERIES

ISSUE 6; 27 NOVEMBER 2008 - RoHS 2002/95/EC

Description

- Super single Oven Controlled Oscillators (OCXO's) manufactured for us by Rakon. Designed as a compact and smart frequency source/time keeping reference for all synchronization systems including global positioning system (GPS) based equipment. Key performance characteristics are:
 - Holdover better than 7ms 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 Outlines

- 50.8 x 50.8 x 25mm (50) CFPO-DO-1
- 51 x 41 x 25mm (51) CFPO-DO-2
- 51 x 41 x 19.05mm (51B) CFPO-DO-3
- 40 x 30 x 20mm (40) CFPO-DO-4

Standard Frequencies

- 10, 12.8, 13MHz

Frequency Range

- 8.192 to 15MHz
- Initial tolerance @ 25°C Fo $\pm 1 \times 10^{-7}$

Output Compatibility & Load

- Sine +7dBm ± 2 dBm into 50 Ω load (S)
- HCMOS (C)

Operating Temperature Range

- 20 to 70°C
- Extended Operating Temperature Ranges may be available on request. Please contact our sales office

Storage Temperature Range

- 55 to 85°C

Supply Voltage

- Standard: 12V (12)

Power Consumption

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

Warm Up Time @ 25°C (typical)

- $\leq \pm 1 \times 10^{-8}$ after 10 mins

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

- $\pm 3 \times 10^{-9}$ after 60 minutes

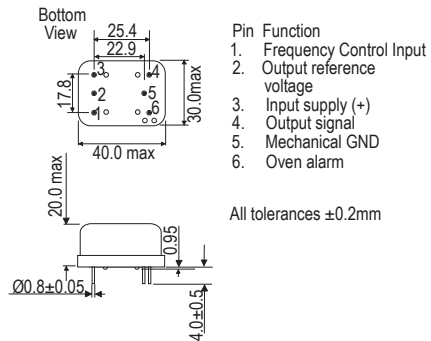
Frequency Adjustment

- $> \pm 3 \times 10^{-7}$ from 0V to reference voltage, monotonic and 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

Outline (mm) - Package 40 (with Oven Alarm)



Reference Voltage

- Standard reference voltage output +8V
- Optional +5.0V or +6.2V (except Package 40)
- Option: N = No Reference Voltage

Harmonic Distortion

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

Environmental (non-operating)

- Shock: 50g for 11ms
- Vibration: 10g for 10 to 500Hz

Packaging

- Bulk

Marking Includes

- Frequency + Model Number + Serial Number + Date Code

Phase Noise @10.0MHz typical (sinewave)

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

Minimum Order Information Required

- Frequency + Model Number + Package Outline + Output Signal + Supply Voltage + Oven Alarm (if applicable) + Reference Voltage (if applicable)

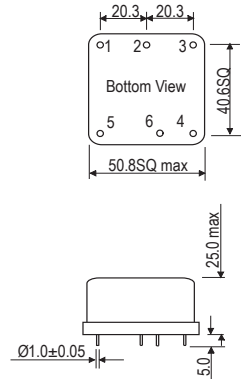
Electrical Specification - maximum limiting values

Operating Temperature Range *	Stability within Temperature Range pk to pk	Long Term Stability @ 25°C after 7 days operation				Frequency Stability Vs Supply Voltage Change (±5%) and Load Change (50Ω±10%)	Standard Package Type (max height)	Model Number
		Per Day	Per Month	Per Year	Over 10 Years			
-20 to 70°C	≤1x10 ⁻¹⁰	≤±5x10 ⁻¹¹	≤±1.5x10 ⁻⁹	≤±1.2x10 ⁻⁸	≤±6x10 ⁻⁸	≥5x10 ⁻¹¹	(50) 25mm	CFPO-DO-1
	≤2x10 ⁻¹⁰	≤±7x10 ⁻¹¹	≤±2x10 ⁻⁹	≤±1.5x10 ⁻⁸	≤±7.5x10 ⁻⁸	≥1x10 ⁻¹⁰	(51) 25mm	CFPO-DO-2
	≤5x10 ⁻¹⁰	≤±1x10 ⁻¹⁰	≤±3x10 ⁻⁹	≤±2x10 ⁻⁸	≤±1x10 ⁻⁷	≥1x10 ⁻¹⁰	(51B) 19.05mm	CFPO-DO-3
	≤1x10 ⁻⁹	≤±2x10 ⁻¹⁰	≤±5x10 ⁻⁹	≤±5x10 ⁻⁸	≤±3x10 ⁻⁷	≥5x10 ⁻¹⁰	(40) 20mm	CFPO-DO-4

Ordering Example	CFPO-DO-1	50	S	12	A	8.0	10.0MHz
Model							
Package outline (50) (51) (51B) (40)							
Output Signal (S) (C)							
Supply Voltage (12)							
Oven Alarm Option (A)							
Reference Voltage (8V standard, optional = 5V or 6.2V with packages 50 & 51) (Option: N = No Reference Voltage)							
Frequency (MHz)							

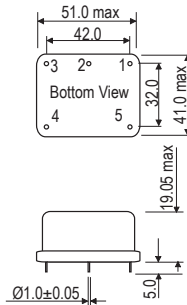
*Please note: Extended Operating Temperature Ranges may be available on request, please contact our sales office for further details

Outline (mm) - Package 50 (without Oven Alarm)



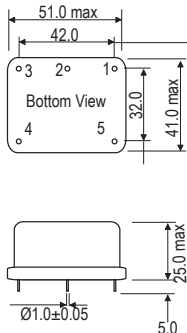
- Pin Function
1. Frequency Control Input
 2. Output ref. voltage
 3. Output signal
 4. Mechanical GND and (-) supply and (+) supply
 5. Input supply (+)
- All tolerances ±0.2mm

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



- Pin Function
1. Mechanical GND and supply
 2. Frequency Control Input
 3. Ref. voltage output
 4. Supply input
 5. Signal output
- All tolerances ±0.2mm

Outline (mm) - Package 51 (with Oven Alarm)



- Pin Function
1. Mechanical GND and supply
 2. Frequency Control Input
 3. Ref. voltage output
 4. Supply Input
 5. Signal output
 6. Oven alarm
- All tolerances ±0.2mm