

CFPO-2 S: Ultra Low Phase Noise & High Stability OCXO

ISSUE 4; 1 APRIL 2002

Description

- Ultra low phase noise and high stability OCXO

Package Outlines

- 50.8 × 50.8 × 25.4mm (50)
- 51.0 × 41.0 × 25.0mm (51)
- 67.0 × 60.0 × 40.0mm (67)

Supply Options

- Standard 12V (12)
- Optional 15V (15), 24V (24)

Standard Frequencies

- 5.0, 10.0, 13.0MHz

Frequency Range

- 5.0 to 13.0MHz

Input Current @ 12V (Power Consumption)

- Warm up: ≤ 700mA (≤ 8.5W)
- @ 25°C: ≤ 200mA (≤ 2.4W) (calm air)

Warm Up Time @ 25°C (typical)

- ≤ ± 1 × 10⁻⁸ after 10 minutes (calm air)

Retrace after 24 hours off @ 25°C

- ≤ ± 5 × 10⁻⁹ after 60 minutes

Output Compatibility

- Sine 4 dBm typical into 50Ω (S)

Harmonic Distortion

- ≤ 30dBc

Phase Noise @ 10.0MHz (sine output)

- 10Hz ≤ -120dBc/Hz
- 100Hz ≤ -150dBc/Hz
- 1kHz ≤ -160dBc/Hz
- 10kHz ≤ -165dBc/Hz

Environmental Specification (non-operating)

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

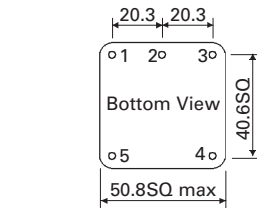
Weight/Mass

- ≤ 80g (51); ≤ 100g (50)

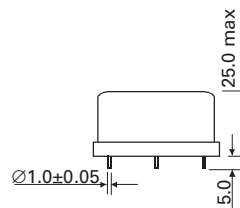
Marking Includes

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

Outline in mm - Package 50

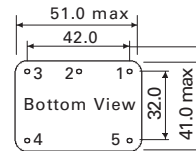


Pin	Function
1.	Input frequency control
2.	Output ref. voltage
3.	Output signal
4.	Mechanical GND and (-) supply
5.	Input supply (+)

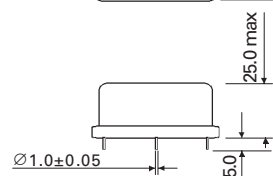


All tolerances ±0.2mm

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 ±0.2mm

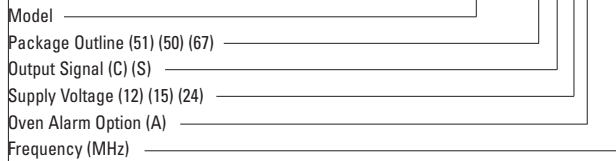
OCXOs

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 Shange (±5%) and Load Change (50Ω ±10%)	Model Number
		Per Day	Per Month	Per Year			
-10 to 70°C	$\leq 1 \times 10^{-9}$	$\leq 5 \times 10^{-11}$	$\leq 1.5 \times 10^{-9}$	$\leq 1.2 \times 10^{-8}$	$\geq 5 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-2 S1
-10 to 70°C	$\leq 1 \times 10^{-9}$	$\leq 1 \times 10^{-10}$	$\leq 3 \times 10^{-9}$	$\leq 1.5 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-2 S2
-10 to 70°C	$\leq 2 \times 10^{-9}$	$\leq 2 \times 10^{-10}$	$\leq 6 \times 10^{-9}$	$\leq 3 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-2 S3
-10 to 70°C	$\leq 2 \times 10^{-9}$	$\leq 3 \times 10^{-10}$	$\leq 1 \times 10^{-8}$	$\leq 5 \times 10^{-8}$	$\geq 7 \times 10^{-7}$	$\leq 2 \times 10^{-10}$	CFPO-2 S4

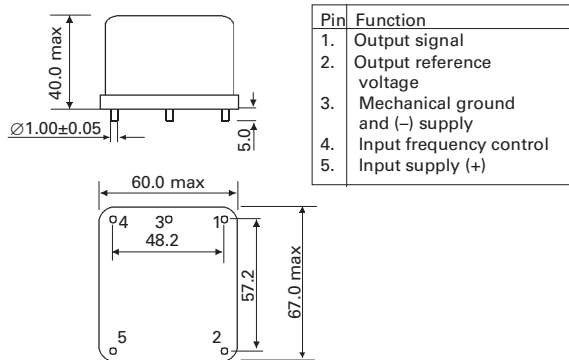
Ordering Example

CFPO-2 S1 50-S 15 A 10MHz



(*) V ref. = Voltage Reference: +8.0±0.2V

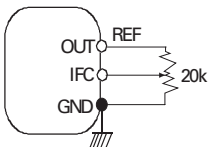
Outline in mm - Package 67



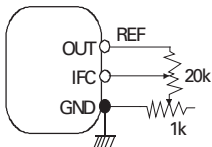
All tolerances ±0.2mm

External Frequency Adjustment

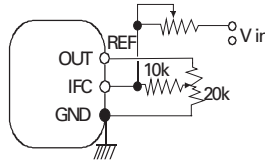
Manual freq. adjust.
Settability $< 1 \times 10^{-8}$



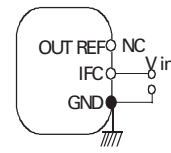
Fine manual freq. adjust.
Settability $< 1 \times 10^{-10}$



Freq. control voltage and manual adjust



Ext. freq. control voltage



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