CFPO-US SERIES

ISSUE 5; 1 NOVEMBER 2008 - RoHS 2002/95/EC

Description

- Ultra stable Oven Controlled Oscillators (OCXOs) manufactured for us by Rakon, providing ultimate frequency stability versus all operational conditions. Applications include Instrumentation, Precise Localisation/Positioning, Metrology and all very accurate measurements. Key performance characteristics are:
  - Short term performance
  - Phase noise near the carrier
  - Frequency stability versus overall operating conditions

Package Outlines

- 67 x 60 x 40mm (67A) CFPO-US-1
- 50.8 x 50.8 x 38mm (50B) CFPO-US-2
- 50.8 x 50.8 x 25.0mm (50) CFPO-US-3
  Option (51B) 51 x 41 x 19.05mm
- 51 x 41 x 19.5mm (51B) CFPO-US-4
  Option (40) 40 x 30 x 20mm

Standard Frequencies

- 5, 10MHz

Output Capatability & Load

- Standard: Sine > 3dBm into 50Ω (S)
- Harmonic Distortion <–40dBc
- Spurious <–70dBc

Operating Temperature Range

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

Storage Temperature Range

- –30 to 85°C

Supply Voltage

- Standard: 12V (12)
- Optional: 15V (15)

Input Current @ 12V (Power Consumption)

- Warm up: < 700mA < 8.5W
- @ 25°C: < 250mA < 3.0W (calm air)

Warm Up Time @25°C (typical)

- ±1 x 10^{-8} after 15 minutes (calm air)

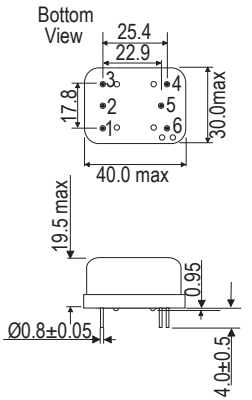
Retrace after 24 hours off @25°C

- < ±3 x 10^{-9} after 60 minutes

Frequency Stability Vs Supply Voltage Change (±5%) and Load Change (50Ω±10%)

- Load: < ± 2 x 10^{-11}
- Supply: < ± 2 x 10^{-11}

Outline (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 ±0.2mm

Phase Noise @ 10MHz (typical)

- 1Hz ≤ –115dBc/Hz (CFPO-US-1)
- 1Hz ≤ –105dBc/Hz (CFPO-US-2)
- 1Hz ≤ –100dBc/Hz (CFPO-US-3)
- 1Hz ≤ –95dBc/Hz (CFPO-US-4)
- 10Hz ≤ –135dBc/Hz (CFPO-US-1)
- 10Hz ≤ –130dBc/Hz (CFPO-US-2)
- 10Hz ≤ –130dBc/Hz (CFPO-US-3)
- 10Hz ≤ –125dBc/Hz (CFPO-US-4)

Weight/Mass

- <350g (67A)
- <220g (50B)
- <100g (50)
- <80g (40)

Environmental (non-operating)

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

Marking Includes

- Model Number + Frequency + Serial Number + Date Code

Packaging

- Bulk

Minimum Order Information Required

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

OCXOs

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Electrical Specification - maximum limiting values

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)	Cumulated Over Lifetime (all causes)	Referance Voltages	Standard Package Type (max height)	Model Number
		Per Day	Per Month	Per Year	Over 15 Years					
–20 to 70°C	≤1x10^{-10}	≤±2x10^{-11}	≤±6x10^{-10}	≤±.5x10^{-9}	≤±1.5.x10^{-8}	≤±.5x10^{-11}	≤±.1.6x10^{-8}	8.0V±0.3V	67A	CFPO-US-1
	≤2x10^{-10}	≤±5x10^{-11}	≤±1.5x10^{-8}	≤±1.2x10^{-8}	≤±3.5x10^{-8}	≤±1x10^{-10}	≤±5.0x10^{-8}	8.2V±0.3V Option 5V or 6.2V	50B	CFPO-US-2
	≤5x10^{-10}	≤±1x10^{-10}	≤±3x10^{-9}	≤±1.5x10^{-8}	≤±.5x10^{-8}	≤±.2x10^{-10}	≤±7.0x10^{-8}	8.2V±0.3V Option 5V or 6.2V	50	CFPO-US-3
	≤1x10^{-9}	≤±2x10^{-10}	≤±5x10^{-9}	≤±3x10^{-8}	≤±9x10^{-8}	≤±5x10^{-10}	≤±1.0x10^{-7}	8.0V±0.3V	51B	CFPO-US-4

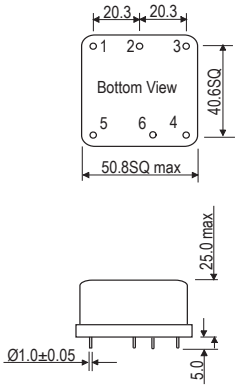
Ordering Example CFPO-US1 67A S 12 A 8 10MHz

- Model
- Package Outline (67A) (50B) (50) (51B) (40)
- Output Signal (S)
- Supply Voltage (12) (15)
- Oven Alarm Option (A)
- Reference Voltage (8V standard, optional 5V or 6.2V)
- Frequency (MHz)

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

For non standard options such as different temperature ranges, negative slope EFC, cold start-up etc, please contact our sales office

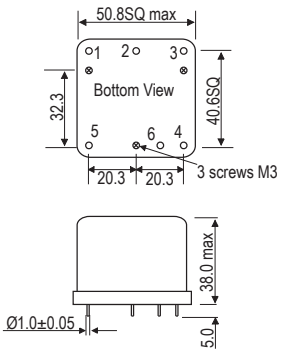
Outline (mm) - Package 50



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

All tolerances ±0.2mm

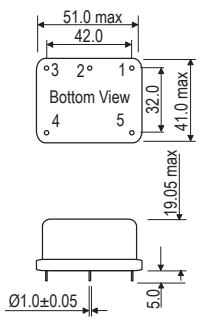
Outline (mm) - Package 50B



Pin Function
1 Input frequency control
2 Output reference voltage
3 Output signal
4 Mechanical ground and (-) supply
5 Input supply (+)
6 Oven Alarm

All tolerances ±0.2mm

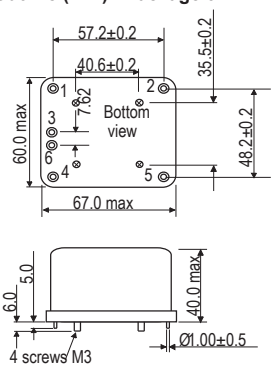
Outline (mm) - Package 51B



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 67A



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

All tolerances ±0.2mm

OCXOs

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