

# CFPO-6 Miniature OCXO

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

## Description

- High stability Oven Controlled Oscillators (OCXOs) manufactured for us by Rakon with either SC Cut (CFPO-6A) or AT Cut (CFPO-6B)

## Package Outlines

- 25.4 x 25.4 x 12.7mm (25)
- 20.7 x 20.7 x 10.5mm (20)

## Frequency Ranges

- 4.096 to 26MHz (CFPO-6 A1, B1)
- 8 to 38.88MHz (CFPO-6 A2, B2)

## Standard Frequencies

- 10, 12.8, 13, 16.384, 19.44, 20, 26, 38.88MHz

## Output Compatibility

- Standard: HCMOS (C)

## Operating Temperature Range

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

## Storage Temperature

- 55°C to 90°C

## Supply Voltage

- Standard: 5V (5)
- Optional: 3.3V (3.3) , 12.0V (12)

## Power Consumption

Warm up:  $\leq 2.5W$

@ 25°C:  $\leq 1.0W$  (calm air)

## Warm Up Time @25°C (typical)

$\leq \pm 1 \times 10^{-7}$  after 5 minutes (calm air)

## Frequency Stability Vs Supply Voltage Change ( $\pm 5\%$ ) and Load Change (1 to 2 HCMOS)

- $\leq \pm 5 \times 10^{-9}$  (CFPO-6A, CFPO-6B)

## Phase Noise @ 10.0MHz (CFPO-6A typical)

- 10Hz  $\leq -120dBc/Hz$
- 100Hz  $\leq -140dBc/Hz$
- 1kHz  $\leq -145dBc/Hz$
- 10kHz  $\leq -150dBc/Hz$

## Environmental (non-operating)

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

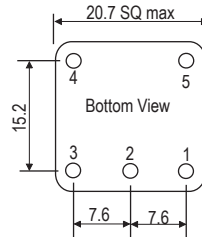
## Marking Includes

- Frequency + Model Number + Serial Number + Date Code

## Packaging

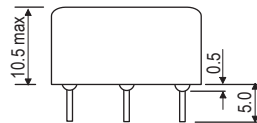
- Bulk

## Outline (mm) - Package 20

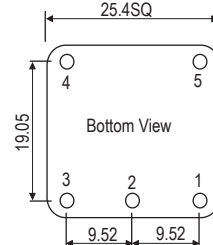


Pin	Function
1.	Voltage supply
2.	RF output
3.	Ground 0V/case
4.	EFC input
5.	Not used

All tolerances  $\pm 0.2mm$

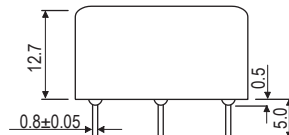


## Outline (mm) - Package 25



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

All tolerances  $\pm 0.2mm$



## Minimum Order Information Required

- Frequency + Model Number + Package Outline + Output Signal + Supply Voltage

### 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)	Package	Model Number
		Per Day	Per Month	Per Year			
-20 to 70°C	$\leq 2 \times 10^{-8}$	$\leq \pm 1 \times 10^{-9}$	$\leq \pm 3 \times 10^{-8}$	$\leq \pm 1.5 \times 10^{-7}$	$\geq 1 \times 10^{-6}$	25	CFPO-6 A1
	$\leq 5 \times 10^{-8}$	$\leq \pm 2 \times 10^{-9}$	$\leq \pm 5 \times 10^{-8}$	$\leq \pm 3 \times 10^{-7}$		20 or 25	CFPO-6 A2
	$\leq 1 \times 10^{-7}$	$\leq \pm 1 \times 10^{-9}$	$\leq \pm 3 \times 10^{-8}$	$\leq \pm 1.5 \times 10^{-7}$	$\geq 4 \times 10^{-6}$		CFPO-6 B1
	$\leq 2 \times 10^{-7}$	$\leq \pm 3 \times 10^{-9}$	$\leq \pm 8 \times 10^{-8}$	$\leq \pm 5 \times 10^{-7}$			CFPO-6 B2

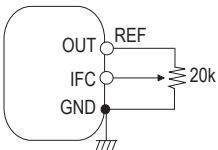
Ordering Example CFPO-6-B2 36 C 12 26.0MHz  
 Model \_\_\_\_\_  
 Package outline (20) (25) \_\_\_\_\_  
 Output Signal (C) \_\_\_\_\_  
 Supply Voltage (3.3) (5) (12) \_\_\_\_\_  
 Frequency (MHz) \_\_\_\_\_

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

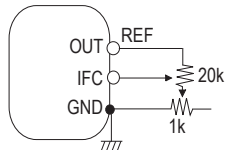
\*\*Voltage reference +2.8V with +3.3V voltage supply  
 +4V with +5V voltage supply  
 +5V with +12V voltage supply

### External Frequency Adjustment

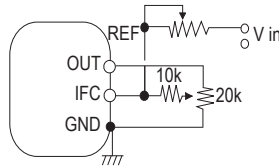
Manual freq. adjust.  
 Settability  $\leq 1 \times 10^{-8}$



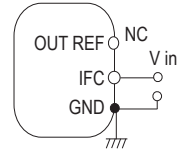
Fine manual freq. adjust.  
 Settability  $\leq 1 \times 10^{-10}$



Freq. control voltage and manual adjust



Ext. freq. control voltage



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