

HIGH-PRECISION FREQUENCY CONTROL

High-Precision Oscillators

Precision XO, high-stability TCXO, and OCXO solutions for timing, synchronization, holdover, and low-noise reference applications.

- Compact Local Clocks · Temperature-Compensated References
- Master References · Low Phase Noise

- GNSS Timing & Resilient PNT
- 5G & Network Sync
- Data Center Timing
- Time Cards & PTP
- Test & Measurement
- RF & Microwave Synthesis

One Portfolio, Three Clock Classes

Move from compact precision XO to temperature-compensated TCXO and oven-controlled OCXO without losing a consistent, function-led selection path.

Application-Led Engineering Review

Begin with the clock function. FCom reviews the error budget, observation interval, start-up behavior, and phase-noise target before confirming the exact configuration.

±10 ppm

Precision XO frequency stability*

±50 ppb

High-stability TCXO frequency stability*

±3 ppb

Best listed OCXO frequency stability*

−162 dBc/Hz

Best listed phase noise at 10 kHz offset*

* Series-level reference values. Confirm the controlled datasheet for the exact nominal frequency, supply, output/load, temperature range, and applicable test conditions.

Precision XO

Compact Local Clock

For processor, FPGA, control, and interface clocks where ±10 ppm is sufficient and fast start-up is important.

FCO-2C-HP · FCO-3C-HP

High-Stability TCXO

Temperature-Compensated Reference

For compact timing nodes requiring tight temperature stability without OCXO power consumption or warm-up time.

FVT-5S-HP · FVT-7S-HP

OCXO

Master & Low-Noise Reference

For holdover, precision timebases, and low-noise PLL or synthesizer reference architectures.

FCom FOC OCXO Portfolio



01

Choose the Right Frequency Reference

Use the series-level portfolio to develop a shortlist, then confirm the latest controlled datasheet for the exact orderable configuration.

Start with the clock function—not the lowest ppm or ppb value. Precision XO supports compact local clocks, TCXO adds temperature compensation, and OCXO addresses master-reference, holdover, and low-phase-noise requirements.

**12 SERIES
3 CLOCK CLASSES**

Precision XO

CMOS · 4–6 mA current consumption



FCO-2C-HP 2.5 × 2.0 mm · 4-SMD
2.5–60 MHz · 1.8 / 2.5 / 3.3 V · CMOS
±10 ppm · –40 to +95°C



FCO-3C-HP 3.2 × 2.5 mm · 4-SMD
2.5–60 MHz · 1.8 / 2.5 / 3.3 V · CMOS
±10 ppm · –40 to +95°C

High-Stability TCXO

Voltage-control and output options depend on exact configuration



FVT-5S-HP 5.0 × 3.2 mm · 4-SMD
10–52 MHz · 2.5 / 3.3 V · clipped sine / CMOS
±50 ppb · –40 to +85°C



FVT-7S-HP 7.0 × 5.0 mm · 4-SMD
5–52 MHz · 2.5 / 3.3 V · clipped sine / CMOS
±50 ppb · –40 to +105°C

OCXO — Oven-Controlled Crystal Oscillators

Operating temperature: –40 to +85°C



FOC-1D
14-pin DIP
10–40 MHz · ±50 ppb
3.3 / 5 V · rectangular / sine
PN*: –105 / –150 dBc/Hz



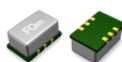
FOC-2D
20 × 20 mm · 5-pin
5–40 MHz · ±5 ppb
3.3 / 5 V · HCMOS / sine
PN*: –115 / –150 dBc/Hz



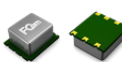
FOC-3D
25 × 25 mm · 5-pin
5–40 MHz · ±3 ppb
3.3 / 5 V · TTL / sine
PN*: –120 / –150 dBc/Hz



FOC-4D
36 × 27 mm · 5-pin
5–40 MHz · ±3 ppb
3.3 / 5 V · TTL / sine
PN*: –120 / –150 dBc/Hz



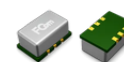
FOC-5S
14 × 9 mm · 6-SMD
10–40 MHz · ±10 ppb
3.3 / 5 V · HCMOS / sine
PN*: –92 / –150 dBc/Hz



FOC-6S
25.4 × 22.1 mm · 7-SMD
5–40 MHz · ±10 ppb
3.3 / 5 V · HCMOS
PN*: –115 / –150 dBc/Hz



FOC-7S
9.7 × 7.5 mm · 4-SMD
10–40 MHz · ±10 ppb
3.3 V · CMOS / clipped sine
PN*: –92 / –150 dBc/Hz



FOC-5S-LN
14 × 9 mm · 6-SMD
10–40 MHz · ±5 ppb
3.3 / 5 V · configuration dependent
PN*: –120 / –162 dBc/Hz

How to read the phase-noise values: PN* is shown at 10 Hz / 10 kHz offset as a series-level reference. Confirm nominal frequency, supply, output/load, and test conditions.

How to read the stability values: The listed value is not total lifetime accuracy. Review initial tolerance, aging, warm-up, retrace, and supply/load sensitivity.

02

Place Precision Where It Creates System Value

The appropriate oscillator class is determined by its function within the timing architecture—not by the lowest ppm or ppb value alone.



03

Shortlist by Design Priority

Each featured series addresses a distinct design priority. The final orderable part number is determined by the complete electrical, mechanical, and environmental requirements.

Precision XO

FCO-2C-HP

2520 SMALL-FOOTPRINT XO

Compact CMOS oscillator for precision local-clock generation.

2.5–60 MHz

Frequency range

±10 ppm

Frequency stability*

1.8 / 2.5 / 3.3 V

Supply options

–40 to +95°C

Operating temperature



Wide-Temperature TCXO

FVT-7S-HP

OPERATION TO +105°C

Temperature-compensated reference for thermally demanding timing nodes.

5–52 MHz

Frequency range

±50 ppb

Frequency stability*

2.5 / 3.3 V

Supply options

–154 dBc/Hz

At 10 kHz offset*



Compact OCXO

FOC-7S

9.7 × 7.5 mm PACKAGE

Smallest OCXO package listed in the FCom portfolio for compact oven-controlled reference designs.

10–40 MHz

Frequency range

±10 ppb

Frequency stability*

3.3 V

Supply

CMOS / clipped sine

Output options



Low-Noise OCXO

FOC-5S-LN

–162 dBc/Hz @ 10 kHz*

Recommended starting point when low phase noise is the primary design priority.

10–40 MHz

Frequency range

±5 ppb

Frequency stability*

3.3 / 5 V

Supply options

Configuration review

Output and test conditions



Minimum RFQ Information

Clock function

Local clock, master reference, holdover source, or PLL reference.

Nominal frequency

Exact frequency and allowable tolerance.

Electrical requirements

Supply, output format, load, and control voltage.

Performance targets

Stability budget and phase-noise mask.

Time-domain behavior

Aging, warm-up, retrace, and holdover.

Environment

Temperature, airflow, shock, and vibration.

FCom Engineering Review Can Confirm

Frequency & Configuration

Available frequencies and orderable options by series.

Stability Breakdown

Initial tolerance, temperature stability, aging, and total error budget.

Phase-Noise Conditions

Nominal frequency, supply, output/load, and offsets.

Start-Up Behavior

Warm-up, current profile, retrace, and thermal impact.

Mechanical Fit

Package, height, land pattern, and assembly requirements.

Documentation Package

Controlled datasheet, test data, and qualification records, as applicable.

FCOM ENGINEERING SUPPORT

Request a Precision-Timing Review

Share the system node, clock function, nominal frequency, and performance targets. FCom will help identify the appropriate oscillator class, candidate series, and verification path.

* Series-level reference values. Confirm the controlled datasheet for the exact configuration and conditions. Product information: www.fujicrystal.com

GENERAL INQUIRY

FCom@fujicrystal.com

TECHNICAL SUPPORT

support@fujicrystal.com

