



XO Overview

Rakon has expertise in a broad range of standard performance, high performance and high reliability Crystal Oscillators (XOs). The high performance range of XOs feature low jitter, low phase noise, and selectable output frequency options; these features make them ideal for applications in Global Positioning and Telecommunications markets.


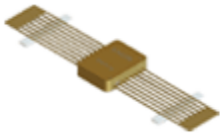
The high reliability XO ranges are resistant to shock and vibration in harsh environments and the specification profile makes it a great solution for Space and Defense applications.

► **XO** : [Hi-Rel Space](#) | [Hi-Rel Defense](#) | [Multi-Frequency](#) | [Selectable](#) | [Low Noise and Low Jitter](#) | [Standard](#)

High Reliability Space XO

► **PROFILE:** The high reliability Space XO is manufactured in accordance with MIL-PRF-55310 and is ITAR-free. The Space XOs are available in a variety of packages and are resistant to a shock and vibration environment. Key advantages of the Space class XOs are their compact size and low power consumption of 0.1W.

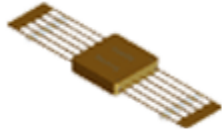
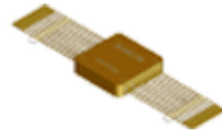
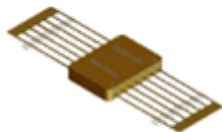
► **APPLICATIONS:** Space applications such as Clocks, Gyroscopes and Frequency Generation Units (FGU).

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	AGING	OUTPUT WAVEFORM
RK115 - JL2		14 x 9 x 3.8 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm (-55 to 125 °C)	± 15 ppm / 18 years	AHCMOS
RK115 - FP4		13 x 10 x 3 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm	± 15 ppm / 18 years	AHCMOS

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MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	AGING	OUTPUT WAVEFORM
				(-55 to 125 °C)		
RK115 - FP3		16 x 16 x 3.6 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm (-55 to 125 °C)	± 15 ppm / 18 years	AHCMOS
RK115 - FP2		16 x 16 x 3.8 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm (-55 to 125 °C)	± 15 ppm / 18 years	AHCMOS
RK115 - FP1		15 x 20 x 3.6 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm (-55 to 125 °C)	± 15 ppm / 18 years	AHCMOS

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MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	AGING	OUTPUT WAVEFORM
RK115 - DIL1		23 x 14 x 5.45 mm	10 kHz - 100 MHz	± 30 ppm (-30 to 105 °C) ± 50 ppm (-55 to 125 °C)	± 15 ppm / 18 years	AHCMOS

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High Reliability Defense XO

► **PROFILE:** QEN79 is based on hybrid technology in a SMD package. It is suitable for rugged radio systems such as used in TGV. QEN55 and QEN49 are based on hybrid technology in a DIP package.

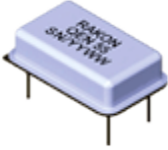

► **APPLICATIONS:** Rugged radio systems such as TGV (very high speed. French: Tres Grande Vitesse).

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	AGING	OUTPUT WAVEFORM
QEN79		14.0 x 9.0 x 3.37 mm	1.5 - 100 MHz	±20 ppm (-40 to 85°C) ±25 ppm (-55 to 125°C)	±5 ppm at 45°C first year	Square, Tristate output

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MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	AGING	OUTPUT WAVEFORM
QEN55		20.7 x 13.1 x 5.1 mm	5 - 100 MHz	±20 ppm (-40 to 85°C) ±25 ppm (-55 to 125°C)	±5 ppm at 45°C first year	Square, Tristate output
QEN49		20.7 x 13.1 x 5.1 mm	5 - 100 MHz	±20 ppm (-40 to 85°C) ±25 ppm (-55 to 125°C)	±5 ppm at 45°C first year	Square, Tristate output

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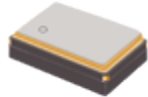
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Selectable XO

► **APPLICATIONS:** Enterprise Networking, Part number consolidation, Software-upgradable systems.

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	RMS PHASE JITTER	OUTPUT WAVEFORM
RCX2520Q		2.5 x 2.0 mm	8 - 1500 MHz	±10 - 20 ppm (-40 to 85 °C)	0.5 - 2 ps	LVCMOS, LVPECL, LVDS

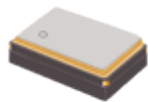


Low Noise and Low Jitter XO

► **APPLICATIONS:** Ethernet 10G / 25G / 40G / 100G, High Speed ADC/DAC/SERDES, Datacentre and Enterprise networks, Storage and server networks, WLAN, PCIe, Fibre Channel, Optical Modules, Defense / Military systems.

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	RMS PHASE JITTER	OUTPUT WAVEFORM
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RXO2520R



2.0 x 2.5 mm

8 - 1500 MHz

±30 - 50 ppm
(-40 to 85°C)

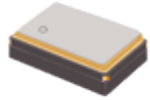
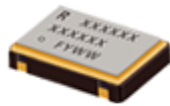


0.9 ps

LVCMOS, LVPECL,
LVDS

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MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	RMS PHASE JITTER	OUTPUT WAVEFORM
RXO2520P		2.0 x 2.5 mm	8 - 1500 MHz	±30 - 50 ppm (-40 to 85°C)	0.5 ps	LVC MOS, LVPECL, LVDS
RXO5032M		5.0 x 3.2 mm	1 - 200 MHz	±30 - 50 ppm (-10 to 70°C)	0.3 ps	LVC MOS, LVPECL, LVDS
RXO5032P		5.0 x 3.2 mm	8 - 1500 MHz	±30 - 50 ppm (-40 to 85°C)	0.5 ps	LVC MOS, LVPECL, LVDS
RXO5032R		5.0 x 3.2 mm	8 - 1500 MHz	±20 - 50 ppm (-40 to 85 °C)	0.9 ps	LVC MOS, LVPECL, LVDS

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MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	RMS PHASE JITTER	OUTPUT WAVEFORM
RXO7050M		7.0 X 5.0 mm	1 - 640 MHz	±30 - 50 ppm (-40 to 85 °C)	0.3 ps	LVC MOS, LVPECL, LVDS
RXO7050P		7.0 X 5.0 mm	8 - 1500 MHz	±30 - 50 ppm (-40 to 85 °C)	0.5 ps	LVC MOS, LVPECL, LVDS
RXO7050R		7.0 X 5.0 mm	8 - 1500 MHz	±20 - 50 ppm (-40 to 85 °C)	0.9 ps	LVC MOS, LVPECL, LVDS

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Standard XO Selection

► **APPLICATIONS:** Ethernet 1G / 10G, ADC/DAC/SERDES, General clocking.

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	OUTPUT	FEATURES
RSO3225X		3.2 x 2.5 mm	2 - 50 MHz	±25 to 100 ppm (-40 to 85°C)	CMOS	Low power Extended temperature range

MODEL	IMAGE	PACKAGE	FREQUENCY RANGE	STABILITY (FVST)	OUTPUT	FEATURES
RSO5032X		5.0 x 3.2 mm	0.5 - 160 MHz	±20 -100 ppm (-40 to 85 °C)	CMOS	Fast sample turnaround Low power
RSO7050X		7.0 x 5.0 mm	1 - 160 MHz	±25 - 100 ppm (-10 to 70°C)	CMOS	Fast sample turnaround Low power

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