

Overview

Rakon's 2.5 x 2.0 mm series of miniature XOs provides excellent performance and flexibility for demanding telecom, datacom, positioning and defense applications.

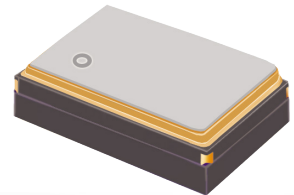
In addition to the standard specifications referenced in this brief, our products offer a high level of customization enabling delivery of the best fit for the application. Talk to us about how Rakon's technology can help to achieve your system design goals.

Applications

- > 10G Ethernet
- > Enterprise, Datacentre Networking and SAN
- > High Speed ADC/DAC/SERDES
- > Optical Modules, WLAN, PCIe, Fibre Channel
- > High reliability radio/clocking

Highlights

- > Small form factor
- > Wide frequency range
- > Low RMS phase jitter
- > Option for selectable frequency
- > Differential or single ended



2.5 x 2.0 mm Series XO Key Specifications

Parameter	Min.	Typ.	Max.	Unit	Notes	Model Outline (2.5 x 2.0 mm)
Frequency	10		1500	MHz	Up to 4 selectable options per part	<p>TOP VIEW: 2.5±0.2 mm width, 2.0±0.2 mm height, pin 1 at bottom-left.</p> <p>SIDE VIEW: 1.0 Max. mm thickness.</p> <p>BOTTOM VIEW: Pin pitch 0.625 (x5) mm, pin width 0.69 mm, pin spacing 0.425 (x6) mm, pin 1 at top-left.</p>
Temperature range	-40		85	°C	Wider temperature ranges available on request	
Frequency stability			±25 – ±50	ppm	Including initial calibration, temperature, load change, supply change, and 10 years ageing at 25°C	
Supply voltage		2.5 3.3		V V	±5% ±10%	
Supply current			30 65 40	mA mA mA	CMOS LVPECL LVDS	

Applications and References

Applications	Data Rate	Bandwidth	RMS Phase Jitter (Typical value)		
			RXO2520P - Low jitter	RXO2520R - Any frequency	RCX2520Q - Selectable
1 Gb Ethernet	1.25 Gbps	637 kHz – 10 MHz	125 fs	250 fs	125 – 250 fs
10 Gb Ethernet	10.3225 Gbps	637 kHz – 20 MHz	125 fs	250 fs	125 – 250 fs
Fibre Channel	4.25 Gbps	2.55 MHz – 10 MHz	75 fs	150 fs	75 – 150 fs
SONET	155 Mbps	12 kHz – 20 MHz	500 fs	1000 fs	500 – 1000 fs



2.5 x 2.0 mm Performance XO

Common Application Frequencies

Ethernet

Ethernet	1 Gb	10 Gb
Optical		
Copper	25 MHz	19.53, 20.1416, 125, 156.25, 161.1328, 625 and 644.5312 MHz



SONET, SDH and OTN

Frequency	x 2	x 4	x 8	x 16	x 32
19.44 MHz	38.88 MHz	77.76 MHz	155.52 MHz	311.04 MHz	622.08 MHz
20.5444 MHz	41.088 MHz				657.4213 MHz
20.916 MHz			167.33 MHz		669.32658 MHz
21.67135 MHz					693.48315 MHz

Cable DOCSIS

Frequency	x 2	x 12	x 14	x 15	x 16	x 24	x 48	x 88
10.24 MHz	20.48 MHz	122.88 MHz	143.36 MHz	153.6 MHz	163.84 MHz	245.76 MHz	491.52 MHz	901.12 MHz
149.8 MHz								

Standard Frequencies for Improved Jitter Performance

Rakon's RXO2520P delivers the lowest jitter in the miniature 2.5 x 2.0 mm footprint. Any frequency can be provided from 10 to 1500 MHz. The list of frequencies below are the most common and available with the shortest lead times.

Frequency	Available Frequencies
10 – 99 MHz	12.5, 15, 18.75, 25, 30, 37.5, 38.88, 50, 62.5, 75 and 77.76 MHz
100 – 399 MHz	100, 106.25, 125, 150, 155.52, 156.25, 159.375, 166.6667, 212.5, 250, 311.04 and 312.5 MHz
400 – 449 MHz	400, 404.35, 405, 410, 412.13, 415, 419.9, 420, 425, 427.68, 430, 435, 435.46, 440, 443.23 and 445 MHz
450 – 499 MHz	450, 451.01, 455, 458.78, 460, 465, 466.56, 470, 474.34, 475, 480, 482.11, 485, 489.89, 490, 495 and 497.66 MHz
500 – 1500 MHz	500, 505, 510, 515, 520, 525, 530, 535, 540, 550, 555, 560, 570, 575, 580, 585, 590, 595, 600, 622.08, 625 and 1244.16 MHz
If your application frequency is not shown in the table above, contact us to check its availability	

