Crystal Oscillators

NIC's Crystal Oscillator product line is designed for a variety of applications that need high performance in both environmentally benign and rugged conditions. NIC manufactures TCXOs & VCTCXOs which typically employ a thermistor network to generate a correction voltage which reduces the frequency variation over temperature. The correction voltage is usually applied to a varactor diode in the crystal circuit such that the crystal frequency may be varied by a small amount. TCXOs & VCTCXOs are preferred in low power applications and when a warm-up period is not acceptable. The only warm-up time is the time required for the components to reach thermal equilibrium and the total current consumption can be very low - often determined by the output signal power requirements.

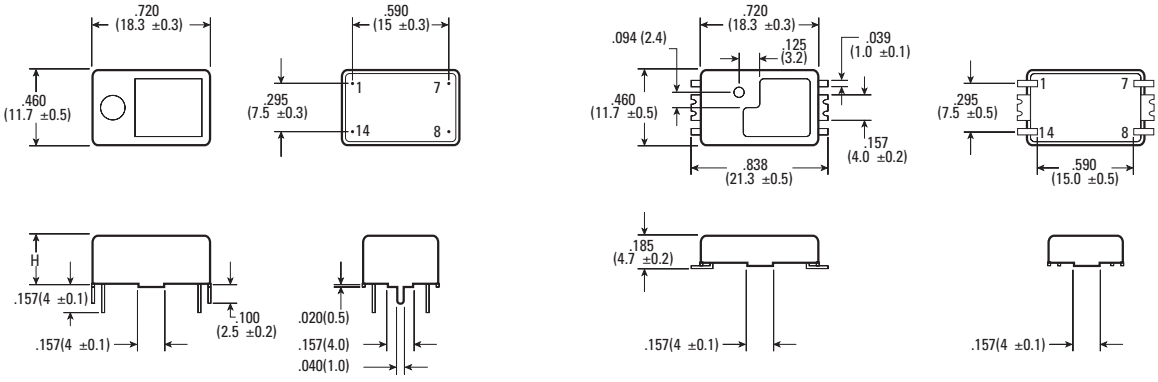
VCTCXOs

10 MHz - 40 MHz

- High Stability
- Phase Noise Measurements Available
- Military, Space, Commercial Applications
- Custom Designs Available

Condition		XO-183	XO-184
Frequency Range	MHz	10 - 20	10 - 20
Frequency Stability			
vs. Temperature	PPM	± 2.5 Max.	± 2.5 Max.
vs. Supply	PPM	± 0.3 Max.	± 0.3 Max.
vs. Aging / Year	PPM	± 0.8 Max.	± 0.8 Max.
Operating Temperature	°C	-30°C ~ 75°C	-30°C ~ 75°C
Supply Voltage	Vdc	+3V ± 5%	+3V ± 5%
		+5V ± 5%	+5V ± 5%
Current Consumption	mA	1.5 Max. +3V	1.5 Max. +3V
		2.0 Max. +5V	2.0 Max. +5V
Output			
Load		10ohm//10PF	10 ohm//10PF
Voltage		0.8Vp-p min.	0.8Vp-p min.
		0.7Vp-p min.	0.7Vp-p min.
		Clipped sine	Clipped sine
		DC CUT	DC CUT
Preset frequency	PPM	±0.5 / +25°C ± 2/C	±2.0 / +25°C ±2/C
Frequency Adjustment	PPM	± 3min, Trimmerless	± 3min, Trimmerless
Voltage Control (VCTCXO only)	PPM	±5 ~10 +2.5V ±2	±8 ~14 +2.5V ±2

Mechanical Dimensions (mm)



Height: 0.185 (4.7±0.2)

Height: 0.314 (8.0±0.5)

Pin No.	Connections
1	No Connection
7	GRD & Case
8	OUTPUT
14	Vcc

Inches (mm)

Note: The trimmer hole location may vary.

TCXOs

10 MHz - 100 MHz

- High Stability
- Phase Noise Measurements Available
- Military, Space, Commercial Applications
- Custom Designs Available

Condition		XO-125	XO-126	XO-163	XO-164
Frequency Range	MHz	8-40	8-40	8-40	8-40
Operating Temperature	°C	0°C ~ 50°C	0°C ~ 50°C	-30°C ~ 75°C	-30°C ~ 75°C
Storage	°C	-20°C ~ 70°C	-20°C ~ 70°C	-20°C ~ 70°C	-20°C ~ 70°C
Supply Voltage	Vdc	+5Vdc ± 5%	+5Vdc ± 5%	+5Vdc ± 5%	+5Vdc ± 5%
Current Consumption	mA	3 Max.	20 Max.	3 Max.	20 Max.
Output					
Load		20K ohm//5PF	2TTL Min.	20K ohm//5PF	CMOS
Voltage		1Vp-p Min. sine	Vol=.4v Max.	1Vp-p Min. sine	
		Clipped DC-Cut	Vol=2.4 Min.	Clipped DC-Cut	
Waveform		Sine	Square	Sine	Square
Frequency Adjustment	PPM	± 5 Min.	± 5 Min.	± 5 Min.	± 5 Min.

Crystal Oscillator Frequency vs. Temperature