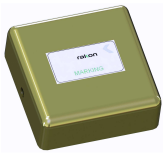
LNO 10 MHz

OCXO LNO 10

Product Description



This Very Low Noise and high stability Oven Controlled Crystal Oscillator available footprint from 50 x 50 x 16 mm, is specifically designed to meet the request of the most demanding phase noise applications in the VSAT, instrumentation and RADAR industries.
The LNO @ 10 MHz offers a low phase noise -140dBc/Hz @ 10Hz and low ADEV 3E-13 @ 1 second.

Features

- Low Noise Oscillator (LNO), Oven Controlled Crystal Oscillator (OCXO)
- Frequency: 10 MHz
- Guaranteed low phase noise @ 10 MHz: -140dBc/Hz @ 10Hz offset
- Supply voltage: +12V
- Pin through hole
- Frequency stability vs temperature: ±1ppb
- Ageing: ±0.03ppm over 1 year

Applications

- Reference for phase noise measurement
- Test equipment
- Military communication
- Synthesizers
- Radar

Specifications

1. Environmental conditions

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Operating Temperature	Top	-20	25	75	°C
Switch-on Temperature	TSo	-40	-	75	°C
Storage Temperature	TSt	-55	-	85	°C
Sine Vibration	Level as per MIL-PRF-28800F, Class 3, test equipment				
Shock	Level as per MIL-PRF-28800F, Class 3, test equipment				

2. Electrical interface

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Power supply	-	11.40	12	12.60	V
Load Impedance	-	45	50	55	Ω
Load current reference voltage	-	-	1	1.5	mA
Input impedance voltage control	-	10	-	-	kΩ

3. Performances

Parameters	Conditions/Remarks	Min	Typ	Max	Unit
Nominal frequency	Initial tolerance ±0.1ppm	-	**10**	-	MHz
Warm up supply power	@ 25°C	-	-	5	W
Steady state input current power	@ 25°C	-	-	3	W
Reference voltage	V_{REF}	9.5	10	10.5	V
Frequency adjustment	Positive slope 0 to V_{REF}.	±0.3	-	±0.7	ppm
Frequency stability vs temperature	Referenced to 25°C	-	-	±1	ppb
Frequency variation vs. supply voltage	Over operating temperature	-	-	±0.1	ppb
Frequency variation vs. load	@ 25°C	-	-	± 0.5	ppb
Aging	Per year	-	-	±30	ppb
	10 years	-	150	±300	ppb
Frequency warm up	Time needed to reach the initial frequency accuracy at ±10 ppb after 1 hour	-	-	5	mn
Allan variance	1s	-	1.5E-13	3E-13	-
Output waveform	-	Sine			
Output level	Vcc = 12V	5	-	10	dBm
Harmonics level	Over operating temperature 1MHz to 500MHz	-	-	-30	dBc
Non-harmonics level	1MHz to 5GHz	-	-	-100	dBc

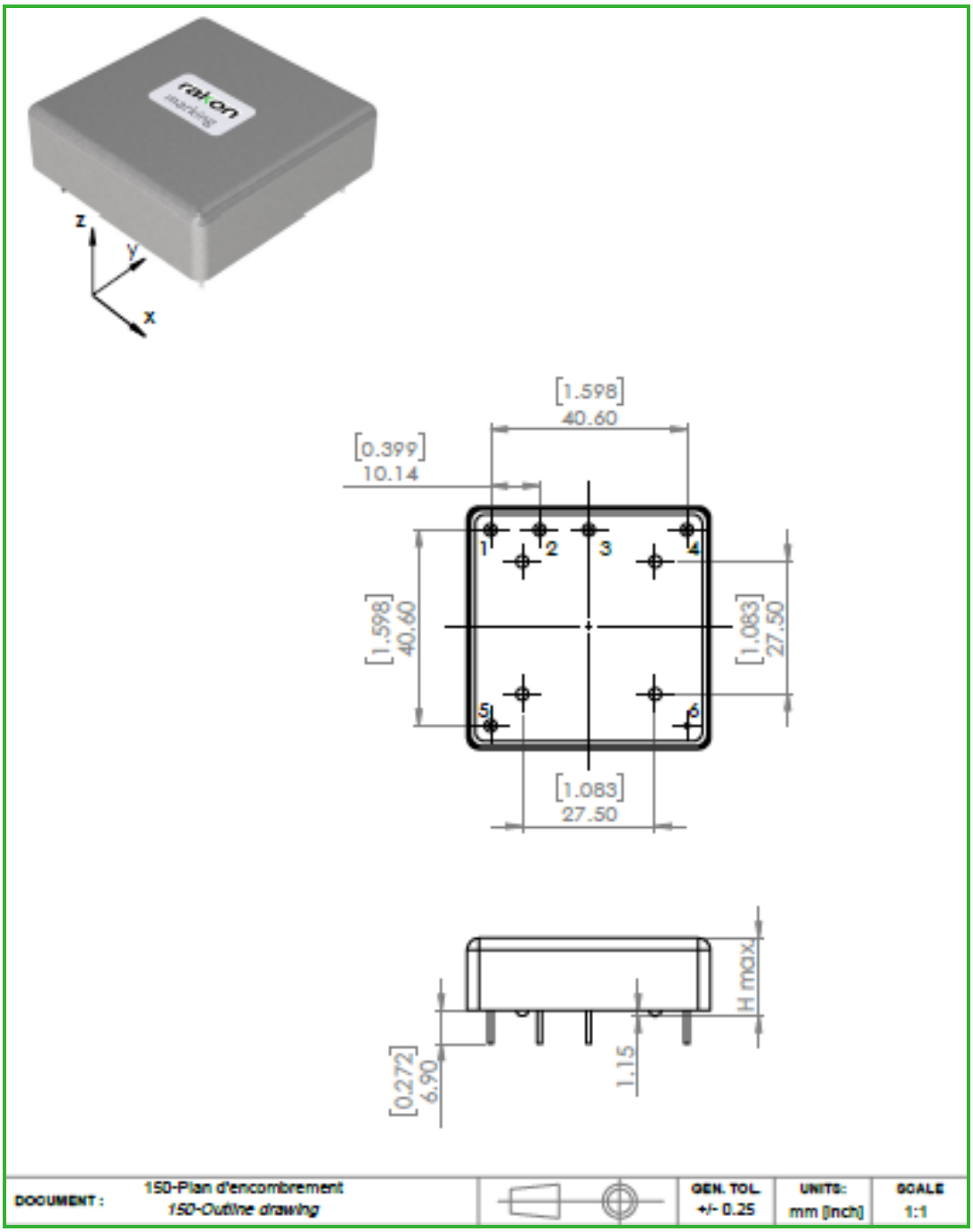
4. Minimum Guaranteed Phase Noise level

Parameters	1Hz	10Hz	100Hz	1kHz	10kHz	Unit
@ Vcc = 12 V	-119	-140	-157	-163	-165	dBc/Hz

5. Mechanical features

Package name	Description	Dimensions	Package
PTH2	Pin Through Hole	2” x 2 ” x 0.63” 50 x 50 x 16 mm	

5.1. Package (Pin Through Hole)



Pin number	Name	Description
1	V_{CTRL}	Voltage control for electrical tuning
2	NC	Not connected
3	V_{REF}	Reference voltage
4	SF	Frequency output
5	V_{CC}	Supply voltage
6	GND	Ground