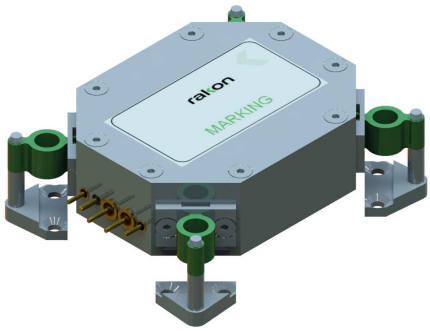
Ultra Low Noise High Frequency Oven Controlled Crystal Oscillator

TE ULN HF C

OCXO ULN HF C

Specific request can be addressed to RAKON info@rakon.fr

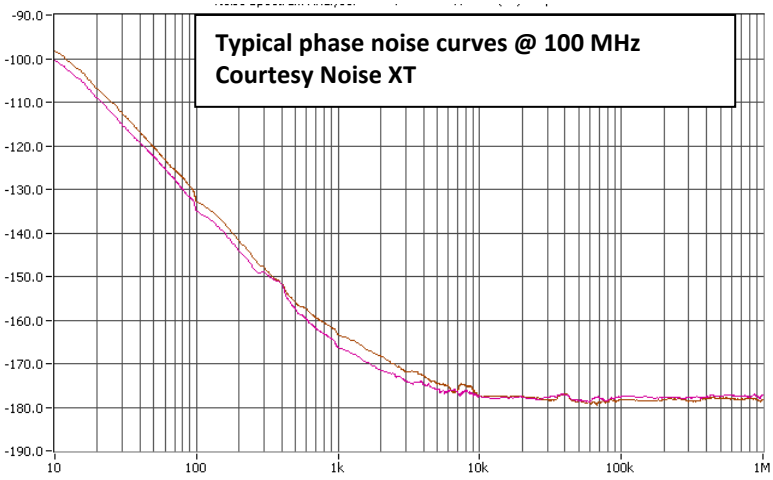
Product Description



This ITAR Free Ultra Low Noise High Frequency Oven Controlled Crystal Oscillator, available in a 60x50x27mm package, is specially designed to meet the request of the most demanding phase noise applications in airborne environment.

Features

- ITAR FREE
- Ultra Low Noise (ULN), Oven Controlled (OCXO), Crystal Oscillator
- Frequency : 80 to 125 MHz
- Ultra low phase noise @ 100 MHz : -163 dBc/Hz @ 1kHz
  -178 dBc/Hz noise floor
- Supply Voltage :+12V or +15V
- 5-pin machined package with shock absorbers
- Airborne environment



Applications

- Airborne military equipment
- Radar & Telecom

Specifications

1.0 Environmental conditions

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Operating Temperature	Option A	0	25	70	°C
	Option B	-20	25	70	°C
	Option C	-40	25	85	°C
Switch-on Temperature	TSo	-40		85	°C
Non-Operating Temperature	TNOp	-55		125	°C
Random Vibration	Overall : 17grms 15 Hz – 300 Hz : +6dB/octave 300 Hz – 1 kHz : 0.2 g^2/Hz 1 kHz – 2 kHz : -6dB/octave				

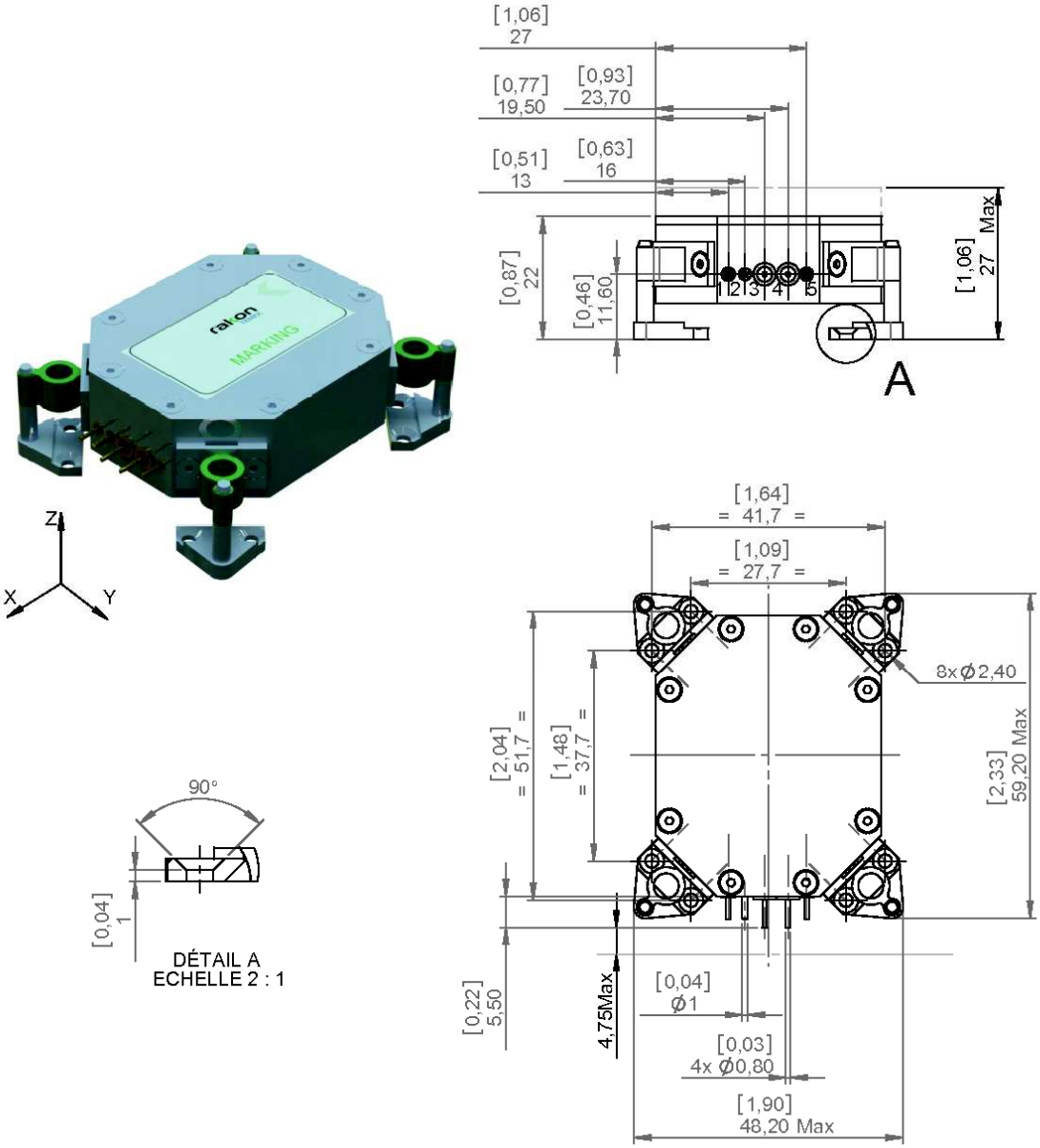
2.0 Electrical interface

Parameters	Conditions/remarks	Min	Nom	Max	Unit
Power supply	Option 1	11.4	12	12.6	V
	Option 2	14.3	15	15.8	V
Load Impedance		45	50	55	Ω
Reference voltage		9.8	10	10.2	V
Ref. voltage current				1	mA
Control voltage		0		10	V
Input impedance		10			κΩ

3.0 Performances

Parameters	Conditions/Remarks	Min	Typ	Max	Unit
Nominal Frequency		80		125	MHz
Relative pulling frequency range (positive slope)	Referred to frequency @ Vc=5V fnom ≥ 100 MHz	± 2			ppm
	Referred to frequency @ Vc=5V fnom<100 MHz	± 4			ppm
Steady state supply current	Typical @ 25°C			3.5	W
Warm up supply current	Frequency achievement 5mn after start up @ 25°C			8	W
Initial frequency accuracy	@ 25°C ; Vc = Vcnom			± 0.5	ppm
Frequency stability vs temperature	Option A			± 0.1	ppm
	Option B			± 0.2	ppm
	Option C			± 0.5	ppm
Frequency variation vs. supply voltage	Vcc ±5% @25°C			± 0.1	ppm
Frequency variation vs. load	For ±10% variation of load			± 0.1	ppm
Frequency ageing	Aging over 1st year after 30 days operating			± 0.5	ppm
Frequency warm up				5	mn
Output waveform			Sine		
Output level		11	13	15	dBm
Harmonics level				-25	dBc
Spurious level				-100	dBc
VSWR (FO ±1.5 MHz)				2:1	
Static Phase noise @ 100 MHz	0.1 kHz		-135	-130	dBc/Hz
	1 kHz		-163	-158	dBc/Hz
	10 kHz		-172	-170	dBc/Hz
	(noise floor) 100 kHz		-178	-174	dBc/Hz
Dynamic Phase noise @ 100 MHz	0.1 kHz			-85	dBc/Hz
	1 kHz			-130	dBc/Hz
	2 kHz			-145	dBc/Hz
	(noise floor) 10 kHz			-170	dBc/Hz

4.0 Mechanical features



DOCUMENT :	150.Plan d'encombrement *150-Oscillator outline*		GEN. TOL. +/- 0.1	UNITS: mm [inch]	SCALE 1:1

5.0 Pin description

Pin number	Name	Function
1	Fout	Frequency output
2	GND	Electrical & Mechanical ground
3	Vc	Voltage control for electrical tuning
4	Vcc	Sypply voltage
5	Vref	Reference voltage

6.0 Ordering part number definition

The part number breakdown is defined as follows: