ROHS-Compliant Product

O-22-ELPN-100M

Description:

O-22-ELPN-100M is a high-performance Oven Controlled Crystal Oscillator (OCXO) offering Exceptional Low Phase Noise **(ELPN)** at 100MHz.

It is housed in a robust Nickel-plated machined aluminum case 51 x 51 x 29 mm with SMA connector what makes it well suited for harsh environmental conditions.

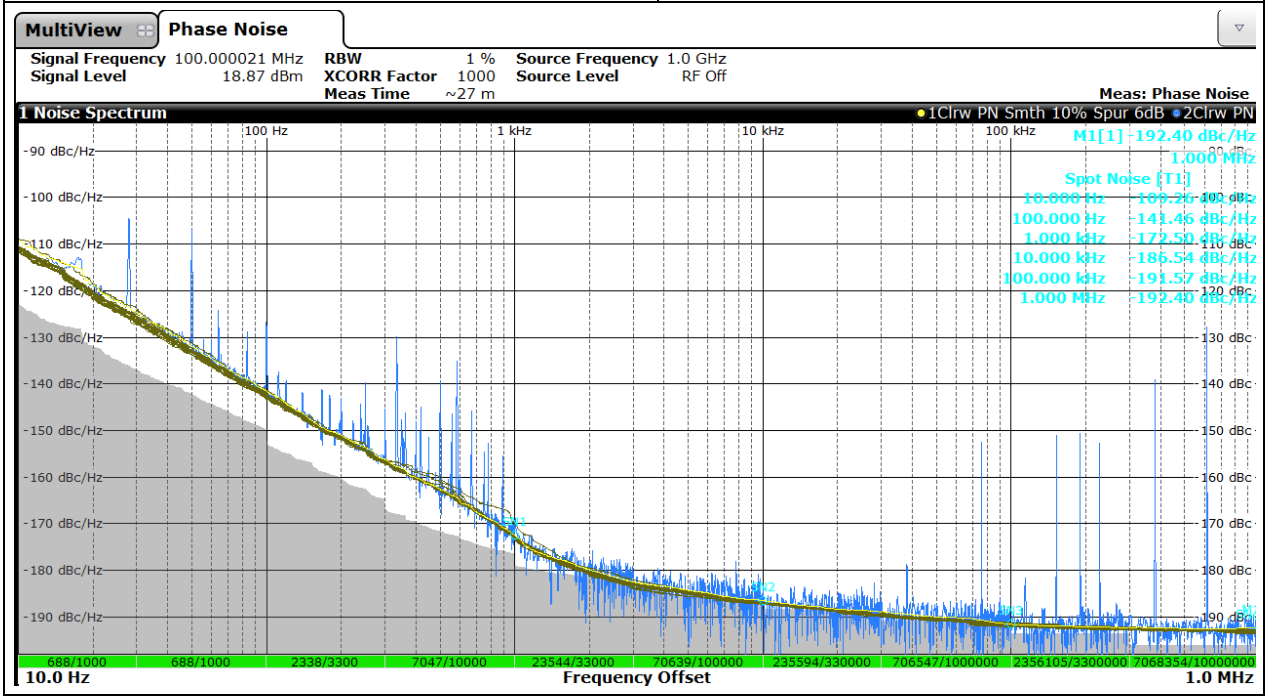


Features:

- Exceptional low Phase Noise:
  -140 dBc / Hz @ 100 Hz
  -190 dBc / Hz Noise Floor
- Low G Sensitivity
- Tight frequency stability
- Electrical frequency tuning input
- SMA connector for RF-output
- High output power

Applications:

- Microwave Communication Systems
- Reference clock
  for Microwave Signal Sources
- Test & Measurement Systems
- Synthesizer Reference Clock
- Radar Systems
- Instrument Reference



KVG Quartz Crystal Technology GmbH
Waibstadter Strasse 2 – 4, 74924 Neckarbischofsheim, Germany
Tel.: +49 (0) 7263/648-0; Fax: +49 (0) 7263/6196
email: info@kvg-gmbh.de web: www.kvg-gmbh.de

ROHS-Compliant Product

O-22-ELPN-100M

1. Specification

Test conditions: V_S = +12 V; T_A = +25 ± 3 °C; V_C = +5 V unless otherwise identified

Nominal frequency F_N:	100.000 MHz
Initial frequency tolerance: (V_C = +5 V; T_A = +25 °C, after power on for 30 min)	≤ ± 300 ppb
Frequency stability vs. temperature range -20 °C to +70 °C (T-option **2070**):	Class **H** ± 100 ppb
Frequency stability vs. supply voltage changes V_S ± 5 %: vs. load changes 50 Ohm ± 10 %:	 ≤ ± 10 ppb ≤ ± 10 ppb
Aging (after 30 days of continuous operation) per day: per year: 15 years:	 ≤ ± 5 ppb ≤ ± 300 ppb ≤ ± 2 ppm
Frequency tuning range (referred to F_N):	≥ ± 2.5 ppm
Frequency control voltage range V_C:	0 V to +10 V
Tuning slope / Linearity:	Positive / ≤ ± 10 %
Control voltage input impedance:	≥ 100 kOhm
Modulation bandwidth:	≥ 1 kHz
Supply voltage V_S:	+12.0 V ± 5%
Power consumption steady state @ +25 °C: during warm-up:	 ≤ 4.0 W ≤ 6.0 W
Warm up time: (to dF/F_0 ≤ ± 50ppb referred to F_0 after 1 hr)	≤ 5 min
Phase Noise @ offset frequency: 10 Hz: 100 Hz: 1 kHz: 10 kHz: 100 kHz: 1 MHz:	Option **P1** -110 dBc/Hz max -140 dBc/Hz max -170 dBc/Hz max -185 dBc/Hz typ.; -184 dBc/Hz max -190 dBc/Hz typ.; -188 dBc/Hz max -190 dBc/Hz typ.; -188 dBc/Hz max
Output voltage:	Sine wave
Initial output level:	≥ +18 dBm
Output load impedance:	50 Ohm ± 10%
Harmonics: Spurious (100 Hz to 5 MHz from carrier):	≤ -30 dBc ≤ -100 dBc

				KVG Quartz Crystal Technology GmbH
3	Power consumtion steady state	12.02.2024	Bai	Waibstadter Str. 2-4
2	Phase Noise	30.01.2024	Schweickert	D-74924 Neckarbischofsheim
1		12.04.2023	Schweickert	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196

Subject to technical modification

1. Specification (continued)

Allan Deviation for τ = 1 sec :	≤ 1 x 10^{-11}
Jitter (RMS) 10 Hz to 1 MHz: 12 kHz to 20 MHz:	 ≤ 50 fsec ≤ 4 fsec
G-Sensitivity (X or Y or Z axis):	≤ 1 ppb / g
Storage emperature range:	-45 °C ... +90 °C

2. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-200 resp. AA-QM-202:

BMP (Bumping):

DIN EN 60068-2-29 Test Eb; 4000 shocks per axis; 40g / 6 ms; 3 axes, both directions

VIB (Vibration):

DIN EN 60068-2-6 Test Fc; 10..55 Hz ; 0.75 mm peak; 55..2000 Hz; 10g peak,
10 Cycles; 3 axes ; 1 Oct./min

SHK (Shock):

DIN EN 60068-2-27 Test Ea; 6 shocks per axis; 100g / 6 ms

3. Marking

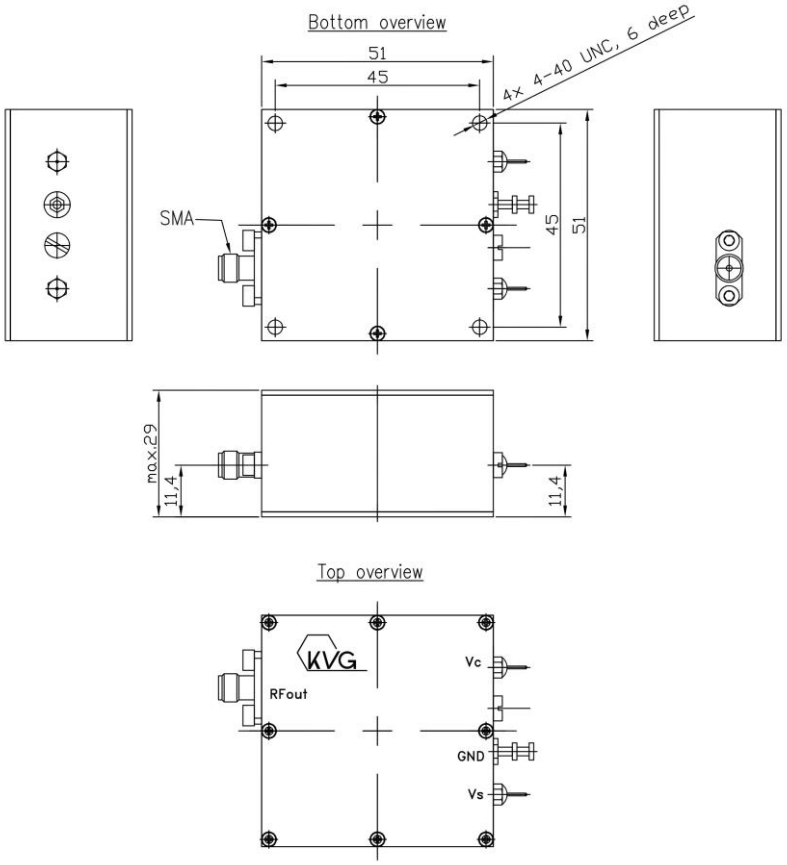
Manufacturer's name, date code (week/year); specification; nominal frequency

ROHS-Compliant Product

O-22-ELPN-100M

4. Case

Case style: BF205-29H



Pin configuration

According to the drawing

Package:

Nickel-plated machined aluminum case

RoHS-6 compliant

5. Ordering information

Type code	Package code	Supply voltage	Temperature option	Frequency stability	Phase Noise option	Nominal frequency
OCXO	51 x 51 mm	12 V	-20 / +70 °C	± 100 ppb	P1	-XXX.YYY
O	**-22**	**C**	**2070**	**H**	**-P1**	**100.000 MHz**

Example: O-22C2070H-P1 - 100.000 MHz

				KVG Quartz Crystal Technology GmbH
3	Power consumtion steady state	12.02.2024	Bai	Waibstadter Str. 2-4
2	Phase Noise	30.01.2024	Schweickert	D-74924 Neckarbischofsheim
1		12.04.2023	Schweickert	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196

Subject to technical modification