High Performance (VC)OCXO

DESCRIPTION:

O-40CXXXX-LPN-LGS-LF is a high performance 'Oven Controlled Crystal Oscillator' **(VC)OCXO** offering exceptional combination of Low Phase Noise **(LPN)**, Low G-Sensitivity **(LGS)** and tight frequency stability.

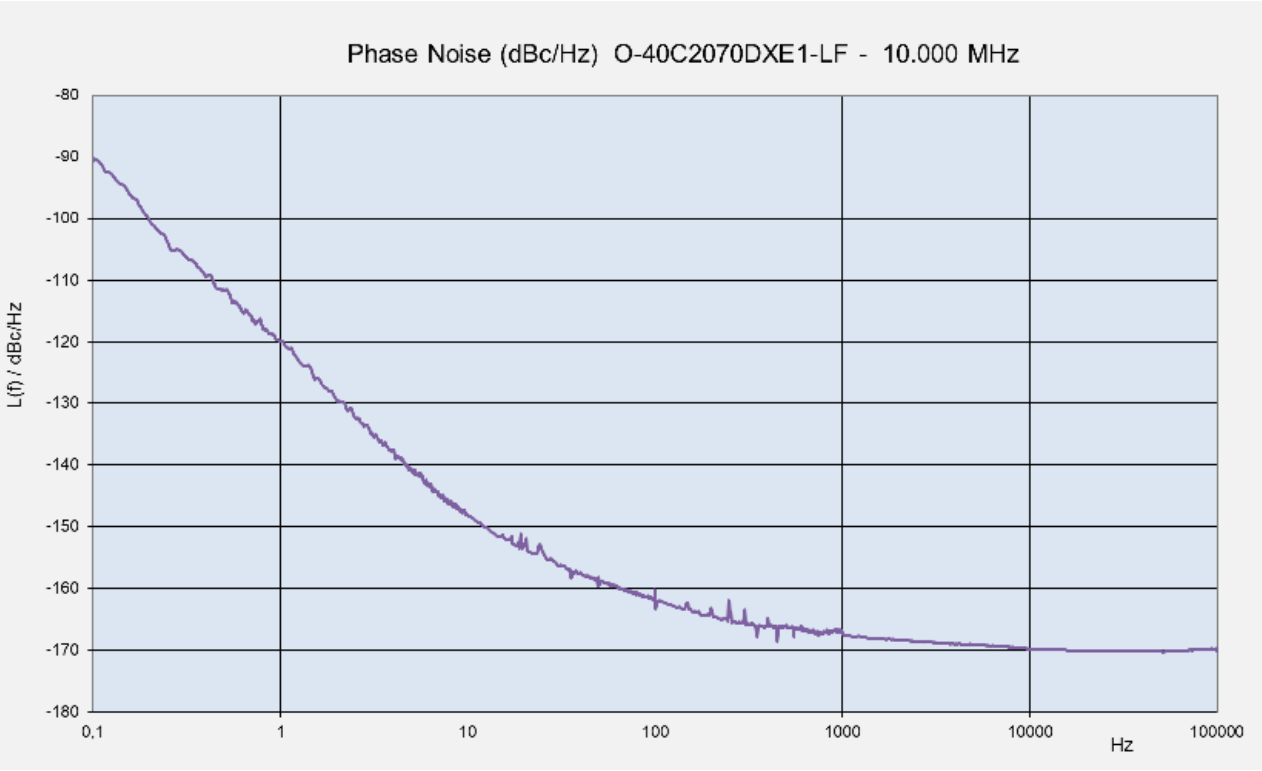
The RoHS-compliant part **(LF)** comes in a small sized hermetically sealed metal can package what makes it suitable for humid climate environment.

FEATURES:

- Fast Warm-up Time
- Tight Frequency Stability
- Excellent Long-Term Stability
- Low Phase Noise
- Low G-Sensitivity
- Frequency Tuning Input
- Reference Voltage Output

APPLICATIONS:

- Instrument Reference
- Microwave Communication
- Clock Reference for Microwave Signal Source
- Synthesizer Reference Clock
- Test & Measurement
- Telecom Systems



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O-40CXXXXXX-LF

1. Specification

Test conditions: V_S = +12 V, V_C = +5.0 V; T_A = +25 °C except when stated otherwise

Nominal Frequency F_N:	10.000 MHz		
Initial factory frequency adjustment tolerance: (after 30 min power ON)	≤ ± 0.1 ppm		
Frequency stability vs. temperature range -20 °C to +70 °C:	Class **E** ± 20 ppb	Class **D** ± 10 ppb	Class **C** ± 5 ppb
Frequency stability vs. temperature range -40 °C to +85 °C:	Class **G** ± 50 ppb	Class **F** ± 30 ppb	Class **E** ± 20 ppb
Frequency stability vs. supply voltage changes V_S ± 5 %: vs. load changes 50 Ohm ± 5%:	≤ ± 1.0 ppb ≤ ± 1.0 ppb		
Aging (after 30 days of continuous operation): per day: 1st year: 10 years:	Option **X** ≤ ± 0.5 ppb ≤ ± 50 ppb ≤ ± 0.3 ppm	Option **Y** ≤ ± 0.3 ppb ≤ ± 30 ppb ≤ ± 0.2 ppm	
Frequency control range (referred to F_N):	Always larger than overall frequency stability; at least ± 0.4 ppm		
Frequency control voltage range V_C:	+0.5 V … +9.5 V		
Tuning slope dF/dV_C / Linearity:	Positive / 10%		
Reference Voltage V_{ref}: Source resistance of V_{ref}: Recommended load impedance:	+9.5 V ≤ 100 Ohm ≥ 10 kOhm		
Supply voltage V_S:	+12.0 V ± 5 %		
Supply current I_S: steady state @ T_A = +25 °C: during warm-up:	-20 to +70 °C ≤ 150 mA ≤ 400 mA	-40 to +85 °C ≤ 180 mA ≤ 500 mA	
Warm up time @ T_A = +25 °C to dF/F < ± 5 x 10^{-8} referred to final frequency after 1 hour:	≤ 5 min		

ED	Description	Date	Name
4	Phase Noise	21.11.2017	Schweickert
3	Temperature Stability improved	12.02.2016	Schweickert
6	Phase Noise	17.05.2021	Mueller
5	Phase Noise	29.11.2018	Schweickert

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1. Specification (cont.)

Output voltage : level: load :	Sine wave ≥ +8 dBm 50 Ohm			
Harmonics: Spurious (10 Hz to 1 MHz from carrier):	≤ -30 dBc ≤ -80 dBc			
Short term stability (Allan Deviation) @ tau = 1 sec:	≤ 2 x 10^{-12} (typical)			
G-Sensitivity (each axis):	≤ 1 ppb/g			
Phase noise **max.** values **[dBc/Hz]** at offset frequency:	Option A	Option B	Option C	Option D
1 Hz:	-105	-110	-115	-118
10 Hz:	-135	-140	-142	-146
100 Hz:	-155	-155	-155	-160
1 kHz:	-165	-165	-165	-166
10 kHz:	-170	-170	-170	-169
100 kHz:	-170	-170	-170	-170
1 MHz:	-170	-170	-170	-170
Temperature ranges Operable: Storage:	-45 °C ... +90 °C -50 °C ... +95 °C			

2. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-202

3. Marking

Manufacturer's name, date code (week/year); Specification; Nominal frequency

4. Ordering Information

Type Code	Package Code	Supp. Volt.	Temp. Range	Freq. Stab. f(T)	Aging f(t)	Phase Noise Option	Low G-Sens. LGS	RoHS compl.	Nominal Frequency
OCXO	25.8 x 25.8	12 V	LOW / HIGH	C to G	X or Y	A to E	YES = 1		XXX.YYY MHz
O-	**40**	**C**	**2070**	**G**	**X**	**B**	**1**	**-LF**	**-10.000 MHz**

Example: O-40C2070GXB1-LF-10.000 MHz

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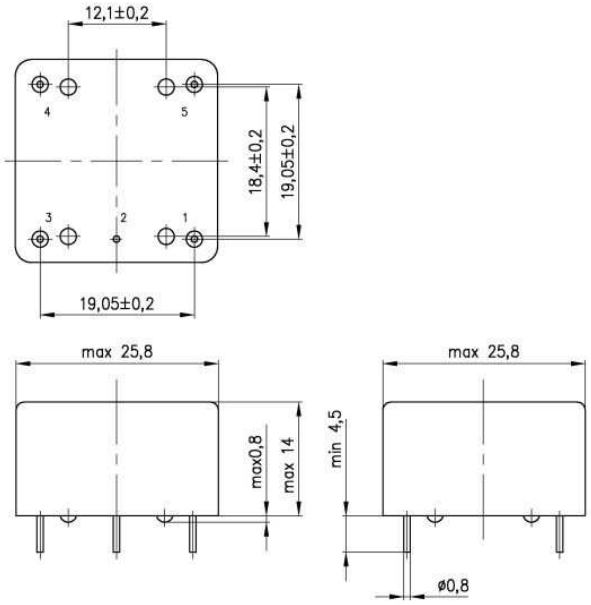
Subject to technical modification

5. Case

Case style: BF171-14.0



Height: 14.0 mm max

Pin configuration

1. RF output
2. Ground, case
3. Control voltage V_C
4. Reference voltage output V_{REF}
5. Supply voltage V_S

Moisture Sensitivity Level: 1

Termination finish:
Sn95.5 Ag3.8 Cu

Solderability:

DIN IEC 68-2-20 (TA)

RoHS-6 compliant

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