



ROHS-Compliant Product

O-30-ULGS-100M



DESCRIPTION:

O-30-ULGS-100M is a high performance 'Oven Controlled Crystal Oscillator' (OCXO) optimized for exceptional Ultra Low G-Sensitivity (**ULGS**), very low phase noise and tight frequency stability.

The part comes in a robust but still small hermetically sealed CO8 metal can package what makes it also suitable for humid environmental conditions. Its low G-Sensitivity makes it a preferred part for any vehicle mounted applications.



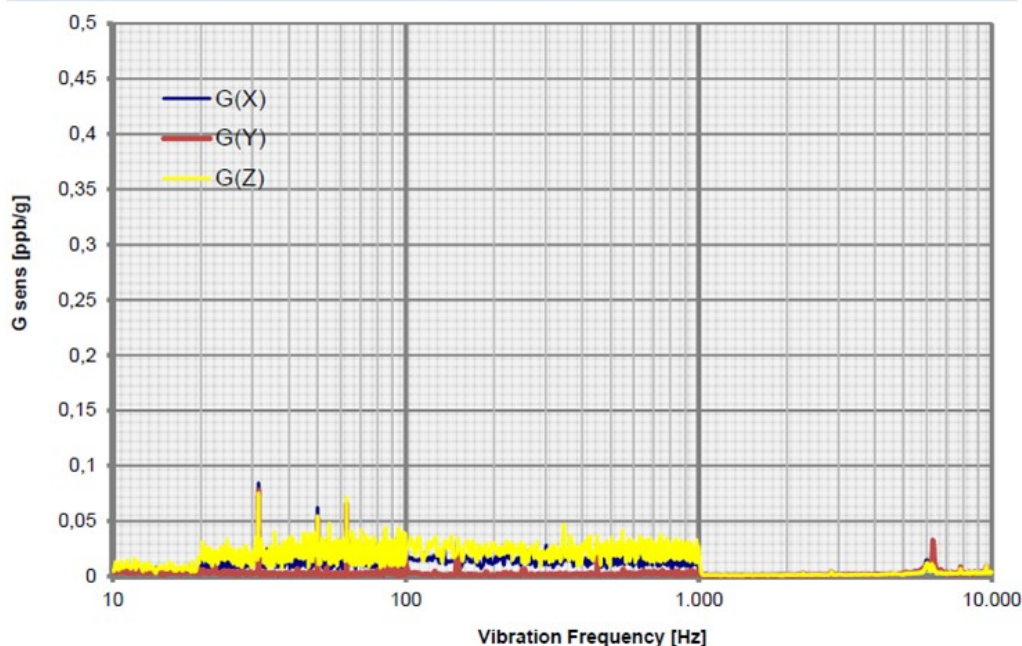
FEATURES:

- Ultra Low G-Sensitivity: **0.1 ppb/g**
- Very Low Phase Noise
- Tight Frequency Stability
- El. Frequency Tuning Input
- Reference Voltage Output
- Hermetical CO-8 package

APPLICATIONS:

- Instrument Reference
- Microwave Communication Systems
- Clock Reference for Microwave Signal Sources
- Test & Measurement Systems
- Radar Systems
- Medical (MRT, CT)

OCXO Ultra Low G-Sensitivity 100MHz - all 3 axis



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-30-ULGS-100M



1. Specification

Test conditions: $V_S = +12\text{ V}$; $T_A = +25 \pm 3\text{ }^\circ\text{C}$; $V_C = +5\text{ V}$ unless otherwise identified

Nominal Frequency F_N :	100.000 MHz	
Initial frequency tolerance: - after power on for 30 min; - within 90 days following date code.	$\leq \pm 200\text{ ppb}$	
Frequency stability in the temperature range $-40\text{ }^\circ\text{C}$ to $+85\text{ }^\circ\text{C}$:	<u>Class G</u> $\leq \pm 50\text{ ppb}$	<u>Class H</u> $\leq \pm 100\text{ ppb}$
Frequency stability vs. supply voltage changes $V_S \pm 5\%$: vs. load changes $50\text{ Ohm} \pm 10\%$:	$\leq \pm 10\text{ ppb}$ $\leq \pm 5\text{ ppb}$	
Aging (after 30 days of continuous operation) per day: 1 st year: 10 years:	$\leq \pm 5\text{ ppb}$ $\leq \pm 300\text{ ppb}$ $\leq \pm 1.5\text{ ppm}$	
Frequency tuning range (referred to F_N):	$\geq \pm 2\text{ ppm}$	
Frequency control voltage range V_C :	0 V to +10 V	
Modulation bandwidth (3 dB cut off frequency):	$\geq 1\text{ kHz}$	
Tuning slope:	positive	
Supply voltage V_S :	$+12\text{ V} \pm 5\%$	
Supply current I_S steady state @ $+25\text{ }^\circ\text{C}$: during warm-up:	$\leq 150\text{ mA}$ $\leq 400\text{ mA}$	
Warm up time: ($dF/F_0 \leq \pm 100\text{ ppb}$ referred to F_0 after 1 hour)	$\leq 5\text{ min}$	
Reference voltage V_{REF} :	$+10\text{ V} \pm 5\%$	
Output voltage:	Sine wave	
Initial output level:	$\geq +7\text{ dBm}$	
Output load:	$50\text{ Ohm} \pm 10\%$	
Harmonics:	$\leq -30\text{ dBc}$	
Spurious (100 Hz to 5 MHz from carrier):	$\leq -100\text{ dBc}$	
Short term stability (Allan Deviation) for $\tau = 1\text{ sec}$:	$\leq 0.1\text{ ppb}$	
Jitter (RMS) 12 kHz to 20 MHz:	$\leq 100\text{ fsec}$	

4				KVG Quartz Crystal Technology GmbH P.O. Box 61 D-74924 Neckarbischofsheim Tel. +49 (0) 7263 / 648-0 Fax. +49 (0) 7263 / 6196
3	Temp. Stability G and G-Sensitivity G4 added	14.03.2017	Mueller	
2	Phase Noise	15.03.2016	Schweickert	
1		12.11.2015	Schweickert	
ED	Description	Date	Name	



ROHS-Compliant Product

O-30-ULGS-100M



1. Specification continued

Phase Noise @ offset frequency:	Typical	Max
10 Hz:	-105 dBc / Hz	≤ -100 dBc / Hz
100 Hz:	-134 dBc / Hz	≤ -130 dBc / Hz
1 kHz:	-160 dBc / Hz	≤ -157 dBc / Hz
10 kHz:	-168 dBc / Hz	≤ -166 dBc / Hz
100 kHz:	-170 dBc / Hz	≤ -168 dBc / Hz
1 MHz:	-170 dBc / Hz	≤ -168 dBc / Hz
G-Sensitivity (X or Y or Z axis)		
Option G1:		≤ 0.5 ppb/g
Option G2:		≤ 0.2 ppb/g
Option G3:		≤ 0.1 ppb/g
Option G4:		≤ 0.05 ppb/g

2. Environmental conditions

According to KVG Product Qualification Procedure AA-QM-200

Storage temperature range:

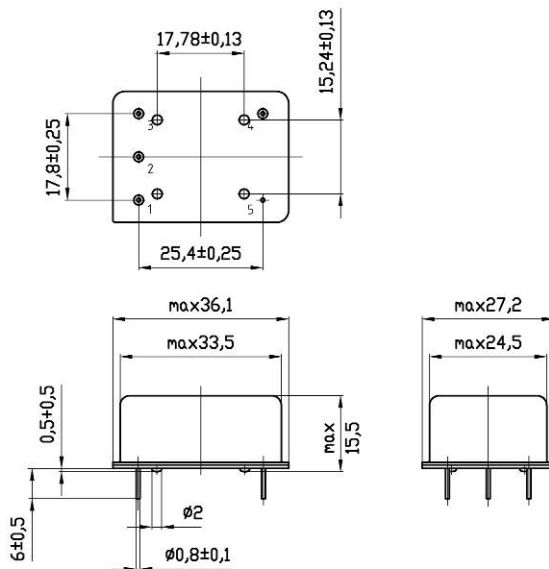
-55 °C to +85 °C

3. Marking

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

4. Case

Case style: BF9-IS-S-15.0



Pin configuration

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

4				KVG Quartz Crystal Technology GmbH
3	Temp. Stability G and G-Sensitivity G4 added	14.03.2017	Mueller	P.O. Box 61
2	Phase Noise	15.03.2016	Schweickert	D-74924 Neckarbischofsheim
1		12.11.2015	Schweickert	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196



ROHS-Compliant Product

O-30-ULGS-100M



5. Ordering information

Type code	Package code	Supply voltage	Temperature range	Frequency stability	G-Sensitivity option	Nominal frequency
OCXO	36 x 27 mm	12 V	-40 / +85 °C	± 50, ± 100 ppb	0.5, 0.2, 0.1, 0.05 ppb/g	-XXX.YYY
O	-30	C	4085	G, H	-G1, G2, G3 or G4	100.000 MHz

Example: O-30C4085H-G1 - 100.000 MHz

4				KVG Quartz Crystal Technology GmbH
3	Temp. Stability G and G-Sensitivity G4 added	14.03.2017	Mueller	P.O. Box 61
2	Phase Noise	15.03.2016	Schweickert	D-74924 Neckarbischofsheim
1		12.11.2015	Schweickert	Tel. +49 (0) 7263 / 648-0
ED	Description	Date	Name	Fax. +49 (0) 7263 / 6196



SPEZIFIKATION

Spezifikation:	O-30-ULGS-100M
Frequenz:	100.000 MHz
Artikelnummer:	
Erfassungsdatum:	
Produktmanager:	Schweickert
Entwickler:	Fieger
Kunden:	viele
Ausgabe Nr.: 1	Erstellung PM: Rudolph * Prüfung und Freigabe BE:*
Ausgabe Nr.: 2 / Phase Noise angepasst an relae Werte, typ. Phase Noise ergänzt	Erstellung PM: Schweickert *15.03.2016 Prüfung und Freigabe BE:*
Ausgabe Nr.: 3 / Beschreibung der Änderung:	Erstellung PM: Rudolph Prüfung und Freigabe BE:*
Ausgabe Nr.: 4 / Beschreibung der Änderung:	Erstellung PM: Rudolph Prüfung und Freigabe BE:*
Ausgabe Nr.: 5 / Beschreibung der Änderung:	Erstellung PM:*Rudolph Prüfung und Freigabe BE:*
Ausgabe Nr.: 6 / Beschreibung der Änderung:	Erstellung BPM:*\br/>Prüfung und Freigabe BE:*
Verteiler:	PM: Rudolph BE: Fieger