



ROHS-Compliant Product

O-30-ULPN-100M



DESCRIPTION:

O-30-ULPN-100M is a high performance 'Oven Controlled Crystal Oscillator' (OCXO) offering exceptional Ultra Low Phase Noise (**ULPN**), 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.

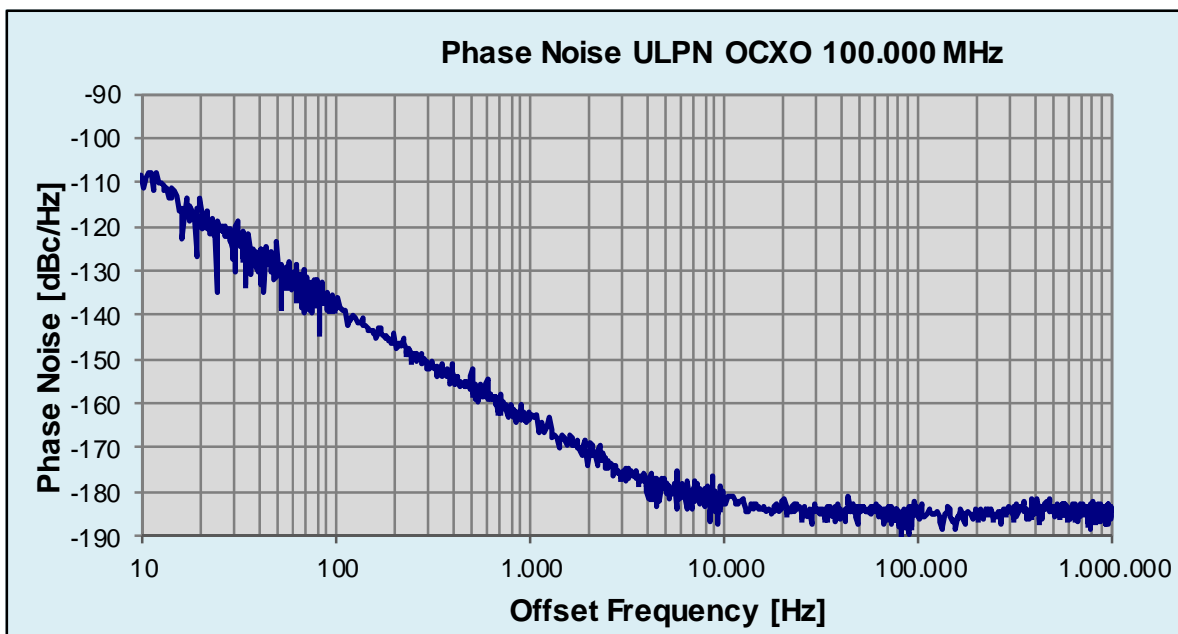


FEATURES:

- Ultra low Phase Noise:
-135 dBc / Hz @ 100 Hz
-185 dBc / Hz Noise Floor
- Low G Sensitivity
- Tight frequency stability
- Electrical frequency tuning input
- Hermetical CO-8 package

APPLICATIONS:

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



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O-30-ULPN-100M



1. Specification

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

Nominal frequency F_N :	100.000 MHz	
Initial frequency tolerance: ($V_C = +5\text{ V}$; $T_A = +25\text{ }^\circ\text{C}$, after power on for 30 min):	$\leq \pm 300\text{ ppb}$	
Frequency stability vs. temperature range -20 °C to +70 °C (T-option 2070):	<u>Class H</u> $\pm 100\text{ ppb}$	<u>Class G</u> $\pm 50\text{ ppb}$
Frequency stability vs. temperature range -40 °C to +85 °C (T-option 4085):	<u>Class J</u> $\pm 500\text{ ppb}$	<u>Class I</u> $\pm 200\text{ ppb}$
Frequency stability vs. supply voltage changes $V_S \pm 5\%$: vs. load changes 50 Ohm $\pm 10\%$:	$\leq \pm 5\text{ ppb}$ $\leq \pm 5\text{ ppb}$	
Aging (after 30 days of continuous operation) per day: per year: 15 years:	$\leq \pm 5\text{ ppb}$ $\leq \pm 200\text{ ppb}$ $\leq \pm 2\text{ ppm}$	
Frequency tuning range (referred to F_N):	$\geq \pm 2.5\text{ ppm}$	
Frequency control voltage range V_C :	0 V to +10 V	
Modulation Bandwidth:	$\geq 1\text{ kHz}$	
Supply voltage V_S :	$+5.0\text{ V} \pm 5\%$	
Supply current I_S steady state @ +25 °C: during warm-up:	$\leq 400\text{ mA}$ $\leq 950\text{ mA}$	
Warm up time: (to $dF/F_0 \leq \pm 50\text{ppb}$ referred to F_0 after 1 hour)	$\leq 5\text{ min}$	
Phase Noise @ offset frequency: 10 Hz: 100 Hz: 1 kHz: 10 kHz: 100 kHz: 1 MHz:	<u>Option P1</u> $\leq -100\text{ dBc / Hz}$ $\leq -130\text{ dBc / Hz}$ $\leq -157\text{ dBc / Hz}$ $\leq -180\text{ dBc / Hz}$ $\leq -185\text{ dBc / Hz}$ $\leq -185\text{ dBc / Hz}$	<u>Option P2</u> $\leq -105\text{ dBc / Hz}$ $\leq -135\text{ dBc / Hz}$ $\leq -162\text{ dBc / Hz}$ $\leq -180\text{ dBc / Hz}$ $\leq -185\text{ dBc / Hz}$ $\leq -185\text{ dBc / Hz}$
Output voltage:	Sine wave	
Initial output level:	$\geq +15\text{ dBm}$	
Output load impedance:	50 Ohm $\pm 10\%$	
Harmonics: Spurious (100 Hz to 5 MHz from carrier):	$\leq -30\text{ dBc}$ $\leq -100\text{ dBc}$	
Allan Deviation for $\tau = 1\text{ sec}$:	$\leq 5 \times 10^{-11}$	

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3				
2	Add short term stability (Allan variance)	24.08.2015	Balzer	
1		05.05.2015	Rudolph	
ED	Description	Date	Name	



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Jitter (RMS) 12 kHz to 20 MHz:	≤ 50 fsec
G-Sensitivity (X or Y or Z axis):	≤ 1 ppb / g
Temperature ranges Operating: Storage:	T-Option 2070 or 4085 -45 °C ... +90 °C

2. Environmental conditions

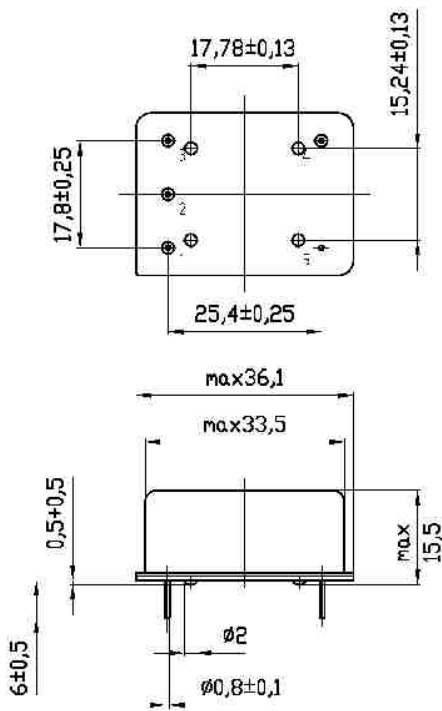
According to KVG Product Qualification Procedure AA-QM-200

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 in
2. N.C.
3. Supply voltage V_S
4. RF output
5. Ground, case

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5. Ordering information

Type code	Package code	Supply voltage	Temperature option	Frequency stability	Phase Noise option	Nominal frequency
OCXO	36 x 27 mm	5 V	-40 / +85 °C	± 500 ppb	P1 or P2	-XXX.YYY
O	-30	B	4085	J	-P2	100.000 MHz

Example: **O-30B4085J-P2 - 100.000 MHz**

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