High Performance Double OCXO

DESCRIPTION:

DO-35-Double OCXO is a 10.000 MHz high performance 'Oven Controlled Crystal Oscillator' **(VC)OCXO** offering exceptional low aging and extremely tight frequency stability vs. temperature in combination with a very small package for this performance.

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

FEATURES:

- Very Tight Frequency Stability
- Excellent Long-Term Stability
- Low Power Consumption
- Fast Warm-up Time
- Small package
- Industrial Temperature Range
- Frequency Tuning Input
- Reference Voltage Output

APPLICATIONS:

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

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

DO-35-Double OCXO

1. Specification

Test conditions: V_S = +5 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:	**Class AB** ± 0.2 ppb	**Class AC** ± 0.5 ppb	
Temperature range options: 0 °C to +70 °C : -30 °C to +70 °C : -40 °C to +85 °C (not for Vs = 3.3V option A) :	**0070** **3070** **4085**		
Frequency stability vs. supply voltage changes V_S ± 5 %:	≤ ± 0.2 ppb		
Retrace after 60 min. turn on, following min. 24hours operation and max. 24 hours turn-off, constant temp. and voltage	≤ ± 5 ppb		
Aging (after 30 days of continuous operation): per day: per year: 10 years:	**Option Z** ≤ ± 0.1 ppb ≤ ± 20 ppb ≤ ± 0.1 ppm	**Option Y** ≤ ± 0.3 ppb ≤ ± 50 ppb ≤ ± 0.2 ppm	
Frequency control range (referred to FN) :	≥ ± 0.35 ppm		
Frequency control voltage range V_C:	0 V … +2.8 V		
Tuning slope dF/dV_C:	positive		
Reference voltage Vref: Recommended load impedance:	+2.8 V ≥ 9 kOhm		
Supply voltage V_S (nominal values ±5%):	**Option A** +3.3V	**Option B** +5.0V	**Option C** +12.0V
Supply current I_S: steady state @ T_A = +25 °C: during warm-up:	≤ 750 mA ≤ 2.5 A	≤ 500 mA ≤ 1.75 A	≤ 200 mA ≤ 0.8 A
Warm up time @ T_A = +25 °C to dF/F < ± 20 ppb referred to final frequency after 1 hour:	≤ 5 min		

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KVG Quartz Crystal Technology GmbH
P.O. Box 61
D-74924 Neckarbischofsheim
Tel. +49 (0) 7263 / 648-0
Fax. +49 (0) 7263 / 6196

ROHS-Compliant Product

DO-35-Double OCXO

1. Specification (cont.)

Output voltage : level: load :	HCMOS V_{OL} < 10% V_S; V_{OH} > 90% V_S 1 kOhm // 15 pF		
Spurious:	≤ -60 dBc		
Short term stability (Allan Variance) @ tau = 1 sec: @ tau = 10 sec:	 ≤ 7.0 x 10^{-12} ≤ 1.0 x 10^{-11}		
Phase noise **max.** values at offset frequency:	**Option A** +3.3V	**Option B** +5.0V	**Option C** +12.0V
1 Hz:	-90 dBc/Hz	-90 dBc/Hz	-90 dBc/Hz
10 Hz:	-120 dBc/Hz	-120 dBc/Hz	-120 dBc/Hz
100 Hz:	-138 dBc/Hz	-140 dBc/Hz	-140 dBc/Hz
1 kHz:	-148 dBc/Hz	-150 dBc/Hz	-150 dBc/Hz
10 kHz:	-155 dBc/Hz	-155 dBc/Hz	-155 dBc/Hz
100 kHz:	-158 dBc/Hz	-160 dBc/Hz	-160 dBc/Hz
Temperature ranges Operating: Storage:	 see above options -40 °C ... +85 °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)	RoHS compl.	Nominal Frequency
Double-OCXO	36 x 27 SMD		LOW /HIGH	AB to AC	Y or Z		XXX.YYY MHz
DO-	**35**	**A: 3.3V B: 5.0V C: 12V**	**4085**	**AB**	**Y**	**-LF**	**-10.000 MHz**

Example: O-35B4085ABY-LF-10.000 MHz

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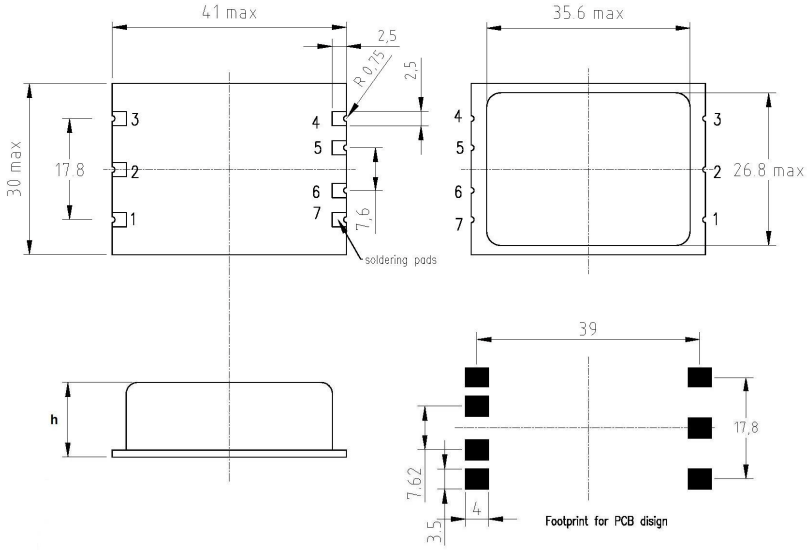
4. Case

Case style: BF9-22-SMD



h = 22.0 mm max.

Pin configuration

1: RF output
2: N.C.
3: Ground, case
4: Reference Voltage out V_{REF}
5: Control voltage input V_C
6: N.C.
7: Supply voltage V_S

*) in case frequency control is **not** required pin 5 has to be kept not connected.

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