

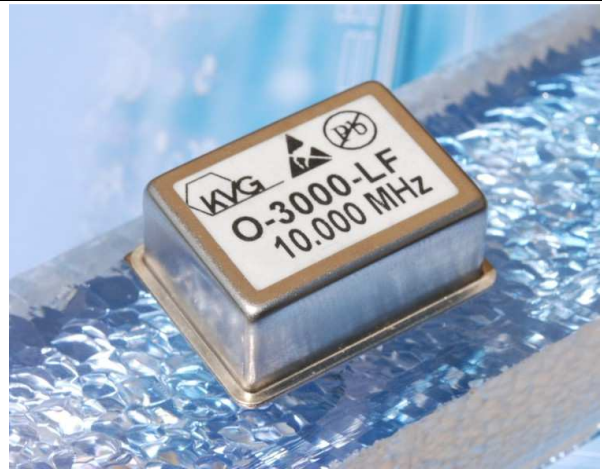


# High Performance Double OCXO

## DESCRIPTION:

**DO-30-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.

This RoHS-compliant part (**LF**) is in a hermetically sealed metal can 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

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ROHS-Compliant Product

# DO-30-Double OCXO



<b>1. Specification</b>			
<b>Test conditions: <math>V_S = +5\text{ V}</math>; <math>T_A = +25\text{ °C}</math> except when stated otherwise</b>			
Nominal Frequency $F_N$ :	10.000 MHz		
Initial factory frequency adjustment tolerance: (after 30 min power ON)	$\leq \pm 0.1\text{ ppm}$		
Frequency stability vs. temperature:	<b>Class AB</b> $\pm 0.2\text{ ppb}$	<b>Class AC</b> $\pm 0.5\text{ ppb}$	
Temperature range options: 0 °C to +70 °C : -30 °C to +70 °C : -40 °C to +85 °C (not for $V_S = 3.3\text{V}$ option A) :	<b>0070</b> <b>3070</b> <b>4085</b>		
Frequency stability vs. supply voltage changes $V_S \pm 5\%$ :	$\leq \pm 0.2\text{ ppb}$		
Retrace after 60 min. turn on, following min. 24hours operation and max. 24 hours turn-off, constant temp. and voltage	$\leq \pm 5\text{ ppb}$		
Aging (after 30 days of continuous operation):  per day: per year: 10 years:	<b>Option Z</b>  $\leq \pm 0.1\text{ ppb}$ $\leq \pm 20\text{ ppb}$ $\leq \pm 0.1\text{ ppm}$	<b>Option Y</b>  $\leq \pm 0.3\text{ ppb}$ $\leq \pm 50\text{ ppb}$ $\leq \pm 0.2\text{ ppm}$	
Frequency control range (referred to $F_N$ ) :	$\geq \pm 0.35\text{ ppm}$		
Frequency control voltage range $V_C$ :	0 V ... +2.8 V		
Tuning slope $dF/dV_C$ :	positive		
Reference voltage $V_{ref}$ : Recommended load impedance:	+2.8 V $\geq 9\text{ kOhm}$		
Supply voltage $V_S$ (nominal values $\pm 5\%$ ):	<b>Option A</b> +3.3V	<b>Option B</b> +5.0V	<b>Option C</b> +12.0V
Supply current $I_S$ : steady state @ $T_A = +25\text{ °C}$ : during warm-up:	$\leq 750\text{ mA}$ $\leq 2.5\text{ A}$	$\leq 500\text{ mA}$ $\leq 1.75\text{ A}$	$\leq 200\text{ mA}$ $\leq 0.8\text{ A}$
Warm up time @ $T_A = +25\text{ °C}$ to $dF/F < \pm 20\text{ ppb}$ referred to final frequency after 1 hour:	$\leq 5\text{ min}$		

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1		05.11.2015	Dannenmaier	
ED	Description	Date	Name	



ROHS-Compliant Product

# DO-30-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:	$\leq -60$ dBc		
Short term stability (Allan Variance) @ tau = 1 sec: @ tau = 10 sec:	$\leq 7.0 \times 10^{-12}$ $\leq 1.0 \times 10^{-11}$		
Phase noise <b>max.</b> values at offset frequency:	<b>Option A</b> +3.3V	<b>Option B</b> +5.0V	<b>Option C</b> +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

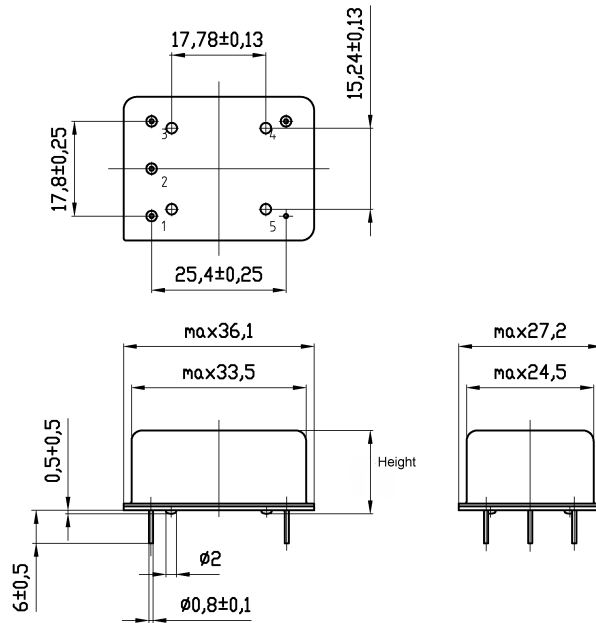
Type Code	Package Code	Supp. Volt.	Temp. Range	Freq. Stab. f(T)	AGING f(t)	RoHS compl.	Nominal Frequency
Double-OCXO	36 x 27		LOW /HIGH	AB to AC	Y or Z		XXX.YYY MHz
<b>DO-</b>	<b>30</b>	<b>A: 3.3V B: 5.0V C: 12V</b>	<b>4085</b>	<b>AB</b>	<b>Y</b>	<b>-LF</b>	<b>-10.000 MHz</b>

**Example: O-30B4085ABY-LF-10.000 MHz**

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4. Case

Case style: BF9-IS-S-18.7



max. height incl. stand-offs: 18.72 mm

Pin configuration

1. Control Voltage  $V_c$  \*)
2. Reference Voltage  $V_{ref}$
3. Supply voltage  $V_s$
4. RF output
5. Ground, case

\*) in case frequency control is **not** required pin 1 has to be kept not connected.

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