

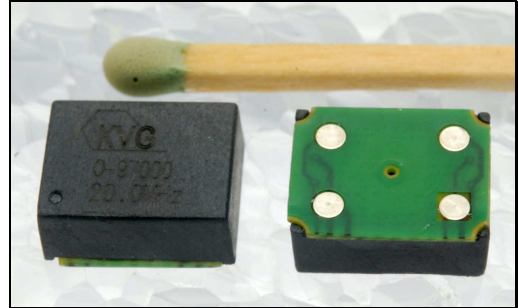


# Miniature SMD (VC)OCXO

## DESCRIPTION:

**O-97000-LF** is a very small sized SMD 'Oven Controlled Crystal Oscillator' (VC)OCXO offering exceptional tight frequency stability of  $\pm 0.01$  ppm ( $\pm 10$  ppb) over a wide temperature range of up to  $-40/+85$  °C.

The part comes in a **tiny 9.7 x 7.5 x 4.1 mm SMD package** taped on reel what makes it also suitable for automatic pick & place machine assembly.



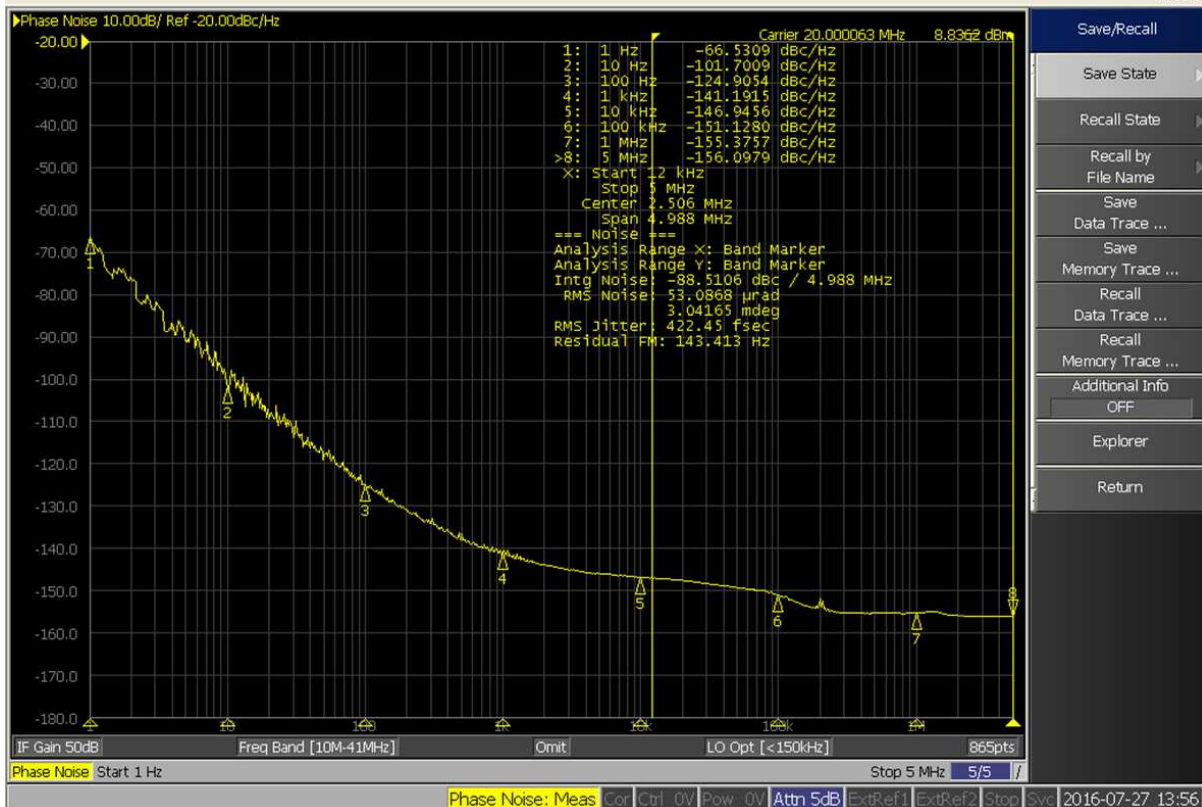
## FEATURES:

- Very Small SMD package
- Fast Warm-up Time
- Low Power Consumption
- Tight Frequency Stability
- Good Long-Term Stability
- Frequency Tuning Input option

## APPLICATIONS:

- Instrument Reference
- Microwave Communication
- Test & Measurement
- Telecom Systems

## Agilent E5052B Signal Source Analyzer



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ROHS-Compliant Product

# O-97000-LF Series



1. Specification (preliminary)	
Test conditions: T <sub>A</sub> = +25 °C; V <sub>C</sub> = 2.5 V resp. +1.65 V unless otherwise identified	
Frequency Range:	10.000 to 40.000 MHz
Standard Frequencies:	10.0, 19.2, 20.0 MHz
Supply voltage V <sub>S</sub> :	+3.3 V ± 5 %
Temperature Ranges:	
-20 °C to +70 °C:	2070
-40 °C to +85 °C:	4085
Frequency stability vs. temperature options:	
≤ ± 5 × 10 <sup>-8</sup>	A
≤ ± 3 × 10 <sup>-8</sup>	B
≤ ± 2 × 10 <sup>-8</sup>	C
≤ ± 1 × 10 <sup>-8</sup>	D
≤ ± 5 × 10 <sup>-9</sup>	E
Long term stability (aging) options (after 30 days of continuous operation)	
1 <sup>st</sup> year:	≤ ± 0.5 ppm
10 years:	≤ ± 2.0 ppm
Frequency stability vs. supply voltage changes V <sub>S</sub> ± 5 %: vs. load changes ± 10 %:	≤ ± 5.0 × 10 <sup>-9</sup> ≤ ± 5.0 × 10 <sup>-9</sup>
Frequency control by external tuning voltage :	> ± 5 ppm
Tuning voltage range:	+0.3 V to 3.0 V
Transfer function / Linearity:	Positive / ≤ 10 %
Supply power/current steady state @ +25 °C: during warm-up:	≤ 0.4 W ≤ 350 mA
Warm-up time: (for a typical accuracy of ≤ ± 1 × 10 <sup>-7</sup> @ +25 °C referred to final frequency after 1 hour)	≤ 5 min
Output signal type: Level: Load: Duty cycle: Rise & fall time	(LV)HCMOS V <sub>OL</sub> ≤ 0.1 × V <sub>S</sub> ; V <sub>OH</sub> > +0.9 × V <sub>S</sub> 1 kOhm // 15 pF 45% to 55% ≤ 5 ns

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1		30.06.2017	Rudolph	
ED	Description	Date	Name	



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Phase noise (typical for 20 MHz):	10 Hz:	Typ. $\leq -98$ dBc / Hz	Max. $\leq -92$ dBc / Hz
	100 Hz:	Typ. $\leq -126$ dBc / Hz	Max. $\leq -120$ dBc / Hz
	1 kHz:	Typ. $\leq -146$ dBc / Hz	Max. $\leq -140$ dBc / Hz
	10 kHz:	Typ. $\leq -152$ dBc / Hz	Max. $\leq -150$ dBc / Hz
	100 kHz:	Typ. $\leq -152$ dBc / Hz	Max. $\leq -150$ dBc / Hz
	1 MHz:	Typ. $\leq -155$ dBc / Hz	Max. $\leq -153$ dBc / Hz
Storage temperature range:	-45 °C to +90 °C		

## 2. Environmental conditions

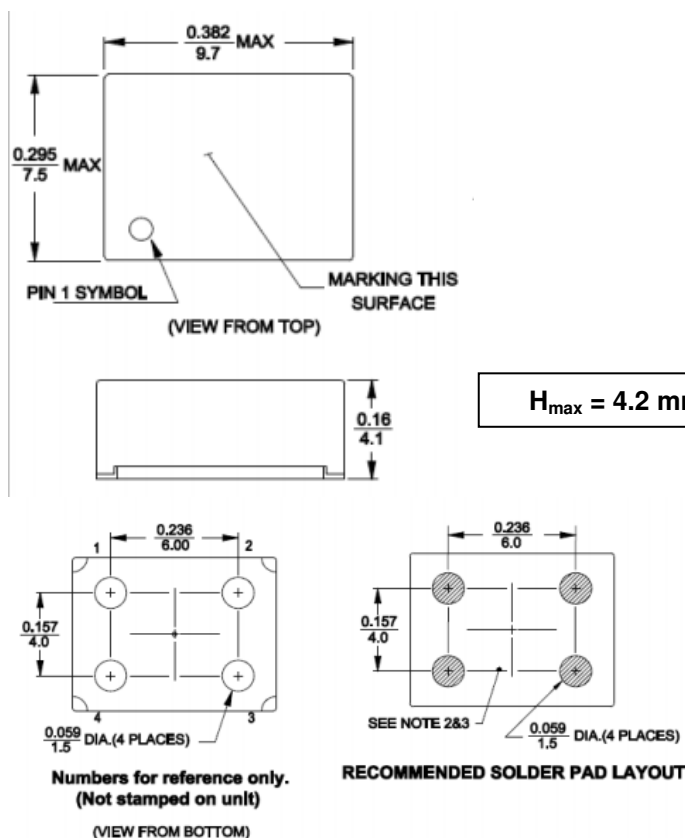
According to KVG Product Qualification Procedure AA-QM-200

## 3. Marking

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

## 4. Case

### BF97-4.1-SMD



### Pin Configuration:

1.  $V_C$  or do not connect
2. GND and Case
3. RF Output
4. Supply voltage  $+V_S$

### Notes:

1. Provided the data sheet does not specify any parameters for Pin 1 then that respective Pin must remain unconnected.

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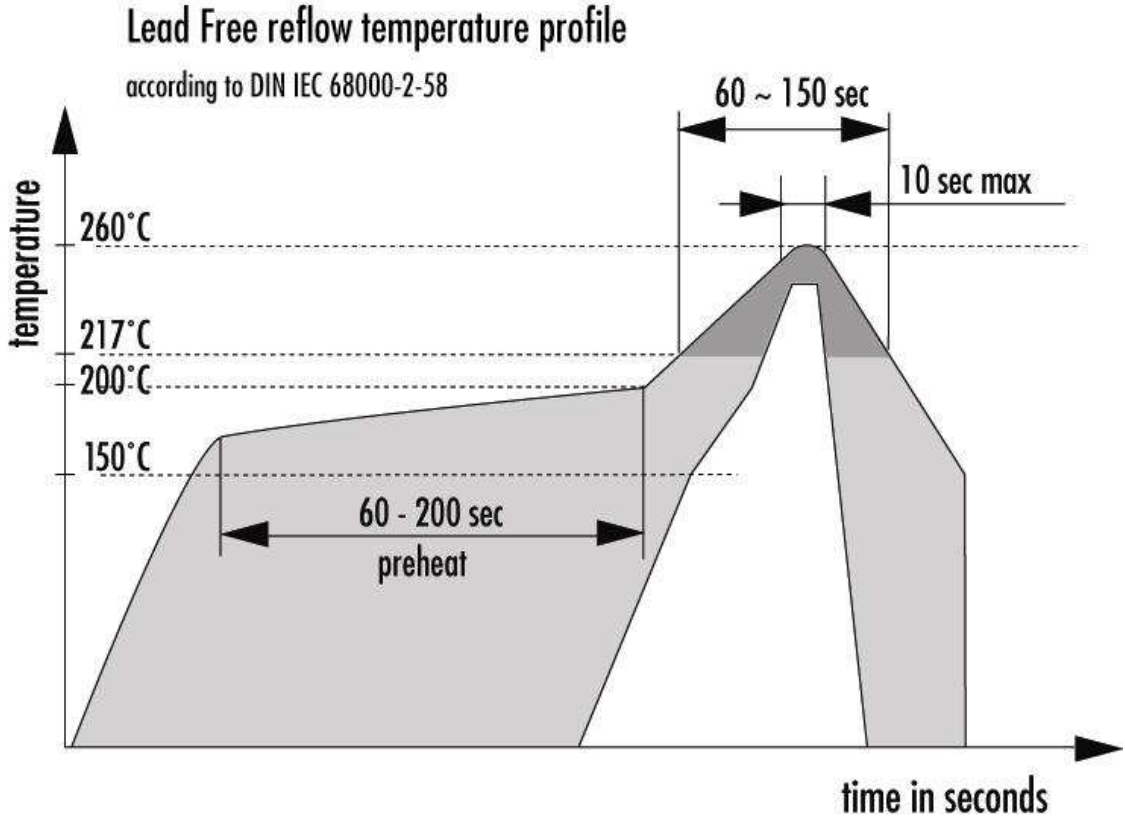


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# O-97000-LF Series



## 5. Recommended soldering profile



## 6. Ordering Information

Type Code	Package Code	Supply Voltage	Temp. Range	Frequency Stability	RoHS Compliant	Frequency
OCXO	9.7 x 7.5 x 4.1 mm	3.3 V	-40/+85 °C	±50 ppb		- XX.YYY MHz
O-	97	3	4085	A	-LF	-20.000 MHz

Example: O-9734085C-LF-20.000 MHz

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