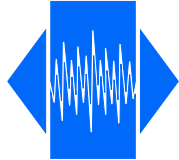


# VTX 7Q-LG

Low G-sensitive, vibration and shock resistant  
Temperature compensated (VC)TCXO

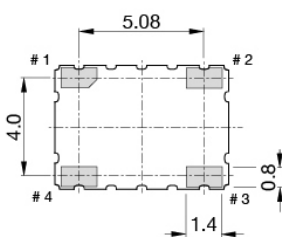
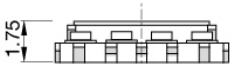
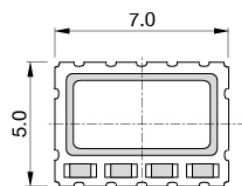
**QuartzCom**  
the communications company



<b>Frequency range</b>	<b>5.000 ~ 100.000 MHz</b>		
Standard frequencies (fundamental)	10, 12, 13, 15.36, 16.368, 20, 25, 27, 30, 32.512, 40, 50, 70, 77.76, 80 and 100 MHz		
Frequency stability:			
vs. temperature referenced to (F <sub>MAX</sub> +F <sub>MIN</sub> )/2	≤ ±0.50 ppm	over -40 to +85 °C	(*)
vs. supply voltage changes referenced to frequency at nominal supply	≤ ±0.1 ppm	±5 %	
vs. load changes referenced to frequency at nominal load	≤ ±0.1 ppm	±5 %	
vs. aging @ +40 °C	≤ ±1.0 ppm	1st year	
G-sensitivity	0.25 ppb/g	per axis	(*)
Frequency tolerance ex. factory @ +25 °C	0 ~ +1.0 ppm	@ +25 °C	
Supply voltage (nominal value ±5 %)	+2.8 V, +3.3 V or +5.0 V		(*)
Output signal	Clipped sine wave	(LV)CMOS	(*)
Output level	> 0.8 V <sub>p-p</sub>	V <sub>OH</sub> > 0.9*V <sub>CC</sub> / V <sub>OL</sub> < 0.1*V <sub>CC</sub>	
Output load	10 kΩ // 10 pF	15 pF Max.	
Current consumption, depending on frequency	1.5 ~ 7 mA	2 ~ 10 mA	
Electronic Frequency Control (EFC) range	±5 ~ ±10 ppm	positive slope	(*)
EFC voltage (V <sub>c</sub> )	+1.50 V ±1.0 V for 3.3 V	+2.50 V ±2.0 V for 5.0 V	(*)
EFC input impedance	> 100 kΩ		
Phase noise (typical value for 40 MHz)	-90 dBc/Hz	@ 10 Hz	
	-118 dBc/Hz	@ 100 Hz	
	-140 dBc/Hz	@ 1 kHz	
	-151 dBc/Hz	@ 10 kHz	
	-156 dBc/Hz	@ 100 kHz	
Operating temperature range	-40 ~ +85 °C		(*)
Storage temperature range	-55 ~ +105 °C		
Reflow Profiles as per IPC/JEDEC J-STD-020C	≤ 260 °C over 10 sec. Max.		
Moisture sensitivity	Level 1 (unlimited)		

(\*) See available options on page #2

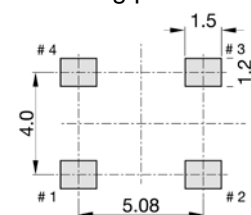
Note: Unless otherwise specified conditions are @+25 °C



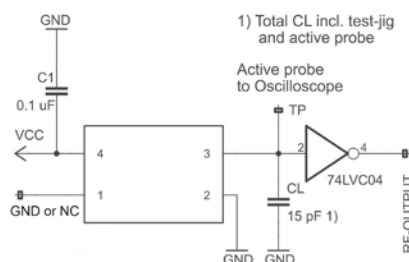
### Pin function

- # 1 V<sub>c</sub> (EFC) for VC-TCXO  
GND or NC for TCXO
- # 2 GND
- # 3 Output
- # 4 V<sub>CC</sub>

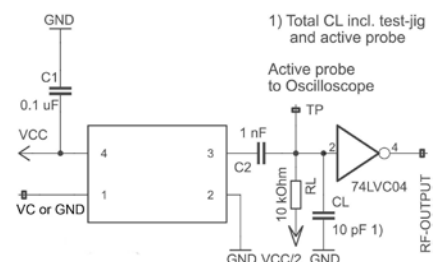
### Soldering pattern



### Test circuit for CMOS



### Test circuit for Clipped Sine Wave



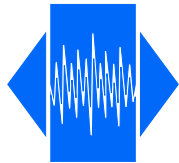
2011/65/EU RoHS compliant

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# VTX 7Q-LG

Low G-sensitive, vibration and shock resistant  
Temperature compensated (VC)TCXO



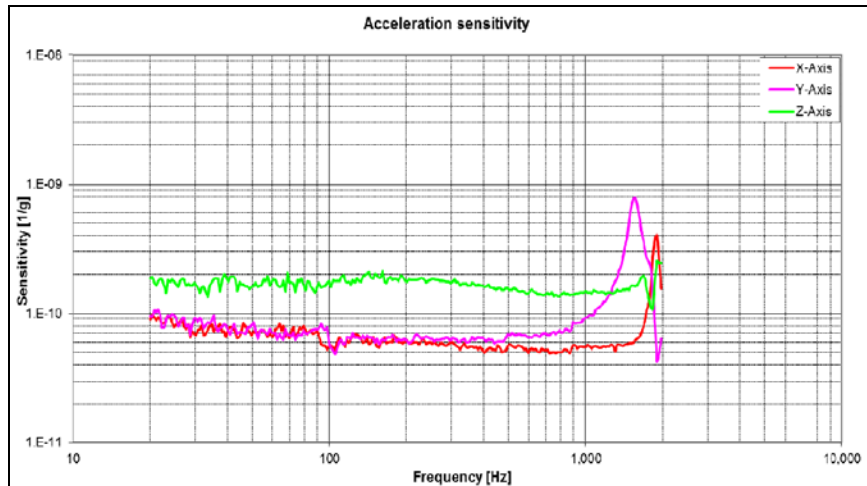
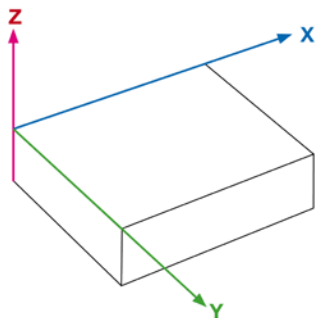
## G-Sensitivity performance

Noise shape vibration from 20-2'000 Hz  
with 0.1 g<sup>2</sup>/Hz (G<sub>RMS</sub> = 14.11g) for the axis

The table shows the averaged values of the G-Sensitivity in the range 20 Hz to 1000 Hz.  
At 1500 Hz appear resonances, which are caused by the mounting structure on the shaker.

TX7-S3-NNu50-C-100 MHz				
Osc-#	X-axis [ppb/g]	Y-axis [ppb/g]	Z-axis [ppb/g]	Gamma [ppb/g]
#1	0.06	0.07	0.17	0.19
#2	0.06	0.05	0.08	0.12
#3	0.04	0.05	0.26	0.27
#4	0.05	0.08	0.08	0.12

### Definitions of vibration axes



## Ordering code

**(0)7Q-(1)(2)-(3)(4)-(5)(6)-40.000MHz** Example: *VT7Q-C33-NNu50- V05GC-40.000MHz*

Oscillator type	(1) Output signal	(2) Supply voltage	(5) Pulling range (VT only)
TX = TCXO VT = VC-TCXO	H = (LV)CMOS C = Clipped sine wave	28 = 2.8 V 30 = 3.0 V 33 = 3.3 V 50 = 5.0 V	V05 = 1.5 ± 1.0 V ±5 ppm V10 = 1.5 ± 1.0 V ±10 ppm  X05 = 2.5 ± 2.0 V ±5 ppm X10 = 2.5 ± 2.0 V ±10 ppm
(3) Operating temperature	(4) Frequency stability	(6) G-sensitivity per axis	Z = special spec
JK = -20 to +70 °C NN = -40 to +85 °C NP = -40 to +95 °C NR = -40 to +105 °C QN = -55 to +85 °C	u25 = ± 0.25 ppm u50 = ± 0.50 ppm 1u0 = ± 1.00 ppm 1u5 = ± 1.50 ppm	GA = 0.10 ppb/g GB = 0.25 ppb/g GC = 0.50 ppb/g GD = 1.00 ppb/g GE = 1.50 ppb/g GZ = special spec	

### Frequency stability vs. temperature

ppm	≤± 0.25	≤± 0.50	≤± 1.00	≤± 1.50
-20 to +70 °C	Δ	O	O	O
-40 to +85 °C	Δ	O	O	O
-40 to +95 °C	Δ	Δ	Δ	O
-40 to +105 °C	Δ	Δ	Δ	Δ
-55 to +85 °C	X	Δ	Δ	Δ

Δ Ask factory
O Available
X Not available

