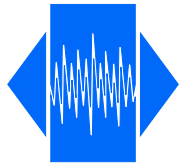


# VTX 11L

High reliable, low package size  
Temperature compensated (VC)TCXO

**QuartzCom**  
the communications company

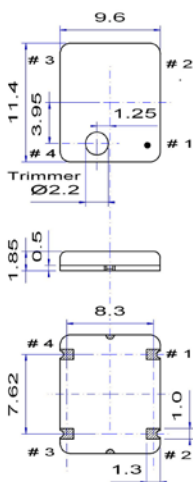


<b>Frequency range</b>	<b>9.600 ~ 50.000 MHz</b>		
Standard frequencies (fundamental)	9.6, 10, 13, 14.4, 16, 16.384, 19.2, 20, 27, 40, 48, 50 MHz		
Frequency stability:			
vs. temperature referenced to (F <sub>MAX</sub> +F <sub>MIN</sub> )/2	≤ ±1.0 ppm	over -40 to +85 °C	(*)
vs. supply voltage changes referenced to frequency at nominal supply	≤ ±0.2 ppm	±5 %	
vs. load changes referenced to frequency at nominal load	≤ ±0.2 ppm	±5 %	
vs. aging @ +40 °C	≤ ±1.0 ppm	1st year	
Frequency tolerance ex. factory @ +25 °C	0 ~ +1.0 ppm	@ +25 °C	
Supply voltage (nominal value ±5 %)	+3.0 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 ~ 4 mA	2 ~ 7 mA	
Frequency adjustment	> ± 5 ppm	by internal trimmer	(*)
Electronic Frequency Control (EFC) range	±10 ~ ±40 ppm	positive slope	(*)
EFC voltage (Vc)	+1.65 V ±1.0 V for 3.3 V	+2.50 V ±2.0 V for 5.0 V	(*)
EFC input impedance	> 50 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)		

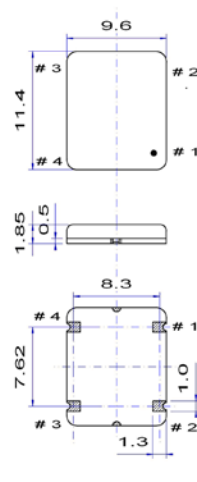
(\*) See available options on page #2

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

Without trimmer



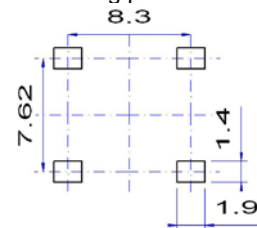
Without trimmer



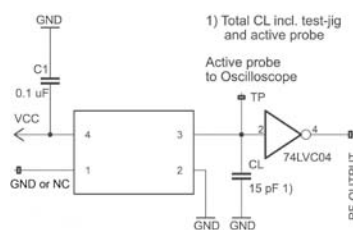
Pin function

- # 1 Vc (EFC) for VC-TCXO  
GND or NC for TCXO
- # 2 GND
- # 3 OUTPUT
- # 4 Vcc

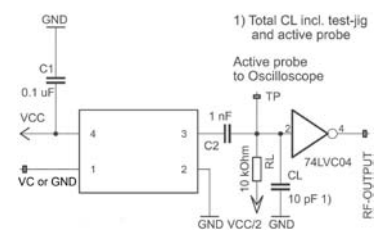
Soldering pattern



Test circuit for CMOS



Test circuit for Clipped Sine Wave



2011/65/EU RoHS compliant

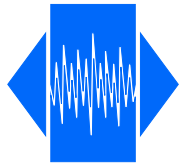
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# VTX 11L

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## Environmental conditions

Test	IEC 60068 Part...	IEC 60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	MIL-PRF-55310D Clause	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta method 1, Test Td, method 2, Test Td <sub>2</sub> method 2
Shock *	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axis 100 g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test Fc, 30 min per axis, 1 oct/min 10 Hz – 55 Hz 0,75 mm; 55 Hz – 2 kHz, 10 g
Vibration, random*	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance tests - ageing - extended ageing		5.7.1 5.7.2	108A		4.8.35	30 days @ 85 °C 1000 h, 2000 h, 8000 h @ 85 °C

Other environmental conditions on request

## Ordering code

**(0)11L-(1)(2)-(3)(4)-(6)(8)-27.000MHz** Example: *TX11L -C33-JK1u50-V15T-27.000MHz*

(0) Oscillator type	(1) Output signal	(2) Supply voltage	(6) Pulling range (VT only)
TX = TCXO VT = VC-TCXO	H = (LV)CMOS C= Clipped sine wave	30 = 3.0 V 33 = 3.3 V 50 = 5.0 V	V10 = ± 10 ppm V15 = ± 15 ppm V20 = ± 20 ppm V25 = ± 25 ppm V30 = ± 30 ppm V40 = ± 40 ppm
(3) Operating temperature	(4) Frequency stability	(8) Internal trimmer	
HJ = -10 to +60 °C JK = -20 to +70 °C LN = -30 to +85 °C NN = -40 to +85 °C	0u50 = ±1.00 ppm 1u00 = ±1.00 ppm 1u50 = ±1.50 ppm 2u00 = ±2.00 ppm 2u50 = ±2.50 ppm	T = with internal trimmer (-) = without internal trimmer	

### Frequency stability vs. temperature

ppm	≤ ±0.5	≤ ±1.0	≤ ±1.50	≤ ±2.0	≤ ±2.5
-10 to +60 °C	O	O	O	O	O
-20 to +70 °C	O	O	O	O	O
-30 to +80 °C	Δ	Δ	O	O	O
-40 to +85 °C	Δ	Δ	Δ	O	O

Δ Ask factory
O Available
X Not available

### Absolute max. ratings

Supply voltage (Vcc)	6.0 V
Storage temperature range	-55 ~ +125 °C
Control voltage (Vc)	0 / Vcc

2011/65/EU RoHS compliant

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Designed in Switzerland



QuartzCom AG reserves the right to make spec changes to this product