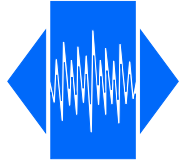


VTX 11L

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

QuartzCom
the communications company

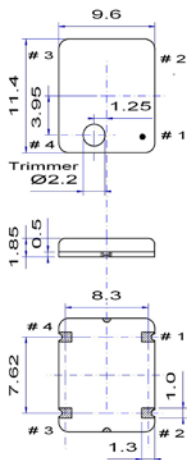


Frequency range	9.600 ~ 50.000 MHz		
Standard frequencies (fundamental)	9.6, 10, 13, 14.4, 16, 16.384, 19.2, 20, 27, 40, 48, 50 MHz		
Frequency stability:			
vs. temperature referenced to (F _{MAX} +F _{MIN})/2	≤ ±1.0 ppm	over -40 to +85 °C	(*)
vs. supply voltage changes referenced to frequency at nominal 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 _{p-p}	V _{OH} > 0.9*V _{CC} / V _{OL} < 0.1*V _{CC}	
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 (V _c)	+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)		

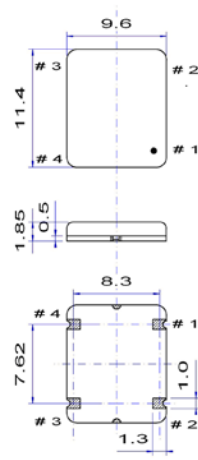
(*) See available options on page #2

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

With trimmer



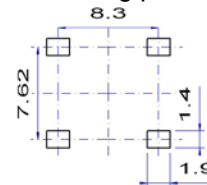
Without trimmer



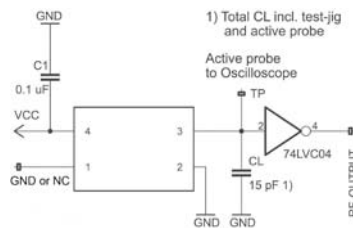
Pin function

- # 1 V_c (EFC) for VC-TCXO
GND or NC for TCXO
- # 2 GND
- # 3 OUTPUT
- # 4 V_{CC}

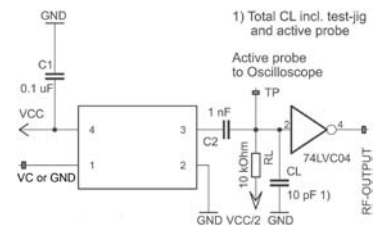
Soldering pattern



Test circuit for CMOS



Test circuit for Clipped Sine Wave



2011/65/EU RoHS compliant

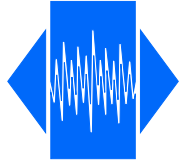
Page 1 of 2 08 Sep. 19



VTX 11L

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

QuartzCom
the communications company



Ordering code

(0)11L-(1)(2)-(3)(4)-(5)(8)-27.000MHz Example: **TX11L-C33-JK1u50-T-27.000MHz**

(0) 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	30 = 3.0 V 33 = 3.3 V 50 = 5.0 V	V05 = 1.65 ± 1.35 V ±5 ppm V10 = 1.65 ± 1.35 V ±10 ppm V20 = 1.65 ± 1.35 V ± 20 ppm V25 = 1.65 ± 1.35 V ± 25 ppm V30 = 1.65 ± 1.35 V ± 30 ppm
(3) Operating temperature	(4) Frequency stability	(8) Internal trimmer	
GH = -10 to +60 °C JK = -20 to +70 °C LN = -30 to +85 °C NN = -40 to +85 °C	u50 = ±0.50 ppm 1u0 = ±1.00 ppm 1u5 = ±1.50 ppm 2u0 = ±2.00 ppm 2u5 = ±2.50 ppm	T = with internal trimmer (-) = without internal trimmer	X05 = 2.5 ± 2.0 V ±5 ppm X10 = 2.5 ± 2.0 V ±10 ppm X15 = 2.5 ± 2.0 V ±15 ppm X20 = 2.5 ± 2.0 V ± 20 ppm X30 = 2.5 ± 2.0 V ± 30 ppm
			Z = special spec

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	Δ	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

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 ₂ 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

2011/65/EU RoHS compliant

Page 2 of 2 08 Sep. 19

