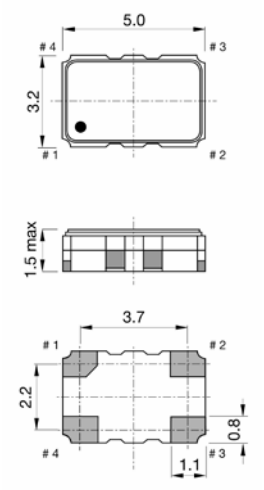
VTX 5T

High reliable,
Temperature compensated (VC)TCXO

Frequency range	**10.000 ~ 50.000 MHz**	
Standard frequencies (fundamental)	10, 12.8, 13, 16, 19.2, 19.44, 20, 25, 26, 27, 40 and 50 MHz	
Frequency stability:		
vs. temperature referenced to (FMAX+FMIN)/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	< 2.0 ppb/g	per axis
Frequency tolerance ex. factory	≤ ±1.0 ppm	@ +25 °C
Supply voltage (nominal value ±5 %)	+1.8 V, +2.5 V, +2.8 V, +3.0 V or +3.3 V	(∗)
Output signal	Clipped sine wave	(LV)CMOS (∗)
Output level	> 0.8 Vp-p	V_{OH} > 0.9∗Vcc / V_{OL} < 0.1∗Vcc
Output load	10 kΩ // 10 pF	15 pF Max.
Current consumption, depending on frequency	1.5 ~ 4 mA	2 ~ 8 mA
Electronic Frequency Control (EFC)	ΔF = ±5 to ±10 ppm	positive slope (∗)
Control voltage (Vc)	+0.9 V ±0.6 V for 1.8 V	+1.50 V ±1.0 V for 3.3 V (∗)
EFC input impedance	> 100 kΩ	
Phase noise (typical value for 20 MHz)	-90 dBc/Hz @ 10 Hz -115 dBc/Hz @ 100 Hz -138 dBc/Hz @ 1 kHz -154 dBc/Hz @ 10 kHz -157 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)	

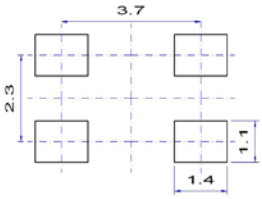
(∗) See available options on page #2 **Note: Unless otherwise specified conditions are @+25 °C**

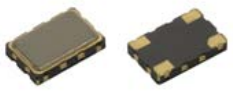


Pin function

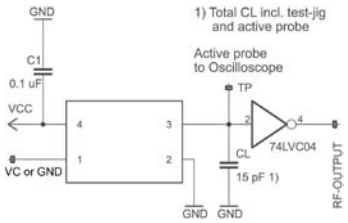
# 1	Vc (EFC) for VC-TCXO GND or NC for TCXO
# 2	GND
# 3	Output
# 4	Vcc

Soldering pattern

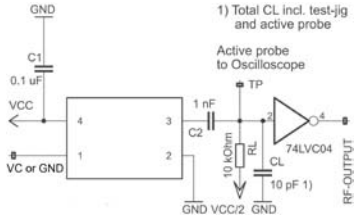




Test circuit for CMOS



Test circuit for Clipped Sine Wave



2011/65/EU RoHS compliant

QuartzCom AG
Bruehlstrasse 15
CH 2540 Grenchen
Switzerland

Fax +41 32 644 24 05
Tel +41 32 644 24 00
E-Mail sales@quartzcom.com
www.quartzcom.com

Designed in Switzerland

VTX 5T

High reliable,
Temperature compensated (VC)TCXO

Ordering code

(0)5T-(1)(2)-(3)(4)-(5)-20.000MHz *Example:* ***XT5T-C33-LNu50-V10-20.000MHz***

(0) Oscillator type

TX = TCXO
VT = VC-TCXO

(1) Output signal

H = (LV)CMOS
C= Clipped sine wave

(2) Supply voltage

18 = 1.8 V
25 = 2.5 V
28 = 2.8 V
30 = 3.0 V
33 = 3.3 V

(3) Operating temperature

JK = -20 to +70 °C
LN = -30 to +85 °C
NN = -40 to +85 °C

(4) Frequency stability

u50 = ± 0.50 ppm
1u0 = ± 1.00 ppm
1u5 = ± 1.50 ppm
2u0 = ± 2.00 ppm
2u5 = ± 2.50 ppm

(5) Pulling range
(VT only)

Vcc = 1.8 V
S05 = 0.9 ± 0.6 V ±5 ppm
S10 = 0.9 ± 0.6 V ±10 ppm

Vcc = 2.5 V
U05 = 1.4 ± 1.0 V ±5 ppm
U10 = 1.4 ± 1.0 V ±10 ppm

Vcc = 2.8, 3.0, 3.3 V
V05 = 1.5 ± 1.0 V ±5 ppm
V10 = 1.5 ± 1.0 V ±10 ppm
V15 = 1.5 ± 1.0 V ±15 ppm

Z = special spec

Frequency stability vs. temperature

ppm	≤± 0.50	≤± 1.00	≤± 1.50	≤± 2.00	≤± 2.50
-20 to +70 °C	O	O	O	O	O
-30 to +85 °C	O	O	O	O	O
-40 to +85 °C	Δ	O	O	O	O

Δ Ask factory
O Available
X Not available

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_1 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

QuartzCom AG
Bruehlstrasse 15
CH 2540 Grenchen
Switzerland

Fax +41 32 644 24 05
Tel +41 32 644 24 00
E-Mail sales@quartzcom.com
www.quartzcom.com

Designed in Switzerland