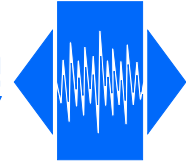


VTX 20

Miniature size, high reliable,
Temperature compensated CSW (VC)TCXO

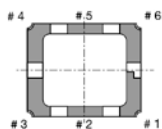
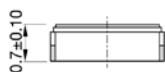
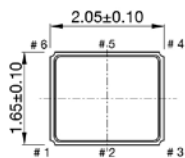
QuartzCom
the communications company



Frequency range	16.000 ~ 50.000 MHz		
Standard frequencies (fundamental)	16.369 19.2, 20, 26 and 38.4 MHz		
Frequency stability:			
vs. temperature referenced to $(F_{MAX}+F_{MIN})/2$	$\leq \pm 0.50$ ppm	over -40 to +85 °C	(*)
vs. supply voltage changes referenced to frequency at nominal supply	$\leq \pm 0.1$ ppm	± 5 %	
vs. load changes referenced to frequency at nominal load	$\leq \pm 0.1$ ppm	± 5 %	
vs. aging @ +40 °C	$\leq \pm 1.0$ ppm	1st year	
G-sensitivity	< 2.0 ppb/g	per axis	
Frequency tolerance ex. factory	$\leq \pm 1.0$ ppm	@ +25 °C	
Supply voltage (nominal value ± 5 %)	+1.8 V, +2.5V to +3.3 V		(*)
Output signal	Clipped sine wave		
Output level	> 0.8 Vp-p		
Output load	10 k Ω // 10 pF		
Current consumption, depending on frequency	1.5 ~ 4 mA		
Electronic Frequency Control (EFC)	$\Delta F = \pm 5$ 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 k Ω		
Phase noise (typical value for 19.2 MHz)	-85 dBc/Hz	@ 10 Hz	
	-115 dBc/Hz	@ 100 Hz	
	-135 dBc/Hz	@ 1 kHz	
	-148 dBc/Hz	@ 10 kHz	
	-152 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

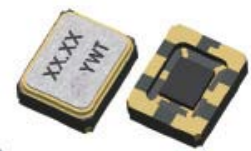
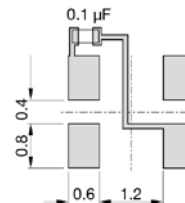
Note: Unless otherwise specified conditions are @+25 °C



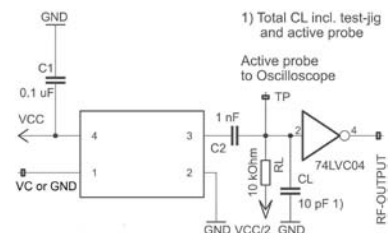
Pin function

- # 1 Vc (EFC) for VC-TCXO
GND or NC for TCXO
- # 2 No Connection
- # 3 GND
- # 4 Output
- # 5 No Connection
- # 6 Vcc

Soldering pattern



Test circuit for Clipped Sine Wave



1) Total CL incl. test-jig and active probe

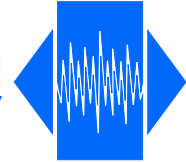
Active probe to Oscilloscope



VTX 20

Miniature size, high reliable,
Temperature compensated CSW (VC)TCXO

QuartzCom
the communications company



Ordering code

(0)20-C(2)-(3)(4)-(5)-20.000MHz

Example: TX20-33-LN1u0-20.000MHz

(0) Oscillator type	(2) Supply voltage	(5) Pulling range (VT only)
TX = TCXO VT = VC-TCXO	18 = 1.8 V 25 = 2.5 V 28 = 2.8 V 30 = 3.0 V 33 = 3.3 V	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 Z = special spec
(3) Operating temperature	(4) Frequency stability	
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	

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
Solder ability 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

2011/65/EU RoHS compliant

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