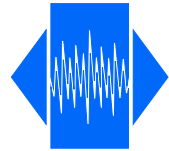


# VTX 14M



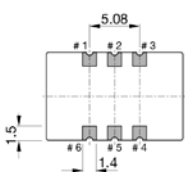
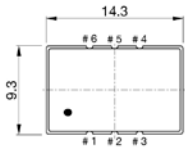
**High Precision,**  
Ultra-low noise floor, low jitter (VC)TCXO

**Application: 5G Repeaters, Link and micro cells, Low noise microwave**

<b>Frequency range</b>	<b>40.000 to 200.000 MHz</b>		
<b>Standard frequencies</b>	<b>50, 60, 70, 80, 100, 120, 122.88, 125, 150 MHz</b>		
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	≤ ±0.05 ppm	±5 %	
vs. load changes referenced to frequency at nominal load	≤ ±0.05 ppm	±10 %	
vs. aging @ +40 °C	≤ ±1.0 ppm	1 <sup>st</sup> year	
G-sensitivity	2.0 ppb/g	per axis	
Short term stability ADEV	< 1*10 <sup>-10</sup>	τ = 1.0 s	
Frequency tolerance ex factory	0 ~ +1.0 ppm	@ +25 °C	
Supply voltage	+3.3 V or 5.0 V		(*)
Current consumption	< 50 mA		
Output signal	Sine wave	(LV)HCMOS (45/55%)	(*)
Output level	+3 to +6 dBm	V <sub>OH</sub> > 0.9*V <sub>CC</sub> / V <sub>OL</sub> < 0.1*V <sub>CC</sub>	
Output load	50 Ω	15 pF max.	(*)
Electronic Frequency Control (EFC)	ΔF = ±5 to ±10 ppm	positive slope	(*)
Control voltage (Vc)	+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 100 MHz )	-78 dBc/Hz -105 dBc/Hz -127 dBc/Hz -150 dBc/Hz -178 dBc/Hz	@ 10 Hz @ 100 Hz @ 1 kHz @ 10 kHz @ 100 kHz	
RMS phase jitter	15 fs (typ.)	12 kHz ~ 20 MHz	
Sub-harmonics	-65 dBc max.	-75 dBc typ.	
Operating temperature range	-40 ~ +85 °C		(*)
Reflow profiles as per IPC/JEDEC J-STD-020C	≤ 245 °C over 10 s max.		

(\*) See available options on page #2

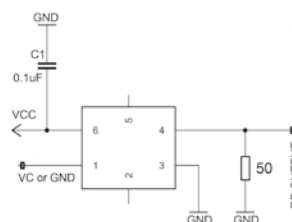
**Note: Unless otherwise specified conditions are @+25 °C**



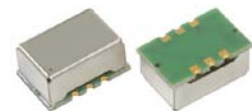
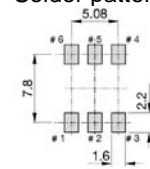
### Pin function

- # 1 Vc (EFC) for VC-TCXO  
GND or NC for TCXO
- # 2 NC or GND
- # 3 GND
- # 4 RF output
- # 5 NC or GND
- # 6 Vcc

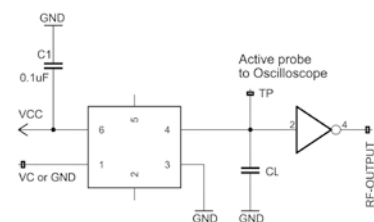
### Test circuit for Sine wave



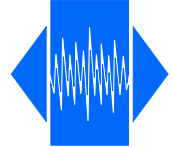
### Solder pattern



### Test circuit for (LV)HCMOS



# VTX 14M



**High Precision,**  
Ultra-low noise floor, low jitter (VC)TCXO

**Application:** 5G Repeaters, Link and micro cells, Low noise microwave

## Ordering code

**(0)14M-(1)(2)-(3)(4)-(5)-100.000MHz** Example: *VT14M-S33-NNu50-V05-80.000MHz*

<b>(0) Oscillator type</b> TX = TCXO VT = VC-TCXO	<b>(1) Output signal</b> H = (LV)HCMOS S = Sine wave	<b>(2) Supply voltage</b> 33 = 3.3 V 50 = 5.0 V	<b>(5) Pulling range</b> (VT only) 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  Z = special spec
<b>(3) Operating temperature</b> 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	<b>(4) Frequency stability</b> u10 = ± 0.10 ppm u25 = ± 0.25 ppm u50 = ± 0.50 ppm 1u0 = ± 1.00 ppm 1u5 = ± 1.50 ppm		

### Frequency stability vs. temperature

ppm	≤± 0.10	≤± 0.25	≤± 0.50	≤± 1.00	≤± 1.50
-20 to +70 °C	Δ	O	O	O	O
-40 to +85 °C	Δ	Δ	O	O	O
-40 to +95 °C	X	Δ	Δ	Δ	O
-40 to +105 °C	X	Δ	Δ	Δ	Δ
-55 to +85 °C	X	X	Δ	Δ	Δ

Δ Ask factory
O Available
X Not available

### Absolute max. ratings

Supply voltage (Vcc)	6.0 V
Storage temperature range	-55 ~ +105 °C
Control voltage (Vc)	0 / Vcc

### Frequency deviation vs. temperature

