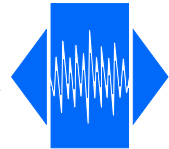


# TX11M- / VT11M- LG



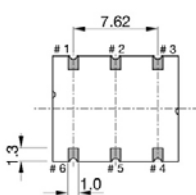
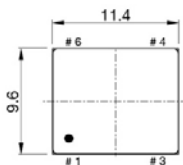
**(LG) Low G-sensitive**, vibration and shock resistant  
Ultra-low noise floor, low jitter (VC)TCXO

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

<b>Frequency range</b>	<b>50.000 to 150.000 MHz</b>		
<b>Standard frequencies</b>	<b>50, 75, 100, 125 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	
Short term stability ADEV	< 1*10 <sup>-10</sup>	τ = 1 sec.	
G-sensitivity	0.25 ppb/g	per axis,	(*)
Frequency tolerance ex factory	0 ~ +1 ppm	@+25 °C	
Supply voltage	3.3 V or 5.0 V		(*)
Current consumption	< 45 mA	without load	
Output signal	Sine wave 3 to 6 dBm	(LV)HCMOS	(*)
Output load	50 Ω	15 pF max.	(*)
Electronic Frequency Control (EFC)	ΔF = ±5 to ±8 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	
Phase noise (typical value for 125 MHz)	-105 dBc/Hz -128 dBc/Hz -150 dBc/Hz -170 dBc/Hz -175 dBc/Hz	@ 100 Hz @ 1 kHz @ 10 kHz @ 100 kHz @ 1'000 kHz	
RMS phase jitter	15 fs (typ.)	12 kHz ~ 20 MHz	
Sub-harmonics	-65 dBc max.	-70 dBc typ.	
Operating temperature range	-40 ~ +85 °C		(*)
Storage temperature range	-55 ~ +105 °C		
Reflow Profiles as per IPC/JEDEC J-STD-020C	≤ 245 °C over 10 sec. Max.		

(\*) See available options on page #2

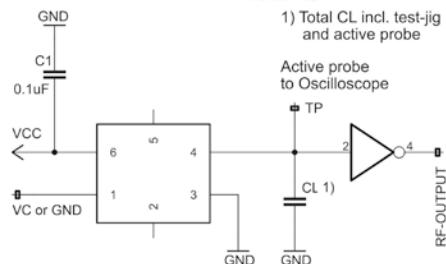
**Note:** Unless otherwise specified conditions are @+25 °C



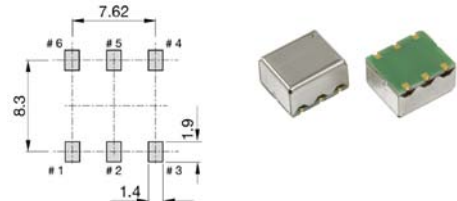
### Pin function

- # 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 (HCMOS)



### Solder pattern



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

Active probe to Oscilloscope



# TX11M- / VT11M- LG



**(LG) Low G-sensitive**, vibration and shock resistant  
Ultra-low noise floor, low jitter (VC)TCXO

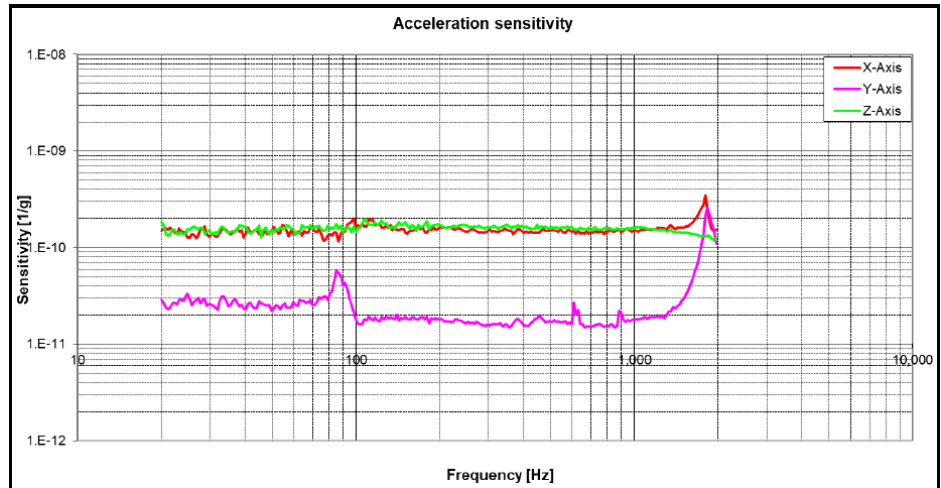
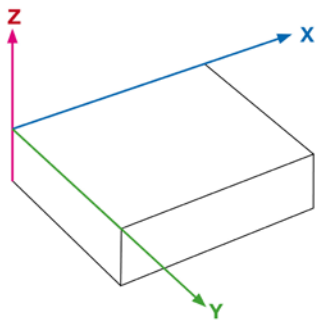
**Application:** 5G Repeaters, Link and micro cells, Low noise microwave

## G-Sensitivity performance

Noise shape vibration from 20-2'000 Hz  
with 0.1 g<sup>2</sup>/Hz ( $G_{RMS} = 14.11g$ ) for the axis

Osc-#	X-axis	Y-axis	Z-axis	Gamma $\Gamma$
	[ppb/g]	[ppb/g]	[ppb/g]	[ppb/g]
#1	0.154	0.030	0.304	0.342
#2	0.151	0.048	0.177	0.237
#3	0.151	0.022	0.161	0.221
#4	0.098	0.039	0.260	0.280

Definitions of vibration axes



## Ordering code

**TX11M-(1)(2)-(3)(4)-(5)-100.0000MHz** Example: **TX11M-S3-NNu50-C-100.0000MHz**

Oscillator type		(1) Output signal	(2) Supply voltage						
TX = TCXO VT = VC-TCXO		H = (LV)HCMOS S = Sine wave	3 = 3.3 V 5 = 5.0 V						
(3) Operating temperature		(4) Frequency stability	(5) G-sensitivity per axis						
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		u25 = ± 0.25 ppm u50 = ± 0.50 ppm 1u0 = ± 1.00 ppm 1u5 = ± 1.50 ppm	A = 0.10 ppb/g B = 0.25 ppb/g C = 0.50 ppb/g D = 1.00 ppb/g E = 1.50 ppb/g - = Non specified						
Q	P	O	N	L	J	K	N	P	R
-55 °C	-50 °C	-45 °C	-40 °C	-30 °C	-20 °C	+70 °C	+85 °C	+95 °C	+105 °C

Frequency stability vs. temperature

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

O Available	Δ Ask factory
E Under development	X Not available

