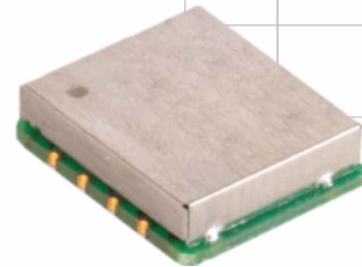


# VF901723-38.400MHz

## VCTCXO Low Noise, LVCMOS

### Features

- Ref design for Qualcomm chipset FSM100xx
- 14x13 mm SMD
- LVCMOS
- Output Frequency 38.400 MHz
- Ultra-low jitter and phase noise
- Excellent frequency stability <0.280 ppm



Dimensions: 14 x 13 x 6 mm

### Applications

- Communications Reference

### Description

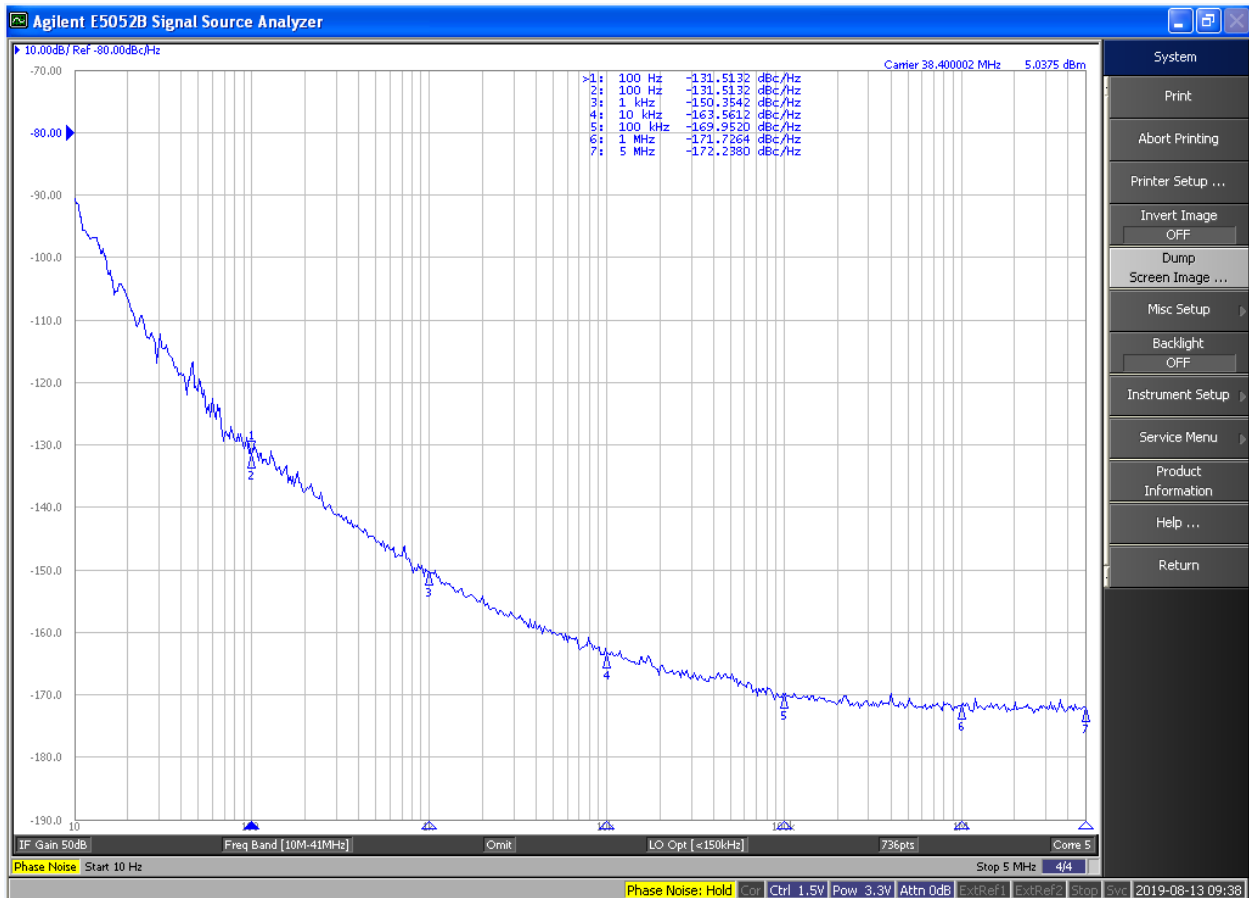
The VF901723 is a low noise TCXO which provides a LVCMOS output frequency at 38.400 MHz. The temperature stability is less than  $\pm 0.280$  ppm over a temperature range of  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . The VF901723 is available in a 14mm x 13mm surface mount package.

### Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Frequency	$F_{\text{NOM}}$		38.400		MHz
Freq. Stability vs. Temp	$\Delta F/F$ ; $-40$ to $+85^{\circ}\text{C}$ $(F_{\text{max}} - F_{\text{min}})/2$	-	-	$\pm 0.280$	ppm
Freq. Stability vs. Supply Voltage	$\Delta F/F_{\text{NOM}}$	-	$\pm 0.1$	-	ppm/V
Freq. Stability vs. Aging	Per year – first year	-	$\pm 1$	-	ppm
	10 years	-	$\pm 3$	-	ppm
Operating Temperature Range	$T_{\text{A}}$	$-40$	-	$+85$	$^{\circ}\text{C}$
Supply Voltage	$V_{\text{CC}}$	3.15	3.3	3.45	V
Voltage Control	$V_{\text{C}}$	0	-	3.3	V
Input Impedance	$Z_{\text{IN}}$	10	-	-	K $\Omega$
APR	Sufficient range to correct for initial calibration, 15 yrs aging, temperature, voltage, and load variations	$\pm 5$	-	-	ppm
Deviation Slope	Positive, monotonic				
Linearity		-	-	10	%
Modulation BW	3dB BW	-	6	-	Hz
Input Current	$I_{\text{CC}}$	-	-	50	mA

## Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
<b>Output – LVCMOS</b>					
Output Level	$V_{OH}$	$0.9 V_{CC}$	-	$V_{CC}$	V
	$V_{OL}$	0	-	0.4	V
Output Load	$Z_L$	-	10	-	pf
Duty Cycle		45	50	55	%
Rise/Fall times	$T_R$	-	-	3	nsec
	$T_F$	-	-	3	nsec
Start-up time		-	2	3	sec
Phase Jitter	12 kHz to 20 MHz	-	75	100	fs
SSB Phase Noise (38.400MHz)	Offset = 10Hz	-	-93	-	dBc/Hz
	100Hz	-	-131	-	
	1KHz	-	-150	-	
	10KHz	-	-163	-	
	100KHz	-	-169	-	
	1MHz	-	-172	-	



Typical phase noise performance, 38.400MHz

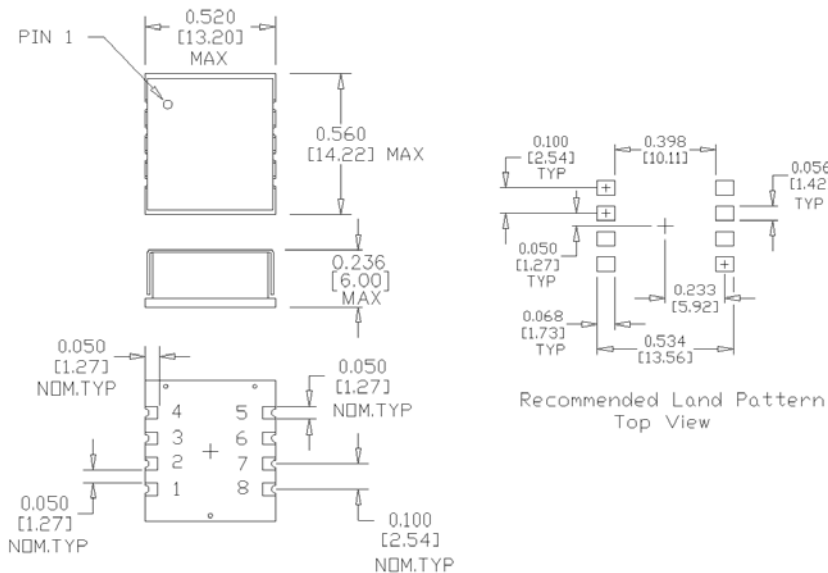
## Absolute Maximum Ratings

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Supply Breakdown Voltage	$V_{CC}$	-0.5	-	4.6	V
Storage Temperature	$T_S$	-45	-	+90	°C
Control Voltage	$V_C$	-0.5	-	4.0	V

## Mechanical and Environmental

Mechanical Shock	Per MIL-STD-202, Method 213, condition E
Thermal Shock	Per MIL-STD-883, Method 1011, condition A
Vibration	Per MIL-STD-883, Method 2007, condition A
Soldering Conditions	260°C for 10s max
Hermetic Seal	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium (crystal only)
Markings	Laser engraved or epoxy ink

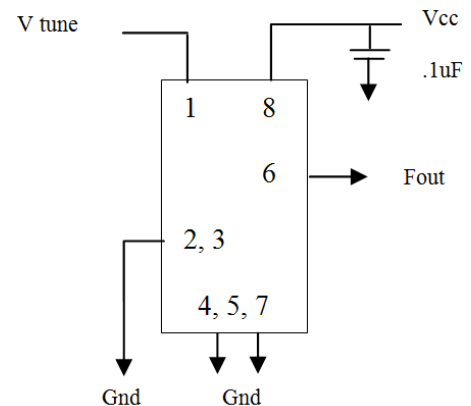
## Mechanical Specification



## Pin Assignments

Pin	Function
1	V tune ( $V_C$ )
2	Gnd
3	Gnd
4	Gnd
5	Gnd
6	$F_{OUT}$
7	Gnd
8	$V_{CC}$

## Connection Diagram



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