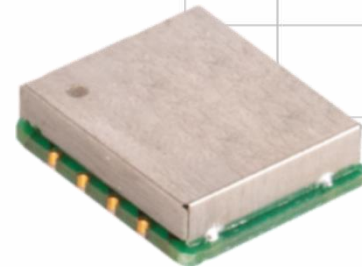


VF901775-38.400MHz

VCTCXO Low Noise, LVCMOS

Features

- Ref design for Qualcomm chipset FSM100xx
- 14x13x3 mm SMD
- Output Frequency 38.400 MHz
- Ultra-low jitter and phase noise
- Excellent frequency stability <0.280 ppm



Applications

- Communications Reference

Description

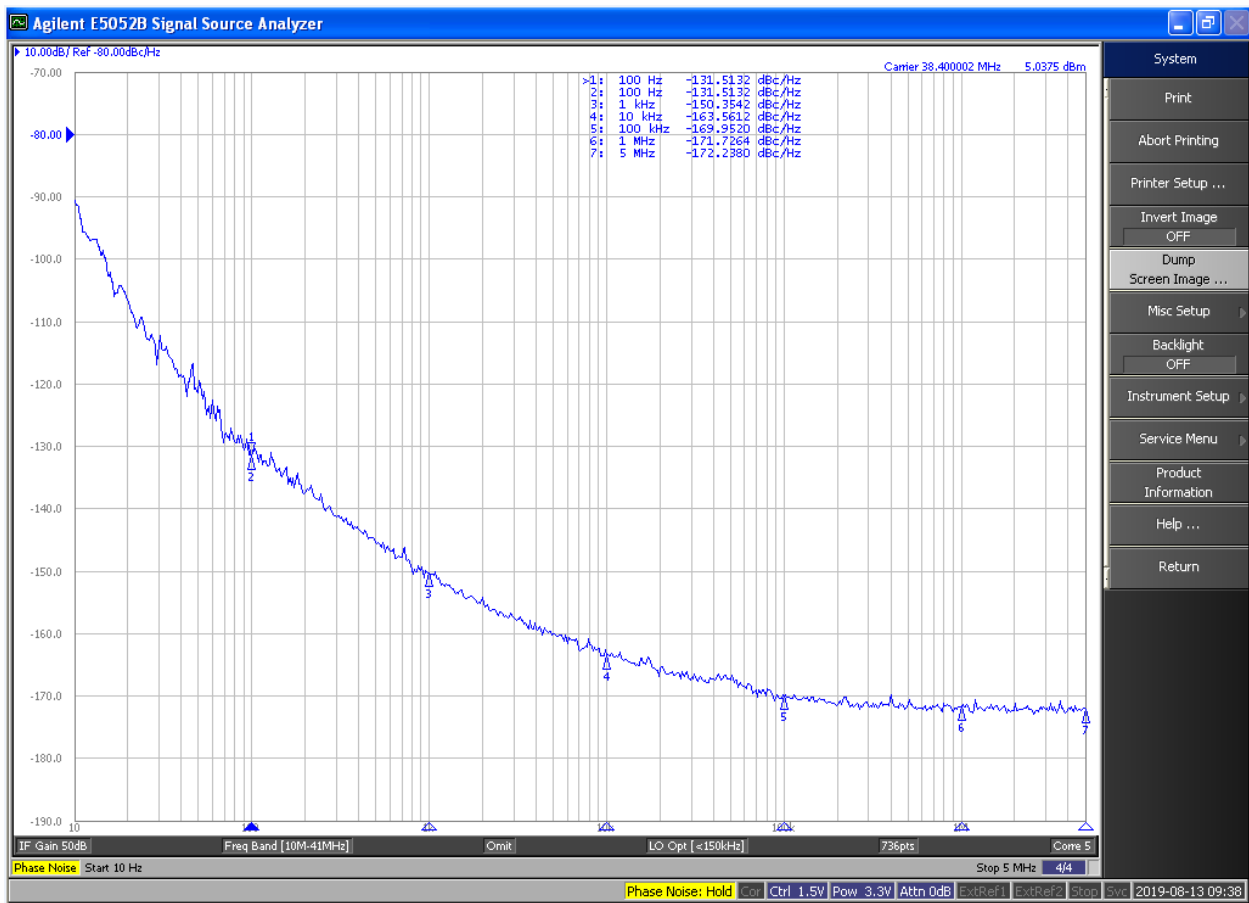
The VF901775 is a low noise TCXO which provides a LVCMOS output frequency at 38.400 MHz. The temperature stability is less than ± 0.280 ppm over a temperature range of -40°C to $+85^{\circ}\text{C}$. The VF901775 is available in a 14 x 13 x 3 mm surface mount package.

Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Frequency	F_{NOM}		38.400		MHz
Freq. Stability vs. Temp	$\Delta F/F$; -40 to $+85^{\circ}\text{C}$ $(F_{\text{max}} - F_{\text{min}})/2$	-	-	± 0.280	ppm
Freq. Stability vs. Supply Voltage	$\Delta F/F_{\text{NOM}}$	-	± 0.1	-	ppm/V
Freq. Stability vs. Aging	Per year – first year	-	± 1	-	ppm
	10 years	-	± 3	-	ppm
Operating Temperature Range	T_{A}	-40	-	$+85$	$^{\circ}\text{C}$
Supply Voltage	V_{CC}	3.15	3.3	3.45	V
Voltage Control	V_{C}	0	-	3.3	V
Input Impedance	Z_{IN}	100	-	-	K Ω
APR	Sufficient range to correct for initial calibration, 15 yrs aging, temperature, voltage, and load variations	± 5	-	-	ppm
Deviation Slope	Positive, monotonic				
Linearity		-	-	10	%
Modulation BW	3dB BW	-	6	-	Hz
Input Current	I_{CC}	-	-	50	mA

Electrical Specifications

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Output – LVCMOS					
Output Level	V_{OH}	$0.9 V_{CC}$	-	V_{CC}	V
	V_{OL}	0	-	0.2	V
Output Load	Z_L @ $I_{out} = 8$ mA (max)	-	-	10	pf
Duty Cycle	@ 50% V_{p-p}	45	50	55	%
Rise/Fall times	T_R 10% - 90%	-	-	3.5	nsec
	T_F 90% - 10%	-	-	3.5	nsec
Start-up time		-	2	3	sec
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

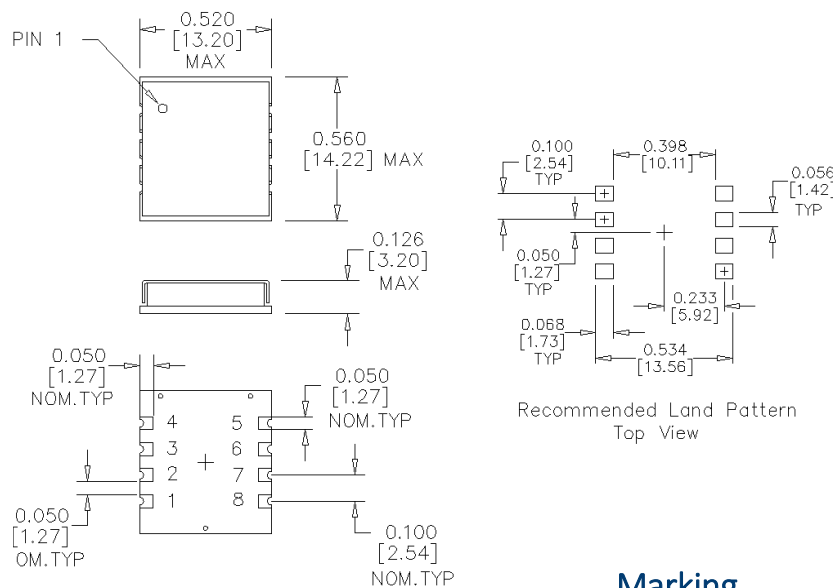
Absolute Maximum Ratings

Parameter	Conditions & Remarks	Min	Typical	Max	Unit
Supply Breakdown Voltage	V_{CC}	-0.5	-	3.65	V
Storage Temperature	T_S	-45	-	+90	°C
Control Voltage	V_C	-0.5	-	3.3	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 5×10^{-8} atm.cc/s of helium (crystal only)
Markings	Laser engraved or epoxy ink

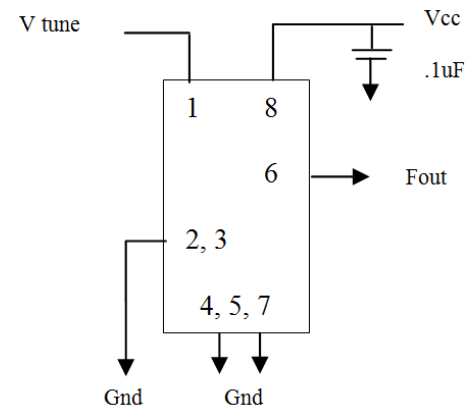
Mechanical Specification



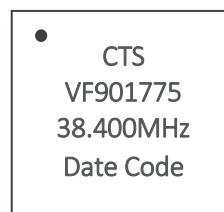
Pin Assignments

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



Marking



This product is specified for use only in standard commercial applications. Supplier disclaims all express and implied warranties and liability in connection with any use of this product in any non-commercial applications or in any application that may expose the product to conditions that are outside of the tolerances provided in its specification.