

## 100 MHz Reference OCXO Module in Machined Aluminum Case

### Product Data Sheet

#### Features

- Extraordinary Low Phase Noise Featuring -173 dBc/Hz at 1 KHz offset
- Internally Locked to Precision 10 MHz OCXO with Excellent Temperature Stability and Aging
- External Reference is Optional

#### Applications

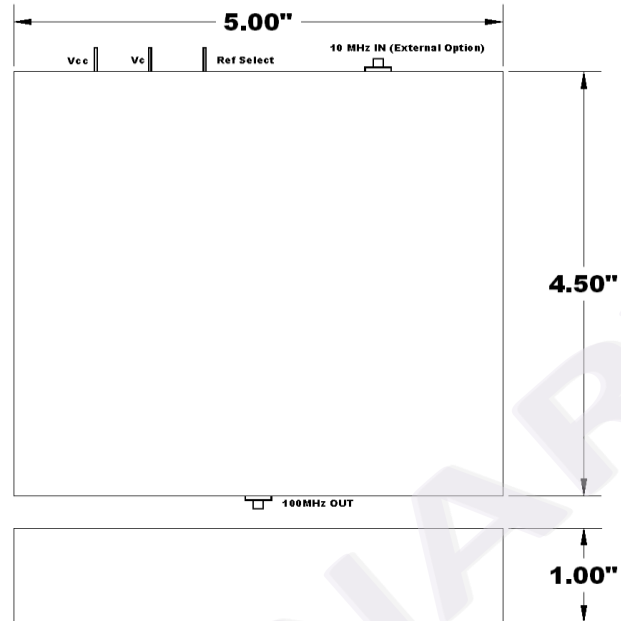
- Radar
- Test and measurement
- Instrumentation
- COTS/Dual use

#### Inputs

External 10 MHz IN SMA Female  
Vcc – Feedthrough  
Vc – Feedthrough  
Reference select - Feedthrough

#### Output

100 MHz OUT SMA Female



# Extraordinary Low Phase Noise OCXO Reference Module

Data Sheet 1942A

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
<b>Absolute Maximum Ratings</b>							
Input Break Down Voltage	V <sub>cc</sub>		-0.5		6.5	V	
Storage temper.	T <sub>s</sub>		-55		85	°C	
Control Voltage	V <sub>c</sub>		-1		10	V	
<b>Electrical (1)</b>							
Frequency	F			100		MHz	
Frequency stability	$\Delta F/F$	vs. Temp.		$\pm 5$		ppb	See table below
		vs. Supply			1	ppb/5% change	
		vs. load			1	ppb/5% change	
Aging		per day per first year 10 years		5E-10 5E-8	0.3	ppm	After 30 days of continuous operation
Allan Deviation		.01s to 1s		5E-13			
SSB Phase Noise	$\mathcal{L}(\Delta f)$	10 Hz		-115		dBc/Hz	
		100 Hz		-145			
		1 KHz		-173			
		10 KHz		-185			
		$\geq 100$ KHz		-190			
Retrace		After 30 minutes		$\pm 10$		ppb	
G-sensitivity		worst direction			$\pm 0.5$	ppb/G	
Input Voltage	V <sub>cc</sub>		4.9	5.0	5.5	V	
Power consumption	P	steady state, 25°C start-up		6.0 18	7.5 20	W	Still air
Spectral Purity		Output power		20		dBm	Non-supply related
		Subharmonics			-80	dBc	
		Spurious Harmonics			-35	-30	
Load	50 Ohm (Internally AC-coupled)						
Warm-up time	$\tau$	to 0.1ppm accuracy		5	8	minutes	During warm-up the output signal can be scrambled, jittery, and not usable altogether
Output Waveform	Sine-wave						
Control voltage	V <sub>c</sub>		0 0		10.0 4.5	V	Slope option "L" Slope option "P"
Setability			4.5 2.0	5 2.25	5.5 2.5	V	Slope option "L" Slope option "P"
Pull range		from nominal F	$\pm 0.4$			ppm	
Modulation Bandwidth	MBW		DC		0.1	Hz	Due to internal PLL loop bandwidth about 1 Hz
Absolute pull range	APR	Over all conditions	$\pm 0.1$			ppm	
External Reference		Sine Wave	+7			dBm	
Reference select		Floating Logic "0"		Internal External			

All parameters for 100,000 MHz

## Environmental and Mechanical

Operating temp. range	0 to 70°C Standard, Other options TBD
Mechanical Shock	Per MIL-STD-202, 30G, 11ms survival
Thermal Shock	Per MIL-STD_883, Method 1011, Condition A survival
Vibration	Per MIL-STD-202, 5G to 2000 Hz survival
Soldering Conditions	260°C for 10s Max leads only



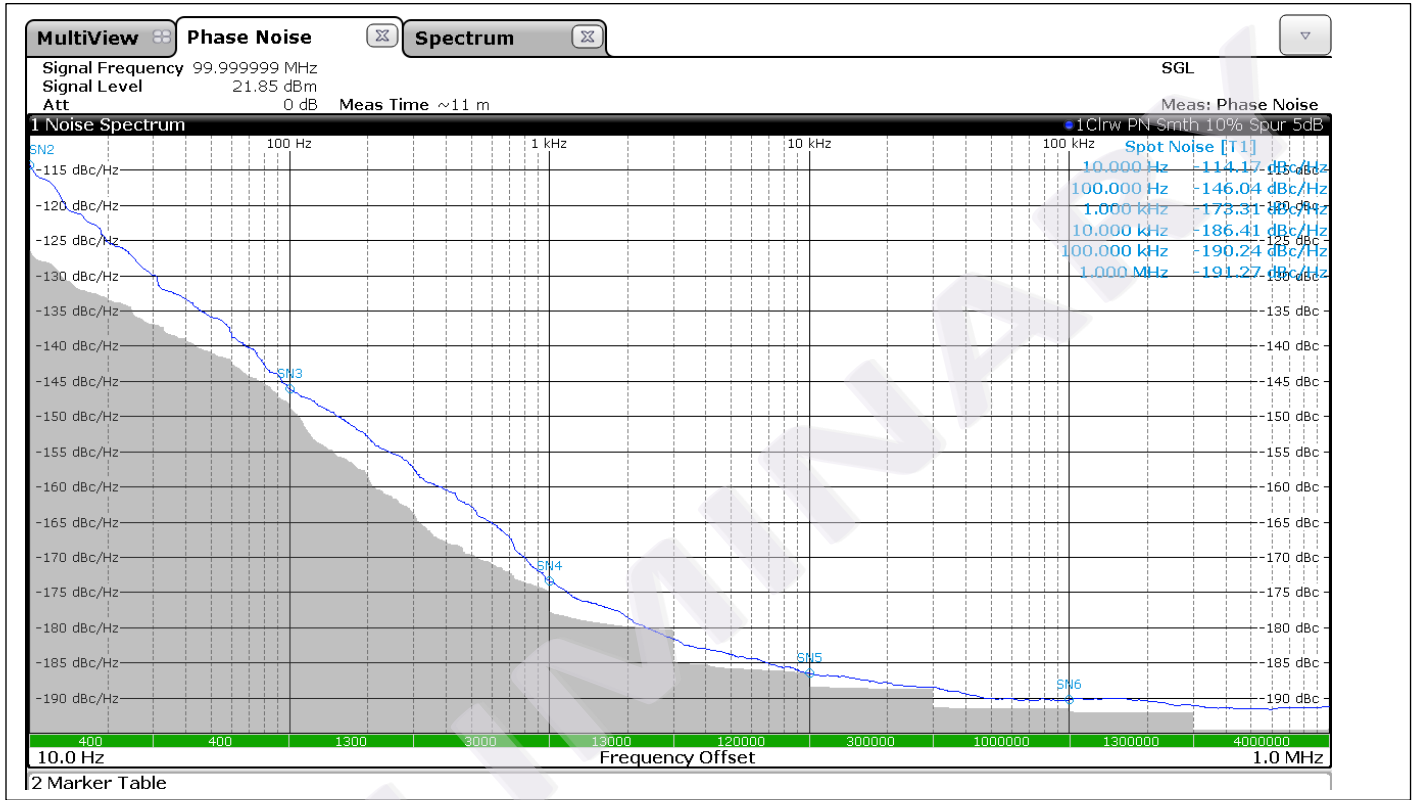
**FREQUENCY  
CONTROLS, INC.**

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