

Precision Ultra Low Phase Noise OCXO in 36x27 mm Package



ESD Sensitive

36.2 x 27.2 x 13 mm
Datasheet #456827

Features

- Compact 36 x 27 mm package
- SC-Cut crystal
- High Stability: ± 0.5 ppb over Operating Temperature Range
- Low Aging: 50 ppb 1st year
- Ultra Low Phase Noise floor (-160dBc/Hz max at 10 kHz)
- Sine wave output

Applications

- Cellular Infrastructure; Base stations
- Test and measurement equipment
- Timing and frequency references
- Battery Powered Equipment
- Tele/Data Communications
- Precision GPS

Absolute Maximum Ratings

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Input Break Down Voltage	V _{cc}	12 V supply	-0.5		12.7	V	
Storage Temperature	T _s		-55		+105	°C	
Control Voltage	V _c		-1		5.5	V	

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Electrical ⁽¹⁾

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Frequency	F			10.00		MHz	
Frequency Tolerance	ΔF	Initial Tolerance	-50		+50	ppb	@25°C
Operating Temperature Range	OTR		-20		+70	°C	
Frequency Stability	$\Delta F/F$	vs. Temp.	-0.5		+0.5	ppb	
		vs. Supply	-0.5		+0.5	ppb/5%Vcc	
		vs. Load	-0.5		+0.5	ppb/5% load	
Aging		per day per year, first year	-5E-10 -5E-8		+5E-10 +5E-8		after 30 days of continuous operation
Retrace			-50		+50	ppb	After powered on for 15 minutes
Short Term Stability (Allan Deviation)		1s			2E-12		
SSB Phase Noise (achieved after 10 minutes warm-up)	S ϕ	1 Hz 10 Hz 100 Hz 1 KHz 10 KHz			-115 -140 -155 -160 -160	dBc/Hz	
Input Voltage	Vcc		11.4	12.0	12.7	V	
Stead State Current	Idd	steady state, 25°C			300	mA	
Warm Up Current					600	mA	
Warm Up Time					15	Minutes	@25°C, within ± 10 ppb of final frequency after powered on for 1 hour

All parameters for 10 MHz

Notes:

1* All measurements guaranteed at nominal VDD, nominal load, and at +25°C unless otherwise specified.

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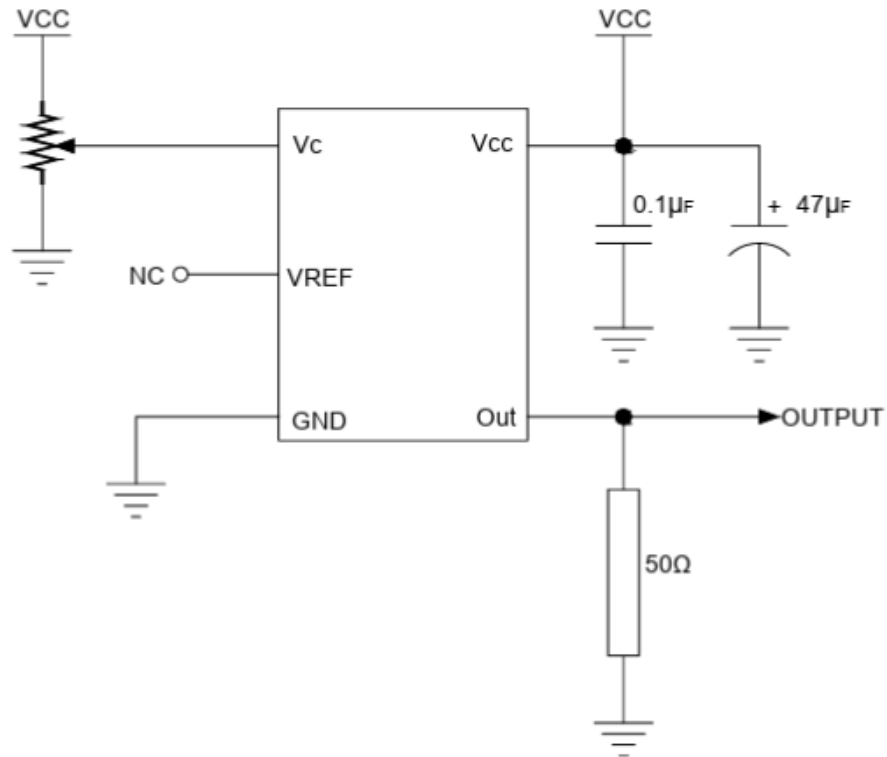
Electrical (cont.)

Parameters	Symbol	Condition	Min	Typ	Max	Unit	Notes
Load		AC-coupled 50 Ohm (Sine wave)					
Output Waveform		Sine wave					
Output Power			+6	+7	+10	dBm	
Harmonics Suppression					-40	dBc	
Spurious Suppression					-80	dBc	
Control Voltage	V _c		0		5.0	V	
Linearity					10	%	
Input impedance	Z _{in}	At V _c pin	100			kOhm	
Pull range		from nominal F	±0.3			ppm	Referenced to frequency at V _c = 2.5V

Environmental and Mechanical

Parameter	Description
Operating temperature range	-20°C to +70°C standard
Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz~500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc.
Soldering conditions	260°C for 10s Max leads only
MSL	N/A
ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010. Machine Model, class B: 200V to 400V; JEDEC JESD22-A115C.

Test Circuit



Creating a Part Number

Q - C36AA - V - X X X X - 10.000MHz - X

OCVCXO

Supply voltage	
Code	Specification
C	12V ± 5%

Output	
Code	Specification
S	Sine wave

Temperature Stability	
Code	Specification
C	±5x10 ⁻¹⁰

Packaging	
Blank	Bulk

Output Frequency	
Please specify the frequency in units of MHz out to 3-digit accuracy after the decimal. Example: 10.000MHZ	

Temperature Range	
Code	Specification
F	-20°C to 70°C

Not all combinations are available. Consult Factory.
Please see the table below for developed part numbers.

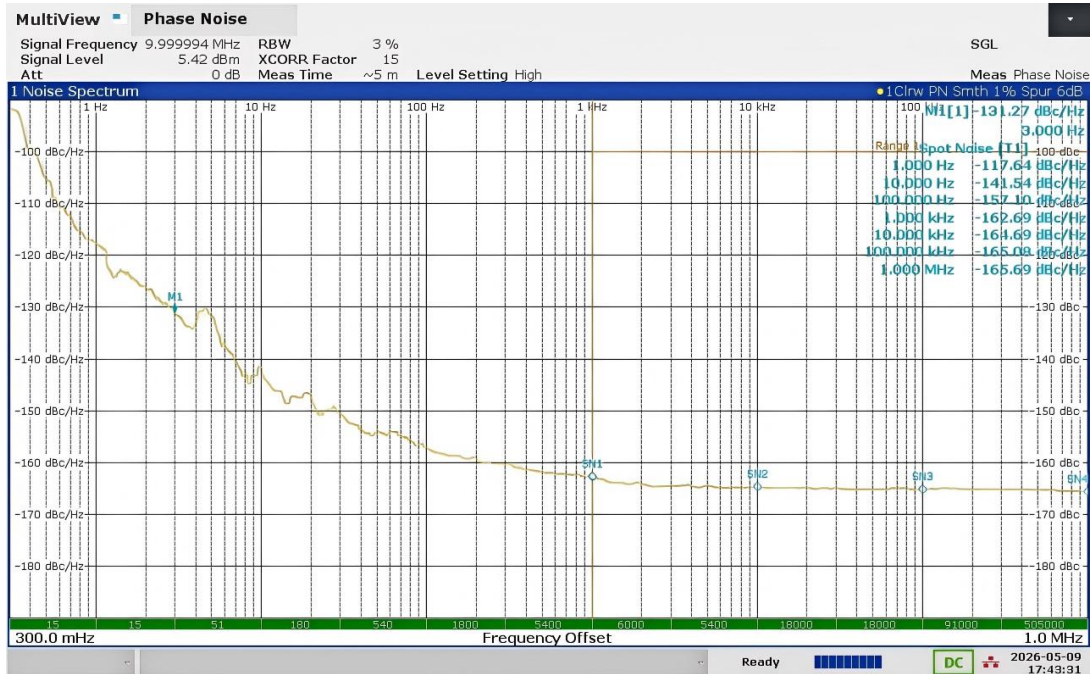
Developed Part Numbers		
O-C36AA -V-CSCF-10.000MHz		

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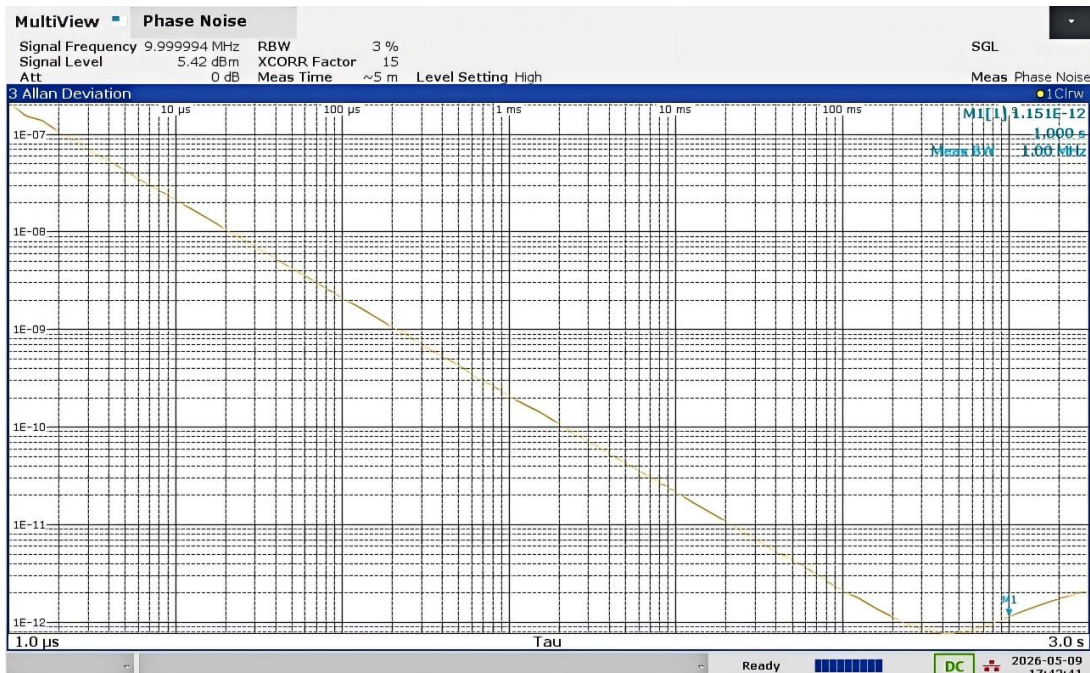


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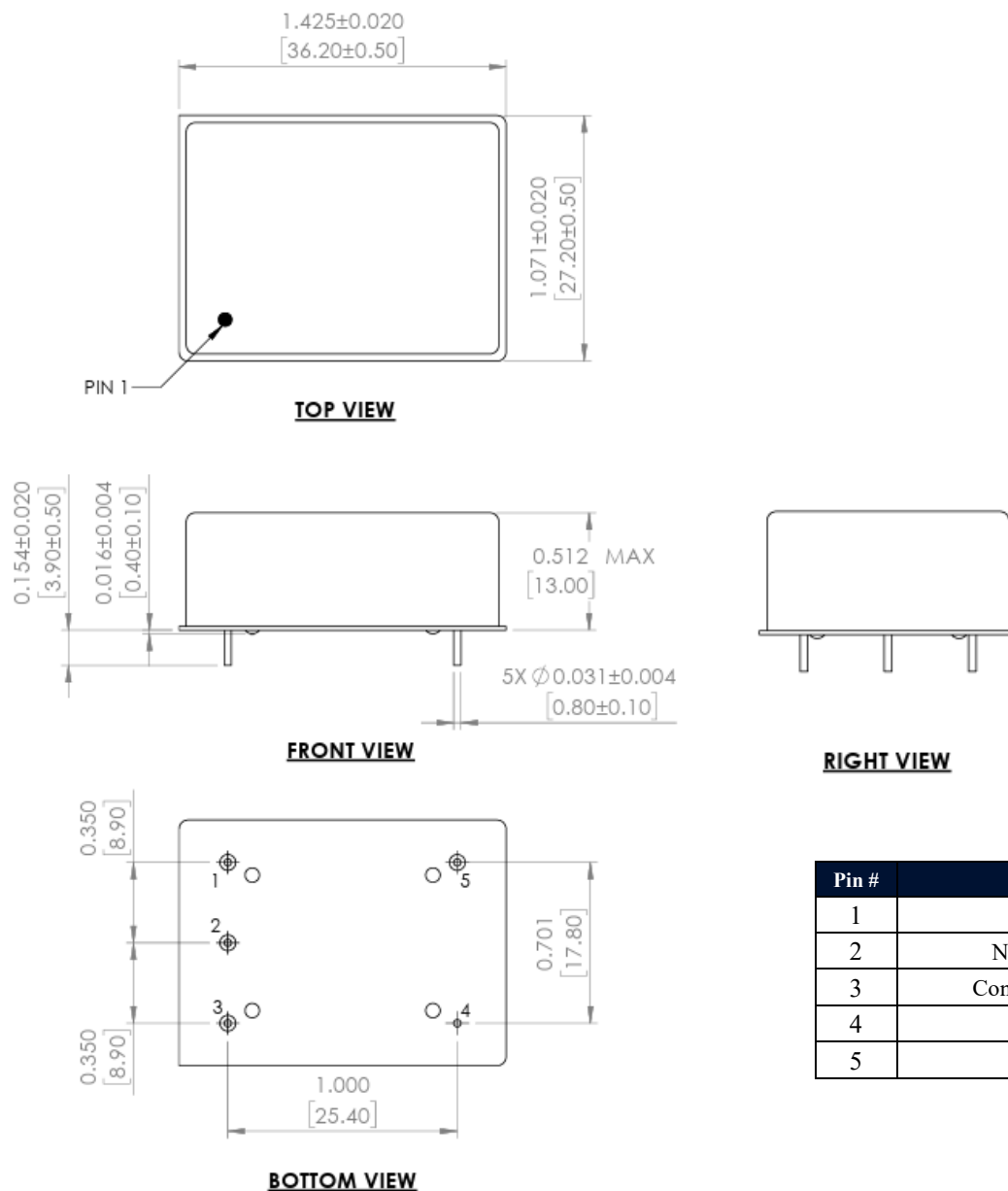
Typical Phase Noise



Typical Allan Deviation



Mechanical Dimensions



Pin #	Function
1	Vcc
2	No Connect
3	Control Voltage
4	GND
5	Output

Dimensions: inches [mm]

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Packaging

Bulk Tray