Miniature High Performance NV79A Series

Bliley Technologies Inc.
2545 W Grandview Blvd
Erie, Pa 16506
Factory +1-814-838-3571

Features:

- **Available in Frequencies from 10 MHz to 50 MHz**
- **Excellent Frequency vs. Temperature Stability**
- **Phase Noise Options**
- **HCMOS and Sine Wave Output**
- **3.3Vdc and 5Vdc supply voltage is available.**
- **RoHS-6/Leadfree Compliant optional**
- **Storage Temperature Range of -55°C to 125°C**
- **Manufactured in Erie, Pa. USA**

Description:

The NV79A Series Ovenized Crystal Oscillator offers high stability Frequency vs. Temperature performance and SC Cut Crystal Phase Noise performance in a DIP configuration. It is ideally suited for base station, test equipment, synthesizers, and digital switching applications.

Electrical Specifications

1. Output Characteristics

	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
1.1	Frequency Range	10		50	MHZ	
1.2	Initial Accuracy			±50	PPB	
1.3	Output Type					
	HCMOS	See Table 1 For Ordering Options (Only available in 5Vdc supply)				
	Level "0"	0		0.4	Vdc	
	Level "1"	4.5		5	Vdc	
	Rise/Fall Time			7	nSec	Rise/Fall time (10% to 90% level)
	Duty Cycle	45	50	55	%	
	Sinusoidal	See Table 1 For Ordering Options				
	Output Level		8		dBm	
	Load Impedance		50		Ω	
	VSWR		1.5:1			Into 50Ω ± 10%
	Harmonic Content			-30	dBc	

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1. Output Characteristics (Continued)

	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
	Spurious Modulation			-75	dBc	
1.4	Acceleration Sensitivity*			1	PPB/g	@10MHz

*Please consult factory for acceleration sensitivity options regarding other frequencies.

2. Frequency Stability

	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
2.1	Frequency vs. Temperature					Referenced to Frequency @+25˚C
	-20°C to +70°C	±50, 100 total block			PPB	See Table 1 For Ordering Options
	-40°C to +85°C	±85, 170 total block			PPB	See Table 1 For Ordering Options
2.2	Aging	Typical for 10MHz after 30 days of continuous operation				
	1st Year**			±150	PPB	Typical at 10MHz after 30 days of continuous operation
	10 Years**			±500	PPB	
2.3	Frequency vs. Voltage			±5	PPB	
2.4	Frequency vs. Load			±5	PPB	
2.5	Allan Variance			5x10e-11		τ = 1 Second
2.6	Warm-up		±50		PPB	Within 3 minutes
2.7	Static Phase Noise	Option A		Option B		See Table 1 for Ordering Options
		@10MHz	@50MHz	@10MHz	@50MHz	
	ℒ(f)@1Hz	-90	-70	-85	-60	dBc/Hz
	ℒ(f)@10Hz	-125	-100	-120	-90	dBc/Hz
	ℒ(f)@100Hz	-145	-125	-142	-115	dBc/Hz
	ℒ(f)@1KHz	-152	-152	-148	-148	dBc/Hz
	ℒ(f)@10KHz	-158	-158	-155	-155	dBc/Hz

Tested @ +25˚C±1˚C

Static Environment

Values listed above are typical performance of a (10.000) MHz Fo

**Long term aging projection is calculated per MIL-PRF 55310 f(t) = A(ln(Bt+1))+Fo

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3. Input Characteristics

	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
3.1	Supply Voltage	3.3 ±5%, 5 ±5%			Vdc	See Table 1 for Ordering Options
3.2	Power Dissipation					
	Warm-up			3.75	Watts	
	Steady State		2.0		Watts	@25°C ±1°C ambient
3.3	Electronic Frequency Control					
	3.3Vdc Supply Voltage					
	Voltage Range	0		+3.3	Vdc	
	Center Voltage		+1.65		Vdc	
	Frequency Range	±0.8			PPM	Consult Factory for Wide Pull Range
	5.0Vdc Supply Voltage					
	Voltage Range	0		5.0	Vdc	
	Center Voltage		2.5		Vdc	
	Frequency Range	±0.8			PPM	Consult Factory for Wide Pull Range
3.4	Slope		Positive			
3.5	Input Impedance	100K			Ω	
3.6	Linearity			10	%	

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4. Environmental, Reliability and Mechanical Specifications

	Parameter	Min.	Typ.	Max.	Unit	Test Conditions
4.1	Operational Temperature	-40		+85	˚C	See Table 1 For Ordering Options
4.2	Storage Temperature	-55		+125	˚C	
4.3	Shock	Mil-Std 202G Method 213 Condition C				
4.4	Random Vibration	Mil-Std 810G Method 514 Procedure I				
4.5	Sinusoidal Vibration	Mil-Std 202G Method 204 Condition A				
4.6	MTTF	153,300			Hours	Calculated using MIL-HDBK-217

Figure2. Mechanical Dimensions and Pin Functions

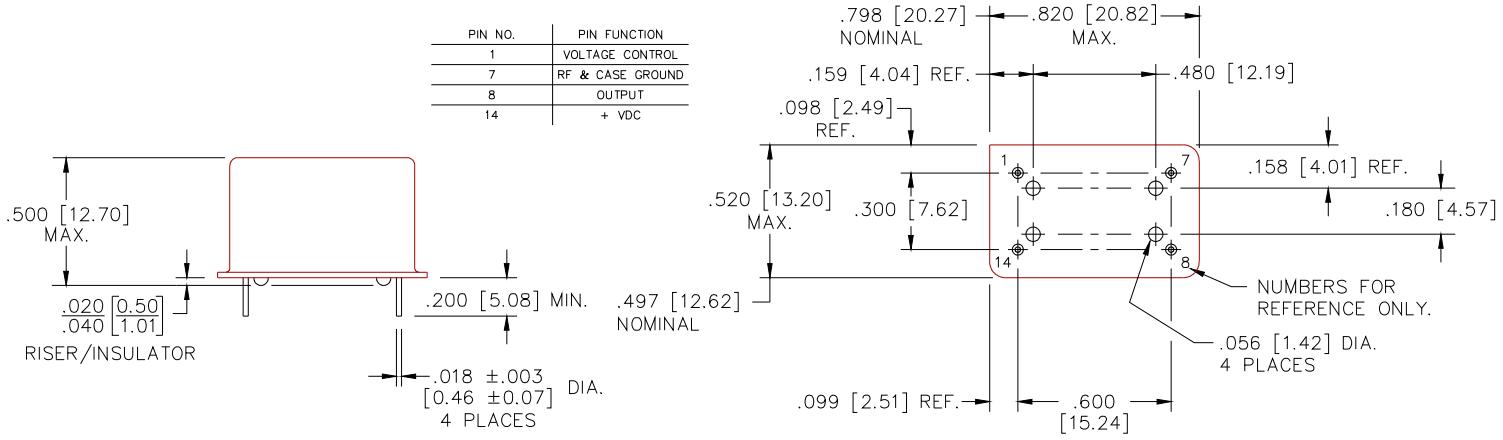

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Table1. Ordering Information

	Phase Noise (dBc/Hz) (10MHz Phase Noise Performance)					Temp Range	Stability	Supply	Output	Frequency
	Offset	A		B						
		10MHz	50MHz	10MHz	50MHz					
NV79A	1Hz	-90	-70	-85	-60	A (-20˚C-+70˚C)	A ±50ppb	A 3.3Vdc B 5Vdc	A Sine-wave	10M To 50M
	10Hz	-125	-100	-120	-90					
NVG79A	100Hz	-145	-125	-142	-115	B (-40˚C-+85˚C)	B ±85ppb			
	1KHz	-152	-152	-148	-148			B 5Vdc	B HCMOS	
	10KHz	-158	-158	-155	-155