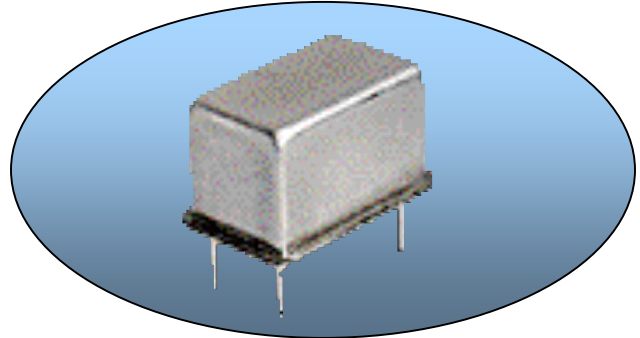


## N79A, N79B & NV79A – Single DIP OCXO

### Series Features

Freq Range: 10 MHz to 140 MHz  
Outputs: HCMOS  
Supply: +3.3 Vdc or +5 Vdc  
Package: 20.8 x 13.2 x 12.7 mm  
0.82" x 0.52" x 0.50"



**Standard Frequencies:** 10, 12.8, 19.44, 20, 20.48, 77.76 & 133 MHz  
Available at any frequency between 10 MHz and 140 MHz

**Output:** HCMOS  
**Output Levels:** "0" < 0.1(Vs)  
(30 pF load) "1" > 0.9(Vs)  
**Rise / Fall Time:** <6 ns (10% to 90%)  
**Duty Cycle:** 50% ±5% @ 50% level

<b>Power Supply (Vs):</b>	+3.3 Vdc ±5%	+5 Vdc ±5%
<b>At warm up</b>	2.0 Watts	2.0 Watts
<b>Steady State @ +25°C</b>	0.75 Watts	0.75 Watts

<b>Freq vs Temperature:</b>	<b>10 MHz to 40 MHz</b>		
0 to +50°C	±3 x 10 <sup>-8</sup>	±1 x 10 <sup>-7</sup>	±3 x 10 <sup>-7</sup>
0 to +70°C	±8 x 10 <sup>-8</sup>	±2 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>
-20 to +70°C	±1 x 10 <sup>-7</sup>	±3 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>
-40 to +85°C	±3 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>
	<b>41 MHz to 80 MHz</b>		
0 to +50°C	±1.5 x 10 <sup>-7</sup>	±3 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>
0 to +70°C	±2 x 10 <sup>-7</sup>	±3 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>
-20 to +70°C	±3 x 10 <sup>-7</sup>	±5 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>
-40 to +85°C	±5 x 10 <sup>-7</sup>	±7.5 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>
	<b>81 MHz to 140 MHz</b>		
0 to +50°C	±5 x 10 <sup>-7</sup>	±7.5 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>
0 to +70°C	±6 x 10 <sup>-7</sup>	±8 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>
-20 to +70°C	±8 x 10 <sup>-7</sup>	±1 x 10 <sup>-6</sup>	±1.5 x 10 <sup>-6</sup>
-40 to +85°C	±1 x 10 <sup>-6</sup>	±1.5 x 10 <sup>-6</sup>	±2 x 10 <sup>-6</sup>

*(Note: The above temperature ranges are standard. The stabilities listed for each show Best to Good to Easy. Custom Temperature ranges and stabilities are welcomed – please let us know your exact requirements if not listed above.)*

<b>Aging (After 3 Days):</b>	10 MHz	77.76 MHz	140 MHz	
	$3 \times 10^{-9}$	$4 \times 10^{-9}$	$5 \times 10^{-9}$	Per Day
	$5 \times 10^{-7}$	$5 \times 10^{-7}$	$7 \times 10^{-7}$	First Year
	$3 \times 10^{-6}$	$3 \times 10^{-6}$	$3 \times 10^{-6}$	For 10 Years

**Frequency vs Supply:**  $<2 \times 10^{-8}$  per Percent change

**Frequency vs Load:**  $<5 \times 10^{-10}$  per Percent change

**Short Term Stability:**  $<1 \times 10^{-10}$  for tau = 1 second

**Warm up:**  $<\pm 1 \times 10^{-7}$  in 3 minutes @ +25°C  
(referenced to frequency @ 2 hours)

**Total Stability Option:**  $<\pm 4.6 \times 10^{-6}$  over any temperature range at any frequency, including all causes for 10 years.  
Please specify when ordering.

**Electronic Frequency Control (EFC) – NV79A Only**

**Tuning Range:**  $\pm 5 \times 10^{-6}$  min,  $\pm 8 \times 10^{-6}$  max

**Linearity:**  $<\pm 10\%$

**Tuning Slope:** Positive

**Range:** Vs = +3.3 0.5 to +2.5 Vdc

Vs = +5.0 0 to +5.0 Vdc

**Calibrated Accuracy:** Vs = +3.3  $<\pm 0.5 \times 10^{-7}$  @ +1.25 Vdc  
(@ +25°C at time of shipment) Vs = +5.0  $<\pm 0.5 \times 10^{-7}$  @ +2.50 Vdc

**Initial Accuracy – N79A & N79B Only**

**Accuracy:**  $<\pm 1 \times 10^{-6}$  at +25°C at time of shipment

**Enable / Disable – N79B Only – Pin 1**

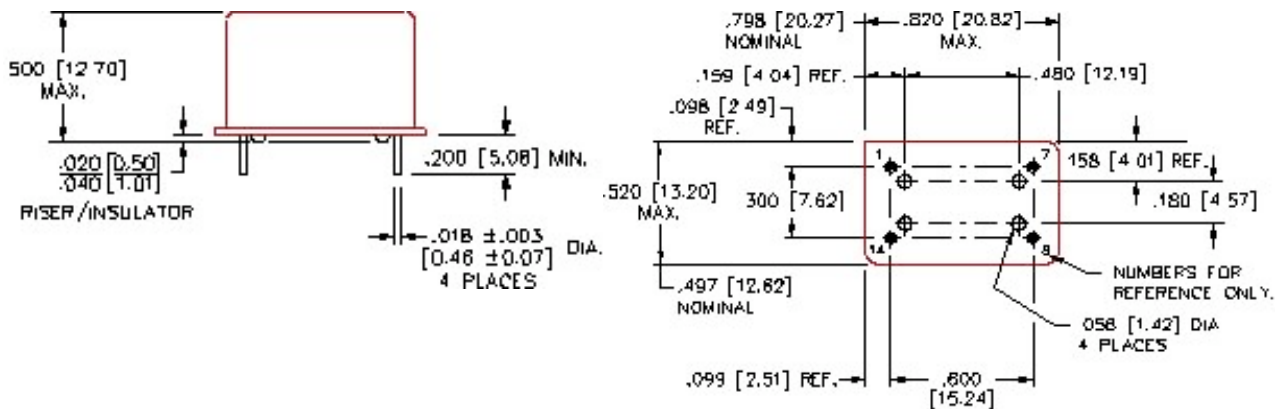
**Oscillator Enabled:** Floating or '> +2.5V'

**Disabled (Tri-State):** Ground or '<0.5V'

<b>Phase Noise (Typical):</b>	Offset	10 MHz	40 MHz	77.76 MHz
Contact Factory for	10 Hz	-90	-80	-75
Improved phase noise	100 Hz	-125	-115	-110
	1k Hz	-145	-140	-135
	10k Hz	-150	-148	-145
	100k Hz	-150	-150	-150
		(dBc/Hz)	(dBc/Hz)	(dBc/Hz)

### Outline Drawing and Pin Out

PIN NO.	N79A	N79B	NV79A
1	<b>No Connect</b>	<b>Enable/Disable</b>	<b>EFC</b>
7	Gnd	Gnd	Gnd
8	Output	Output	Output
14	+ Vs	+ Vs	+ Vs



### Environmental

**Storage temperature:** - 65 to + 125 °C

**Mechanical shock:** 500 G's, half-sine pulse @ 0.1 mSec, 3 axis

**Vibration:** 20 G's swept sine, 10 to 500 Hz

### How to Order:

1. Specify Pin 1 Option – **N79A, N79B or NV79A**
2. Specify Supply voltage - **+3.3 or +5.0 Vdc**
3. Specify Temperature Range and Stability over Temperature  
(see page 1 for standard offerings)

*Note: Stability vs Temperature is the biggest cost driver – do not over specify – units will be 100% tested over temperature.*

4. Specify any additional requirements – phase noise, Aging, .....