

Typical Applications

Frequency Synthesizers
Position Location
Satellite Communications
Space Applications

Features

Low Phase Noise
Fast Warm-up
High Stability
SC-Cut Crystal

Compact Size
Hybrid Construction
Hermetic
100 Krad tolerant

Frequency Range (Sinewave)

30 MHz to 120 MHz

Frequency Range (CMOS)

5 MHz to 100 MHz

Supply Characteristics

Parameter	Value	Condition
Supply voltage ³ (Vs)	+5 V	±5%
Power consumption steady state	1.5 W (max)	@ 25°C
Power consumption during warm up	4.5 W (max)	

Output Characteristics

Waveform	Sinewave	
Load	50Ω (nominal)	
Output level	+7dBm to +11dBm	Straight Sine
Harmonics	-35 dBc (max)	
Spurious	-75 dBc (max)	DC to 1GHz
Output VSWR	2:1	Fo ±500 kHz%

Frequency Stability¹

Set-on Tolerance ^{2,3}	$\pm 0.2 \times 10^{-6}$	$\Delta f/f$
Temperature Stability ¹	$\pm 100 \times 10^{-9}$	-40....+85°C
Warm-up Accuracy	$\pm 50 \times 10^{-9}$	Within 2 minutes @ 25°C
Aging ^{1,3}	$< \pm 4.0 \times 10^{-9}$	per Day after 7 days
	$< \pm 0.75 \times 10^{-6}$	per Year after 30 days
	$< \pm 2.0 \times 10^{-6}$	per 10 Years after 30 days
Acceleration Sensitivity ¹	0.8×10^{-9}	per G, Total Gamma
Frequency Pull ¹	$\pm 20 \times 10^{-9}$	10% change in load
Frequency Push ¹	$\pm 30 \times 10^{-9}$	5% change in voltage

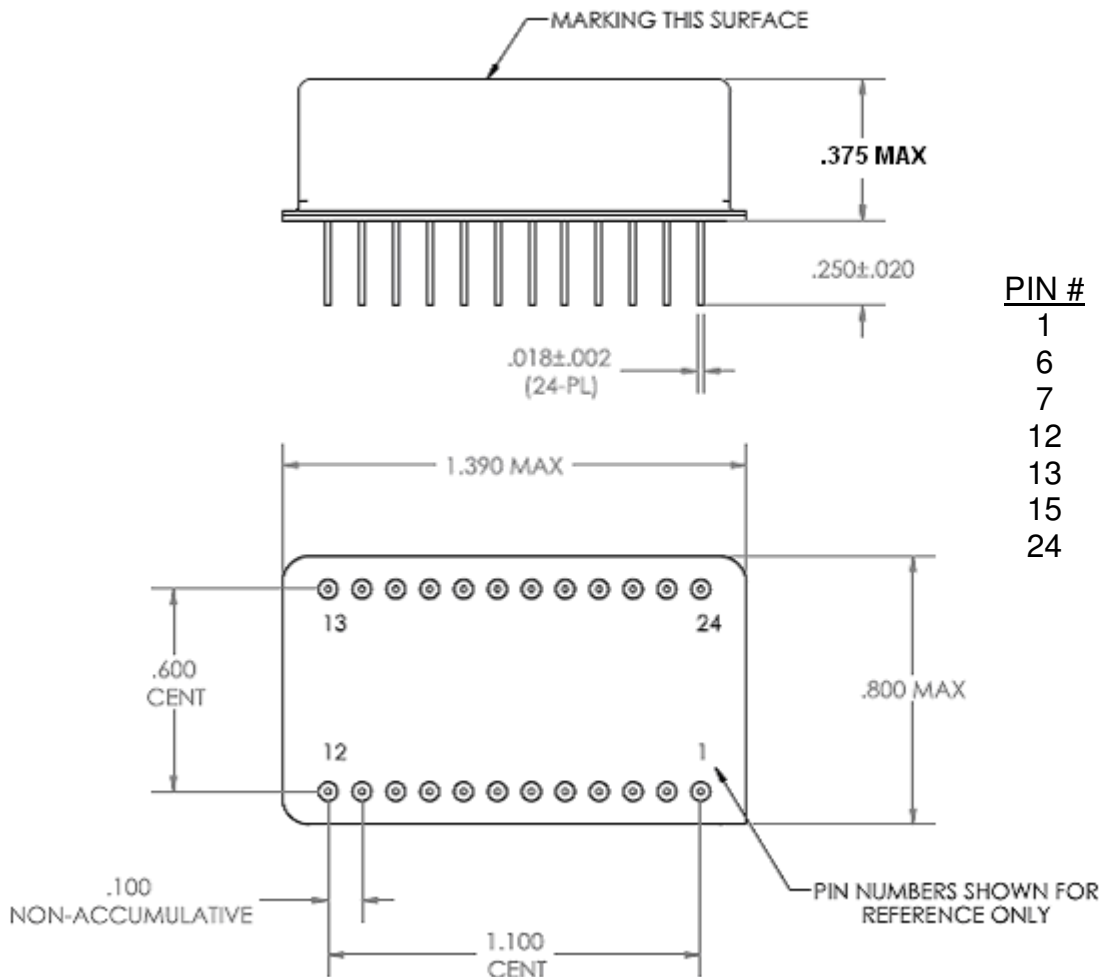
Frequency Control

Electrical Frequency Control (EFC):	$\pm 2.0 \times 10^{-6}$	minimum
Voltage range	0V to 4V	2.0V nominal
Pulling slope	Positive	

Additional Parameters¹

Parameter	Value	Offset
Phase Noise ¹	< - 65 dBc/Hz	1 Hz
	< - 95 dBc/Hz	10 Hz
	< -125 dBc/Hz	100 Hz
	< -147 dBc/Hz	1 kHz
	< -157 dBc/Hz	10 kHz
	< -160 dBc/Hz	100 kHz
	< -163 dBc/Hz	1 MHz

Short-term Stability (AVAR) ¹	8×10^{-12}	$\tau = 1 \text{ sec.}$
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PIN #	FUNCTION
1	EFC ⁴ or N/C
6	GND
7	GND
12	GND
13	RF OUT
15	Vref ⁴
24	Vcc

Notes

- 1 Typical values @ 100 MHz.
- 2 Set-on Tolerance is specified with EFC set to the mid-point of its range or no EFC installed.
- 3 Set-on Tolerance and Daily aging rate are 'At Time of Shipment' value. Unless otherwise stated, all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load and temperature (25°C).
- 4 Vref = +4V if Pin1 = EFC.