

Helping Customers Innovate, Improve & Grow



Description

The Holdover Reference Oscillator family is designed specifically to meet the need for a high accuracy cost effective backup reference.

These high stability oscillators will provide consistent, repeatable, extended holdover to the stated phase accuracy - making them ideal for applications where GPS, 1588 or other sources of timing are intermittent or prone to extended periods of unavailability.

Features

- Available in 8 hour and 24 hour version
- Holdover accuracy available to $\leq 8\mu\text{s}$ and $\leq 1\mu\text{s}$
- Specifically designed for inter-operability with existing designs based on conventional OCXO's.
- Advanced digital compensation techniques take place inside the Holdover Reference - no need for programming or other user intervention.

Applications

- Precision Timing Applications in:
 - Wireless Base Stations
 - Wireless Backhaul
 - Digital Video Broadcast
 - Low latency optical networking
 - Power distribution
 - Test and Measurement

Specifications

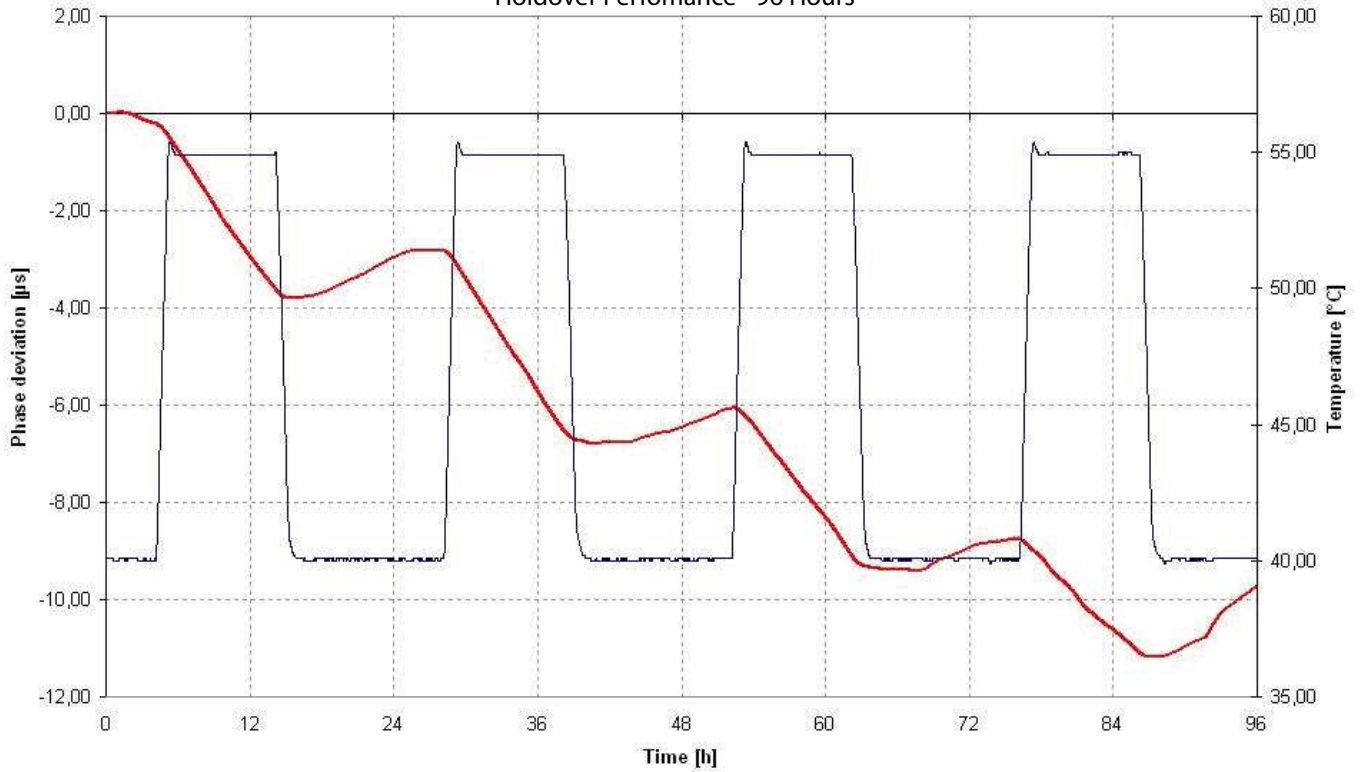
Parameter	Min	Typical	Max	Units	Condition
Output Frequency	5		20	MHz	
Holdover Accuracy over 8 hours (ordering option)			8.0	μs	15°C range, Vs $\pm 5\%$, Load $\pm 5\%$, after 24 hours of operation
Holdover Accuracy over 8 hours (ordering option)			1.0	μs	15°C range, Vs $\pm 5\%$, Load $\pm 5\%$, after 24 hours of operation
Holdover Accuracy over 24 hours (ordering option)			8.0	μs	15°C range, Vs $\pm 5\%$, Load $\pm 5\%$, after 24 hours of operation
Warm up time			5	minutes	to $\pm 10\text{ppb}$ of final frequency (1 hour reading) @25 °C

Specifications (continued)

Parameter	Min	Typical	Max	Units	Condition
Supply					
Supply voltage	4.75	5	5.25	Vdc	
Power Consumption			3.1	Watts	during warmup
Power Consumption			1.5	Watts	steady state at 25 °C
Output					
Signal	HCMOS				
Load		15		pF	
Signal Level (Vol)			0.5	Vdc	With Vs=5.0 and 15pF load
Signal Level (Voh)	3.5			Vdc	With Vs=5.0 and 15pF load
Duty Cycle	40		60	%	@ (Voh-Vol)/2
Signal	Sine Wave				
Load		50		Ohm	
Output Power @ 5.0V	0	3	6	dBm	50 Ohm Load
Sub Harmonics			-25	dBc	50 Ohm Load
Spurious			-65	dBc	50 Ohm Load
Tuning Range	Fixed OCXO; No adjustment				
Tuning Range	+0.15		+0.4	ppm	
Linearity	10%				
Tuning Slope	Positive				
Control Voltage Range	0	1.65	3.3	Vdc	With Vs = 5.0 Vdc
Phase Noise 1 Hz		-98	-90	dBc/Hz	@10MHz
Phase Noise 10 Hz		-125	-120	dBc/Hz	
Phase Noise 100 Hz		-135	-130	dBc/Hz	
Phase Noise 1kHz		-143	-138	dBc/Hz	
Phase Noise 10kHz		-150	-145	dBc/Hz	
Maximum Ratings					
Maximum supply voltage			6.0	Vdc	
Maximum output load			50	pF	
Operable Temperature Range	-40		85	°C	
Storage Temperature Range	-55		85	°C	
Mechanical					
Weight	16.0			g	
Dimensions	25.8x25.8x15.35			mm	

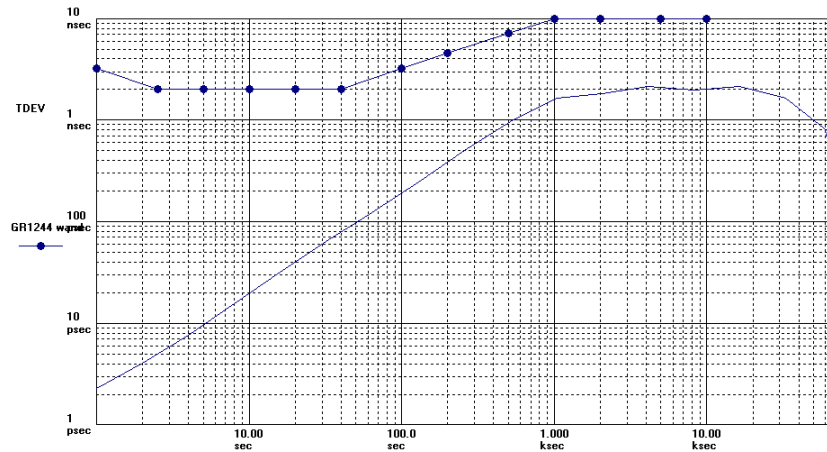
Typical Performance Data

Holdover Performance - 96 Hours

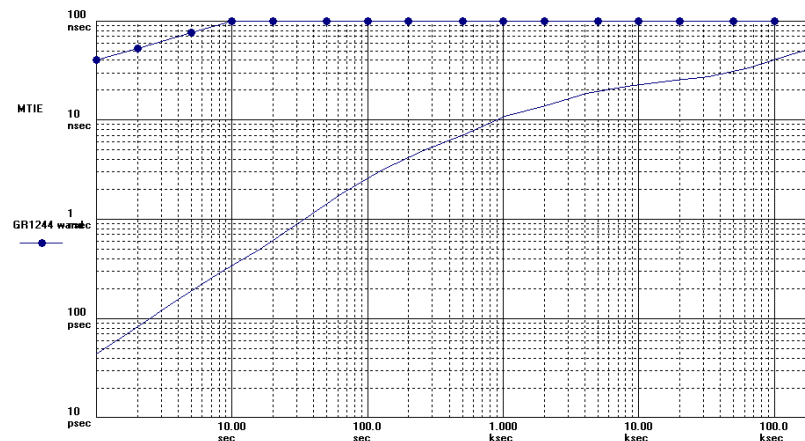


MTIE and TDEV - 0.3mHz loop filter bandwidth

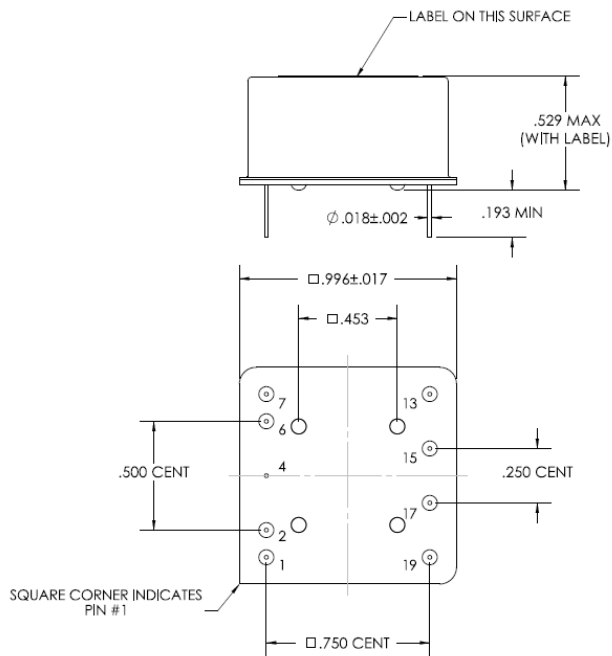
Symmetricon TimeMonitor Analyzer (file=Typ_OX-203-0001-10M00_Tau1s.phd)
 TDEV: No. Avg=1; Fo=10.00 MHz; 8/3/2011 1:33:27 PM
 Stable32 Phase; Samples: 200000



Symmetricon TimeMonitor Analyzer (file=Typ_OX-203-0001-10M00_Tau1s.phd)
 MTIE: Fo=10.00 MHz; Fs=1000.0 mHz; 8/3/2011 1:33:27 PM
 Stable32 Phase; Samples: 200000



Outline Drawing



Pin Assignment	
Pin	Connection
1	RF Output
2	Do Not Connect
4	Case Ground
6	Do Not Connect
7	EFC (Frequency Control)
13	Do Not Connect
15	Do Not Connect
17	Do Not Connect
19	Supply Voltage

Ordering Information

OX - 203 1 - D A E - 808 0 - 10M0000000

Product
OX: OCXO

Package Type
203: THT Version

Height
1: 15.35mm

Supply Voltage
D: 5.0V

Output
A: HCMOS
E: Sinewave

Temperature Range
E: -40 to +85 °C
J: -20 to +70 °C
P: 0 to +50 °C

Frequency
Frequency Control
0: No Tuning
1: ±0.15 to ±0.4ppm

Holdover Range
808: 8µs over 8 hours
824: 8µs over 24 hours
108: 1µs over 8 hours

**Note: not all combination of options are available.
Other specifications may be available upon request.*

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