GSOX1206-10MHz-A
Compact Double Ovenized Oscillator

Features

Temperature Stability: ±3 PPB over (-40 to +85)°C
Excellent Yearly Aging of less than ±30 PPB
Phase Noise Floor: -163 dBc/Hz typical at 10KHz
Allan Variance: For 1 second tau typ. 1E-11
Optimized performance at 10MHz

Packaging type R: 20.4 x 20.4 x 13.8 mm

RoHS compliant

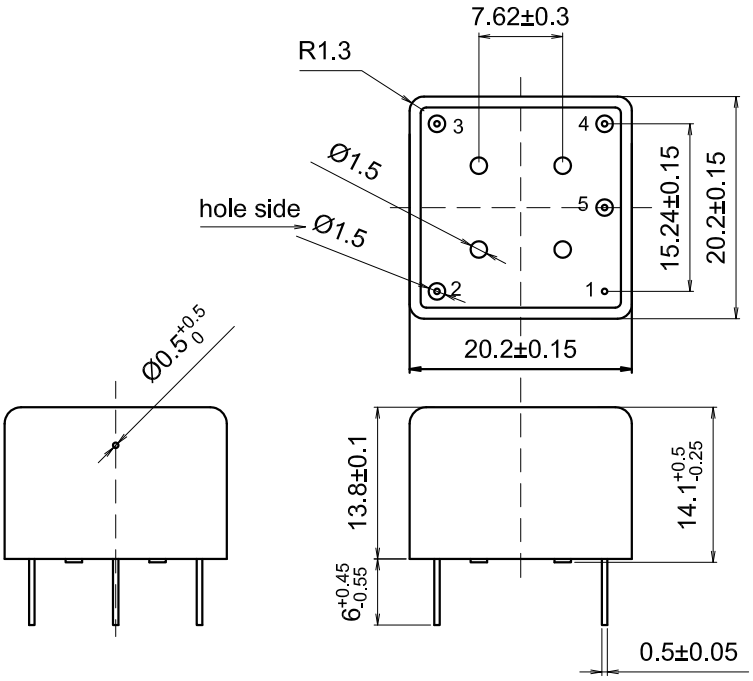
Typical Applications

Test Instrumentation Reference
GPS Timing Modules
Microwave Communications

Description

The GSOX1206-10MHz-A series of miniature double ovens offers excellent overall frequency stability in a compact 20.4*20.4*13.8 mm enclosure. Low steady-state power dissipation of 1 Watt combined with excellent phase noise performance makes the 3182 ideally suited for a variety of application listed above.

Physical Dimensions & Pin Connections



Pin	Signal
1	GND
2	RF Out
3	+V Supply
4	Electrical tuning
5	Reference voltage

#	OCXO Specification	Sym.	Condition	Value			Unit	Included in the test data
				Min.	Typ.	Max.		
1.1	**Nominal Frequency**	f_0			10.000000		MHz	
1.2	Initial tolerance	$(f- f_0)/f_0$	at +25 C, $V_c=V_{c0}$	-0.1		0.1	ppm	+
	RF output							
2.1	Wave form				Sine-wave			
2.2	Level	L		+6			dBm	+
2.3	Load	R_L		45	50	55	Ohm	
2.4	Harmonics level					-25	dBc	+
	Frequency control							
3.1	Input resistance	R_{in}			11		kΩ	
3.2	Control voltage range	V_c		0		4.2	V	
3.3	Preset control voltage	V_{c0}	disconnected Vc pin	1.9	2.1	2.3	V	
3.4	Slope				Positive			
3.5	Pull range	$(f_L- f)/f$	V_c=0 V			-0.35	ppm	+
		(f-f)/f	$V_c=V_{c0}$		0		ppm	
3.6		$(f_H- f)/f$	$V_c= V_{ref}$	0.35			ppm	+
3.7	Reference voltage	V_{ref}		4.1	4.2	4.3	V	
3.8	Out. resistance of V_{ref}				91		Ohm	
	Power supply							
4.1	Voltage	Vcc		4.75	5	5.25	V	
4.2	Warm-up current		Vcc=5V			850	mA	+
4.3	Continuous current		at +25 C, Vcc=5V, still air			250	mA	+
4.4	Warm-up time	t_{up}	to Δf/f=1e-7, at +25 C, ref. to 30 min.			180	sec.	
	Frequency stability							
5.1	vs. temperature		ref 25 C			±3	ppb	plot
5.2	vs. supply voltage		ref Vcc typ.			±0.3	ppb	
6	**Aging** per day		after 30 days of operation			±0.2	ppb	+**
	per year					±30	ppb	
7.1	**SSB Phase Noise**		at 1 Hz offset		-95		dBc/Hz	+*
			at 10 Hz offset		-125			
			at 100 Hz offset		-145			
			at 1 kHz offset		-155			
			at 10 kHz offset		-163			
7.2	**Allan Variance**		1 s		10		e-12	

* 10% of production LOT for quantities greater than or equal to 20 pcs
** Daily and Yearly Projected Aging Rates

Maximum ratings, environmental, mechanical conditions.

Power voltage	-0.5 to 6 V
Control voltage	-1.0 to 9.0 V
Operating temperature range	-40 C to +85 C
Storage temperature range	-60 C to +90 C
Humidity	Non-Hermetically sealed
Mechanical shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 10G to 500 Hz
Soldering conditions	260 C, 10s