

GSOX1204

Low Power High Performance Double Oven

Features

Ultra-high stability (as good as 1 E-10)
Outstanding aging (as good as 0.1
ppb/day ; 15 ppb per year)
-165 dBc/Hz typical floor
As good as 2E-12 short term stability

Typical Applications

Rubidium Standard Replacement
Instrumentation
Stratum 2 clocking systems
WCDMA for 24 hour hold-over

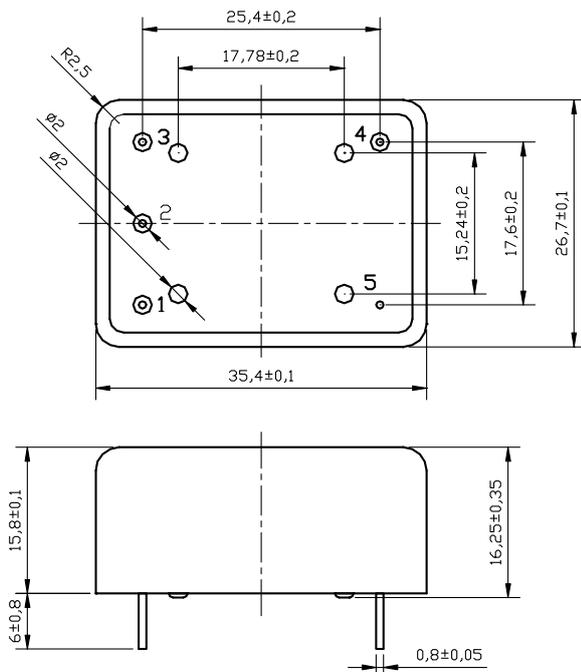
Description

The GSOX1204 is a double oven oscillator offering lower power dissipation and faster warm-up characteristics than standard products in the market place.

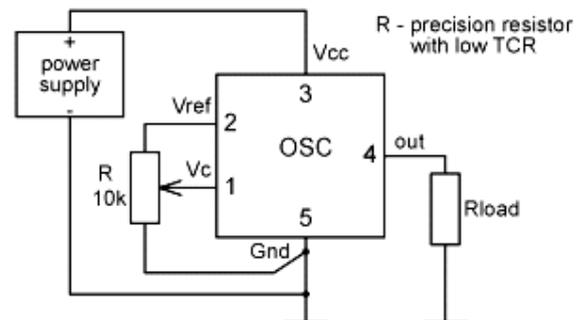
Picture of Part



Physical Dimensions



Pin Connections



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

Specification

OCXO Specification		Sym.	Condition	Value			Unit	Note
				Min.	Typ.	Max.		
Operational Frequency Range		f_0		8		100	MHz	
HCMOS/ TTL compatible option N/A	Load					15	pF	In parallel with 10Kohm
	H - level voltage	V_H		3.6			V	
	L - level voltage	V_L				0.4	V	
	Rise & Fall time					10	ns	
	Duty cycle			45	50	55	%	For 10MHz frequency
Sine-wave option	Level	L		6	8	10	dBm	
	Load	R_L		45	50	55	Ohm	
	Harmonics/sub					-25	dBc	
Spurious						-75	dBc	
Power supply								
Voltage		V_{cc}		4.75	5.0	5.25	V	12.0 volt option available
Power consumption			Warm-up state Steady state, +25°C		1.25	5.0 1.5	W W	
Warm-up time***		t_{up}	To within +/- 1e-8, at +25°C			300	sec	ref. to frequency after 30 min.
Frequency control*								
Control voltage range		V_c		0		4.3	V	Positive tuning slope
Tuning range				+/-0.35			ppm	
Reference voltage Output		V_{ref}		4.19	4.30	4.41	V	
Frequency stability								
vs. temperature			-40°C to +80°C, ref 25°C	-0.5		+0.5	ppb	
vs. 5% change in supply voltage			ref Vcc typ.	-0.02		+0.02	ppb	
vs. acceleration			Worst direction			1.0	ppb/G	
SSB Phase noise			1 Hz			-95	dBc/Hz	for 10 MHz operational freq.
			10 Hz			-128		
			100Hz			-145		
			1 kHz			-155		
			10 kHz			-165		
Allan variance			1 s	2	5	10	e-12	
Aging	Per Day		Projected aging after 30 days operation			+/-0.2	ppb	For 10 MHz third Overtone SC-cut standard
	Per Year					+/-30	ppb	
Environmental, mechanical conditions.								
Operating temperature range		-40°C to +80°C maximum range available that is standard						
Storage temperature range		-60°C to +90°C						
Humidity		Hermetically Sealed						
Mechanical shock		Per MIL-STD 202 30G half sine pulse, 11 ms						
Vibration		Per MIL-STD 202 10G swept sine 10 to 1000 Hz						
Soldering conditions		+260°C for 10 seconds						

*** The unit will be within +/- 0.01 ppm of the steady-state frequency that is reached after 30 minutes continuous operation

Ordering Information

GSOX1204-XXX.XXXXXX-W-Y-Z

1. Field " XXX.XXXXXX " is the Output Frequency to six decimals in MHz
2. Field " W " is Operating Temperature Range and Freq. Stability :
 - a. " 0 " for -30 °C to +70 °C and +/- 0.2 ppb
 - b. " 1 " for -40 °C to +80 °C and +/- 0.5 ppb
3. Field " Y " is Power Supply Option :
 - a. " 0 " for 5V +/- 5%
 - b. " 1 " for 12.0V +/- 5%
4. Field " Z " is sine wave output versus square wave output
 - a. " 0 " for sine wave output
 - b. " 1 " for square wave output

Part Number Example

GSOX1204-10.000000-1-1-0

10.000000 MHz Operating Frequency

Operating Temperature of -40 °C to +80 °C

+/- 0.5 ppb Frequency Stability

12.0 volt supply

Sine wave output