



### Features

Ultra Miniature Packaging  
High Stability - to  $\pm 2 \times 10^{-10}$  over (-30 to +70)°C  
Low Aging - to  $\pm 2 \times 10^{-10}$ /day,  $3 \times 10^{-8}$ /year  
Low Phase Noise level ( -163 dBc/Hz, TYP, floor)

Packaging type R: 20.4 x 20.4 x 13.8 mm

### Typical Applications

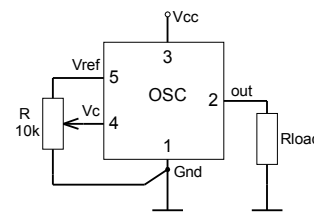
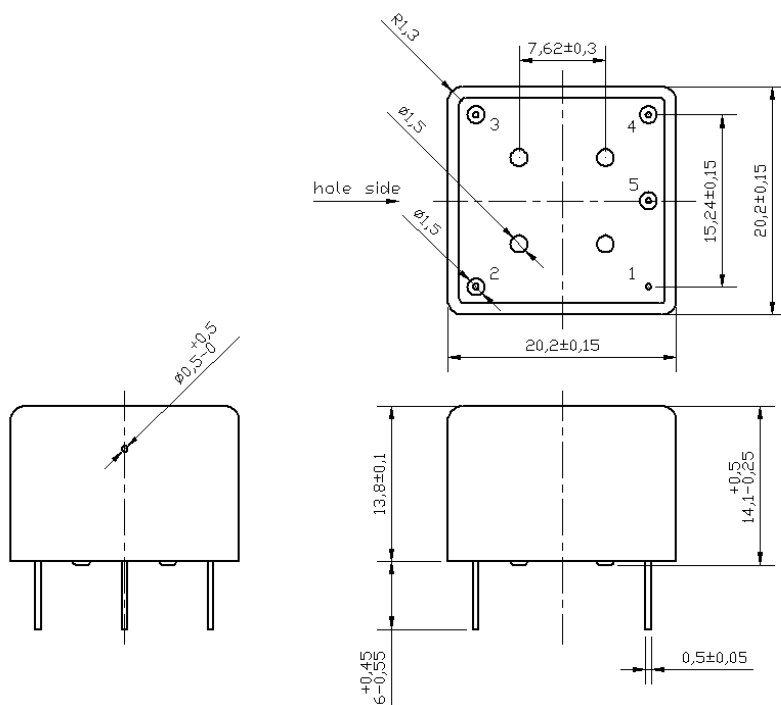
Rubidium Standard Replacement  
GPS Receivers  
Instrumentation  
Stratum 2 Clock Systems



### Description

The OCXO3182 series use combines advantageous of the double-oven and internal heated resonator technologies(IHR) resulting in smallest in the world volume ( 6 ccm) and less than 1W power consumption at 0.2 ppb temperature stability and 0.2 ppb/day aging. The OCXO3182 oscillators are excellent to use in Stratum II clock system, instrumentations, and other high-end applications. The double-oven OCXOs are produced for operational frequency range from 8 to 100MHz.

### Physical Dimensions & Pin Connections



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



**Specification**

#	OCXO Specification	Sym.	Condition	Value			Unit	Included in the test data
				Min.	Typ.	Max.		
1.1	<b>Nominal Frequency</b>	$f_0$		10.000000			MHz	
1.2	Initial tolerance	$(f - f_0)/f_0$	at +25°C, $V_c=V_{c0}$	-0.1		0.1	ppm	+
<b>RF output</b>								
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	+
<b>Frequency control</b>								
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 $V_c$ pin	1.9	2.1	2.3	V	
3.4	Slope			Positive				
3.5	Pull range	$(f_{L} - f)/f$	$V_c=0V$			-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	
<b>Power supply</b>								
4.1	Voltage	$V_{cc}$		4.75	5	5.25	V	
4.2	Warm-up current		$V_{cc}=5V$			850	mA	+
4.3	Continuous current		at +25°C, $V_{cc}=5V$ , still air			250	mA	+
4.4	Warm-up time	$t_{up}$	to $\Delta f/f=1e-7$ , at +25°C, ref. to 30 min.			180	sec.	
<b>Frequency stability</b>								
5.1	vs. temperature		ref 25°C			±3	ppb	plot
5.2	vs. supply voltage		ref $V_{cc}$ typ.			±0.3	ppb	
6.1	SSB Phase Noise		at 1 Hz offset		-95		dBc/Hz	+*
			at 10 Hz offset		-130			
			at 100 Hz offset		-150			
			at 1 kHz offset		-162			
			at 10 kHz offset		-168			
			at 100 kHz offset		-168			
7.1	Aging	per day	after 30 days of operation			±0.2	ppb	+**
		per year				±30	ppb	
* 10% of production LOT for quantities greater than or equal to 20 pcs								
** Daily and Yearly Projected Aging Rates								
<b>Maximum ratings, environmental, mechanical conditions.</b>								
Power voltage		-0.5 to 6 V						
Control voltage		-1.0 to 9.0 V						
Operating temperature range		-40°C to +85°C (-55°C to -40°C operable)						
Storage temperature range		-60°C to +90°C						
Humidity		Hermetically sealed						
Mechanical shock		Per MIL-STD-202, 30G, 11ms						
Vibration		Per MIL-STD-202, 10G to 500 Hz						
Soldering conditions		260°C, 10s						