



### Features and Benefits

- 185 dBc / Hz Noise Floor
- 135 dBc / Hz @ 100 Hz; -162 dBc / Hz @ 1 kHz
- Low Noise +15 dBm high power output signal
- +5V supply

### Typical Applications

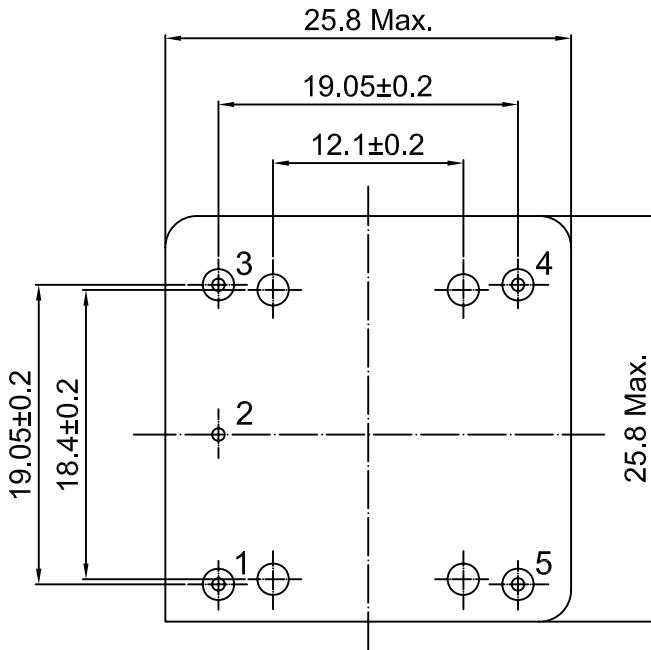
- Clock reference for microwave signal source
- Microwave communication systems
- Instrument reference
- Test and measurement systems
- Radar systems
- Medical (MRT)

### Description

OCXO2525P-100MHz-w-x-y offers ultra-low noise and tight frequency stability with electrical frequency tuning input in a small hermetically sealed package.

### Mechanical Drawing & Pin Connections

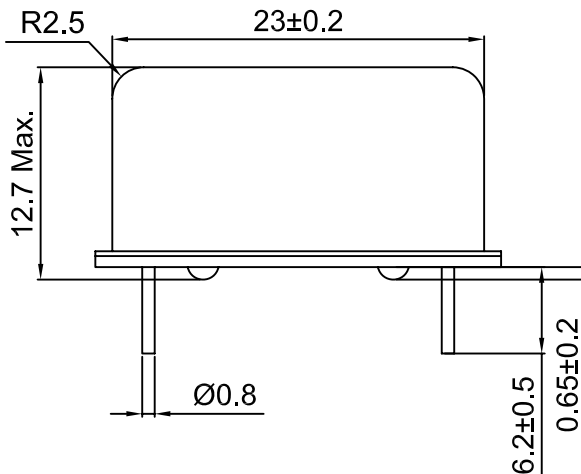
**Drawing No: MD13022-4**



#### Pin connections

PIN #	Symbol	CONNECTION
1	RF OUT	RF Output
2	GND	Ground, case
3	Vc	Control Voltage
4	N.C.	No connection
5	Vs	Supply Voltage

Unit in mm  
1mm = 0.0394 inches

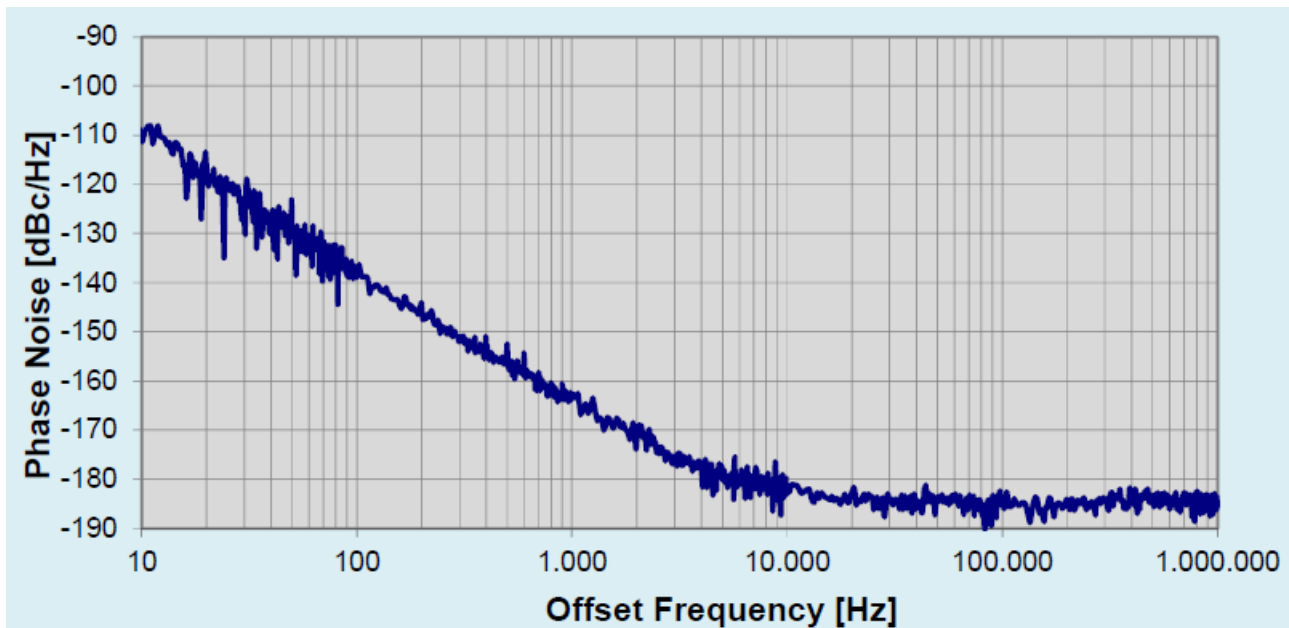




Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency	$F_N$			100.000		MHz	
Warm-up Time		To $dF/F_0 \leq \pm 50$ ppb referred to $F_0$ after 1 hour		$\leq 5$		min	
<b>RF Output</b>							
Output Waveform			Sine Wave				
Initial Output Level				$\geq +15$		dBm	
Output Load Impedance		$\pm 10\%$		50		Ohm	
Harmonics				$\leq -30$		dBc	
Spurious		100 Hz to 5 MHz from carrier		$\leq -100$		dBc	
<b>Power Supply</b>							
Supply Voltage	$V_S$	$\pm 5\%$		+5.0		V	
Supply Current	$I_S$	Steady state @ +25°C		$\leq 400$		mA	
		During warm-up		$\leq 950$			
<b>Frequency Adjustment Range</b>							
Frequency Tuning Range		Referred to $F_N$		$\geq \pm 2.5$		ppm	
Frequency Control Voltage Range	$V_C$		0		+10	V	
Modulation Bandwidth				$\geq 1$		kHz	
<b>Frequency Stability</b>							
Initial Tolerance: $V_C = +5V$ ; $T_A = +25^\circ C$		After power on for 30 mins		$\leq \pm 300$		ppb	
Vs. Operating Temperature Range			Refer to options table				
Vs Supply Voltage		$V_S \pm 5\%$		$\leq \pm 5$		ppb	
Vs Load Change		50 Ohm $\pm 10\%$		$\leq \pm 5$		ppb	
Aging per day		After 30 days of continuous operation		$\leq \pm 5$		ppb	
Aging per year			$\leq \pm 300$				
15 years			$\leq \pm 2$		ppm		
Allan Deviation		$\tau = 1$ s		$\leq 5 \times 10^{-11}$			
Jitter (RMS)		12 kHz to 20 MHz		$\leq 50$		fsec	
G-Sensitivity (X or Y or Z axis)				$\leq 1$		ppb/g	
Phase noise @ Offset Frequency			Refer to Options Table				
<b>Environmental Conditions</b>							
Operating temperature range	Refer to options table						
Storage temperature range	-45°C to +90°C						
Bumping (BMP)	DIN EN 60068-2-29 Test Eb; 4000 shocks per axis; 40g/6 ms; 3 axes both directions						
Vibration (VIB)	DIN EN 60068-2-6 Test Fc; 10..55 Hz; 0.75 mm peak; 55..2000 Hz; 10g peak, 10 cycles; 3 axes; 1 Oct.min						
Shock (SHK)	DIN EN 60068-2-27 Test Ea; 6 shocks per axis; 100g / 6 ms						

Note 1: Test conditions:  $V_S = +5V$ ;  $T_A = +25^\circ C \pm 3^\circ C$ ,  $V_C = +5V$  unless otherwise identified





### Ordering Information

OCXO2525P-100MHz	-	w	x	y
Group		1	2	3

X	Stability
Code	[ppb]
1	±50
2	±100
3	±200
4	±500

W	Temperature Range °C
Code	[ppb]
1	-20..+70
2	-40..+85

Frequency Stability vs. Temperature Range Availability

Frequency Stability [ppb]	Temperature Range [°C]	
	-20..+70	-40..+85
±50	Available	Not available
±100	Available	Not available
±200	Not available	available
±500	Not available	available

\*Disclaimer: Not all option choices available across entire temperature range

Y	Phase Noise						Unit
	Offset						
Code	10 Hz	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	
1	≤-100	≤-130	≤-157	≤-180	≤-185	≤-185	dBc/Hz
2	≤-105	≤-135	≤-162	≤-180	≤-185	≤-185	

For example, OCXO2525P-100MHz-232 denotes the OCXO has the following specifications:

- Temperature Range                    -40°C to +85°C
- Stability Over Temperature        ±200 ppb
- Phase Noise                            ≤-105 dBc / Hz @ 10 Hz
- ≤-135 dBc / Hz @ 100 Hz
- ≤-162 dBc / Hz @ 1 kHz
- ≤-180 dBc / Hz @ 10 kHz
- ≤-185 dBc / Hz @ 100 kHz
- ≤-185 dBc / Hz @ 1 MHz