Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077
TEL: 281-870-8822 EMAIL:Sales@DynamicEngineers.com

OCXO2522C
Low phase-noise high stability OCXO

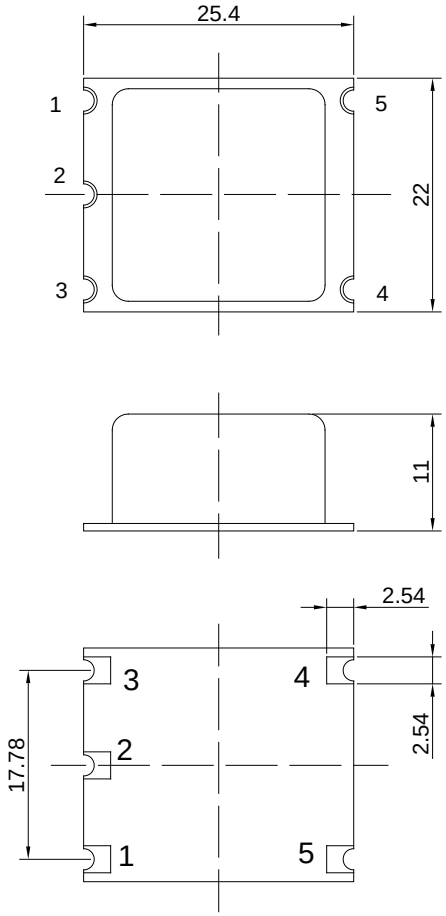
Features and Benefits
Very low phase noise up to -175 dBc/Hz, floor
High temperature stability up to ±1 ppb at -40°C to +85°C
Low aging up to ±0.2 ppb/day, 20 ppb/year
Compact surface mount design
Frequency range from 5 MHz to 150 MHz

Typical Applications
Stratum 3E clock systems
Cellular Base Station
Microwave Applications
Radar Reference
Instrumentation

Description
A new series of low phase-noise OCXO with high temperature stability for optimal performance.

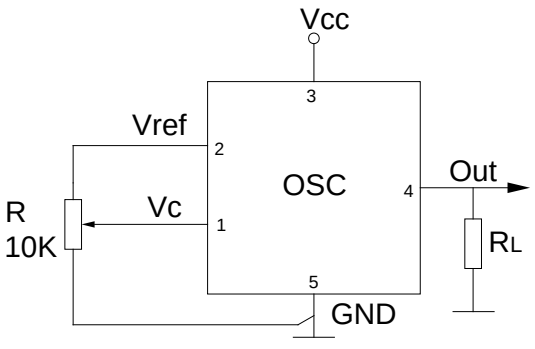
Mechanical Drawing & Pin Connections

Drawing No:MD140083-1



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

Unit : mm
1mm=0.0394inch



Note : 12.7mm height is available

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Specifications

General Specifications								
Parameter		Sym	Condition	Value			Unit	Note
				Min.	Typ.	Max		
Frequency Range		F_0		5		150	MHz	Fundamental operation
RF Output								
HCMOS (TTL) option	**Load**			10		15	kOhm pF	For 10 MHz operational frequency
	H-level voltage	V_H	V_{cc}=5V or 12V V_{cc}=3.3V	3.8 2.4			V	
	L-level voltage	V_L				0.4	V	
	Duty Cycle			45		55	%	
	Rise / Fall Time					10	ns	For 10 MHz operational frequency
Sine-wave option	**Level**	L		+6	+8	+10	dBm	
	Load	R_L			50		Ohm	
	Harmonics level					-30	dBc	
Sub-harmonics level				None			dBc	
Frequency Control*								
Control Voltage Range		V_c	V_{cc}=5V or 12V V_{cc}=3.3V	0 0		4.2 2.8	V	Positive tuning slope – (standard option)
Tuning Range				±0.5	±1		ppm	
Reference voltage		V_{ref}	V_{cc}=5V or 12V V_{cc}=3.3V	4.1 2.7	4.2 2.8	4.3 2.9	V	
Frequency Stability								
Vs. temperature			-40°C to+85°C, ref 25°C		±10		ppb	See chart below
Vs. supply voltage			Ref V_{cc} typ.		±1		ppb	
Vs. acceleration			Worst direction	±0.5		±1	ppb/G	
Power Supply								
Voltage		V_{CC}		4.75	5.0	5.25	V	3.3V, 12V optional
Power Consumption			Warm-up state Steady state, +25°C		3.2 1	3.5 1.2	W W	
Warm-up time		t_{up}	to Δf/f = 1e-7, at +25°C			180	Sec	Ref to frequency after 30 min
SSB Phase Noise			1 Hz	-106/-	-100/-		dBc/Hz	For 10 MHz operational frequency
			10 Hz	-135/-95	-125/-90			
			100 Hz	-155/-130	-145/-120			
			1 kHz	-163/-155	-155/-150			
			10 kHz	-170/-170	-165/-165			
			100 kHz	-172/-175	-168/-168			
Allan variance			1s	5	10		e-12	
Aging	Per day		After 30 days of operation	0.2	0.5		ppb	See chart below
	First year			20	50		ppb	
	For 20 years			0.3	0.5		ppm	

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Environmental, mechanical conditions.	
Operating temperature range	See chart below
Storage temperature range	-60°C to +90°C
Humidity	Hermetically sealed
Mechanical Shock	Per MIL-STD-202, 30G half sine pulse, 11ms
Vibration	Per MIL-STD-202, 10G swept sine 10 to 500Hz
Soldering Conditions	Hand solder only – not reflow compatible 260°C 10s (on pins)
Impermeability	Not hermetical. Do NOT wash or immerse into liquid when cleaning!

* No frequency control option – on customer requirement

Ordering Code

OCXO2522C	-	2	6	4	2	1	-	10 MHz
Group		1	2	3	4	5		

For example, OCXO2522C-26421-10MHz denotes the OCXO has the following specifications:

Temperature Range	-10°C to +60°C
Stability Over Temperature	±10ppb
Aging per day / year	1.0ppb / 0.10 ppm
Supply Voltage	3.3V ±10%
Output	HCMOS
Frequency	10MHz

1	**Temperature Range**
Code	Specification
1	0°C..+50°C
2	-10°C..+60°C
3	0°C..+70°C
4	-20°C..+70°C
5	-30°C..+70°C
6	-40°C..+85°C
7	-55°C..+85°C
8	-40°C..+125°C

2	**Stability Over Temperature**		
Code	Specification	Available temperature range code	
		For 10 MHz	For 100 MHz
1	±0.5 ppb	1, 2	-
2	±1.0 ppb	1, 2, 3, 4, 5, 6	-
3	±2.0 ppb	1, 2, 3, 4, 5, 6	-
4	±3.0 ppb	1, 2, 3, 4, 5, 6, 7	1
5	±5.0 ppb	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6
6	±10.0 ppb	1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6, 7
7	±20.0 ppb	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7
8	±50.0 ppb	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7
9	±100.0 ppb	1, 2, 3, 4, 5, 6, 7, 8	1, 2, 3, 4, 5, 6, 7

3	**Aging per day/year, ppb/ppm**	
Code	Specification	
1	0.2/0.02	≤10MHz
2	0.3/0.03	
3	0.5/0.05	≤20MHz
4	1.0/0.10	≤40MHz
5	1.5/0.15	≤50MHz
6	2.0/0.20	≤120MHz
7	3.0/0.30	
8	5.0/0.50	≤150MHz

4	**Supply voltage**
Code	Specification
1	5V ±5%
2	3.3V ±5%
3	12V ±10%

5	**Output**
Code	Specification
1	HCMOS
2	Sine wave + 6 dBm min

*for 10 MHz operational frequency

Disclaimer: Not all option choices available across entire frequency range
Please contact Dynamic Engineers Inc. for further details.