C7 LC' * &+7

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 packaging
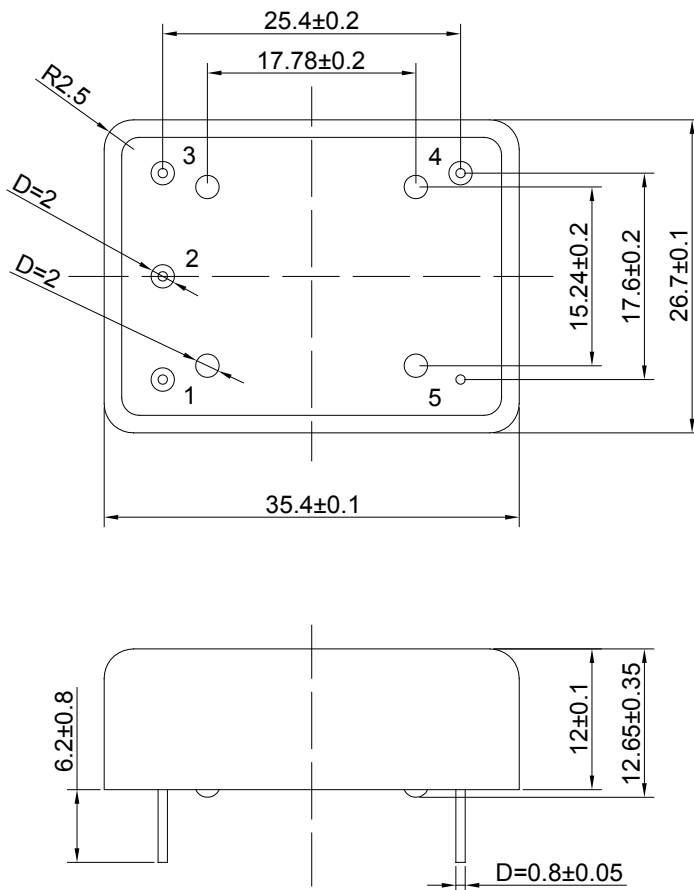Frequency range from 5 MHz to 150 MHz

Typical Applications

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

Description

A new series of low phase-noise OCXO with high temperature stability for optimal performance.
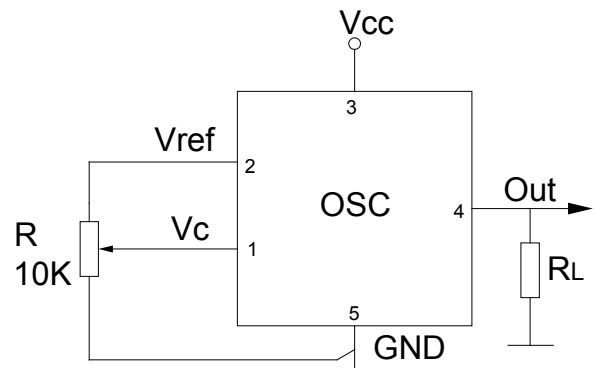
Mechanical Drawing & Pin Connections

Drawing No:MD140079-1

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

Unit : mm
1mm=0.0394

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					

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		3.2	3.5	W	
		Steady state, +25°C		1	1.2	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 / 100 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			ppb	See chart below
	First year		20			ppb	
	For 20 years			0.5		ppm	

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 2000Hz
Soldering Conditions	Hand solder only – not reflow compatible 260°C 10s (on pins)
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage

* No frequency control option – on customer requirement
Ordering Code

OCXO3627C	-	2	6	4	2	1	-	10 MHz
Group		1	2	3	4	5		

For example, OCXO3627C-26421-10MHz denotes the OCXO has the following specifications:

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

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	±H0 ppb		1, 2, 3, 4, 5, 6, 7	1
5	±Í.0 ppb		1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6
6	±F0.0 ppb		1, 2, 3, 4, 5, 6, 7	1, 2, 3, 4, 5, 6, 7
7	±G0.0 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/TTL
2	Sine wave

*for 10 MHz operational frequency
Disclaimer: Not all option choices available across entire frequency range

Please contact Dynamic Engineers Inc. for further details.