



### Features and Benefits

Temperature stability to 10 ppb at -40°C to +125°C  
 Low aging up to ±0.3ppb/day, 30 ppb/year  
 Low noise level up to -170dBc/Hz@100kHz  
 Frequency range from 8 to 30 MHz  
 Allan Variance up to ±5x10<sup>-12</sup>/s

### Typical Applications

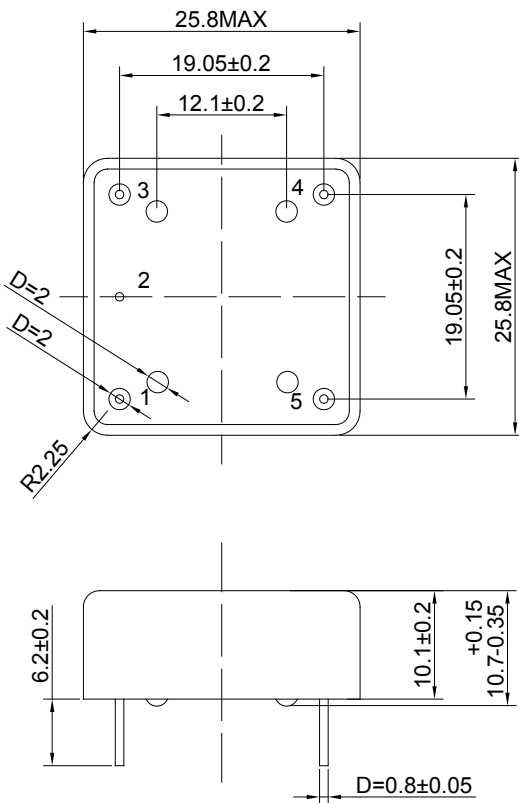
Stratum 3 Clock Systems  
 Microwave Communications  
 Cellular Base Stations  
 Radar reference  
 Instrumentation

### Description

A new series of high-temperature high stability OCXO with low phase noise for rigorous environment.

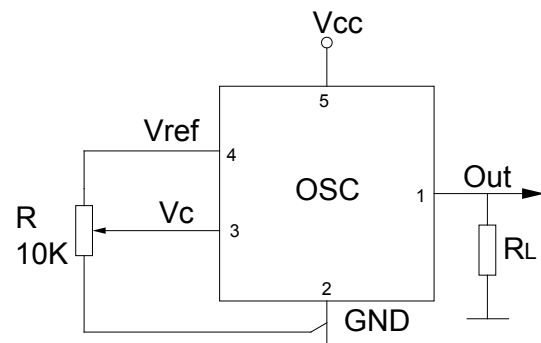
### Mechanical Drawing & Pin Connections

Drawing No:MD140078-1



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

Unit : mm  
 1mm=0.0394inch



Packaging available: 25x25x10.7(12.4, 13.4)mm



Specifications

General Specifications							
Parameter	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max		
Frequency Range	F <sub>0</sub>		8		30	MHz	Fundamental
<b>RF Output</b>							
HCMOS (TTL) option	Load		10		15	kOhm pF	
	H-level voltage	V <sub>H</sub>	3.8			V	
	L-level voltage	V <sub>L</sub>			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 <sub>L</sub>		50		Ohm	
	Harmonics level				-25	dBc	
Sub-harmonics level			None				
<b>Frequency Control*</b>							
Control Voltage Range	V <sub>c</sub>	V <sub>cc</sub> =5V V <sub>cc</sub> =3.3V	0 0		4.2 2.8	V	Positive tuning slope (standard option)
Tuning Range			±0.35	±1.00		ppm	
Reference voltage	V <sub>ref</sub>	V <sub>cc</sub> =5V V <sub>cc</sub> =3.3V	4.1 2.7	4.2 2.8	4.3 2.9	V	
<b>Frequency Stability</b>							
Vs. temperature		-40°C to +125°C, ref 25°C	±10			ppb	See chart below
Vs. supply voltage		Ref V <sub>cc</sub> typ.		±1		ppb	
Vs. acceleration		Worst direction	±0.5		±1	ppb/G	
<b>Power Supply</b>							
Voltage	V <sub>cc</sub>		4.75	5.0	5.25	V	3.3V supply available
Power Consumption		Warm-up state		3.2	3.5	W	
		Steady state, +25°C		1.3	1.5	W	
Warm-up time	t <sub>up</sub>	to Δf/f = 1e-7 at +25°C			180	sec	Ref to frequency after 30 min
SSB Phase Noise		1 Hz	-110	-100		dBc/Hz	For 10 MHz operational frequency
		10 Hz	-135	-125			
		100 Hz	-155	-145			
		1 kHz	-163	-155			
		10 kHz	-170	-168			
		100 kHz	-170	-170			
Allan variance		1s	5			10 <sup>-12</sup>	
Aging	Per day	After 30 days of operation	0.3	0.5		ppb	See chart below
	First year		30	50		ppb	
	For 20 years			0.5		Ppm	



Environmental, mechanical conditions.	
<b>Operating temperature range</b>	See chart below
<b>Storage temperature range</b>	-60°C to +125°C
<b>Humidity</b>	Hermetically sealed
<b>Mechanical Shock</b>	Per MIL-STD-202, 30G half sine pulse, 11ms (500G 1ms – optional)
<b>Vibration</b>	Per MIL-STD-202, 10G swept sine 10 to 2000Hz
<b>Soldering Conditions</b>	Hand solder only – not reflow compatible 260°C 10s (on pins)

\* No frequency control option – on customer requirement

**Ordering Code**

ETOCXO2525C	-	1	3	4	2	1	-	10 MHz
		1	2	3	4	5		

For example, ETOCXO2525C-13421-10MHz denotes the OCXO has the following specifications:

Temperature Range	-40°C to +125°C
Stability Over Temperature	±30ppb
Aging per day / year	1.5ppb / 0.15ppm
Supply Voltage	3.3V ±10%
Output	HCMOS
Frequency	10MHz

1	Temperature Range
Code	Specification
1	-40°C..+125°C

2	Stability Over Temperature	
Code	Specification	Available temperature range code for 10MHz
1	±10ppb	1
2	±20ppb	1
3	±30ppb	1
4	±50ppb	1
5	±100ppb	1

3	Aging per day/year, ppb/ppm
Code	Specification
1	0.3/0.03
2	0.5/0.05
3	1.0/0.10
4	1.5/0.15
5	2.0/0.20
6	3.0/0.30
7	5.0/0.50

4	Supply voltage
Code	Specification
1	+5V ±5%
2	+3.3V ±5%

5	Output
Code	Specification
1	HCMOS/TTL
2	Sine wave

\*for 10 MHz operational frequency

Deviations of the parameters may be possible on Customer's requirements  
 Please contact Dynamic Engineers Inc. for further details.