



## Dynamic Engineers Inc.

2550 Gray Falls Dr., Suite#128, Houston, TX, 77077  
 TEL: 1-281-870-8822 EMAIL: Sales@DynamicEng.com

**OCXO2525L-100MHz-D-V**  
 Sinewave OCXO with Ultra-Low Phase Noise

### Features and Benefits

Ultra-Low phase noise  
 <-165 dBc/Hz @ 1KHz offset  
 <-178 dBc/Hz @ 100KHz offset  
 +11 dBm min output power  
 Sine wave output  
 25.8 x 25.8 x 13.5 mm

### Description

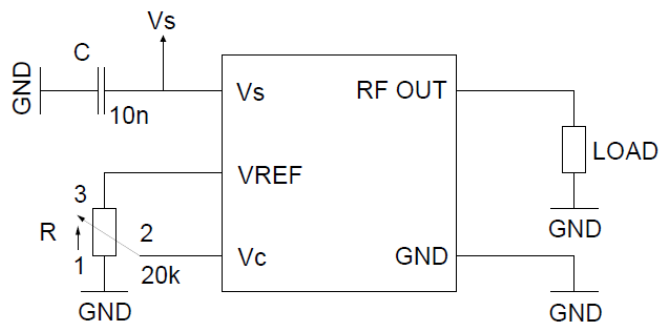
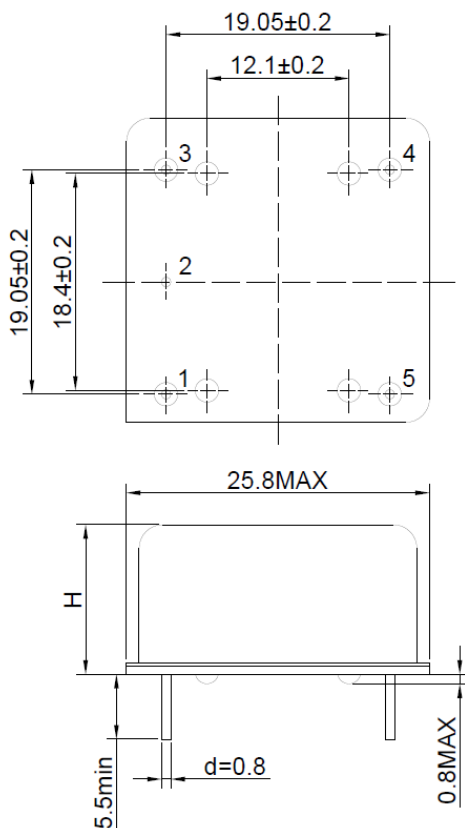
Cutting edge ultra-low noise SC-cut resonator technology utilized in low noise 100 MHz oscillator topology with proprietary impedance matching tuning algorithm.

### Typical Applications

Customized Frequency source for Microwave Communications / Synthesizer Modules

### Mechanical Drawing & Pin Connections

Drawing No: **MD150074-1**



Pin connections

PIN #	Symbol	Function
1	RF OUT	RF Output
2	GND	Ground
3	Vc	Control Voltage(EFC)
4	VREF	Reference Voltage
5	Vs	Supply Voltage

Unit = mm  
 1mm=0.0394inch



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## Specifications

Parameter	Condition	Value			Unit
		Min.	Typ.	Max.	
Frequency Range		80		125	MHz
Standard Frequencies		100.000			MHz
<b>RF Output</b>					
Output Waveform		Sine wave			
Load $R_L$	$\pm 5\%$		50		$\Omega$
Output Level (Note 2)		+11			dBm
Harmonics				-30	dBc
Spurious				-90	dBc
Warm-up time	$\Delta f_{final}/f_0 < \pm 0.1 \text{ ppm}$		3	5	min
G-Sensitivity	Per axis			1.0	ppb/g
<b>Voltage and Power Consumption</b>					
Reference Voltage VREF Output (Note 3)			10.0		V
Supply Voltage $V_S$ (Note 3)		11.4	12.0	12.6	V
Current Consumption	Warm-up (Note 4)			350	mA
	Steady-state @ +25°C (Note 4)			150	mA
<b>Frequency Adjustment Range</b>					
Electronic Frequency Control (EFC)		$\pm 1$	$\pm 2$		ppm
EFC Voltage $V_C$		0	VREF/2	VREF	V
EFC Slope ( $\Delta f/\Delta V_C$ )		Positive			
EFC Input Impedance		100			K $\Omega$
<b>Frequency Stability</b>					
Initial Tolerance @ +25°C	$V_C @ VREF / 2$			$\pm 300$	ppb
Vs. Operating Temperature Range	Steady state	Please refer to the options tables below			
Vs. Supply Voltage Variations (pushing)	$V_S \pm 5\%$			$\pm 10$	ppb
Vs. Load Change (pulling)	$R_L \pm 5\%$			$\pm 5$	ppb
Long Term Aging Per Day	After 30days operation		$\pm 1$	$\pm 2$	ppb
Long Term Aging First Year	After 30days operation		$\pm 100$	$\pm 200$	ppb
<b>Phase Noise</b>					
1KHz		$< -165$			dBc/Hz
100KHz		$< -178$			
<b>Size, Weight and Packaging</b>					
Size	25.8 x 25.8 x 13.5mm Max. IEC 60679-3 CO43				
Weight	20g				
Packaging	Palette				

### Notes:

1. Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated
2. Other output level on request
3. Other supply and reference voltage available on request
4. Maybe higher for wide operating temperature range



**Absolute Maximum Ratings**

Parameter	Condition	Value		Unit
		Min.	Max.	
Supply Voltage $V_S$	$V_S$ to GND	-0.5	$V_S + 10\%$	V
Control Voltage $V_C$	$V_C$ to GND	-0.5	15	V
Storage Temperature		-55	+125	°C

**Ordering Options Codes**

Stability vs. Temperature

Code	Stability in ppb
1	±5
2	±10
3	±25
4	±50
5	±100
6	±200

Code	°C
1	0
2	-10
3	-20
4	-30
5	-40
6	-55

Code	°C
1	+50
2	+60
3	+70
4	+75
5	+80
6	+85

Frequency Stability Code	Temperature Code and Range °C							
	Code	11	22	33	43	54	56	66
	Temperature	0 ~ +50	-10 ~ +60	-20 ~ +70	-30 ~ +70	-40 ~ +75	-40 ~ +85	-55 ~ +85
1		Available On Request	Available On Request	Available On Request	Available On Request	Not Available	Not Available	Not Available
2		Available	Available	Available	Available On Request	Available On Request	Not Available	Not Available
3		Available	Available	Available	Available	Available	Available On Request	Available On Request
4		Available	Available	Available	Available	Available	Available	Available
5		Available	Available	Available	Available	Available	Available	Available
6		Available	Available	Available	Available	Available	Available	Available

Ordering Code

Model	Stability	Temperature
OCXO2525L-100MHz	Table 1	Table 2 & 3

Example

OCXO2525L-100MHz-D-V-4-33 denotes

OCXO2525L in 100MHz with ±50ppb stability and temperature range of -20 ~ +70°C



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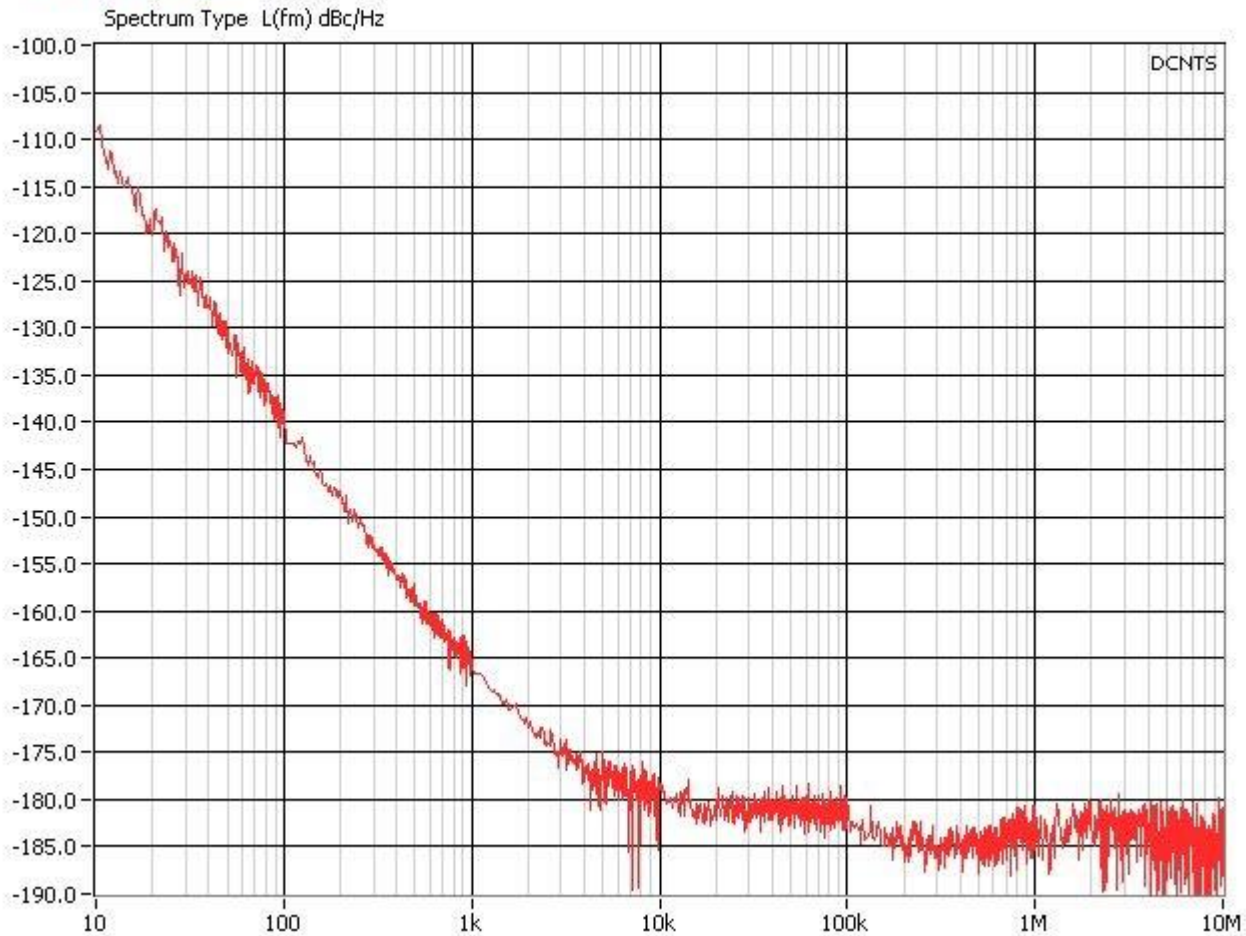
## Testing

Parameter	Procedure		Condition
Electrostatic Discharge (ESD)			
THD Devices	IEC60749-26	HBM	2000V
SMD Devices	IEC60749-27	MM	200V
Washable	Yes		
RoHS-Compliant	Yes		

## Performance Graph section

**NOISE XT**

Phase Noise Plot



*Dynamic Engineers reserves the right to make changes to the company datasheet(s) along with other information contained inside; such as data tables and graphs without notification to potential customers who may have earlier revisions in their possession.*



### Environmental Conditions

Test	IEC 60068 Part	OEC60679-1 Clause	MIL-STD-202G Method	MIL-STD-810F Method	Mil-PRF-55310D Clause	Test Conditions (IEC)
Sealing Tests (if applicable)	2-17	5.6.2	112E		3.6.1.2	Gross leak: Test Qc Fine leak: Test Qk
Solderability Resistance to Soldering Heat	2-20 2-58	5.6.3	208H 210F		3.6.52 3.6.48	Test Ta Method 1 Test Td <sub>1</sub> Method 2 Test Td <sub>2</sub> Method 2
Shock	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 3 x per axes 100g, 6ms half-sine pulse
Vibration, Sinusoidal*	2-6	5.6.7.1	201A 204D	516.4-4	3.6.38.1 3.6.38.2	Test F <sub>C</sub> , 30 min per axes 10 Hz – 55 Hz 0,75mm; 55Hz – 2 kHz, 10g
Vibration, Random	2-64	5.6.7.3	214A	514.5	3.6.38.3 3.6.38.4	Test Fdb
Endurance Tests - Aging - Extended aging		5.7.1 5.7.2	108A		4.8.35	30 days @ 85°C, OCXO @ 25°C 1000h, 2000h, 8000h @85°C

Other environment conditions available on request

Datasheet is for reference purpose only and maybe changed without notice.