Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
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OCXO6060L-xMHz-yMHz-zMHz
Ultra-Low Phase Noise OCXO

Features and Benefits

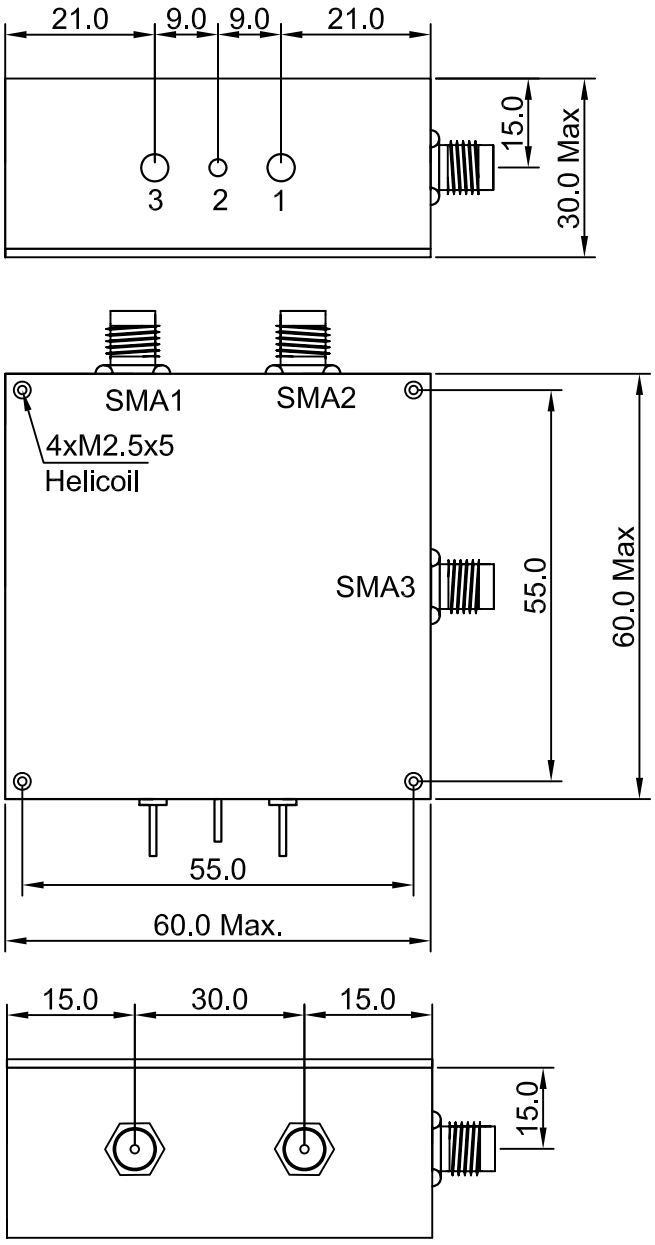
Internal-Ultra Low Phase Noise Reference OCXO
Customizable frequency source
1 direct OCXO output and 2 user definable multiplied outputs
Phase coherent outputs

Typical Applications

Mobile Radio
Communication Equipment

Mechanical Drawing & Pin Connections

Drawing No:MD160083-1



Pin Connection:

Pin#	Symbol	Function
1	Vs	Supply voltage
2	GND	Ground
3	Vc	Control voltage(EFC)
SMA1	RF OUT	RF OUT RF2
SMA2	RF OUT	RF OUT RF3*
SMA3	RF OUT	RF OUT RF1

*Output RF3 blind screwed when not used

Unit : mm
1mm=0.039inch

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Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range RF1	F_0	ULN OCXO	50		160	MHz	
Frequency Range RF2		Multiplied RF1	600		1600		Must be integer multiples of RF1
Frequency Range RF3		Frequency = 2x RF2	1200		3200		
RF1 Output							
Output Wave Form			Sine wave				
Load	R_L	±5%	50			Ω	
Output Level			+10			dBm	
Harmonics				-35	-30	dBc	
Spurious					-90	dBc	
Phase Noise @ 100 MHz (Please consult DEI for phase noise of other frequencies)		@10 Hz			-100	dBc/Hz	
		@ 100 Hz			-130		
		@ 1 kHz			-160		
		@ 10 kHz			-170		
		@ ≥ 100 kHz			-175		
Short-Term Stability (Allan Deviation)		@ t = 1 sec		$5x10^{-12}$	$1x10^{-11}$		
RF2 Output							
Output Wave Form			Sine Wave				
Load	R_L	±5%	50			Ω	
Output Level			+10	+13		dBm	
Harmonics				-50	-40	dBc	
Sub-harmonics (multiples of RF1)				-50	-45	dBc	
Spurious					-90	dBc	
Phase Noise			Consult DEI				
RF3 Output (Phase coherent to RF1 (OCXO)							
Output Wave Form			Sine Wave				
Load			50			Ω	
Output Level			0	+4		dBm	
Harmonics				-50	-40	dBc	
Sub-harmonics (multiples of RF1)				45	-40	dBc	
Spurious					-90	dBc	
Phase Noise			Consult DEI				
Power Supply							
Voltage	V_S		11.4	12.0	12.6	V	
Current Consumption Warm-up Steady State		@+25°C			 600 350	mA	
Warm-up Time @ +25°C		$\Delta f_{final}/f_0$ <±0.1ppm		3	5	min	
Frequency Adjustment Range							
Electronic Frequency Control (EFC)			±1			ppm	
EFC Voltage	V_C		0		5	V	Other tuning voltages available
EFC Slope ($\Delta f/\Delta V_C$)			positive				
EFC Input Impedance			100			kΩ	

Frequency Stability							
VS. Tolerance @+25°C		@ V_C=2.5V			±300	ppb	
VS. over operating temperature range		Steady state			±50	ppb	
VS ±5% change in supply voltage	V_S				±10	ppb	Pushing
Long Term Aging Per day Per year		After 30 days of operation		 ±1 ±100	 ±2 ±200	ppb	

Environmental Conditions	
Parameter	**Reference Std.**
Operating temperature range	-10°C to +60°C
Storage temperature	-55°C to +105°C
Enclosure (L x W x H)	60 x 60 x 30 max. (mm)
Weight	200 g (max.)
Packing	Palette

Note: Terminology and test conditions are according to IEC60679-1 and MIL-PRF-55310, unless otherwise stated

Absolute Maximum Ratings

Parameter	Sym.	Condition	Min.	Max.	Unit
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

Ordering Code

Model	Ouput Frequency RF1 [MHz]	Ouput Frequency RF2 [MHz]	Ouput Frequency RF3* [MHz]
PLOCXO6060L	100	1600	3200

Example: PLOCXO6060L-100-1600-3200-100.000MHz. *Output frequency RF3 is optional

Pin Connections

Pin #	Symbol	Function
1	V_S	Supply Voltage
2	GND	Ground
3	V_C	Control Voltage (EFC)
SMA1	RF OUT	RF Output RF2
SMA2	RF OUT	RF Output RF3*
SMA3	RF OUT	RF Output RF1

- Output RF3 blind screwed when not used

Handling and Test

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

Environmental Conditions

Test	IEC 60068 Part	IEC 60679-1 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, Method 2 Test Td, Method 2
Shock*	2-27	5.6.8	213B	516.4	3.6.40	Test Ea, 2 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 FC, 30 min per axes
Vibraton 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 environmental conditions information available upon request.