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

DOCXO3627S-10MHz-A-V
Double Oven Controlled Crystal Oscillator

Features and Benefits

Less than +/- 0.1 ppb per day aging
Less than +/- 20 ppb per year aging
Less than +/- 0.2 ppb over -40°C to +85°C
Industry Standard Package
Less than 7.0E-12 root-allan variance for tau = 1 second

Typical Applications

Ideally suited for customer specified hold-over conditions over 24 hours over any +/- 15°C change in temperature.

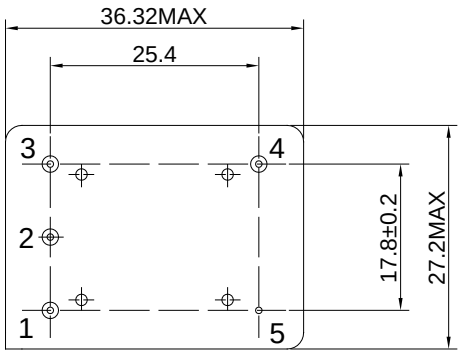
Description

This device is a traditional double oven design architecture utilizing ultra-low aging, proprietary high temperature processes to deliver a highly stable frequency reference source.

Mechanical Drawing & Pin Connections

Drawing No:MD15083-1

Bottom View

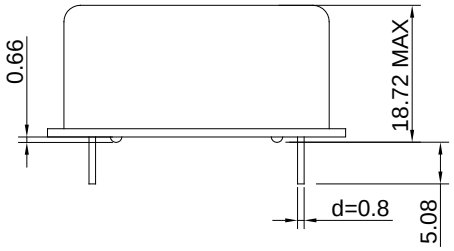


Pin Connections:

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

Unit : mm

Side View



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Specifications

OCXO Specification	Sym	Condition	Value Min.	Value Typ.	Value Max.	Unit	Note
Frequency Range	F_0			10.000000		MHz	
RF Output							
Output Waveform				HCMOS			
Load				15		pF	
Output Level High "1"			+4.4			V	
Output Level Low "0"					+0.3	V	
Harmonics					-30	dBc	
Duty Cycle		@+2.5V	45	50	55	%	
Spurious					-60	dBc	
Power Supply							
Voltage	Vcc		4.75	5.0	5.25	V	
Power Consumption(Steady State)		@+25°C			2.5	W	
Current Consumption(Warm-up)	$I_{Warm-up}$				1.75	A	
Reference Voltage							
Reference Voltage Output (Pin 2)			+2.66	+2.8	+2.94	V	
Load			9			Kohm	
Stability of Ref. Voltage over temp.			-0.0005		+0.0005	V	
Frequency Control*							
Electronic Frequency Control(EFC)		VCO @Min. voltage	-0.8		-0.35	ppm	Ref. to frequency at nominal center voltage
		VCO @Max. voltage	+0.35		+0.8	ppm	
EFC Voltage	Vc		0	+1.4	+2.8	V	
Linearity			-10		+10	%	
EFC Input Impedance			50			Kohm	
EFC Slope	△f/Vc			Positive			
Frequency Stability							
Initial Tolerance @+25°C		After turn on power 30+/-5 minutes			+/-0.1	ppm	VCO input at center voltage +/-0.001V
Vs. Operating Temperature Range		From -40°C to +85°C Steady state			+/-0.2	ppb	
Less than +/- 0.3 ppb total drift over 24 hours over ANY +/- 15°C change in temperature as a function of temperature and aging with a minimum of seven days continuous operation in the end application equipment. This assumes customer holds power supply constant.							
Vs. Supply Voltage Change					+/-0.2	ppb	
Warm-up		In 5 minutes @+25+/-1°C	-20		+20	ppb	Ref. to 1hour
Short Term Stability		Allan Deviation		Tau = 1 sec	0.007	ppb/s	
				Tau = 10 sec	0.01	ppb/10s	
Aging – Per Day (After 30 Days Operation)		Less than this rate at time of shipment			+/-0.1	ppb	
Aging – Per Year (After 30 Days Operation)		Curve-fit less than this rate at time of shipment			+/-20	ppb	
Phase Noise							
Phase Noise		@1Hz			-90	dBc/Hz	
		@10Hz			-120	dBc/Hz	
		@100Hz			-140	dBc/Hz	
		@1KHz			-150	dBc/Hz	
		@10KHz			-155	dBc/Hz	
		@100KHz			-160	dBc/Hz	
Environmental							
Operating Temperature Range	-40°C to +85°C						
Vibration (non-operating)	MIL-STD-202, Method 201 0.06" Total p-p, 10 to 55Hz						
Shock (non-operating)	MIL-STD-202, Method 213 Test Condition J 30g, 11ms, half -sine						

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Phase Noise and Short-Term Stability Test Data