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.

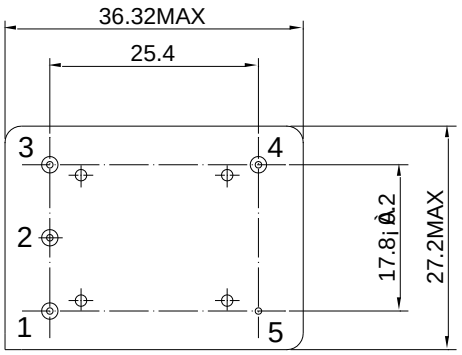
Description

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

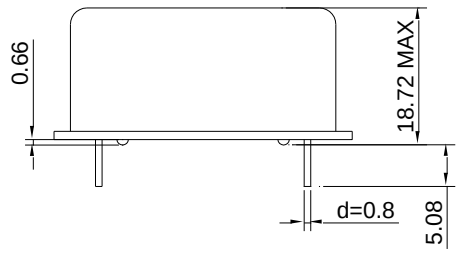


Pin Connections:

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			Unit	Note
				Min.	Typ.	Max.		
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	
	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						

Phase Noise and Short-Term Stability Test Data