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

DOCXO3627BM-10MHz-622
Double Oven Controlled Crystal Oscillator

Features and Benefits

Frequency range: 10MHz
Supply voltage: 5.0V
Steady current: 2.5W Max.
Output waveform: HCMOS
Frequency stability vs. operating temperature: ±0.5ppb
Aging: ±20ppb per year
Phase noise@100KHz: -160dBc/Hz
Operating temperature: -40°C to +85°C
Size: 36x27x18mm

Typical Applications

SATCOM System
Cellular Base Stations
Radar Applications

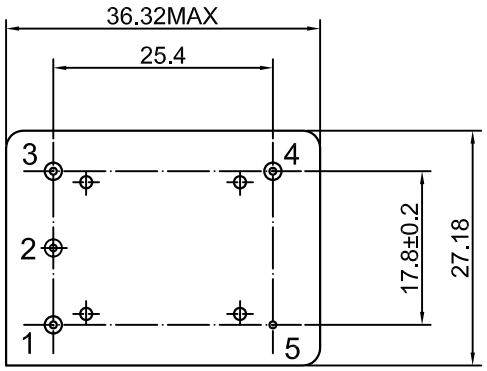
Description

DOCXO3627BM-10MHz-622 is designed for applications where exceptional frequency stability and timing is required. It has both excellent temperature performance and short-term stability. These characteristics make it an excellent choice for timing applications requiring holdover of < 10 us for 24 hours.

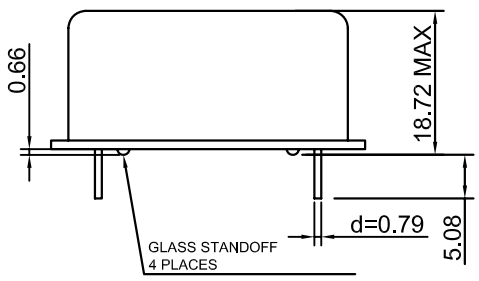
Mechanical Drawing & Pin Connections

Drawing No: MD150083-5

Bottom View



Side View



Pin Connections:

Pin	Function
1	Control Voltage or N.C.
2	Reference Voltage or Oven Monitor or N.C.
3	Supply Voltage
4	RF Output
5	Ground

Unit in mm
1mm = 0.0394 inches

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Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F_{nom}			10		MHz	
RF Output							
Signal Waveform				HCMOS			
Load	R_L			15pf			
H-Level Voltage	V_H		4.4			V	
L- Level Voltage	V_L				0.3	V	
Duty Cycle		@+2.5V	45	50	55	%	
Spurious					-60	dBc	
Power Supply							
Reference Voltage			2.716	2.8	2.884	V	
Reference Voltage Load			9			kohm	
Reference Voltage Temp Stability			-0.5		+0.5	mV	
Supply Voltage	V_S		4.75	5.0	5.25	V	
Power Consumption		Steady state @+25°C			2.5	W	power
		Warm-up@ turn on			1.75	A	current
Frequency Adjustment Range							
Electronic Frequency Control (EFC)		Vco@Min Voltage	-0.25		-0.15	ppm	Ref to freq at nominal center voltage
		Vco@Max Voltage	+0.15		+0.25	ppm	
EFC voltage	V_c		0		2.8	V	
Center Voltage		When not connected,Vco input is internally held at this voltage		1.4		V	
Linearity			-10		+10	%	
Input Impedance			50			kohm	
EFC Slope				positive			
Frequency Stability							
Versus Operating Temperature Range		-40°C to +85°C			±0.5	ppb	
Initial Tolerance @+25°C after turn on 30±5 min		≤ 90 days following date code; VCO Input at Center Voltage ±0.001V	-0.1		+0.1	ppm	
Versus supply voltage	V_S	±5%change	-0.1		+0.1	ppb	
Warm-up		In 5 min@+25±1°C Refer to 1 hour	-20		+20	ppb	
Retrace		After 60 minutes from turn on, following 24 hours minimum on time, and 24 hours maximum off time	-5		+5	ppb	At constant temperature and voltage. Referenced to frequency at off time
Aging Per Day		After 30days			±0.1	ppb	
Aging 1st Year					±20	ppb	
Aging 10st Year					±100	ppb	
Allan Variance		1s			0.005	ppb	
		10s			0.01	ppb	
SSB Phase noise		1Hz			-90	dBc	
		10Hz			-120	dBc	
		100Hz			-135	dBc	
		1kHz			-145	dBc	
		10kHz			-155	dBc	
		100kHz			-160	dBc	

Environmental,Mechanical Conditions	
Storage temperature range	-40°C to +85°C
Shock (non-operating)	Per MIL-STD-202, Method 213, test condition J; 30G, half sine,11ms
Vibration (non-operating)	Per MIL-STD-202, Method 201;0.06'' total p-p,10 to 55Hz