



### Features and Benefits

Frequency range: 10MHz  
Supply voltage: 5.0V  
Steady current: 2.5W Max.  
Output waveform: HCMOS  
Frequency stability vs. operating temperature:  $\pm 0.1$ ppb  
Aging:  $\pm 10$ ppb 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

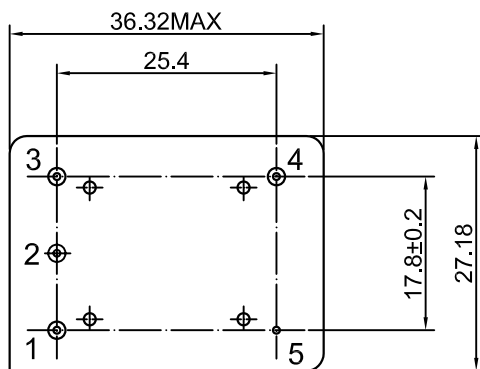
### Description

DOCXO3627BM-10MHz-221 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.

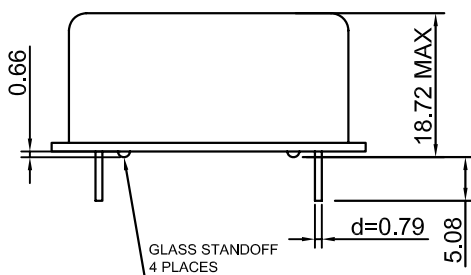
### Mechanical Drawing & Pin Connections

**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



**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F <sub>nom</sub>			10		MHz	
<b>RF Output</b>							
Signal Waveform			HCMOS				
Load	R <sub>L</sub>		15pf				
H-Level Voltage	V <sub>H</sub>		4.4			V	
L- Level Voltage	V <sub>L</sub>				0.3	V	
Duty Cycle		@+2.5V	45	50	55	%	
Spurious					-60	dBc	
<b>Power Supply</b>							
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 <sub>s</sub>		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
<b>Frequency Adjustment Range</b>							
Electronic Frequency Control (EFC)		V <sub>co</sub> @Min Voltage	-0.25		-0.15	ppm	Ref to freq at nominal center voltage
		V <sub>co</sub> @Max Voltage	+0.15		+0.25	ppm	
EFC voltage	V <sub>c</sub>		0		2.8	V	
Center Voltage		When not connected, V <sub>co</sub> input is internally held at this voltage		1.4		V	
Linearity			-10		+10	%	
Input Impedance			50			kohm	
EFC Slope			positive				
<b>Frequency Stability</b>							
Versus Operating Temperature Range		-40°C to +85°C			±0.1	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 <sub>s</sub>	±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			±0.05	ppb	
Aging 1 <sup>st</sup> Year					±10	ppb	
Aging 10 <sup>st</sup> Year					±50	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	



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**DOCXO3627BM-10MHz-221**

Double Oven Controlled Crystal Oscillator

## 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