



### Features and Benefits

Frequency range: 10MHz  
Supply voltage: 5.0V  
Steady current: 2.5W Max.  
Output waveform: HCMOS  
Frequency stability vs. operating temperature:  $\pm 0.5$ ppb  
Aging:  $\pm 40$ 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

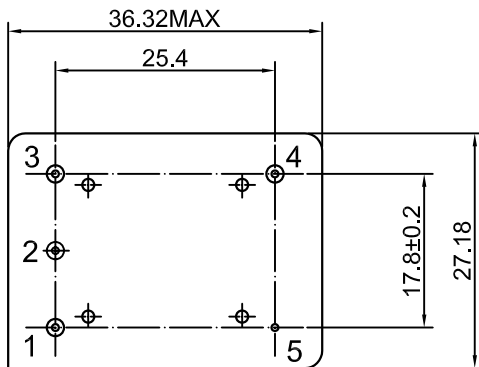
### Description

DOCXO3627BM-10MHz-623 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

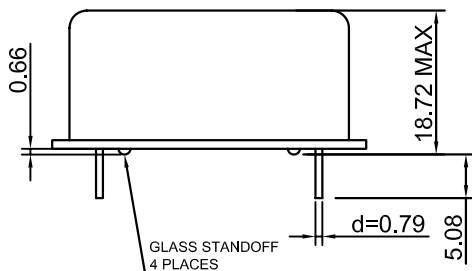
### Mechanical Drawing & Pin Connections

**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			±0.5	ppb	
Initial Tolerance @+25°C after turn on power 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			±0.2	ppb	
Aging 1 <sup>st</sup> Year					±40	ppb	
Aging 10 <sup>st</sup> Year					±200	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	



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**DOCXO3627BM-10MHz-623**

Double Oven Controlled Crystal Oscillator

		100kHz			-160	dBc	
<b>Environmental, Mechanical Conditions</b>							
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						