



### Features and Benefits

Frequency range: 30.72MHz  
Supply voltage: 3.3V  
Steady state: 0.4W Max  
Output waveform: HCMOS  
Frequency stability vs. operating temperature: ±20ppb  
Aging: ±0.6ppm per year  
Phase noise@10KHz: -153dBc/Hz  
Operating temperature: -40°C to +85°C  
Size:9.7x7.5x4.1mm

### Typical Applications

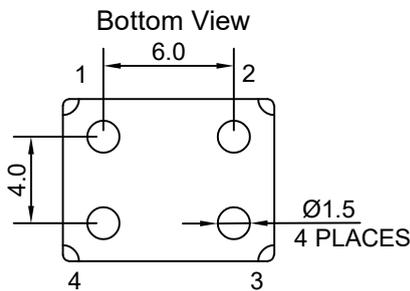
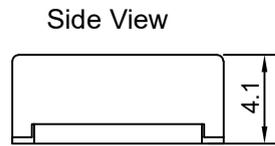
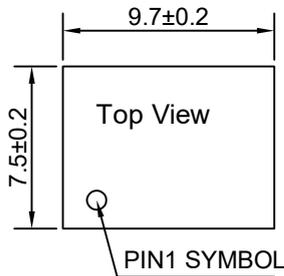
Small Cell, Portable Telecommunication Device  
Test and Instrumentation  
Synthesizer, Digital switch, Reference Timing Circuit  
Packet Timing Protocol ATCOM System

### Description

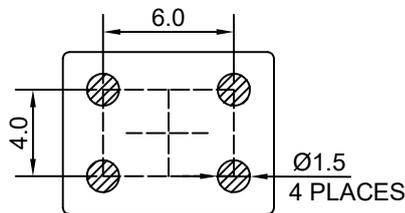
OCXO9700BM-30.72MHz-A-V is designed for applications where exceptional frequency stability and timing is required. It has both excellent temperature performance and short-term stability. These characteristics make it an excellent choice for timing applications.

### Mechanical Drawing & Pin Connections

Drawing No: MD180010-1



#### Recommended Solder PAD Layout



#### Pin Connections

Pin	Function
1	Control Voltage/N.C.
2	Ground
3	RF Output
4	Supply Voltage

Unit in mm  
1mm = 0.0394 inches

Note1: If the specification does not specify parameters for PIN1, then PIN1 must remain unconnected.

Note2: Copper in this area should be kept to a minimum to reduce heat loss from OCXO.

Note3: Bottom side reflow is forbidden unless specified in specification.



**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F <sub>nom</sub>			30.720000		MHz	
<b>RF Output</b>							
Waveform			Rectangular				
Level			HCMOS				
High Level			+3.0			V	
Low Level					+0.3	V	
Load	R <sub>L</sub>			15		pF	
Duty Cycle		@+1.65V	45	50	55	%	
Rise/Fall time		10% to 90%			4	ns	
<b>Electrical Frequency Adjustment (PIN = "VCO INPUT")</b>							
Range		Referenced to frequency at nominal Center Voltage	±3.4		±5	ppm	
Control Voltage			0.25		+2.25	V	
Slope				+4.2		ppm/V	positive
Center Voltage				+1.25		V	
Linearity					+2	%	
Input Impedance			80			Kohm	
<b>Power Supply</b>							
Supply Voltage	V <sub>cc</sub>		3.135	3.3	3.465	V	
Steady state		+25°C			0.4	W	
Current		@ turn on			350	mA	
<b>Frequency Stability</b>							
Total		10 years from nominal frequency after 30 minutes continuous operation for aging, reflow, temperature, voltage, load, Initial set frequency.	-3.4		+3.4	ppm	
Versus Operating Temperature Range		-40°C to +85°C reference to (F <sub>max</sub> +F <sub>min</sub> )/2	-20		+20	ppb	
Initial Frequency Accuracy		@ +25 ±1°C after turning on power 15 ± 1 minutes 90 days following date code VCO Input voltage @ Center Voltage ±0.001V	-0.2		+0.2	ppm	
Accuracy after reflow		After 1 hour recovery @+25°C	-0.4		+0.4	ppm	
Versus supply voltage		±2% change		±5		ppb	
Versus Load		±10% change		±5		ppb	
Aging		after 30 days					
Aging Per Day			-3	±2	+3	ppb	
Aging 1 <sup>st</sup> Year			-0.9	±0.6	+0.9	ppm	
Aging 10 Years			-2.7	±1.8	+2.7	ppm	
Warm-up		In 3 minutes @25±1°C	-0.1		±0.1	ppm	Reference to 1 hour
Phase Noise		1Hz		-55		dBc/Hz	
		10Hz		-95		dBc/Hz	
		100Hz		-122		dBc/Hz	
		1kHz		-145		dBc/Hz	
		10kHz		-153		dBc/Hz	
		100kHz		-155		dBc/Hz	
		1MHz		-157		dBc/Hz	
<b>Environmental, Mechanical Conditions</b>							
Operating temperature range	-40°C to +85°C						
Storage temperature range	-55°C to +125°C						
Humidity	MIL-STD-202, Method 103, Test Condition B. 95% RH @ +40°C, non-condensing, 96 hours						
Vibration (non-operating)	MIL-STD-202, Method 201. 0.06" Total p-p, 10 to 55 Hz						
Shock (non-operating)	MIL-STD-202, Method 213, Test Condition J. 30g, 11ms, half-sine						
Cleaning	Aqueous cleaning is not allowed.						
Re-flow	Bottom side assembly is not allowed.						