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

OCXO3322AW02
Low Power and High Frequency OCXO

Features and Benefits

Frequency range: 30MHz – 300MHz
Supply voltage: 3.3V/5.0V
Steady power consumption: 230mW Typ.
Output waveform: HCMOS/Sine
Frequency stability vs. operating temperature: ±10ppb (optional)
Aging: ±0.1ppb/day (optional)
Operating temperature: -40°C to +85°C
Size: 21.6x15.3x10.5mm

Typical Applications

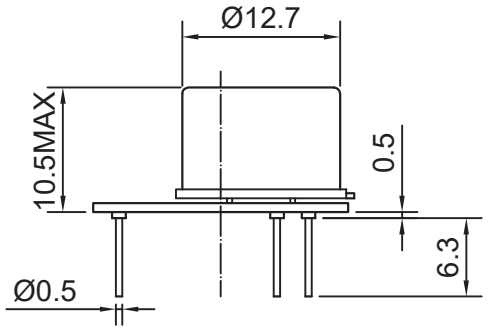
Portable Wireless Communications
Mobile Test Equipment
Beacons and Rescue Systems
Battery Powered Applications

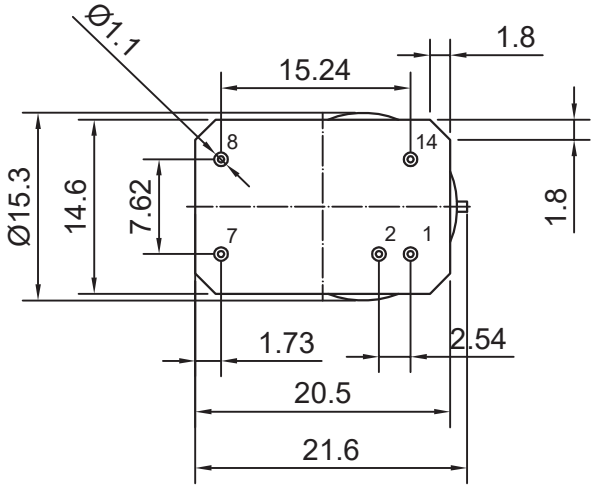
Description

The OCXO3322AW02 is the low power, high frequency, and shock resistant OCXO. The frequency can up to 300MHz and the stability can less than ±10PPB from -40°C to +85°C. It can be widely used in the battery powered communication devices.

Mechanical Drawing & Pin Connections

Drawing No: MD220025-1





Pin	Signal
1	Control voltage
2	Reference voltage
7	GND
8	Output
14	Supply voltage

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_0		30		300	MHz	
Initial Tolerance		$(f-f_0)/f_0$	+25°C, V_C=0.5*V_{ref}		±0.1		ppm	
RF Output								
Sine-wave	Level	L	V_{CC}=5V V_{CC}=3.3V	+7 +4			dBm	
	Load	R_L			50		Ohm	
	Harmonics Level					-25	dBc	
	Sub-harmonics level					-40	dBc	
HCMOS (TTL)	H-Level Voltage	V_H	Vcc=5V Vcc=3.3V	3.7 2.4			V	
	L-Level Voltage	V_L				0.4	V	
	Load			10		 5	Kohm pF	100MHz
	Duty Cycle			45		55	%	
	Rise/Fall Time					3	ns	100MHz
Power Supply								
Voltage		V_{CC}		4.75 3.15	5.0 3.3	5.25 3.45	V	
Power Consumption			Warm-up			1200	mW	100MHz, -40°C to +85°C
			Steady state, +25°C		230		mW	
Warm-up Time:		T_{up}	At+25° C to Δf/f=1e-8 At+25° C to Δf/f=1e-7		120 60		s	ref. frequency after 15 min operation.
Frequency Control								
Control Voltage Range		V_C	V_{CC}=5V Vcc=3.3V	0 0		4.2 2.8	V	
Tuning Range			Compliance with 10 years of aging	±0.3	±1.0		ppm	Positive slope
Reference Voltage Output		V_{ref}	V_{CC}=5V Vcc=3.3V	4.1 2.7	4.2 2.8	4.3 2.9	V	
Frequency Stability								
Versus Temperature			ref 25°C	±10.0			ppb	See ordering code
Versus Supply Voltage			Ref V_{CC} typ.		±5.0		ppb	
G-Sensitivity			Worst direction, 0-1KHz vibration BW	±0.2	±1.0		ppb/G	
Retrace			24h work after 24h off			±10	ppb	100MHz
Aging	Per day		After 30 days of operation	±0.1			ppb	See ordering code
	First Year			±0.015			ppm	
SSB Phase Noise			@10Hz	-105		-90	dBc/Hz	100MHz V_{CC}=5V
			@100Hz	-125		-115		
			@1KHz	-145		-140		
			@10KHz	-158		-150		
			@100KHz	-158		-150		
Allan Variance			1s	10		50	e-12	100MHz

Environmental Conditions	
Operating temperature range	-40°C to +85°C (See ordering code)
Storage temperature range	-60°C to +85 °C
Power Voltage	-0.5V to V_{CC} +20%
Control Voltage	-0.5V to +6V
Airflow Velocity	0.5m/s max.
Humidity	Non-condensing 95%
Mechanical Shock	Per MIL-STD-202, 500G half sine pulse, 1ms
Vibration	Per MIL-STD-202, 10G swept sine 0 to 2000 Hz
Soldering Conditions	Hand solder only – not reflow compatible 260°C 10s (on pins)
Washing Conditions	Washing with water or alcohol based detergent allowed only with final enough drying stage

Ordering Information

OCXO3322AW02	-	xxMHz	-	01	02	03	04	05	06
Group				Code					

For example, OCXO33122AW02-100MHz-25511 denotes the OCXO has the following specifications:

Frequency	100MHz
Temperature Range	-10°C to +60°C
Stability Over Temperature	±50ppb
Aging per day / year	1ppb / 0.1ppm
Supply Voltage	3.3V ±10%
Output	HCMOS

01	Temperature Range
Code	Specification
1	0°C to +50°C
2	-10°C to +60°C
3	0°C to +70°C
4	-20°C to +70°C
5	-30°C to +70°C
6	-40°C to +85°C
7	-55°C to +85°C
8	-60°C to +85°C

02	Stability Over Temperature		
Code	Specification	Available temperature range code	
		100MHz 5V	300MHz 5V
1	±5.0 ppb	1 to 2	-
2	±10 ppb	1 to 6	1
3	±20 ppb	1 to 7	1 to 5
4	±30 ppb	1 to 7	1 to 6
5	±50 ppb	1 to 8	1 to 7
6	±100 ppb	1 to 8	1 to 8

03	Aging per day/year, ppb/ppm	
Code	Specification	
1	0.1/0.015*	30MHz to 150MHz
2	0.2/0.02	
3	0.3/0.03	
4	0.5/0.05	
5	1/0.1	
6	1.5/0.15	
7	2/0.2	150MHz to 300MHz
8	3/0.3	
9	5/0.5	

04	Supply Voltage
Code	Specification
1	3.3V±5%
2	5.0V±5%

05	RF Output
Code	Specification
1	HCMOS
2	Sinewave

*Only for temperature 1 to 5