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

DOCXO2020AW-100MHz-D-V
High Stability 100MHz OCXO

Features and Benefits

Frequency range: 100MHz
Supply voltage: 3.3V
Steady current: 360mA Max.
Output waveform: HCMOS
Frequency stability vs. operating temperature: ±0.3ppb
Aging: ±0.05ppm per year
Phase noise@100KHz: -150dBc/Hz
Operating temperature: -40°C to +80°C
Size: 20.2x20.2x13.8mm

Typical Applications

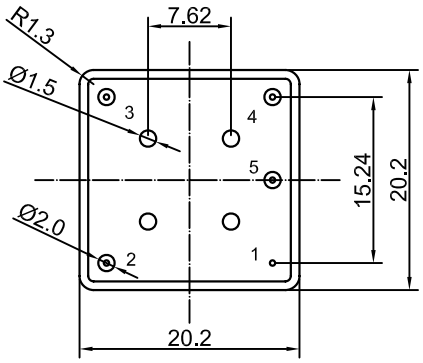
GPS Disciplined Mobile Frequency Standards
Portable Instrumentation
Mobile Communication Systems
Battery Supply Beacons

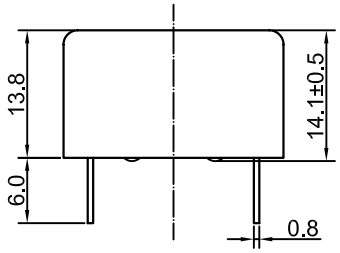
Description

DOCXO2020AW-100MHz-D-V offers high frequency stability, low long-term aging and low phase noise, all in a compact package to suit the different communication needs.

Mechanical Drawing & Pin Connections

Drawing No: MD140069-9





Pin Connections

Pin	Signal
1	GND
2	RF Out
3	+V Supply
4	Electrical tuning
5	Reference 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			100		MHz	
RF Output							
Signal Waveform				HCMOS			
High-Voltage			2.4			V	
Low-Voltage					0.4	V	
Load	R_L		10			kOhm	
	C_L				5	pF	
Rise/Fall time		10,90%			5	ns	
Duty Cycle			45	50	55	%	
Sub-Harmonic Level		$f_{SH}=f_0\pm(n*f_0/5)$ N=1,2,3…			-35	dBc	
Power Supply							
Supply Voltage	V_{cc}		3.15	3.3	3.45	V	
Warm-up Time	T_{up}	At +25°C to Δ f/f=1e-7			180	sec	Ref at 15min
Power Consumption		Steady state, +25°C			360	mA	Vcc=3.3V
		Warm-up	900		1100	mA	Vcc=3.3V
Frequency Adjustment Range							
Electronic Frequency Control (EFC)	$(f_L-f)/f$	Vc=0 V			-0.4	ppm	+
	(f-f)/f	Vc=Vc_0		0		ppm	
	$(f_H-f)/f$	Vc=Vref	+0.4			ppm	+
EFC Voltage	V_c		0		2.9	V	
Preset Control Voltage	Vc0	Disconnected Vc pin	1.2	1.4	1.6	V	
Input Impedance	Rin			11		kΩ	
Output Resistance of Vref				91		ohm	
Reference Voltage	Vref		2.7	2.8	2.9	V	
Frequency Stability							
Versus Operating Temperature Range		Ref +25°C			±0.3	ppb	
Initial Tolerance @+25°C		$(f-f_0)/f_0$	-0.1		+0.1	ppm	at +25°C, Vc=Vc_0
Versus supply voltage	V_S	Ref Vcc typ			±0.2	ppb	
Aging Per Day		After 30 days of operation			±0.5	ppb	
Aging 1st Year					±0.05	ppm	
SSB Phase noise (Static. Values are for reference only and are subject to change.)		10Hz		-90		dBc/Hz	
		100Hz		-120		dBc/Hz	
		1kHz		-145		dBc/Hz	
		10kHz		-148		dBc/Hz	
		100kHz		-150		dBc/Hz	

Environmental,Mechanical Conditions	
Operating Temperature Range	-40°C to +80°C
Storage Temperature Range	-60°C to +85°C
Power Voltage	-0.5V to 4.0V
Control Voltage	-1.0V to 6.0V
Air flow Velocity	0.5 m/s maximum
Humidity	Hermetically sealed
Mechanical Shock	Per MIL-STD-202,30G,11mS
Vibration	Per MIL-STD-202, 10G 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