



Features and Benefits

- Frequency range: 100MHz
- Supply voltage: 3.3V
- Steady current: 400mA/Max
- Output waveform: HCMOS
- Frequency stability vs. operating temperature: ± 0.5 ppb
- Aging: ± 0.1 ppm per year
- Phase noise@100KHz: -160dBc/Hz
- Operating temperature: -40°C to +80°C
- Size: 20.2x20.2x13.8mm

Typical Applications

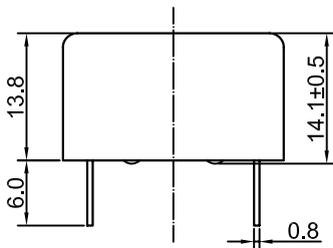
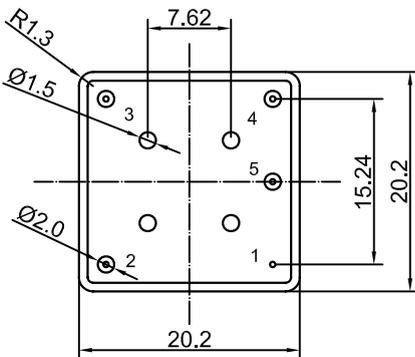
- GPS Disciplined Mobile Frequency Standards
- Portable Instrumentation
- Mobile Communication Systems
- Battery Supply Beacons

Description

DOCXO2020AW-100MHz-B-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



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	RL		10kohm//5pF				
Rise/Fall time					3	ns	
Duty Cycle			45		55	%	
Power Supply							
Supply Voltage	V _{cc}		3.15	3.3	3.45	V	
Warm-up Time	T _{up}	At +25°C to Δf/f=1e-7			180	sec	ref to freq after 15 min of operation
Power Consumption		Steady state, +25°C			400	mA	
		Warm-up			1400	mA	
Frequency Adjustment Range							
Electronic Frequency Control (EFC)	(fL-f)/f	Vc=0 V			-0.3	ppm	
	(fH-f)/f	Vc=Vref	+0.3			ppm	
EFC voltage	V _c		0		3.1	V	
Reference voltage	Vref		2.7		3.1	V	
Frequency Stability							
Versus Operating Temperature Range		@+25°C			±0.5	ppb	
Initial Tolerance @+25°C		(f-f ₀)/f ₀		±0.1		ppm	at +25°C, Vc=0.5* Vref
Versus supply voltage	V _s	Ref Vcc typ			±0.3	ppb	
Versus load		5% change			±0.3	ppb	
Aging Per Day		After 30 days of operation			±1	ppb	
Aging 1 st Year					±0.1	ppm	
SSB Phase noise (Static. Values are for reference only and are subject to change.)		1Hz		---		dBc	
		10Hz		-90		dBc	
		100Hz		-120		dBc	
		1kHz		-150		dBc	
		10kHz		-160		dBc	
		100kHz		-160		dBc	
Environmental, Mechanical Conditions							
Operating temperature range	-40°C to 80°C						
Storage temperature range	-60°C to 85°C						
Power voltage	-0.5V to 3.96V						
Control voltage	-0.5V to 4V						
Air flow velocity	0.5 m/s maximum						
Humidity	Hermetically sealed						
Mechanical shock	Per MIL-STD-202,30G half sine pulse,11ms						
Vibration	Per MIL-STD-202, 10G swept sine 10 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						