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

DOCXO3628AW-100MHz-A-V
Low power high stability low phase-noise OCXO

Features and Benefits

Frequency range: 100MHz
Supply voltage: 5.0V
Steady current: 370mA Max
Output waveform: Sinewave
Frequency stability vs. operating temperature: ±0.3ppb
Aging: ±0.05ppm per year
Operating temperature: -30°C to +70°C
Size: 35.4x26.7x15.8mm

Typical Applications

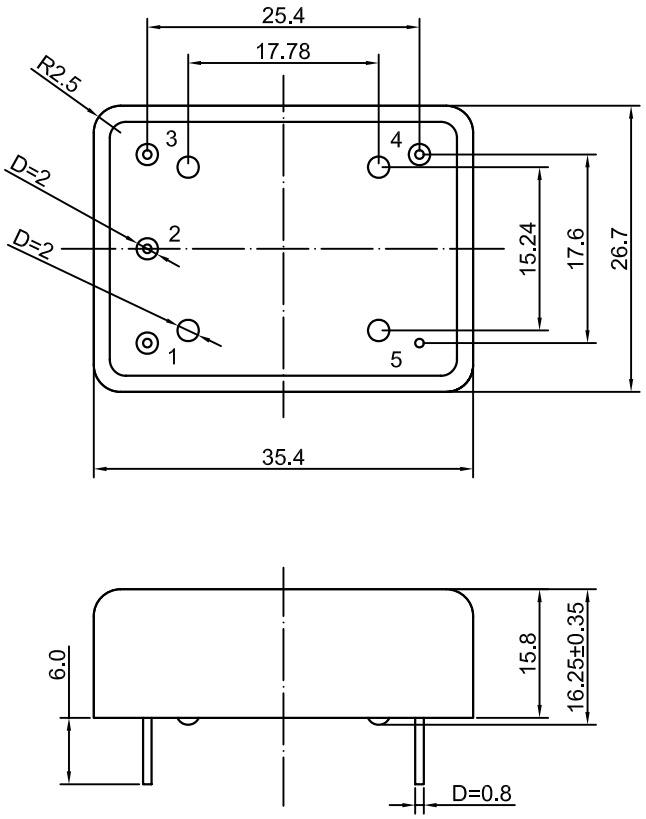
Portable Wireless Communications Mobile
Test equipment
Synthesizers
Battery Powered Application

Description

DOCXO3628AW-100MHz-A-V offers high frequency stability, low long-term aging and low phase noise, all in a compact package to suit the different communication needs.

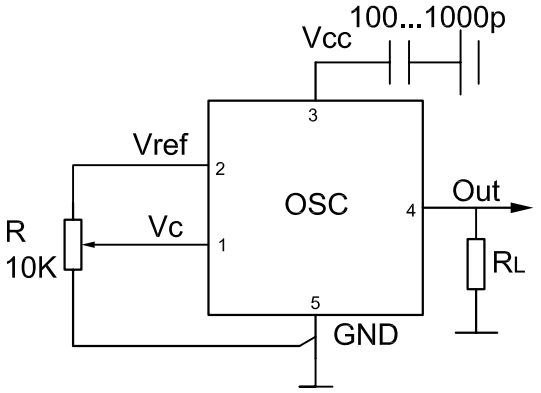
Mechanical Drawing & Pin Connections

Drawing No: MD140079-2



Pin	Signal
1	Electrical tuning
2	Reference voltage
3	+V Supply
4	RF OUT
5	GND

Unit in mm
1mm = 0.0394 inches



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Specifications

Oscillator Specification	Sym	Condition	Value Min.	Value Typ.	Value Max.	Unit	Note
Operational Frequency	f_0			100		MHz	
RF Output							
Signal Waveform				Sinewave			
Level			+7.0			dBm	
Harmonics					-30	dBc	
Load			45	50	55	ohm	
Sub-harmonics level		$f_{SH}=f_0\pm(n*f_0/5)$ n=1,2,3...			-40	dBc	
Power Supply							
Reference Voltage	Vref		4.1	4.2	4.3	V	
Supply Voltage	Vcc		4.75	5.0	5.25	V	
Warm-up current		V_{CC}=5.0V	900		1300	mA	
Continuous current		at +25°C, V_{CC}=5.0V			370	mA	
Frequency warm-up time		to df/f=1e-8 at +25°C ref at 15min			300	sec	
Frequency Adjustment Range							
Electronic Frequency Control (EFC)	$(f_L-f)/f$	Vc=0 V			-0.4	ppm	
	(f-f)/f	Vc=Vc0		0		ppm	
	$(f_H-f)/f$	Vc=Vref	+0.4			ppm	
EFC voltage	Vc		0		4.3	V	
Input impedance				11		kohm	
Output resistance of Vref				91		ohm	
Preset control voltage	V_{C0}	disconnected Vc pin	1.8	2.1	2.4	V	
Frequency Stability							
Versus Operating Temperature Range		-30°C to +70°C			±0.3	ppb	ref +25°C
Initial Tolerance @+25°C	$(f-f_0)/f_0$	$V_C=V_{C0}$	-0.1		+0.1	ppm	
Versus supply voltage		ref V_{CC} typ.			±0.2	ppb	
Versus load		5% change			±0.2	ppb	
Allan deviation		1s, 100 kHz BW		10		e-12	
SSB Phase noise (Static. Values are for reference only and are subject to change.)		1Hz		-80		dBc/Hz	
		10Hz		-100		dBc/Hz	
		100Hz		-125		dBc/Hz	
		1KHz		-145		dBc/Hz	
		10KHz		-150		dBc/Hz	
		100KHz		-155		dBc/Hz	
Aging Per Day		After 30 days of operation			±0.5	ppb	
Aging 1st Year					±0.05	ppm	

Maximum ratings, environmental, mechanical conditions	
Operating temperature range	-30°C to +70°C
Storage temperature range	-60°C to +90°C
Power voltage	-0.5 to 6.0 V
Control voltage	-1.0 to 6.0 V
Air flow velocity	0.5 m/s maximum
Humidity	Hermetically sealed
Mechanical shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 500Hz
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