



Features and Benefits

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

Typical Applications

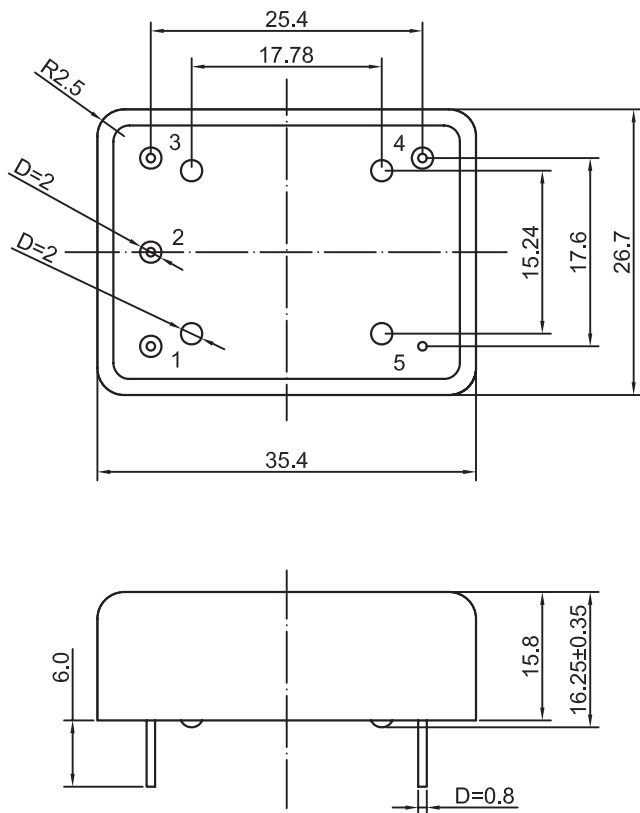
Portable Wireless Communications Mobile
Test equipment
Synthesizers
Battery Powered Application

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

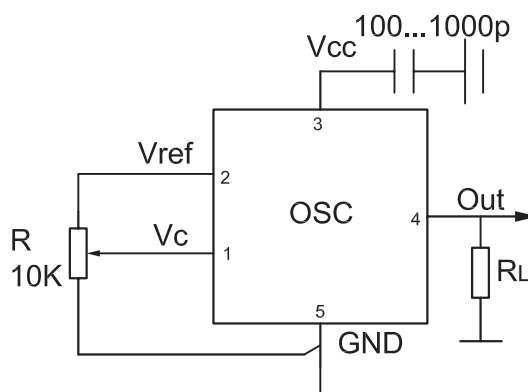
Drawing No: MD140079-2



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

Unit in mm

1mm = 0.0394 inches





Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
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 ±(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 1 st 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						