



### Features and Benefits

Wide operating temperature range from -40° C to +85° C  
Short warm-up time of <30s  
Small case size (DIL14/4 pin)

### Typical Applications

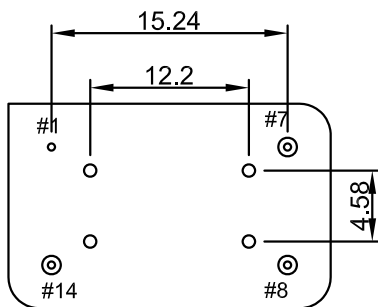
GPS  
Base Station  
Synchronization  
Satellite Modem

### Description

OCXO2013ZS1 series offers wide temperature operation from -40°C to +85°C with outstanding frequency stability and low phase noise performance all with very fast warm-up of less than 30s.

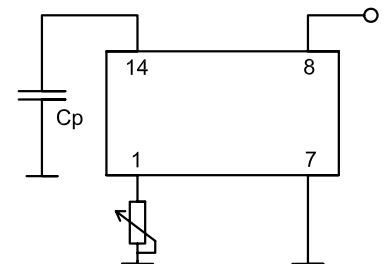
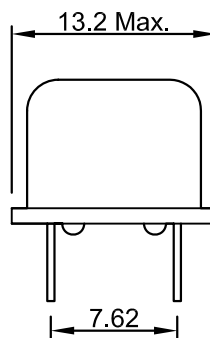
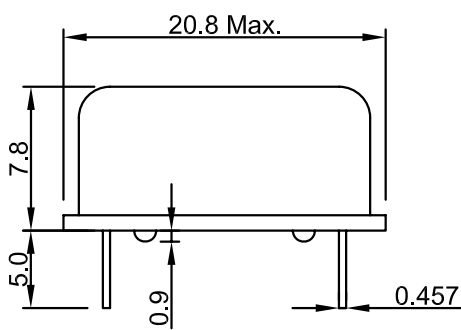
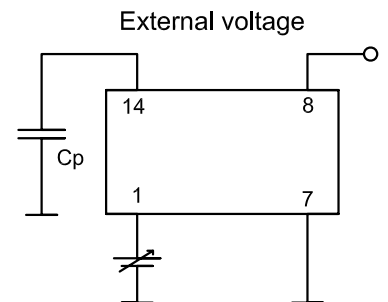
### Mechanical Drawing & Pin Connections

**Drawing No:** MD150026-2



Pin Function

#1	Vc
#7	GND
#8	RF Output
#14	Vdc



Unit: mm  
1mm=0.0394inch

External potentiometer



**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	F <sub>nom</sub>		10.0000		60.0000	MHz	
Standard Frequencies			10.00, 12.80, 16.00, 16.384, 20.00, 25.00, 40.00, 52.00			MHz	
Output waveform		0 ~ 4 dBm	Sine wave				
Output load				50		Ω	±5%
Harmonics				<-10		dBc	
Spurious				<-70		dBc	
<b>Power Supply</b>							
Voltage	V <sub>cc</sub>			3.30		V	±0.2V
Current Consumption		Steady State at +25° C		129		mA	
Warm-up Time:	T <sub>up</sub>	at +25° C		<30		sec	Within spec
<b>Frequency Control</b>							
Frequency pulling range				≥±3		ppm	Positive slope
Vcontrol via external voltage	V <sub>c</sub>		+0.5		+5.0	V	
Vcontrol via external potentiometer				10		kΩ	
<b>Frequency Stability</b>							
Versus Operating Temperature (tighter stability on request)		-40° C to +85° C		≤±0.200		ppm	
		-20° C to +70° C		≤±0.150			
		-10° C to +60° C		≤±0.075			
Versus supply voltage change				≤±0.100		ppm	±0.2V
Versus load change				≤±0.010		ppm	±10%
Versus aging after 30 days of operation		1 <sup>st</sup> year		≤±0.300		ppm	
Versus long term aging		10 years		≤±2.500		ppm	
Phase noise @10 MHz carrier frequency		10 Hz		-110		dBc/Hz	
		100 Hz		-135			
		1 KHz		-145			
		10 KHz		-150			
Short-Term Satability		Allan deviation over 0.1~30s		5		E-10	
<b>Environmental Conditions</b>							
Operating temperature range		-10° C to +60° C, -20° C to + 70° C or -40° C to 85° C					
Storage temperature range		-65° C to +125° C					
Vibration		Acceleration: 10 g; 10 Hz up to 2000 Hz and down to 10 Hz,					
Shock		2000 g; half-sine; 3 ms, (3 shocks each, 6 directions)					