



Features and Benefits

Frequency stability: ± 5 ppb from -20°C to $+70^{\circ}\text{C}$
Excellent aging: 1st year: 30ppb
SMD sine wave output
Low phase noise

Typical Applications

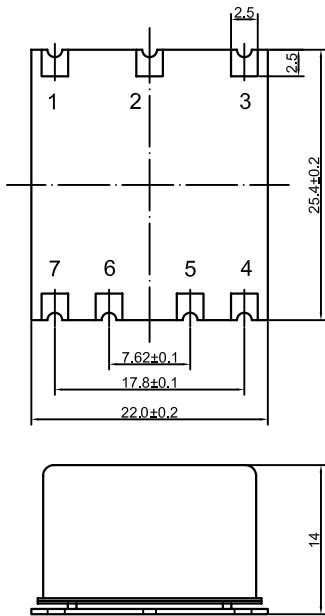
Base Station
Synchronization
Satellite Modem

Description

OCXO2522L series offers high frequency stability (up to ± 5 ppb) and excellent short term stability with SMD package.

Mechanical Drawing & Pin Connections

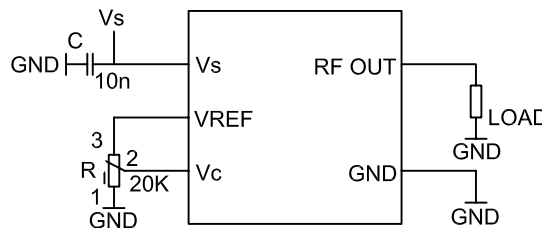
Drawing No: MD140068-2



Pin connections

Pin#	Symbol	Function
1	RF OUT	RF Output
2	OA	Oven Alarm Output
3	GND	Ground
4	VREF	Reference Voltage
5	Vc	Control Voltage (EFC)
6	OE	Oscillator Enable Input
7	Vs	Supply Voltage

Unit in mm
1mm = 0.0394 inches





Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Frequency Range	F_{nom}			10		MHz	
RF Output							
Output Wave Form			Sine wave				
Load	R_L		50			Ohm	±5%
Output Level			+5		+10	dBm	
Harmonics					-30	dBc	
Spurious					-90	dBc	
Warm-up time		$\Delta f_{final}/f_0 \leq \pm 0.1 \text{ ppm}$		3	10	min	
Oven alarm output (Pin 2)		0 to 0.4 V 2.4 to 5 V	LOW = alarm (not stable) HIGH = ready				
Oscillator enable input (Pin 6)		0 to 0.4 V 2.4 to 12.6 V	LOW = Oscillator OFF HIGH = Oscillator ON				HCMOS compatible input
Power Supply							
Supply Voltage	V_s		11.4	12.0	12.6	V	
Current Consumption		Steady state			150	mA	@ +25°C
		Warm-up			350	mA	
Reference Voltage	V_{ref}			5.0		V	
Frequency Control							
Electronic Frequency Control(EFC)			±0.8	±1.0		ppm	
EFC Voltage	V_c		0	2.5	5.0	V	
EFC Slope ($\Delta f/\Delta V_c$)			positive				
EFC Non-linearity				2	5	%	
EFC input impedance			100			kOhm	
Frequency Stability							
Initial Tolerance @+25°C		$V_c @ V_{ref}/2$		±50	±100	ppb	
Vs. Temperature		From -20°C to +70°C Steady state			±5	ppb	
Vs. Supply Voltage Variation		$V_s \pm 5\%$		±0.5		ppb	
Vs. load change		$R_L \pm 5\%$			±0.5	ppb	
Short Term Stability (Allan Deviation)		$\tau = 1 \text{ s}$		0.002	0.005	ppb	
		$\tau = 10 \text{ s}$		0.002	0.01	ppb	
		$\tau = 100 \text{ s}$		0.005	0.05	ppb	
Aging Per Day		after 30 days of operation			±0.5	ppb	
Aging 1 st Year		after 30 days of operation			±30	ppb	
Aging 15 years after		after 30 days of operation			±500	ppb	
Phase Noise							
Phase Noise		@1Hz		-105	-100		
		@10Hz		-135	-130		
		@100Hz		-150	-145		
		@1KHz		-157	-150		
		@10KHz to 100KHz		-160	-150		
Temperature Range							
Operating Temperature		-20°C to +70°C					
Storage Temperature		-55°C to +125°C					



Environment Conditions

Test	IEC 60679-1 Clause	MIL-PRF-55310D Clause
Sealing Tests	5.6.2	3.6.1.2
Solderability Resistance to Soldering Heat	5.6.3	3.6.52 3.6.48
Shock	5.6.8	3.6.40
Vibration, Sinusoidal	5.6.7.1	3.6.38.1 3.6.38.2
Vibration, Random	5.6.7.3	3.6.38.3 3.6.38.4
Endurance tests - ageing - extended aging	5.7.1 5.7.2	4.8.35