

EWOS0525

High mechanical resistance OCXO for Space applications, Flight Proven

PRODUCT OVERVIEW

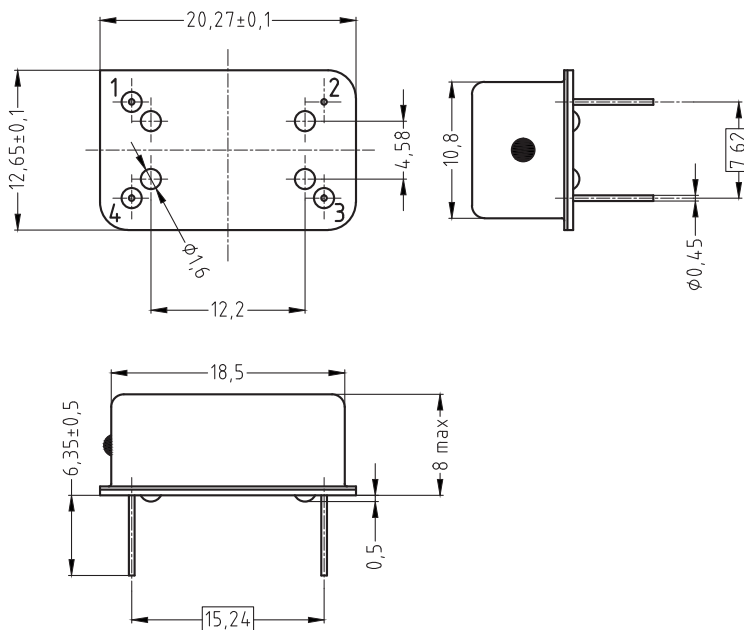
EWOS0525 is a 10 MHz OCXO using a quartz resonator with very high mechanical resistance and low accelerometric sensitivity. It has a very high frequency stability over short and medium term and is perfectly suited for LEO space missions subject to significant environmental constraints (vibrations & shocks). This OCXO is based on COTS components and is an ideal compromise in terms of cost and performance for cubesat applications, nanosat, micro-minisat, space gnss receivers, ranging functions and radio links.



KEY FEATURES

- 10 MHz
- ± 0.1 ppm (typ.) thermal sensitivity
- 300 mW @ -40°C (typ.)
- ± 2 ppb/day after 30 days (typ.)

DIMENSIONS & PIN-OUT



PIN	FUNCTION
1	Frequency control
2	Ground
3	RF Out
4	Power Supply

ORDERING INFORMATION

EWOS

0525

ELECTRICAL CHARACTERISTICS

PARAMETERS	Unit	Min	Typ.	Max	Note	Comments
Output Frequency	MHz		10		1	Nominal frequency
Frequency Tolerance	ppm		±0.5	±2	1	+25°C
Temperature Range						
• Operating	°C	-40		+60	1	
• Storage	°C	-55		+125		
Supply Voltage	V		5 ± 5%			
Supply Current						
• Warm-up	mA		200	250	3	During 10 seconds
• Steady state / -40°C	mA		60	70	3	
• Steady state / +25°C	mA		30	35	3	
• Steady state / +85°C	mA		5	10	3	
Warm-up time	s			60	3	1E-7 accuracy referred to frequency measured at 25°C. To achieve 1E-10 short term stability - quiet environment
	mn			15	2	
Frequency Stability						
• Vs temperature variation	ppm		±0.1	±0.25	1	-40°C to 60°C
• Vs supply voltage variation	ppm		±0.05	±0.1	3	5V ±1%
• Vs load variation	ppm		±0.1	±0.2	2	(10 KΩ//10 pF) ± 10%
• Short-term			2E-11	1E-10	2	Allan deviation / 1s
• Aging						
	Per day	ppb	±2	±5	2	After 30 days
	First year	ppm		±1	2	
	After 20 years	ppm		±5	2	Over full temperature range
Phase noise	dBc/Hz		-150		2	1 kHz offset from carrier
Control Voltage	V	0		5	1	Frequency control
Frequency Shift	ppm	±5	±6		1	Referred to nominal frequency measured at 25°C. Control voltage 0V to 5V - Positive slope
Tuning Input Impedance	kΩ		100		3	
	pF		100		3	
Output level	Vpp	1.6	2		4	Clipped sinewave - Dc cut Load 10 kΩ // 10pF
Output Impedance	kΩ		1		3	
	pF		5		3	
Frequency sensitivity to acceleration				5E-10/g	3	All three axes

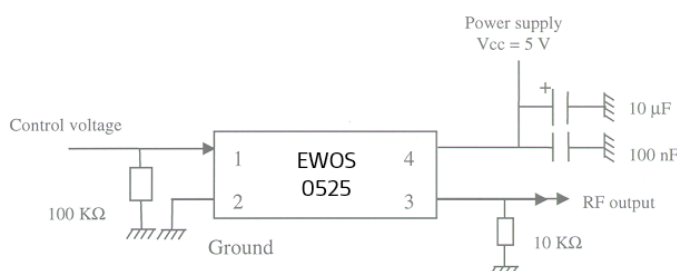
Notes

- Parameter inspected at 100%
- Parameter inspected by sampling
- Parameter guaranteed by design and characterization
- Parameter guaranteed by periodical qualification

ABSOLUTE MAXIMUM RATINGS

- Supply Voltage VCC: 0V / 6V
- Control Voltage VCTRL: 0V / 6V

Operation of the device beyond these limits may affect device reliability or may cause permanent damage.

TYPICAL APPLICATION


Rated performance requires using good high frequency board layout techniques. It is recommended to connect decoupling capacitors (100 nF ceramic and 10 μF tantalum capacitors) to the supply pin.

Oscillator case has to be mechanically maintained or glued on the equipment board in order not to be damaged by environment vibrations and shocks.