

EWOS10/20

Ultra-Low Power OCXO for Mil/Aero/General Industry

PRODUCT OVERVIEW

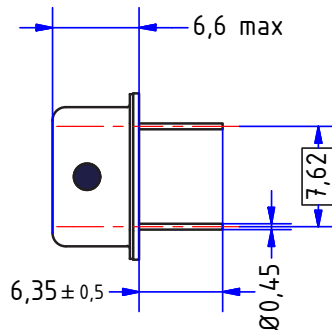
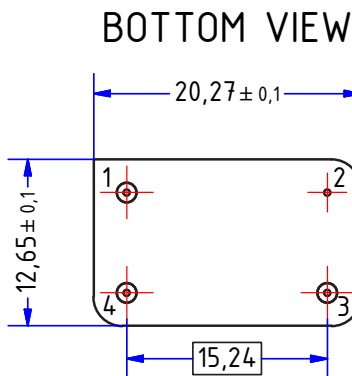
EWOS10/20 is the least power consuming OCXO within Syrlinks products range. Widely used in aeronautic, defense or general industry applications, it shows a record low power consumption of 75 mW at 25°C. Powered with 5V, it is available in standard frequencies at 10 or 20 MHz with an operating temperatures up to 70°C or 85°C. Its high compactness and low power makes it ideal for high capacity battery powered systems requiring precision timing. EWOS10/20 can be disciplined thanks to its tuning pin and is highly resistant to shocks and vibrations.



KEY FEATURES

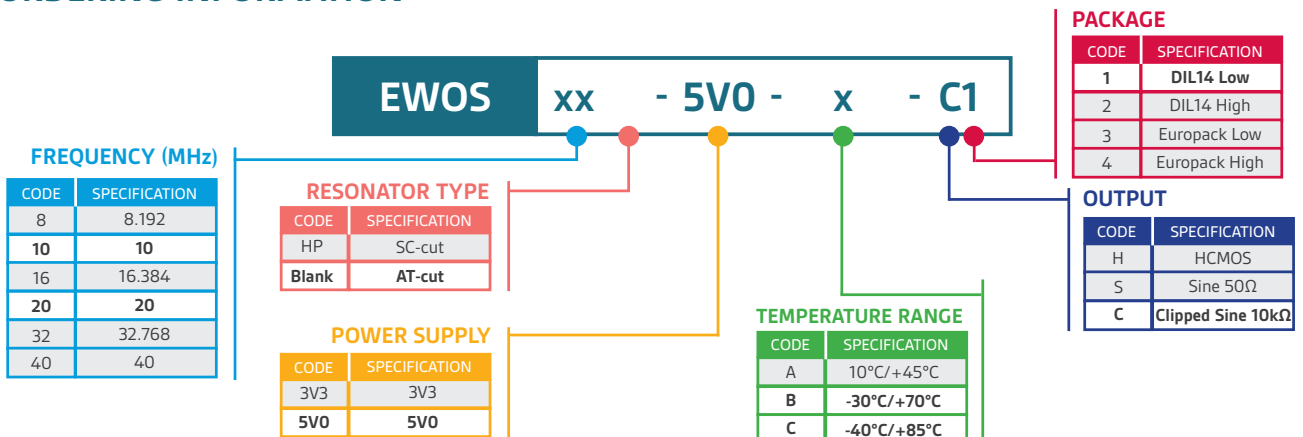
- 10 or 20 MHz clipped sine output
- ±100 ppb thermal sensitivity (typ., ordering Code B)
- 75 mW @ 25°C (typ.)
- ±2ppb/day after 30 days (typ.)

DIMENSIONS & PIN-OUT



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

ORDERING INFORMATION



ELECTRICAL CHARACTERISTICS

PARAMETERS	Unit	Min	Typ.	Max	Note	Comments
Output Frequency	MHz	10		20	1	Standard frequencies: 10, 20
Temperature Range						
• Operating	°C	-30		+70		Ordering Code B
	°C	-40		+85		Ordering Code C
• Storage	°C	-55		+95		
Supply Voltage	V		5			±5%
Supply Current / Power consumption						
• Warm-up	mA			220	3	during 10s max @25°C
• Steady state / -40°C	mA		35	40	1	Ordering Code C
• Steady state / +25°C	mA		15	20	1	Ordering Code C
• Steady state / +85°C	mA		5	7	1	Ordering Code C
Frequency Stability						
• Initial frequency accuracy	ppm		±1	±2	1	+25°C referred to nominal frequency. Control Voltage @1.1V or control resistance Rc=3.8k Ohm
• Vs operating temperature range	ppb		±100	±200	1	Ordering Code B
	ppb		±150	±250	1	Ordering Code C
• Vs supply voltage variation	ppb		±0.1	±0.2	2	5V ± 5%
• Vs load	ppb		±0.1	±0.2	2	(10 kΩ//10 pF) Load ± 10%
• Short-term (τ=0.1s)	10 ⁻¹¹		2	10	2	Allan deviation @ 10 MHz
	(τ=1s)		3	10	2	
• Aging						
	Per day	ppb	±2	±5	2	After 30 days
	First year	ppm		±1	2	
	After 20 years	ppm		±5	2	
• Acceleration sensitivity	ppb/G		±1		3	Worst direction
• Warm-Up Time	sec			10	3	To ±1 ppm of final frequency (1 hour)
	sec			60	3	To ±100 ppb of final frequency (1 hour)
• Retrace	ppb	-	-	-	-	-
Phase Noise @ 10 MHz						
• 1 Hz	dBc/Hz			-85	2	
• 10 Hz	dBc/Hz			-105	2	
• 100 Hz	dBc/Hz			-135	2	
• 1 KHz	dBc/Hz			-145	2	
• 10 KHz	dBc/Hz			-150	2	
Clipped sinewave output parameters						
• Output Level	Vpp	0.6	1.2	2.0	3	Clipped sinewave - DC cut - Load 10 kΩ//10pF
• Output Impedance	kΩ		1		3	
	pF		5		3	
Frequency Tuning						
• Tuning Voltage	V	0		4.1	3	*Fixed Frequency is possible or 0 Ohm to 1M Ohm resistance to ground
• Tuning Range	ppm	±4	±5	±7	2	
• Tuning Slope			Positive		3	
• Tuning Input Impedance	kΩ		10		3	
	pF		100		3	
Weight	grams		4			

Notes

1. Parameter inspected at 100% | 2. Parameter inspected by sampling | 3. Parameter guaranteed by design and characterization

ENVIRONMENTAL CONDITIONS

Shocks	1500G peak / 0.5 ms / 3 axis ; MIL-STD-883 method 2002, Test Condition B
Vibrations	16.91 Grms / 10 to 2000 Hz Random / 3 min per axis, MIL STD 202-214 cond E
Soldering instructions	Hand soldering with recommended pins temperature: 235°C ±5°C, t=10s ±05s (260°C max for 5s max) Selective wave soldering with limitation of pre-heating to reach the max temperature of 85°C (body of component) and 3 s max at max temperature Use of no-clean solder paste When connecting a pad to a copper plane, thermal pads are recommended
Mounting instructions	Metallic Case glued onto the PCB, without glue overflow into the metallized holes No spacer material between OCXO and PCB
PCB cleaning/washing	Washable with a temperature below 85°C

OCXO HERMETICITY

	Metallic housing hermetically sealed
	Fine Leaks and Gross Leaks tests performed 100%