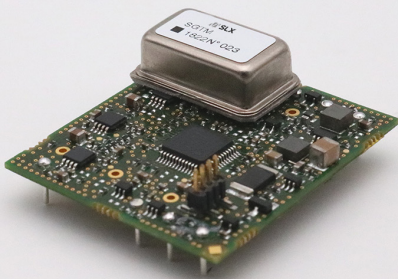


SGTM10/20

ULTRA LOW POWER TIMING MODULE
FOR MIL / AERO / GENERAL INDUSTRY

PRODUCT OVERVIEW

SGTM10/20 is the generic ultra-low power Timing module of Syrlinks using a low power EWOS10/20 OCXO. This SGTM delivers a PPS, a Sine 50ohm and a HCMOS output with a standard frequency of 10 or 20MHz. Its core low aging performance and low power consumption makes it ideal for all applications with drastic precision timing constraints under GNSS denied area. The module consumes less than 100 mW at 25°C and shows a thermal sensitivity less than ±100ppb across the full temperature range (ordering Code B). A specific firmware brings its thermal sensitivity to ±2ppb (on demand).



KEY FEATURES

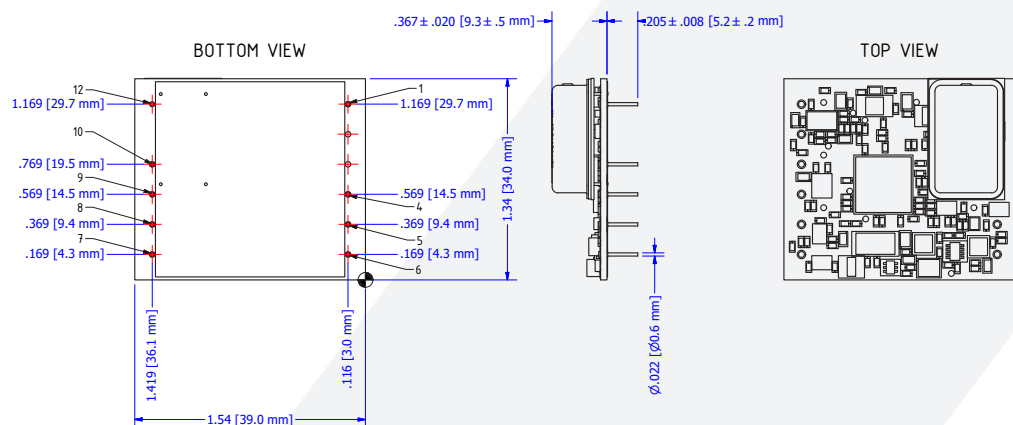
- 10 or 20 MHz HCMOS output
- ±100 ppb thermal sensitivity (typ., CO version, ordering Code B)
- ±2 ppb thermal sensitivity (typ., CT version)
- 100 mW at 25°C (typ.)
- ±2 ppb/day after 30 days (typ.)
- Pin-to-pin compatible replacement of Chip Scale Atomic Clock



ORDERING INFORMATION IS AVAILABLE ON THE LAST PAGE

DIMENSIONS & PIN-OUT

PIN	FUNCTION
1	Vtune
4	Tune Enable
5	TX
6	RX
7	Vcc
8	GND
9	1PPS IN
10	1PPS OUT
12	RF OUT



ELECTRICAL CHARACTERISTICS

PARAMETERS	UNIT	MIN	TYP.	MAX	NOTE	COMMENTS
Output Frequency	MHz		10		1	Other freq. on request (20 MHz, 40 MHz)
Temperature Range						
Operating	°C	-30		+70		Ordering Code B
	°C	-40		+85		Ordering Code C
Storage	°C	-55		+95		
Supply Voltage	V	3.15	3.3	3.45		±5% / 5V power supply on request
Supply Current						
Warm up	mA			330	3	During 10s max
Steady state / -40°C	mA		60	65	1	Ordering Code C
Steady state / +25°C	mA		30	35	1	Ordering Code C
Steady state / +70°C	mA		15	17	1	Ordering Code C
Steady state / +85°C	mA		12	15	1	Ordering Code C
Frequency Stability						
Initial frequency accuracy	ppm		±0.1	±0.2	1	+25°C referred to nominal frequency
Vs operating temperature range	ppb		±100	±200	1	Ordering Code B
	ppb		±150	±250	1	Ordering Code C
Vs supply voltage variation	ppm		±0.1	±0.2	2	3V3 ± 5%
Vs load	ppm		±0.1	±0.2	2	(10 kΩ//15 pF) load ± 10%
Short-term ($\tau=0.1s$)	10 ⁻¹¹		2	10	2	Allan deviation @16.384 MHz
($\tau=1s$)	10 ⁻¹¹		3	10	2	
Aging						
Per day	ppb		±2	±5	2	After 30 days
First year	ppm			±1	2	
After 10 years	ppm			±5	2	
Acceleration sensitivity	ppb/G			±1	2	Worst direction
Warm-Up Time	sec			10	3	To ±1 ppm of final frequency (1 hour) at 25°C
	sec			60	3	To ±100 ppb of final frequency (1 hour) at 25°C
Retrace	ppb			±10	3	24h work after 24 off
HCMOS Output Parameters						
Load	pF		15		3	1MΩ
Signal Level - Vh	V	2.4			3	
Signal Level - Vl	V			0.4	3	
Rise \ Fall Time	ns			8	3	10% - 80%
Duty Cycle	%	45		55	3	
1 PPS Output Parameters						
Load	pF		10		3	1 MΩ
Rise \ Fall Time	ns			8	3	10% - 80%
Signal Level - Vh	V	4			3	
Signal Level - Vl	V			0.4	3	
Level	V	0		Vcc	3	

NOTES

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

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PARAMETERS	UNIT	MIN	TYP.	MAX	NOTE	COMMENTS
1 PPS Input Parameters						
Format			Rising edge			
Load	MΩ		1		3	
Logic low level	V	< 0.4			3	
Logic high level	V			2.4 to Vcc	3	3V3 on request
Serial Communications						
Protocol			RS-232			
Format	V	0		Vcc		CMOS
Baud Rate			57600		3	
1 PPS accuracy 1σ	ns		±10			
Holdover stability	μs	±100		±600		over 24h (at 25°C)
Weight	grams		10			

ENVIRONMENTAL CONDITIONS

Soldering instructions	Hand soldering only, with recommended pins soldering temperature: 235°C ±5°C, t=10s ±0.5s (260°C max for 5s max) Reflow soldering and other soldering methods are prohibited
Mounting instructions	Pin receptacles mounted into PCB can be used. Reference example : 0338-0-15-XX-15-XX-10-0
PCB cleaning/washing	Not washable

OCXO HERMETICITY

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

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ORDERING INFORMATION

