

SGTM10-HP

LOW AGING & LOW POWER TIMING MODULE
FOR MIL / AERO & GENERAL INDUSTRY

PRODUCT OVERVIEW

SGTM10HP is a low aging Timing module delivering a PPS, sine 50Ω or HCMOS output with a standard frequency of 10 MHz. Its core low aging and low power consumption makes it ideal for all applications with drastic precision timing constraints under GNSS denied area. The module consumes less than 550 mW at 25°C and shows a thermal sensitivity less than 15ppb across the full temperature range. A specific firmware brings its thermal sensitivity to ± 1 ppb (typ.) on demand.



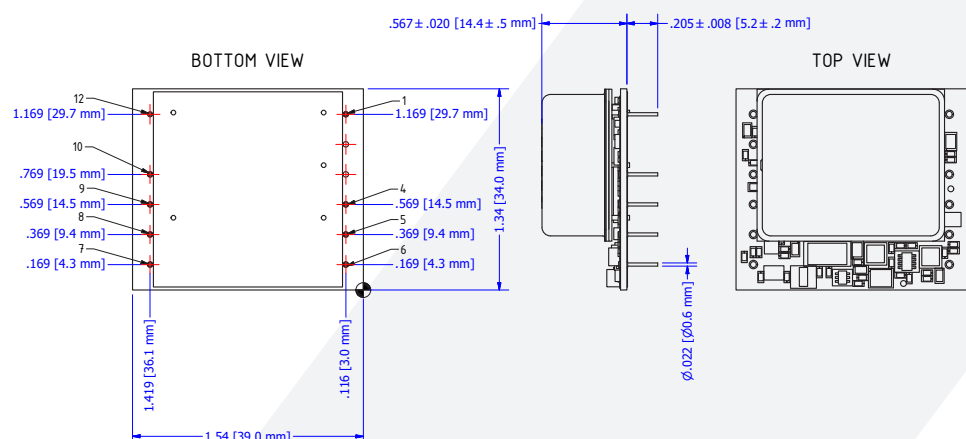
KEY FEATURES

- 10 MHz Sine 50 ohm or HCMOS output
- ± 10 ppb or ± 1 ppb (typ.) thermal sensitivity
- 550 mW at 25°C (typ., ordering Code B)
- ± 0.2 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



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ELECTRICAL CHARACTERISTICS

PARAMETERS	UNIT	MIN	TYP.	MAX	NOTE	COMMENTS
Output Frequency	MHz		10		1	
Temperature Range						
■ Operating	°C	-30		+70		Ordering Code B
	°C	-40		+85		Ordering Code C
■ Storage	°C	-55		+95		
Supply Voltage	V	4.75	5.0	5.25		
Supply Current						
■ Warm up	A		0.5	0.7	3	During 20s max @25°C / 40s max @ 5°C
■ Steady state / -30°C	mA		170	190	1	Ordering Code B
■ Steady state / +25°C	mA		110	120	1	Ordering Code B
■ Steady state / +70°C	mA		50	60	1	Ordering Code B
■ Steady state / -40°C	mA		200	240	1	Ordering Code C
■ Steady state / +25°C	mA		120	130	1	Ordering Code C
■ Steady state / +70°C	mA		55	70	1	Ordering Code C
Frequency Stability						
■ Initial frequency accuracy	ppm		±0.05	±0.1	1	+25°C referred to nominal frequency
■ Vs operating temperature range	ppb		±10	±15	1	Ordering Code B
	ppb		±15	±20		Ordering Code C
	ppb		±1	±2		Compensated version
■ Vs supply voltage variation	ppb			±2	2	± 5%
■ Vs load	ppb			±2	2	10 kΩ//15 pF load ± 10%
■ Short-term ($\tau=0.1s$)	10 ⁻¹¹		0.5	1	2	Allan deviation @10 MHz
($\tau=1s$)	10 ⁻¹¹		0.8	5	2	
■ Aging						
Per day	ppb		±0.2	±0.5	2	After 30 days
First year	ppb			±50	2	
After 10 years	ppb			±300	2	
■ Acceleration sensitivity	ppb/G			±1	2	Worst direction
■ Warm-Up Time	sec		60	120	3	To ±1 ppm of final frequency (1 hour) at 25°C
	min		10	15	3	To ±100 ppb of final frequency (1 hour) at 25°C
■ Retrace	ppb			±10	3	24h work after 24 off
Sinewave Output Parameters						
■ Load	Ω		50		3	
■ Output Power (Standard)	dBm	+7	+9	+13	3	10% - 80%
■ Harmonics	dBc			-35	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		5	3	3V3 on request

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	3	3V3 on request
Rise Time	ns			12	3	
Serial Communications						
Protocol			RS-232			
Format	V	0		5		CMOS ; 3V3 on request
Baud Rate			57600		3	
1 PPS accuracy 1σ	ns		±10			
Holdover stability						
T=25°C	μs		±2.5	±5	3	Over 24h for CO and CT version and after 4 days power On with PPS-in-signal
T=25°C ±5°C	μs		±2.5	±5	3	Over 24h for CT version and after 4 days power On with PPS-in-signal
T=25°C ±20°C	μs		±3	±6	3	Over 24h for CT version and after 4 days power On with PPS-in-signal
T=25°C ±20°C	μs		±150	±250	3	Over 15 days
Weight	grams		20			

ENVIRONMENTAL CONDITIONS

Soldering instructions	Hand soldering with recommended pins 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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