SUNTSU

GPS Disciplined Sinewave OCXO

SGO12S

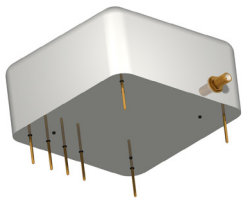
50.8mm x 50.8mm

Features

- 1PPS & 10MHz Output
- GPS/QZSS L1 C/A, GLONASS L10F, BeiDou B1 SBAS L1
- C/A: WAAS, EGNOS, MSAS, GAGAN Galileo E1B/C
- Frequency Band: L1 (1575.42MHz)
- Tracking Code: C/A Code
- Tracking Capability: Up to 24 Satellites

Applications

- 4G/5G/LTE
- Clock Source
- Base Stations
- Test Equipment
- Military Communication Equipment



Part Numbering Guide

SGO12S - 10.000M

RoHS COMPLIANT

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency	MHz		10.0		Synchronizing with GNSS 1PPS output
Frequency Accuracy	ppt	-1.0		1.0	24hrs average value when locked to 1PPS
Freq. Stability vs. Op Temp.	ppb	-0.1		0.1	When locked to 1PPS, -20°C ~ 60°C
Freq. Stability vs. Op Temp.	ppb	-5.0		5.0	No GPS Lock, -20°C ~ 70°C
Freq. Stability vs. Op Temp.	ppb	-15.0		15.0	No GPS Lock, -40°C ~ 80°C
Freq. Stability vs. Aging/Day	ppb	-0.1		0.1	No GPS Lock, continually operating after 30 days
Freq. Stability vs. Aging/Month	ppb	-2.0		2.0	No GPS Lock, continually operating after 30 days
Freq. Stability vs. Aging/Year	ppb	-75.0		75.0	No GPS Lock, continually operating after 30 days
Pulse Width (1 PPS Output)	ms		1		
Accuracy (1 PPS Output)	ns	-35		35	
Holdover 24Hrs Drift (1 PPS Output)	µs			6	
Operating Temperature	°C	-40		80	
Storage Temperature	°C	-50		90	
Supply Voltage (V_{DD})	V		12		
Power Consumption At Turn On	W			6	
Power Consumption At 25°C	W		2		
Harmonics	dBc			-30	
Spurious	dBc			-100	100KHz BW
Output Logic (Sinewave) Load	Ω			50	
Level	dBm	7	9	11	
Warm Up Time	min			15	Time to lock at room temperature 25°C
Phase Noise 1Hz Offset	dBc/Hz		-100		
Phase Noise 10Hz Offset	dBc/Hz		-130		
Phase Noise 100Hz Offset	dBc/Hz		-145		
Phase Noise 1kHz Offset	dBc/Hz		-150		
Phase Noise 10kHz Offset	dBc/Hz		-160		
Phase Noise 100kHz Offset	dBc/Hz		-160		
Sensitivity (Internal Receiver)	dBm		-167		Tracking & Navigation
Sensitivity (Internal Receiver)	dBm		-157		Acquisition (Cold Start)
Frequency Stability, Allan Deviation				$1x10^{-11}$	1s
Frequency Stability, Allan Deviation				$2x10^{-11}$	10s
Frequency Stability, Allan Deviation				$1x10^{-11}$	100s
Frequency Stability, Allan Deviation				$8x10^{-12}$	1,000s

Suntsu Electronics, Inc.
142 TECHNOLOGY DR., SUITE 150
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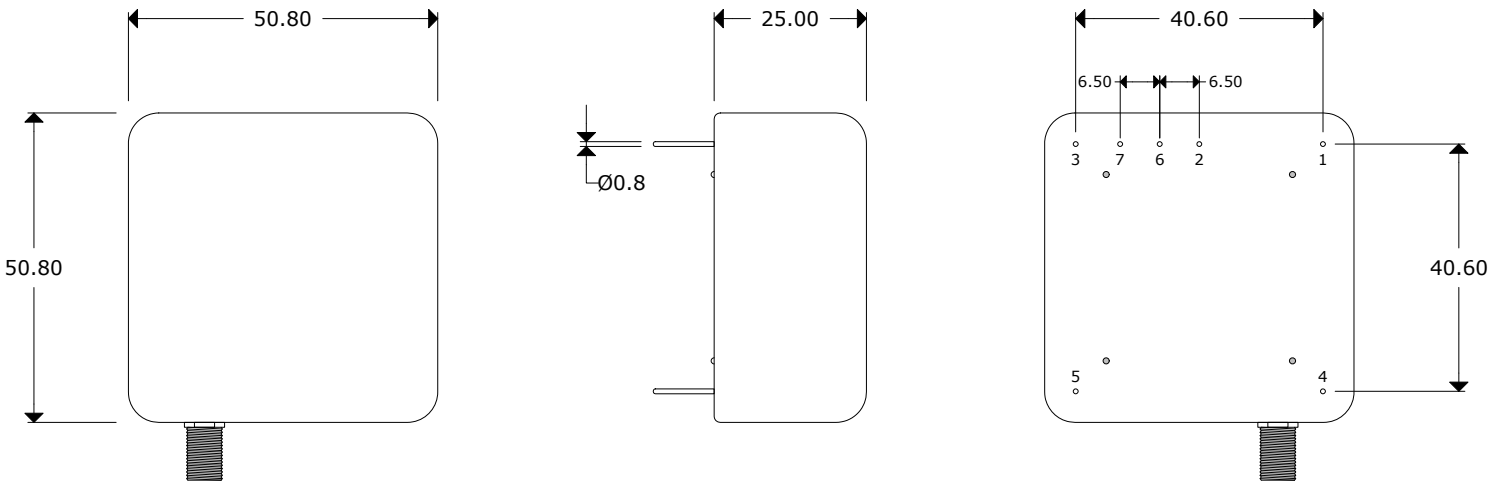
Outline Drawing

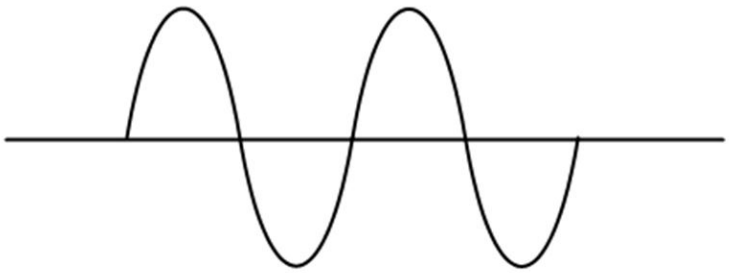
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



Pin Orientation

PIN GROUP	PIN#	PIN NAME	TYPE	DESCRIPTION
OUTPUT CLOCKS	1	CLOCK OUT	O	10MHz OUTPUT
CONTROL & STATUS	2	LOCK	O	LOCK STATUS
OUTPUT CLOCKS	3	1PPS OUT	O	1PPS OUTPUT
SUPPLY VOLTAGE	4	GND	GND	GROUND
	5	V_{DD}	PWR	POWER INPUT
UART	6	RX	I	ASYNCHRONOUS SERIES DATA OUTPUT/INPUT
	7	TX	O	

Waveform (Sinewave)



Sinewave Output, 9dBm into 50Ω

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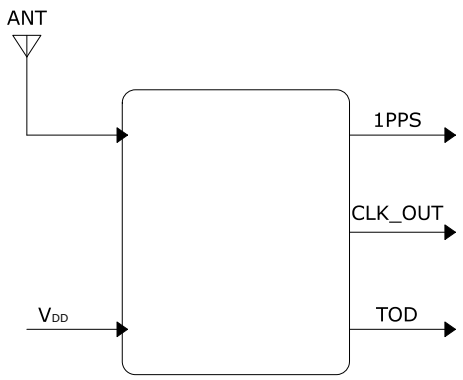
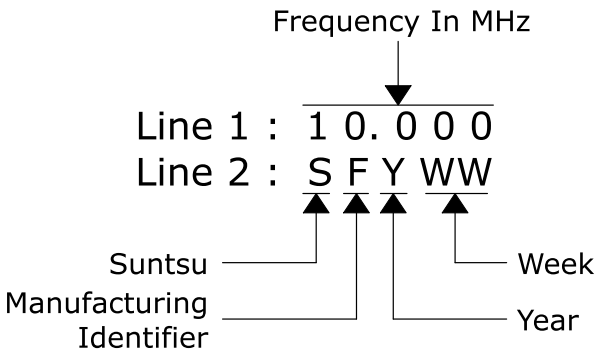
Test Circuit



Part Marking



Sensitivity: Tracking & Navigation

Tracking and Navigation	-167dBm	
Cold Start (aided)	-157dBm	
Cold Start (autonomus)	-148dBm	
Reaquisition	-160dBm	
Acquisition	GPS & GLONASS	GPS & BeiDou
Cold Starts	25 sec.	28 sec.
Warm Start	2 sec.	2 sec.

Environmental & Mechanical Specifications

Storage Humidity	30% - 80%	Storage Relative Humidity	20% - 70%
Moisture Sensitivity Level	Not Humidity Sensitive	Full Package Storage	-10°C - 35°C
Mechanical Shock	50g ; 11ms ; Half sine wave (directions X ,Y & Z) IEC68-2-27 Test Ea / Severity 50A		
ESD Level	Human Body Model, Class 2 : 2,000V to 4,000V ; ANSI / ESDA / JEDEC JS-001-2010 Machine Model, Class B : 200V to 400V ; JESD22-A115C		
Vibration	Test Condition: 0.75mm ; Acceleration : 10g ; 10Hz - 500Hz, One cycle per 30 min, test 2hrs. (3 times for each 3 directions X, Y & Z), IEC 68-2-06 Test Fc.		

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