Travelling Merchant: A012

DATASHEET

Standard: **O22SG-1201-20.00MHz**

P/N:

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Amway.wei	Tony · Wang	Jason Zhao	
Date: 2024.06.05			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2024.06.03
1.1	Add “G-sensitivity”	Amway	2024.06.05

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1. Electrical Parameters

MODEL： O22SG-1201-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		20.00		MHz	
	Output Waveform		LVCMOS			
	Output Low Voltage			0.4	V	V_{cc}=3.3V, O_{load}=15pF
	Output High Voltage	2.4			V	V_{cc}=3.3V, O_{load}=15pF
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			10	ns	
	Load	13.5	15	16.5	pF	
Frequency Stabilities	Over all	-4.6		+4.6	$\times 10^{-6}$	-40~85℃
	Frequency Tolerance vs. Operating Temperature Range	-5		+5	$\times 10^{-9}$	T_A varied from -40℃ to 85℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=3.3V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
	Additional information: Drift 24 Hr and ±2.8℃ temp. change <±1.1ppb. Over all include: Temp Stab, supply, load stab, initial, 20 years aging. S3E compliant according GR1244.					
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-3		+3	$\times 10^{-9}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.14V to 3.47V, and O_{Load}=15pF.
	Frequency Tolerance vs. Load	-3		+3	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, and O_{Load}=15pF.
	G-sensitivity			±3	$\times 10^{-9}$/g	Worst direction
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with T_A=25℃,V_{cc}=3.3V, and after 30 days of operation.
	Aging Tolerance Per Month	-0.025		+0.025	$\times 10^{-6}$	
	Aging Tolerance Per Year	-0.1		+0.1	$\times 10^{-6}$	
	Aging Tolerance 10 Year	-1		+1	$\times 10^{-6}$	

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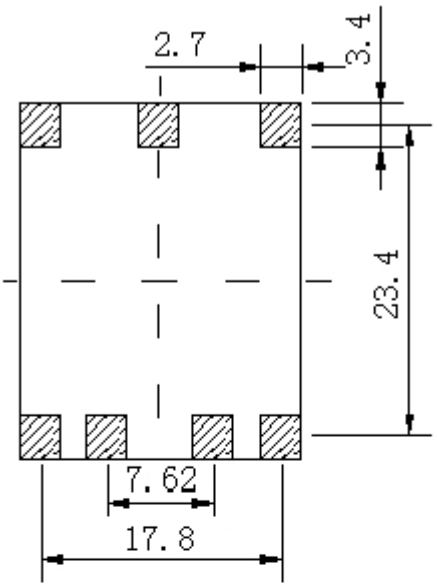
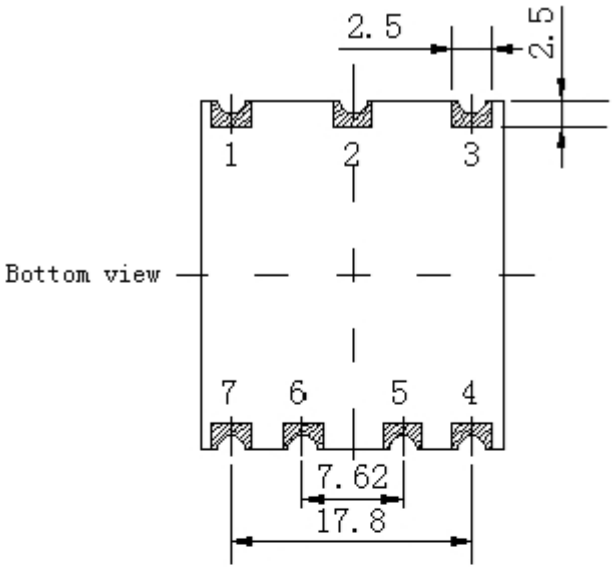
	Holdover 24 h	-6		+6	$\times 10^{-9}$	incl. Drift and -40~85℃ temperature stability
Additional information: Holdover 5ppb peak-peak: incl. of 24H aging and @40℃ temperature change						
Power Supply	Supply Voltage	3.14	3.3	3.47	V	
	Steady Consumption			400	mA	@25℃
	Warm up current			950	mA	
	Warm-Up Time			5	min	@25℃within $\pm 0.01 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Jitter				1	ps	RMS @ 12KHz to 10MHz
Phase Noise	Phase Noise		-85	-75	dBc/Hz	1Hz
			-115	-105		10Hz
			-140	-130		100Hz
			-147	-140		1KHz
			-150	-145		10KHz
Environmental Conditions	Operable Temperature	-40		+85	℃	
	Storage Temperature	-55		+105	℃	
	ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; JEDEC JESD22-A115C.				
	Moisture Sensitivity Level	Level 2.				
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc.				
	Shock	50g; 11ms; half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A.				
Full Package Storage	Relative humidity (%)	20%～70%				
	Temperature (℃)	-10~35℃				

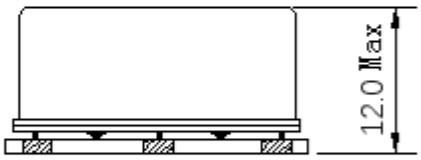
2. Mechanical Structure (mm)



Solder Pad layout

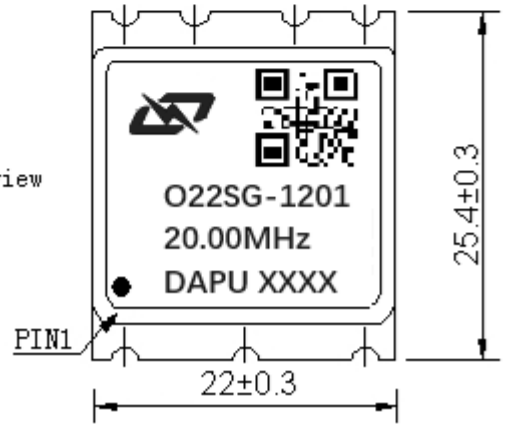


Right view



PIN FUNCTION

PIN	FUNCTION
1	Not Connect
2	Not Connect
3	Supply Voltage
4	RF Output
5	Not Connect
6	Not Connect
7	GND

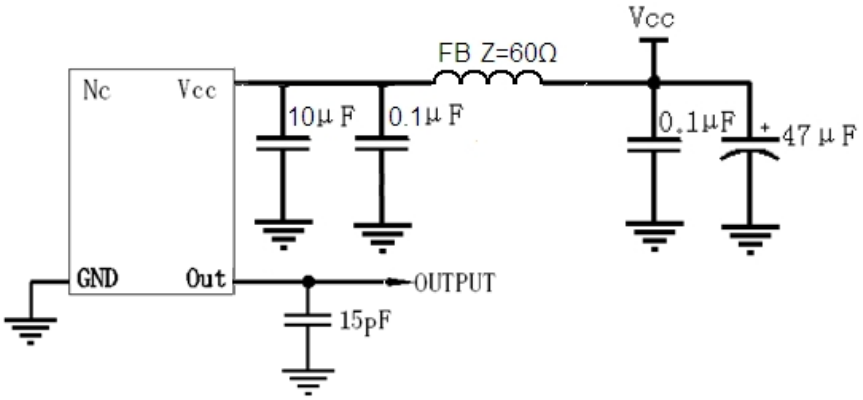


Note1: Tolerance ± 0.2mm without mark

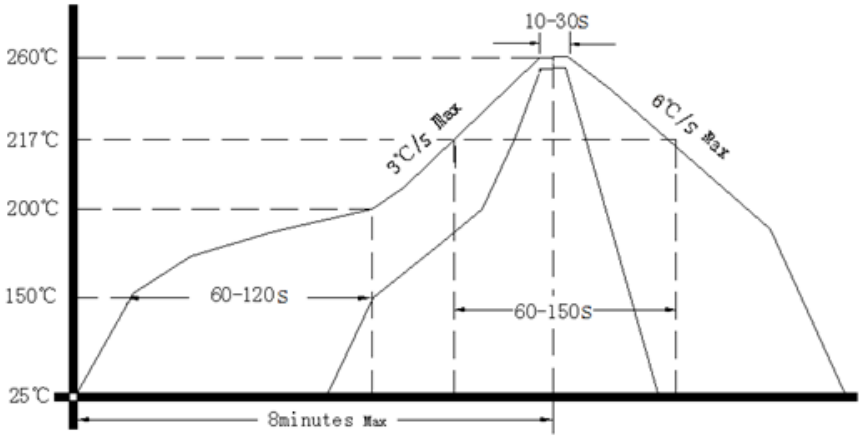
Note2: The first two xx representative: year
After two xx representative: week

Note3: Referential weight 7.8g

3. Test Circuit



4. Reflow Soldering Curve (RoHS)



Note: passing through reflow upside down is not supported

5. Package: Tape & Reel (mm)