



1. Electrical Parameters

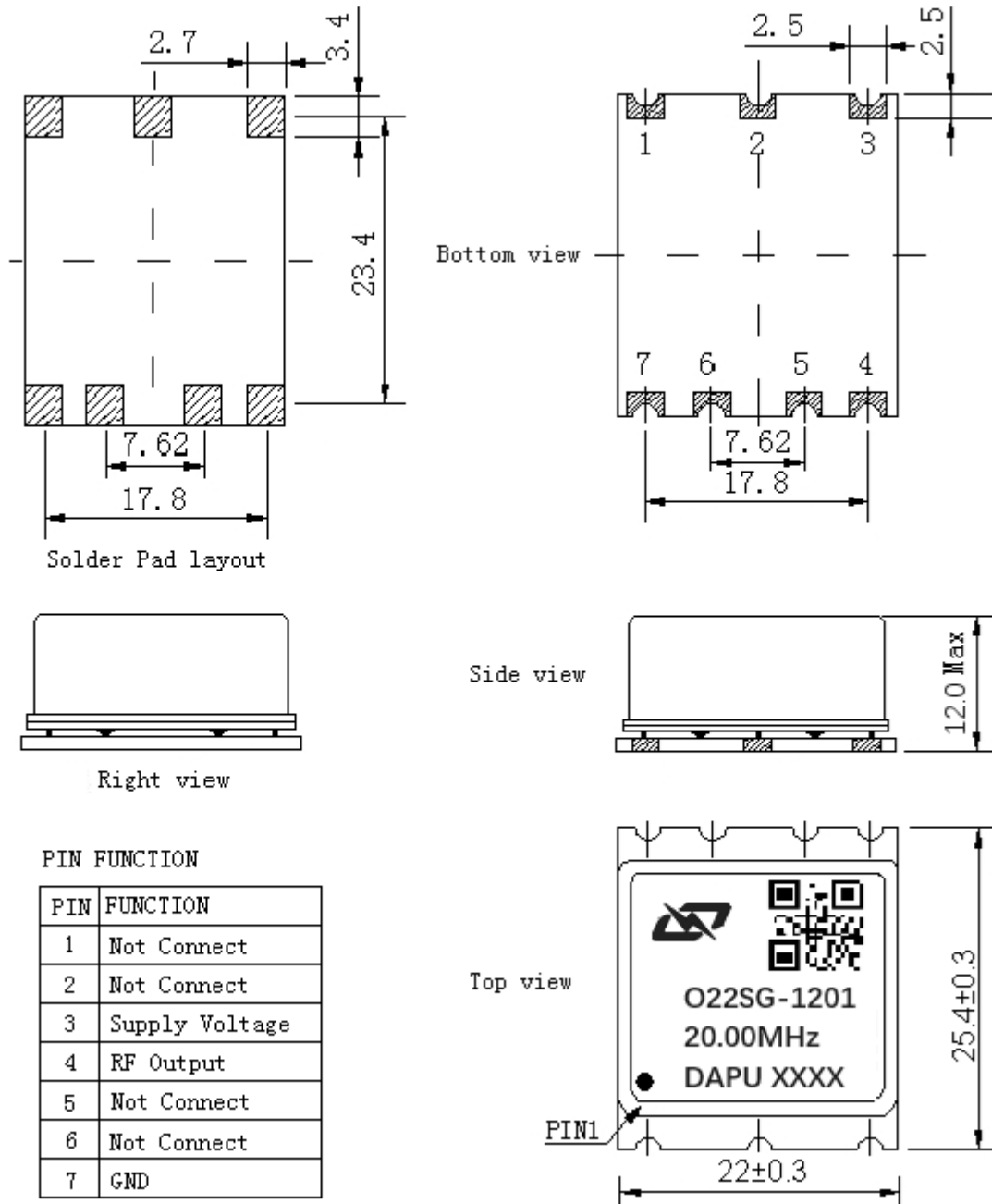
MODEL: O22SG-1201-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	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°C
	Frequency Tolerance vs. Operating Temperature Range	-5		+5	$\times 10^{-9}$	T_A varied from -40°C to 85°C, 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°C per minute.
	Additional information: Drift 24 Hr and $\pm 2.8^\circ C$ temp. change $< \pm 1.1ppb$. 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 $T_A=25^\circ C, V_{cc}=3.3V,$ 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 $T_A=25^\circ C, V_{cc}$ 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 $T_A=25^\circ C,$ $V_{cc}=3.3V,$ and $O_{Load}=15pF$.
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=3.3V,$ 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	$\times 10^{-6}$		



	Holdover 24 h	-6		+6	$\times 10^{-9}$	incl. Drift and -40~85°C temperature stability
Additional information: Holdover 5ppb peak-peak: incl. of 24H aging and @40°C temperature change						
Power Supply	Supply Voltage	3.14	3.3	3.47	V	
	Steady Consumption			400	mA	@25°C
	Warm up current			950	mA	
	Warm-Up Time			5	min	@25°C 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	°C	
	Storage Temperature	-55		+105	°C	
	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 (°C)	-10~35°C				



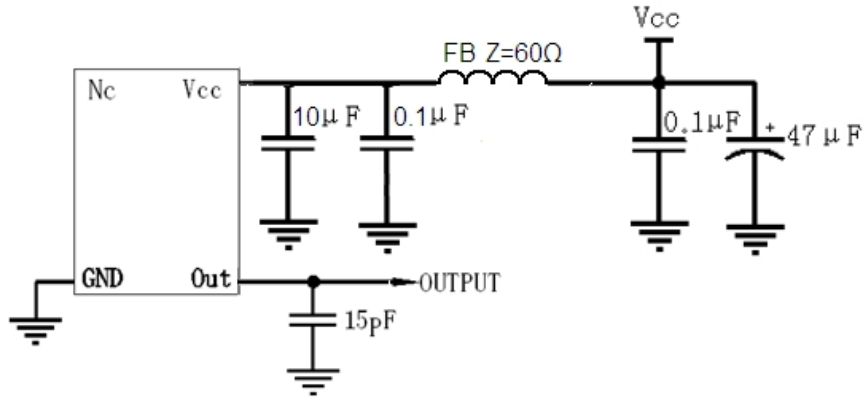
2. Mechanical Structure (mm)



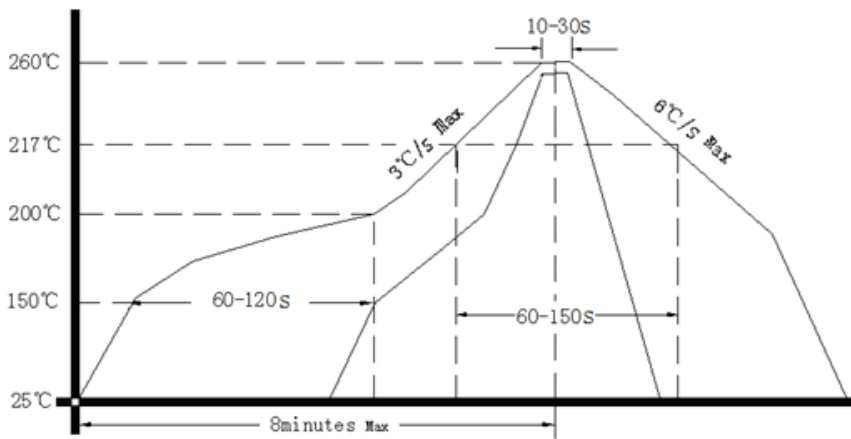
- Note1:** Tolerance $\pm 0.2\text{mm}$ without mark
- Note2:** The first two xx representative: year
After two xx representative: week
- Note3:** Referential weight 7.8g



3. Test Circuit



4. Reflow Soldering Curve (RoHS)



Note: passing through reflow upside down is not supported

5. Package: Tape & Reel (mm)

