

Customer Code : _____

DATASHEET

DAPU P/N: **O22S-C319-20.00MHz**

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2020.04.27			

Guangdong Dapu Telecom Technology Co.,Ltd

Bldg 16,.N.Ind.Zone,SSL Industry Park, Dongguan City, Guangdong Province, China

TEL: 0086-0769-88010888 FAX: 0086-0769-81800098



1. Electrical Parameters

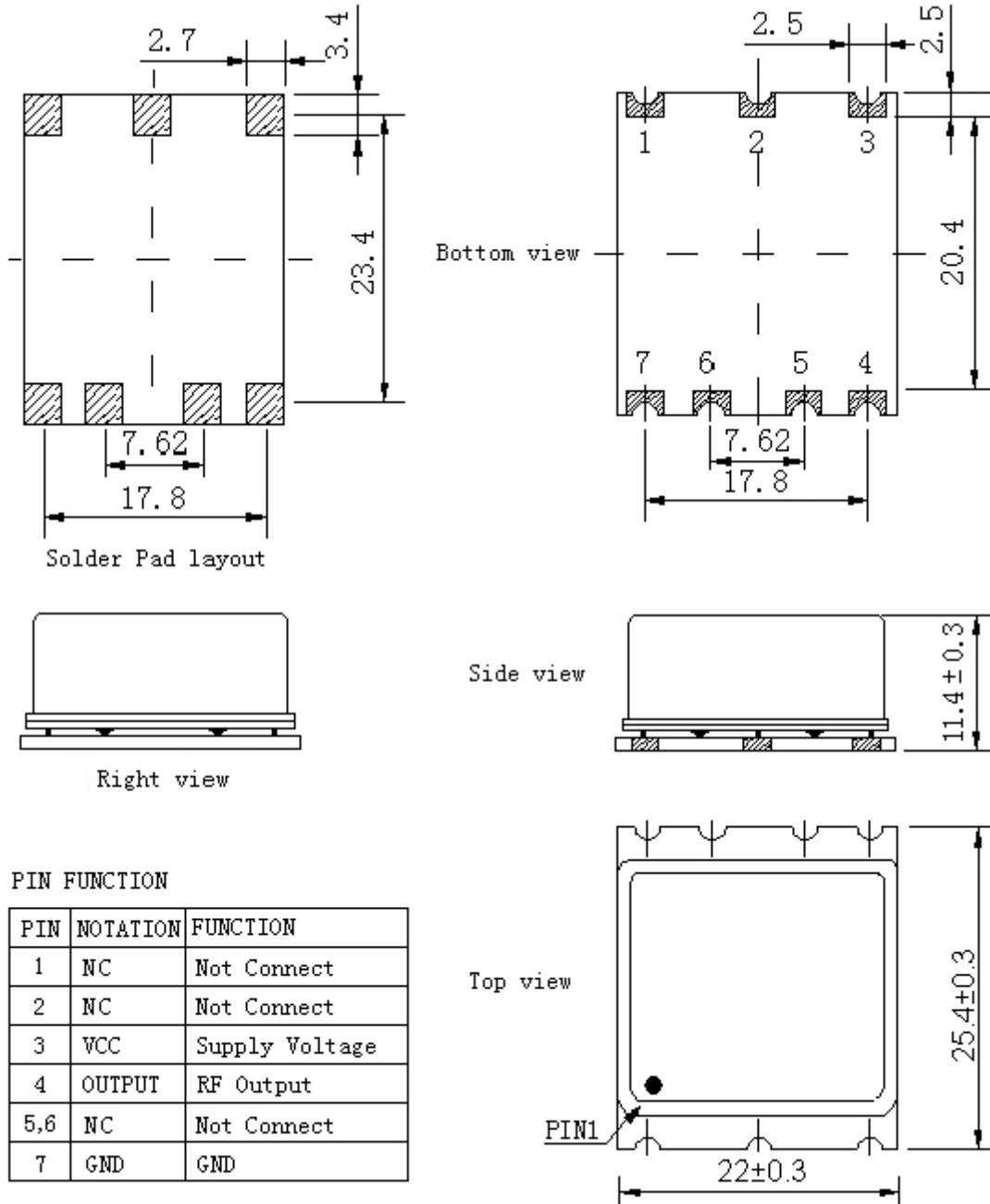
MODEL: O22S-C319-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.33	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	40	50	60	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	
	Load	13.5	15	16.5	pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.01		+0.01	$\times 10^{-6}$	T_A varied from $-40^{\circ}C$ to $85^{\circ}C$, measurement referenced to frequency observed with $T_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15pF$, temperature rise speed less than $2^{\circ}C$ per minute.
	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 3.135V to 3.465V, and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-3		+3	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$, and $O_{Load}=15pF$.
	Short-Term Frequency Stability		0.01		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1s.
	Aging Tolerance Per Day	-0.5		+0.5	$\times 10^{-9}$	V_{cc}, V_c, 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 1 Year	-0.08		+0.08	$\times 10^{-6}$	
	Aging Tolerance 20 Year	-0.8		+0.8	$\times 10^{-6}$	
	Drift	-1		+1	$\times 10^{-9}$	24hours with $\pm 2.8^{\circ}C$, after 30 days.
	Total Free-run Accuracy	-2		+2	$\times 10^{-6}$	20 years
	MTIE (GR-1244/Fig 5-5)			100	ns	Frequency data subjected to a 1MHz loop filter (-dB cut-off frequency, 2 nd order high pass filter). After 24 hours operation, $T=+25^{\circ}C$.
	TDEV (GR-1244/Fig 5-4)			10	ns	



Power Supply	Supply Voltage	3.135	3.3	3.465	V	
	Steady Consumption			400	mA	@25°C
	Warm up current			1000	mA	
	Warm-Up Time		2	5	minutes	@25°C within $\pm 0.1 \times 10^{-6}$ of final Frequency with reference after 24 hour on.
Phase Noise	Phase Noise @25°C		-80		dBc/Hz	1Hz
			-110			10Hz
			-135			100Hz
			-145			1KHz
			-150			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 3.				
	Vibration	Test Condition: 0.75mm ;acceleration:10g;5Hz~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				



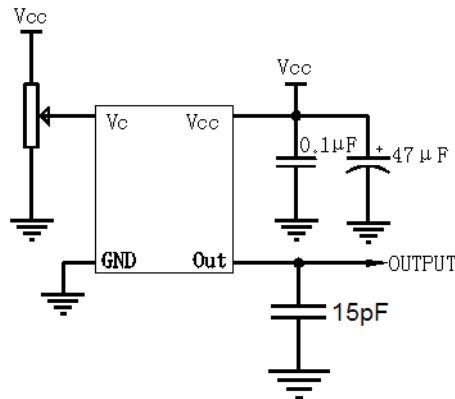
2. Mechanical Structure (mm)



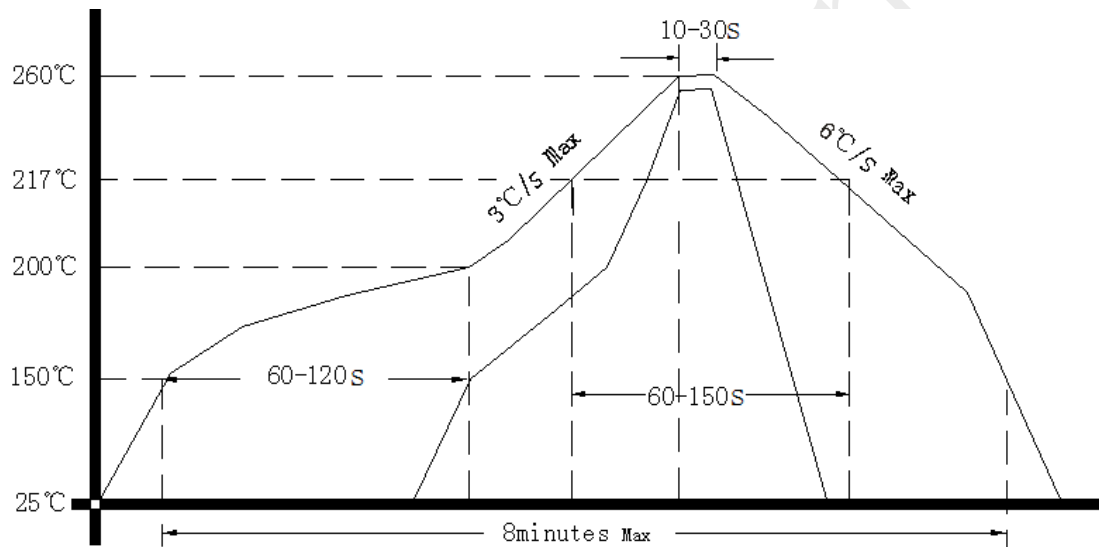
- Note1:** Tolerance $\pm 0.20\text{mm}$ without mark
- Note2:** The first two xx representative: week
After two xx representative: year
- Note3:** Referential weight 7.8g
- Note4:** NC is not connect



4. Test Circuit



5. Reflow Soldering Curve (RoHS)



6. Package: Tape & Reel (mm)

