

Customer Code: \_\_\_\_\_

# DATASHEET

DAPU P/N: **O22S-0808-10.00MHz**

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2024.04.30			

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**Table of amendment**

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Anway</i>	2024.04.30

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## 1. Electrical Parameters

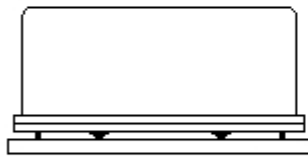
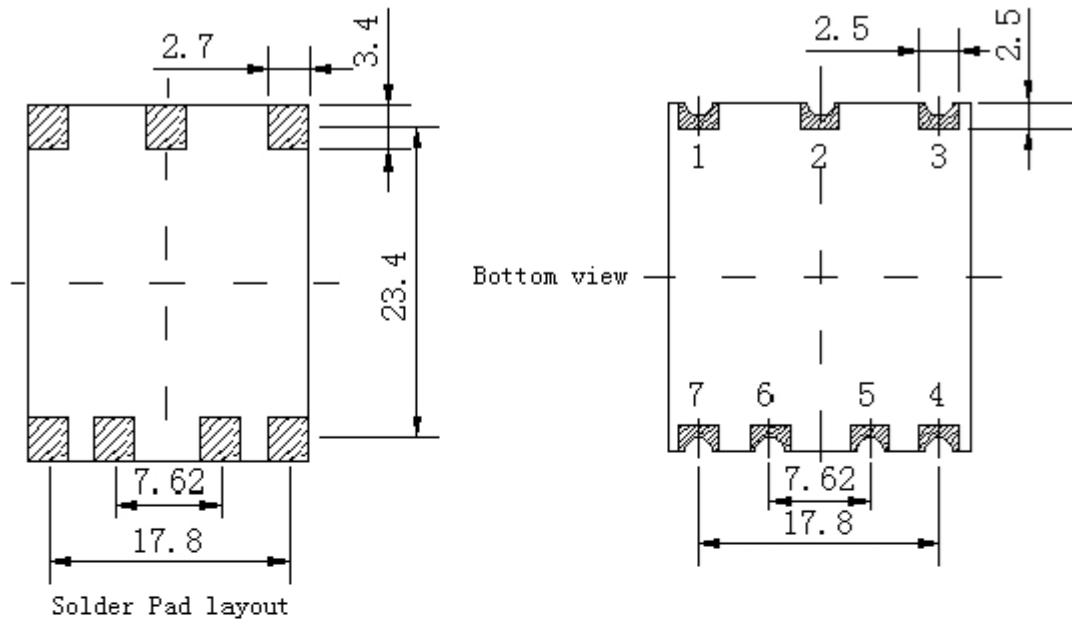
MODEL: O22S-0808-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	LVTTTL				
	Output Low Voltage			0.4	V	V <sub>cc</sub> =3.3V, Load =15pF
	Output High Voltage	2.4			V	V <sub>cc</sub> =3.3V, Load =15pF
	Duty Cycle	45		55	%	@50%
	Spurious Suppression			-90	dBc	
	Rise/Fall Time			10	ns	10%~90% V <sub>cc</sub>
	Load	13.5	15	16.5	pF	
	Start up time			1	s	90% V <sub>cc</sub> to the correct frequency output time
Frequency Stabilities	Frequency Accuracy	-0.9		+0.9	× 10 <sup>-6</sup>	Within 90 days after shipment and 15 minutes warm up time (before reflow), Measurement referenced to nominal frequency
		-1		+1	× 10 <sup>-6</sup>	After 2 hours and 5 minutes warm up time (after reflow), Measurement referenced to the nominal frequency.
	Frequency Stability vs. Operating Temperature Range	-1		+1	× 10 <sup>-9</sup>	TA varied from -40°C to 85°C, V <sub>cc</sub> =3.3V, and Load = 15pF. Measurement referenced to frequency observed With f <sub>ref</sub> =(f <sub>max</sub> +f <sub>min</sub> )/2, V <sub>cc</sub> =3.3V . Air condition
	Frequency Stability vs. Supply Voltage	-0.5		+0.5	× 10 <sup>-9</sup>	measurement referenced to frequency observed T <sub>A</sub> =25°C, V <sub>cc</sub> varied from 3.135V to 3.465V, and O <sub>Load</sub> =15pF.
	Frequency Tolerance vs Load	-0.5		+0.5	× 10 <sup>-9</sup>	10% load change measurement referenced to frequency observed with T <sub>A</sub> =25°C, V <sub>cc</sub> =3.3V, and O <sub>Load</sub> =15pF.
	Short-Term Stability: Allan Variance			1	× 10 <sup>-12</sup>	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to 25°C; 1s.
	Aging Tolerance per day	-1		+1	× 10 <sup>-9</sup>	V <sub>cc</sub> , TA constant Measurement referenced to frequency observed with TA=25°C, V <sub>cc</sub> =3.3V. and after 30 days of operation
	Aging Tolerance 1 Year	-0.05		+0.05	× 10 <sup>-6</sup>	Calculation method:
	Aging Tolerance 10 Years	-0.5		+0.5	× 10 <sup>-6</sup>	Annual Aging Rate: 50*daily aging rate. 10-Years Aging Rate: 10* annual aging rate.



Power Supply	Supply Voltage	3.135	3.3	3.465	V	
	Steady Consumption			450	mA	@25°C
	Warm up current			1000	mA	When all temp range
	Warm Up	-0.1		+0.1	$\times 10^{-6}$	After warm up 3 minutes. Measurement referenced to frequency observed with TA = 25°C, V <sub>cc</sub> =3.3V. and after 24 hours of operation.
Phase Noise	Phase Noise			-80	dBc/Hz	1Hz
				-120		10Hz
				-140		100Hz
				-145		1KHz
				-150		10KHz
				-150		100KHz
				-150		1MHz
Environmental Conditions	Operable Temperature range	-40		+85	°C	
	Storage Temperature	-55		+105	°C	
	Temperature Rate of Change			1	°C/min	
	Air-tightness			$1 \times 10^{-9}$	Pa.cm <sup>3</sup> /s	Crystal cavity
				$1 \times 10^{-5}$	Pa.cm <sup>3</sup> /s	Shell
	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)



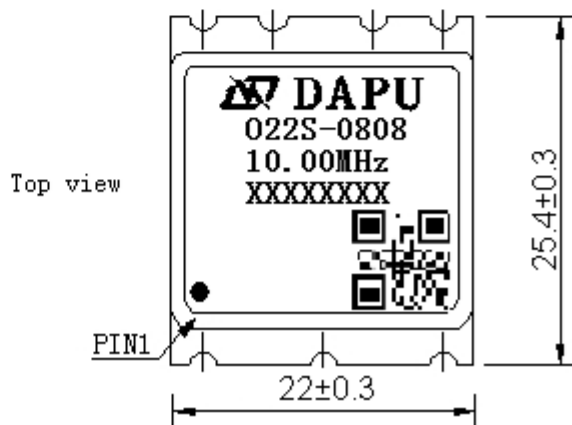
Right view



Side view

### PIN FUNCTION

PIN	NOTATION	FUNCTION
1	NC	Not Connect
2	NC	Not Connect
3	VCC	Supply Voltage
4	OUTPUT	RF Output
5,6	NC	Not Connect
7	GND	GND



**Note1:** Tolerance ± 0.20mm without mark

**Note2:** The first two xx representative: year

After two xx representative: week

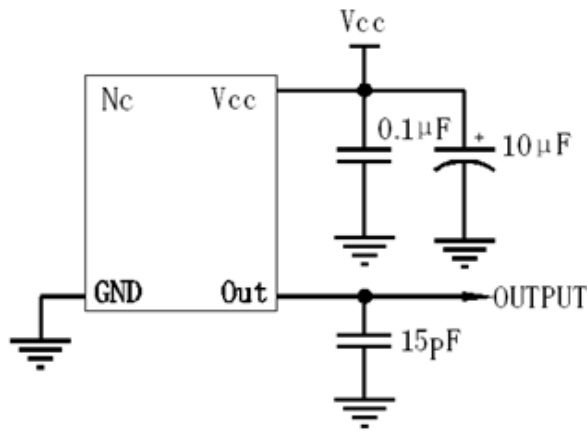
At last four xxxx representative: serial number

**Note3:** Referential weight 10g

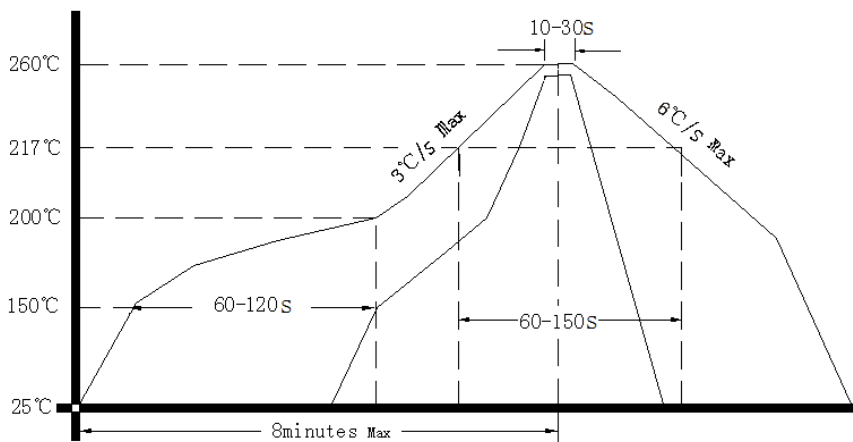
**Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



Note: Passing through reflow upside down is not supported

### 5. Package: Tape & Reel (mm)

