

Customer Code : _____

DATASHEET

DAPU P/N: **O22S-K319-20.00MHz**

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2020.03.23			

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

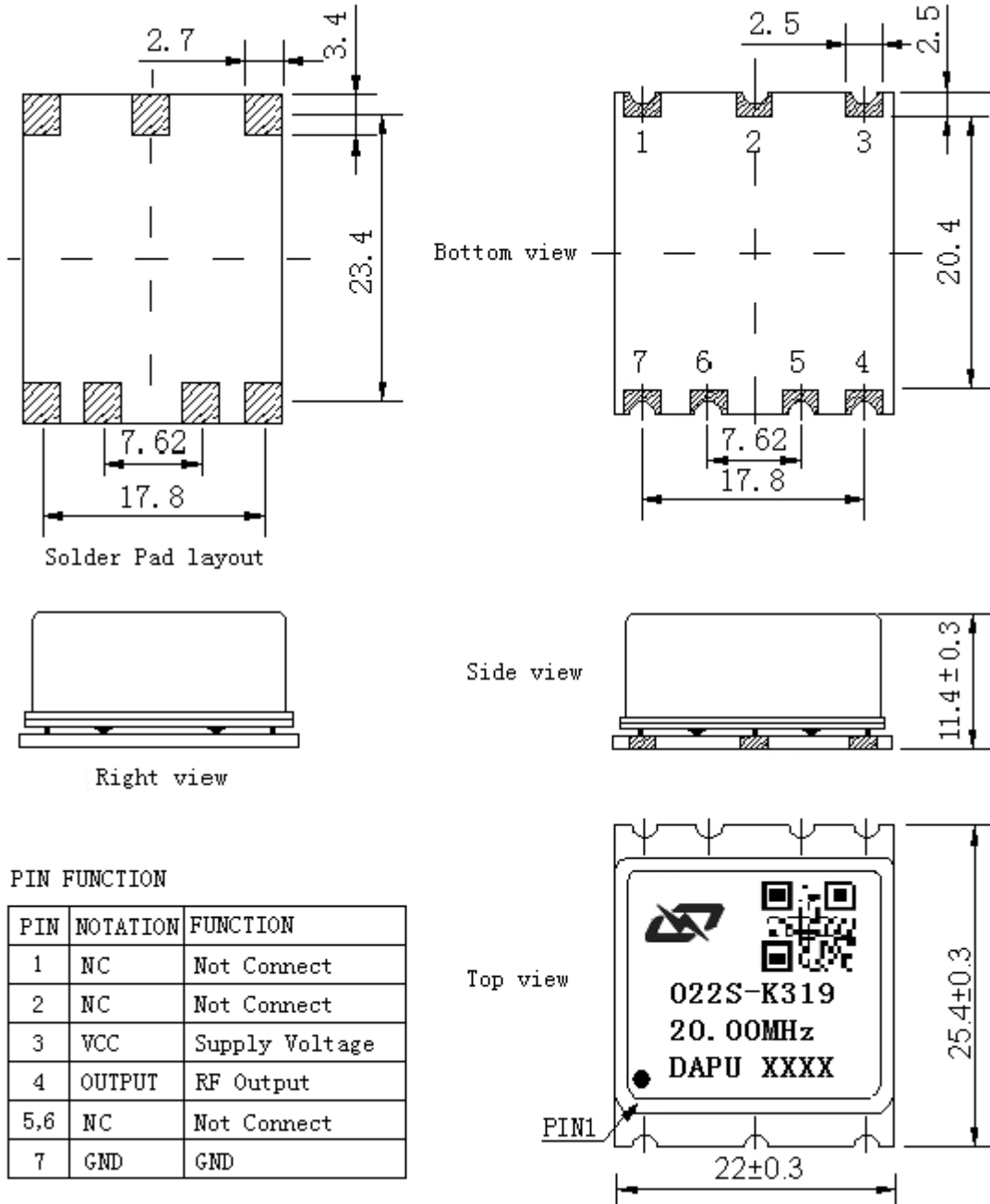
MODEL: O22S-K319-20.00MHZ						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	
	Load	15			pF	
	Start-up Time			0.5	s	
	Spurious			-70	dBc	
	Overshoot			10	%	$O_{load}=15pF$
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range			2	$\times 10^{-9}$	T_A varied from $-40^{\circ}C$ to $85^{\circ}C$, $V_{cc}=3.3V$, $O_{load}=15pF$, temperature variable speed less than $2^{\circ}C$ per minute. calculation formula : $(f_{max}-f_{min})/f_0$.
	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	-1		+1	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^{\circ}C$, V_{cc} varied from 3.13V to 3.47V, and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-1		+1	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^{\circ}C$, $V_{cc}=3.3V$, and $O_{Load}=15pF$.
	Short-Term Stability Allan Variance			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	-0.3		+0.3	$\times 10^{-9}$	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	-0.05		+0.05	$\times 10^{-6}$	
	Aging Tolerance 20 Year	-0.5		+0.5	$\times 10^{-6}$	
Total Free-run Accuracy	-1.5		+1.5	$\times 10^{-6}$	Over lifetime(Telcordia GR-1244 requirement: $\pm 4.6ppm$)	



Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			400	mA	@25°C
	Warm up current			1000	mA	
	Warm-Up Time			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		-90		dBc/Hz	1Hz
			-120			10Hz
			-135			100Hz
			-145			1KHz
			-145			10KHz
Jitter			1	ps	RMS Jitter (12KHz-5MHz)	
Environmental Conditions	Operable Temperature	-40		+85	°C	
	Storage Temperature	-55		+105	°C	
	Operable Environmental Conditions	5		85	%RH	
	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)

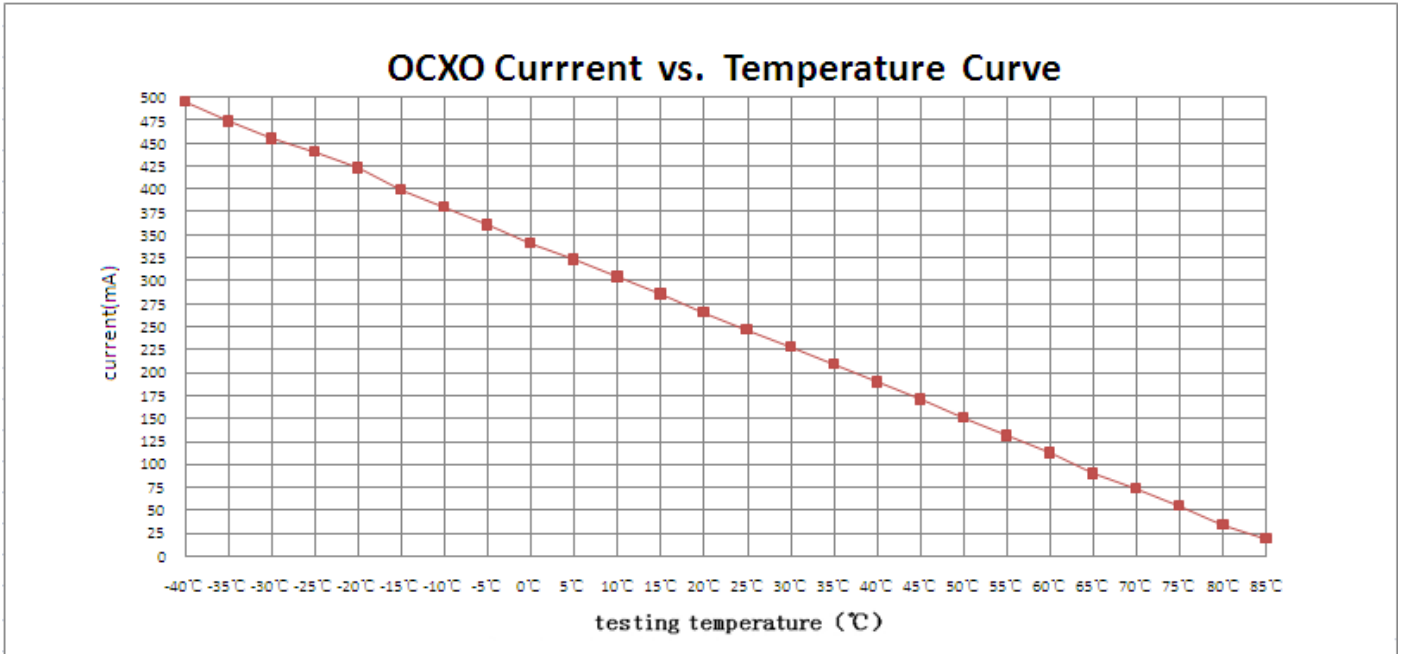


- Note1:** Tolerance $\pm 0.20\text{mm}$ without mark
- Note2:** The first two xx representative: week
After two xx representative: year
- Note3:** Referential weight 7.8g
- Note4:** NC is not connect

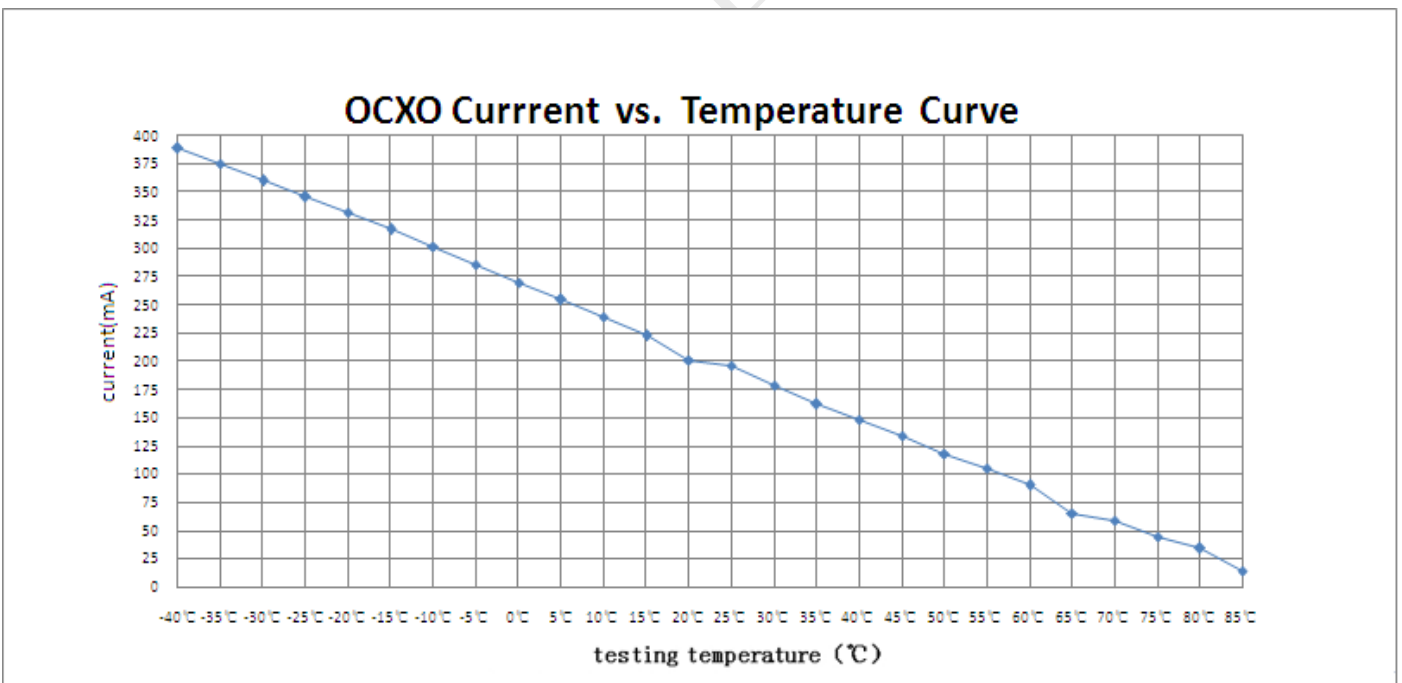


3. Current vs. Temperature

Airflow=1.5m/s

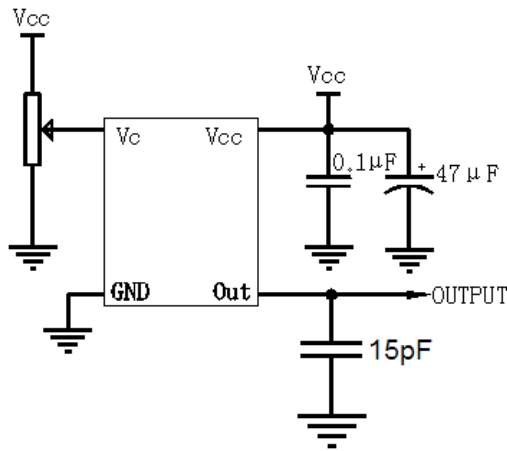


Airflow=0m/s

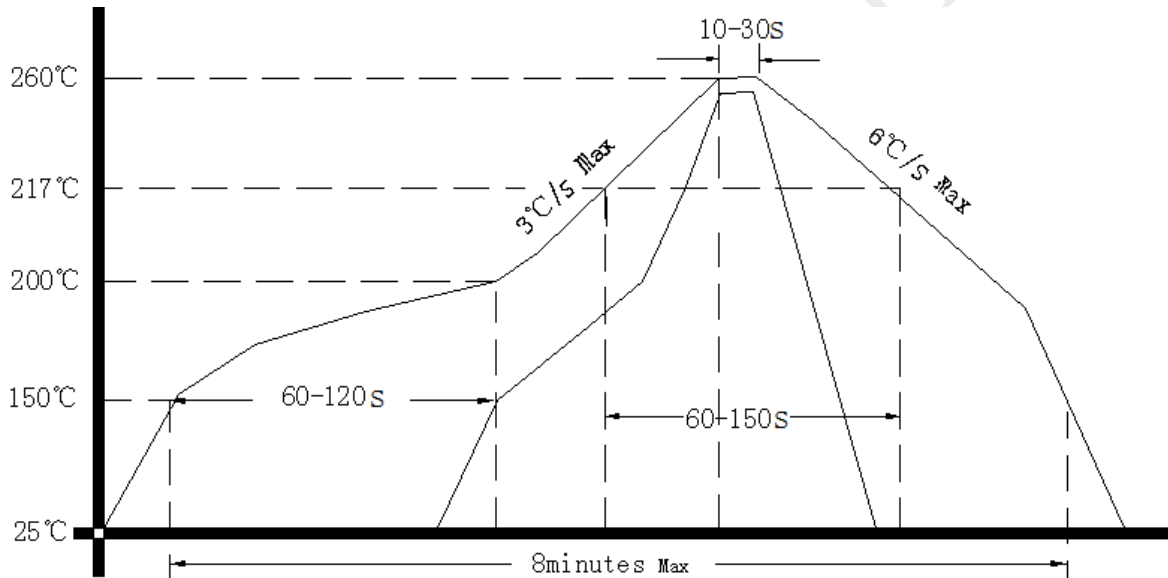




4. Test Circuit



5. Reflow Soldering Curve (RoHS)



6. Package: Tape & Reel (mm)

