

Customer Code : _____

DATASHEET

DAPU P/N: O22S-K317-10.00MHz-B

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2023.07.03			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2020.09.30
1.1	The “Operable Temperature” changed	<i>Amway</i>	2023.07.03



1. Electrical Parameters

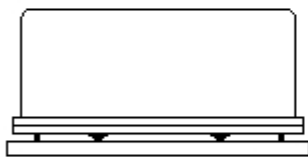
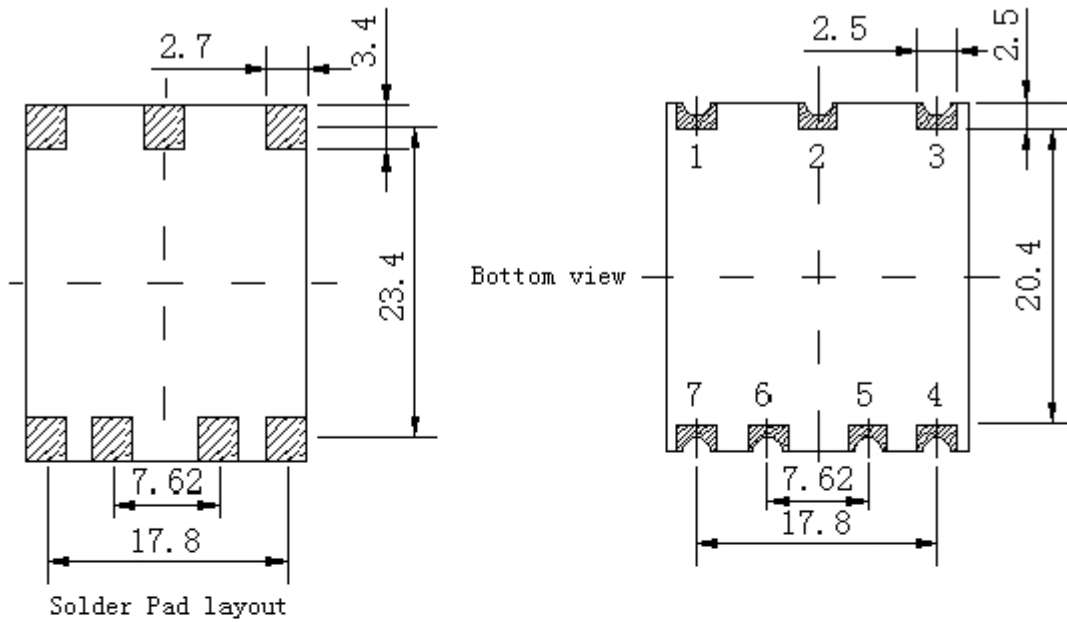
MODEL: O22S-K317-10.00MHZ-B						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.7			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	
	Load	15			pF	
	Start-up Time			1	s	@25°C, for frequency deviation $\leq \pm 50ppm$
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.01		+0.01	$\times 10^{-6}$	T_A varied from -40°C to 85°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, V_c=1.65V, O_{load}=15pF$, temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-0.2		+0.2	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=3.3V, V_c=1.65V$, and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-2		+2	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^\circ C, V_{cc}$ varied from 3.13V to 3.47V, $V_c=1.65V$ and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-2		+2	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=3.3V, V_c=1.65V$, 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°C; 1s.
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	V_{cc}, V_c, T_A constant measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=3.3V, V_c=1.65V$, and after 30 days of operation.
	Aging Tolerance 1 Year	-0.05		+0.05	$\times 10^{-6}$	
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			400	mA	@25°C
	Warm up current			900	mA	
	Warm-Up Time			3	minutes	@25°C within $\pm 0.1 \times 10^{-6}$ of final Frequency with reference after 1 hour on.



Voltage Control Characteristics	Frequency Tuning Range	-2.0		-0.8	$\times 10^{-6}$	$V_c=0V$. measurement referenced to $V_c=1.65V$
		-0.2		+0.2	$\times 10^{-6}$	$V_c=1.65V$. measurement referenced to exactly 10.00MHz
		+0.8		+2.0	$\times 10^{-6}$	$V_c=3.3V$. measurement referenced to $V_c=1.65V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100				K Ω
Phase Noise	Phase Noise @25 $^{\circ}C$		-85	-75	dBc/Hz	1Hz
			-120	-110		10Hz
			-140	-135		100Hz
			-145	-140		1KHz
			-150	-145		10KHz
			-150	-145		100KHz
			-155	-150		1MHz
Jitter			1	ps	RMS Jitter (12KHz-5MHz)	
Environmental Conditions	Operable Temperature	-40		+85	$^{\circ}C$	
	Storage Temperature	-40		+90	$^{\circ}C$	
	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 2.				
	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.					
Free fall	100 mm, The frequency difference between before and after the test is less than 2E-7					
Full Package Storage	Relative humidity (%)	20%~70%				
	Temperature ($^{\circ}C$)	-10~35 $^{\circ}C$				



2. Mechanical Structure (mm)



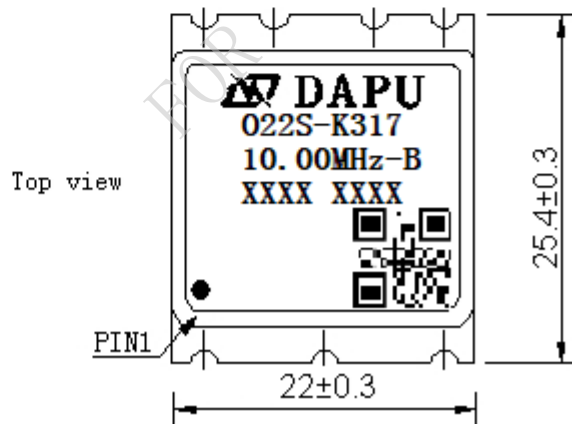
Right view



Side view

PIN FUNCTION

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



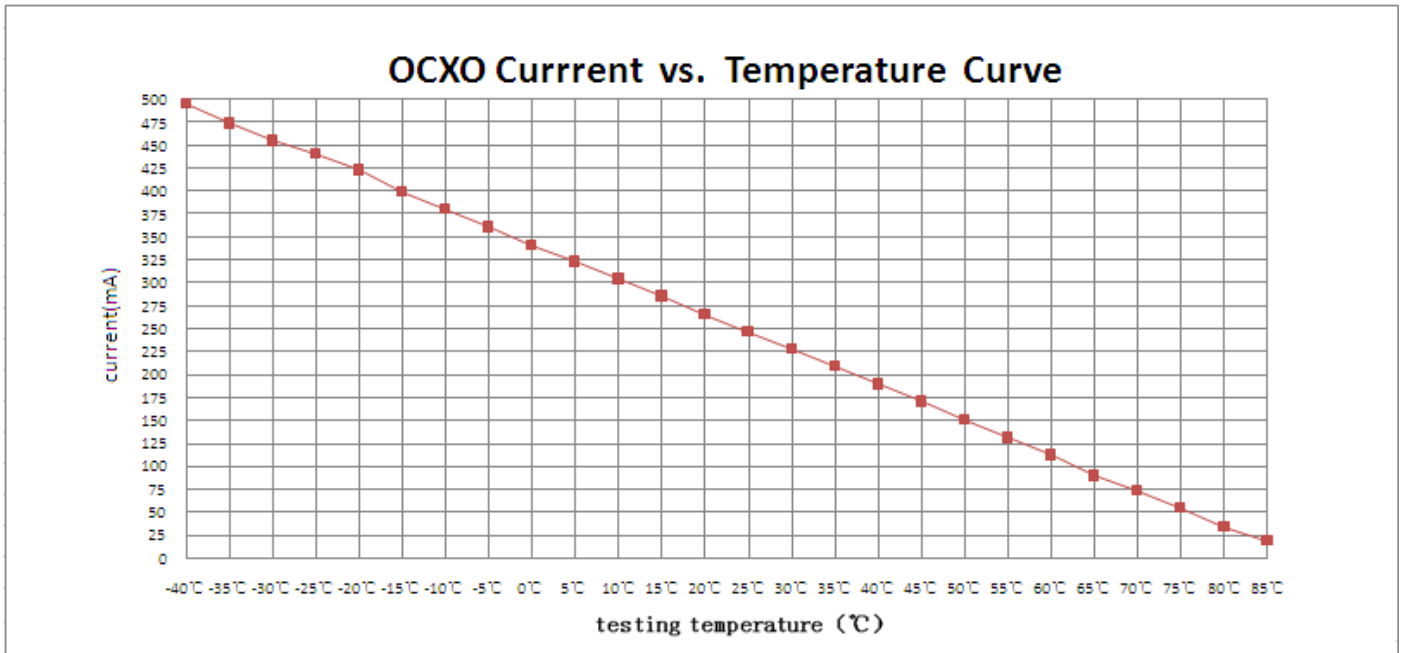
Top view

- Note1:** Tolerance ± 0.20mm without mark
- Note2:** The first two xx representative: week
After two xx representative: year
At last four xxxx representative: serial number
- Note3:** Referential weight 7.8g
- Note4:** NC is not connect

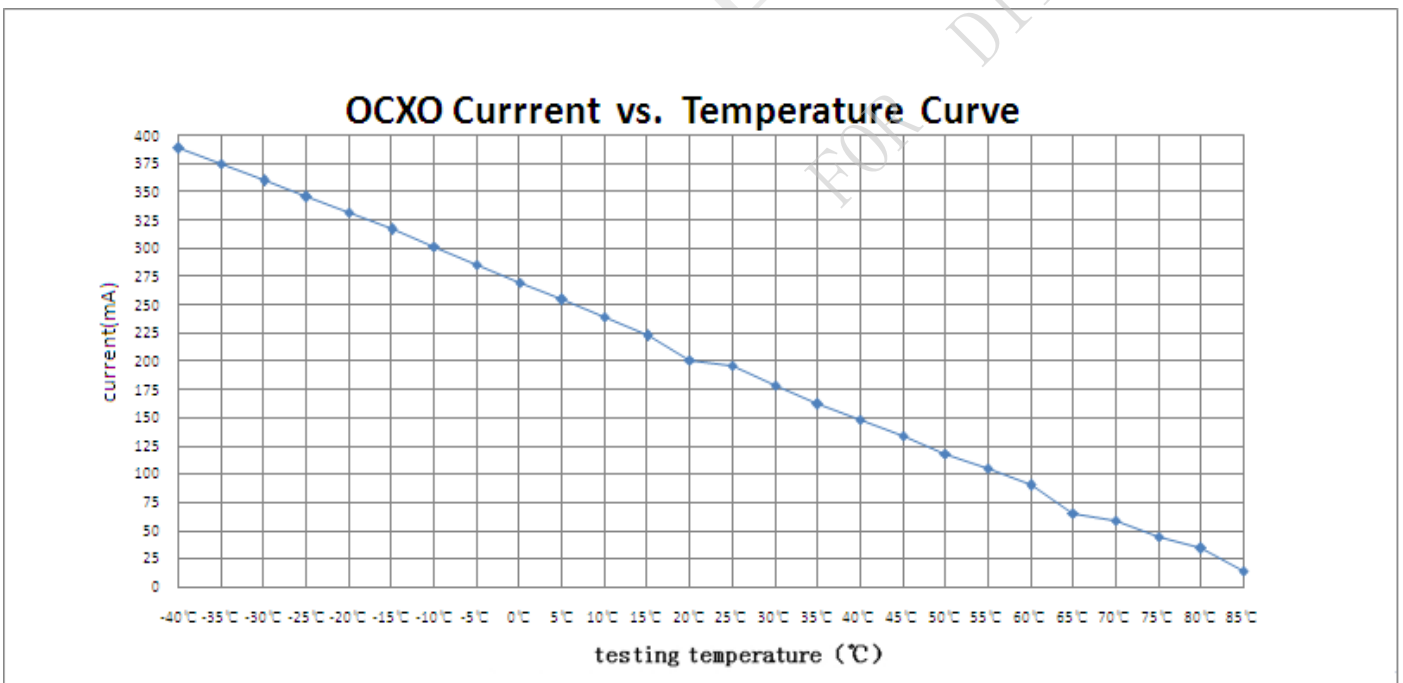


3. Current vs. Temperature

Airflow=1.5m/s

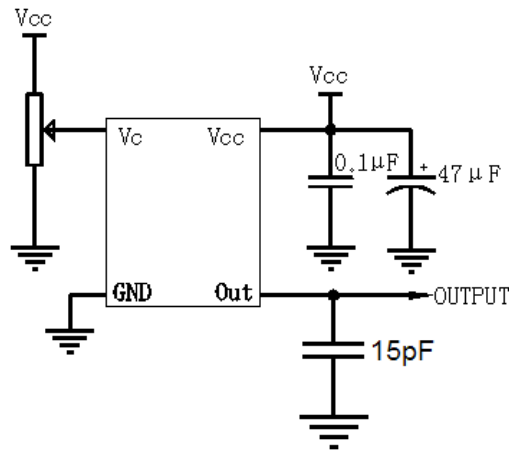


Airflow=0m/s

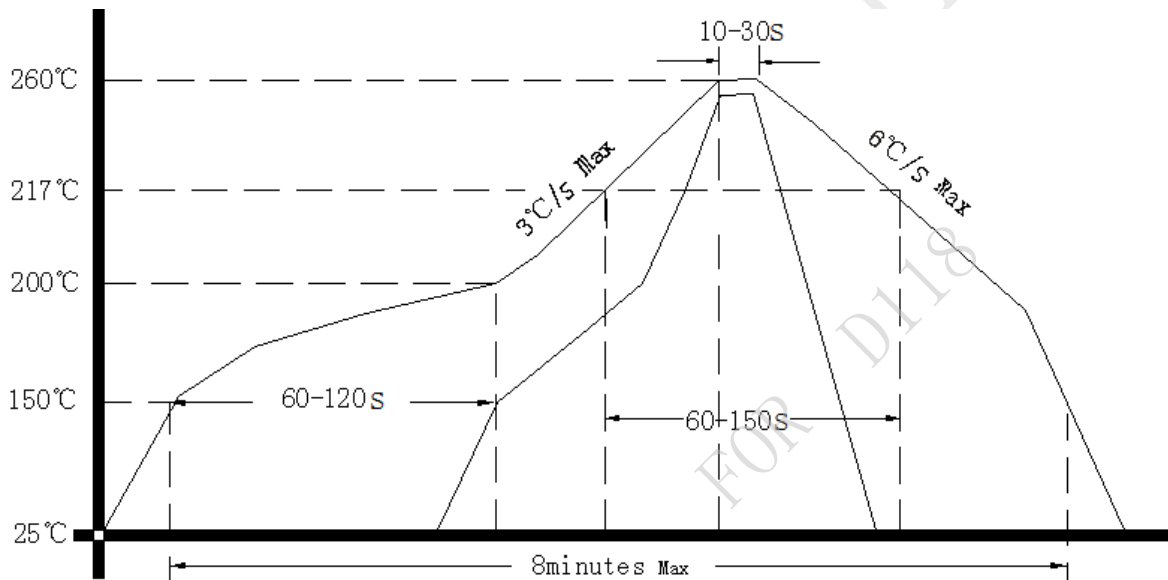




4. Test Circuit



5. Reflow Soldering Curve (RoHS)



6. Package: Tape & Reel (mm)

