

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

# DATASHEET

DAPU P/N: 079A-3701-30.72MHz

Customer P/N: \_\_\_\_\_

DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2024.04.03			

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### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2019.11.07
1.1	Add “Total Tolerance” The “Initial Frequency Tolerance” “current” “Moisture Sensitivity Level” “Reflow Soldering Curve” “slope” “Mechanical Structure” “Package” changed, “	<i>Amway</i>	2022.05.06
1.2	The “Frequency Tuning Range” changed	<i>Amway</i>	2022.06.30
1.3	The “Tuning Slope” “Linearity” changed	<i>Amway</i>	2022.08.01
1.4	The “Output High Voltage” “Marking” changed	<i>Amway</i>	2023.04.03
1.5	The “Rise / Fall Time” “Storage Temperature” changed	<i>Amway</i>	2024.03.01
1.6	The “Mechanical Structure” changed	<i>Amway</i>	2024.03.12
1.7	The “Package” changed	<i>Amway</i>	2024.04.03



## 1. Electrical Parameters

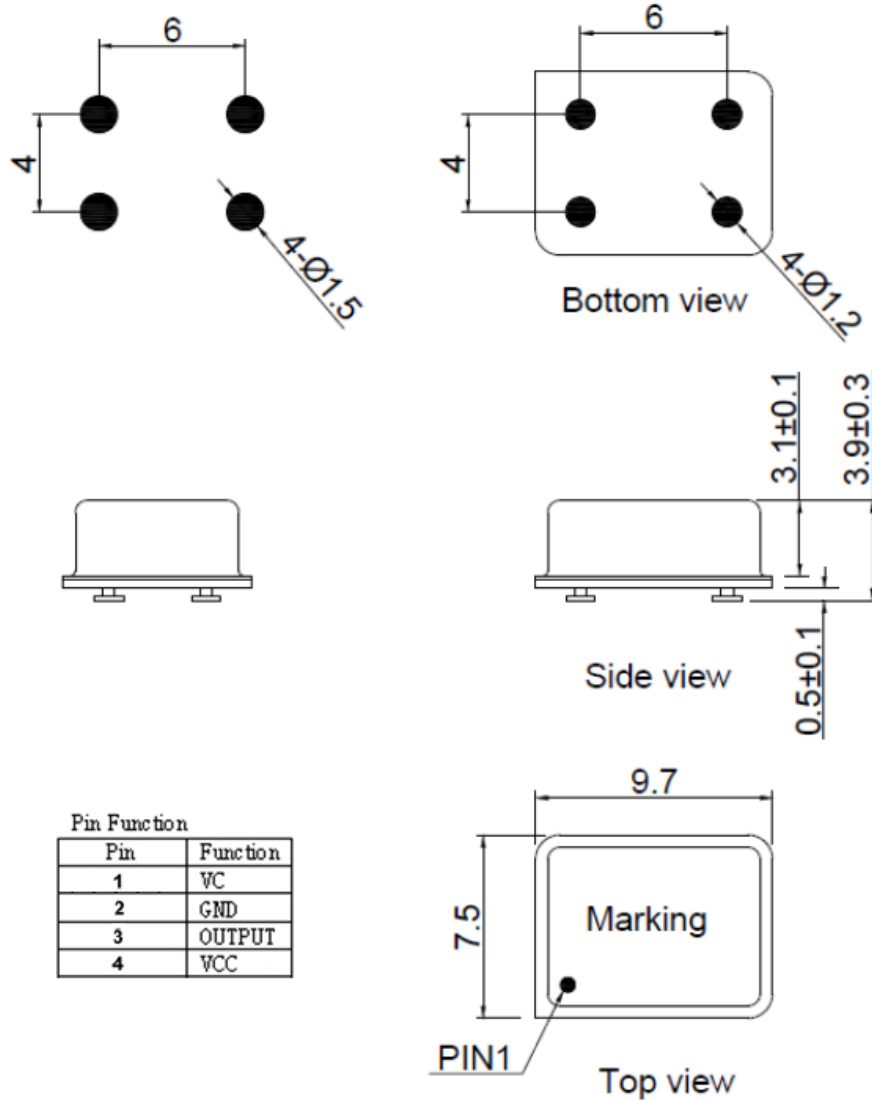
MODEL: O79A-3701-30.72MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	30.72			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.7			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			3.5	ns	
	Sub Harmonics			-40	dBc	
	Non Harmonic Spurious			-60	dBc	
	Load	15			pF	
Frequency Stabilities	Total Tolerance	-2.4		+2.4	$\times 10^{-6}$	Including calibration at 25°C, $V_c=1.25V$ , reflow, temperature, supply voltage, load changes and 10years aging reference to Fn
	Frequency Tolerance vs. Operating Temperature Range	-0.02		+0.02	$\times 10^{-6}$	$T_A$ varied from -40°C to 95°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=3.3V$ , $V_c=1.25V$ , $O_{load}=15pF$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ C$ , $V_{cc}=3.3V$ , $V_c=1.25V$ , and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-5		+5	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^\circ C$ , $V_{cc}$ varied from 3.234V to 3.366V, $V_c=1.25V$ , and $O_{Load}=15pF$ .
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^\circ C$ , $V_{cc}=3.3V$ , $V_c=1.25V$ , and $O_{Load}=15pF$ .
	Reflow shift	-0.2		+0.2	$\times 10^{-6}$	Pre to post reflow $\Delta F$ (measured $\geq 60$ minutes after reflow)
	Frequency Slope	-0.5		+0.5	$\times 10^{-9}/^\circ C$	Temperature ramp rate $\leq 1^\circ C$ /minute
	Short-Term Stability: Allan Variance			0.1	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to 25°C; 1s.



	Aging Tolerance Per Day	-3		+3	$\times 10^{-9}$	$V_{cc}, V_c, T_A$ constant measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{cc}=3.3\text{V}$ , $V_c=1.25\text{V}$ , and after 30 days of operation.
	Aging Tolerance 1 Year	-0.3		+0.3	$\times 10^{-6}$	
	Aging Tolerance 10 Year	-2.0		+2.0	$\times 10^{-6}$	
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			600	mW	@25°C
	Warm up current			1650	mW	
	Warm up time			1	min	@25°C within $\pm 0.02 \times 10^{-6}$ of final frequency with reference after 1 hours on .
Voltage Control Characteristics	Frequency Tuning Range	-4		-2.4	$\times 10^{-6}$	$V_c=0\text{V}$ . measurement referenced to $V_c=1.25\text{V}$
		-0.5		+0.5	$\times 10^{-6}$	$V_c=1.25\text{V}$ . measurement referenced to exactly 30.72MHz
		+2.4		+4	$\times 10^{-6}$	$V_c=2.5\text{V}$ . measurement referenced to $V_c=1.25\text{V}$
	Tuning Slope	1.92	2.5	3.2	$\times 10^{-6}/\text{V}$	
	Linearity			5	%	
	Input Impedance	100			K $\Omega$	
Phase Noise	Phase Noise		-73	-60	dBc/Hz	1Hz
			-105	-100		10Hz
			-135	-130		100Hz
			-157	-152		1KHz
			-160	-155		10KHz
			-160	-155		100KHz
			-161	-155		1MHz
Environmental Conditions	Operable Temperature	-40		+95	°C	
	Storage Temperature	-55		+125	°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 1.					
	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)



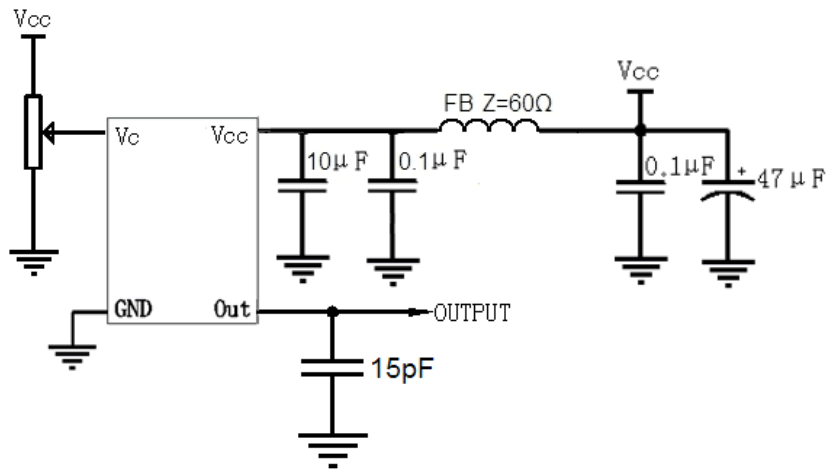
### Marking:



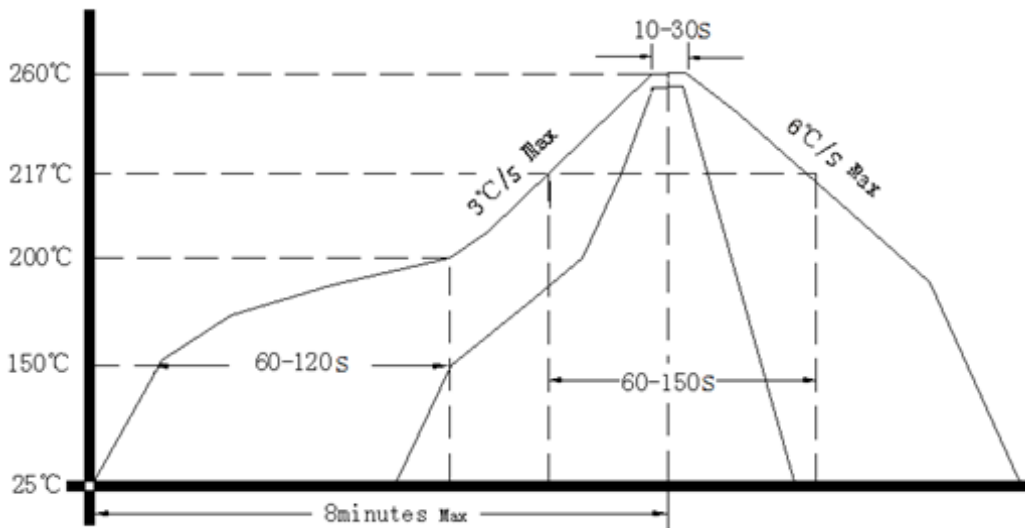
- Note1:** Tolerance  $\pm 0.3\text{mm}$  without mark
- Note2:** The first two xx representative: week  
After two xx representative: year
- Note3:** Referential weight 0.7g



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



Note: passing through reflow upside down is not supported



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

