

Customer Code: _____

DATASHEET

DAPU P/N: 079A-M312-20.00MHz-A

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DAPU			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2024.06.17			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2024.01.10
1.1	The “Steady Consumption” “Warm up current”changed	<i>Amway</i>	2024.06.17



1. Electrical Parameters

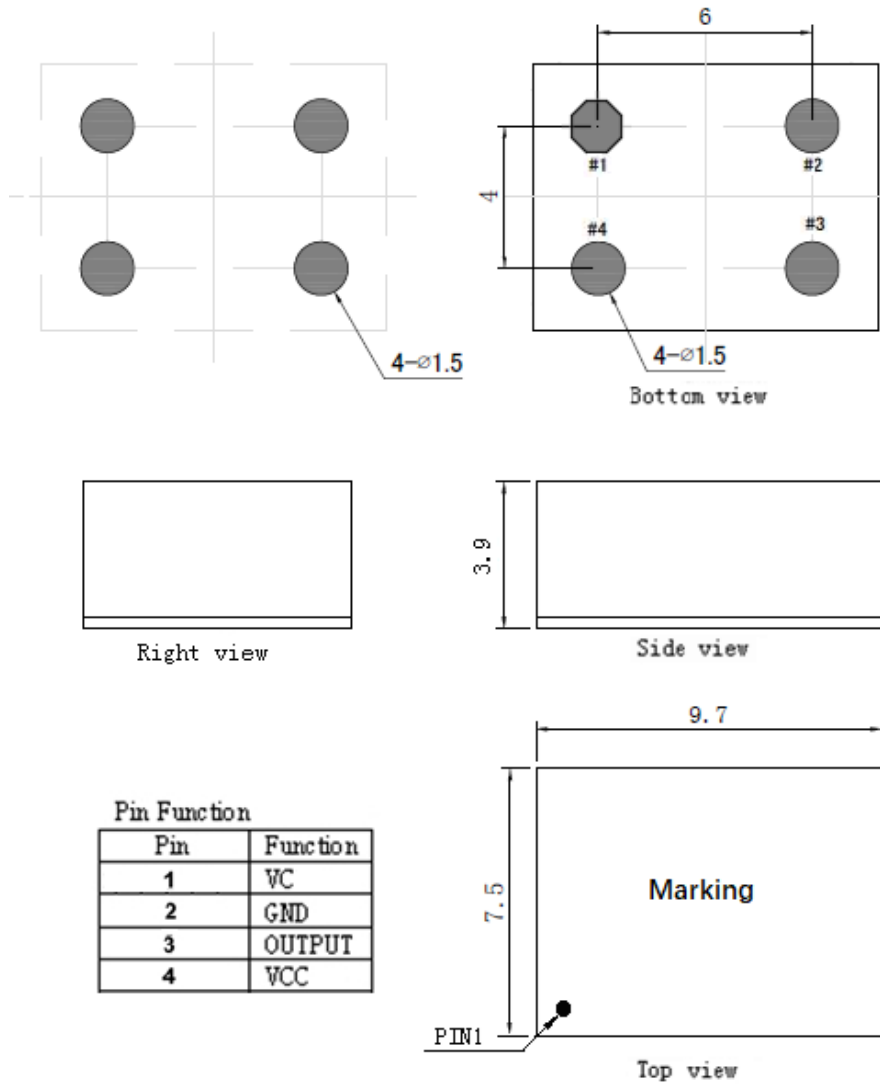
MODEL: O79A-M312-20.00MHz-A						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45		55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	
	Load	15			pF	
	Frequency Tolerance vs. Operating Temperature Range	-0.02		+0.02	$\times 10^{-6}$	T_A varied from $-40^{\circ}C$ to $85^{\circ}C$, measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V, O_{load}=15pF$, temperature variable speed less than $2^{\circ}C$ per minute.
	Initial Frequency Tolerance	-0.1		+0.1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V, V_c=1.65V$, at time of shipment.
	Frequency Tolerance vs. Supply Voltage	-5		+5	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^{\circ}C, V_{cc}$ varied from 3.135V to 3.465V, $V_c=1.65V$ and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V, V_c=1.65V$, and $O_{Load}=15pF$.
	Frequency Slope	-1		+1	$\times 10^{-9}/^{\circ}C$	Temperature ramp $\leq 1^{\circ}C$ /minute
	Short-Term Stability: Allan Variance		80		$\times 10^{-12}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1s.
	Free-run Accuracy	-4.6		+4.6	$\times 10^{-6}$	All causes, 20years life, reference to F_n .
Aging Tolerance Per Day	-2		+2	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with $T_A=25^{\circ}C,$	
Aging Tolerance Per Year	-0.5		+0.5	$\times 10^{-6}$	$V_{cc}= 3.3V, V_c=1.65V,$ and after 30 days of operation.	



Power Supply	Supply Voltage	3.135	3.3	3.465	V	
	Steady Consumption			160	mA	@25°C
	Warm up current			500	mA	
Voltage Control Characteristics	Frequency Tuning Range	-3.3		-1.9	$\times 10^{-6}$	$V_c=0V$. measurement referenced to $V_c=1.65V$
		-0.1		+0.1	$\times 10^{-6}$	$V_c=1.65V$. measurement referenced to exactly 20.00MHz, at time of shipment.
		+1.9		+3.3	$\times 10^{-6}$	$V_c=3.3V$. measurement referenced to $V_c=1.65V$
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			K Ω	
Phase Noise	Phase Noise @25°C		-78	-70	dBc/Hz	1Hz
			-110	-105		10Hz
			-138	-133		100Hz
			-152	-147		1KHz
			-157	-152		10KHz
			-158	-155		100KHz
			-163	-160		1MHz
Jitter	RMS		0.28	1.5	ps	12kHz~5MHz
Environmental Conditions	Operating Temperature	-40		+85	°C	
	Operable Temperature	-45		+105	°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;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:



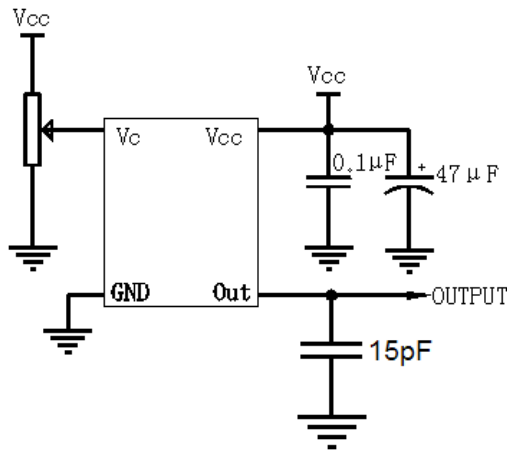
Note1: Tolerance $\pm 0.30\text{mm}$ without mark

Note2: The first two xx representative: week
After two xx representative: year

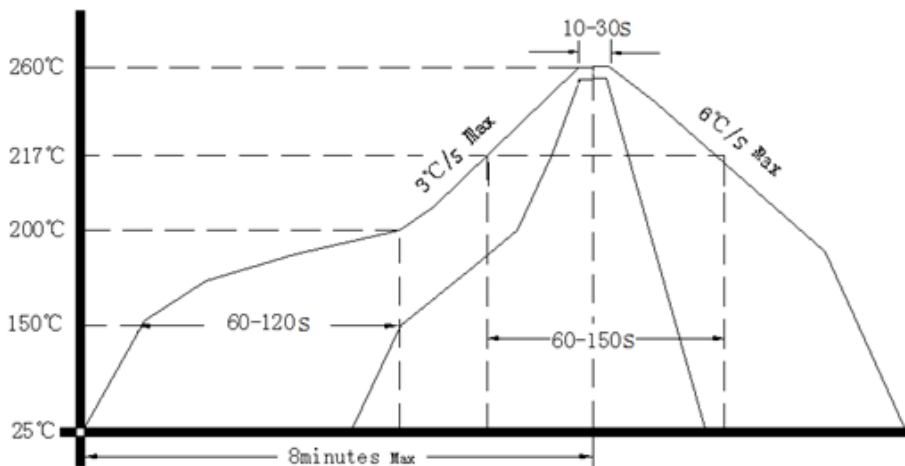
Note3: Referential weight 0.4g



3. Test Circuit



4. Reflow Soldering Curve (RoHS)



Note: passing through reflow upside down is not supported

5. Package: Tape & Reel (mm)

