Customer Code : A021

DATASHEET

DAPU P/N: **O11M-2101-20.00MHz**

Customer P/N:

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Tony · Wang	James.Liu	
Date: 2014.07.22			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2014.07.22

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1、Electrical Parameters

MODEL： O11M-2101-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		20.00		MHz	
	Output Waveform		HCMOS			
	Output Low Voltage			0.33	V	V_{cc}=3.3V, O_{load}=15pF
	Output High Voltage	2.97			V	V_{cc}=3.3V, O_{load}=15pF
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			4	ns	
	Load		15		pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.02		+0.02	$\times 10^{-6}$	In still air, T_A varied from -20℃to 70℃, Measurement referenced (F_{MAX}+F_{MIN})/2, temperature variable speed less than 2℃per minute.
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, and after 15 minutes of operation, within 30 days after ex-works.
	Reflow Shift	-1		+1	$\times 10^{-6}$	After 1 hour recovery.
	Slope	-1		+1	$\times 10^{-9}$/℃	In still air, temperature ramp 0.5℃/minute.
	Frequency Tolerance vs. Supply Voltage	-0.01		+0.01	$\times 10^{-6}$	Measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.13V to 3.47V, and O_{Load}= 15pF.
	Frequency Tolerance vs. Load	-0.01		+0.01	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with T_A= 25℃, V_{cc}=3.3V, O_{Load}= 15pF.
	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℃; 1s , using PN9000 equipment.
	Aging Tolerance Per Day	-2		+2	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with T_A= 25℃, V_{cc}= 3.3V, and after 30 days of operation.
	Aging Tolerance First Year	-1		+1	$\times 10^{-6}$	
	Aging Tolerance 20 Years	-3		+3	$\times 10^{-6}$	
	Holdover 24 hours Drift	-3		+3	$\times 10^{-9}$	In still air , at constant temperature, temperature variation ≤±1℃ , after 30 days of operation.

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	Overall Stability	-4.6		+4.6	$\times 10^{-6}$	Inclusive of the following: - operating temperature -20℃ to 70℃ - 3.3V ±5% - 15pF load ±5% - 2 times reflow soldering - 20 years aging reference to nominal frequency.
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			150	mA	@25℃ in still air
	Warm-up Time			3	minute	@25℃within $\pm 0.02 \times 10^{-6}$ of final frequency with reference after 1 hour on.
	Warm up current		300		mA	
Phase Noise	Phase Noise @25℃		-95		dBc/Hz	10Hz
			-120			100Hz
			-140			1KHz
			-147			10KHz
			-153			100KHz
			-153			1MHz
Environmental Conditions	Operable Temperature	-40		+85	℃	
	Storage Temperature	-55		+105	℃	
	ESD Level	Human Body Model,class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.				
	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 (℃)	-10~35℃				

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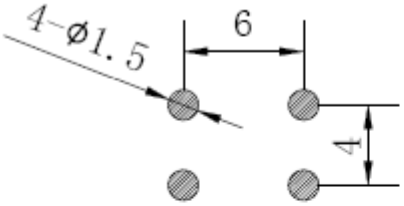
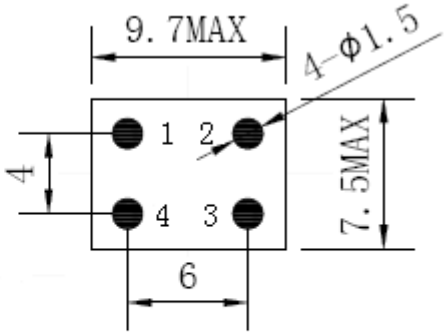
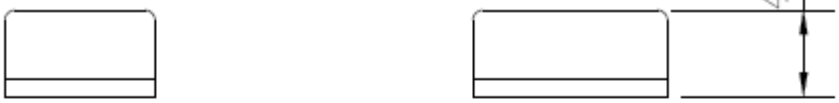
2、Mechanical Structure(mm)



Solder Pad layout



Bottom view

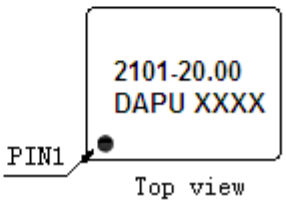


Right view

Side view

PIN FUNCTION

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



Top view

Note1: Tolerance ±0.20mm without mark

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

Note3: NC is not connect

Note4: Material composition :
Pad/terminals：Cu （Surface plating: Ni 3-6um，Au 0.1～0.5um）
Base: High-TG FR4
Cover：Stainless steel

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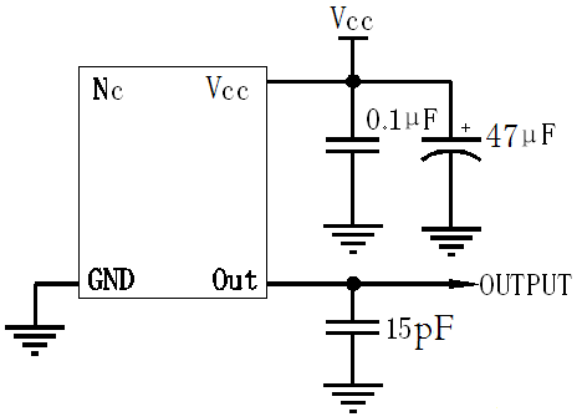
3、Test Circuit



4、Reflow Soldering Curve (RoHS)