Travelling Merchant:_____

DATASHEET

Standard: **O11S-M319-20.00MHz**

P/N: _____

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Amway.wei	Tony · Wang	James.Liu	
Date: 2014.07.07			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2009.08.12
1.1	"Warm up current" changed	Amway	2011.09.02
1.2	"Slope" added	Amway	2011.12.20
1.3	"Start-up Time" , "Holdover 24 hours Drift" , "Overall Stability" and "Warm-up Time" added	Amway	2012.03.09
1.4	"Mechanical Structure" changed	Amway	2013.07.24
1.5	"Mechanical Structure" changed	Amway	2014.07.07

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1、Electrical Parameters

MODEL：O11S-M319-20.00MHz						
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			5	ms	90% of final amplitude
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.1		+0.1	$\times 10^{-6}$	T_A varied from -40℃to 85℃,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.
	Slope	-0.01		+0.01	$\times 10^{-6}$/℃	Temperature ramp 1 ℃/minute.
	Frequency Tolerance vs. Supply Voltage	-0.05		+0.05	$\times 10^{-6}$	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	-0.05		+0.05	$\times 10^{-6}$	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	-5		+5	$\times 10^{-9}$	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 1 Year	-1		+1	$\times 10^{-6}$	
	Holdover 24 hours Drift	-0.02		+0.02	$\times 10^{-6}$	At constant temperature, after 48 hours of continuous operation.

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	Overall Stability	-4.6		+4.6	$\times 10^{-6}$	Inclusive of the following: - operating temperature -40℃ to 85℃ - 3.3V±5% - 15pF load ±5% - 2 times reflow soldering - 10 years aging reference to nominal frequency
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			150	mA	@25℃
	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			400	mA	
Phase Noise	Phase Noise		-85	-82	dBc/Hz	10Hz
			-115	-112		100Hz
			-135	-132		1KHz
			-145	-142		10KHz
			-148	-145		100KHz
			-150	-147		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.				

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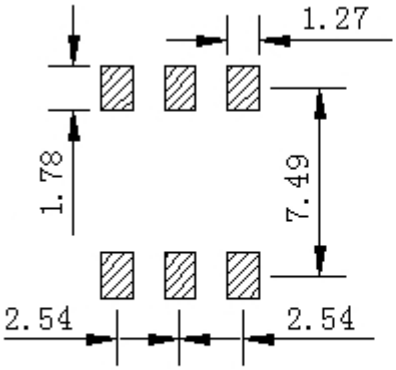
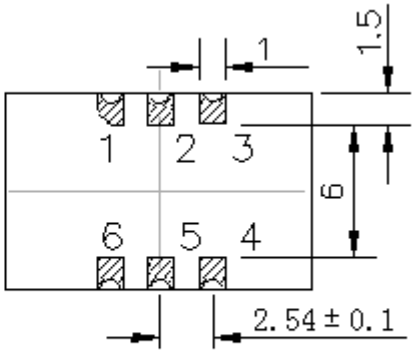
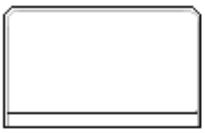
2、Mechanical Structure(mm)



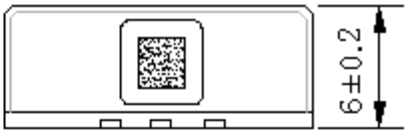
Solder Pad layout



Bottom view



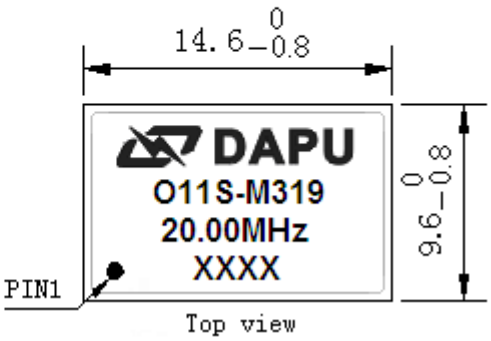
Right view



Side view

PIN FUNCTION

PIN	FUNCTION
1	NC
2,5	NC
3	GND
4	OUTPUT
6	VCC



Top view

Note1: Tolerance ±0.2mm without mark

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

Note3: Referential Weight 3.8g

Note4: NC is not connect

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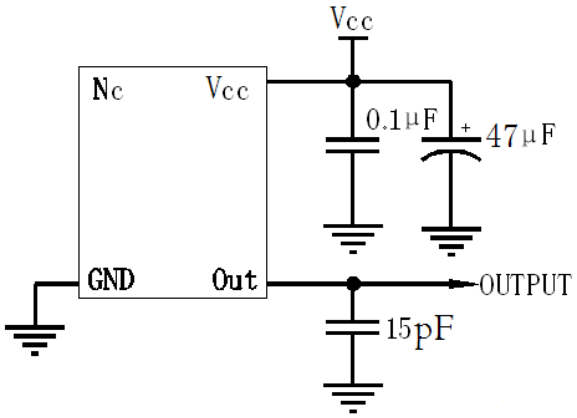
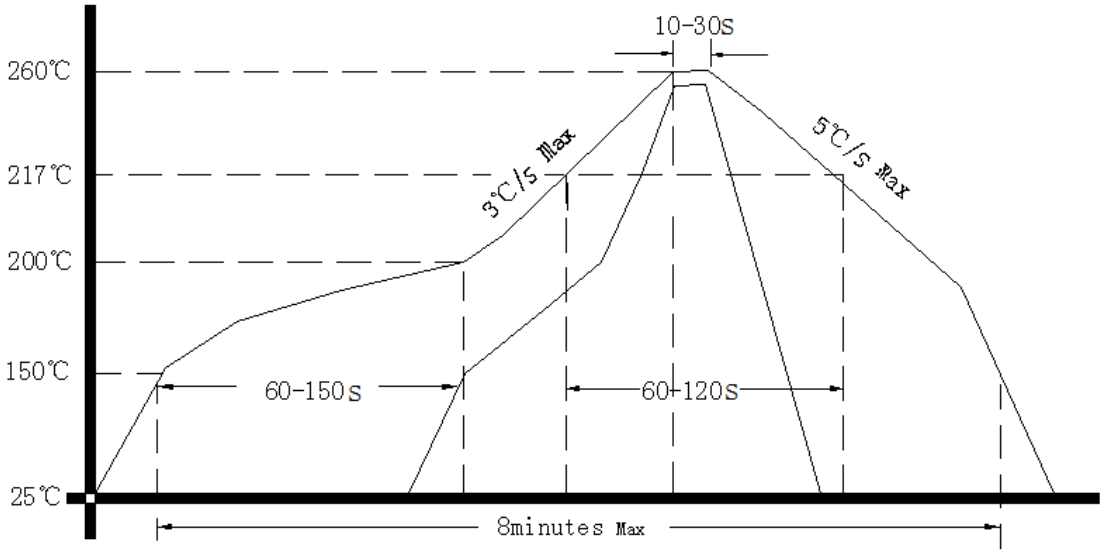
3、Test Circuit



4、Reflow Soldering Curve (RoHS)



5、Package: Tape & Reel (mm)