

Travelling Merchant: \_\_\_\_\_

# DATASHEET

Standard:           **O11S-R312-19.20MHz**          

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

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2012.03.12			

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## 1、Electrical Parameters

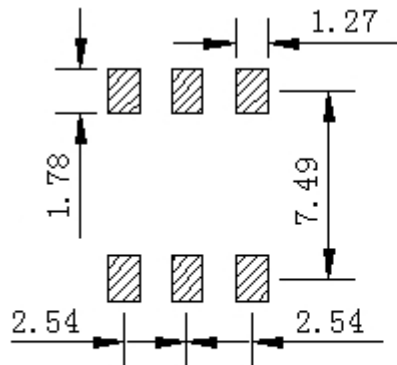
MODEL: O11S-R312-19.20MHZ						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	19.20			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			10	ns	
	Load	15			pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-5		+5	$\times 10^{-9}$	$T_A$ varied from $-40^{\circ}C$ to $85^{\circ}C$ , measurement referenced to frequency observed with $f_{ref} = (f_{max} - f_{min}) / 2 f_0$ , $V_{cc} = 3.3V, V_c = 1.65V$ , $O_{load} = 15pF$ , temperature variable speed less than $2^{\circ}C$ per minute.
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A = 25^{\circ}C$ , $V_{cc} = 3.3V, V_c = 1.65V$ , 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	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with $T_A = 25^{\circ}C$ , $V_{cc} = 3.3V$ , $V_c = 1.65V, O_{Load} = 15pF$ .
	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 $25^{\circ}C$ ; 1s, using PN9000 equipment.
	Aging Tolerance Per Day	-3		+3	$\times 10^{-9}$	$V_{cc}, V_c, T_A$ constant measurement referenced to frequency observed with $T_A = 25^{\circ}C, V_{cc} = 3.3V, V_c = 1.65V$ , and after 30 days of operation.
	Aging Tolerance 1 Year	-1		+1	$\times 10^{-6}$	



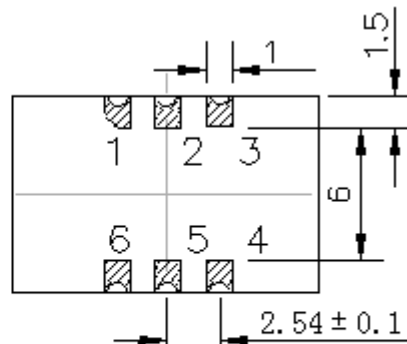
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Current Consumption			150	mA	@25 °C
	Warm-Up Time			5	minute	@25 °C within $\pm 0.1 \times 10^{-6}$ of final frequency with reference after 1 hour on.
	Current Consumption during warm up			400	mA	
Voltage Control Characteristics	Frequency Tuning Range	-10		-5	$\times 10^{-6}$	$V_c=0$ V. measurement referenced to $V_c=1.65$ V
		-0.5		+0.5	$\times 10^{-6}$	$V_c=1.65$ V. measurement referenced to exactly 19.20MHz
		+5		+10	$\times 10^{-6}$	$V_c=3.3$ V. measurement referenced to $V_c=1.65$ V
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			K $\Omega$	
Phase Noise	Phase Noise		-85	-80	dBc/Hz	10Hz
			-115	-110		100Hz
			-135	-130		1KHz
			-145	-140		10KHz
			-148	-143		100KHz
			-148	-143		1MHz
Environmental Conditions	Operable Temperature	-40		+85	°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; 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.					



## 2、Mechanical Structure(mm)



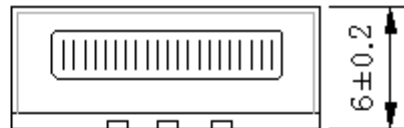
Solder Pad layout



Bottom view



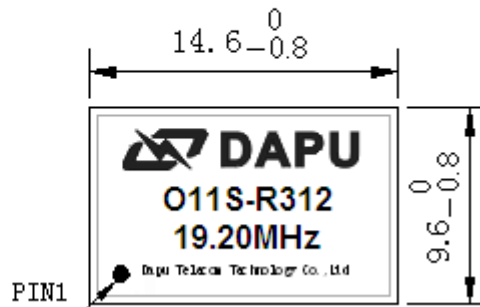
Right view



Side view

### PIN FUNCTION

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



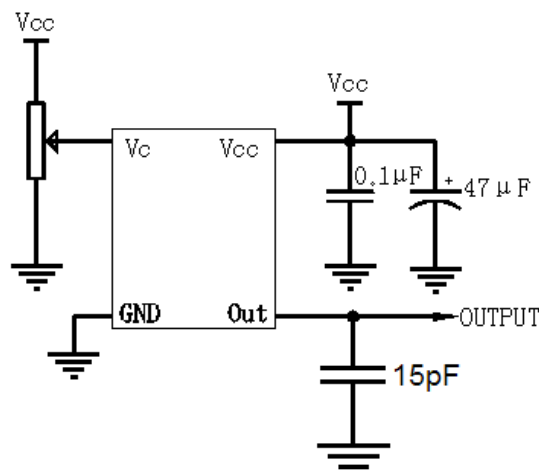
Top view

**Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark

**Note2:** Referential Weight 3.8g

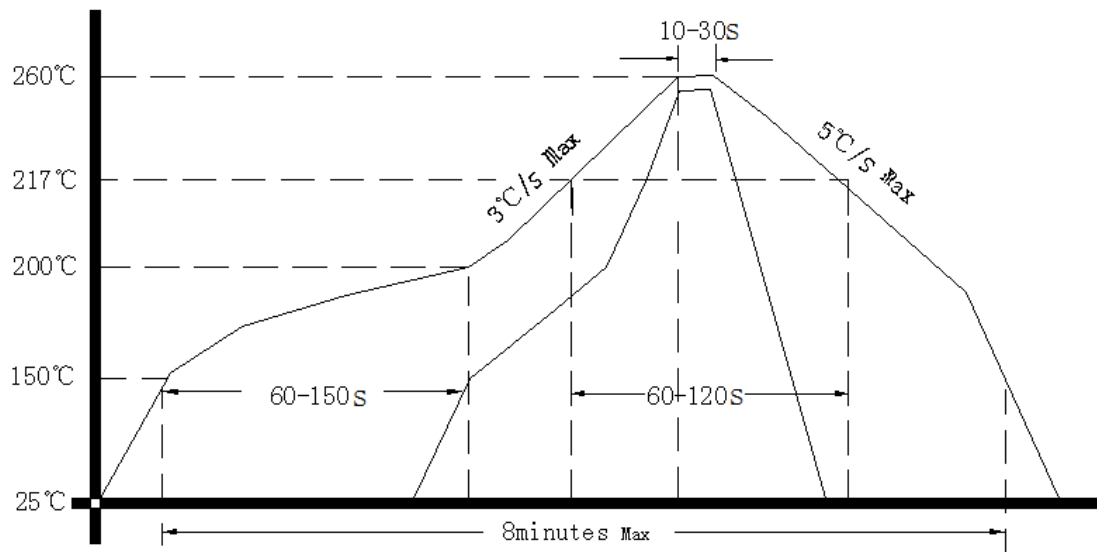
**Note3:** NC is not connect

## 3、Test Circuit





#### 4、 Reflow Soldering Curve (RoHS)



#### 5、 Package: Tape & Reel (mm)

