







## 1. Electrical Parameters

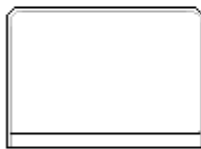
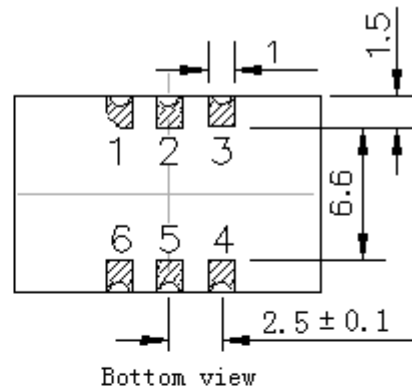
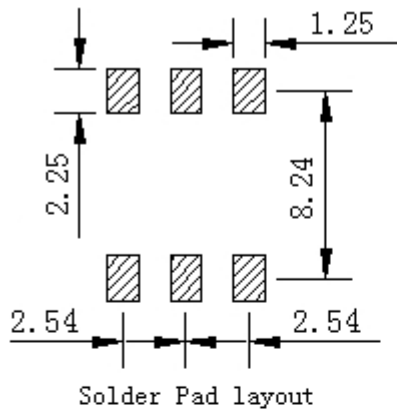
MODEL: O11H-2101-20.00MHz							
Item	Description	Parameters			Unit	Test Condition	
		Min.	Typ.	Max.			
Output	Frequency	20.00			MHz		
	Output Waveform	HCMOS					
	Output Low Voltage			0.33	V	$V_{cc}=3.3V, O_{load}=15pF$	
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$	
	Duty Cycle	45	50	55	%	@50%	
	Rise / Fall Time (10%~90%)			10	ns		
	Load	15			pF		
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.05		+0.05	$\times 10^{-6}$	$T_A$ 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	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$ , and after 15 minutes of operation, within 30 days after ex-works.	
	Frequency Tolerance vs. Supply Voltage	-0.01		+0.01	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^{\circ}C, V_{cc}$ 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 $T_A=25^{\circ}C, V_{cc}=3.3V$ , and $O_{Load}=15pF$ .	
	Short-Term Stability: Allan Variance				0.2	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 1s, using PN9000 equipment.
					0.2	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 10s, using PN9000 equipment.
					0.1	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 100s, using PN9000 equipment.
					0.2	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 1000s, using PN9000 equipment.
					0.6	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$ ; 10000s, using PN9000 equipment.



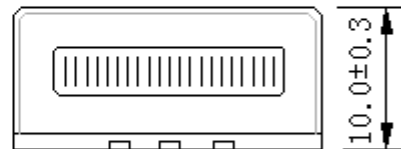
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	$V_{cc}, T_A$ constant measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3\text{V}$ , and after 30 days of operation.
	Aging Tolerance Per Month	-0.025		+0.025	$\times 10^{-6}$	
	Aging Tolerance 1 Year	-0.1		+0.1	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-1.5		+1.5	$\times 10^{-6}$	
	Overall stability	-2		+2	$\times 10^{-6}$	Inclusive of the following: - operating temperature $-40^\circ\text{C}$ to $85^\circ\text{C}$ - $3.3\text{V} \pm 5\%$ - $15\text{pF}$ load $\pm 5\%$ - 2 times reflow soldering - 10 years aging reference to nominal frequency
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			330	mA	@ $25^\circ\text{C}$
	Warm up current			750	mA	
	Warm-Up Time			3	minutes	@ $25^\circ\text{C}$ to final frequency
Phase Noise	Phase Noise @ $25^\circ\text{C}$		-70	-60	dBc/Hz	1Hz
			-100	-90		10Hz
			-130	-120		100Hz
			-145	-135		1KHz
			-150	-145		10KHz
Environmental Conditions	Operable Temperature	-40		+85	$^\circ\text{C}$	
	Storage Temperature	-55		+105	$^\circ\text{C}$	
	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)



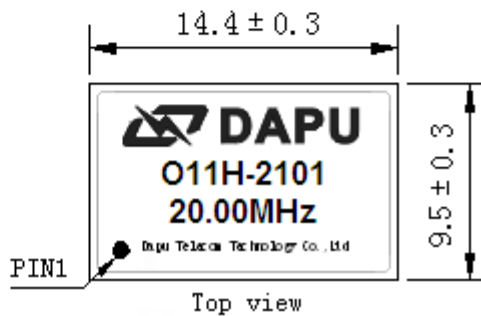
Right view



Side view

### PIN FUNCTION

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



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

**Note2:** Referential Weight 1.3g

**Note3:** NC is not connect

**Note4:** Material composition :

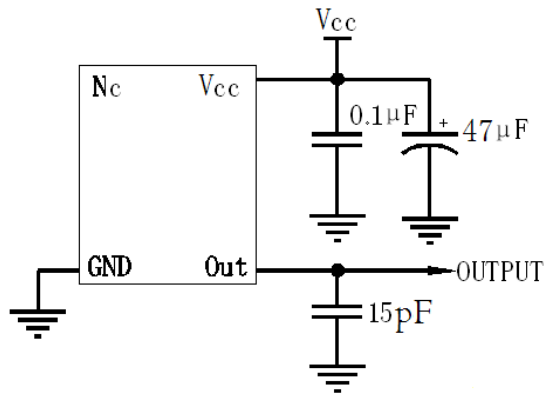
Pad/terminals: Cu (Surface plating: Ni 3-6um, Au 0.1~0.5um)

Base: High-TG FR4

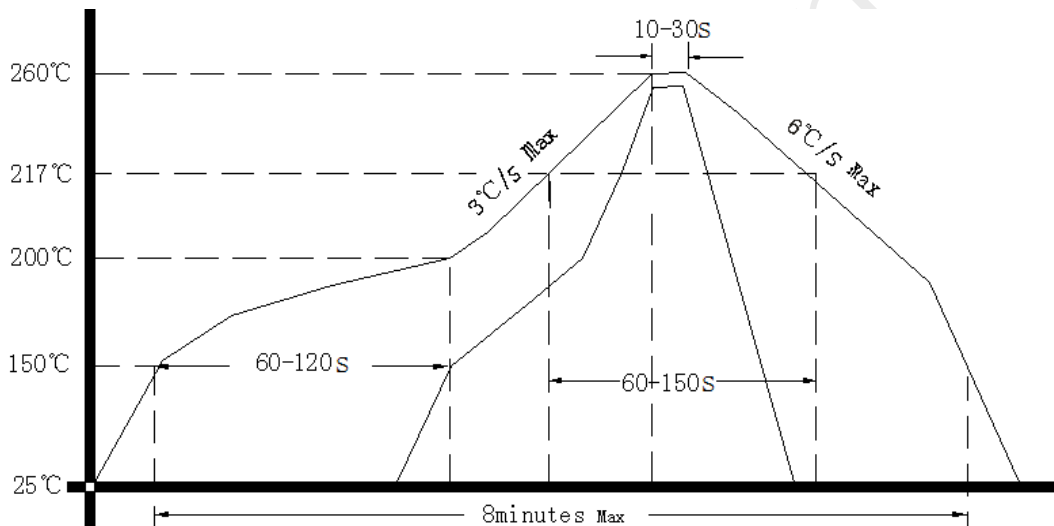
Cover: Stainless steel



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



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

