



1. Electrical Parameters

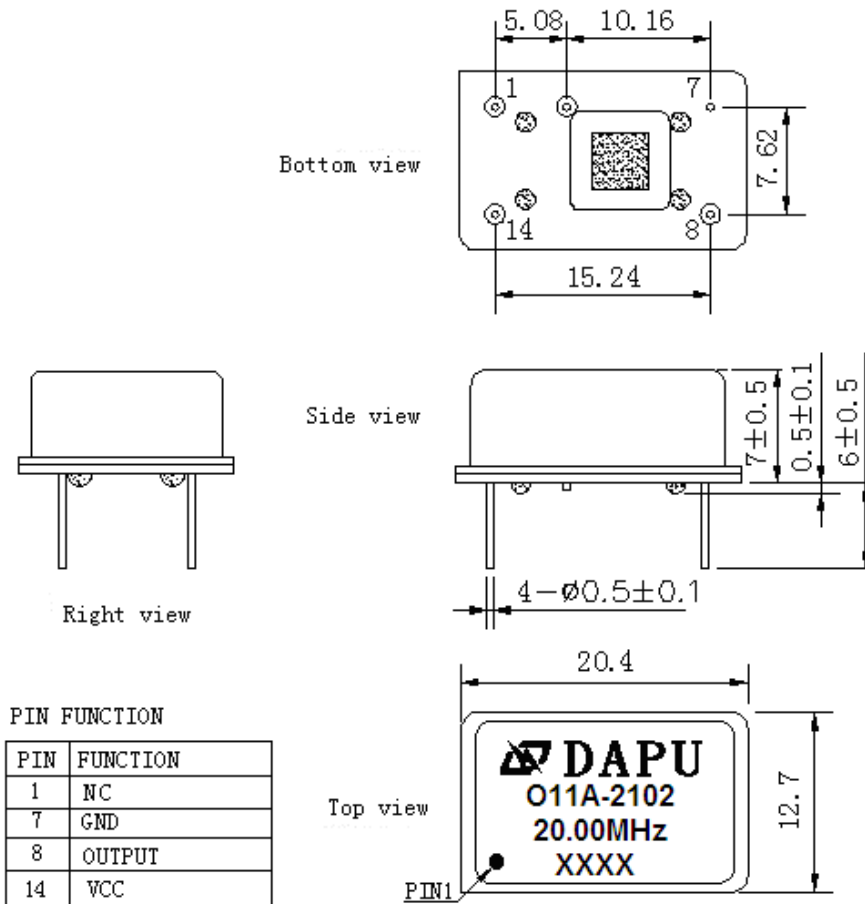
MODEL: O11A-2102-20.00MHz							
Item	Description	Parameters			Unit	Test Condition	
		Min.	Typ.	Max.			
Output	Frequency	20.00			MHz		
	Output Waveform	HCMOS					
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$	
	Output High Voltage	2.7			V	$V_{cc}=3.3V, O_{load}=15pF$	
	Duty Cycle	45	50	55	%	@50%	
	Rise / Fall Time (10%~90%)			4	ns	$O_{load}=15pF$	
	Load	15			pF		
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.025		+0.025	$\times 10^{-6}$	T_A varied from $-40^{\circ}C$ to $85^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15pF$, 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 $T_A=25^{\circ}C, V_{cc}=3.3V$, at time of shipment.	
	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	$\times 10^{-6}$	$\pm 5pF$ 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			0.07		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 0.1s, using PN9000 equipment.
				0.07		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1s, using PN9000 equipment.
				0.07		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 10s, using PN9000 equipment.
				0.08		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 100s, using PN9000 equipment.
				0.08		$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C$; 1000s, using PN9000 equipment.



	Frequency Slope in Still air	-2		+2	$10^{-9}/^{\circ}\text{C}$	Temperature ramp 1°C per minute max.
	Aging Tolerance Per Day	-2		+2	$\times 10^{-9}$	$V_{\text{cc}}, T_{\text{A}}$ constant measurement referenced to frequency observed with $T_{\text{A}}=25^{\circ}\text{C}, V_{\text{cc}}=3.3\text{V}$, and after 30 days of operation.
	Aging Tolerance 1 Year	-0.5		+0.5	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-3		+3	$\times 10^{-6}$	
	Holdover 24hours Drift	-4		+4	$\times 10^{-9}$	$V_{\text{cc}}=3.3\text{V}$, temperature change range $\leq 1^{\circ}\text{C}$, after 30 days of operation.
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			180	mA	@ 25°C
	Warm up current			500	mA	
	Warm-Up Time		3		min	@ 25°C within $\pm 0.02 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Phase Noise	Phase Noise @ 25°C		-70	-60	dBc/Hz	1Hz
			-100	-90		10Hz
			-130	-120		100Hz
			-145	-140		1KHz
			-150	-145		10KHz
			-155	-150		100KHz
			-155	-150		1MHz
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	Not humidity sensitive.				
	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.					

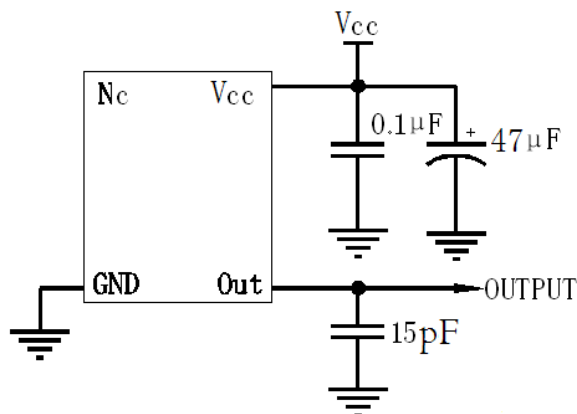


2. Mechanical Structure (mm)



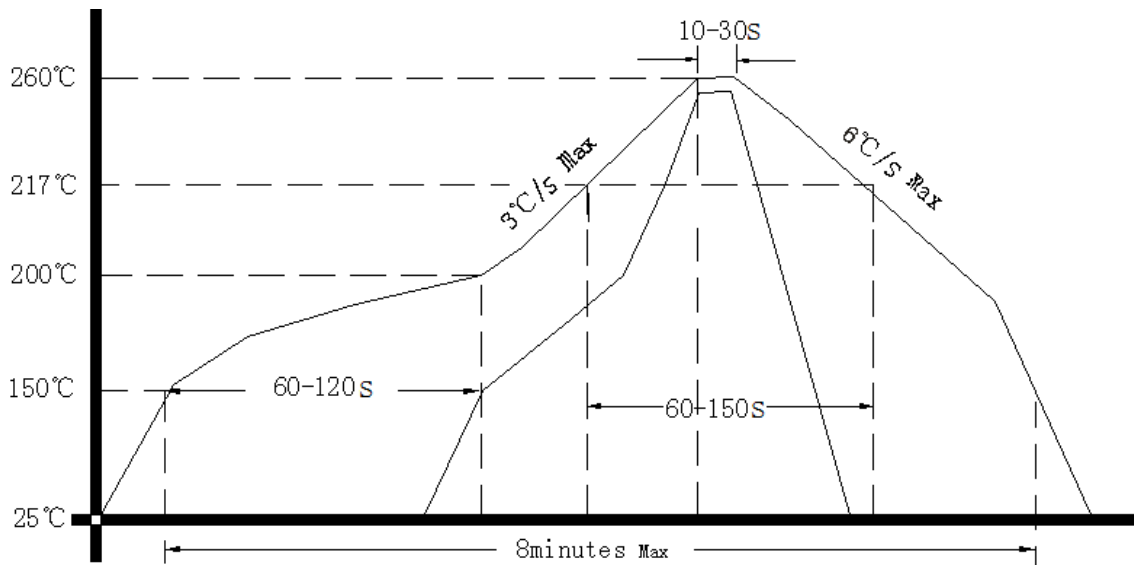
- Note1:** Tolerance ±0.2mm without mark
- Note2:** The first two xx representative: week
After two xx representative: year
- Note3:** Referential Weight 4.2g
- Note4:** NC is not connect

3. Test Circuit





4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)

