







## 1. Electrical Parameters

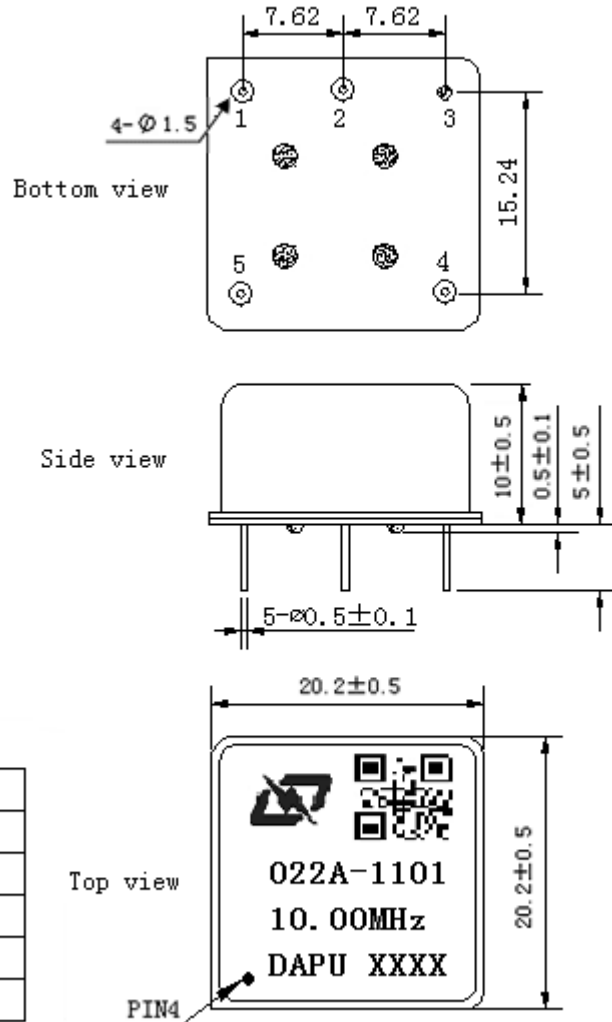
MODEL: O22A-1101-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=5.0V, O_{load}=15\text{ pF}$
	Output High Voltage	2.4		3.3	V	$V_{cc}=5.0V, O_{load}=15\text{ pF}$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			6	ns	@25°C
	Load	15			pF	
	Spurious Suppression			-70	dBc	
	Start up time			200	ms	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-5		+5	$\times 10^{-9}$	$T_A$ varied from -40°C to 85°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$ , $V_{cc}=5.0V, V_c=2.5V$ , $O_{load}=15\text{ pF}$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-0.1		+0.1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C} \pm 3^\circ\text{C}$ , $V_{cc}=5.0V$ , $V_c=2.5V$ and after 10 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. supply voltage	-2		+2	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^\circ\text{C}$ , $V_{cc}$ varied from 4.75V to 5.25V, $V_c=2.5V$ , $O_{load}=15\text{ pF}$ .
	Frequency Tolerance vs. Load	-2		+2	$\times 10^{-9}$	10% Load Change Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{cc}=5.0V, V_c=2.5V, O_{load}=15\text{ pF}$ .
	Short Term Stability			0.01	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to 25°C; 1s, test 10s.
	Retrace	-5.0		+5.0	$\times 10^{-9}$	Power off 24 hours, and then power on 1 hour before the frequency difference with the power before
	Aging Tolerance per day	-0.5		+0.5	$\times 10^{-9}$	$V_{cc}, V_c, T_A$ constant Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{cc}=5.0V, V_c=2.5V, O_{load}=15\text{ pF}$ , Continuous
	Aging Tolerance 1 Year	-0.05		+0.05	$\times 10^{-6}$	work 7 days after the test
	Aging Tolerance 15 Year	-0.5		+0.5	$\times 10^{-6}$	



Power Supply	Supply Voltage	4.75	5.0	5.25	V	
	Steady Consumption			200	mA	@25°C
	Warm up current			600	mA	
	Warm-Up Time			8	minutes	@25°C within $\pm 0.05 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Voltage Control Characteristics	Frequency Tuning Range	-1.0		-0.5	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=2.5V$ .
		-0.1		+0.1	$\times 10^{-6}$	$V_c=2.5V$ . measurement referenced to exactly 10.00MHz.
		+0.5		+1.0	$\times 10^{-6}$	$V_c=5.0V$ . measurement referenced to $V_c=2.5V$ .
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			K $\Omega$	
Phase Noise	Phase Noise		-100	-90	dBc/Hz	1Hz
			-125	-115		10Hz
			-145	-135		100Hz
			-150	-145		1KHz
			-155	-150		10KHz
			-155	-150		100KHz
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; JEDEC JESD22-A115C.				
	Moisture Sensitivity Level	Not humidity sensitive.				
	Fine/Gross Leak	GJB360B Method 112				
	Vibration	Frequency range: 20Hz~2000Hz, acceleration :6g, ASD: 0.04g <sup>2</sup> /Hz one cycle per 30 min, test 2 hour. (3 times for each 3 directions X , Y , Z), GJB 150.16A-2009				
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 (°C)	-10~35°C				



## 2. Mechanical Structure (mm)



### PIN FUNCTION

PIN	NOTATION	FUNCTION
1	VCC	Supply Voltage
2	OUTPUT	Output
3	GND	Ground
4	VC	Control Voltage
5	NC	Not Connect

**Note1:** Tolerance ±0.2mm without mark

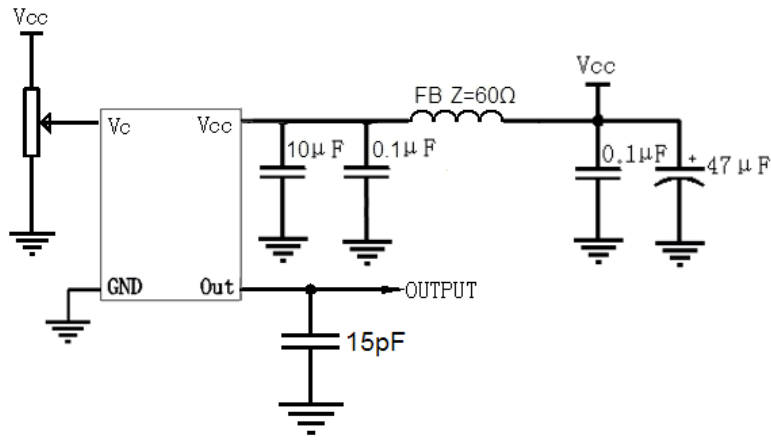
**Note2:** The first two xx representative: week  
After two xx representative: year

**Note3:** Referential weight 13.6g

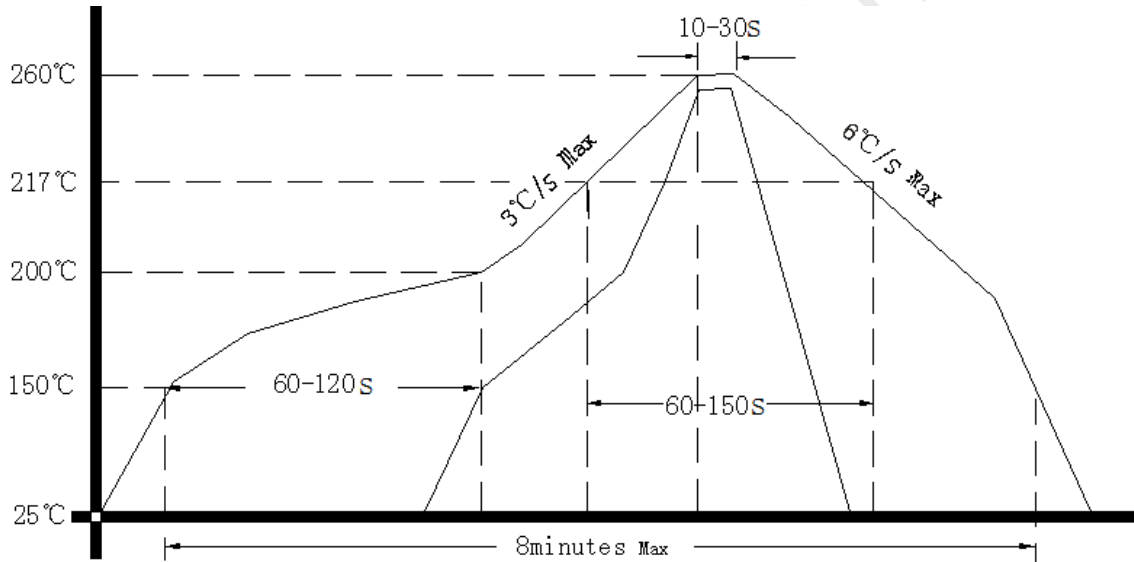
**Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



### 5. Package(mm)

