



1. Electrical Parameters

MODEL: O11F-0804-19.20MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	19.20			MHz	
	Output Waveform	LVCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.6			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	
	Rise / Fall Time (10%~90%)			5	ns	
	Spurious Suppression			-65	dBc	
	Load	15			pF	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.03		+0.03	$\times 10^{-6}$	T_A varied from $-40^{\circ}C$ to $85^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, V_c=1.65V, O_{load}=15pF$, temperature variable speed less than $2^{\circ}C$ per minute.
		-0.1		+0.1	$\times 10^{-6}$	T_A varied from $85^{\circ}C$ to $90^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, V_c=1.65V, O_{load}=15pF$, 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 90 days after ex-works.
	Frequency Accuracy after Reflow	-0.2		+0.2	$\times 10^{-6}$	Pre-reflow frequency f_1 , Frequency after reflow $f_2, \Delta f=f_2-f_1$
	Frequency Tolerance vs. Supply Voltage	-5		+5	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^{\circ}C, V_{cc}$ varied from 3.135V to 3.465V, $V_c=1.65V$, and $O_{Load}=15pF$.
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V, V_c=1.65V$, and $O_{Load}=15pF$.
	Short-Term Stability Allan Variance			0.05	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1 hour ref. to $25^{\circ}C$; 1s.



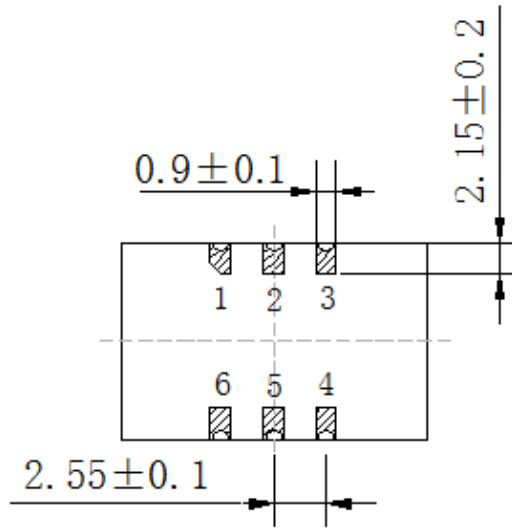
	Aging Tolerance Per Day	-2		+2	$\times 10^{-9}$	V_{cc}, V_c, T_A constant measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3\text{V}$, and after 30 days of operation.	
	Aging Tolerance 1 Year	-0.3		+0.3	$\times 10^{-6}$		
	Aging Tolerance 10 Years	-1.5		+1.5	$\times 10^{-6}$		
	Aging Tolerance 15 Years	-2		+2	$\times 10^{-6}$	Including all conditions	
	Frequency Retrace		-0.05		+0.05	$\times 10^{-6}$	$V_c=1.65\text{V}$ @25 $^\circ\text{C}$, Frequency power on 48 hour: f1, power off 24 hour, power on 1 hour:f2, f2-f1
			-0.2		+0.2	$\times 10^{-6}$	$V_c=1.65\text{V}$ @25 $^\circ\text{C}$, Frequency power on 5minute: f3, power off 90 days, power on 1 hour:f4, f4-f3
			-0.15		+0.15	$\times 10^{-6}$	$V_c=1.65\text{V}$ @25 $^\circ\text{C}$, Frequency power on 1 hour: f5, power off 90 days, power on 1 hour:f6, f6-f5
Power Supply	Supply Voltage	3.135	3.3	3.465	V		
	Steady Consumption			300	mA	@25 $^\circ\text{C}$	
	Warm up current			600	mA		
	Warm-Up Time				5	minutes	@25 $^\circ\text{C}$ within $\pm 0.06 \times 10^{-6}$ of final frequency with reference after 1 hour on.
				1	hour	@25 $^\circ\text{C}$ within $\pm 0.06 \times 10^{-6}$ of final frequency with reference after 24 hours on.	
Voltage Control Characteristics	Frequency Tuning Range	-4.0		-2.0	$\times 10^{-6}$	$V_c=0\text{V}$. measurement referenced to $V_c=1.65\text{V}$.	
		-0.5		+0.5	$\times 10^{-6}$	$V_c=1.65\text{V}$. measurement referenced to exactly 19.20MHz.	
		+2.0		+4.0	$\times 10^{-6}$	$V_c=3.3\text{V}$. measurement referenced to $V_c=1.65\text{V}$.	
	Linearity			10	%		
	Slope	Positive					
	Input Impedance	100				K Ω	
	Modulation Bandwidth	1				KHz	



Phase Noise	Phase Noise			-73	dBc/Hz	1Hz
				-108		10Hz
				-140		100Hz
				-150		1KHz
				-155		10KHz
				-155		100KHz
Phase Jitter	Phase Jitter			1	ps	12KHz~10MHz,RMS.
Environmental Conditions	Operating Temperature Range	-40		+90	°C	
	Storage Temperature	-55		+125	°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.				
	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.					
Full Package Storage	Relative humidity (%)	20% ~ 70%				
	Temperature (°C)	-10~35°C				



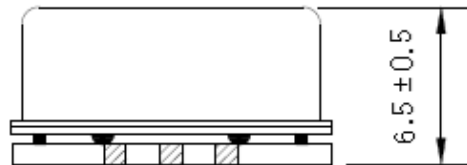
2. Mechanical Structure (mm)



Bottom view



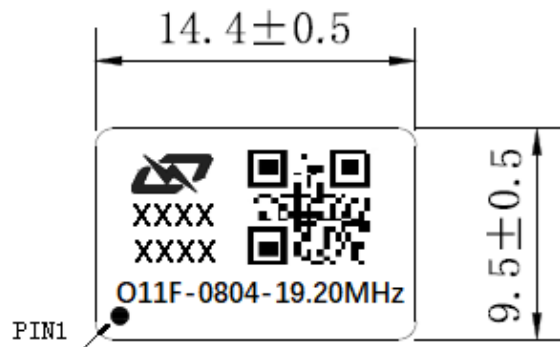
Right view



Side view

PIN FUNCTION

PIN	FUNCTION
1	V _C
2,5	NC
3	GND
4	OUTPUT
6	V _{CC}

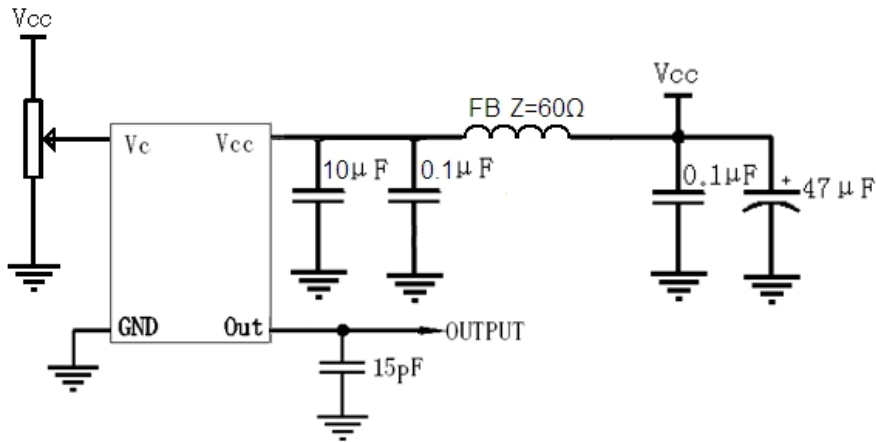


Top view

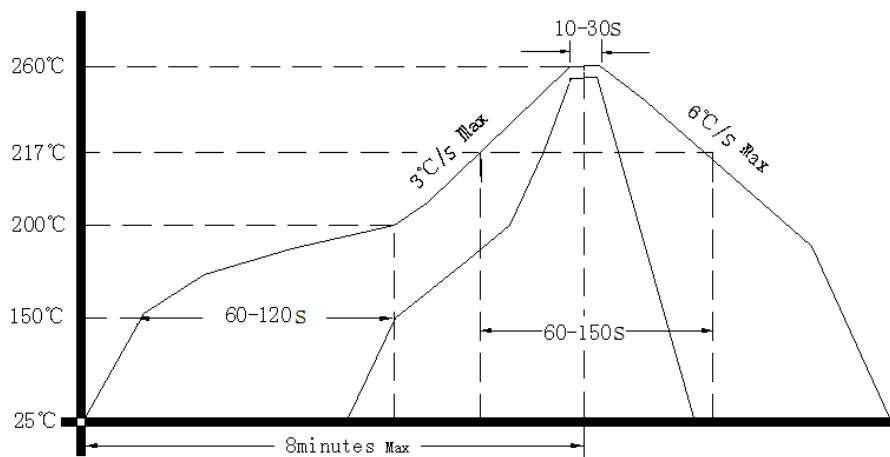
- Note1:** Tolerance ± 0.2 mm without mark
- Note2:** Referential weight 2.2g
- Note3:** The first two xx representative: year
After two xx representative: week
At last four xxxx representative: serial number
- Note4:** NC is not connect



3. Test Circuit



4. Reflow Soldering Curve (RoHS)



Note: passing through reflow upside down is not supposed.

5. Package: Tape & Reel (mm)

