

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

# DATASHEET

Standard:           **O11F-3701-20.00MHz**          

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

Plot			Customer Approval
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2024.03.12			

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### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2022.07.11
1.1	The “Mechanical Structure” “Package: Tape & Reel” changed	<i>Amway</i>	2022.12.20
1.2	The “Initial Frequency Tolerance” “Frequency Tolerance vs. Supply Voltage” “Frequency Tolerance vs. Load” “Aging” “Warm up current” “Phase Noise” “Mechanical Structure” “Package: Tape & Reel” changed, Add “Frequency vs. Temperature Slope” “SPRR”	<i>Amway</i>	2023.01.15
1.3	The “Aging” “Mechanical Structure” “Package: Tape & Reel” changed	<i>Amway</i>	2023.07.17
1.4	The “Mechanical Structure” changed	<i>Amway</i>	2024.03.07
1.5	The “Mechanical Structure” changed	<i>Amway</i>	2024.03.12



## 1. Electrical Parameters

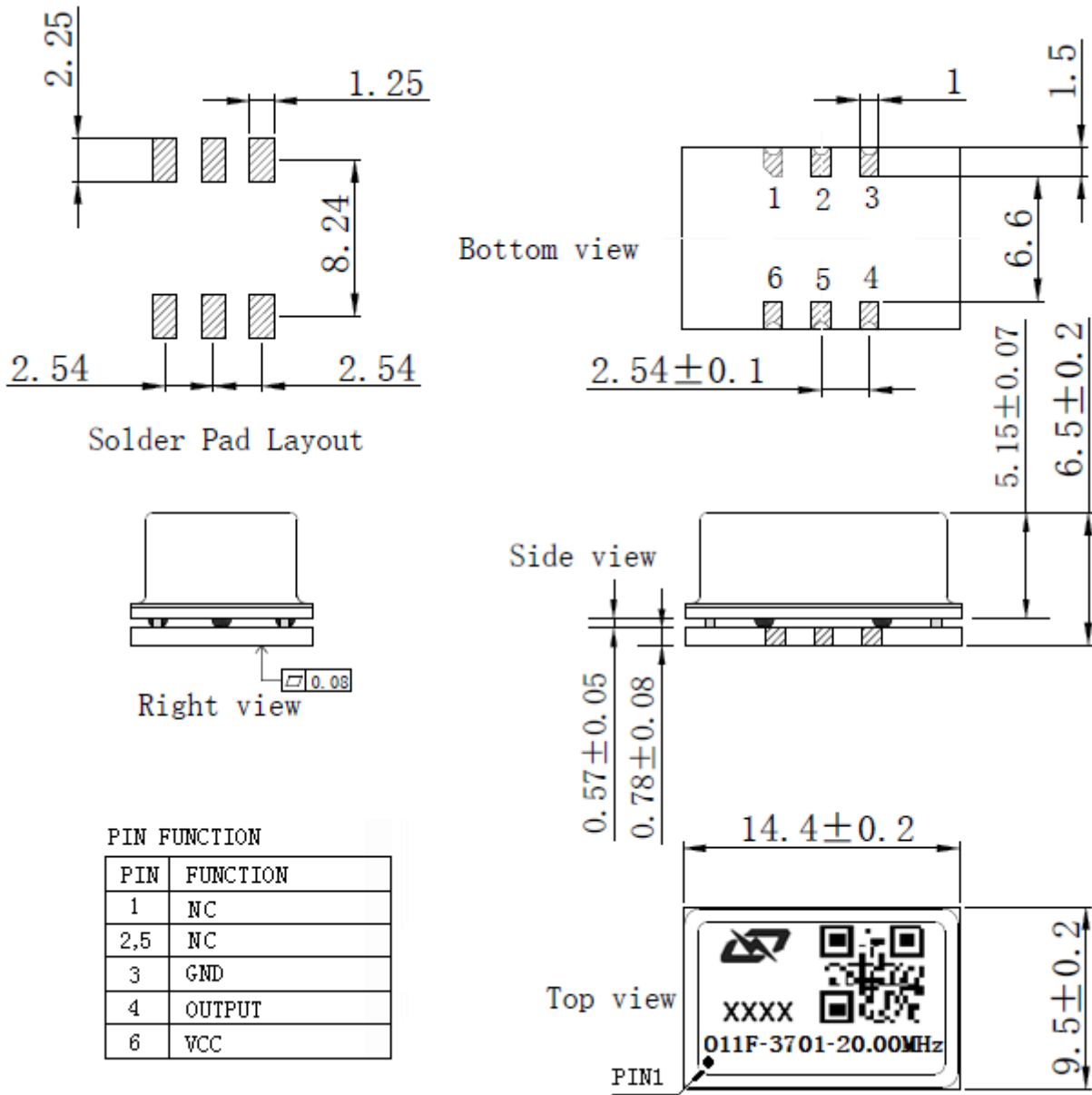
MODEL: O11F-3701-20.00MHZ						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	20.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15pF$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time			10	ns	10%~90%
	SPRR	2				
	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 $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15pF$ , temperature variable speed less than $2^{\circ}C$ per minute. Air flow $< 2m/s$ .
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	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. Including three times reflow and relaxation for 2 hours, refer to the frequency change before reflow.
	Frequency Tolerance vs. Supply Voltage	-5		+5	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^{\circ}C, V_{cc}$ varied from 3.13V to 3.47V, and $O_{Load}=15pF$ .
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	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			0.05	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^{\circ}C; 1s$ .
	Frequency vs. Temperature Slope	-1		+1	$\times 10^{-9}/^{\circ}C$	$T_{amb}$ slope $\pm 1^{\circ}C/min$ with any temperature window over operating temperature range. Includes also hysteresis effects. Slope measurement for device qualification as described in the related note.
	Aging Tolerance Per Day	-1.0		+1.0	$\times 10^{-9}$	$V_{cc}, T_A$ constant measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V$ , and after 7 days of operation.
	Aging Tolerance 1st Year	-0.3		+0.3	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-0.6		+0.6	$\times 10^{-6}$	



Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			300	mA	@25°C
	Warm up current			600	mA	
Phase Noise	Phase Noise		-95	-85	dBc/Hz	10Hz
			-125	-115		100Hz
			-145	-140		1KHz
			-150	-145		10KHz
			-155	-150		100KHz
			-155	-150		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; JEDEC JESD22-A115C				
	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.					
Full Package Storage	Relative humidity (%)	20%~70%				
	Temperature (°C)	-10~35°C				



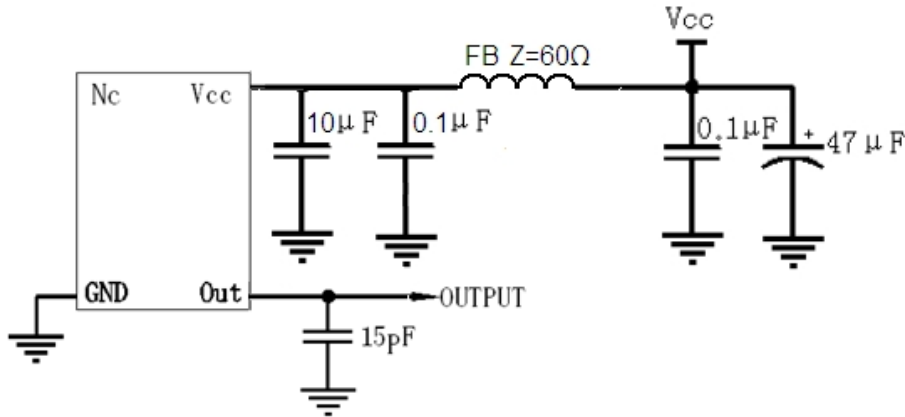
## 2. Mechanical Structure (mm)



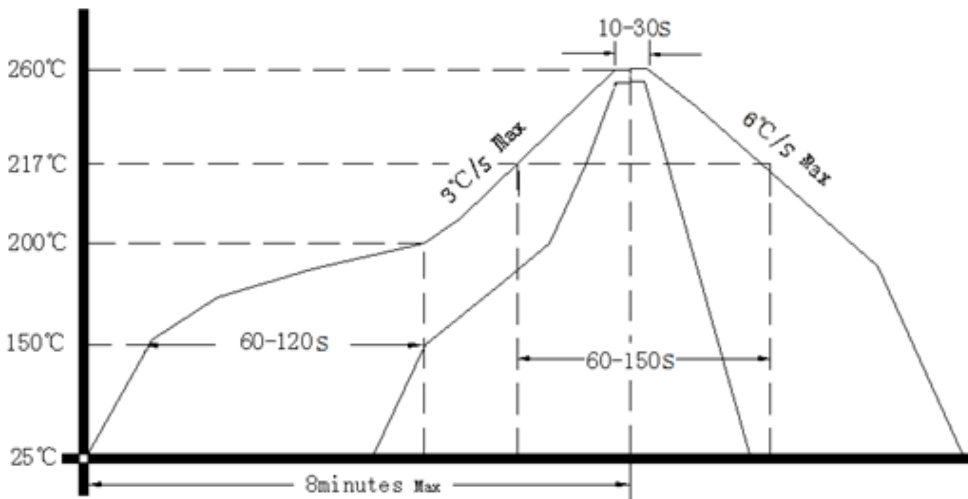
- Note1:** Tolerance ± 0.2mm without mark
- Note2:** The first two xx representative: week  
After two xx representative: year
- Note3:** Referential weight 1.9g
- Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



Note: Passing through reflow upside down is not supported

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

