





### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2021.05.10
1.1	The “Marking” changed	<i>Amway</i>	2021.05.31
1.2	The “Marking” changed	<i>Amway</i>	2021.06.12
1.3	The “Short-Term Stability Allan Variance” “Moisture Sensitivity Level” “Reflow Soldering Curve” “Package: Tape & Reel” changed, Add “Aging Calculation method”	<i>Amway</i>	2023.03.29
1.4	The “Mechanical Structure” changed	<i>Amway</i>	2023.03.31
1.5	The “Output High Voltage” changed	<i>Amway</i>	2023.09.22



## 1. Electrical Parameters

MODEL: O11F-0801-19.20MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	19.20			MHz	
	Output Waveform	LVTTTL				
	Output Overshoot			10	%	
	Output Low Voltage			0.4	V	Vcc=3.3V, load=15pF
	Output High Voltage	2.8			V	Vcc=3.3V, load=15pF
	Duty Cycle	45		55	%	
	Rise / Fall Time (10%~90%)			4	ns	
	Load	13.5	15	16.5	pF	
	Start-up time			0.8	s	
	Spurious			-90	dBc	
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range			10	$\times 10^{-9}$	TA varied from -40°C to 85°C, measurement referenced to frequency observed with pk-pk, Vcc=3.3V, load=15pF, temperature variable speed less than 2°C per minute.
		-100		+100	$\times 10^{-9}$	TA varied from -40°C to 90°C.
	Initial Frequency Tolerance	-1		+1	$\times 10^{-6}$	Measurement referenced to frequency observed with TA=25°C, Vcc=3.3V, and after 15 minutes of operation, within 90 days after ex-works
	Frequency Tolerance vs. Supply Voltage	-2		+2	$\times 10^{-9}$	measurement referenced to frequency observed TA=25°C, Vcc varied from 3.234V to 3.366V, and Load=15pF.
	Frequency Tolerance vs. Load	-3		+3	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with TA=25°C, Vcc=3.3V, and Load=15pF.
	Micro jump	-0.5		+0.5	$\times 10^{-9}$	Continuous testing for 14 days, temperature Fluctuations < $\pm 5^\circ\text{C}$ , one sampling/10s.
	Temperature hysteresis effect	-0.5		+0.5	$\times 10^{-9}$	Over temperature range(10°C/hour)
Retrace	-0.03		+0.03	$\times 10^{-6}$	After 24 hour off at 25°C 15min power on	



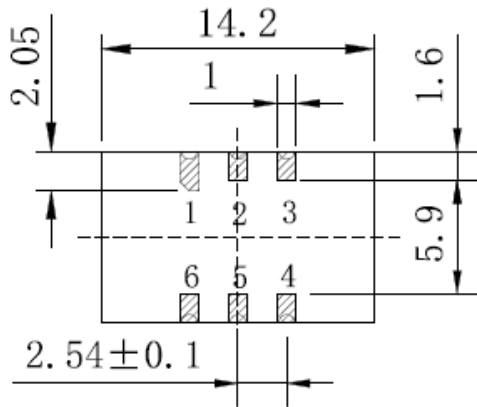
	Reflow shift	-0.1		+0.1	$\times 10^{-6}$	within 90 days after ex-works, put 2 hours after reflow soldering and power on for 5 minutes, relative to the frequency deviation after ex-works
		-1		+1	$\times 10^{-6}$	within 90 days after ex-works, put 2 hours after reflow soldering and power on for 5 minutes, relative to standard frequency deviation
	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°C; 1s.
	Aging Tolerance Per Day	-1		+1	$\times 10^{-9}$	Vcc,TA constant measurement referenced to frequency observed with TA=25°C,Vcc=3.3V, and after 30 days of operation. Calculation method: Annual Aging Rate:100*daily aging rate. 10-Years Aging Rate: 6* annual aging rate. 15-Years Aging Rate: 10* annual aging rate.
	Aging Tolerance 1 Year	-0.1		+0.1	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-0.6		+0.6	$\times 10^{-6}$	
Aging Tolerance 15 Years	-1		+1	$\times 10^{-6}$		
Power Supply	Supply Voltage	3.135	3.3	3.465	V	
	Steady Consumption			300	mA	@25°C
	Warm up current			800	mA	
	Warm-Up Time			10	minutes	@25°C within $\pm 0.01 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Phase Noise	Phase Noise @25°C			-75	dBc/Hz	1Hz
				-105		10Hz
				-135		100Hz
				-145		1KHz
				-150		10KHz
				-150		100KHz
				-155		1MHz
Jitter	Jitter		0.6		ps	RMS (12KHz ~5MHz)
Acceleration sensitivity	Acceleration sensitivity			5	ppb/g	Gamma vector,3-axes,30-1500Hz, typically less than



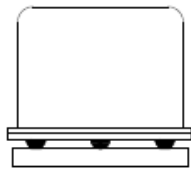
Environmental Conditions	Operating environmental condition	-40		+85	°C		
	Storage Temperature	-55		+105	°C		
	Relative Humidity	5		85	%		
	Pressure	70		106	Kpa		
	ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.					
		Machine Model, class B: 200V to 400V; JEDEC JESD22-A115C.					
	Moisture Sensitivity Level	Level 2.					
Vibration	Sweep frequency sine wave, frequency: 10-55 Hz, maximum amplitude 1.0 mm (peak value), 55-1 KHz, maximum acceleration 10 g. Each axis 1H (3 axes 6 directions), sweep rate 1 octave/min.						
Shock	100g; 6ms; half sine wave (3 times for each 3 directions X, Y, Z).						
Full Package Storage	Relative humidity (%)	20% ~70%					
	Temperature (°C)	-10~35°C					



## 2、 Mechanical Structure (mm)



Bottom view



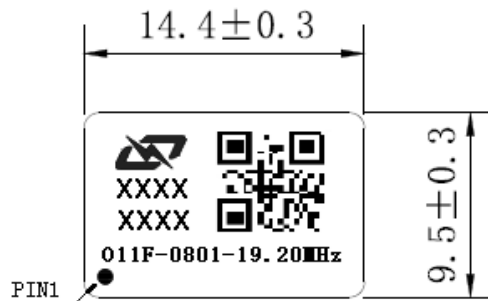
Right view



Side view

### PIN FUNCTION

PIN	NOTATION	FUNCTION
1	NC	Not Connect
2,5	NC	Not Connect
3	GND	GND
4	OUTPUT	RF Output
6	VCC	Supply Voltage



Top view

**Note1:** Tolerance ± 0.20mm without mark

**Note2:** The first two xx representative: year.

After two xx representative: week.

At last four xxxx representative: serial number.

Two dimensional code marking rules:

Material code + space + brand + space + batch (year week) + space + serial number.

The customer's material code is 030062000051

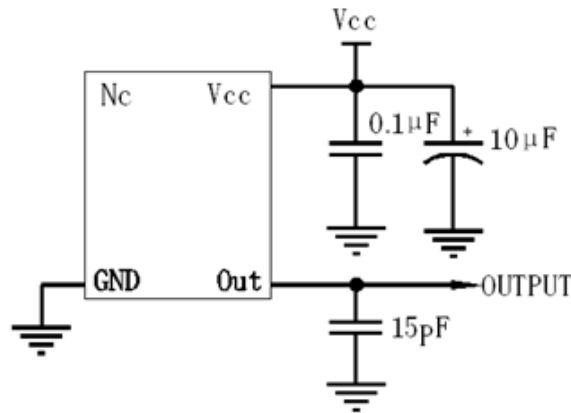
Take 62 in the middle and the last three digits as the material code number in the two dimensional code.

**Note3:** Referential weight 2.4g

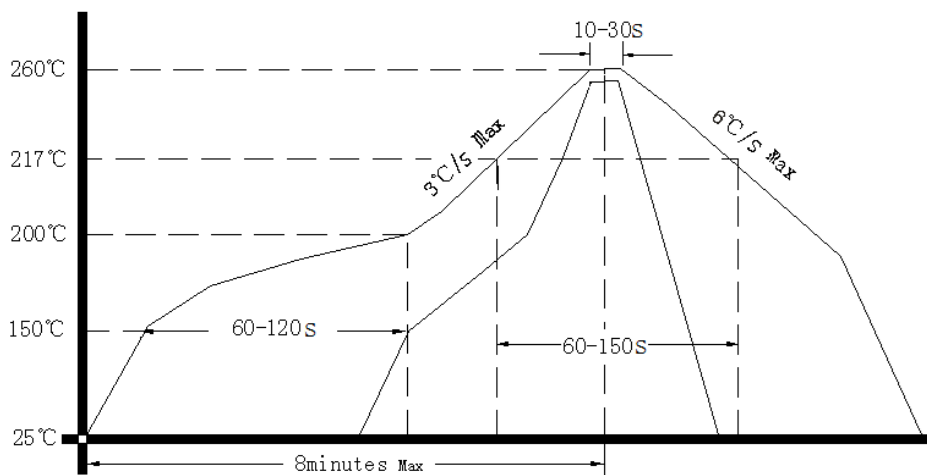
**Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



Passing through reflow upside down is not supported

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

