

Travelling Merchant: _____

DATASHEET

Standard: **O75A-3701-38.88MHz**

P/N: _____

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2022.05.07			

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2021.05.07
1.1	The "Operating Temperature" "Rise / Fall Time" "Aging Tolerance Per Day" "Phase Noise" "Reflow Soldering Curve" changed, Del "warm up time" Add "Start up time"	<i>Amway</i>	2022.04.19
1.2	Add "Reflow"	<i>Amway</i>	2022.04.26
1.3	The "Initial Frequency Tolerance" "Steady Consumption" "Warm up current" changed	<i>Amway</i>	2022.04.27
1.4	Add "Note5", The "Note2" "Note3" "Package" changed	<i>Amway</i>	2022.05.07



1. Electrical Parameters

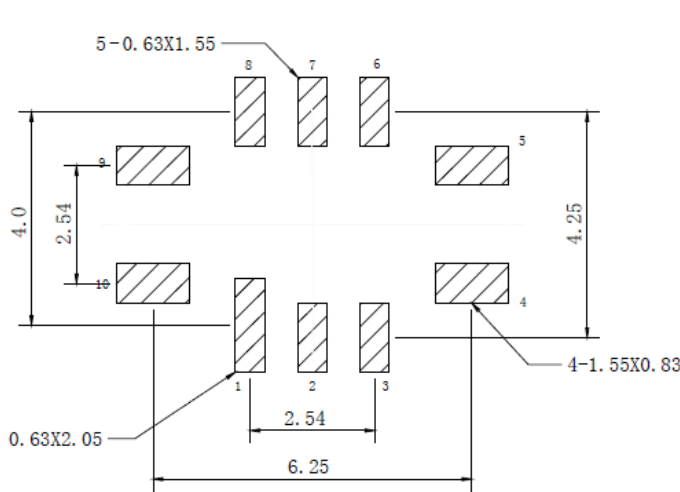
MODEL: O75A-3701-38.88MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	38.88			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.4			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	45		55	%	@50%
	Rise / Fall Time		4	5	ns	10%~90%
	Startup time till valid waveform			50	ms	Time until RF output waveform is within output level, duty cycle and rise/fall time spec
	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 $100^{\circ}C$, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=3.3V, O_{load}=15\text{ pF}$, 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 $T_A=25^{\circ}C, V_{cc}=3.3V$ within 30 days after ex-works.
	Reflow	-1		+1	$\times 10^{-6}$	After three times reflow 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 $T_A= -40\sim 100^{\circ}C, V_{cc}$ varied from 3.135V to 3.465V, and $O_{Load}=15\text{ pF}$.
	Frequency Tolerance vs. Load	-5		+5	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=3.3V, O_{Load}=15\text{ pF}$.
	Frequency vs. Temperature Slope	-1		+1	$\times 10^{-9}/^{\circ}C$	T_{amb} slope $\pm 1^{\circ}C/\text{min}$ with any temperature window over operating temperature range. Includes also hysteresis effects. Slope measurement for device qualification as described in the related note.
	G Sensitivity			1	$\times 10^{-9}/g$	Gamma vector of all three axes from 30Hz to 1500Hz.
	Aging Tolerance Per Day	-3		+3	$\times 10^{-9}$	$T_A=25^{\circ}C, V_{cc}=3.3V$, and after 30 days of operation.
	Aging Tolerance 1 Year	-0.3		+0.3	$\times 10^{-6}$	



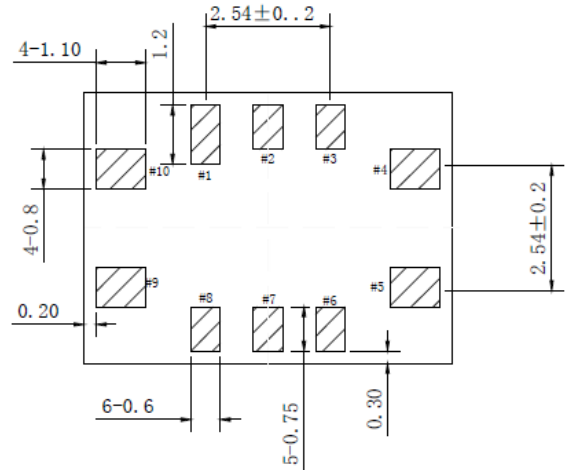
Power Supply	Start up time			60	s	± 200ppb reference to frequency after 60sec @25°C	
	Steady Consumption			500	mW	@25°C	
	Warm up current			1500	mW		
	Supply Voltage	3.135	3.3	3.465	V		
Phase Noise	Phase Noise -40~100°C		-67	-65	dBc/Hz	1Hz	
			-105	-100		10Hz	
			-135	-130		100Hz	
			-156	-151		1KHz	
			-165	-158		10KHz	
			-165	-158		100KHz	
			-165	-158		1MHz	
Environmental Conditions	Operating Temperature	-40		+100	°C		
	Operable Temperature	-45		+105	°C		
	Storage Temperature	-55		+105	°C		
	Relative Humidity Range	5		95	%		
	Absolute Humidity Range	1		29	g/m ³		
	Air Pressure Range	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 3.					
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz~2000Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z) .IEC 68-2-06 Test Fc.					
Shock	100g; 6ms; half sine wave (3 times for each 3 directions X ,Y , Z),IEC 68-2-27 Test Ea/Severity 50A.						



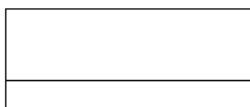
2. Mechanical Structure(mm)



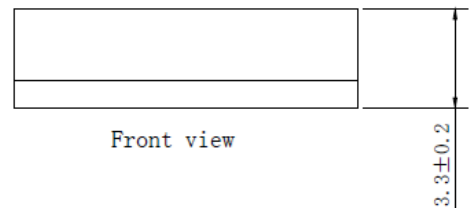
Solder pad layout



Bottom view



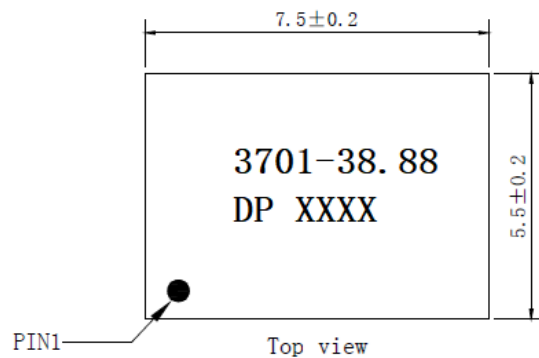
Right view



Front view

Pin Function

Pin	Function
1, 2, 3, 6, 7, 8	NC
4	GND
5	OUTPUT
9	VCC
10	NC



Top view

Note1: Tolerance $\pm 0.2\text{mm}$ without mark

Note2: “DP” -- Manufacturer logo

“XXXX” -- Data code is Year (YY) + Week (WW)format

3701 -- OCXO model name

38.88 -- Frequency

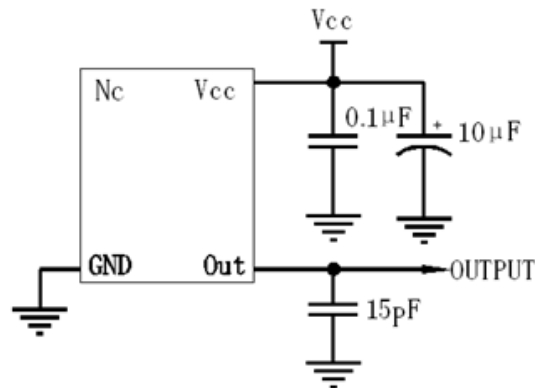
Note3: Referential Weight 0.3g

Note4: NC is not connect

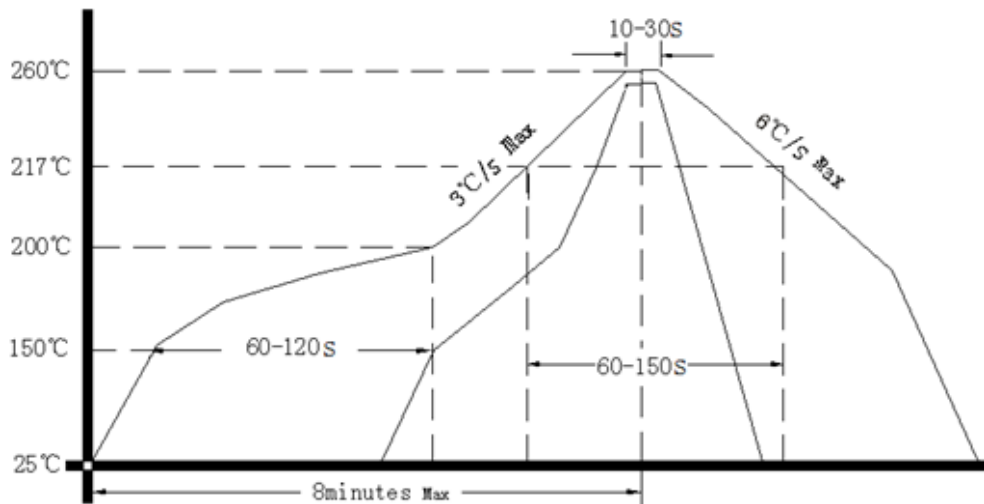
Note5: The crystal oscillator can guaranty and satisfy the reliability performance of datasheet Spec after 260 degree & 3 times Reflow.



Test circuit



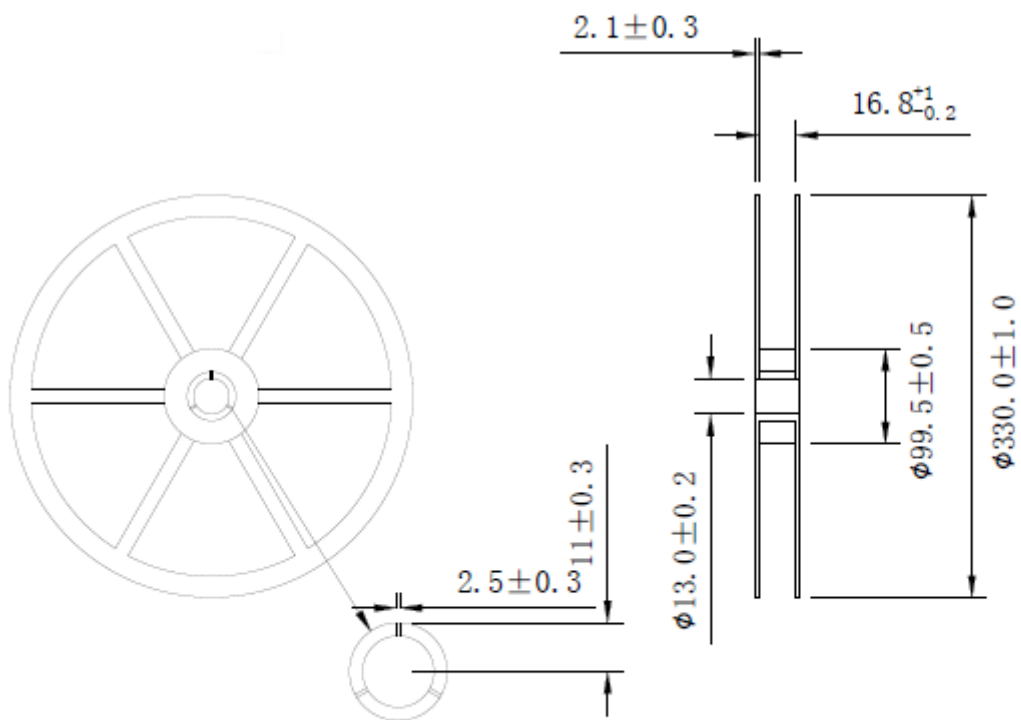
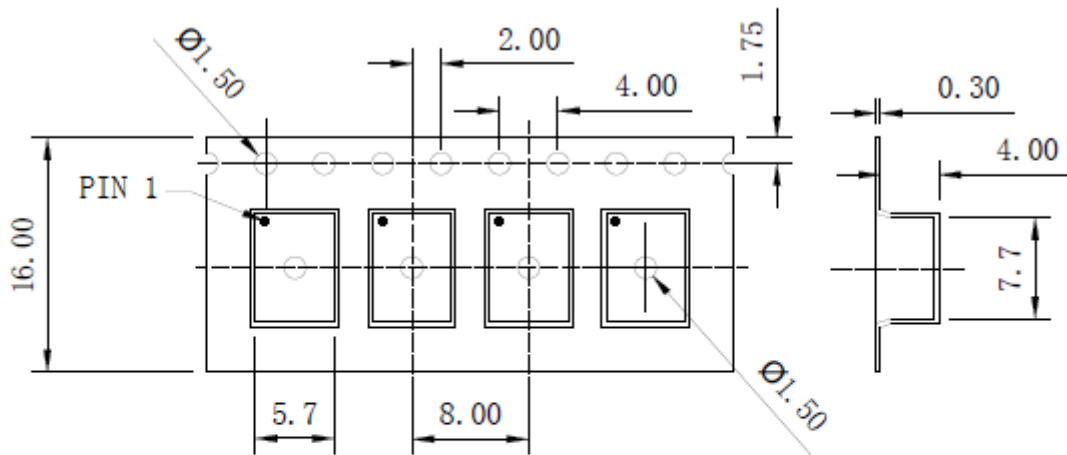
3. Reflow Soldering Curve (RoHS)



Note: Passing through reflow upside down is not supported



4. Package: Tape & Reel (mm)



2000PCS/Reel
Material:HIPS(475)