





### Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	<i>Amway</i>	2019.05.06
1.1	The “Output High Voltage” “Frequency Stabilities” “Short-Term Stability” “Phase Noise” “ESD Level” “Mechanical Structure” “Package: Tape & Reel” changed	<i>Amway</i>	2020.07.16
1.2	The “Mechanical Structure” changed	<i>Amway</i>	2020.12.15
1.3	The “Mechanical Structure” changed	<i>Amway</i>	2021.07.01
1.4	The “Mechanical Structure” changed	<i>Amway</i>	2024.12.20



## 1. Electrical Parameters

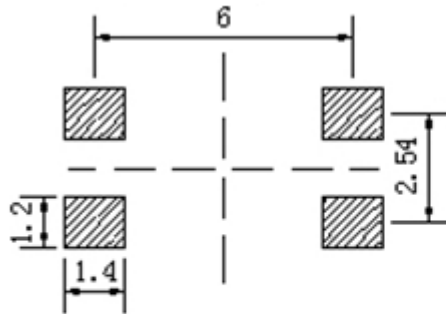
MODEL: T75A-1801-38.88MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	38.88			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.33	V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Output High Voltage	2.97			V	$V_{cc}=3.3V, O_{load}=15\text{ pF}$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	@25°C
	Spurious suppression			5	dBc	
	Start up time			10	ms	
	Load	15			pF	
Frequency Stabilities	Overall Tolerance	-7		+7	$\times 10^{-6}$	Including 10 years of 85°C aging.
	Frequency Tolerance vs. Operating Temperature Range	-0.5		+0.5	$\times 10^{-6}$	$T_A$ varied from -40°C to 105°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°C per minute.
	Initial Frequency Tolerance	-1.5		+1.5	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V$ within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.1		+0.1	$\times 10^{-6}$	measurement referenced to frequency observed $T_A=25^\circ\text{C}, V_{cc}$ varied from 3.13V to 3.47V, and $O_{Load}=15\text{ pF}$ .
	Frequency Tolerance vs. Load	-0.1		+0.1	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with $T_A=25^\circ\text{C}, V_{cc}=3.3V, O_{Load}=15\text{ pF}$ .
	Short-Term Stability			0.1	$\times 10^{-9}$	No temperature changed.
	Frequency Slope	-0.05		+0.05	$\times 10^{-6}$	Temperature ramp 2°C/minute, Test interval: test per 1°C



Power Supply	Current Consumption			10	mA	@25°C, V <sub>cc</sub> =3.3V, O <sub>Load</sub> =15pF.
	Supply Voltage	3.13	3.3	3.47	V	
Phase Noise	Phase Noise			-53	dBc/Hz	1Hz
				-88		10Hz
				-112		100Hz
				-135		1KHz
				-142		10KHz
				-145		40KHz
				-150		100KHz
				-150		1MHz
Jitter	Jitter			1	ps-rms	10Hz-100KHz
Environmental Conditions	Operable Temperature	-40		+105	°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	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.					



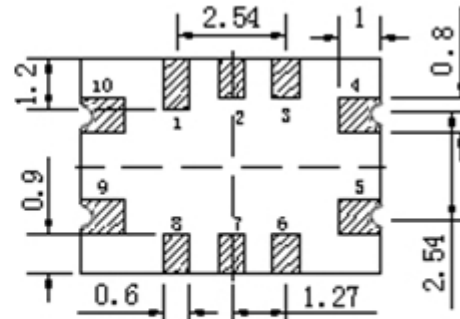
## 2. Mechanical Structure(mm)



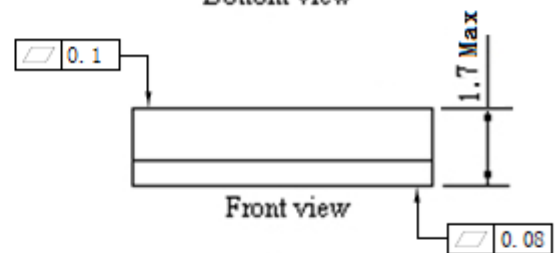
Solder pad layout



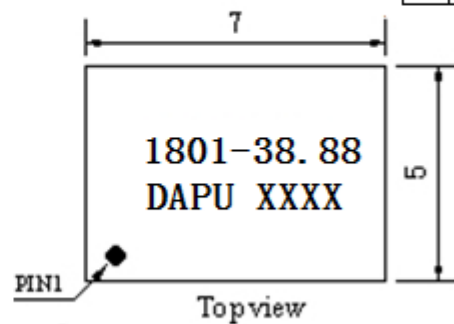
Right view



Bottom view



Front view



Top view

### PIN FUNCTION

PIN	NOTATION	FUNCTION
1, 2, 3, 6, 8	NC	Not Connect
4	GND	GND
5	OUTPUT	RF Output
7	NA	No Access
9	VCC	Supply Voltage
10	NC	Not Connect

**Note1:** Tolerance  $\pm 0.25\text{mm}$  without mark

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

After two xx representative: week

**Note3:** Referential Weight 0.2g

**Note4:** NC: No internal Connection

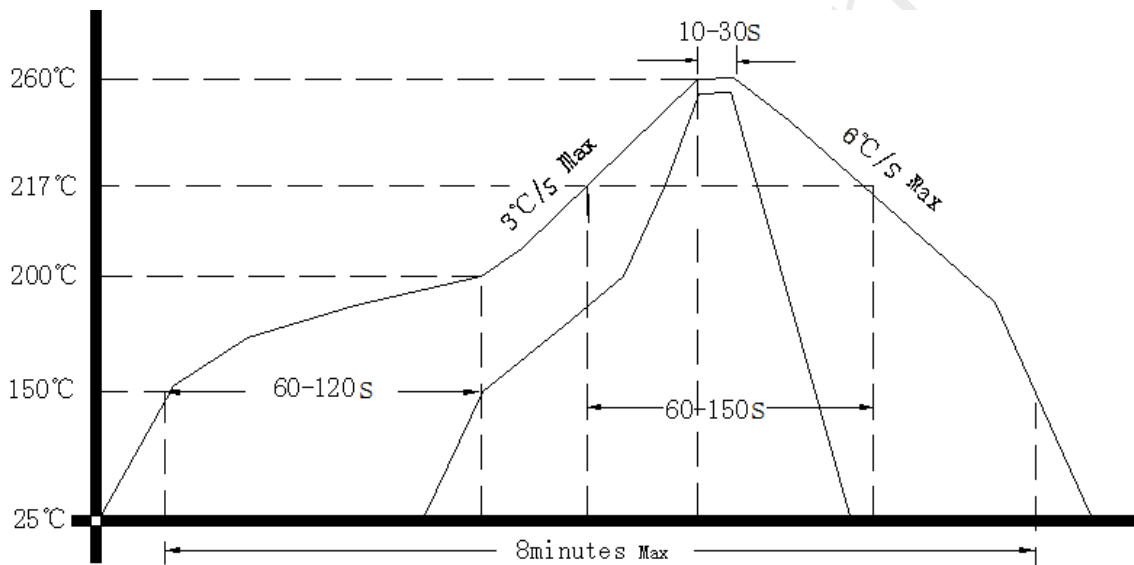
NA: Do Not Connect



### 3. Test circuit



### 4. Reflow Soldering Curve (RoHS)



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

