Travelling Merchant: A012

DATASHEET

Standard: **T75A-1201-20.00MHz**

P/N:

Plot			The Label
Drew	Audited	Approved	
Amway.wei	Carry.Wang	James.Liu	
Date: 2019.07.02			Stamp, please! Thanks!

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2019.06.14
1.1	The “Slope” and “Phase Noise” changed	Amway	2019.06.24
1.2	The “Phase Noise”“Mechanical Structure” changed	Amway	2019.06.27
1.3	The“Start up time”“Retrace accuracy”“Overall tolerance over 15 years lifetime (df/f) from 1h post-reflow frequency (f)”“Maximum accumulated power of spurs and Sub harmonic distortions” changed	Amway	2019.07.02

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1、Electrical Parameters

MODEL：T75A-1201-20.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		20.00		MHz	
	Output Waveform		HCMOS			
	Output Low Voltage			0.33	V	V_{cc}=3.3V, O_{load}=15 pF
	Output High Voltage	2.97			V	V_{cc}=3.3V, O_{load}=15 pF
	Duty Cycle	45	50	55	%	@50%
	Slew Rate	1			V/ns	Measured at mid-point of rising edge
	Load		15		pF	
	Start up time			15	ms	Time until RF output waveform is within output level, duty cycle and rise/fall time spec.(Over operational temperature range but Tamb = constant)
				30	s	Time until RF output is within ±0.025 ppm referenced to last frequency reading 1 h after start up.(Over operational temperature range but Tamb = constant)
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.1		+0.1	$\times 10^{-6}$	T_A varied from -40℃ to 95℃, 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℃per minute.
	Initial Frequency Tolerance	-1.0		+1.0	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-5.0		+5.0	$\times 10^{-9}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.13V to 3.47V, and O_{Load}=15pF.
	Frequency Tolerance vs. Load	-0.01		+0.01	$\times 10^{-6}$	10% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, and O_{Load}=15pF.
	Retrace accuracy	-0.025		+0.025	$\times 10^{-6}$	Cycle:1st power on 1h, power off 15 min, 2nd power on. First reading 30 s after 2nd power on, referenced to last frequency reading immediately before power off (Over operational temperature range but Tamb = constant).
	G-sensitivity			1	$\times 10^{-9}$/g	Three-dimensional vibration, sinusoidal per EN 300 019-2-4 Class 4M5
	Aging Tolerance Per Day	-5.0		+5.0	$\times 10^{-9}$	After 30 days of continuous operation.

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	Slope	-5.0		+5.0	$\times 10^{-9}$	T_{amb} slope ±1 ℃/min，For test details, See Note 1.
	Overall tolerance over 15 years lifetime (df/f) from 1h post-reflow frequency (f)	-4.6		+4.6	$\times 10^{-6}$	over operating temperature range
Power Supply	Operating Current			15	mA	@25℃, V_{cc}=3.3V, O_{Load}=15pF.
	Supply Voltage	3.13	3.3	3.47	V	
Phase Noise	Phase Noise @-40~95℃			-63	dBc/Hz	1Hz
				-89		10Hz
				-116		100Hz
				-134		1KHz
				-144		10KHz
				-144		100KHz
				-144		⩾1MHz
Maximum accumulated power of spurs and Sub harmonic distortions				-84	dBc	10 Hz ⩽ f_{Offset} < 300 Hz
				-84		300 Hz ⩽ f_{Offset} ⩽ 10 kHz
				-84		10 kHz ⩽ f_{Offset}
Environmental Conditions	Operating Temperature	-40		+95	℃	
	Operable Temperature	-45		+105	℃	
	Rate Of Temperature Variation			±1	℃/min	
	Relative Humidity Range	5		95	%	
	Absolute Humidity Range	1		29	g/m2	
	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; ANSI/ESDA/JEDEC JS-001-2010.				
	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.				

Note1: Apply a thermal ramp up and following ramp down (or vice versa) over specified operating temperature range with a Tamb slope of +-1 ℃/min. Measure consecutive pairs of DUT output frequency and Tamb in equidistant time steps. Number of measured frequency and Tamb pairs ≥ 10 per minute. Calculate slope as difference quotient with a fixed interval of 1 minute nominal for all measured frequency and Tamb pairs

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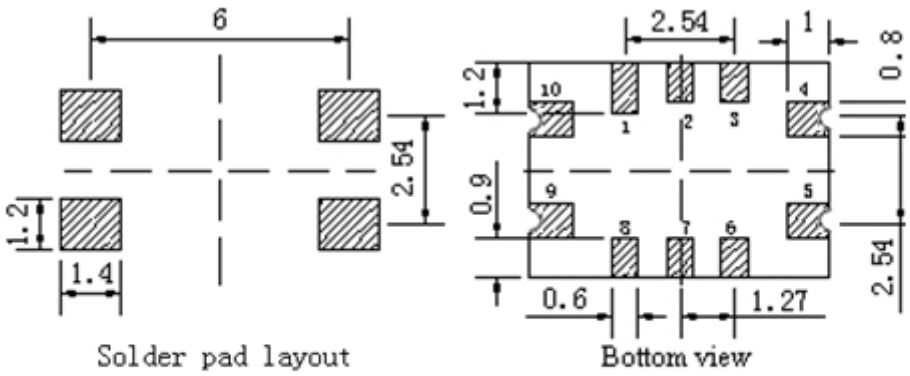
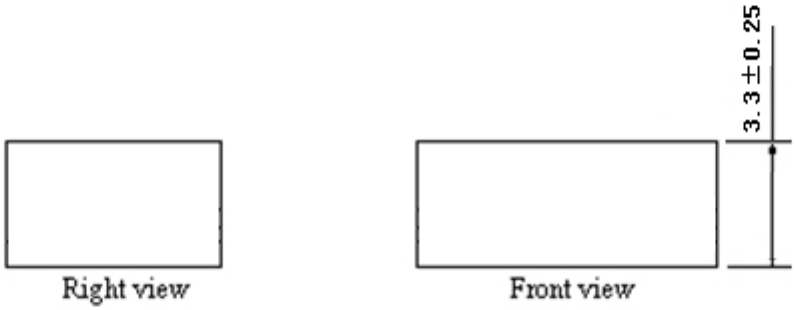
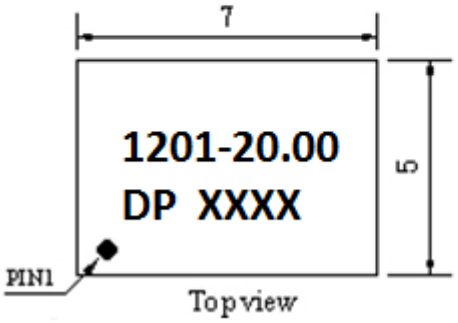
2、Mechanical Structure(mm)





Pin Function

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



Note1: Tolerance ±0.2mm without mark

Note2: The first two xx representative: week
After two xx representative: year

Note3: Referential weight 0.2g

Note4: NC is not connect

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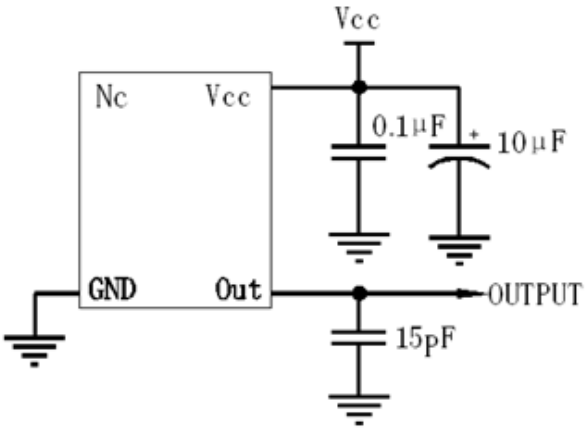
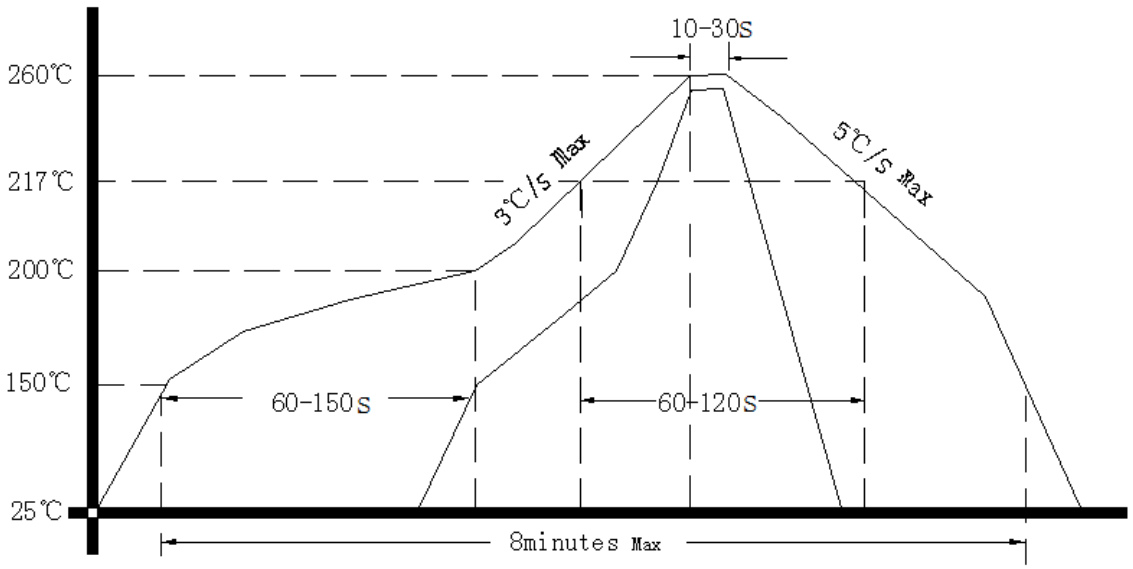
3、Test Circuit



4、Reflow Soldering Curve (RoHS)



5、Package: Tape & Reel (mm)