Travelling Merchant: A021

DATASHEET

Standard: **O11F-2101-25.00MHz**

P/N:

Plot			The Label
Drew	Audited	Approved	
Amway.wei	Tony · Wang	James.Liu	
Date: 2014.04.24			Stamp, please! Thanks!

Guangdong Dapu Telecom Technology Co.,Ltd

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2014.04.24

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1. Electrical Parameters

MODEL： O11F-2101-25.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		25.00		MHz	
	Output Waveform		HCMOS			
	Output Low Voltage			0.4	V	V_{cc}=3.3V, O_{load}=15 pF
	Output High Voltage	2.7			V	V_{cc}=3.3V, O_{load}=15 pF
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time （10%~90%）			4	ns	@25℃
	Load		15		pF	
	Non-Harmonics		-100	-90	dBc	
	RF availability after power on			0.3	S	Valid HCMOS signal
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range			+0.05	$\times 10^{-6}$	T_A varied from-40℃ to 85℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}-f_{min})/2f_0$, V_{cc}=3.3V, V_c=1.5V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
				+0.01	$\times 10^{-6}$	T_A varied from-20℃ to 70℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}-f_{min})/2f_0$, V_{cc}=3.3V, V_c=1.5V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
	Initial Frequency Tolerance	-0.5		+0.5	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, V_c=1.5V, and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-0.01		+0.01	$\times 10^{-6}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 3.13V to 3.47V, V_c=1.5V and O_{Load}=15pF.
	Frequency Tolerance vs. Load	-0.01		+0.01	$\times 10^{-6}$	5% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, V_c=1.5V, O_{Load}=15pF.
	ADEV			0.06	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference， test after power for 24hours, 25℃; 1s.
				0.15	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference， test after power for 24hours, 25℃; 1000s.

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	Aging Tolerance Per Day	-5		+5	$\times 10^{-9}$	V_{cc}, V_c, T_A constant measurement referenced to frequency observed with T_A=25℃, V_{cc}=3.3V, V_c=1.5V,and after 30 days of operation.
	Aging Tolerance 1 Year	-0.5		+0.5	$\times 10^{-6}$	
	Frequency slope vs. Temperature	-2		+2	$\times 10^{-9}$/℃	Temperature ramp 1 ℃/min
Power Supply	Supply Voltage	3.13	3.3	3.47	V	
	Steady Consumption			200	mA	@25℃
	Warm-Up Time		3		min	@25℃within $\pm 0.02 \times 10^{-6}$ of final frequency with reference after 24 hours on.
	Warm up current			500	mA	
	Iout		16		mA	Output Load: 200Ω AC coupled to GND
			8		mA	Output Load: 15pF to GND
Voltage Control Characteristics	Frequency Tuning Range	-7		-2.8	$\times 10^{-6}$/V	V_c=0.2V. measurement referenced to V_c=1.5V
		-0.5		+0.5	$\times 10^{-6}$	V_c=1.5V. measurement referenced to exactly 25.00MHz
		+2.8		+7	$\times 10^{-6}$/V	V_c=2.8V. measurement referenced to V_c=1.5V
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	80			KΩ	
	Modulation bandwidth	10			Hz	(@ modulator source impedance 1KΩ)
	Input capacitance			50	pF	
Phase Noise	Phase Noise		-105	-95	dBc/Hz	10Hz
			-130	-120		100Hz
			-145	-140		1KHz
			-150	-145		10KHz
			-155	-150		100KHz
Environmental Conditions	Operable Temperature	-40		+85	℃	
	Storage Temperature	-55		+105	℃	
	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 2.				
	Shock	50g; 11ms; half sine wave (3 times for each 3 directions X,Y, Z),IEC 68-2-27 Test Ea/Severity 50A.				

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<table>
<tr><td></td><td>Vibration</td><td>
<table>
<tr><td>Parameter</td><td>Sinusoidal Vibration</td><td>Min.</td><td>Typ.</td><td>Max</td><td>Unit</td></tr>
<tr><td rowspan="6">Spurious</td><td>5 Hz, 3mm</td><td></td><td></td><td>-34</td><td>dBc</td></tr>
<tr><td>10 Hz, 10m/s^2</td><td></td><td></td><td>-40</td><td>dBc</td></tr>
<tr><td>20 Hz, 10m/s^2</td><td></td><td></td><td>-46</td><td>dBc</td></tr>
<tr><td>50 Hz, 10m/s^2</td><td></td><td></td><td>-54</td><td>dBc</td></tr>
<tr><td>100 Hz, 10m/s^2</td><td></td><td></td><td>-59</td><td>dBc</td></tr>
<tr><td>200 Hz, 10m/s^2</td><td></td><td></td><td>-64</td><td>dBc</td></tr>
</table>
Reference: ETSI EN 300 019-2-4:2-9Hz=3mm amplitude, 9-200 Hz=10m/s^2=1g. The vibration should be applied to x-y-z axis. The vibration time is 30 seconds before measurement + needed measurement time. The supplier specifies the typ. spurious level due to vibration.
Example:
f_m=100Hz, G=10m/s^2=1g, L=-59dBc=1.259×10^{-6}, $S=\frac{G^2}{\sqrt{2\cdot f_m^2\cdot L}}=6.30\frac{g^2}{Hz}$
Carrier frequency error under vibration: $\Delta f_0=\sqrt{2\cdot f_m^2\cdot L}=0.159Hz$
Fractional frequency sensitivity $\Gamma_f=\frac{\Delta f_0}{f_0\cdot G}=6.35\cdot 10^{-9}\cdot\frac{1}{g}$ tends to be constant over vibration frequency except at internal resonances.
</td></tr>
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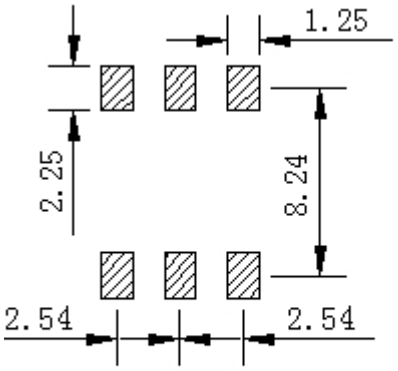
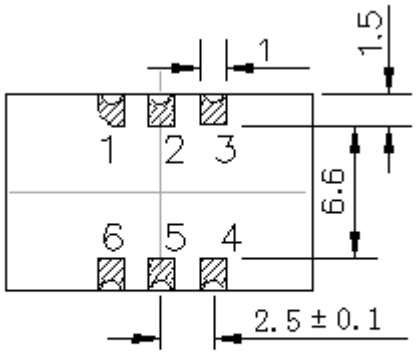
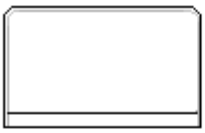
2. Mechanical Structure(mm)



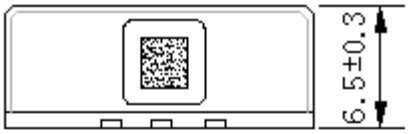
Solder Pad layout



Bottom view



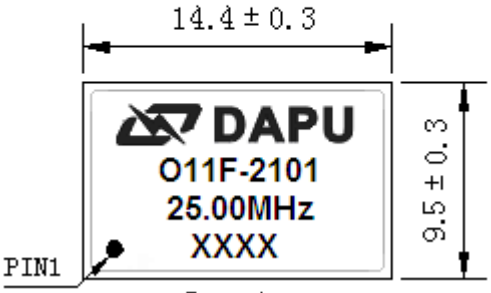
Right view



Side view

PIN FUNCTION

PIN	FUNCTION
1	VC
2	E/D
3	GND
4	OUTPUT
5	NC
6	VCC



Top view

Note1: Tolerance ±0.2mm without mark

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

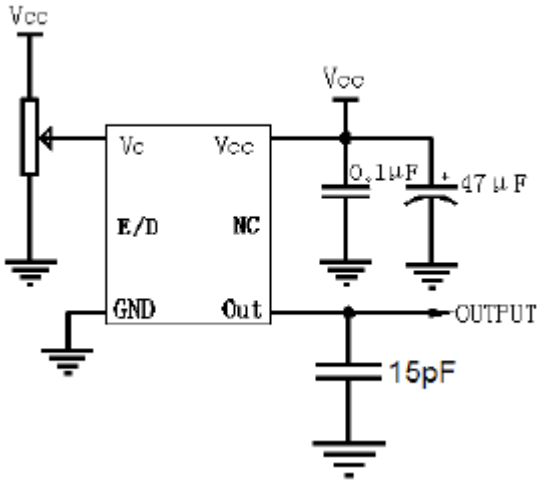
Note3: Referential Weight 1.3g

Note4: NC is not connect

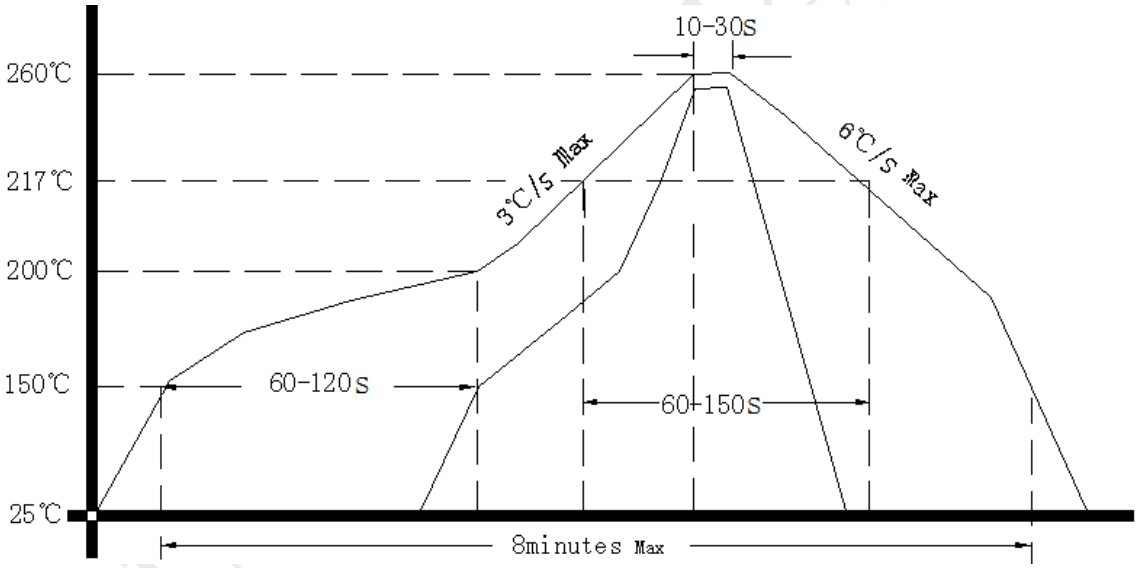
Note5: Disable: Vil≤Vcc-2.0V
Enable: Vih≥Vcc-1.025V

Pin 2	Pin 4
high level, open	data
low level	no data

3. Test circuit



4. Reflow Soldering Curve (RoHS)



5. Package: Tape & Reel (mm)