Travelling Merchant: A021

DATASHEET

Standard: **O77A-2101-10.00MHz**

P/N:

Plot			The Label
Drew	Audited	Approved	
Amway.wei	Tony · Wang	James.Liu	
Date: 2013.05.02			Stamp, please! Thanks!

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2013.05.02

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1. Electrical Parameters

MODEL： O77A-2101-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		10.00		MHz	
	Output Waveform		LVTTL			
	Output Low Voltage			0.8	V	V_{cc}=5.0V, O_{load}=15pF
	Output High Voltage	2.4			V	V_{cc}=5.0V, O_{load}=15pF
	Duty Cycle	40	50	60	%	@50%
	Rise / Fall Time (10%~90%)		2	3	ns	@25℃
	Over shoot and Under shoot			10	%	
	Load		15		pF	
	5MHz sub-harmonic peak			-37	dBc	
	Start up time			2	S	
	Frequency Tolerance vs. Operating Temperature Range	-0.04		+0.04	$\times 10^{-9}$	ΔT ℃= ±5 ℃ within range 0 ℃ to 20 ℃ V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 1℃per minute.
		-0.02		+0.02	$\times 10^{-9}$	ΔT°C= ±5 ℃ within range 20 ℃ to 60 ℃ V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 1℃per minute.
		-0.027		+0.027	$\times 10^{-9}$	ΔT°C= ±5 ℃ within range 60 ℃ to 85 ℃ V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 1℃per minute.
	Warm-up stability	-0.015		+0.015	$\times 10^{-6}$	T_A in range 0℃ to 85 ℃,within 30 days power off, After 12 minutes of warm-up with reference to 24 hours value
	Frequency Transcient During Thermal Shock (up to 3 minutes duration)	-2		+2	$\times 10^{-9}$	Ramp rate : 5C/min up to 3 minutes duration, within entire operating temperature range.
	Initial Frequency Tolerance	-0.05		+0.05	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=25℃, V_{cc}=5.0V, and after 12 minutes of operation, within 30 days after ex-works
	Frequency Tolerance vs. Supply Voltage	-0.04		+0.04	$\times 10^{-9}$	measurement referenced to frequency observed T_A=25℃, V_{cc} varied from 4.75V to 5.25V, and O_{Load}=15pF.
	Frequency Tolerance vs. Load	-0.04		+0.04	$\times 10^{-9}$	5% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=5.0V, and O_{Load}=15pF.

	Short-Term Stability: Allan Variance			0.005	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference，test after power for 1hour ref. to 25℃; 1s, using PN9000 equipment.
	Maximum total frequency jump	-0.05		+0.05	$\times 10^{-9}$	@25℃, Measured 72h.
	Time of opera before allowing aging compensation.			12	hour	Within 10 days after ex-work.
				2	days	Within 100 days after ex-work.
				7	days	Within 365 days after ex-work.
	Maximum daily ageing variation,based on mean ageing slope for running 24 hour segments throughout minimum of 48 hour measurement period	-0.01		+0.01	$\times 10^{-9}$	Measured during minimum of 48h of operation at T_A=25℃.
	Aging Tolerance 24 hours	-0.1		+0.1	$\times 10^{-9}$	V_{cc}, T_A constant measurement referenced to frequency observed with T_A=25℃, V_{cc}=5.0V, and after 7 days of operation, within 30 days power off
	Overall Stability	-0.3		+0.3	$\times 10^{-6}$	Inclusive of the following: operating temperature 0℃ to 85℃ 5.0V ±5% 15pF load ±5% 10 years aging reference to nominal frequency
Power Supply	Supply Voltage	4.9	5.0	5.1	V	
	Current Consumption			600	mA	@25℃
	Current Consumption			300	mA	T_A=85℃
	Warm-up completion time			4	min	T_A=25℃, Oscillator frequency within $\pm 0.015\times 10^{-6}$,With reference to 24 hour value.Warm-up completion bit 0 to 1 transition.
				12	min	T_A in range 0℃ to 85℃, Oscillator frequency within $\pm 0.015\times 10^{-6}$,With reference to 24 hour value.Warm-up completion bit 0 to 1 transition.
	Warm up current			1200	mA	T_A=0℃
	Ripple noise on power supply			10	mV	Peak to peak

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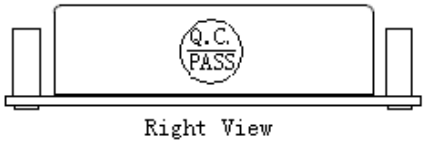
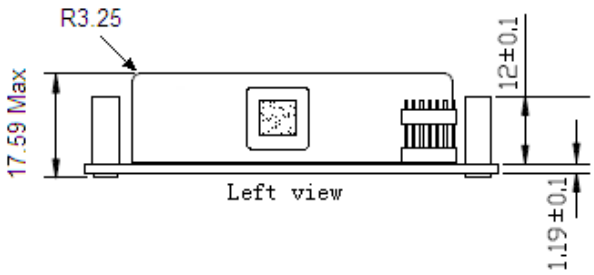
Phase Noise	Phase Noise			-70	dBc/Hz	1Hz
				-100		10Hz
				-120		100Hz
				-130		1KHz
				-130		10KHz
				-130		1MHz
Environmental Conditions	Operable Temperature	0		+85	℃	
	Storage Temperature	-40		+100	℃	
	ESD Level	Human Body Model, class2: 2000V to 4000V; ANSI/ESDA/JEDEC JS-001-2010.				
		Machine Model, class B: 200V to 400V; ANSI/ESDA/JEDEC JS-001-2010.				
	Moisture Sensitivity Level	Not humidity sensitive.				
	Vibration	Test Condition: 0.75mm ;acceleration:10g;10Hz～500Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z)， IEC 68-2-06 Test Fc.				
	Shock	50g; 11ms; half sine wave (3 times for each 3 directions X ,Y, Z),IEC 68-2-27 Test Ea/Severity 50A.				

2. Mechanical Structure(mm)



Right View

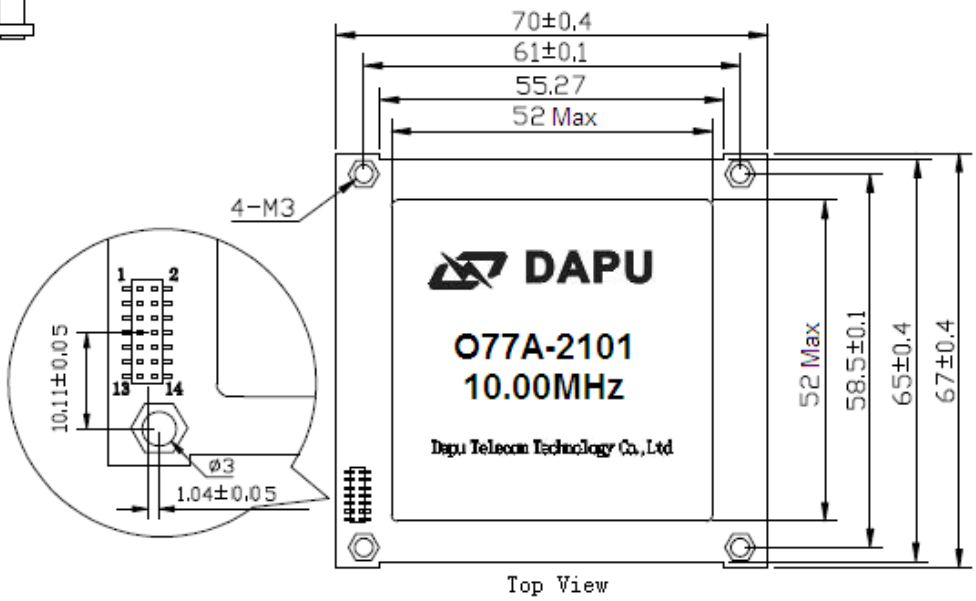

Side View



Left view

PIN FUNCTION

PIN	FUNCTION
1	I2C_SCL
2	I2C_SDA
3	VCC
4	VCC
5	VCC
6	VCC
7	Presence
8	Ready (Warm-up Complete=Logic high)
9	GND
10	GND
11	10MHz output
12	GND
13	GND
14	GND



Top View

Note: Referential Weight 65g

3. I²C Devices Address

3.1. 8K I²C SERIAL EEPROM

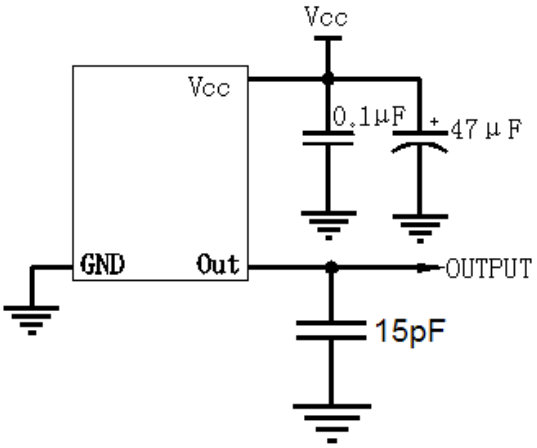
Device name : 24LC08B

Device supplier : Microchip

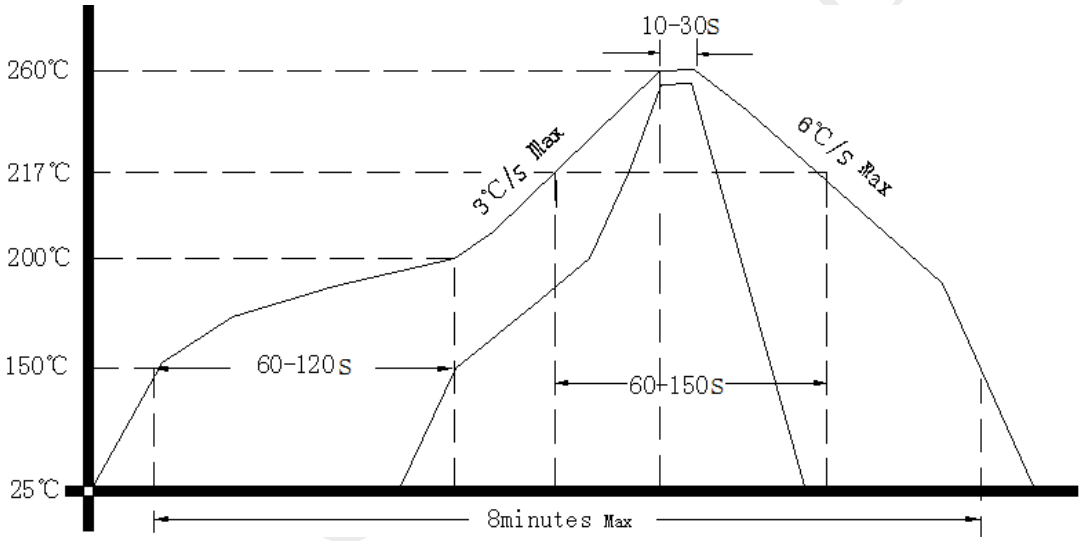
Device address : 1010100

Note: More detailed information see the datasheet provide by the supplier.

4. Test Circuit



5. Reflow Soldering Curve (RoHS)



6. Package(mm)