Customer Code : A008

DATASHEET

DAPU P/N: **O23B-0802-10.00MHz**

Customer P/N:

DAPU			Customer Approval
Drew	Audited	Approved	
Amway.wei	Carry.Wang	James.Liu	
Date: 2017.04.10			Stamp, please! Thanks!

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Table of amendment

Version	Revision contents	Prepared by	Revised date
1.0	The first issued	Amway	2015.10.20
1.1	"Pin Length" changed	Amway	2015.11.03
1.2	"Frequency Tolerance vs. Operating Temperature Range" , "Linearity" , "Operable Temperature Range" , "Operating Environmental Condition", "Storage Condition", "Mechanical Structure" and "Test Circuit" changed Add "Start up time" , "Function curve" and "RoHS"	Amway	2017.02.15
1.3	The "Marking" changed	Amway	2017.04.10

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1. Electrical Parameters

MODEL： O23B-0802-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency		10.00		MHz	
	Output Waveform		LVTTL			
	Output Low Voltage			0.4	V	V_{cc}=5.0V, O_{load}=15pF
	Output High Voltage	2.8			V	V_{cc}=5.0V, O_{load}=15pF
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			5	ns	
	Output overshoot			10	%	
	Load		15		pF	
	Spurious Suppression			-70	dBc	
	Start up time		0.7	1	s	
	Jitter			1	ps	RMS(12KHz~50MHz)
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.2		+0.2	$\times 10^{-9}$	T_A varied from-20℃ to 80℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
		-1.0		+1.0	$\times 10^{-9}$	T_A varied from-40℃ to 85℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
		-0.05		+0.05	$\times 10^{-6}$	T_A varied from-40℃ to 90℃, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2$, V_{cc}=5.0V, O_{load}=15pF, temperature variable speed less than 2℃per minute.
		-0.03		+0.03	$\times 10^{-9}$	within arbitrarily continuous 15℃ (-20℃～70℃)
	Initial Frequency Tolerance	-0.05		+0.05	$\times 10^{-6}$	Measurement referenced to frequency observed with T_A=60℃ or 25℃, V_{cc}=5.0V, DAC=0x7FFF , and after 30 minutes of operation.
	Frequency Tolerance vs. Supply Voltage	-0.1		+0.1	$\times 10^{-9}$	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	-0.1		+0.1	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with T_A=25℃, V_{cc}=5.0V, and O_{Load}=15pF.
	Micro Jump	-0.05		+0.05	$\times 10^{-9}$	Continuous testing for 48 hours, temperature fluctuations ＜3℃,one sampling/10s.
	Temper Hysteresis Effect	-0.2		+0.2	$\times 10^{-9}$	Over temperature range(10℃/hour)
	MTIE			1.5	μs	12 hours period, temperature fluctuations ＜15℃.
	Retrace	-5		+5	$\times 10^{-9}$	After 24 hour off at 25℃, 15min power on.
	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.
				0.02	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference，test after power for 1hour ref. to 25℃; 100s, using PN9000 equipment.
	Aging Tolerance Per Day	-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, before shipment.
	Aging Tolerance 1 Year	-0.015		+0.015	$\times 10^{-6}$	
	Aging Tolerance 10 Years	-0.15		+0.15	$\times 10^{-6}$	
	Aging Tolerance 15 Years	-0.2		+0.2	$\times 10^{-6}$	
Power Supply	Supply Voltage	4.75	5.0	5.25	V	
	Steady Consumption			700	mA	@25℃
	Warm up current			1500	mA	
	Warm-Up Time			8	min	@25℃within ±0.01×10^{-6} of final frequency with reference after 1 hour on.
DAC Control Characteristics	Frequency Tuning Range	-0.5		-0.3	$\times 10^{-6}$	DAC=0x0000. measurement referenced to DAC=0x7FFF
		-0.05		+0.05	$\times 10^{-6}$	DAC=0x7FFF. measurement referenced to Exactly 10.00MHz
		+0.3		+0.5	$\times 10^{-6}$	DAC=0xFFFF. measurement referenced to DAC=0x7FFF
	Linearity			10	%	
	Slope	Positive				

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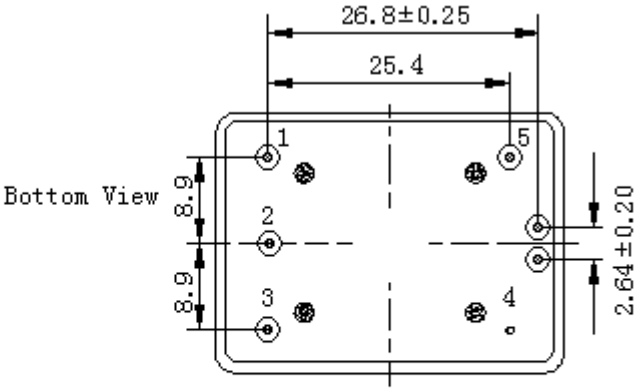
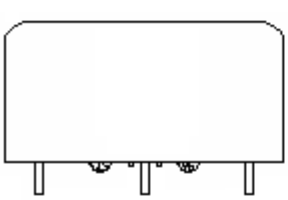
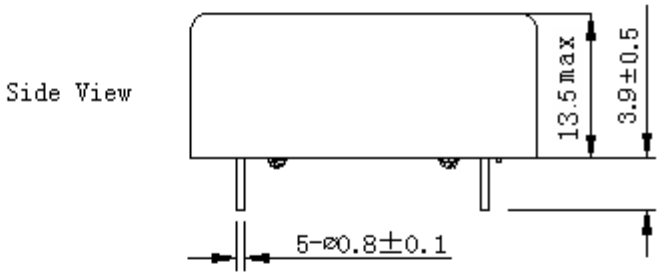
Phase Noise	Phase Noise			-85	dBc/Hz	1Hz
				-115		10Hz
				-135		100Hz
				-145		1KHz
				-145		10KHz
				-150		100KHz
				-155		1MHz
Environmental Conditions	Operable Temperature Range	-40		+90	℃	
	Operating Environmental Condition	-40		+85	℃	
	Storage Condition	-40		+105	℃	
	Operating Humidity	5		85	%	
	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:30m/s^2;5Hz～500Hz, test 2 hours for each 3 directions (X ,Y , Z) , IEC 68-2-06 Test Fc.				
	Shock	200m/s^2; 6ms; half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A.				
	Free Fall	Height:300mm				
	RoHS	Pb Free				
Full Package Storage	Relative humidity (%)	20%～70%				
	Temperature (℃)	-10~35℃				

Note: The frequency difference between before and after the test (Vibration, Shock, Free Fall) is less than 0.5×10^{-6}.

2. Mechanical Structure (mm)

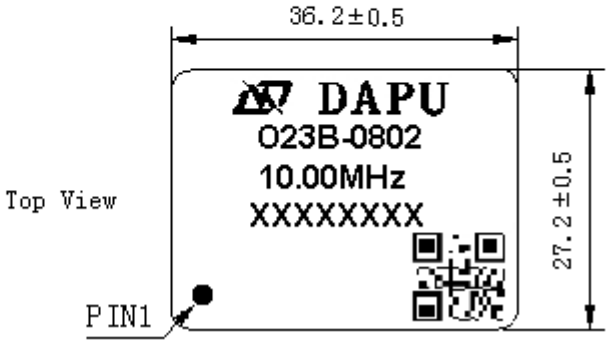






PIN FUNCTION

PIN	FUNCTION
1	VCC
2	SDA
3	SCL
4	GND
5	OUTPUT



Note1: Tolerance ±0.20mm without mark

Note2: The first two xx representative: week
After two xx representative: year
At last four xxxx representative: serial number

Note3: Referential weight 20.7g

3. I²C Devices Address

3.1 DIGITAL-TO-ANALOG CONVERTER,VOLTAGE OUTPUT

Device name : DAC8571

Device supplier : TI

Device address : 1001100

3.2.1 256kbit I²C SERIAL EEPROM

Device name : AT24C256

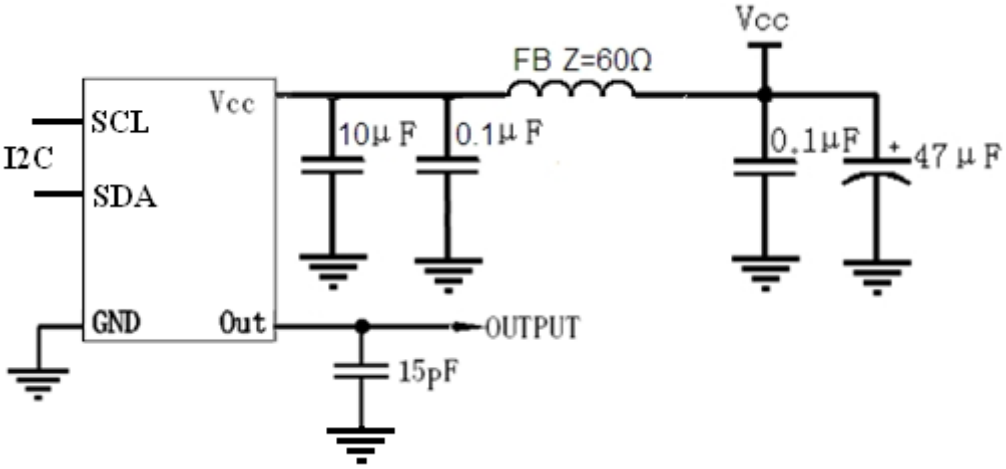
Device supplier : Atmel

Device address : 1010100

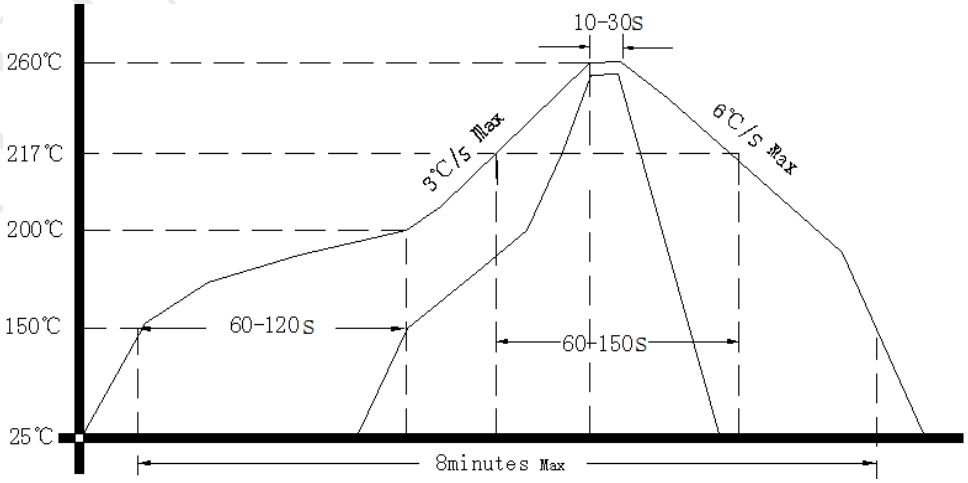
3.2.2 EEPROM for inventory and data storage

Note: Pls refer to *EEPROM Data Storage Definition of High Stability OCXO* for the detailed information.

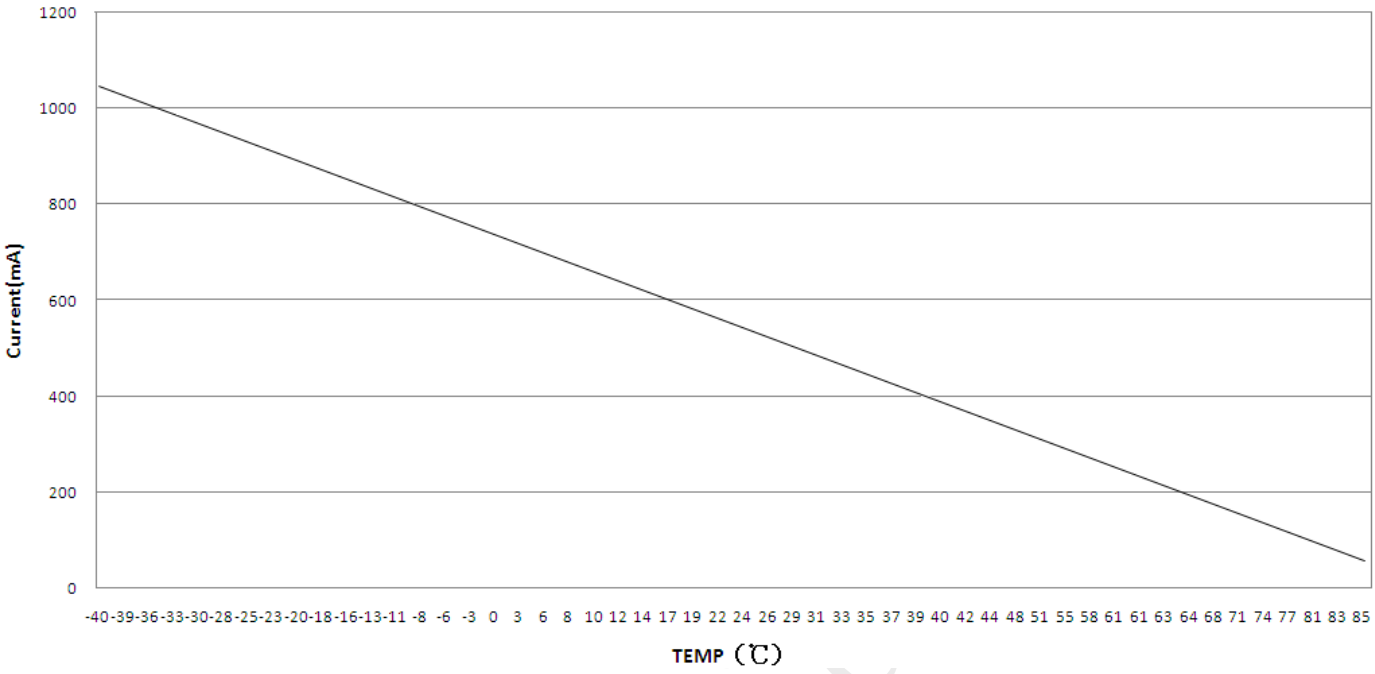
4. Test Circuit



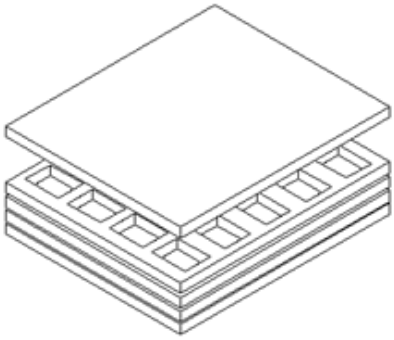
5. Reflow Soldering Curve (RoHS)



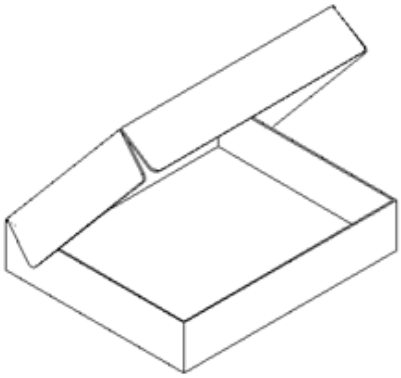
6. Power Curve



7. Package（mm）



Buffer material



Cardboard
Max 20pcs. circulator