

Travelling Merchant: \_\_\_\_\_

# DATASHEET

Standard:           **O22S-B326-10.00MHz**          

P/N: \_\_\_\_\_

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2015.02.10			

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## 1. Electrical Parameters

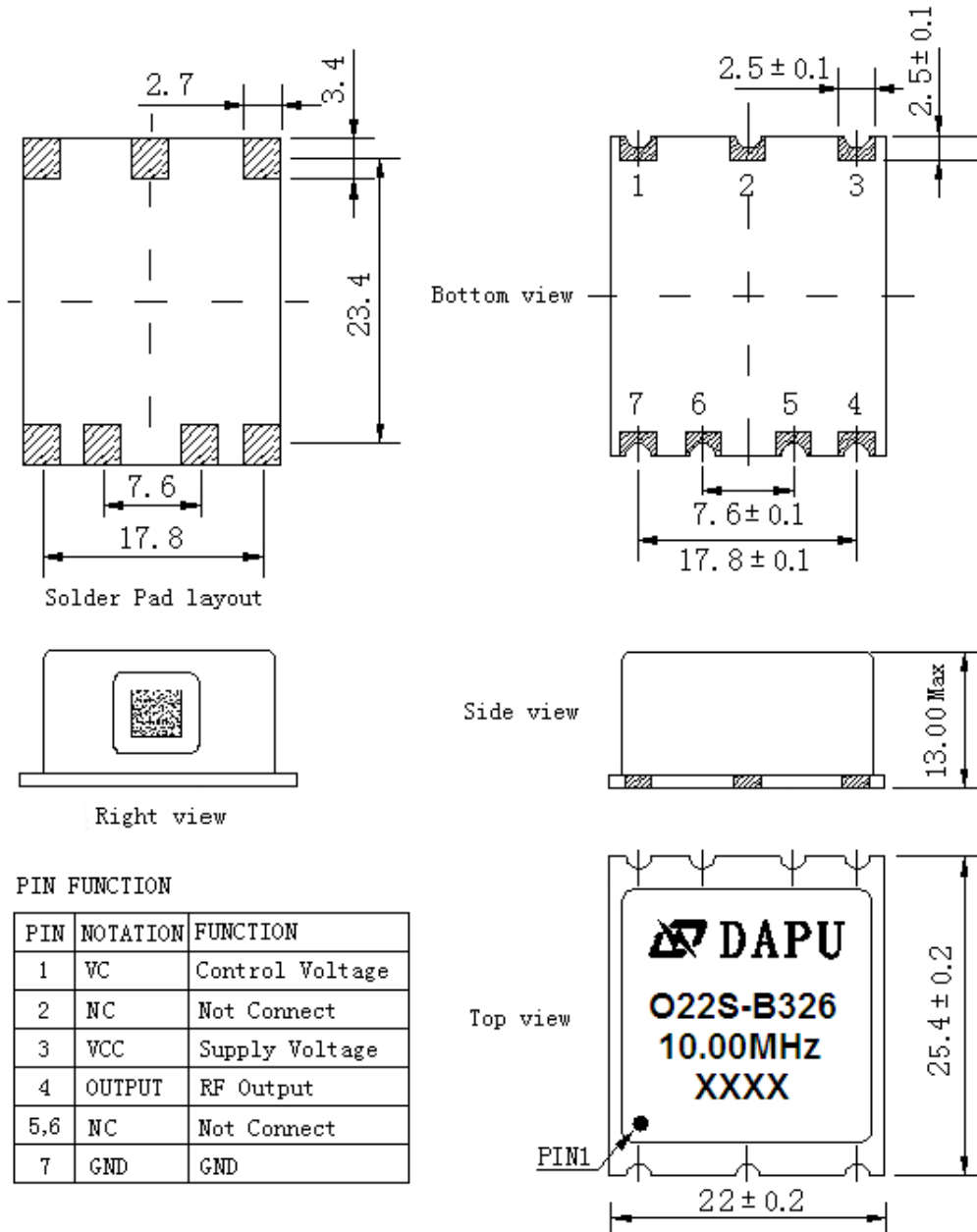
MODEL: O22S-B326-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.4	V	$V_{cc}=5.0V, O_{load}=15pF$
	Output High Voltage	2.4		3.3	V	$V_{cc}=5.0V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			6	ns	
	Load	15			pF	
	Spurious Suppression			-70	dBc	
	Start-Up Time			200	ms	@25°C
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-5		+5	$\times 10^{-9}$	$T_A$ varied from -40°C to 85°C, measurement referenced to frequency observed with $f_{ref}=(f_{max}+f_{min})/2, V_{cc}=5.0V, V_c=2.5V, O_{load}=15pF$ , temperature variable speed less than 2°C per minute.
	Initial Frequency Tolerance	-0.1		+0.1	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=5.0V, V_c=2.5V$ , and after 15 minutes of operation, within 30 days after ex-works.
	Frequency Tolerance vs. Supply Voltage	-1		+1	$\times 10^{-9}$	measurement referenced to frequency observed $T_A=25^\circ C, V_{cc}$ varied from 4.75V to 5.25V, $V_c=2.5V$ and $O_{Load}=15pF$ .
	Frequency Tolerance vs. Load	-1		+1	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=5.0V, V_c=2.5V$ , and $O_{Load}=15pF$ .
	Short-Term Stability: Allan Variance			0.01	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to 25°C; 1s, using PN9000 equipment.
	Aging Tolerance Per Day	-0.5		+0.5	$\times 10^{-9}$	$V_{cc}, V_c, T_A$ constant measurement referenced to frequency observed with $T_A=25^\circ C, V_{cc}=5.0V, V_c=2.5V$ , and after 7 days of operation.
	Aging Tolerance 1 Year	-0.05		+0.05	$\times 10^{-6}$	
	Aging Tolerance 15 Years	-0.5		+0.5	$\times 10^{-6}$	



	Retrace	-5		+5	$\times 10^{-9}$	$V_c = 2.5V$ . After 48 hours operation ,record the frequency f1.Power off the oscillator at least 24 hours. Then power on , measurement frequency f2 after 1 hour operation. $\Delta fr=f1-f2$
Power Supply	Supply Voltage	4.75	5.0	5.25	V	
	Steady Consumption			250	mA	@25°C
	Warm up current			700	mA	
	Warm-Up Time			8	minutes	@25°C within $\pm 0.05 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Voltage Control Characteristics	Frequency Tuning Range	-0.8		-0.5	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=2.5V$
		-0.1		+0.1	$\times 10^{-6}$	$V_c=2.5V$ . measurement referenced to exactly 10.00MHz
		+0.5		+0.8	$\times 10^{-6}$	$V_c=5.0V$ . measurement referenced to $V_c=2.5V$
	Linearity			10	%	For each test point 0.5V
	Slope	Positive				
	Input Impedance	100			K $\Omega$	
Phase Noise	Phase Noise @25°C		-100	-90	dBc/Hz	1Hz
			-125	-115		10Hz
			-145	-135		100Hz
			-150	-145		1KHz
			-155	-150		10KHz
			-155	-150		100KHz
Environmental Conditions	Operable Temperature	-40		+85	°C	
	Storage Temperature	-55		+105	°C	
	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.				
	Vibration	Frequency range: 20Hz~2000Hz, acceleration :6g, ASD: 0.04g <sup>2</sup> /Hz one cycle per 30 min, test 2 hour. (3 times for each 3 directions X ,Y , Z), GJB 150.16A-2009				
	Shock	100g; 6ms; half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A.				
Thermal Shock	Temperature Range :-55°C to +125°C, 30Cycles, GJB 1032					
Full Package Storage	Relative humidity (%)	20%~70%				
	Temperature (°C)	-10~35°C				



## 2. Mechanical Structure (mm)



**Note1:** Tolerance ±0.2mm without mark

**Note2:** Marking

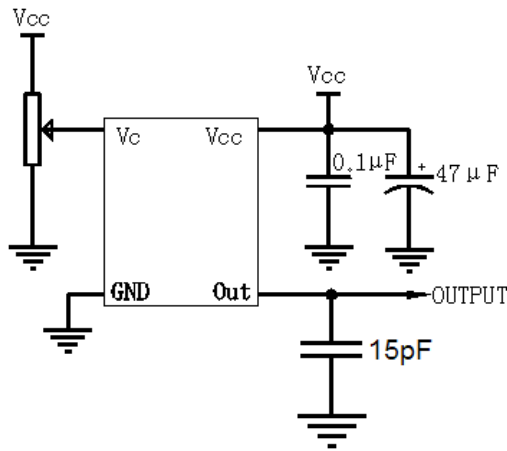
- 1) Line 1 is DAPU's logo
- 2) Line 2-3 is product model
- 3) Line 4 is manufacture date code:  
The first two xx representative: week  
After two xx representative: year

**Note3:** Referential Weight 7.8g

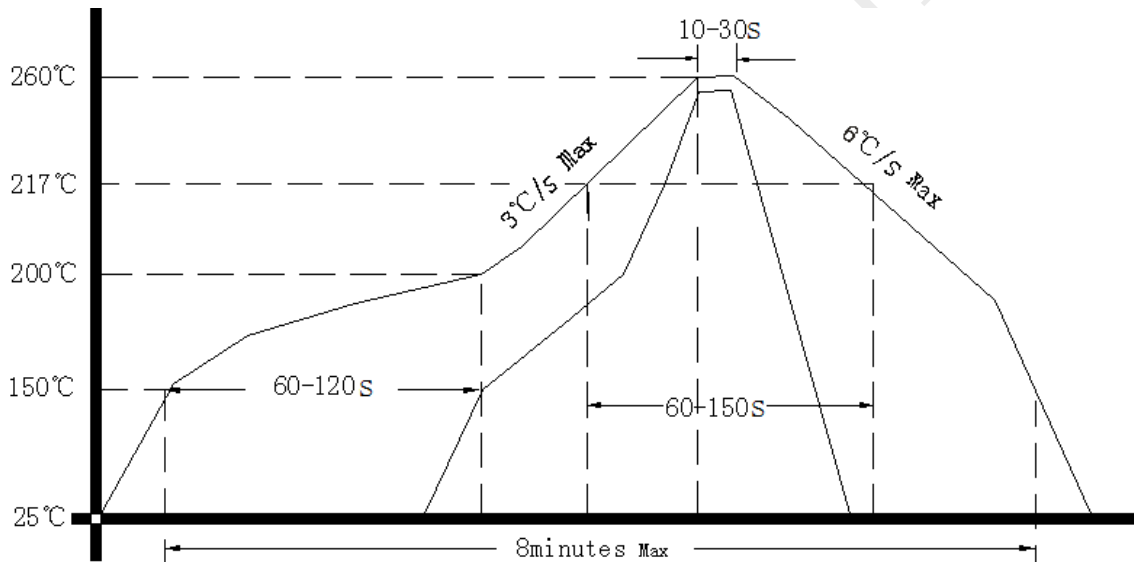
**Note4:** NC is not connect



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



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

