

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

# DATASHEET

Standard:           **O23B-ESBD-10.00MHz-A**          

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

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2013.11.22			

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## 1. Electrical Parameters

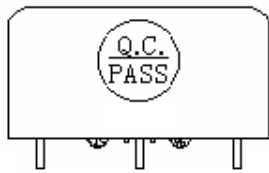
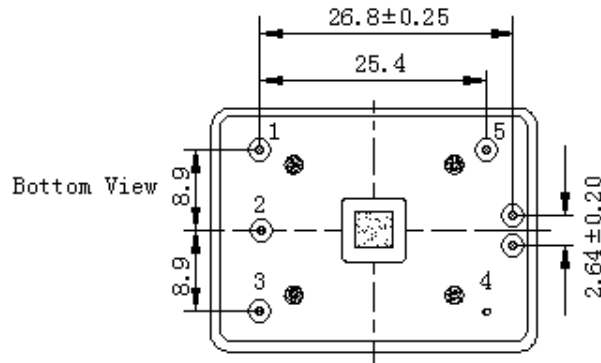
MODEL: O23B-ESBD-10.00MHz-A							
Item	Description	Parameters			Unit	Test Condition	
		Min.	Typ.	Max.			
Output	Frequency	10.00			MHz		
	Output Waveform	Sine wave					
	Level	6		10	dBm		
	Load	50			$\Omega$		
	Harmonics Suppression			-30	dBc		
	Spurious Suppression			-60	dBc		
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-3		+3	$\times 10^{-9}$	$T_A$ varied from $-10^\circ\text{C}$ to $70^\circ\text{C}$ , measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.5\text{V}$ , $O_{\text{load}}=50\Omega$ , temperature rise speed less than $2^\circ\text{C}$ per minute.	
	Initial Frequency Tolerance	-0.05		+0.05	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.5\text{V}$ 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 $T_A=25^\circ\text{C}$ , $V_{\text{cc}}$ varied from 4.75V to 5.25V, $V_c=2.5\text{V}$ , $O_{\text{load}}=50\Omega$ .	
	Frequency Tolerance vs. Load	-1		+1	$\times 10^{-9}$	5% Load Change Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.5\text{V}$ , $O_{\text{load}}=50\Omega$ .	
	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 $25^\circ\text{C}$ ; 1s, using PN9000 equipment.
					0.05	$\times 10^{-9}$	Temperature stability, no EMI\EMC or other interference, test after power for 1hour ref. to $25^\circ\text{C}$ ; 100s, using PN9000 equipment.
	Aging Tolerance per day	-0.3		+0.3	$\times 10^{-9}$	$V_{\text{cc}}, V_c, T_A$ constant Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$ , $V_{\text{cc}}=5.0\text{V}$ , $V_c=2.5\text{V}$ , $O_{\text{load}}=50\Omega$ and after 30 days of operation.	
	Aging Tolerance 1 Year	-0.05		+0.05	$\times 10^{-6}$		
	Aging Tolerance 10 Years	-0.3		+0.3	$\times 10^{-6}$		
	Aging Tolerance 15 Years	-0.4		+0.4	$\times 10^{-6}$		



	Daily Fluctuation	-3.6		+3.6	$\times 10^{-9}$	$V_{cc}=5.0V$ , temperature change range $\pm 2.8^{\circ}C$ , after 30 days of operation.
	Retrace after 24 hours off			30	minutes	@25 $^{\circ}C$ within $\pm 0.01 \times 10^{-6}$ of final frequency, with the frequency before turn off after 48hours on.
Power Supply	Supply Voltage	4.75	5.0	5.25	V	
	Current Consumption			600	mA	@25 $^{\circ}C$
	Current Consumption during warm up			1200	mA	
	Warm-Up Time			8	minutes	@25 $^{\circ}C$ within $\pm 0.01 \times 10^{-6}$ of final frequency with reference after 1 hour on.
Voltage Control Characteristics	Frequency Tuning Range	-0.4		-0.2	$\times 10^{-6}$	$V_c=0V$ . measurement referenced to $V_c=2.5V$ .
		-0.05		+0.05	$\times 10^{-6}$	$V_c=2.5V$ . measurement referenced to exactly 10.00MHz.
		+0.2		+0.4	$\times 10^{-6}$	$V_c=5.0V$ . measurement referenced to $V_c=2.5V$ .
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100				K $\Omega$
Phase Noise	Phase Noise @25 $^{\circ}C$		-100	-95	dBc/Hz	1Hz
			-132	-127		10Hz
			-145	-140		100Hz
			-150	-145		1KHz
			-155	-150		10KHz
			-155	-150		100KHz
			-155	-150		
Environmental Conditions	Operable Temperature	-40		+85	$^{\circ}C$	
	Storage Temperature	-55		+105	$^{\circ}C$	
	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	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.					

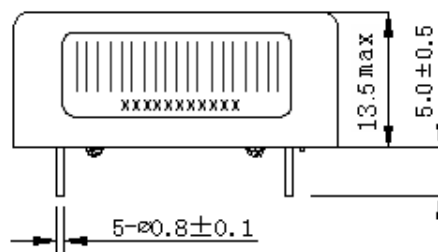


## 2. Mechanical Structure (mm)



Right View

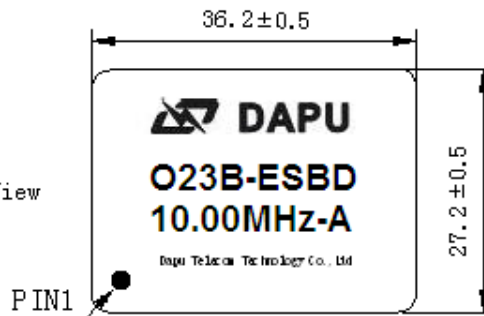
Side View



### PIN FUNCTION

PIN	FUNCTION
1	VCC
2	NC
3	VC
4	GND
5	OUTPUT

Top View

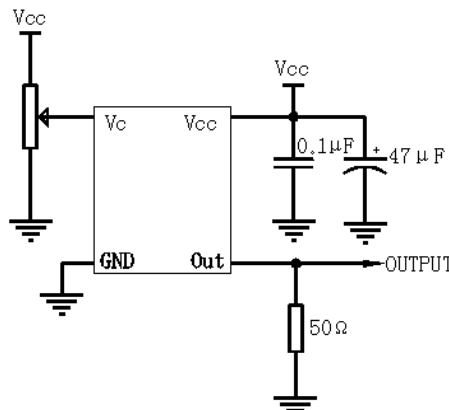


**Note1:** Tolerance  $\pm 0.2\text{mm}$  without mark

**Note2:** Referential Weight 21g

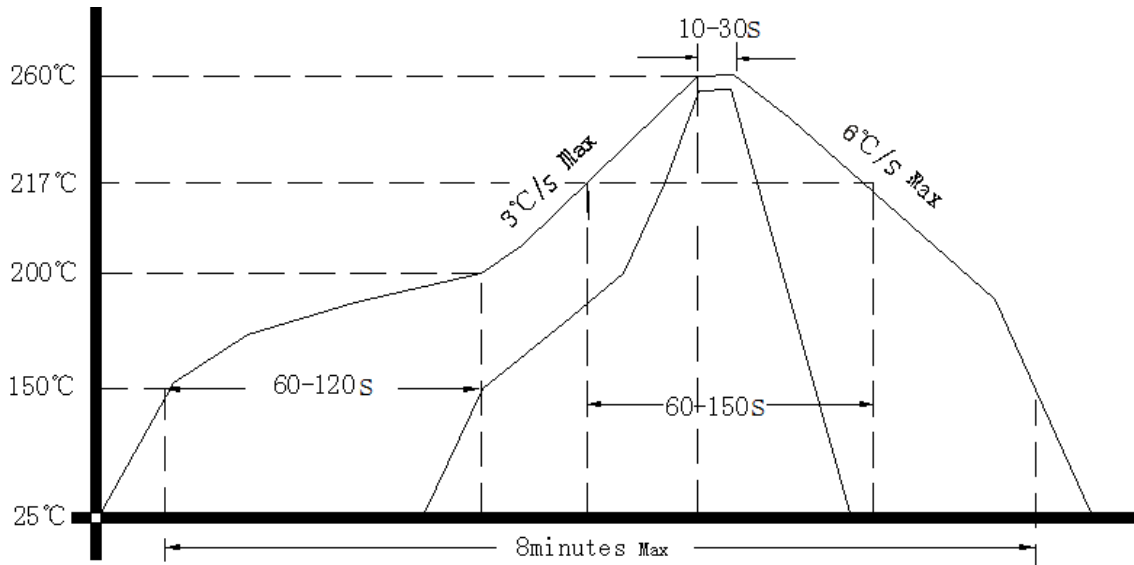
**Note3:** NC is not connect

## 3. Test Circuit





#### 4. Reflow Soldering Curve (RoHS)



#### 5. Package(mm)

