

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

# DATASHEET

Standard:           **O22B-K328-10.00MHz**          

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

Plot			The Label
Drew	Audited	Approved	Stamp, please! Thanks!
Date: 2019.10.25			

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## 1. Electrical Parameters

MODEL: O22B-K328-10.00MHz						
Item	Description	Parameters			Unit	Test Condition
		Min.	Typ.	Max.		
Output	Frequency	10.00			MHz	
	Output Waveform	HCMOS				
	Output Low Voltage			0.3	V	$V_{cc}=5.0V, O_{load}=15pF$
	Output High Voltage	3.0			V	$V_{cc}=5.0V, O_{load}=15pF$
	Duty Cycle	45	50	55	%	@50%
	Rise / Fall Time (10%~90%)			6	ns	
	Load	15 ±10%			pF	
	Spurious			-60	dBc	
	Output overshoot			10	%	
	Jitter			1	ps	RMS (12kHz ~20MHz)
Frequency Stabilities	Frequency Tolerance vs. Operating Temperature Range	-0.01		+0.01	$\times 10^{-6}$	$T_A$ varied from $-40^{\circ}C$ to $75^{\circ}C$ , measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.5V, O_{load}=15 pF$ , temperature rise speed less than $2^{\circ}C$ per minute.
		-0.02		+0.02	$\times 10^{-6}$	$T_A$ varied from $75^{\circ}C$ to $85^{\circ}C$ , measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.5V, O_{load}=15 pF$ , temperature rise speed less than $2^{\circ}C$ per minute.
	Initial Frequency Tolerance	-0.2		+0.2	$\times 10^{-6}$	Measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.5V$ , within less than 6 months after IQC acceptance stage after 30mn at $+50^{\circ}C$ .
	Frequency Tolerance vs. Supply Voltage	-2		+2	$\times 10^{-9}$	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	-2		+2	$\times 10^{-9}$	10% load change measurement referenced to frequency observed with $T_A=25^{\circ}C, V_{cc}=5.0V, V_c=2.5V$ , and $O_{Load}=15pF$ .	



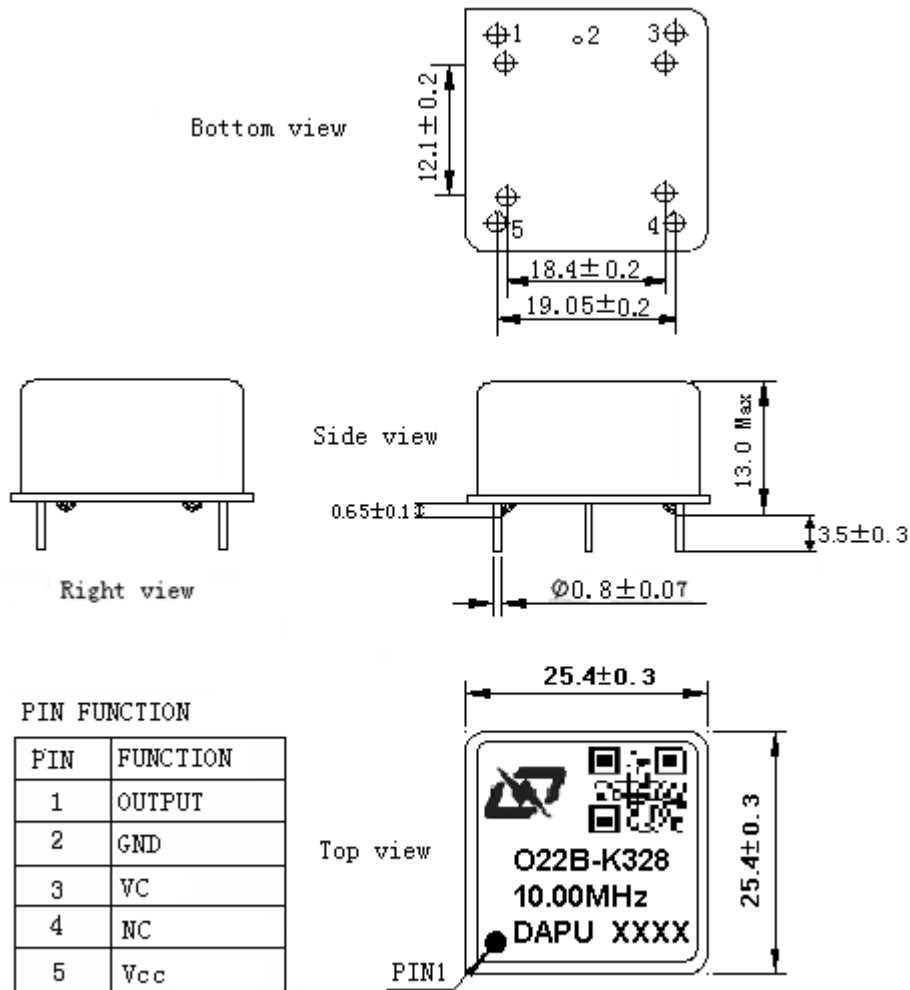
	Short-Term Stability:			0.05	$\times 10^{-9}$	After power on one hour and after stabilization after power on 30mins, Alan Variance
	Daily Fluctuation	-5		+5	$\times 10^{-9}$	25±5℃
	Retrace	-0.01		+0.01	$\times 10^{-6}$	1 hour continuous power on ,After 24 hour off at 25℃, 15min power on compared with before power failure.
	Aging Tolerance Per Day	-0.5		+0.5	$\times 10^{-9}$	V <sub>cc</sub> , V <sub>c</sub> , T <sub>A</sub> constant measurement referenced to frequency observed with T <sub>A</sub> =25℃, V <sub>cc</sub> = 5.0V, V <sub>c</sub> =2.5V, and after 30 days of operation.
	Aging Tolerance 1 Year	-0.1		+0.1	$\times 10^{-6}$	
	Aging Tolerance 10Year	-0.4		+0.4	$\times 10^{-6}$	
Power Supply	Supply Voltage	4.75	5.0	5.25	V	Tolerate input voltage (no damage) -0.5VDC~6.5VDC
	Steady Consumption			250	mA	@25℃
	Warm up current			800	mA	-40℃~85℃
Voltage Control Characteristics	Frequency Tuning Range	-2.4		-0.8	$\times 10^{-6}$	V <sub>c</sub> =0V. measurement referenced to V <sub>c</sub> =2.5V
		-0.2		+0.2	$\times 10^{-6}$	V <sub>c</sub> =2.5V. measurement referenced to exactly 10.00MHz
		+0.8		+2.4	$\times 10^{-6}$	V <sub>c</sub> =5.0V. measurement referenced to V <sub>c</sub> =2.5V
	Linearity			10	%	
	Slope	Positive				
	Input Impedance	100			KΩ	
Phase Noise	Phase Noise		-80	-75	dBc/Hz	1Hz
			-120	-115		10Hz
			-140	-135		100Hz
			-145	-140		1KHz
			-150	-145		10KHz



Environmental Conditions	Operable Temperature	-40		+85	°C	
	Storage Temperature	-55		+125	°C	Storage 4 years
	Operating Humidity	10		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: 10Hz~55Hz;0.75mm ; 55Hz~2000Hz, acceleration 10g; Vertical axis in each direction 30min, (3 times for each 3 directions X ,Y , Z), IEC 68-2-06 Test Fc.				
	Shock	100g; 6ms; half sine wave; three mutually perpendicular axes (A total of six directions) in each direction three times, IEC 68-2-27 Test Ea.				
	Bump	40g;6ms; each directions 4000±10 times (Three mutually perpendicular axes) IEC60068-2-29 Test Eb .				
	Solderability	The solderability test temperature is 260 °C,The duration is 5 seconds, Satisfy: GB/T2423.28-2005				
Vibration , Shock and Bump : after the test all indexes meet the requirement of “Output”, “Frequency Tolerance vs. Operating Temperature Range”, “Power Supply” and “Voltage Control Characteristics”						
Full Package Storage	Relative humidity (%)	20% ~ 70%				
	Temperature (°C)	-10~35°C				



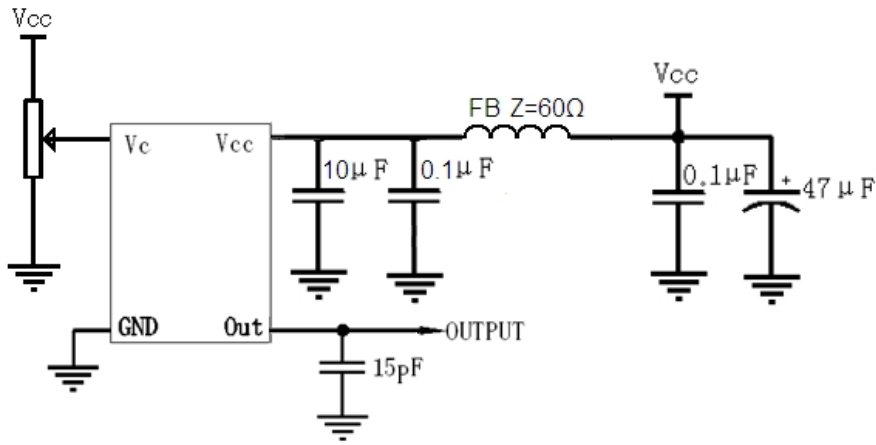
## 2. Mechanical Structure (mm)



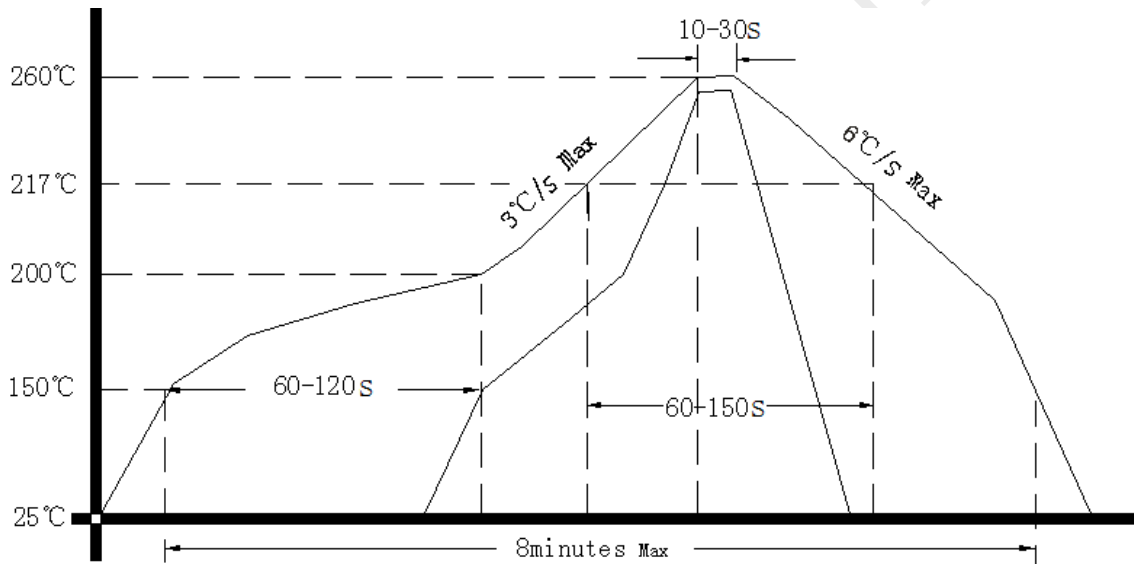
- Note1:** Tolerance ±0.2mm without mark
- Note2:** Referential weight 13.6g
- Note3:** NC is not connect
- Note4:** The first two xx representative: week  
After two xx representative: year



### 3. Test Circuit



### 4. Reflow Soldering Curve (RoHS)



### 5. Package (mm)

