

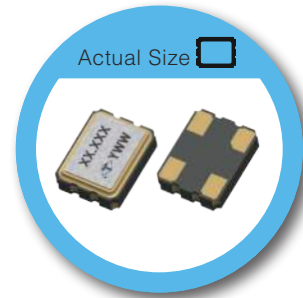
# OX Type Ultra Low Power 3.2 x 2.5mm SMD CMOS Output Crystal Oscillator

## FEATURE

- Ultra Low Power Supply Voltage: 0.9V, 1.2V, 1.5V Supply Options
- Singled-end Output: CMOS
- Frequency Support from 1MHz to 50MHz
- Low Noise Typical: 0.3ps at 12kHz to 20MHz Frequency Offsets
- Temperature Range: -40 to 85°C Operation
- Pb-free/RoHS Compliant

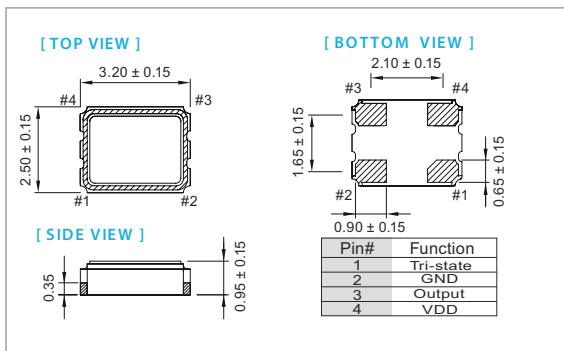
## TYPICAL APPLICATION

- IoT
- Game Console
- Smartphone
- Wearable Device
- Digital Camera
- Digital Consumer Electronics

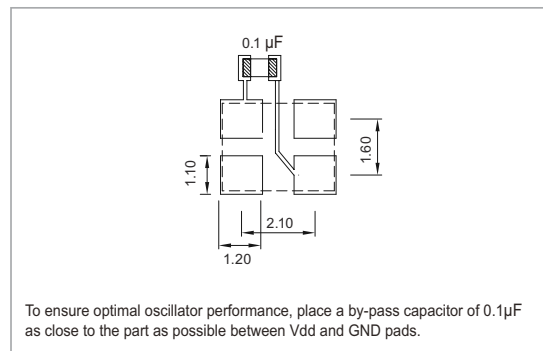


RoHS Compliant

## DIMENSION (mm)



## SOLDER PAD LAYOUT (mm)



## ELECTRICAL SPECIFICATION

Parameter	0.9V		1.2V		1.5V		Unit		
	Min.	Max.	Min.	Max.	Min.	Max.			
Supply Voltage Variation (V <sub>DD</sub> )	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V		
Frequency Range	1	50	1	50	1	50	MHz		
Supply Current	At 15pF Load	-	1.5	-	2	-	3	mA	
	No Load Condition, 1MHz ≤ F <sub>o</sub> < 10MHz	-	0.9	-	1	-	1.2	mA	
	No Load Condition, 10MHz ≤ F <sub>o</sub> < 20MHz	-	1	-	1.2	-	1.2	mA	
	No Load Condition, 20MHz ≤ F <sub>o</sub> < 50MHz	-	1.2	-	1.5	-	1.5	mA	
Duty Cycle	45	55	45	55	45	55	%		
Output Level	Output High	90% V <sub>DD</sub>	-	90% V <sub>DD</sub>	-	90% V <sub>DD</sub>	-	V	
	Output Low	-	10% V <sub>DD</sub>	-	10% V <sub>DD</sub>	-	10% V <sub>DD</sub>	V	
Transition Time: Rise / Fall Time*	1MHz ≤ F <sub>o</sub> < 10MHz	-	4	-	3	-	3	nSec	
	10MHz ≤ F <sub>o</sub> < 20MHz	-	3	-	3	-	3	nSec	
	20MHz ≤ F <sub>o</sub> < 50MHz	-	2	-	2	-	2	nSec	
Startup Time	-	4	-	4	-	4	mSec		
Tri-State (Input to Pin 1)	Enable (High Voltage or Floating)	0.7xV <sub>DD</sub>	-	0.7xV <sub>DD</sub>	-	0.7xV <sub>DD</sub>	-	V	
	Disable (Low Voltage or GND)	-	0.3xV <sub>DD</sub>	-	0.3xV <sub>DD</sub>	-	0.3xV <sub>DD</sub>	V	
Output Loading	15		15		15		pF		
Stand by Current	-	100	-	100	-	100	µA		
Aging (@ 25°C, 1 <sup>st</sup> Year)	-	±3	-	±3	-	±3	ppm		
Storage Temp. Range	-55	+125	-55	+125	-55	+125	°C		
Phase Noise	At V <sub>DD</sub> =1.2V, F <sub>out</sub> =24MHz	Typ.	Max.	Typ.	Max.	Typ.	Max.	dBc/Hz	
		1kHz offset	-130	-	-133	-	-135		-
		10kHz offset	-140	-	-143	-	-143		-
		100kHz offset	-148	-	-150	-	-150		-
		1MHz offset	-152	-	-155	-	-155		-
Period Jitter (Pk-Pk)	-	40	-	40	-	40	pSec		
RMS Phase Jitter (Integrated 12kHz to 20MHz)	-	1	-	1	-	1	pSec		

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position  
 \*Transition times are measured between 10% and 90% of V<sub>DD</sub> with an output load of 15pF

## FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	
	±25	±50
-10~+60	○	○
-20~+70	○	○
-40~+85	△	○

\* O: Available △: Conditional X: Not available

\* Inclusive of calibration @ 25°C, operating temperature range, input voltage variation, load variation, aging (1<sup>st</sup> year), shock, and vibration load variation

**Note: not all combination of options are available. Other specifications may be available upon request.**

Specifications subject to change without notice.

www.taitien.com  
 sales@taitien.com.tw

Rev(3) 11/2022