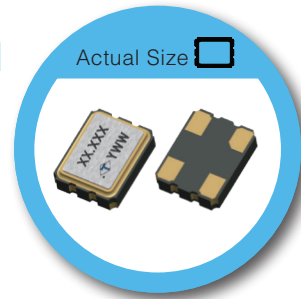


# OX Type Ultra Low Power 3.2 x 2.5mm SMD CMOS Output Crystal Oscillator

## 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

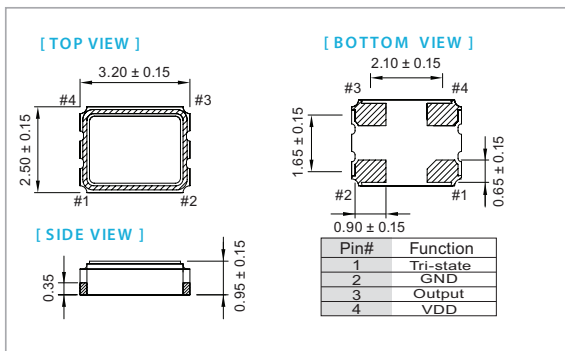


RoHS Compliant

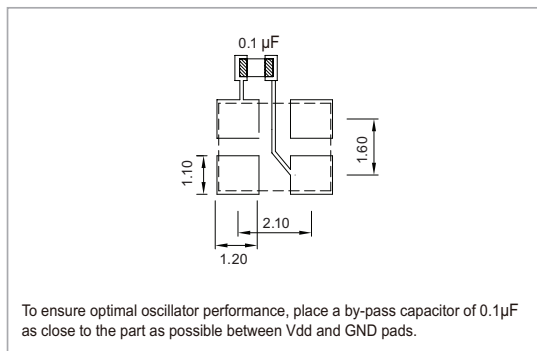
## TYPICAL APPLICATION

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

## 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		-		-		3
	No Load Condition, 1MHz ≤ Fo < 10MHz		-		-		1.2
	No Load Condition, 10MHz ≤ Fo < 20MHz		-		-		1.2
	No Load Condition, 20MHz ≤ Fo < 50MHz		-		-		1.5
Duty Cycle	45	55	45	55	45	55	%
Output Level	Output High		2.97		-		1.62
	Output Low		-		0.33		0.18
Transition Time: Rise / Fall Time*	1MHz ≤ Fo < 10MHz		-		-		4
	10MHz ≤ Fo < 20MHz		-		-		3
	20MHz ≤ Fo < 50MHz		-		-		2
Startup Time	-		4		-		4
Tri-State (Input to Pin 1)	Enable (High Voltage or Floating)		0.7xV <sub>DD</sub>		-		0.7xV <sub>DD</sub>
	Disable (Low Voltage or GND)		-		0.3xV <sub>DD</sub>		0.3xV <sub>DD</sub>
Output Loading	15		15		15		pF
Stand by Current	-		100		-		100
Aging (@ 25°C, 1 <sup>st</sup> Year)	±3		-		±3		ppm
Storage Temp. Range	-55		+125		-55		+125
Phase Noise	Typ.		Max.		Typ.		Max.
	1kHz offset		-130		-133		-135
	10kHz offset		-140		-143		-150
	100kHz offset		-148		-150		-155
	1MHz offset		-152		-155		-160
Period Jitter (Pk-Pk)	-		40		-		40
RMS Phase Jitter (Integrated 12kHz to 20MHz)	-		1		-		1

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 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.