

# Enhanced Stability Crystal Oscillator

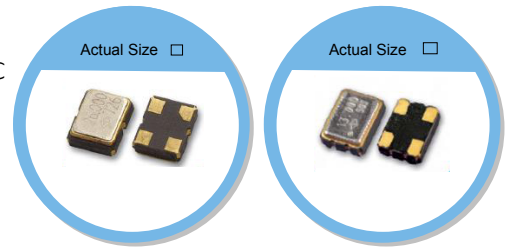
## OX-A/OY-A Series-3.2 X 2.5 / 2.5 X 2.0 mm SMD Crystal Oscillator

### FEATURE

- Tight Tolerance:  $\pm 4$  ppm accuracy @25°C,  $\pm 4$  ppm over -40°C to +85°C
- LVCMOS Output Logic
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V.
- Tri-state enable/disable.
- Femto second phase jitter and -152dBc/Hz at 10kHz offset.

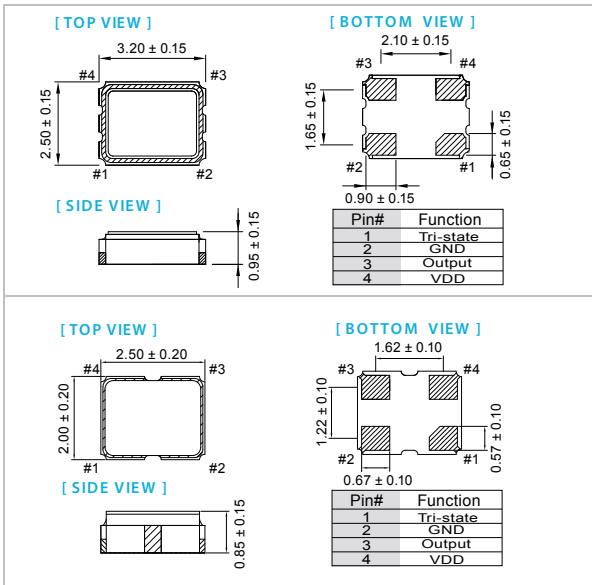
### TYPICAL APPLICATION

- Wireless Connectivity
- Video Distribution

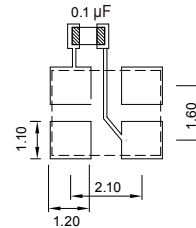


RoHS Compliant

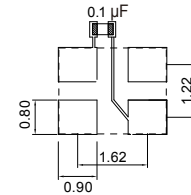
### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.



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### ELECTRICAL SPECIFICATION

Parameter	3.3V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) $\pm 10\%$	2.97	3.63	2.25	2.75	1.62	1.98	V
Frequency Range	19	60	19	60	19	60	MHz
Supply Current 19 $\leq f_o \leq 60$ MHz	--	10	--	7	--	5	mA
Duty Cycle	45	55	45	55	45	55	%
Output Level (CMOS) Output High (Logic "1")	2.97		2.25		1.62		V
Output Low (Logic "0")		0.33		0.25		0.18	
Transition Time: Rise/Fall Time+		8		8		8	nSec
Start Time		5		5		5	mSec
Tri-State(Input to Pin 1) Enable (High voltage or floating)	2.31		1.75		1.26		V
Disable (Low voltage or GND)		0.99		0.75		0.54	
RMS Phase Jitter (integrated 12 kHz ~ 20 MHz)		1		1		1	pSec
Phase Noise @ 26 MHz 10 Hz		-90		-90		-90	dBc/Hz
100 Hz		-115		-115		-115	
1 kHz		-136		-136		-136	
10 kHz		-152		-152		-152	
Aging (@25°C 1st year)		$\pm 1$		$\pm 1$		$\pm 1$	ppm
Storage Temp. Range	-55	125	-55	125	-55	125	°C

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 VDD, with an output load of 15pF

### FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm		
	$\pm 5$	$\pm 10$	$\pm 15$
-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 (1st year), shock, and vibration

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

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