

# 32.768kHz Series

## OX / OY Type

### 3.2 x 2.5 / 2.5 x 2.0 mm SMD Oscillator

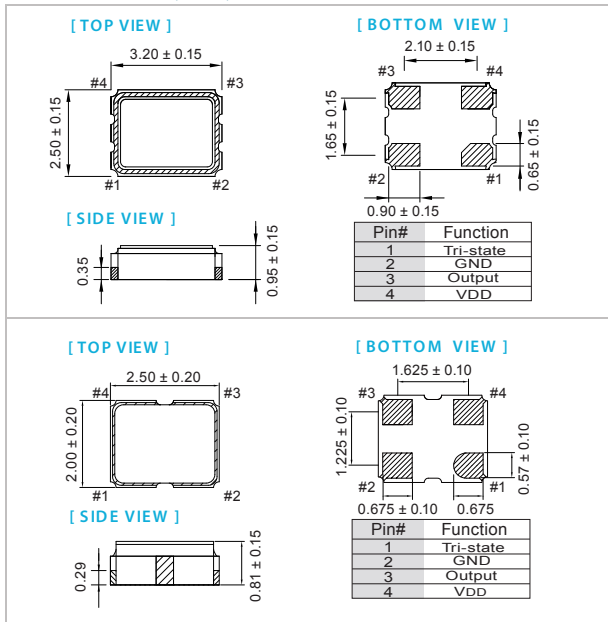
#### FEATURE

- Conforms to AEC-Q200
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable
- Built-in ASIC enables reduction of current consumption.

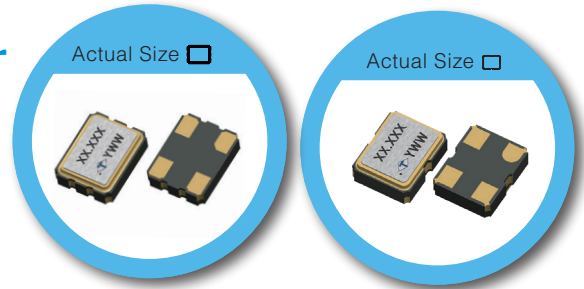
#### TYPICAL APPLICATION

- Typically used for real time clock application.
- Mobile Phone
- DSC, Set-top Box, HDTV
- Car navigation systems.

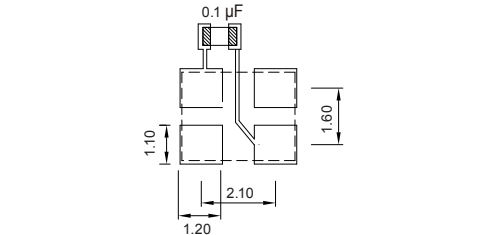
#### DIMENSION (mm)



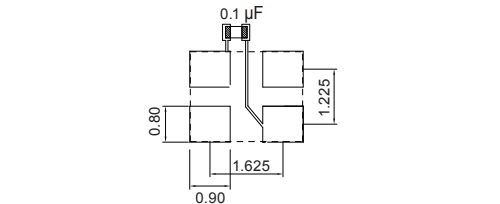
#### SOLDER PAD LAYOUT (mm)



**RoHS Compliant**



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)	VDD-10%	VDD+10%	VDD-10%	VDD+10%	VDD-10%	VDD+10%	V
Supply Current (@ 15pF load)	-	120	-	120	-	120	µA
(@ no load)	-	80	-	80	-	80	µA
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+	-	50	-	50	-	50	nSec
Start Time	-	2	-	2	-	2	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	
Aging (@25°C 1 <sup>st</sup> year)	-	±3	-	±3	-	±3	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	±20	±25	±40	±50
		○	○	○	○
-10~+60		○	○	○	○
-20~+70		△	○	○	○
-40~+85		X	△	○	○
-40~+105		X	X	○	○
-40~+125		X	X	△	○

\* 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.**