

# PX Type

## 3.2 x 2.5 mm SMD Crystal Oscillator

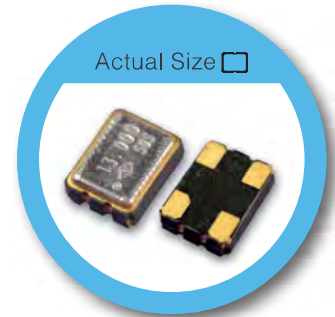
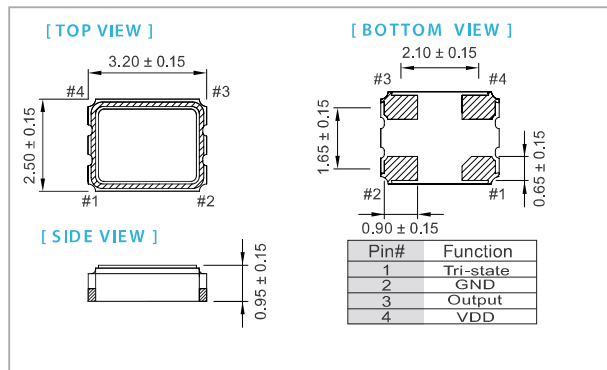
### FEATURE

- Typical 3.2 x 2.5 x 0.95mm ceramic SMD package.
- Tight symmetry (45 to 55%) available.
- Operation voltage: 1.8V, 2.5V, 3.3V
- Tri-state enable/disable

### TYPICAL APPLICATION

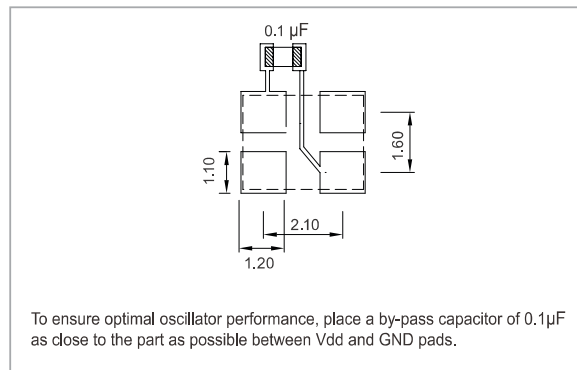
- Computer Peripherals
- Set-top Box , HDTV
- DSC, PDA

### DIMENSION (mm)



**RoHS Compliant**

### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	3.3 V		2.5 V		1.8 V		unit
	Min.	Max.	Min.	Max.	Min.	Max.	
<b>Supply Voltage Variation (VDD)</b>	VDD-10%	VDD+10%	VDD-10%	VDD+10%	VDD-10%	VDD+10%	V
<b>Frequency Range</b>	2.048	200	2.048	166	2.048	110	MHz
<b>VDD Sensitivity (±10 %)</b>	-2	2	-2	2	-2	2	ppm
<b>Supply Current</b> 2.048 MHz ≤ Fo < 30 MHz 30 MHz ≤ Fo < 75 MHz 75 MHz ≤ Fo < 133 MHz 133 MHz ≤ Fo < 166 MHz 166 MHz ≤ Fo ≤ 200 MHz	-	10	-	8	-	6	mA
	-	15	-	10	-	8	
	-	20	-	15	-	12	
	-	22	-	15	-	-	
	-	25	-	-	-	-	
<b>Duty Cycle</b>	45	55	45	55	45	55	%
<b>Output Level (CMOS)</b> Output High (Logic "1") Output Low (Logic "0")	2.97	-	2.25	-	1.62	-	V
	-	0.33	-	0.25	-	0.18	
<b>Transition Time: Rise/Fall Time<sup>+</sup></b> 2.048 MHz ≤ Fo < 10 MHz 10 MHz ≤ Fo	-	3	-	4	-	5	nSec
	-	2	-	3	-	4	
<b>Start Time</b>	-	2	-	2	-	2	mSec
<b>Tri-State (Input to Pin 1)</b> Enable (High voltage or floating) Disable (Low voltage or GND)	2.31	-	1.75	-	1.26	-	V
	-	0.99	-	0.75	-	0.54	
<b>Period Jitter (Pk-Pk)</b> Specific Frequency <sup>**</sup> Others	-	40	-	40	-	40	pSec
	-	200	-	200	-	200	
	-	-	-	-	-	-	
<b>Standby Current</b>	-	15	-	15	-	15	µA
<b>Aging (@ 25°C 1st year)</b>	-	±3	-	±3	-	±3	ppm
<b>Storage Temp. Range</b>	-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.

\*\* Specific frequency including 4.0, 6.0, 8.0, 12.0, 13.0, 16.0, 19.2, 20.0, 24.0, 26.0, 32.0, 38.4 and 40.0MHz

### FREQ. STABILITY vs. TEMP. RANGE

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

\* ○: 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

