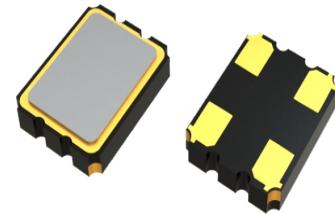


## Crystal Oscillator, Series

# 3.2 x 2.5 mm 32.768KHz SMD Crystal Oscillator

## Feature

- Typical 3.2 x 2.5 x 0.95 mm SMD package.
- 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



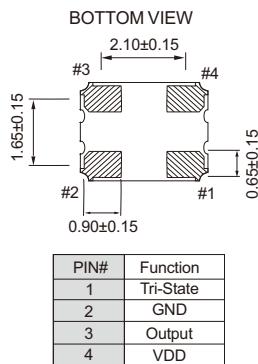
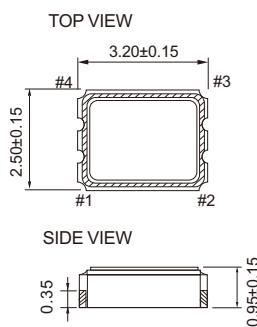
## Electrical Specifications

Parameter	3.3V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation	2.97	3.63	2.25	2.75	1.62	1.98	V
Supply Current	@ 15pF Load	-	70	-	66	-	63
		-	65	-	62	-	60
Duty Cycle	45	55	45	55	45	55	%
Transition Time :Rise/Fall Time	-	50	-	50	-	50	nSec
Output Level	Out High(Logic"1")		2.25		1.62		V
	Out Low(Logic"0")		0.33		0.25		0.18
Start Time	-	2	-	2	-	2	mSec
Tri-State (Input to Pin 1)	Enable(High Voltage or floating)		2.31	-	1.75	-	V
	Disable(Low Voltage or GND)		-	0.99	-	0.75	0.54
Aging(@25 1st year)	-	±3	-	±3	-	±3	ppm
Storage Temp. Range	-55	125	-55	125	-55	125	°C

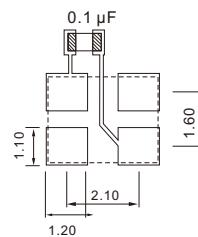
Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position

.+ Transition times are measured between 10% and 90% of VDD, with an output load of 15pF.

## Dimension(mm)



## Solder Pad Layout(mm)



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

## FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	±20	±25	±40	±50
-10 ~ +60	o	o	o	o	o
-20 ~ +70	△	o	o	o	o
-40 ~ +85	x	△	o	o	o
-40 ~ +125	x	x	△	o	o

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 load variation