

## 3.2 × 2.5 mm SMD Crystal Oscillator

### Feature

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



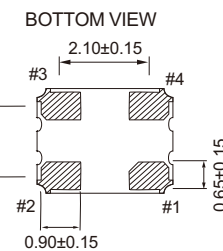
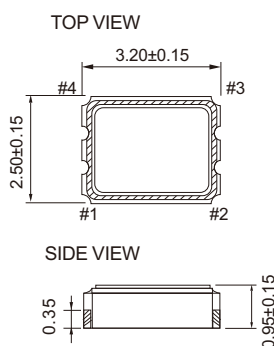
### Electrical Specifications

Parameter	3.3V		2.5V		1.8V		Unit
	Min.	Max.	Min.	Max.	Min.	Max.	
Supply Voltage Variation	3.135	3.465	2.375	2.625	1.71	1.89	V
Frequency Range	1.25	125	1.25	125	1.25	125	MHz
Standard Frequency	4,24,26,32,38,40						MHz
Supply Current(At 15pF Load)	-	15	-	10	-	7	mA
Duty Cycle	45	55	45	55	45	55	%
Transition Time :	1.25 MHz ≤ FO < 10MHz						nSec
Rise/Fall Time	10 MHz ≤ FO < 125MHz						
Output Level	Out High(Logic"1")		2.25		1.62		V
	Out Low(Logic"0")		0.33		0.18		
Start Time	-	2	-	2	-	2	mSec
Tri-State (Input to Pin 1)	Enable(High Voltage or floating)		1.75		1.26		V
	Disable(Low Voltage or GND)		0.75		0.54		
Period Jitter (Pk-Pk)	-	40	-	40	-	40	pSec
RMS Phase Jitter (integrated 12KHz to 20MHz)	-	1	-	1	-	1	pSec
Standby Current(@-40 to 85°C)	-	10	-	10	-	10	µA
Standby Current(@-40 to 125°C)	-	20	-	20	-	20	µA
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

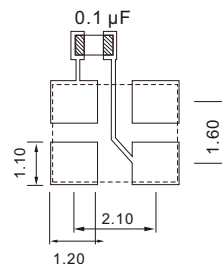
+ Transition times are measured between 10% and 90% of VDD, with an output load of 15pF.

### Dimension(mm)



Pin#	Function
1	Tri-State
2	GND
3	Output
4	VDD

### Solder Pad Layout(mm)



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

### FREQ. STABILITY vs. TEMP. RANGE

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

o: Available Δ: 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