

## Product Features

- Output Frequency : 10 ~ 52MHz
- Supply Voltage : 2.8 , 3.3V (Typ.)
- Frequency Stability :  
 $\pm 0.1$  ppm @ (-20 ~ +70°C)  
 $\pm 0.14$  ppm @ (-40 ~ +85°C)  
 $\pm 0.28$  ppm @ (-40 ~ +105°C)
- Output Type : Clipped Sinewave / CMOS
- Voltage Control Function Available
- Output Enable / Disable Function Available
- RoHS and REACH Compliant , Pb-free , Halogen-free
- Industry Standard Package :  
7.0 x 5.0 x 2.0 mm (4/10 Pad)

Application :

- Small Cell
- Base Station
- Networking Infrastructure(Sever, Switch, Router, etc.)
- Advanced Equipment



- Table 1 . Electrical Specifications

Test Condition  
Ambient Temperature : 25 ±5°C  
Relative Humidity : 40% ~ 70%

Parameters	Symbol	Min.	Typ.	Max.	Units	Notes
<b>Output Type Frequency Range and Stability</b>						
Nominal Frequency	F	10 ~ 52			MHz	Fundamental
Frequency Tolerance	-	±2.0			ppm	After 2 Times Reflow , Note 1
Frequency Stability	vs. Temp.	±0.1			ppm	-20 ~ +70°C , Note 2
		±0.14				-40 ~ +85°C , Note 2
		±0.28				-40 ~ +105°C , Note 2
	vs. Load	±0.05				vs. Load (±5%)
	vs. VCC	±0.05				vs. Supply Voltage (±5%)
<b>Operating Temperature Range</b>						
Operating Temperature	Topr	-40	+25	+105	°C	
<b>Supply Voltage and Current Consumption</b>						
Supply Voltage	Vdd	2.5 ~ 3.3 (±5%)			V	
Current Consumption	Icc	-	-	5	mA	Clipped Sinewave
		-	-	10	mA	CMOS
<b>Output Type Signal Characteristics</b>						
Output Load	RL // CL	10			kΩ	Clipped Sinewave
		10			pF	
	CL	15			pF	CMOS
Output Level	Vp-p	0.8	-	-	V	Clipped Sinewave
	VoH	90%VCC	-	-	V	CMOS
	VoL	-	-	10%VCC	V	
Rise Time	Tr	-	-	6	ns	10% → 90% VCC Level (CMOS)
Fall Time	Tf	-	-	6	ns	90% → 10% VCC Level (CMOS)

Test Condition  
Ambient Temperature :  $25 \pm 5^\circ\text{C}$   
Relative Humidity : 40% ~ 70%

● Table 1 . Electrical Specifications (continued)

Parameters	Symbol	Min.	Typ.	Max.	Units	Notes
<b>Frequency Slope</b>						
Slope over Temperature	$(\Delta F/\Delta T)$	-	-	$\pm 50$	ppb/ $^\circ\text{C}$	-40 ~ +85 $^\circ\text{C}$
		-	-	$\pm 100$		-40 ~ +105 $^\circ\text{C}$
<b>Symmetry and Start-up time</b>						
Symmetry (Duty Ratio)	TH/T	40	~	60	%	
Start-up Time	Tosc	-	-	5	ms	To 90% of Final Amplitude
<b>AFC pin and Input Characteristics</b>						
Auto-Frequency-Control Range(Ref : VC= 1.5 V) (Option)	AFC	+5	-	+12	ppm	VC = 2.5 V
		-12	-	-5	ppm	VC = 0.5 V
<b>Tri-state Control</b>						
Input High Level	OE	$0.8 \cdot V_{CC}$	-	-	V	Output Enable , Note 3
Input Low Level		-	-	$0.2 \cdot V_{CC}$	V	Output Disable
<b>Aging Performance</b>						
Aging	Aging	$\pm 1$			ppm	1 <sup>st</sup> Year , Note 4
<b>Holdover Performance</b>						
24 hrs Holdover Stability (Option)	-	-	-	$\pm 0.32$	ppm	24 hours at Operation Temperature after 48 hours Operation
<b>Free-run Accuracy Performance</b>						
Free-run Accuracy	-	-	-	$\pm 4.6$	ppm	20 Years , Note 5

Note 1 : Operation after reflow 2 hrs , refer to nominal frequency.

Note 2 : Refer to  $(F_{max}+F_{min}) / 2$  , at VC = Center (Option).

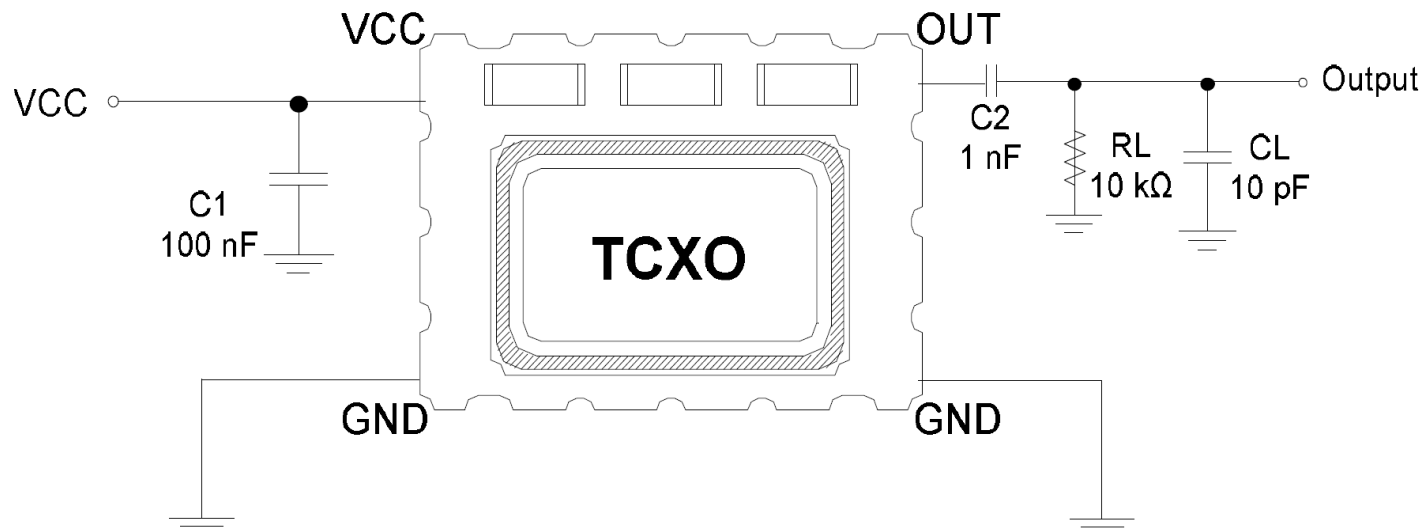
Note 3 : Tri-state floating is output enable as same as input high level.

Note 4 : After 30 days and continuous operation at fix temperature, power supply and load.

Note 5 : Inclusive of calibration tolerance  $25^\circ\text{C}$  , frequency vs. change in temperature, change in supply voltage ( $\pm 5\%$ ), load change ( $\pm 5\%$ ) , reflow soldering process and 20 years aging.

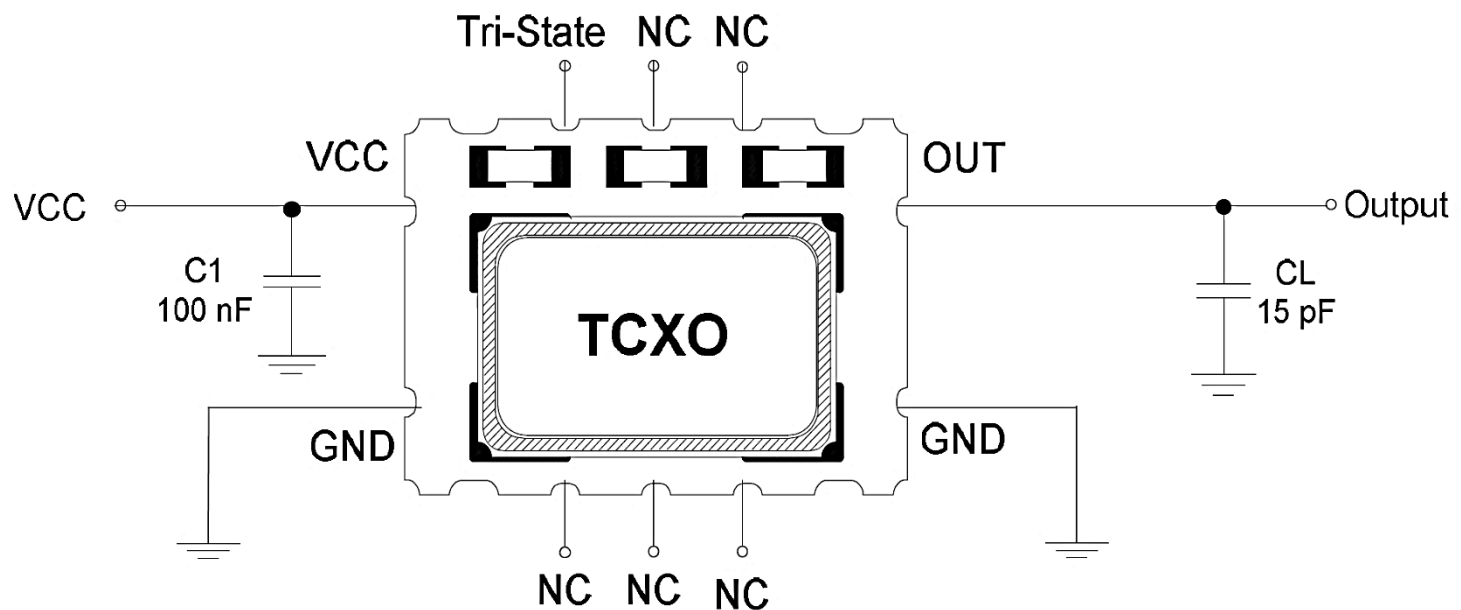
● **Test Diagram**

■ **Output Type : Clipped Sinewave**



Note: (1) By pass capacitor (C1) should be placed.  
 (2) AFC is optional function.  
 (3) Example of 4 Pad Option

■ **Output Type : CMOS**

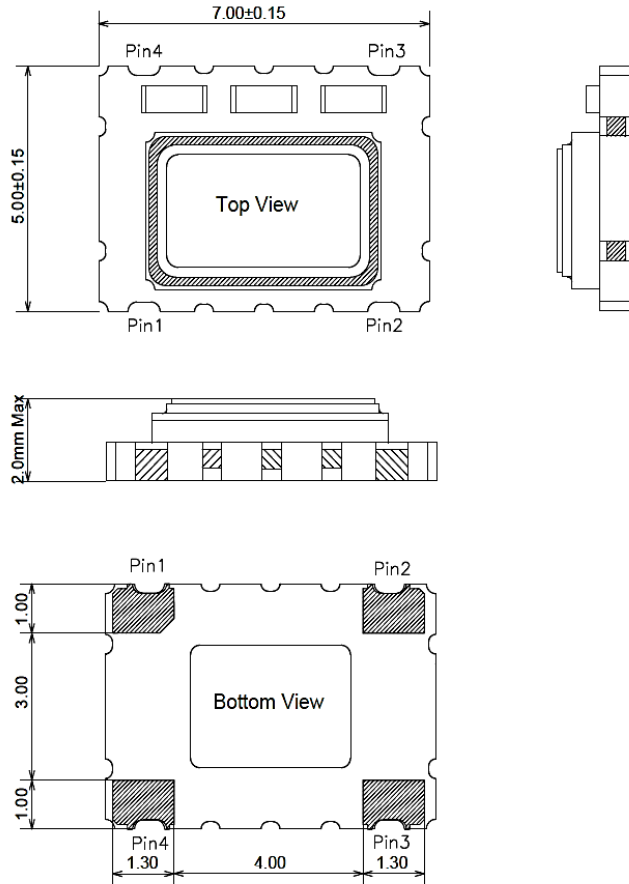


Note: (1) By pass capacitor (C1) should be placed.  
 (2) AFC is optional function.  
 (3) TXC sets CL to 15pF for simulation IC load. No need to layout it in reality circuit.  
 (4) Example of 10 Pad Option.

● **Dimensions & Footprint (Recommended)**

Unit : mm

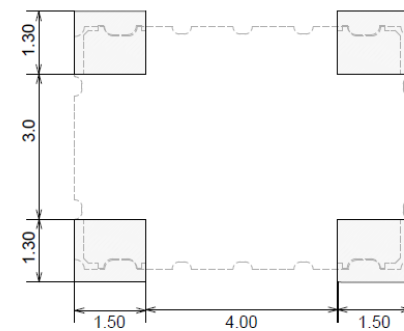
**7N Series , 4 Pad**



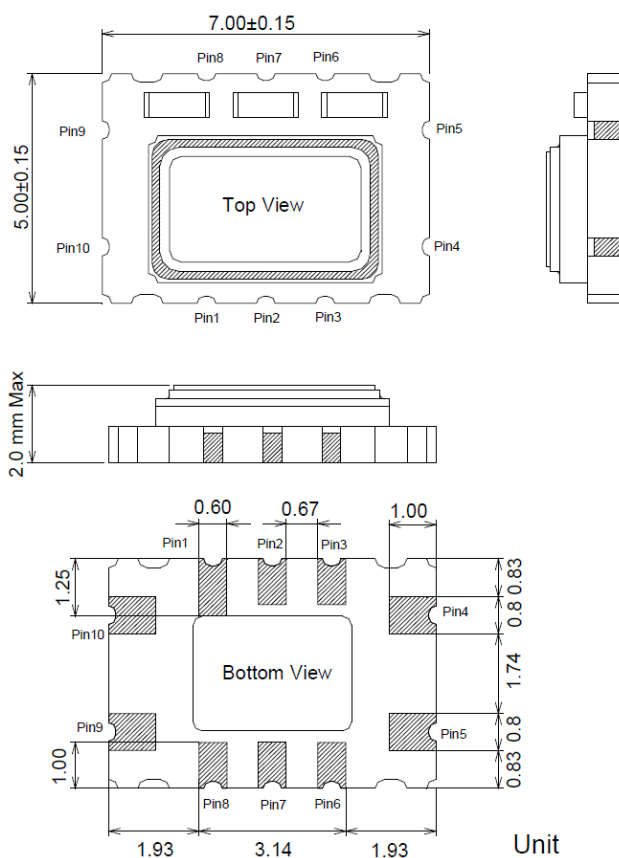
**Pin Connection**

Name	Function
Pin 1	AFC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC

**Recommended Land Pattern**



**7N Series , 10 Pad**



**Pin Connection**

Name	Function
Pin 1	NC
Pin 2	NC
Pin 3	NC
Pin 4	GND
Pin 5	Output
Pin 6	NC
Pin 7	NC
Pin 8	Tri-State
Pin 9	VCC
Pin 10	GND or NC

**Recommended Land Pattern**

