

Product Features

- Output Frequency: 10 ~ 52MHz
- Supply Voltage : 2.8 , 3.3V (Typ.)
- Frequency Stability :
 ± 0.1 ppm @ (-20~+70°C)
 ± 0.14 ppm @ (-40~+85°C)
 ± 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
Output Type Frequency Rangeand Stability						
Nominal Frequency	F	10 ~ 52			MHz	Fundamental
Frequency Tolerance	-	±2.0			ppm	After 2 Times Reflow , Note 1
FrequencyStability	vs. Temp.	±0.1			ppm	-20 ~ +70℃ , Note 2
		±0.14				-40 ~ +85℃ , Note 2
		±0.28				-40 ~ +105℃ , Note 2
	vs. Load	±0.05				vs. Load (±5%)
	vs. VCC	±0.05				vs. Supply Voltage (±5%)
Operating Temperature Range						
Operating Temperature	Topr	-40	+25	+105	℃	
Supply Voltage and Current Consumption						
Supply Voltage	Vdd	2.5 ~ 3.3 (±5%)			V	
Current Consumption	Icc	-	-	5	mA	Clipped Sinewave
		-	-	10	mA	CMOS
Output Type Signal Characteristics						
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% VCCLevel (CMOS)
Fall Time	Tf	-	-	6	ns	90% → 10% VCCLevel (CMOS)

● Table 1 . Electrical Specifications (continued)

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

Parameters	Symbol	Min.	Typ.	Max.	Units	Notes
Frequency Slope						
Slope over Temperature	(ΔF/ΔT)	-	-	±50	ppb/°C	-40 ~ +85 °C
		-	-	±100		-40 ~ +105 °C
Symmetry and Start-up time						
Symmetry (Duty Ratio)	TH/T	40	~	60	%	
Start-up Time	Tosc	-	-	5	ms	To 90% of Final Amplitude
AFCpin and Input Characteristics						
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
Tri-state Control						
Input High Level	OE	0.8*VCC	-	-	V	Output Enable, Note 3
Input Low Level		-	-	0.2*VCC	V	Output Disable
Aging Performance						
Aging	Aging	± 1			ppm	1 st Year , Note 4
Holdover Performance						
24 hrs Holdover Stability (Option)	-	-	-	±0.32	ppm	24 hours at Operation Temperature after 48 hours Operation
Free-run Accuracy Performance						
Free-run Accuracy	-	-	-	±4.6	ppm	20 Years, Note 5

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

Note 2 : Refer to (Fmax+Fmin) / 2 , at VC = Center (Option).

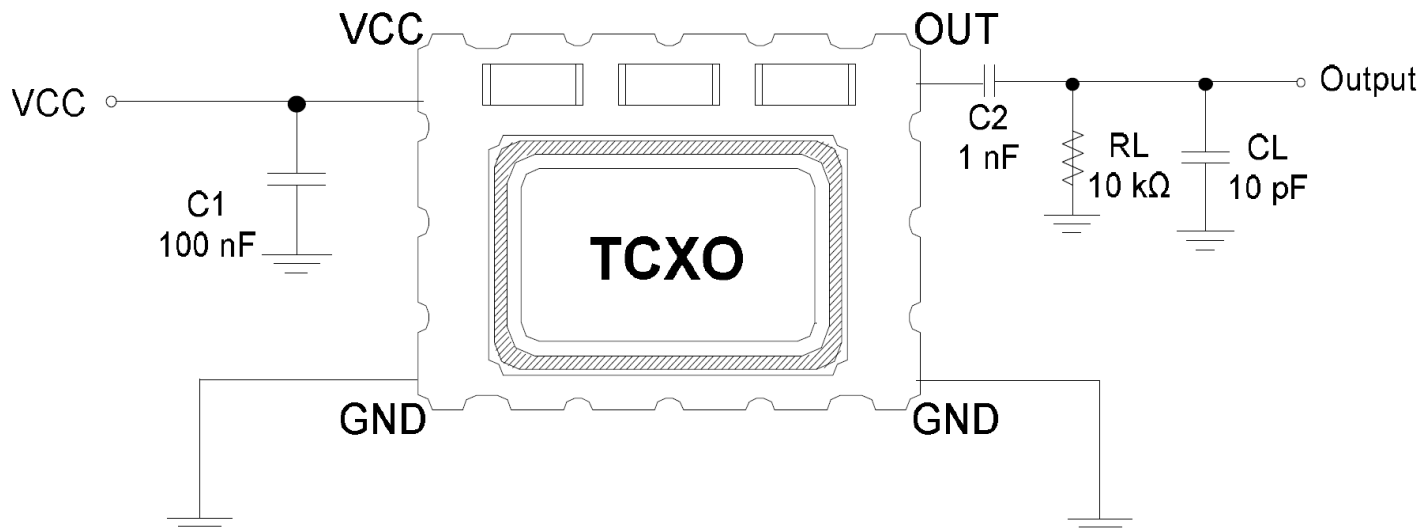
Note 3 : Tri-state floating is output enable as same as input high level.

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

Note 5 : Inclusive of calibration tolerance 25°C , frequency vs. change in temperature, change in supply voltage (±5%), load change (±5%) , reflow soldering process and 20 years aging.

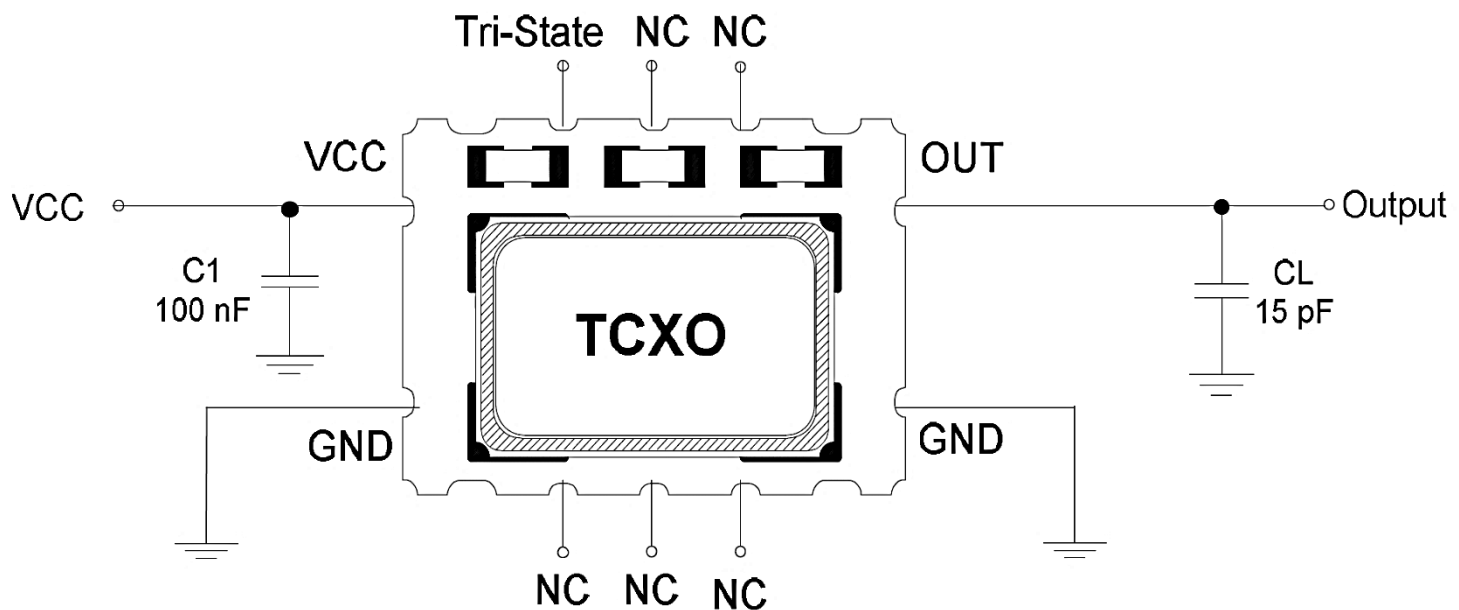
● Test Diagram

■ Output Type: ClippedSinewave



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

■ Output Type: CMOS

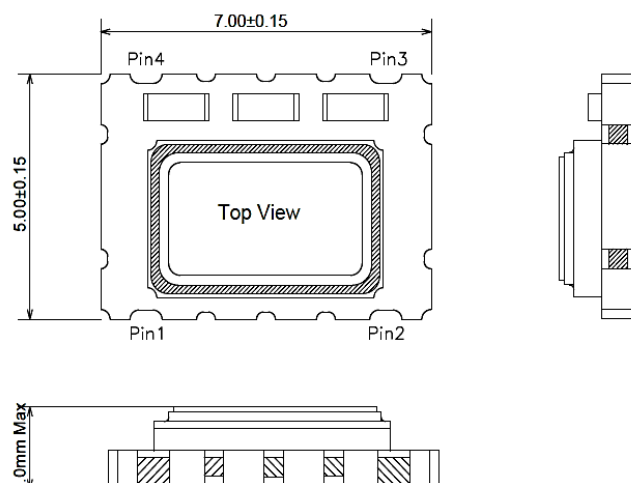


Note: (1) By pass capacitor (C1) should be placed.
(2) AFC is optional function.
(3) TxC sets CL to 15pF for simulation IC load. No need to layout it in reality circuit.
(4) Example of 10 Pad Option.

● Dimensions & Footprint (Recommended)

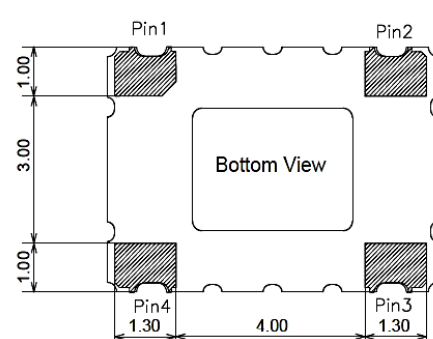
Unit: mm

7N Series, 4 Pad

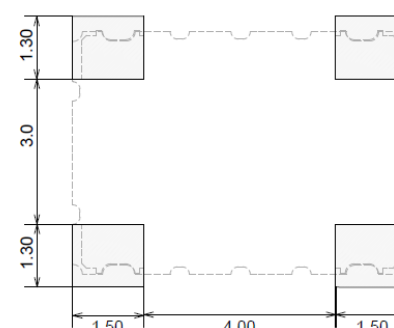


Pin Connection

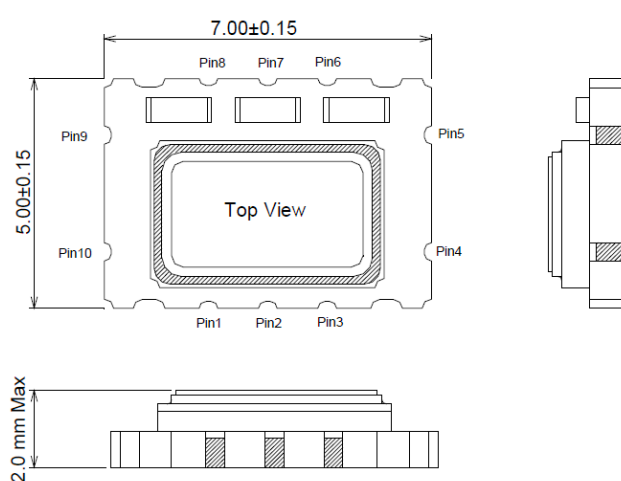
Name	Function
Pin 1	AFC
Pin 2	GND
Pin 3	OUTPUT
Pin 4	VCC



Recommended Land Pattern

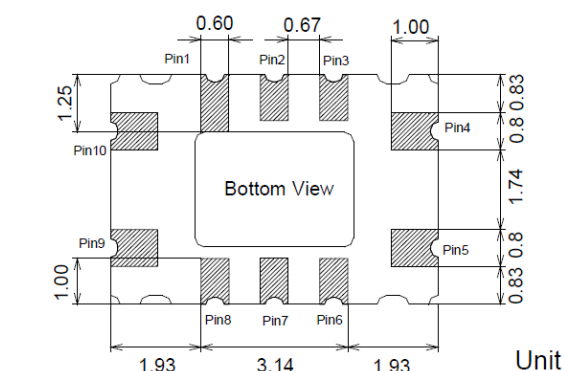


7N Series, 10 Pad



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

