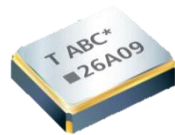


Product Features

1. Output Frequency : 10 ~ 52MHz
2. Supply Voltage : 2.8 , 3.3V (Typ.)
3. Frequency Stability : $\pm 0.5 \sim \pm 2.0$ ppm
4. Output Type : Clipped Sinewave
5. Voltage Control Function Available
6. Output Enable / Disable Function Available
7. RoHS and REACH Compliant , Pb-free , Halogen-free
8. Industry Standard Package :
2.0 x 1.6 x 0.8 mm

Application :

- GPS
- Cellular and Wireless Communications



Test Condition

Ambient Temperature : $25 \pm 5^\circ\text{C}$

Relative Humidity : 40% ~ 70%

● Table 1 . Electrical Specifications

Parameters	Symbol	Min.	Typ.	Max.	Units	Notes
Output Type Frequency Range and Stability						
Nominal Frequency	F	10 ~ 52			MHz	Fundamental
Frequency Tolerance	-	± 2.5			ppm	Note1. After 2 Times Reflow
Frequency Stability	vs. Temp.	$\pm 0.5 \sim \pm 2.0$			ppm	Note2. $-40 \sim +85^\circ\text{C}$
	vs. Load	± 0.2 (Max)				vs. Load ($\pm 5\%$)
	vs. Vdd	± 0.2 (Max)				vs. Supply Voltage ($\pm 5\%$)
Operating Temperature Range						
Operating Temperature	Topr	-40	+25	+85	$^\circ\text{C}$	
Supply Voltage and Current Consumption						
Supply Voltage	Vdd	1.8 ~ 3.3 ($\pm 5\%$)			V	
Supply Current	Icc	-	-	2.0	mA	
Output Type Signal Characteristics						
Output Load	RL // CL	9	10	11	k Ω	Clipped Sinewave
		9	10	11	pF	
Output Level	Vp-p	0.8	-	-	V	Clipped Sinewave
Symmetry and Start-up time						
Symmetry (Duty Ratio)	TH/T	40	~	60	%	
Start-up Time	Tosc	-	-	5	ms	To 90% of Final Amplitude
Harmonics				-5	dBc	
Frequency Slope						
Slope over Temperature	$(\Delta F/\Delta T)$	-	-	± 50	ppb/ $^\circ\text{C}$	$-40 \sim +85^\circ\text{C}$
		-	-	± 100		$-40 \sim +105^\circ\text{C}$
Symmetry and Start-up time						
Symmetry (Duty Ratio)	TH/T	40	~	60	%	
Start-up Time	Tosc	-	-	5	ms	To 90% of Final Amplitude

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

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

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

● **Table 1 . Electrical Specifications (continued)**

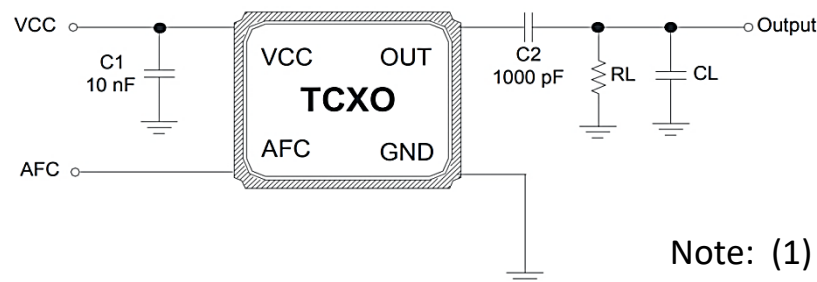
Parameters	Symbol	Min.	Typ.	Max.	Units	Notes
AFC pin and Input Characteristics						
Auto-Frequency-Control Range(Ref : VC= 1.5 V) (Option)	AFC	+7	-	+16	ppm	VC = 2.5 V
		-16	-	-7	ppm	VC = 0.5 V
Tri-state Control						
Input High Level	OE	0.8*Vdd	-	-	V	Output Enable , Note 3
Input Low Level		-	-	0.2*Vdd	V	Output Disable
Aging Performance						
Aging	Aging	± 1			ppm	1 st Year , Note 4
Harmonics						
Harmonics				-5	dBc	

Note 3 : Tristate 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.

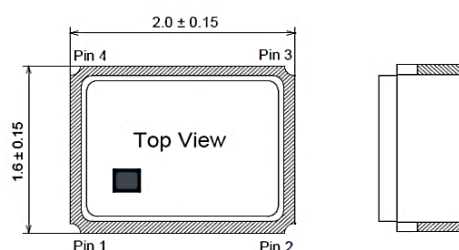
● **Test Diagram**

■ **Output Type : Clipped Sinewave**



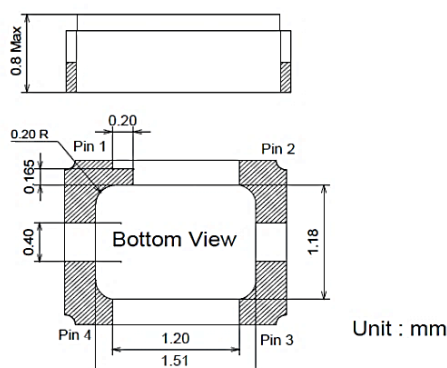
Note: (1) By pass capacitor (C1) should be placed.
(2) AFC is optional function.

● **Dimensions & Footprint (Recommended)**



Pin Connection

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



Recommended Land Pattern

