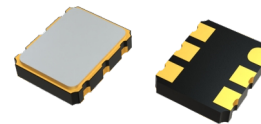# 7.0 x 5.0 mm SMD Voltage Controlled Crystal Oscillator

⚙ Feature

- Typical 7.0 x 5.0 x 1.75 mm 6 pads ceramic SMD package.
- Tight symmetry (45 to 55%) available.
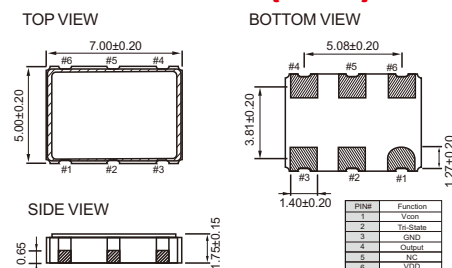- Operating temperature up to 105°C.
- Tri-state enable/disable

▭ Electrical Specifications

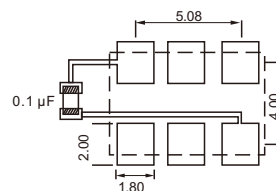| Parameter		3.3V		Unit
		Min.	Max.	
Supply Voltage Variation(VDD)		VDD-5%	VDD+5%	V
Frequency Range		1.5	170	MHz
Standard Frequency		10,20,25,27,32.768,35.328,38.88,61.44,122.88, 153.6		MHz
Absolute Pulling Range (APR)		±50		ppm
Control Voltage Range		0.3	3.0	V
Supply Current	1.5MHz ≦ F0 ＜20 MHz		10	mA
	20MHz ≦ F0 ＜50 MH		20	
	50MHz ≦ F0 ≦ 80 MHz		30	
	80MHz ≦ F0 ≦ 160 MHz		40	
	160MHz ≦ F0 ≦ 170 MHz		50	
Output Level	Output High	2.97	-	V
	Output Low		0.33	
Transition Time: Rise/Fall Time +	1.5 MHz ≦F0＜ 20 MHz	-	5	nSec
	20 MHz ≦ F0 ＜ 50 MHz	-	4	
	50 MHz ≦ F0 ≦ 80 MHz		3	
	80 MHz ≦ F0 ≦ 170 MHz	-	2	
Start Time		-	5	mSec
Tri-State (input to Pin 2)	Enable (High voltage or floating)	2.31	-	V
	Disable (Low voltage or GND)	-	0.99	
Linearity			10	%
Modulation Bandwidth (BW)		15	-	kHz
Input Impedance		10	-	M Ω
Period Jitter (Pk-Pk)		-	40	pSec
RMS Phase Jitter (Integrated 12 kHz ~ 20 MHz)		-	1	
Phase Noise @38.4MHz	100 Hz	-115		dBc/HZ
	1KHz	-135		
	10KHz	-150		
Aging (@ 25°C 1st year)			±3	Ppm
Storage Temp. Range		-55	125	℃

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)

TOP VIEW

7.00±0.20
5.00±0.20
#6 #5 #4
#1 #2 #3

BOTTOM VIEW

5.08±0.20
3.81±0.20
#4 #5 #6
#3 #2 #1
1.40±0.20
1.27±0.20

SIDE VIEW

0.65
1.75±0.15

PIN#	Function
1	Vcon
2	Tri-State
3	GND
4	Output
5	NC
6	VDD

Solder Pad Layout(mm)

5.08
4.00
0.1 μF
2.00
1.80

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	±25	±50
-10 ~ +60	O	O
-20 ~ +70	O	O
-40 ~ +85	X	O
-40 ~ +105	X	O

○: Available   △ :Conditional   X: Not available
Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1 st year), shock, and vibration