

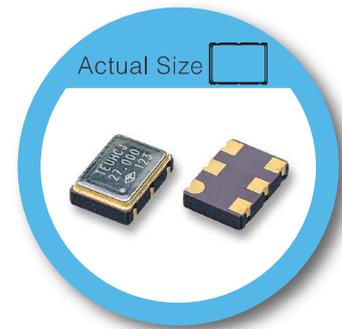
# VT Type 7.0 x 5.0 mm SMD Voltage Controlled Crystal Oscillator

## FEATURE

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

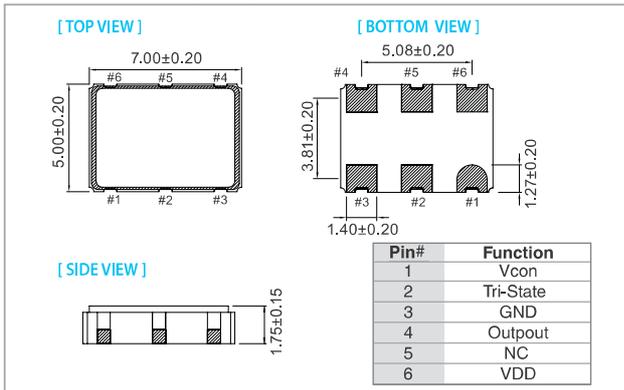
## TYPICAL APPLICATION

- Set-top Box, HDTV
- WiMAX/WLAN
- xDSL/ VoIP, Cable modem

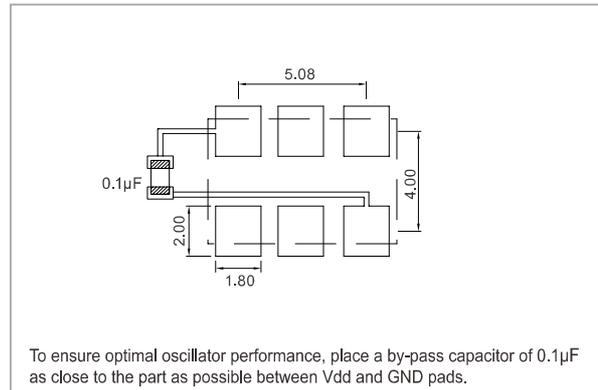


RoHS Compliant

## DIMENSION (mm)



## SOLDER PAD LAYOUT (mm)



## ELECTRICAL SPECIFICATION

Parameter	5.0 V		3.3 V		Unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD) ±10%	4.5	5.5	2.97	3.63	V
Frequency Range	1.5	125	1.5	200	MHz
Standard Frequency	10,20,25,27,32,768,35,328,38,88,61.44,122.88,153.6				
Absolute Pulling Range (APR)	±50	—	±50	—	ppm
Control Voltage Range	0.5	4.5	0.3	3.0	V
Supply Current	1.5 MHz ≤ Fo < 20 MHz		—		mA
	20 MHz ≤ Fo < 50 MHz		—		
	50 MHz ≤ Fo ≤ 80 MHz		—		
	80 MHz < Fo < 160 MHz		—		
	160 MHz ≤ Fo ≤ 200 MHz		—		
Output Level (CMOS)	Output High (Logic"1")		2.97		V
	Output Low (Logic"0")		0.33		
Transition Time: Rise/Fall Time+	1.5 MHz ≤ Fo < 20 MHz		—		nSec
	20 MHz ≤ Fo < 50 MHz		—		
	50 MHz ≤ Fo ≤ 80 MHz		—		
	80 MHz < Fo ≤ 200 MHz		—		
Start Time	—		5		mSec
Tri-State(Input to Pin 2)	Enable (High voltage or floating)		2.31		V
	Disable (Low voltage or GND)		—		
Period Jitter (Pk-Pk)	—		40		pSec
RMS Phase Jitter (Integrated 12kHz~20MHz)	—		1		pSec
Linearity	—		10		%
Modulation Bandwidth (BW)	1.5 MHz ≤ Fo ≤ 175 MHz		15		kHz
	175 MHz < Fo ≤ 200 MHz		45		
Input Impedance	1.5 MHz ≤ Fo < 170 MHz		5000		kΩ
	170 MHz ≤ Fo ≤ 200 MHz		50		
Phase Noise@30.72MHz	100 Hz		-115		dBc/Hz
	1 kHz		-135		
	10 kHz		-150		
Aging (@ 25°C 1st year)	—		±3		ppm
Storage Temp. Range	-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.

## FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	±25	±50
-10 ~ +60	○	○	○
-20 ~ +70	○	○	○
-40 ~ +85	△	○	○

\* ○: Available △:Conditional X: Not available

\* Inclusive of calibration @ 25 °C, operating temperature range, input voltage variation, load variation, aging (1<sup>st</sup> year), shock, and vibration

Note: not all combination of options are available. Other specifications may be available upon request.

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