

# VT-M Type

## 7.0 x 5.0 mm SMD Differential Output Voltage Controlled Crystal Oscillator

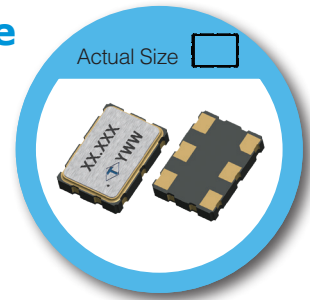
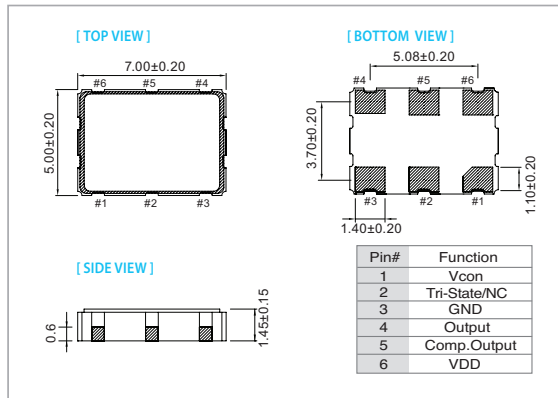
### FEATURE

- Typical 7.0 x 5.0 x 1.45 mm 6 pads ceramic SMD package.
- Low jitter performance: < 1 ps RMS from 12k-20MHz.
- Wide frequency control range.
- LVPECL / LVDS output.
- Output frequency up to 1500 MHz.
- Tri-state enable/disable

### TYPICAL APPLICATION

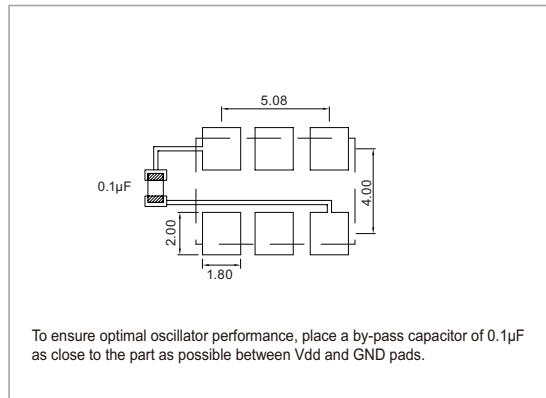
- Set-top Box, HDTV - WiMAX/WLAN
- xDSL/ VoIP, Cable modem - Jitter Attenuator, ADC

### DIMENSION (mm)



RoHS Compliant

### SOLDER PAD LAYOUT (mm)



### ELECTRICAL SPECIFICATION

Parameter	LVPECL 2.5V / 3.3V		LVDS 2.5V / 3.3V		unit
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (V <sub>DD</sub> )	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V
Frequency Range	10	1500	10	1500	MHz
Standard Frequency	122.88, 125, 155.52, 200, 491.52, 622.08		125, 155.52, 200, 491.52		
Absolute Pulling Range (APR)	±50	—	±50	—	ppm
Control Voltage Range	0.3	3.0	0.3	3.0	V
Supply Current	100 MHz ≤ F <sub>o</sub> < 160 MHz	—	—	50	mA
	160 MHz ≤ F <sub>o</sub> ≤ 1500 MHz	100	—	75	
Output Level	Output High	—	—	1.6	V
	Output Low	2.275	—	—	
Transition Time: Rise/Fall Time <sup>+</sup>	—	1.0	—	1.0	nSec
Start Time	—	10	—	10	mSec
Tri-State (input to Pin 2)					
	Enable (High voltage or floating)	2.31	—	2.31	V
	Disable (Low voltage or GND)	—	0.99	—	0.99
Linearity	—	10	—	10	%
Modulation Bandwidth (BW)	10	—	10	—	kHz
Input Impedance	1000	—	1000	—	kΩ
RMS Phase Jitter (Integrated 12 kHz~20 MHz) (At Integer Mode)	—	1.2	—	1.2	pSec
Phase Noise@614.4 MHz	100 Hz	-70	—	-70	dBc/Hz
	1 kHz	-95	—	-95	
	10 kHz	-105	—	-105	
Aging ( @ 25°C 1st year)	—	±3	—	±3	ppm
Storage Temp. Range	-55	125	-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 20% and 80%.

### FREQ. STABILITY vs. TEMP. RANGE

Temp. (°C)	ppm	±25	±50
-10 ~ +60	○	○	○
-20 ~ +70	○	○	○
-40 ~ +85	△	○	○
-40 ~ +105	×	×	△

\* ○ : 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.**