

# VT-M Type

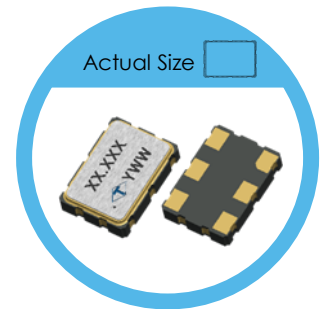
## 7.0 x 5.0 mm SMD CMOS Output Voltage Crystal Oscillator

### FEATURES

- Industry Standard 7.0 x 5.0 x 1.45mm Hermetically Sealed Ceramic Package
- Tight Symmetry (45 to 55%) Available
- Output Frequency up to 250MHz
- Tri-State Enable/Disable

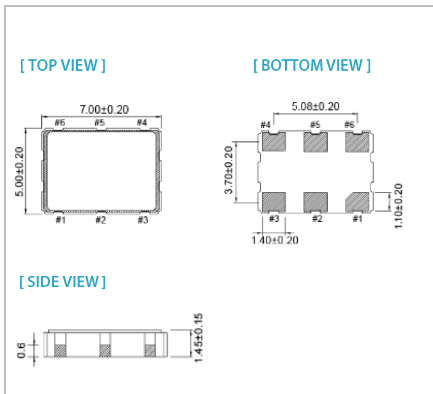
### TYPICAL APPLICATION

- Set-Top Box, HDTV, WiMAX/WLAN
- xDSL/VoIP, Cable Modem

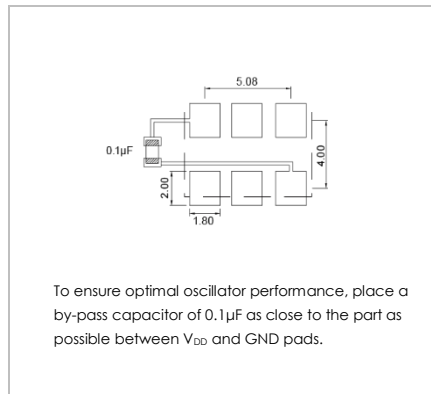


RoHS Compliant

### DIMENSION (mm)



### SOLDER PAD LAYOUT (mm)



### PIN FUNCTION (mm)

PIN#	FUNCTION
1	V <sub>con</sub>
2	Tri-State
3	GND
4	Output
5	NC
6	V <sub>DD</sub>

### ELECTRICAL SPECIFICATION

Parameter	CMOS				Unit	Test Condition
	3.3V		2.5V			
	Min.	Max.	Min.	Max.		
Supply Voltage Variation (V <sub>DD</sub> )	V <sub>DD</sub> - 10%	V <sub>DD</sub> + 10%	V <sub>DD</sub> - 10%	V <sub>DD</sub> + 10%	V	
Frequency Range	10	250	10	250	MHz	
Absolute Pulling Range (APR)	±50	-	±50	-	ppm	
Control Voltage Range	0.3	3.0	0.5	2.0	V	
Supply Current	10MHz ≤ F <sub>o</sub> < 160MHz	-	-	40	mA	
	160MHz ≤ F <sub>o</sub> ≤ 250MHz	-	-	50	mA	
Output Level	Output High (Logic"1")	90% x V <sub>DD</sub>	-	90% x V <sub>DD</sub>	V	
	Output Low (Logic"0")	-	10% x V <sub>DD</sub>	-	10% x V <sub>DD</sub>	V
Transition Time <sup>+</sup>	Rise / Fall Time	-	2	-	2	nSec
Startup Time		-	10	-	10	mSec
Tri-State (Input to Pin 2 or Pin 1)	Enable (High Voltage or Floating)	0.7 x V <sub>DD</sub>	-	0.7 x V <sub>DD</sub>	-	V
	Disable (Low Voltage or GND)	-	0.3 x V <sub>DD</sub>	-	0.3 x V <sub>DD</sub>	V
Period Jitter (Pk-Pk)		-	150	-	150	pSec
RMS Phase Jitter 12kHz~20 MHz	Fractional Mode	0.8	1.5	0.8	1.5	pSec
	Integer Mode	0.6	1.2	0.6	1.2	pSec
Linearity		-	10	-	10	%
Modulation Bandwidth (BW)		10	-	10	-	kHZ
Input Impedance		1000	-	1000	-	kΩ
Phase Noise @155.25MHz	100Hz offset	-75	-	-75	-	dBc/Hz
	1kHz offset	-105	-	-105	-	dBc/Hz
	10kHz offset	-125	-	-125	-	dBc/Hz
Aging (@ 25°C, First Year)		-	±3	-	±3	ppm
Storage Temp. Range		-55	125	-55	125	°C

<sup>+</sup>Transition times are measured between 20% and 80% of V<sub>DD</sub>

### FREQ. STABILITY vs. TEMP. RANGE

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

○: 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.

Specifications subject to change without notice.