

# OT Type 7.0 x 5.0 mm SMD LVPECL/LVDS Crystal Oscillator

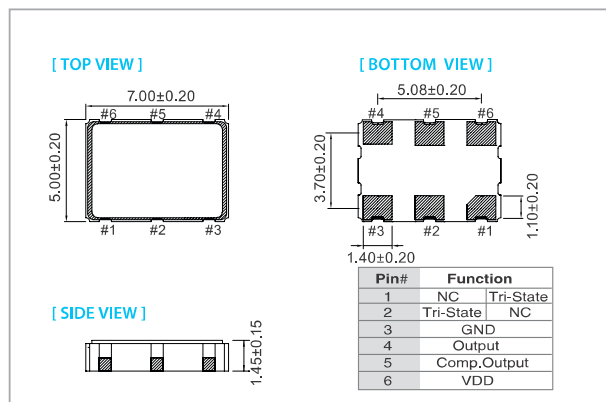
## FEATURE

- Typical 7.0 x 5.0 x 1.45 mm hermetically sealed ceramic package.
- Very low jitter performance: typical 0.3 pS RMS from 12k-20MHz.
- Fundamental/3rd overtone crystal design.
- Output frequency up to 320 MHz.
- Operating temperature up to 125°C
- Tri-state enable/disable

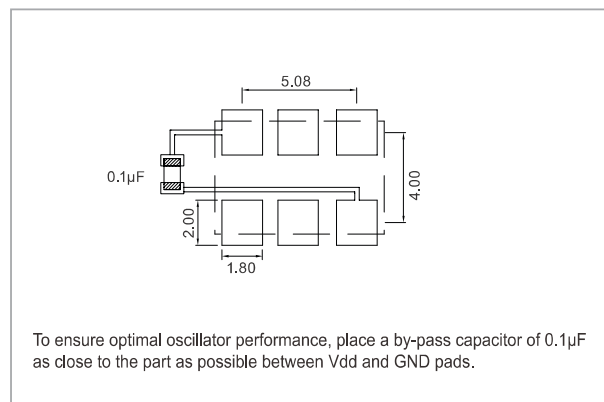
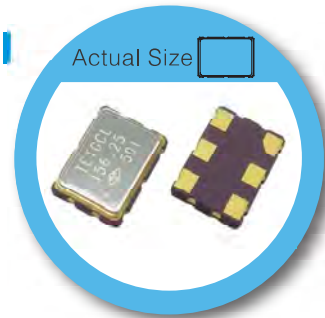
## TYPICAL APPLICATION

- 10Gbit Ethernet, Fiber Channel, Storage Area Network, SONET
- Enterprise Servers, Reference clocks for ADC and DAC
- Telecom

## DIMENSION (mm)



## SOLDER PAD LAYOUT (mm)


 Actual Size 

**RoHS Compliant**

## ELECTRICAL SPECIFICATION

Parameter	LVPECL				LVDS				unit
	3.3 V		2.5 V		3.3 V		2.5 V		
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
<b>Supply Voltage Variation (V<sub>DD</sub>)</b>	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V <sub>DD</sub> -5%	V <sub>DD</sub> +5%	V
<b>Frequency Range</b>	10	320	10	320	10	320	10	320	MHz
<b>Standard Frequency</b>	77.76, 106.25, 125, 155.52, 156.25, 187.5, 212.5, 312.5								
<b>Supply Current</b>	10 MHz ≤ F <sub>o</sub> < 160 MHz		160 MHz ≤ F <sub>o</sub> < 250 MHz		250 MHz ≤ F <sub>o</sub> ≤ 320 MHz				
	—	75	—	75	—	50	—	50	mA
	—	100	—	100	—	50	—	50	
	—	100	—	100	—	65	—	65	
<b>Output Level</b>	Output High (Logic "1")		Output Low (Logic "0")						
	2.275	—	1.475	—	—	1.6	—	1.6	V
	—	1.68	—	0.88	0.9	—	0.9	—	
<b>Transition Time: Rise/Fall Time<sup>+</sup></b>	—	1.0	—	1.0	—	1.0	—	1.0	nSec
<b>Start Time</b>	—	2	—	2	—	2	—	2	mSec
<b>Tri-State(Input to Pin 2 or Pin 1)</b>	Enable (High voltage or floating)		Disable (Low voltage or GND)						
	2.31	—	1.75	—	2.31	—	1.75	—	V
	—	0.99	—	0.75	—	0.99	—	0.75	
<b>RMS Phase Jitter (Integrated 12 KHz ~ 20 MHz)</b>									
	F <sub>o</sub> < 80 MHz		80 MHz ≤ F <sub>o</sub> < 125 MHz		125 MHz ≤ F <sub>o</sub> < 170 MHz		170 MHz ≤ F <sub>o</sub> < 200 MHz		
	—	1	—	1	—	1	—	1	pSec
	—	0.5	—	0.5	—	0.5	—	0.5	
	—	0.3	—	0.3	—	0.3	—	0.3	
	—	0.5	—	0.5	—	0.5	—	0.5	
	—	0.3	—	0.3	—	0.3	—	0.3	
<b>Phase Noise @ 156.25 MHz</b>	100Hz		1 kHz		10 kHz				
	-100		-130		-145				dBc/Hz
	-130		-145						
	-145								
<b>Aging (@ 25°C 1st year)</b>	—	±3	—	±3	—	±3	—	±3	ppm
<b>Storage Temp. Range</b>	-55	125	-55	125	-55	125	-55	125	°C

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

<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
-10 ~ +60	○	○
-20 ~ +70	○	○
-40 ~ +85	△	○
-40 ~ +125	×	○

\* ○: 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