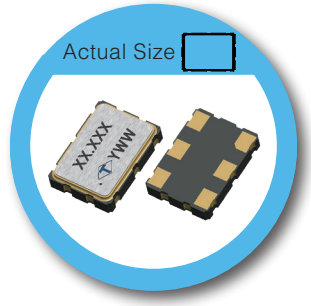
OT Type
7.0 x 5.0 mm SMD LVPECL/LVDS/ HCSL Crystal Oscillator



RoHS Compliant

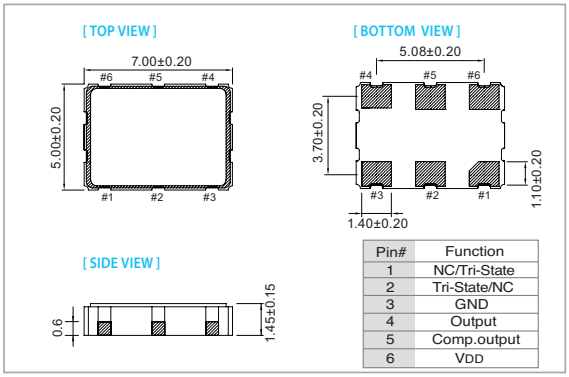
FEATURE

- 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

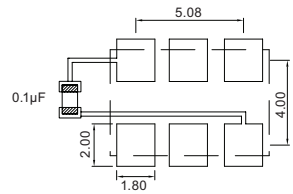
- 10Gbit Ethernet, Fiber Channel, Storage Area Network, SONET
- Enterprise Servers, Reference clocks for ADC and DAC
- Telecom

DIMENSION (mm)



Pin#	Function
1	NC/Tri-State
2	Tri-State/NC
3	GND
4	Output
5	Comp.output
6	VDD

SOLDER PAD LAYOUT (mm)



To ensure optimal oscillator performance, place a by-pass capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.

ELECTRICAL SPECIFICATION

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

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

Specifications subject to change without notice.

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Parameter	HCSL				unit
	3.3 V		2.5 V		
	Min.	Max.	Min.	Max.	
Supply Voltage Variation (VDD)	VDD-5%	VDD+5%	VDD-5%	VDD+5%	V
Frequency Range	25	175	25	175	MHz
Standard Frequency	100				
Supply Current					
25 MHz ≦ Fo ≦ 175 MHz	–	50	–	50	mA
Output Level					
Output High	0.6	–	0.58	–	V
Output Low	–	0.15	–	0.15	
Transition Time: Rise/Fall Time+	–	0.5	–	0.5	nSec
Start Time	–	10	–	10	mSec
Tri-State(Input to Pin 2 or Pin 1)					
Enable	0.7VDD	–	0.7VDD	–	V
Disable	–	0.3VDD	–	0.3VDD	
RMS Phase Jitter (Integrated 12 kHz ~ 20 MHz)					
25MHz ≦ Fo ≦ 175MHz	–	0.5	–	0.5	pSec
Aging	–	±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% of VDD.

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 (1st year), shock, and vibration

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