

Ultra Low Noise Crystal Oscillator

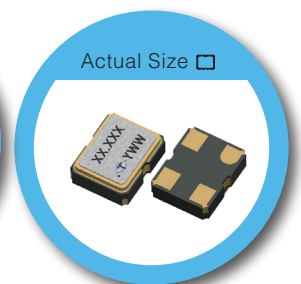
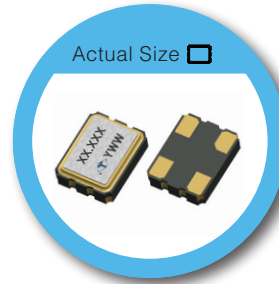
OX-U/OY-U Series 3.2 x 2.5/2.5 x 2.0 mm SMD Crystal Oscillator

FEATURE

- Ultra Low Phase Noise designed specifically for Hi-Resolution Audio (HiFi,HD Audio)
- F=24.576MHz (@3.3V, 25°C): typical low close-in phase noise of -110dBc/Hz@10Hz-offset, -140dBc/Hz@100Hz-offset, and a noise floor of -173dBc/Hz
- F=49.152MHz (@3.3V, 25°C): typical low close-in phase noise of -100dBc/Hz@10Hz-offset, -130dBc/Hz@100Hz-offset, and a noise floor of -173dBc/Hz
- Wide operating temperature range: -40°C to +125°C

TYPICAL APPLICATION

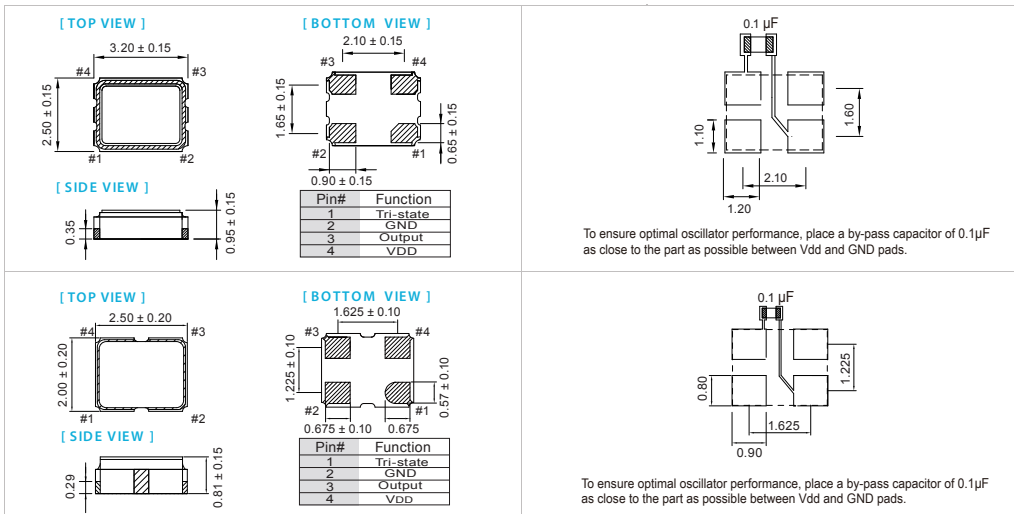
- Automotive multimedia, Automotive radar
- DACs and ADCs for Hi-Fi, Digital Audio Broadcasting (DAB), Professional audio equipment
- Smartphone, Tablet, Wireless module



RoHS Compliant

DIMENSION (mm)

SOLDER PAD LAYOUT (mm)



ELECTRICAL SPECIFICATION

Parameter	3.3V		2.5V		1.8V		Unit	
	Min.	Max.	Min.	Max.	Min.	Max.		
Supply Voltage Variation (VDD)	VDD-10%	VDD+10%	VDD-10%	VDD+10%	VDD-10%	VDD+10%	V	
Frequency Range	20	60	20	60	20	60	MHz	
Supply Current	20 ≤ Fo ≤ 60MHz	--	8	--	7	5	mA	
Duty Cycle		45	55	45	55	45	55	%
Output Level (CMOS)	Output High (Logic "1")	2.97		2.25		1.62	V	
	Output Low (Logic "0")		0.33		0.25		0.18	
Transition Time: Rise/Fall Time+		6		6		6	nSec	
Start Time		2		2		2	mSec	
Tri-State(Input to Pin 1)	Enable (High voltage or floating)	2.31		1.75		1.26	V	
	Disable (Low voltage or GND)		0.99		0.75		0.54	
RMS Phase Jitter (integrated 12kHz ~ 20MHz)		0.5		0.5		0.5	pSec	
Aging (@25°C, 1st year)		±3		±3		±3	ppm	
Storage Temp. Range		-55		125		-55	125	°C
Phase Noise (Typ.)		F=20MHz		F=40MHz		F=60MHz		dBc/Hz
@49.152MHZ	10 Hz offset	-100		-100		-100		dBc/Hz
	100 Hz offset	-130		-130		-128		dBc/Hz
	10 kHz offset	-161		-161		-162		dBc/Hz
	100 kHz offset	-173		-169		-165		dBc/Hz

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	ppm			
		±20	±25	±30	±50
-10→+60	○	○	○	○	○
-20→+70	△	○	○	○	○
-40→+85	×	○	○	○	○
-40→+105	×	×	△	○	○
-40→+125	×	×	×	○	○

* O: 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.