

Ultra Low Noise Crystal Oscillator

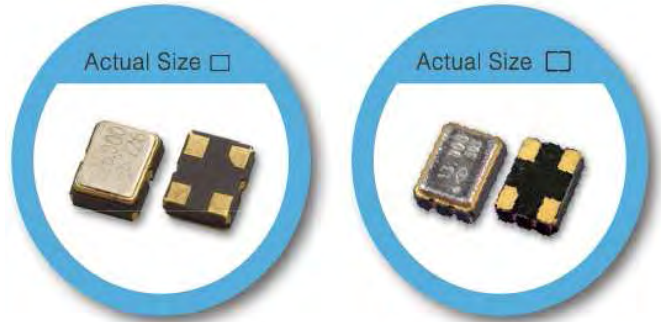
OX-U/OY-U Series - 3.2 x 2.5 / 2.5 x 2.0 mm SMD Crystal Oscillator

FEATURE

- Ultra Low Phase Noise designed specifically for Hi-Resolution Audio (HiFi, HD Audio)
- F=45.1584MHz (@1.8V, 25°C): typical low close-in phase noise of -100dBc/Hz@10Hz-offset, -127dBc/Hz@100Hz-offset, and a noise floor of -157dBc/Hz
- F=49.152MHz (@1.8V, 25°C): typical low close-in phase noise of -100dBc/Hz@10Hz-offset, -128dBc/Hz@100Hz-offset, and a noise floor of -157dBc/Hz
- Wide operating temperature range: -40 to +105°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)

	<p>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.</p>
	<p>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.</p>

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			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	-55	125	°C	
Phase Noise (Typ.)	F=20MHz		F=40MHz		F=60MHz		dBc/Hz	
1.8V, 25°C	1 kHz offset	-147		-143		-139	dBc/Hz	
	100 kHz offset	-156		-154		-150	dBc/Hz	
2.5 to 3.3V, 25°C	1 kHz offset	-151		-148		-142	dBc/Hz	
	100 kHz offset	-157		-156		-156	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	±20	±25	±30	±50
		-10~+60	○	○	○
-20~+70	△	○	○	○	○
-40~+85	×	○	○	○	○
-40~+105	×	×	△	○	○

* 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.