

Ultra Low Noise Crystal Oscillator

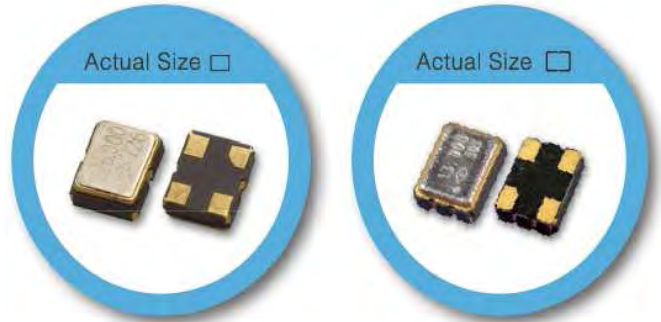
OX-U/OY-U Series - 3.2 x 2.5 / 2.5 x 2.0 mm SMD Crystal Oscillator

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>
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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	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	
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		V
	Disable (Low voltage or GND)			0.99		0.75	
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	-139	-139	
	100 kHz offset	-156	-154	-150	-150	-150	
2.5 to 3.3V, 25°C	1 kHz offset	-151	-148	-142	-142	-142	
	100 kHz offset	-157	-156	-156	-156	-156	

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

