



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Ultra Low Noise Crystal Oscillator

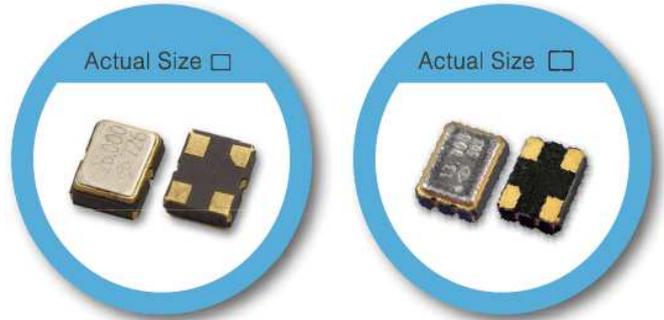
OX-U/OY-U Series - 3.2 x 2.5 / 2.5 x 2.0 mm SMD Crystal Oscillator

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

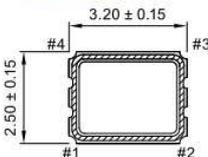
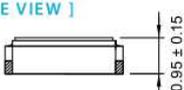
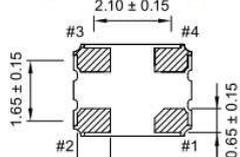
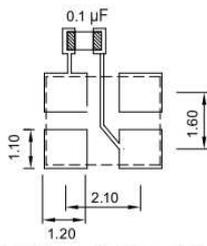
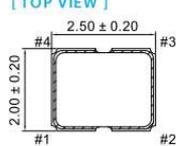
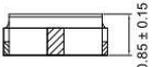
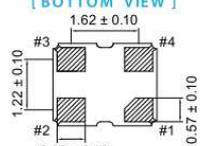
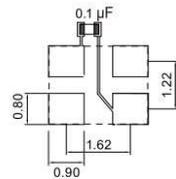
- Automotive multimedia, Automotive radar
- DACs and ADCs for Hi-Fi, Digital Audio Broadcasting (DAB), Professional audio equipment
- Smartphone, Tablet, Wireless module



RoHS Compliant

DIMENSION (mm)

SOLDER PAD LAYOUT (mm)

<p>[TOP VIEW]</p>  <p>3.20 ± 0.15 2.50 ± 0.15</p> <p>#4 #3 #1 #2</p> <p>[SIDE VIEW]</p>  <p>0.95 ± 0.15</p> <p>[BOTTOM VIEW]</p>  <p>2.10 ± 0.15 1.65 ± 0.15 0.65 ± 0.15 0.90 ± 0.15</p> <p>#3 #4 #2 #1</p> <table border="1"> <thead> <tr> <th>Pin#</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tri-state</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>Output</td> </tr> <tr> <td>4</td> <td>VDD</td> </tr> </tbody> </table>	Pin#	Function	1	Tri-state	2	GND	3	Output	4	VDD	 <p>0.1 μF 1.10 1.60 2.10 1.20</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>
Pin#	Function										
1	Tri-state										
2	GND										
3	Output										
4	VDD										
<p>[TOP VIEW]</p>  <p>2.50 ± 0.20 2.00 ± 0.20</p> <p>#4 #3 #1 #2</p> <p>[SIDE VIEW]</p>  <p>0.85 ± 0.15</p> <p>[BOTTOM VIEW]</p>  <p>1.62 ± 0.10 1.22 ± 0.10 0.67 ± 0.10 0.57 ± 0.10</p> <p>#3 #4 #2 #1</p> <table border="1"> <thead> <tr> <th>Pin#</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Tri-state</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>Output</td> </tr> <tr> <td>4</td> <td>VDD</td> </tr> </tbody> </table>	Pin#	Function	1	Tri-state	2	GND	3	Output	4	VDD	 <p>0.1 μF 1.22 1.62 0.90 0.80</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>
Pin#	Function										
1	Tri-state										
2	GND										
3	Output										
4	VDD										

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	-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.

Specifications subject to change without notice