Multilayer Organic (MLO®) Inductors **Tight Tolerance**

🔇 КУОСЕRа



The Multilayer Organic Tight Tolerance Inductor is a low profile organic based inductor that can support mobile communications, satellite applications, GPS, matching networks, and collision avoidance. The MLO® Tight Tolerance Inductor series of components are based on KYOCERA AVX patented multilayer organic technology (US patent 6,987,307). MLO® Tight Tolerance Inductors incorporate very low loss organic materials which allow for high Q and high stability over frequency. MLO® Tight Tolerance Inductors are surface mountable and are expansion matched to FR4 printed wiring boards. MLO® Tight Tolerance Inductors utilize fine line high density interconnect technology thereby allowing for tight tolerance control and high repeatability. Reliability testing is performed to JEDEC and mil standards. Finishes are available in RoHS compliant Sn.

APPLICATIONS

- Mobile communications
- Satellite Applications
- GPS .
- **Collision Avoidance** .
- Wireless LAN's

FEATURES

- Tight Tolerance
- High Frequency
- · High Withstanding Voltage
- Low DC Resistance
- . Surface Mountable
- . 0402 Case Size
- **RoHS Compliant Finishes** .
- Available in Tape and Reel

SURFACE MOUNT ADVANTAGES

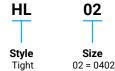
TR

5000pcs

T&R

- · Inherent Low Profile
- Excellent Solderability
- · Low Parasitics
- Better Heat Dissipation
- · Expansion Matched to PCB

HOW TO ORDER



Tolerance



Expressed in nH (2 significant digits + number of zeros) for values <10nH, letter R denotes decimal point. Example: 22nH = 220 4.7nH = 4R7

Tolerance $A = \pm 0.05 nH$ $B = \pm 0.1 nH$

Х

G = ±2%

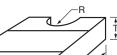
Termination Sn100

Т





DIMENSIONS



mm (inches)



QUALITY INSPECTION

Finished parts are 100% tested for electrical parameters and visual characteristics.

TERMINATION

RoHS compliant Sn finish.

OPERATING TEMPERATURE

-55°C to +125°C

		mm (inches)					
	L	W	Т	R	В		
	1.00±0.10	0.58±0.075	0.35±0.10	0.125±0.050	0.23±0.0508		
L	(0.040±0.004)	(0.023±0.003)	(0.014±0.004)	(0.005±0.002)	(0.0092±0.002)		

KIDERRA | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.avx.com/disclaimer/ by reference and should be reviewed in full before placing any order. **XXXXX**

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RECOMMENDED FOOTPRINT

RECOMMENDED FOOTPRINT mm (inches)							
_		Case Size	D1	D2	D3	D4	D5
l Î		0201	0.85 (0.033)	0.30 (0.012)	0.25 (0.010)	0.30 (0.012)	0.35 (0.014)
		0402	1.70 (0.067)	0.60 (0.024)	0.50 (0.020)	0.60 (0.024)	0.50 (0.020)
		0603	2.30 (0.091)	0.80 (0.031)	0.70 (0.028)	0.80 (0.031)	0.75 (0.030)
		0805	3.00 (0.118)	1.00 (0.039)	1.00 (0.039)	1.00 (0.039)	1.25 (0.049)
D1	$ \begin{array}{c c} D1 & D3 \\ & & & \\ & $	1206	4.00 (0.157)	1.00 (0.039)	2.00 (0.079)	1.00 (0.039)	1.60 (0.063)
		1210	4.00 (0.157)	1.00 (0.039)	2.00 (0.079)	1.00 (0.039)	2.50 (0.098)
		1808	5.60 (0.220)	1.00 (0.039)	3.60 (0.142)	1.00 (0.039)	2.00 (0.079)
		1812	5.60 (0.220)	1.00 (0.039)	3.60 (0.142)	1.00 (0.039)	3.00 (0.118)
		1825	5.60 (0.220)	1.00 (0.039)	3.60 (0.142)	1.00 (0.039)	6.35 (0.250)
<u> </u> ♥		2220	6.60 (0.260)	1.00 (0.039)	4.60 (0.181)	01.00 (0.039)	5.00 (0.197)
		2225	6.60 (0.260)	1.00 (0.039)	4.60 (0.181)	1.00 (0.039)	6.35 (0.250)

Component Pad Design

Component pads should be designed to achieve good solder filets and minimize component movement during reflow soldering. pad designs are given below for the most common sizes of multilayer ceramic capacitors for both wave and reflow soldering. The basis of these designs is:

· Pad width equal to component width. It is permissible to decrease this to as low as 85% of component width but it is not advisable to go below this.

• Pad overlap 0.5mm beneath component.

· Pad extension 0.5mm beyond components for relow and 1.0mm to wave soldering.

0402 ELECTRICAL SPECIFICATIONS

0.8 ±0.05nH,±0.1nH 15 450 100 7 0.9 ±0.05nH,±0.1nH 15 450 100 7 1 ±0.05nH,±0.1nH 15 410 100 7 1.1 ±0.05nH,±0.1nH 15 410 110 7 1.2 ±0.05nH,±0.1nH 15 295 13 7 1.5 ±0.05nH,±0.1nH 15 295 150 7 1.6 ±0.05nH,±0.1nH 15 295 160 7 1.8 ±0.05nH,±0.1nH 15 295 160 7 1.8 ±0.05nH,±0.1nH 15 230 200 7 2.2 ±0.05nH,±0.1nH 15 230 200 7 2.4 ±0.05nH,±0.1nH 15 230 200 7 3.3 ±0.05nH,±0.1nH 15 200 340 7 3.4 ±0.05nH,±0.1nH 15 180 350 7 3.5 ±0.05nH,±0.1nH </th <th>L (nH) 450MHz</th> <th>Available Inductance Tolerance A = ±0.05nH, B = ±0.1nH, G = ±2%</th> <th>Q 450MHz</th> <th>Idc max (mA)</th> <th>Rdc max (mΩ)</th> <th>SRF min (GHz)</th>	L (nH) 450MHz	Available Inductance Tolerance A = ±0.05nH, B = ±0.1nH, G = ±2%	Q 450MHz	Idc max (mA)	Rdc max (mΩ)	SRF min (GHz)
1 1.0.5H, ±0.1H 15 420 100 7 1.1 ±0.05H, ±0.1H 15 410 100 7 1.2 ±0.05H, ±0.1H 15 410 110 7 1.3 ±0.05H, ±0.1H 15 295 13 7 1.5 ±0.05H, ±0.1H 15 295 150 7 1.6 ±0.05H, ±0.1H 15 295 160 7 1.6 ±0.05H, ±0.1H 15 230 150 7 1.8 ±0.05H, ±0.1H 15 230 18 7 2 ±0.05H, ±0.1H 15 230 200 7 2.1 ±0.05H, ±0.1H 15 230 200 7 2.4 ±0.05H, ±0.1H 15 230 200 7 3 ±0.05H, ±0.1H 15 200 300 7 3.3 ±0.05H, ±0.1H 15 160 7 7 3.6 ±0.05H, ±0.1H 15 <td>0.8</td> <td>±0.05nH, ±0.1nH</td> <td>15</td> <td>450</td> <td>100</td> <td>7</td>	0.8	±0.05nH, ±0.1nH	15	450	100	7
1.1 ±0.05nH,±0.1nH 15 410 100 7 1.2 ±0.05nH,±0.1nH 15 410 110 7 1.3 ±0.05nH,±0.1nH 15 295 13 7 1.5 ±0.05nH,±0.1nH 15 295 150 7 1.6 ±0.05nH,±0.1nH 15 230 150 7 1.8 ±0.05nH,±0.1nH 15 230 160 7 2 ±0.05nH,±0.1nH 15 230 200 7 2.2 ±0.05nH,±0.1nH 15 230 200 7 2.4 ±0.05nH,±0.1nH 15 230 200 7 2.7 ±0.05nH,±0.1nH 15 230 200 7 3.3 ±0.05nH,±0.1nH 15 200 300 7 3.3 ±0.05nH,±0.1nH 15 180 350 7 3.6 ±0.05nH,±0.1nH 15 180 400 7 3.6 ±0.05nH,±0.1nH </td <td>0.9</td> <td>±0.05nH, ±0.1nH</td> <td>15</td> <td>450</td> <td>100</td> <td>7</td>	0.9	±0.05nH, ±0.1nH	15	450	100	7
1.2 ±0.05nH, ±0.1nH 15 410 110 7 1.3 ±0.05nH, ±0.1nH 15 295 13 7 1.5 ±0.05nH, ±0.1nH 15 295 150 7 1.6 ±0.05nH, ±0.1nH 15 230 150 7 1.8 ±0.05nH, ±0.1nH 15 295 160 7 2 ±0.05nH, ±0.1nH 15 230 18 7 2.2 ±0.05nH, ±0.1nH 15 230 200 7 2.4 ±0.05nH, ±0.1nH 15 230 200 7 2.7 ±0.05nH, ±0.1nH 15 230 200 7 3 ±0.05nH, ±0.1nH 15 200 300 7 3.3 ±0.05nH, ±0.1nH 15 200 300 7 3.3 ±0.05nH, ±0.1nH 15 180 400 7 3.6 ±0.05nH, ±0.1nH 15 180 400 7 4.7 ±0.5nt	1	±0.05nH, ±0.1nH	15	420	100	7
1.3 ±0.05H,±0.1H 15 295 13 7 1.5 ±0.05H,±0.1H 15 295 150 7 1.6 ±0.05H,±0.1H 15 230 150 7 1.8 ±0.05H,±0.1H 15 230 160 7 2 ±0.05H,±0.1H 15 230 18 7 2.1 ±0.05H,±0.1H 15 230 200 7 2.2 ±0.05H,±0.1H 15 230 200 7 2.4 ±0.05H,±0.1H 15 230 200 7 2.7 ±0.05H,±0.1H 15 230 200 7 3 ±0.05H,±0.1H 15 200 300 7 3.3 ±0.05H,±0.1H 15 200 340 7 3.6 ±0.05H,±0.1H 15 180 350 7 3.3 ±0.05H,±0.1H 15 180 400 7 4.7 ±0.1H 15 18	1.1	±0.05nH, ±0.1nH	15	410	100	7
1.5 ±0.05H, ±0.1H 15 295 150 7 1.6 ±0.05H, ±0.1H 15 230 150 7 1.8 ±0.05H, ±0.1H 15 295 160 7 2 ±0.05H, ±0.1H 15 230 18 7 2.2 ±0.05H, ±0.1H 15 230 200 7 2.4 ±0.05H, ±0.1H 15 230 200 7 2.4 ±0.05H, ±0.1H 15 230 200 7 2.7 ±0.05H, ±0.1H 15 230 200 7 3 ±0.05H, ±0.1H 15 200 300 7 3.3 ±0.05H, ±0.1H 15 180 350 7 3.6 ±0.05H, ±0.1H 15 180 400 7 3.6 ±0.05H, ±0.1H 15 180 400 7 3.6 ±0.05H, ±0.1H 15 180 400 7 5.6 ±0.1H 15<	1.2	±0.05nH, ±0.1nH	15	410	110	7
1.6 ±0.05nH,±0.1nH 15 230 150 7 1.8 ±0.05nH,±0.1nH 15 295 160 7 2 ±0.05nH,±0.1nH 15 230 18 7 2.2 ±0.05nH,±0.1nH 15 230 200 7 2.4 ±0.05nH,±0.1nH 15 230 200 7 2.7 ±0.05nH,±0.1nH 15 230 250 7 3 ±0.05nH,±0.1nH 15 200 300 7 3.3 ±0.05nH,±0.1nH 15 200 340 7 3.3 ±0.05nH,±0.1nH 15 200 340 7 3.6 ±0.05nH,±0.1nH 15 180 400 7 3.6 ±0.05nH,±0.1nH 15 180 400 7 3.6 ±0.05nH,±0.1nH 15 180 400 7 4.7 ±0.05nH,±0.1nH 15 180 400 7 5.6 ±0.1nH	1.3	±0.05nH, ±0.1nH	15	295	13	7
1.8 ±0.05H,±0.1nH 15 295 160 7 2 ±0.05H,±0.1nH 15 230 18 7 2.2 ±0.05H,±0.1nH 15 230 200 7 2.4 ±0.05H,±0.1nH 15 230 200 7 2.7 ±0.05H,±0.1nH 15 230 250 7 3 ±0.05H,±0.1nH 15 200 300 7 3.3 ±0.05H,±0.1nH 15 200 340 7 3.3 ±0.05H,±0.1nH 15 180 350 7 3.6 ±0.05H,±0.1nH 15 180 400 7 3.6 ±0.05H,±0.1nH 15 180 400 7 3.9 ±0.05H,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 180 400 7 5.6 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 1	1.5	±0.05nH, ±0.1nH	15	295	150	7
2 ±0.05H,±0.1hH 15 230 18 7 2.2 ±0.05H,±0.1hH 15 230 200 7 2.4 ±0.05H,±0.1hH 15 230 200 7 2.7 ±0.05H,±0.1hH 15 230 250 7 3 ±0.05H,±0.1hH 15 230 300 7 3.3 ±0.05H,±0.1hH 15 200 300 7 3.3 ±0.05H,±0.1hH 15 200 340 7 3.6 ±0.05H,±0.1hH 15 180 350 7 3.6 ±0.05H,±0.1hH 15 180 400 7 3.9 ±0.05H,±0.1hH 15 180 400 7 4.7 ±0.01hH 15 180 400 7 5.6 ±0.1hH 15 150 500 7 6.8 ±0.1hH 15 150 500 7 6.8 ±0.1hH 15 140 <td>1.6</td> <td>±0.05nH, ±0.1nH</td> <td>15</td> <td>230</td> <td>150</td> <td>7</td>	1.6	±0.05nH, ±0.1nH	15	230	150	7
2.2 ±0.05H, ±0.1H 15 230 200 7 2.4 ±0.05H, ±0.1H 15 230 200 7 2.7 ±0.05H, ±0.1H 15 230 250 7 3 ±0.05H, ±0.1H 15 200 300 7 3.3 ±0.05H, ±0.1H 15 200 300 7 3.3 ±0.05H, ±0.1H 15 200 340 7 3.6 ±0.05H, ±0.1H 15 180 350 7 3.6 ±0.05H, ±0.1H 15 180 400 7 3.6 ±0.05H, ±0.1H 15 180 400 7 3.6 ±0.05H, ±0.1H 15 180 400 7 4.7 ±0.05H 15 180 400 7 5.6 ±0.1H 15 180 600 7 6.8 ±0.1H 15 140 600 7 8.2 ±0.1H 15 105	1.8	±0.05nH, ±0.1nH	15	295	160	7
2.4 ±0.05hH,±0.1nH 15 230 200 7 2.7 ±0.05hH,±0.1nH 15 230 250 7 3 ±0.05hH,±0.1nH 15 200 300 7 3.3 ±0.05hH,±0.1nH 15 200 340 7 3.6 ±0.05hH,±0.1nH 15 180 350 7 3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 180 400 7 5.6 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 160 500 7 6.8 ±0.1nH 15 160 600 7 6.8 ±0.1nH 15 160 600 7 8.2 ±0.1nH 15 105 100 5 10 ±2% 15 95 100 4 115 400 15 15 100	2	±0.05nH, ±0.1nH	15	230	18	7
2.7 ±0.05hH,±0.1nH 15 230 250 7 3 ±0.05hH,±0.1nH 15 200 300 7 3.3 ±0.05hH,±0.1nH 15 200 340 7 3.6 ±0.05hH,±0.1nH 15 180 350 7 3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 180 400 7 5.6 ±0.1nH 15 180 400 7 5.6 ±0.1nH 15 160 600 7 6.8 ±0.1nH 15 160 600 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 95 1000 5 12 ±2% 15 95 100 4 15 ±2% 15 85 150 3	2.2	±0.05nH, ±0.1nH	15	230	200	7
3 ±0.05hH,±0.1nH 15 200 300 7 3.3 ±0.05hH,±0.1nH 15 200 340 7 3.6 ±0.05hH,±0.1nH 15 180 350 7 3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 180 400 7 5.6 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 160 500 7 6.8 ±0.1nH 15 160 600 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 105 1000 5 10 ±2% 15 95 1000 4 115 \$95 1100 4 4 15 ±2% 15 95 1200 4 18 ±2% 15 85 1500 3 <t< td=""><td>2.4</td><td>±0.05nH, ±0.1nH</td><td>15</td><td>230</td><td>200</td><td>7</td></t<>	2.4	±0.05nH, ±0.1nH	15	230	200	7
3.3 ±0.05hH,±0.1nH 15 200 340 7 3.6 ±0.05hH,±0.1nH 15 180 350 7 3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 170 480 7 6.8 ±0.1nH 15 150 500 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 ±2% 15 95 200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	2.7	±0.05nH, ±0.1nH	15	230	250	7
3.6 ±0.05hH,±0.1nH 15 180 350 7 3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 170 480 7 6.8 ±0.1nH 15 150 500 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 15 95 1200 4 15 ±2% 15 85 350 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	3	±0.05nH, ±0.1nH	15	200	300	7
3.9 ±0.05hH,±0.1nH 15 180 400 7 4.7 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 150 500 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 140 600 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 ±2% 15 95 1200 4 15 ±2% 15 85 300 3 22 ±2% 15 75 1900 3 22 ±2% 15 75 2100 3	3.3	±0.05nH, ±0.1nH	15	200	340	7
4.7 ±0.1nH 15 170 480 7 5.6 ±0.1nH 15 150 500 7 6.8 ±0.1nH 15 140 600 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 ±2% 15 95 1200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	3.6	±0.05nH, ±0.1nH	15	180	350	7
5.6 ±0.1nH 15 150 500 7 6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 15 95 1200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	3.9	±0.05nH, ±0.1nH	15	180	400	7
6.8 ±0.1nH 15 140 600 7 8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 15 95 1200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	4.7	±0.1nH	15	170	480	7
8.2 ±0.1nH 15 115 800 6 10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 ±2% 15 95 1200 4 15 ±2% 15 85 1500 3 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	5.6	±0.1nH	15	150	500	7
10 ±2% 15 105 1000 5 12 ±2% 15 95 1100 4 15 ±2% 15 95 1200 4 16 ±2% 15 95 1200 3 21 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	6.8	±0.1nH	15	140	600	7
12 ±2% 15 95 1100 4 15 ±2% 15 95 1200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	8.2	±0.1nH	15	115	800	6
15 ±2% 15 95 1200 4 18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	10	±2%	15	105	1000	5
18 ±2% 15 85 1500 3 22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	12	±2%	15	95	1100	4
22 ±2% 15 75 1900 3 27 ±2% 15 75 2100 3	15	±2%	15	95	1200	4
27 ±2% 15 75 2100 3	18	±2%	15	85	1500	3
	22	±2%	15	75	1900	3
	27	±2%	15	75	2100	3
30 IZ % IS 05 Z200 Z	30	±2%	15	65	2200	2
32 ±2% 15 65 2200 2	32	±2%	15	65	2200	2

Specifications based on performance of component assembled properly on printed circuit board with 500 nominal impedance.