

Multilayer Organic (MLO®) Inductors

Tight Tolerance



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

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

HOW TO ORDER

HL
Style
Tight
Tolerance

02
Size
02 = 0402

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

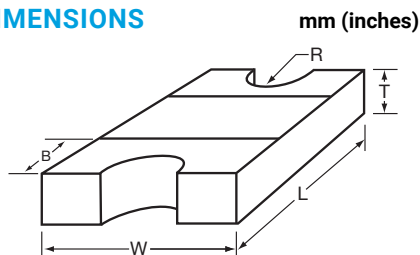
X
Tolerance
A = $\pm 0.05\text{nH}$
B = $\pm 0.1\text{nH}$
G = $\pm 2\%$

T
Termination
Sn100

TR
Packaging
5000pcs
T&R



DIMENSIONS



mm (inches)				
L	W	T	R	B
1.00 $\pm$ 0.10 (0.040 $\pm$ 0.004)	0.58 $\pm$ 0.075 (0.023 $\pm$ 0.003)	0.35 $\pm$ 0.10 (0.014 $\pm$ 0.004)	0.125 $\pm$ 0.050 (0.005 $\pm$ 0.002)	0.23 $\pm$ 0.0508 (0.0092 $\pm$ 0.002)

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

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RECOMMENDED FOOTPRINT

mm (inches)

Case Size	D1	D2	D3	D4	D5
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)
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)
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 files 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 reflow and 1.0mm to wave soldering.

0402 ELECTRICAL SPECIFICATIONS

L (nH) 450MHz	Available Inductance Tolerance A = $\pm 0.05\text{nH}$, B = $\pm 0.1\text{nH}$, G = $\pm 2\%$	Q 450MHz	Idc max (mA)	Rdc max (m Ω)	SRF min (GHz)
0.8	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	450	100	7
0.9	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	450	100	7
1	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	420	100	7
1.1	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	410	100	7
1.2	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	410	110	7
1.3	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	295	13	7
1.5	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	295	150	7
1.6	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	230	150	7
1.8	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	295	160	7
2	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	230	18	7
2.2	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	230	200	7
2.4	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	230	200	7
2.7	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	230	250	7
3	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	200	300	7
3.3	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	200	340	7
3.6	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	180	350	7
3.9	$\pm 0.05\text{nH}$, $\pm 0.1\text{nH}$	15	180	400	7
4.7	$\pm 0.1\text{nH}$	15	170	480	7
5.6	$\pm 0.1\text{nH}$	15	150	500	7
6.8	$\pm 0.1\text{nH}$	15	140	600	7
8.2	$\pm 0.1\text{nH}$	15	115	800	6
10	$\pm 2\%$	15	105	1000	5
12	$\pm 2\%$	15	95	1100	4
15	$\pm 2\%$	15	95	1200	4
18	$\pm 2\%$	15	85	1500	3
22	$\pm 2\%$	15	75	1900	3
27	$\pm 2\%$	15	75	2100	3
30	$\pm 2\%$	15	65	2200	2
32	$\pm 2\%$	15	65	2200	2

Specifications based on performance of component assembled properly on printed circuit board with 50 Ω nominal impedance.

Mouser Electronics

Authorized Distributor

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KYOCERA AVX:

[HL02100GTTR](#) [HL02120GTTR](#) [HL02150GTTR](#) [HL02180GTTR](#) [HL021R0BTTR](#) [HL021R1BTTR](#) [HL021R2BTTR](#)
[HL021R3BTTR](#) [HL021R5BTTR](#) [HL021R6BTTR](#) [HL021R8BTTR](#) [HL02220GTTR](#) [HL02270GTTR](#) [HL022R0BTTR](#)
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