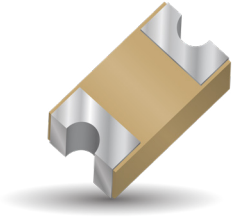


# Multilayer Organic (MLO®) Inductors

## High Current



The Multilayer Organic High Current Inductor is a low profile organic based inductor that can support mobile communications, satellite applications, GPS, matching networks, and collision avoidance. Based on KYOCERA AVX patented multilayer organic technology (US patent 6,987,307), the 0402 size Multilayer Organic High Current Inductor allows for much higher current handling over similar multilayer ceramic chip inductors, a 50% average increase in current handling over comparable thin film products with similar Q, and current handling approaching that of wire wound ceramic chip inductors. MLO® High Current Inductors incorporate very low loss organic materials which allow for high Q and high stability over frequency. They are surface mountable and are expansion matched to FR4 printed wiring boards. MLO® High Current 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

- High Q
- High SRF
- High Frequency
- High Current Handling
- 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

**HLC**

**Type**

HLC = High Current

**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**

B = ±0.1nH  
C = ±0.2nH  
D = ±0.5nH  
G = ±2%  
H = ±3%  
J = ±5%

**T**

**Termination**

Sn100

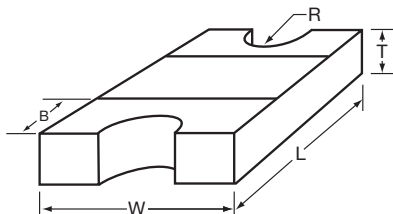
**TR**

**Packaging**

5000pcs T&R



### DIMENSIONS



mm (inches)

| L                          | W                           | T                          | R                            | B                             |
|----------------------------|-----------------------------|----------------------------|------------------------------|-------------------------------|
| 1.00±0.10<br>(0.040±0.004) | 0.58±0.075<br>(0.023±0.003) | 0.35±0.10<br>(0.014±0.004) | 0.125±0.050<br>(0.005±0.002) | 0.23±0.0508<br>(0.0092±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

# Multilayer Organic (MLO®) Inductors

## High Current

### 0402 ELECTRICAL SPECIFICATIONS

| 450 MHz Test Frequency |   |           | 900 MHz Test Frequency |           | 1900 MHz Test Frequency |            | 2400 MHz Test Frequency |            | SRF Min (GHz) | Rdc Max (mΩ) | Idc Max (mA) |
|------------------------|---|-----------|------------------------|-----------|-------------------------|------------|-------------------------|------------|---------------|--------------|--------------|
| L (nH) 450 MHz         | Available Inductance Tolerance<br>B = ±0.1nH, C = ±0.2nH<br>D = ±0.5nH, G = ±2%<br>H = ±3%, J = ±5% | Q 450 MHz | L (nH) 900 MHz         | Q 900 MHz | L (nH) 1900 MHz         | Q 1900 MHz | L (nH) 2400 MHz         | Q 2400 MHz |               |              |              |
| 0.8                    | ±0.1nH, ±0.2nH, ±0.5nH  | 30        | 0.8                    | 42        | 0.8                     | 55         | 0.8                     | 61         | >20           | 100          | 875          |
| 0.9                    | ±0.1nH, ±0.2nH, ±0.5nH  | 26        | 0.9                    | 36        | 0.9                     | 47         | 0.9                     | 52         | >20           | 100          | 835          |
| 1                      | ±0.1nH, ±0.2nH, ±0.5nH  | 25        | 1.0                    | 34        | 1.0                     | 45         | 1.0                     | 50         | >20           | 100          | 800          |
| 1.1                    | ±0.1nH, ±0.2nH, ±0.5nH  | 24        | 1.1                    | 33        | 1.1                     | 43         | 1.1                     | 48         | 20            | 100          | 782          |
| 1.2                    | ±0.1nH, ±0.2nH, ±0.5nH  | 24        | 1.2                    | 33        | 1.2                     | 44         | 1.2                     | 48         | 20            | 110          | 751          |
| 1.3                    | ±0.1nH, ±0.2nH, ±0.5nH  | 25        | 1.3                    | 34        | 1.3                     | 44         | 1.3                     | 49         | 19            | 130          | 725          |
| 1.5                    | ±0.1nH, ±0.2nH, ±0.5nH  | 25        | 1.5                    | 35        | 1.5                     | 45         | 1.5                     | 50         | 19            | 150          | 679          |
| 1.6                    | ±0.1nH, ±0.2nH, ±0.5nH  | 25        | 1.6                    | 35        | 1.6                     | 45         | 1.6                     | 49         | 18            | 150          | 660          |
| 1.8                    | ±0.1nH, ±0.2nH, ±0.5nH  | 25        | 1.8                    | 35        | 1.8                     | 45         | 1.8                     | 49         | 18            | 160          | 626          |
| 2                      | ±0.1nH, ±0.2nH, ±0.5nH  | 26        | 2.0                    | 35        | 2.0                     | 45         | 2.1                     | 49         | 17            | 180          | 596          |
| 2.2                    | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 2.2                    | 36        | 2.2                     | 46         | 2.2                     | 50         | 16            | 200          | 571          |
| 2.4                    | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 2.4                    | 37        | 2.4                     | 47         | 2.4                     | 50         | 15            | 200          | 549          |
| 2.7                    | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 2.7                    | 36        | 2.7                     | 46         | 2.7                     | 48         | 14            | 250          | 521          |
| 3                      | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 3.0                    | 36        | 3.0                     | 44         | 3.1                     | 46         | 12            | 300          | 497          |
| 3.3                    | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 3.3                    | 36        | 3.3                     | 44         | 3.4                     | 46         | 11            | 340          | 476          |
| 3.6                    | ±0.1nH, ±0.2nH, ±0.5nH  | 27        | 3.6                    | 37        | 3.7                     | 45         | 3.8                     | 46         | 10            | 350          | 457          |
| 3.9                    | ±0.1nH, ±0.2nH, ±0.5nH  | 28        | 3.9                    | 38        | 4.0                     | 46         | 4.1                     | 47         | 10            | 400          | 441          |
| 4.7                    | ±0.1nH, ±0.2nH, ±0.5nH  | 29        | 4.7                    | 39        | 4.9                     | 45         | 5.1                     | 44         | 9             | 480          | 405          |
| 5.6                    | ±0.1nH, ±0.2nH, ±0.5nH  | 30        | 5.7                    | 40        | 6.0                     | 44         | 6.3                     | 42         | 8             | 500          | 375          |
| 6.8                    | ±2%, ±3%, ±5%   | 30        | 6.9                    | 39        | 7.5                     | 41         | 8.0                     | 37         | 7             | 600          | 343          |
| 8.2                    | ±2%, ±3%, ±5%   | 29        | 8.4                    | 37        | 9.4                     | 37         | 10.4                    | 31         | 6             | 800          | 315          |
| 10                     | ±2%, ±3%, ±5%   | 30        | 10.3                   | 38        | 12.0                    | 35         | 13.9                    | 27         | 5             | 1000         | 290          |
| 12                     | ±2%, ±3%, ±5%   | 32        | 12.5                   | 40        | 15.7                    | 31         | 19.8                    | 19         | 4             | 1100         | 265          |
| 15                     | ±2%, ±3%, ±5%   | 32        | 15.9                   | 38        | 22.3                    | 24         | 33.0                    | 9          | 4             | 1200         | 240          |
| 18                     | ±2%, ±3%, ±5%   | 28        | 19.4                   | 32        | 31.1                    | 15         | 60.0                    | 0.3        | 3             | 1500         | 210          |
| 22                     | ±2%, ±3%, ±5%   | 30        | 24.0                   | 34        | 44.7                    | 11         | n/a                     | n/a        | 3             | 1900         | 202          |
| 27                     | ±2%, ±3%, ±5%   | 29        | 30.5                   | 30        | n/a                     | n/a        | n/a                     | n/a        | 3             | 2100         | 184          |
| 30                     | ±2%, ±3%, ±5%   | 28        | 34.0                   | 27        | n/a                     | n/a        | n/a                     | n/a        | 2             | 2200         | 180          |
| 32                     | ±2%, ±3%, ±5%   | 28        | 37.7                   | 27        | n/a                     | n/a        | n/a                     | n/a        | 2             | 2200         | 175          |

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

Idc max: Maximum 15°C rise in component temperature over ambient.