

ATC MOL Series Multilayer Chip Inductors

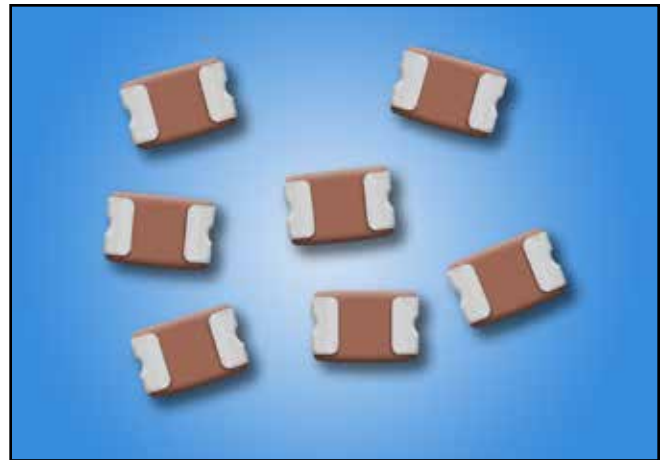
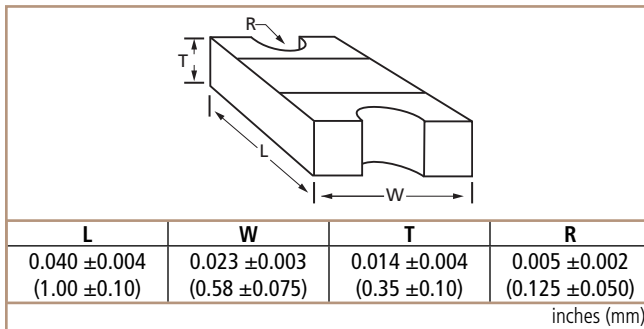
Features:

- EIA 0402
- 0.8 nH to 32 nH
- Multilayer Organic Construction
- Tight Tolerances to ± 0.05 nH
- High Q
- High Current to 875 mA
- High Self Resonant Frequency
- Available in Tape and Reel
- RoHS Compliant Terminations

ATC, the industry leader, offers the MOL Multilayer Chip Inductor Series. The MOL Series is manufactured with the highest grade multilayer organic-based materials and is constructed in a low profile 0402 SMT package. This Series was designed to provide a low cost, high performance RF surface mount inductor solution. The MOL Series is ideal for critical RF and microwave applications that require stable and repeatable performance. It maintains high stable Q over a wide range of frequencies. The MOL Series provides tolerances as tight as ± 0.05 nH for precise tuning. It is ideal for high current, high power applications. These inductors also exhibit a thermal coefficient of expansion that closely matches the most commonly used soft boards.

The MOL Series is manufactured in a tightly controlled process that utilizes innovative multilayer organic manufacturing technology to ensure the highest achievable quality. These devices are ideal for RF and microwave applications where cost and performance are major factors. Typical applications include Wireless LANs, Avionics Modules, Satellite Communications, GPS, and Collision Avoidance Systems.

Dimensions



Advantages:

- Low Profile
- Excellent Solderability
- Excellent Repeatability
- High Reliability

Applications:

- Wireless Communications
- Wireless LANs
- Avionics Modules
- Satellite Communications
- GPS
- Collision Avoidance

Operating Temperature

-55°C to +125°C

Quality Inspection

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

- **Moisture Sensitivity Level MSL-1:** J-STD-020C
- **High Temperature:**
Operating Life (HTOL) JESD22-A108-C.
Storage JESD22-A103 – 150°C 1000 hours Condition B.
- **Low Temperature:**
Storage JESD22-A119 – 40°C 1000 hours.
- **Temperature Cycle:** JESD22-A104-C
-40°C to 125°C; 1000 cycles; Dwell= 15 minutes
Test Condition G.
10°C/minute minimum ramp rate; Soak Mode 4.
- **Physical Dimensions:** JESD22-B100
Horizontal and vertical package measurements only.
- **Solderability:** JESD22-B102-D
Precondition: 150°C for 16 hours.



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ISO 9001 REGISTERED
COMPANY

ATC # 001-1140
Rev. B; 11/17

ATC MOL SERIES MULTILAYER CHIP INDUCTORS

Electrical Specifications

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

ATC Part Number Code

ATC MOL L 2R2 D T T

Series _____

Case Size: 0402 _____


Inductance value in nH. _____
1st and 2nd digits are significant digits. 3rd digit is multiplier. R is decimal point.

Tolerance: See table below.

| Tolerance Code Table | | | | | | |
|----------------------|---------|---------|---------|-----|-----|-----|
| Code | B | C | D | G | H | J |
| Tol. | ±0.1 nH | ±0.2 nH | ±0.5 nH | ±2% | ±3% | ±5% |

Packaging: T - Tape & Reel
5,000 piece; 7 inch reel

Termination Code:
T = Tin over Nickel Barrier



The above part number refers to a MOL Series (case size L) 2.2 nF inductor,
D tolerance (±0.5 nH), with T termination(Tin over nickel barrier), tape and reel packaging.

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