



AMERICAN  
TECHNICAL  
CERAMICS

# INDUCTOR PRODUCTS

*Manufactured for ATC*



 THE  
ENGINEERS'  
CHOICE®

# CORPORATE PROFILE

## Corporate Profile

American Technical Ceramics Corp. (ATC) provides component and custom integrated packaging solutions for the RF, microwave and telecommunications industries. For over forty years we have been "The Engineer's Choice".

ATC designs, develops, manufactures and markets Multilayer Capacitors, Single Layer Capacitors, Resistive Products, Inductors and Custom Thin Film Products for RF, microwave and millimeter-wave applications. Our products are primarily focused on the wireless communications infrastructure, fiber optic, medical electronics, semiconductor manufacturing equipment, defense, aerospace, and satellite communications markets.

Customer interface is administered by our own personnel and independent sales representatives. American Technical Ceramics is headquartered in Huntington Station, New York and has an Advanced Technology Center in Jacksonville, Florida. This is the center of excellence for our traditional product lines and the development and manufacturing facilities for Thin Film and Resistive products.

As part of our globalization initiative ATC has a wholly-owned subsidiary for European Direct Sales, Applications Support and Distribution, located in Kungens Kurva, Sweden. The Company's wholly-owned subsidiary offering Technical Support for Asia is located in Shenzhen, P.R. China. ATC also has local offices in Holzkirchen, Germany and Guildford, England.

### RLC Product Offerings

- Multilayer Ceramic Capacitors
- Single Layer Ceramic Capacitors
- Resistive Products
- Inductors

### Process and Packaging Offerings

- Thin Film Custom Products

### Markets Served

- Wireless Communications Infrastructure
- Fiber Optics
- Wireless Handsets
- Automotive Electronics
- LMDS/MMDS
- Semiconductor Manufacturing Equipment
- Medical Diagnostic Equipment
- Telecommunications
- Military and Aerospace



▲ ATC's New York Facility occupies approximately 90,000 sq. ft.

### Facilities

- **Huntington Station, New York** – Sales, Applications Support, Manufacturing and Distribution Center
- **Kungens Kurva, Sweden** – European Operations and Distribution Center
- **Jacksonville, Florida** – Advanced Technology Center, Manufacturing Facility.



▲ ATC's Jacksonville Facility occupies approximately 100,000 sq. ft.

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w w w . a t c e r a m i c s . c o m

# GENERAL SPECIFICATIONS

## Introducing ATC's New WL Series, High Frequency Wire Wound Chip Inductors

ATC introduces its new family of RF surface mount inductor components, intended to complement its high frequency ultra low ESR capacitor products. The WL Series Wire Wound Chip Inductor Products have been designed to provide excellent performance at competitive prices.

This Series includes the most widely used traditional EIA case sizes – 0402, 0603, 0805, 1008, and 1206. The WL Inductor Product line is intended for RF and microwave applications and features high self-resonant frequencies (SRF), high Q, and low DC resistance. These products are manufactured on a rugged core made of high quality ceramic material that exhibits high Q at high operating frequencies.

The WL Series is especially attractive for all 800 MHz to 3.4 GHz wireless applications where cost and performance are major factors. These applications include but are not limited to: cellular base stations, broadband wireless services, point-to-point and point-to-multipoint radio as well as other RF and microwave telecommunications systems.

All WL Series Inductor Products are supplied in tape and reel (2000 to 4000 parts per reel depending on case size) as standard, making them ideal for automated pick and place manufacturing applications. The terminations consist of a barrier layer with a lead-free tin-plated finish that exhibits excellent solderability for trouble-free attachments.

### Features

- High Q
- High SRF
- Low DC Resistance
- Wide Range of Standard EIA Inductance Values  
1 nH to 15000 nH
- Traditional EIA Case Sizes 0402, 0603, 0805, 1008,  
and 1206
- Lead-Free, RoHS Compliant Terminations,  
Tin Plated over Nickel Barrier
- Rugged Ceramic Core Construction
- Tape and Reel for Automated Placement

### General Electrical Specifications:

- Inductance Range: 1 nH to 15000 nH, See Tables
- Operating Temperature: -40°C to +125°C
- Temperature Coefficient of Inductance (TCL):  
+25 to +125 ppm/°C Typical From -40°C to +125°C
- Rated Current: See Tables, Pages 2-6
- SRF: See Tables, Pages 2-6
- IDC: See Tables, Pages 2-6
- RDC: See Tables, Pages 2-6

### Applications:

- Cellular Base Station Equipment
- Broadband Wireless Services
- Point-to-Point and Point-to-Multipoint Radio
- Satcom Equipment
- Telecommunications Wireless Applications
- RF and Microwave Communications Systems

### Circuit Applications:

- Amplifier Matching Networks
- Bias Networks
- Filters
- Oscillators
- Synthesizers

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w w w . a t c e r a m i c s . c o m

# ATC 0402 WL SERIES WIRE WOUND CHIP INDUCTORS

Inductance (nH)	Tolerance Code	Q min.	SRF (GHz) min.	RDC (Ohms) max.	IDC (mA) max.	900 MHz		1.7 GHz	
						L typ.	Q typ.	L typ.	Q typ.
1.0 @ 250 (MHz)	J, K	16	12.7	0.045	1360	1.02	77	1.02	69
1.2 @ 250 (MHz)	J, K	14	12.0	0.045	1360	—	—	—	—
1.5 @ 250 (MHz)	J, K	14	10.0	0.100	300	—	—	—	—
1.9 @ 250 (MHz)	J, K	16	11.3	0.070	1040	1.72	68	1.74	82
2.0 @ 250 (MHz)	J, K	16	11.1	0.070	1040	1.93	54	1.93	75
2.2 @ 250 (MHz)	J, K	19	10.8	0.070	960	2.19	59	2.23	100
2.4 @ 250 (MHz)	J, K	15	10.5	0.070	790	2.24	51	2.27	68
2.7 @ 250 (MHz)	J, K	16	10.4	0.120	640	2.23	42	2.25	61
3.3 @ 250 (MHz)	G, J, K	19	7.00	0.066	840	3.10	65	3.12	87
3.6 @ 250 (MHz)	G, J, K	19	6.80	0.066	840	3.56	65	3.62	71
3.9 @ 250 (MHz)	G, J, K	19	5.80	0.066	840	3.89	50	4.00	75
4.3 @ 250 (MHz)	G, J, K	18	6.00	0.090	700	4.19	47	4.30	71
4.7 @ 250 (MHz)	G, J, K	15	4.70	0.130	640	4.55	48	4.68	68
5.1 @ 250 (MHz)	G, J, K	20	4.80	0.083	800	5.15	56	5.25	82
5.6 @ 250 (MHz)	G, J, K	20	4.80	0.083	760	5.16	54	5.28	81
6.2 @ 250 (MHz)	G, J, K	20	4.80	0.083	760	6.16	52	6.37	76
6.8 @ 250 (MHz)	G, J, K	20	4.80	0.080	680	6.56	63	6.93	78
7.5 @ 250 (MHz)	G, J, K	22	4.80	0.104	680	7.91	60	8.22	88
8.2 @ 250 (MHz)	G, J, K	22	4.40	0.104	680	8.50	57	8.85	84
8.7 @ 250 (MHz)	G, J, K	18	4.10	0.200	480	8.78	54	9.21	73
9.0 @ 250 (MHz)	G, J, K	22	4.16	0.104	680	9.07	62	9.53	78
9.5 @ 250 (MHz)	G, J, K	18	4.00	0.200	480	9.42	54	9.98	69
10 @ 250 (MHz)	G, J, K	21	3.90	0.195	480	9.8	50	10.1	67
11 @ 250 (MHz)	G, J, K	24	3.68	0.120	640	10.7	52	11.2	78
12 @ 250 (MHz)	G, J, K	24	3.60	0.120	640	11.9	53	12.7	71
13 @ 250 (MHz)	G, J, K	24	3.45	0.210	440	13.4	51	14.6	57
15 @ 250 (MHz)	G, J, K	24	3.28	0.172	560	14.6	55	15.5	77
16 @ 250 (MHz)	G, J, K	24	3.10	0.220	560	16.6	46	18.8	47
18 @ 250 (MHz)	G, J, K	24	3.10	0.230	420	18.3	57	20.3	62
19 @ 250 (MHz)	G, J, K	24	3.04	0.202	480	19.1	50	21.1	67
20 @ 250 (MHz)	G, J, K	25	3.00	0.250	420	20.7	52	23.7	53
22 @ 250 (MHz)	G, J, K	25	2.80	0.300	400	23.2	53	26.8	53
23 @ 250 (MHz)	G, J, K	24	2.72	0.214	400	23.8	49	26.9	64
24 @ 250 (MHz)	G, J, K	25	2.70	0.300	400	25.1	51	29.5	50
27 @ 250 (MHz)	G, J, K	24	2.48	0.298	400	28.7	49	33.5	63
30 @ 250 (MHz)	G, J, K	25	2.35	0.350	400	31.1	46	38.5	39
33 @ 250 (MHz)	G, J, K	24	2.35	0.350	400	34.9	31	41.7	32
36 @ 250 (MHz)	G, J, K	24	2.32	0.403	320	39.5	44	48.4	53
39 @ 250 (MHz)	G, J, K	25	2.10	0.550	200	41.7	47	50.2	45
40 @ 250 (MHz)	G, J, K	24	2.24	0.438	320	39.0	44	47.4	33
43 @ 250 (MHz)	G, J, K	25	2.03	0.810	100	45.8	46	61.6	34
47 @ 250 (MHz)	G, J, K	20	2.10	0.830	150	50.0	38	59.4	37
51 @ 250 (MHz)	G, J, K	25	1.75	0.820	100	50.4	47	59.4	37
56 @ 250 (MHz)	G, J, K	25	1.76	0.970	100	57.4	49	72.4	40
68 @ 250 (MHz)	G, J, K	22	1.62	1.120	100	69.6	45	83.4	38
82 @ 250 (MHz)	G, J, K	22	1.26	1.550	50	—	—	—	—
100 @ 250 (MHz)	G, J, K	22	1.16	2.000	30	—	—	—	—

NOTE: For Mechanical Configurations, see page 7.

## ATC Part Number Code

**0402    WL    100    K    T**

EIA Case Size: 0402, 0603, 0805, 1008, 1206

Wire Wound Inductor

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

The above part number refers to an ATC 0402 WL wire wound chip inductor, 10 nH, K (±10%) tolerance, in tape and reel packaging. Tighter tolerances are available. Consult factory.

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant**, Tin Plated over Nickel Barrier.

Packaging: T - Tape & Reel

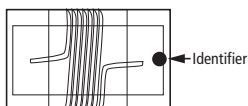
Tolerance: See table below.

Inductance Tolerances			
Code	G	J	K
Tol.	± 2%	± 5%	± 10%

## Marking Code

0402- No mark due to size.

0603 and 0805 Series - Because of their small size, these parts are marked with a single dot. The inductance value represented by the dot is shown on the data sheet for each series.



## Terminations

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant**, Tin Plated over Nickel Barrier.

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# ATC 0603 WL SERIES WIRE WOUND CHIP INDUCTORS

Inductance (nH)	Tolerance Code	Q min.	SRF (MHz) min.	RDC (Ohms) max.	IDC (mA) max.	900 MHz		1.7 GHz		Color Code
						L typ.	Q typ.	L typ.	Q typ.	
1.6 @ 250 (MHz)	J, K	16	12,500	0.040	700	1.53	35	1.58	55	Blue
1.8 @ 250 (MHz)	J, K	16	12,500	0.045	700	1.63	35	1.66	50	Black
2.2 @ 250 (MHz)	J, K	15	6000	0.100	700	2.18	41	2.20	64	White
2.3 @ 250 (MHz)	J, K	16	>4000	0.140	700	2.32	32	2.35	40	Yellow
3.3 @ 250 (MHz)	G, J, K	22	6000	0.080	700	3.35	47	3.40	65	Red
3.6 @ 250 (MHz)	G, J, K	22	5900	0.063	700	3.72	53	3.71	65	Violet
3.9 @ 250 (MHz)	G, J, K	22	6900	0.080	700	3.95	49	3.96	67	Brown
4.3 @ 250 (MHz)	G, J, K	22	5900	0.063	700	4.32	50	4.33	70	Orange
4.5 @ 250 (MHz)	G, J, K	20	5800	0.120	700	4.74	55	4.87	92	Gray
4.7 @ 250 (MHz)	G, J, K	20	5800	0.116	700	4.72	47	4.75	57	Violet
5.1 @ 250 (MHz)	G, J, K	20	5700	0.140	700	4.93	47	4.95	56	Green
5.6 @ 250 (MHz)	G, J, K	20	5800	0.170	700	5.53	56	5.86	77	Yellow
6.2 @ 250 (MHz)	G, J, K	25	5800	0.110	700	6.28	60	6.40	85	Black
6.3 @ 250 (MHz)	G, J, K	25	5800	0.110	700	6.67	41	6.86	61	Black
6.8 @ 250 (MHz)	G, J, K	27	5800	0.110	700	6.75	60	7.10	81	Red
7.5 @ 250 (MHz)	G, J, K	28	4800	0.106	700	7.70	60	7.82	65	Brown
8.2 @ 250 (MHz)	G, J, K	28	4700	0.109	700	8.30	60	8.50	60	Green
8.7 @ 250 (MHz)	G, J, K	28	4600	0.109	700	8.86	62	9.32	58	Yellow
9.1 @ 250 (MHz)	G, J, K	35	4800	0.130	700	9.20	70	9.70	80	Black
9.5 @ 250 (MHz)	G, J, K	28	5400	0.135	700	9.70	59	9.92	61	Blue
10 @ 250 (MHz)	G, J, K	31	4800	0.130	700	10.00	66	10.60	83	Orange
11 @ 250 (MHz)	G, J, K	33	4000	0.086	700	11.00	53	11.50	5	Gray
12 @ 250 (MHz)	G, J, K	35	4000	0.130	700	12.30	72	13.50	83	Yellow
15 @ 250 (MHz)	G, J, K	35	4000	0.170	700	15.40	64	16.80	89	Green
16 @ 250 (MHz)	G, J, K	34	3300	0.104	700	16.20	55	17.30	52	White
17 @ 250 (MHz)	G, J, K	35	3200	0.170	700	17.60	56	19.40	44	Red
18 @ 250 (MHz)	G, J, K	35	3100	0.170	700	18.70	70	21.40	69	Blue
20 @ 250 (MHz)	G, J, K	40	3000	0.190	700	20.70	80	23.50	30	Green
22 @ 250 (MHz)	G, J, K	38	3000	0.190	700	22.80	73	26.10	71	Violet
23 @ 250 (MHz)	G, J, K	38	2850	0.190	700	24.10	71	28.00	71	Orange
24 @ 250 (MHz)	G, J, K	37	2650	0.135	700	24.50	45	28.70	39	Black
27 @ 250 (MHz)	G, J, K	40	2800	0.220	600	29.20	74	34.60	65	Gray
30 @ 250 (MHz)	G, J, K	37	2250	0.144	600	31.40	47	39.90	28	Brown
33 @ 250 (MHz)	G, J, K	40	2300	0.220	600	36.00	67	49.50	42	White
36 @ 250 (MHz)	G, J, K	38	2080	0.250	600	39.40	47	52.70	24	Red
39 @ 250 (MHz)	G, J, K	40	2200	0.250	600	42.70	60	60.20	40	Black
43 @ 250 (MHz)	G, J, K	39	2000	0.280	600	47.00	44	64.90	21	Orange
47 @ 200 (MHz)	G, J, K	38	2000	0.280	600	52.20	62	77.20	35	Brown
51 @ 200 (MHz)	G, J, K	38	1900	0.280	600	55.50	69	82.20	34	Blue
56 @ 200 (MHz)	G, J, K	38	1900	0.310	600	62.50	56	97.00	26	Red
62 @ 200 (MHz)	G, J, K	37	1800	0.340	600	68.00	40	110.00	10	Gray
68 @ 200 (MHz)	G, J, K	37	1700	0.340	600	80.50	54	168.00	21	Orange
72 @ 150 (MHz)	G, J, K	34	1700	0.490	400	82.00	53	135.00	20	Yellow
82 @ 150 (MHz)	G, J, K	34	1700	0.540	400	96.20	54	177.00	21	Green
91 @ 150 (MHz)	G, J, K	30	1700	0.500	400	110.00	50	416.40	6	Brown
100 @ 150 (MHz)	G, J, K	34	1400	0.580	400	124.00	49	319.50	13	Blue
110 @ 150 (MHz)	G, J, K	32	1350	0.610	300	138.00	43	342.70	15	Violet
120 @ 150 (MHz)	G, J, K	32	1300	0.650	300	166.00	39	529.30	8	Gray
130 @ 150 (MHz)	G, J, K	30	1400	0.720	300	185.00	60	-	-	White
140 @ 100 (MHz)	G, J, K	28	1300	0.870	280	190.00	80	-	-	Blue
150 @ 150 (MHz)	G, J, K	32	1300	0.950	280	230.00	25	-	-	White
160 @ 100 (MHz)	G, J, K	25	1300	1.400	280	215.00	20	-	-	Yellow
180 @ 100 (MHz)	G, J, K	25	1250	1.400	250	303.00	20	-	-	Black
220 @ 100 (MHz)	G, J, K	25	1200	1.600	250	440.00	15	-	-	Brown
260 @ 100 (MHz)	G, J, K	25	1000	2.000	200	469.00	21	-	-	Violet
270 @ 100 (MHz)	G, J, K	25	900	2.100	200	580.00	12	-	-	Red
280 @ 100 (MHz)	G, J, K	25	900	2.400	100	524.00	18	-	-	Green
300 @ 100 (MHz)	G, J, K	25	750	2.500	150	539.70	21	-	-	Orange
330 @ 100 (MHz)	G, J, K	25	900	3.800	100	440.00	15	-	-	Blue
390 @ 100 (MHz)	G, J, K	25	900	4.350	100	580.00	12	-	-	Yellow
470 @ 100 (MHz)	G, J, K	23	600	3.600	80	-	-	-	-	White

NOTE: For Mechanical Configurations, see page 7.

## ATC Part Number Code

**0603    WL    100    J    T**

EIA Case Size: 0402, 0603, 0805, 1008, 1206

Wire Wound Inductor

Inductance value in nH.

1st and 2nd digits are significant digits. 3rd digit is multiplier. R is decimal point.

The above part number refers to an ATC 0603 WL wire wound chip inductor, 10 nH, J (±5%) tolerance, in tape and reel packaging. Tighter tolerances are available. Consult factory.

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant, Tin Plated over Nickel Barrier.**

**Packaging:** T - Tape & Reel

**Tolerance:** See table below.

Inductance Tolerances			
Code	G	J	K
Tol.	± 2%	± 5%	± 10%

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# ATC 0805 WL SERIES WIRE WOUND CHIP INDUCTORS

Inductance (nH)	Tolerance Code	Q (MHz) min.	SRF (MHz) min.	RDC (Ohms) max.	IDC (mA) max.	Color Code
2.7 @ 250 (MHz)	J, K	80 @ 1500	7900	0.060	800	Brown
2.8 @ 250 (MHz)	J, K	80 @ 1500	7900	0.060	800	Gray
3.0 @ 250 (MHz)	J, K	65 @ 1500	7900	0.060	800	White
3.3 @ 250 (MHz)	J, K	50 @ 1500	7900	0.080	600	Black
5.6 @ 250 (MHz)	J, K	65 @ 1500	5500	0.080	600	Orange
6.2 @ 250 (MHz)	J, K	50 @ 1000	5500	0.110	600	Green
6.8 @ 250 (MHz)	J, K	50 @ 1000	5500	0.110	600	Brown
7.5 @ 250 (MHz)	J, K	50 @ 1000	4500	0.140	600	Green
8.2 @ 250 (MHz)	J, K	50 @ 1000	4700	0.120	600	Red
8.7 @ 250 (MHz)	J, K	50 @ 1000	3900	0.210	400	White
10 @ 250 (MHz)	G, J, K	60 @ 500	4200	0.100	600	Blue
12 @ 250 (MHz)	G, J, K	50 @ 500	4000	0.150	600	Orange
15 @ 250 (MHz)	G, J, K	50 @ 500	3400	0.170	600	Yellow
18 @ 250 (MHz)	G, J, K	50 @ 500	3300	0.200	600	Green
22 @ 250 (MHz)	G, J, K	55 @ 500	2600	0.220	500	Blue
24 @ 250 (MHz)	G, J, K	50 @ 500	2000	0.220	500	Gray
27 @ 250 (MHz)	G, J, K	55 @ 500	2500	0.250	500	Violet
33 @ 250 (MHz)	G, J, K	60 @ 500	2050	0.270	500	Gray
36 @ 250 (MHz)	G, J, K	55 @ 500	1700	0.270	500	Orange
39 @ 250 (MHz)	G, J, K	60 @ 500	2000	0.290	500	White
43 @ 200 (MHz)	G, J, K	60 @ 500	1650	0.340	500	Yellow
47 @ 200 (MHz)	G, J, K	60 @ 500	1650	0.310	500	Black
56 @ 200 (MHz)	G, J, K	60 @ 500	1550	0.340	500	Brown
68 @ 200 (MHz)	G, J, K	60 @ 500	1450	0.380	500	Red
72 @ 150 (MHz)	G, J, K	65 @ 500	1400	0.400	500	Green
82 @ 150 (MHz)	G, J, K	65 @ 500	1300	0.420	400	Orange
91 @ 150 (MHz)	G, J, K	65 @ 500	1200	0.480	400	Black
100 @ 150 (MHz)	G, J, K	65 @ 500	1200	0.460	400	Yellow
110 @ 150 (MHz)	G, J, K	50 @ 250	1000	0.480	400	Brown
120 @ 150 (MHz)	G, J, K	50 @ 250	1100	0.510	400	Green
150 @ 100 (MHz)	G, J, K	50 @ 250	920	0.560	400	Blue
180 @ 100 (MHz)	G, J, K	50 @ 250	870	0.640	400	Violet
200 @ 100 (MHz)	G, J, K	50 @ 250	860	0.660	400	Orange
220 @ 100 (MHz)	G, J, K	50 @ 250	850	0.700	400	Gray
240 @ 100 (MHz)	G, J, K	44 @ 250	690	1.000	350	Red
250 @ 100 (MHz)	G, J, K	45 @ 250	680	1.000	350	Green
270 @ 100 (MHz)	G, J, K	48 @ 250	650	1.300	350	White
300 @ 100 (MHz)	G, J, K	48 @ 250	620	1.200	330	Yellow
330 @ 100 (MHz)	G, J, K	48 @ 250	600	1.650	310	Black
360 @ 100 (MHz)	G, J, K	48 @ 250	580	1.450	300	Green
390 @ 100 (MHz)	G, J, K	48 @ 250	560	1.800	290	Brown
430 @ 50 (MHz)	G, J, K	33 @ 100	430	1.700	230	Blue
470 @ 50 (MHz)	G, J, K	22 @ 100	375	2.000	250	Red
560 @ 25 (MHz)	G, J, K	23 @ 50	340	2.100	230	Orange
600 @ 25 (MHz)	G, J, K	23 @ 50	260	1.600	450	White
620 @ 25 (MHz)	G, J, K	23 @ 50	220	2.200	210	Yellow
680 @ 25 (MHz)	G, J, K	23 @ 50	188	2.300	190	Green
750 @ 25 (MHz)	G, J, K	23 @ 50	200	2.300	180	Blue
820 @ 25 (MHz)	G, J, K	23 @ 50	200	2.350	180	Violet
910 @ 25 (MHz)	G, J, K	18 @ 50	120	1.900	170	Black
1000 @ 25 (MHz)	G, J, K	20 @ 50	100	2.500	170	Gray
1200 @ 25 (MHz)	G, J, K	18 @ 25	100	2.500	170	White
1500 @ 25 (MHz)	G, J, K	16 @ 25	100	2.500	170	Black
1800 @ 25 (MHz)	G, J, K	16 @ 7.9	80	2.500	170	Brown
2200 @ 25 (MHz)	G, J, K	16 @ 7.9	60	2.700	160	Red
2700 @ 25 (MHz)	G, J, K	16 @ 7.9	50	2.950	150	Orange
3300 @ 7.9 (MHz)	G, J, K	15 @ 7.9	40	4.400	90	Blue
4700 @ 7.9 (MHz)	G, J, K	15 @ 7.9	40	6.400	90	Green

NOTE: For Mechanical Configurations, see page 7.

## ATC Part Number Code

**0805    WL    100    K    T**

EIA Case Size: 0402, 0603, 0805, 1008, 1206

Wire Wound Inductor

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

The above part number refers to an ATC 0805 WL wire wound chip inductor, 10 nH, J ( $\pm 10\%$ ) tolerance, in tape and reel packaging. Tighter tolerances are available. Consult factory.

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant, Tin Plated over Nickel Barrier.**

**Packaging:** T - Tape & Reel

**Tolerance:** See table below.

Inductance Tolerances			
Code	G	J	K
Tol.	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$

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# ATC 1008 WL SERIES WIRE WOUND CHIP INDUCTORS

Inductance (nH)	Tolerance Code	Q (MHz)	SRF (MHz)	RDC (Ohms)	IDC (mA)	Color Code
		min.	min.	max.	max.	
4.7 @ 50 (MHz)	J, K	50 @ 1500	4000	0.15	1000	Green
5.6 @ 50 (MHz)	J, K	50 @ 1500	4000	0.15	1000	Black
10 @ 50 (MHz)	G, J, K	50 @ 500	4100	0.08	1000	Brown
12 @ 50 (MHz)	G, J, K	50 @ 500	3300	0.09	1000	Red
15 @ 50 (MHz)	G, J, K	50 @ 500	2500	0.11	1000	Orange
18 @ 50 (MHz)	G, J, K	50 @ 350	2400	0.12	1000	Yellow
22 @ 50 (MHz)	G, J, K	55 @ 350	2400	0.12	1000	Green
24 @ 50 (MHz)	G, J, K	55 @ 350	1900	0.12	1000	Blue
27 @ 50 (MHz)	G, J, K	55 @ 350	1600	0.13	1000	Violet
33 @ 50 (MHz)	G, J, K	60 @ 350	1600	0.14	1000	Gray
36 @ 50 (MHz)	G, J, K	60 @ 350	1600	0.15	1000	Orange
39 @ 50 (MHz)	G, J, K	60 @ 350	1500	0.15	1000	White
47 @ 50 (MHz)	G, J, K	65 @ 350	1500	0.16	1000	Black
56 @ 50 (MHz)	G, J, K	65 @ 350	1300	0.18	1000	Brown
62 @ 50 (MHz)	G, J, K	65 @ 350	1250	0.20	1000	Blue
68 @ 50 (MHz)	G, J, K	65 @ 350	1300	0.20	1000	Red
75 @ 50 (MHz)	G, J, K	60 @ 350	1100	0.21	1000	White
82 @ 50 (MHz)	G, J, K	60 @ 350	1000	0.22	1000	Orange
100 @ 25 (MHz)	G, J, K	60 @ 350	1000	0.56	650	Yellow
120 @ 25 (MHz)	G, J, K	60 @ 350	950	0.63	650	Green
150 @ 25 (MHz)	G, J, K	45 @ 100	850	0.70	800	Blue
180 @ 25 (MHz)	G, J, K	45 @ 100	750	0.77	620	Violet
220 @ 25 (MHz)	G, J, K	45 @ 100	700	0.84	500	Gray
240 @ 25 (MHz)	G, J, K	45 @ 100	650	0.88	500	White
270 @ 25 (MHz)	G, J, K	45 @ 100	600	0.91	690	Black
300 @ 25 (MHz)	G, J, K	45 @ 100	585	1.00	450	Brown
330 @ 25 (MHz)	G, J, K	45 @ 100	570	1.05	450	Red
360 @ 25 (MHz)	G, J, K	45 @ 100	530	1.10	470	Orange
390 @ 25 (MHz)	G, J, K	45 @ 100	500	1.12	630	Yellow
430 @ 25 (MHz)	G, J, K	45 @ 100	480	1.15	470	Green
470 @ 25 (MHz)	G, J, K	45 @ 100	450	1.19	470	Blue
560 @ 25 (MHz)	G, J, K	45 @ 100	415	1.33	580	Violet
620 @ 25 (MHz)	G, J, K	45 @ 100	375	1.40	300	Gray
680 @ 25 (MHz)	G, J, K	45 @ 100	375	1.47	540	White
750 @ 25 (MHz)	G, J, K	45 @ 100	360	1.54	360	Black
820 @ 25 (MHz)	G, J, K	45 @ 100	350	1.61	400	Brown
910 @ 25 (MHz)	G, J, K	35 @ 50	320	1.68	380	Red
1000 @ 25 (MHz)	G, J, K	35 @ 50	290	1.75	370	Orange
1200 @ 7.9 (MHz)	G, J, K	35 @ 50	250	2.00	310	Yellow
1500 @ 7.9 (MHz)	G, J, K	28 @ 50	200	2.30	330	Green
1800 @ 7.9 (MHz)	G, J, K	28 @ 50	160	2.60	300	Blue
2200 @ 7.9 (MHz)	G, J, K	28 @ 50	160	2.80	280	Violet
2700 @ 7.9 (MHz)	G, J, K	22 @ 25	140	3.20	290	Gray
3300 @ 7.9 (MHz)	G, J, K	22 @ 25	110	3.40	290	White
3900 @ 7.9 (MHz)	G, J, K	20 @ 25	100	3.60	260	Black
4700 @ 7.9 (MHz)	G, J, K	18 @ 25	90	4.00	260	Brown
5600 @ 7.9 (MHz)	G, J, K	16 @ 7.96	20	4.00	240	Red
6800 @ 7.9 (MHz)	G, J, K	15 @ 7.96	40	4.90	200	Orange
8200 @ 7.9 (MHz)	G, J, K	15 @ 7.96	25	6.00	170	Yellow
10000 @ 2.52 (MHz)	G, J, K	16 @ 7.96	20	9.00	150	Green
12000 @ 2.52 (MHz)	G, J, K	15 @ 7.96	18	10.5	130	Blue
15000 @ 2.52 (MHz)	G, J, K	15 @ 7.96	15	11.5	120	Violet

NOTE: For Mechanical Configurations, see page 7.

## ATC Part Number Code

**1008**    **WL**    **100**    **K**    **T**

**EIA Case Size:** 0402, 0603, 0805, 1008, 1206  
**Wire Wound Inductor**  
**Inductance value in nH.** 1st and 2nd digits are significant digits. 3rd digit is multiplier. R is decimal point.  
 The above part number refers to an ATC 1008 WL wire wound chip inductor, 10 nH, J ( $\pm 10\%$ ) tolerance, in tape and reel packaging. Tighter tolerances are available. Consult factory.  
 Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant**, Tin Plated over Nickel Barrier.

**Packaging:** T - Tape & Reel  
**Tolerance:** See table below.

Inductance Tolerances			
Code	G	J	K
Tol.	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$

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# ATC 1206 WL SERIES WIRE WOUND CHIP INDUCTORS

Inductance (nH)	Tolerance Code	Q (MHz) min.	SRF (MHz) min.	RDC (Ohms) max.	IDC (mA) max.	Color Code
6.8 @ 100 (MHz)	J, K	30 @ 300	5500	.070	1000	Brown
10 @ 100 (MHz)	J, K	40 @ 300	4000	.080	1000	Red
12 @ 100 (MHz)	J, K	40 @ 300	3200	.080	1000	Orange
15 @ 100 (MHz)	J, K	40 @ 300	3200	.100	1000	Yellow
18 @ 100 (MHz)	J, K	50 @ 300	2800	.100	1000	Green
22 @ 100 (MHz)	J, K	50 @ 300	2200	.100	1000	Blue
24 @ 100 (MHz)	J, K	50 @ 300	2000	.100	1000	Red
27 @ 100 (MHz)	G, J, K	50 @ 300	1800	.110	1000	Violet
33 @ 100 (MHz)	G, J, K	55 @ 300	1800	.110	1000	Gray
39 @ 100 (MHz)	G, J, K	55 @ 300	1800	.120	1000	White
47 @ 100 (MHz)	G, J, K	55 @ 300	1500	.130	1000	Black
56 @ 100 (MHz)	G, J, K	55 @ 300	1450	.140	1000	Brown
68 @ 100 (MHz)	G, J, K	55 @ 300	1200	.260	950	Red
82 @ 100 (MHz)	G, J, K	55 @ 300	1200	.210	920	Orange
91 @ 100 (MHz)	G, J, K	55 @ 300	1100	.240	900	White
100 @ 100 (MHz)	G, J, K	55 @ 300	1100	.260	850	Yellow
120 @ 100 (MHz)	G, J, K	55 @ 300	750	.260	800	Green
150 @ 100 (MHz)	G, J, K	60 @ 300	950	.310	750	Blue
180 @ 50 (MHz)	G, J, K	55 @ 300	900	.430	700	Violet
220 @ 50 (MHz)	G, J, K	55 @ 300	760	.500	670	Gray
270 @ 50 (MHz)	G, J, K	40 @ 300	740	.560	630	White
300 @ 50 (MHz)	G, J, K	50 @ 150	680	.600	600	Green
330 @ 50 (MHz)	G, J, K	45 @ 150	650	.620	590	Black
360 @ 50 (MHz)	G, J, K	45 @ 150	600	.650	550	Blue
390 @ 50 (MHz)	G, J, K	45 @ 150	600	.750	530	Brown
470 @ 50 (MHz)	G, J, K	45 @ 150	550	1.30	490	Red
560 @ 35 (MHz)	G, J, K	45 @ 150	470	1.34	460	Orange
620 @ 35 (MHz)	G, J, K	45 @ 150	470	1.58	460	Gray
680 @ 35 (MHz)	G, J, K	45 @ 150	450	1.58	430	Yellow
750 @ 35 (MHz)	G, J, K	45 @ 150	440	2.25	320	White
820 @ 35 (MHz)	G, J, K	45 @ 150	420	1.82	400	Green
910 @ 35 (MHz)	G, J, K	45 @ 150	410	2.95	310	Green
1000 @ 35 (MHz)	G, J, K	45 @ 150	400	2.80	320	Blue
1200 @ 35 (MHz)	G, J, K	45 @ 150	380	3.20	300	Violet

NOTE: For Mechanical Configurations, see page 7.

## ATC Part Number Code

**1206    WL    100    K    T**

EIA Case Size: 0402, 0603, 0805, 1008, 1206

Wire Wound Inductor

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

The above part number refers to an ATC 1206 WL wire wound chip inductor, 10 nH, J ( $\pm 10\%$ ) tolerance, in tape and reel packaging. Tighter tolerances are available. Consult factory.

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant, Tin Plated over Nickel Barrier.**

Packaging: T - Tape & Reel

Tolerance: See table below.

Inductance Tolerances			
Code	G	J	K
Tol.	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$

1206 Series available by special order non stock item, consult factory for availability.

## A M E R I C A N   T E C H N I C A L   C E R A M I C S

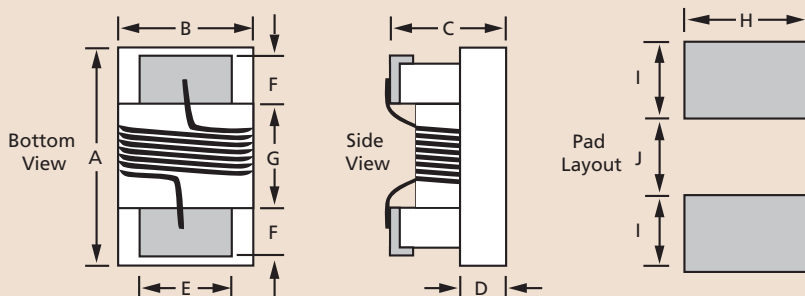
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# ATC WL SERIES WIRE WOUND CHIP INDUCTORS

## Mechanical Configurations



WL Case Size/ Series	A max.	B max.	C max.	D ref.	E	F	G	H	I	J
0402	.050 (1.27)	.030 (0.76)	.024 (0.61)	.006 (0.15)	.020 (0.51)	.009 (0.23)	.022 (0.56)	.026 (0.66)	.019 (0.50)	.018 (0.46)
0603	.071 (1.80)	.044 (1.12)	.040 (1.02)	.015 (0.38)	.030 (0.76)	.013 (0.33)	.034 (0.86)	.040 (1.02)	.025 (0.64)	.025 (0.64)
0805	0.09 (2.29)	.068 (1.73)	0.06 (1.52)	0.02 (0.51)	0.05 (1.27)	0.02 (0.51)	0.04 (1.02)	0.07 (1.78)	0.04 (1.02)	0.03 (0.76)
1008	0.16 (2.92)	0.11 (2.79)	0.08 (2.03)	0.02 (0.51)	0.08 (2.03)	0.02 (0.51)	0.06 (1.52)	0.10 (2.54)	0.04 (1.02)	0.05 (1.27)
1206	0.14 (3.56)	.085 (2.16)	0.06 (1.52)	0.02 (0.51)	0.06 (1.52)	0.02 (0.51)	0.08 (2.03)	0.08 (2.03)	0.04 (1.02)	0.07 (1.78)

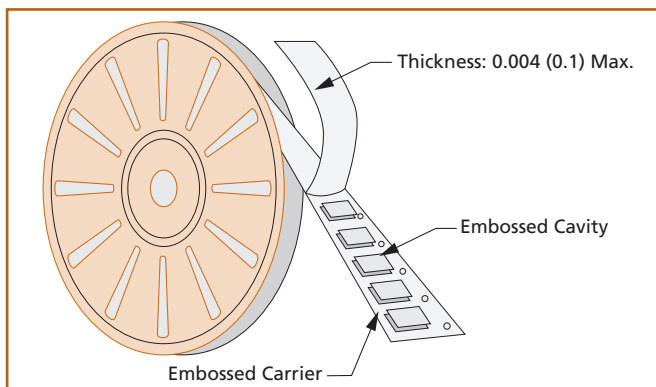
Inches (mm)

Terminations for all WL Series Inductor Case Sizes are **Lead-Free, RoHS Compliant**, Tin Plated over Nickel Barrier.

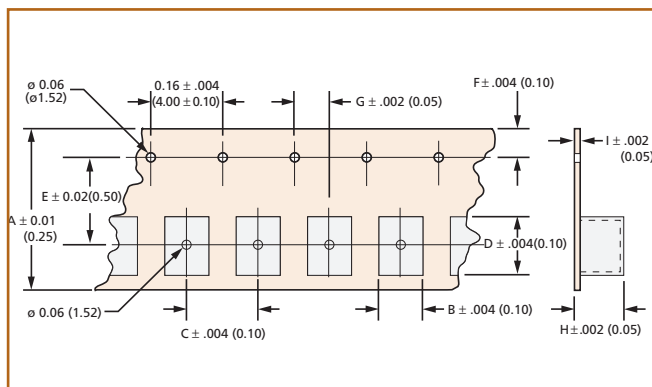
## Tape and Reel Specifications

ATC WL Series Inductor Products are supplied on tape and reel in standard quantities of 2000 and 4000 parts per reel (see table below), making them ideal for automated pick and place manufacturing applications.

### Packaging



### Tape Dimensions



WL Case Size / Series	A Dim.	B Dim.	C Dim.	D Dim.	E Dim.	F Dim.	G Dim.	H Dim.	I Dim.	Pcs. / per reel
0402	0.32 (8.00)	.044 (1.10)	.080 (2.00)	.070 (1.75)	.140 (3.50)	.070 (1.75)	.080 (2.00)	.024 (0.60)	.010 (0.25)	4000
0603	0.32 (8.00)	.044 (1.10)	0.16 (4.00)	.070 (1.75)	.140 (3.50)	.070 (1.75)	.080 (2.00)	.042 (1.05)	.010 (0.25)	4000
0805	0.32 (8.00)	.075 (1.88)	0.16 (4.00)	.095 (2.38)	.140 (3.50)	.070 (1.75)	.080 (2.00)	.054 (1.35)	.008 (0.20)	2000
1008	0.32 (8.00)	.109 (2.73)	0.16 (4.00)	.115 (2.88)	.140 (3.50)	.070 (1.75)	.080 (2.00)	.090 (2.25)	.008 (0.20)	2000
1206	0.32 (8.00)	.109 (2.73)	0.16 (4.00)	.115 (2.88)	.140 (3.50)	.070 (1.75)	.080 (2.00)	0.10 (2.50)	.008 (0.20)	2000

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w w w . a t c e r a m i c s . c o m

# ATC WL SERIES WIRE WOUND CHIP INDUCTORS

## Inductor Quality Assurance:

ATC ensures that all of its contracted component manufacturing facilities are ISO 9000 Registered, and that an outgoing product quality level of better than 100 PPM is maintained. ATC'S WL Series products have successfully passed the most rigorous environmental, mechanical and electrical validations. All manufacturing lots receive a tollgate sample inspection of the primary parameter values used to specify an inductor. The test equipment and fixtures listed below in the RF Measurement Table are used to verify RF performance parameters for ATC'S WL Series Inductor Products.

### Quality and Reliability Testing - Environmental

Item	Examination	Test Method	Performance Specs.
1	High Temperature Storage	Inductors are subjected to +125°C for 48 hours, then tested after 1 hour at room temperature.	<ul style="list-style-type: none"> <li>Inductors shall not have a shorted or open winding</li> <li>Change in inductance shall not change more than ±5%.</li> <li>Change in Q shall not change more than ±10%.</li> </ul>
2	Low Temperature Storage	Inductors are subjected to -40°C for 48 hours, then tested after 1 hour at room temperature	
3	Thermal Shock	Inductors are subjected to 10 cycles of -40°C for 30 min. and +125°C for 30 min., then tested after 1 hour at room temperature.	
4	Moisture Resistance	Inductors are subjected to 10 25-hour cycles from 25°C to 65°C at 80 to 90% RH, and are exposed to -10°C for 3 hours during one of the cycles. Samples are then tested after 2 hours at room temperature.	
5	Life Test	Inductors are subjected to 110°C for 1,000 hours at rated current. Samples are then tested after 1 hour at room temperature.	

### Quality and Reliability Testing - Mechanical

Item	Examination	Test Method	Performance Specifications
1	Solderability Dip	Dip terminals into molten Sn63 at 235°C for 5 sec.	Terminals shall exhibit a continuous solder coating free of defects for a minimum of 95% of surface.
2	Adhesion	Reflow solder to circuit lands. A force gauge is applied to side of component	1 lb. for 0402, 2 lbs. for 0603, 4 lbs. for all larger parts
3	Vibration	10 to 2000 Hz, 5 Gs for 20 minutes, 12 cycles each, 3 orientations	1. No mechanical damage 2. Change in L less than ±5% 3. Change in Q less than ±10%
4	Mechanical Shock	MIL-STD-202, method 213, condition A. Test mounted parts 2 axes 6 times (50 G's, 11 ms, half-sine).	1. No mechanical damage 2. Change in L less than ±5% 3. Change in Q less than ±10%

### RF Test Measurements

Measured Parameter	Test Equipment	Fixture(s)
Inductance (L)	HP 4291B Impedance Analyzer	Bottom Electrode SMD Test Fixture, Model 16197A
Quality Factor (Q)		
Self Resonant Frequency (SRF)	HP 8722D Vector Network Analyzer	Anritsu Universal test fixture Model 3680K with substrate DUT adapters
DC Resistance (DCR)	Micro-ohm meter	Four Wire Kelvin Probes

## Inductor Design Kits

ATC'S WL Series Inductor Design Kits contain a selection of standard inductance values for circuit prototyping.

Kit #	Item #	Description	Inductor Value range (nH)	Inductor Values (nH)	Tol.	Price
Kit 51	DK0051	0402 WL Chip Inductors 23 different values, 15 pieces per value	1.0nH to 56nH	1.0	10%	\$120.00
				2.0, 2.2, 3.3, 3.6, 3.9, 5.1, 5.6, 6.2, 7.5, 8.2, 9.0, 10, 11, 12, 15, 19, 23, 27, 36, 40, 47, 56	5%	
Kit 52	DK0052	0603 WL Chip Inductors 42 different values, 15 pieces per value	1.6nH to 390nH	1.6, 1.8, 3.3, 3.6, 3.9, 4.3, 4.7, 5.1, 5.6, 6.8, 7.5, 8.2, 8.7, 9.5, 10, 11, 12, 15, 16, 18, 22, 24, 27, 30, 33, 36, 39, 43, 47, 56, 68, 72, 82, 100, 110, 120, 150, 180, 220, 270, 330, 390	5%	\$120.00
Kit 53	DK0053	0805 WL Chip Inductors 45 different values, 15 pieces per value	2.8nH to 2700nH	2.8, 3.0, 3.3, 5.6, 6.8, 7.5, 8.2, 10, 12, 15, 18, 22, 24, 27, 33, 36, 39, 43, 47, 56, 68, 82, 91, 100, 110, 120, 150, 180, 220, 240, 270, 330, 390, 470, 560, 620, 680, 750, 820, 1000, 1200, 1500, 1800, 2200, 2700	5%	\$120.00
Kit 54	DK0054	1008 WL Chip Inductors 42 different values, 15 pieces per value	10nH to 15,000nH	10, 12, 15, 18, 22, 27, 33, 39, 47, 56, 68, 82, 100, 120, 150, 180, 220, 270, 330, 390, 470, 560, 620, 680, 750, 820, 910, 1000, 1200, 1500, 1800, 2200, 2700, 3300, 3900, 4700, 5600, 6800, 8200, 10,000, 12,000, 15,000	5%	\$120.00

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Single Layer  
Capacitors



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