

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

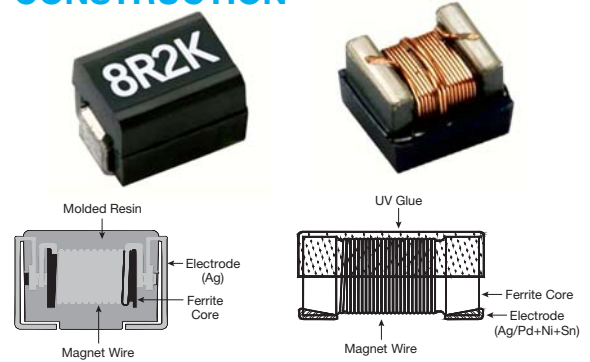
### FEATURES

- Very strong solderability by reflow soldering, soldering iron or wave soldering
- Highly accurate dimensions
- Automated mounting capable
- Terminals are highly resistant to pull forces
- Highly resistant to mechanical shocks and pressure
- Highly reliable in sudden temperature and humidity changes
- Superb Q characteristics

### APPLICATIONS

- DC/DC Converters
- LCD Televisions
- Personal Computers
- Tablets
- Cell Phones
- Automotive Sound Systems
- Mobile Communications Devices

### CONSTRUCTION



These revolutionary, high reliability wound chip inductors have been developed in response to the trend toward higher densities in electronic equipment.

With metal terminals and a body of heat resistant resin, these inductors offer many superior features.

### DIMENSIONS

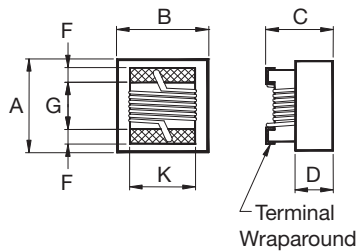


Figure 1

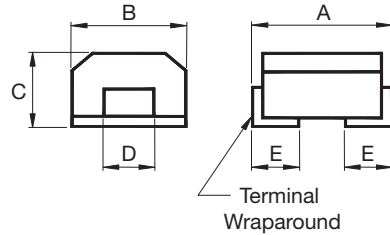


Figure 2

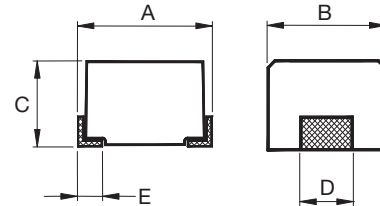
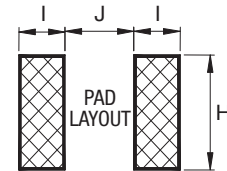
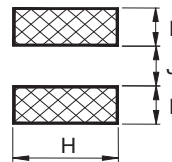
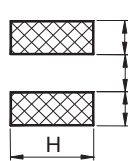


Figure 3



mm (inches)

Style	Size (inch)	Figure	A Max.	B Max.	C Max.	D Ref.	E	F	G	H	I	J	K	Weight (g) (1000pcs)
G	0603	1	1.80 (0.071)	1.20 (0.047)	1.00 (0.039)	0.45 (0.018)	-	0.33 (0.013)	0.95 (0.037)	1.02 (0.040)	1.64 (0.065)	0.64 (0.025)	1.05 (0.042)	9.6
G	0805	1	2.40 (0.094)	1.71 (0.067)	1.45 (0.057)	0.65 (0.026)	-	0.44 (0.017)	1.02 (0.040)	1.78 (0.070)	1.02 (0.040)	0.76 (0.030)	1.27 (0.050)	14
G	1008	1	2.92 (0.115)	2.79 (0.110)	2.10 (0.083)	1.20 (0.047)	-	0.45 (0.018)	1.52 (0.060)	2.54 (0.100)	1.02 (0.040)	1.27 (0.050)	2.03 (0.080)	30
G	1210	2	3.50 (0.138)	2.80 (0.110)	2.50 (0.098)	1.60 (0.063)	0.80 (0.031)	-	-	2.00 (0.079)	1.20 (0.047)	1.60 (0.063)	-	40
G	1812	2	4.80 (0.189)	3.50 (0.138)	3.50 (0.138)	1.80 (0.071)	1.10 (0.043)	-	-	2.80 (0.110)	1.50 (0.059)	3.00 (0.118)	-	160
G	2220	3	5.90 (0.232)	5.20 (0.205)	4.30 (0.169)	4.00±0.2 (0.157±0.008)	0.70±0.20 (0.028±0.008)	-	-	4.50 (0.177)	2.00 (0.079)	4.00 (0.157)	-	300
R	0805	1	2.29 (0.090)	1.73 (0.068)	1.00 (0.039)	0.51 (0.020)	-	0.44 (0.017)	1.02 (0.040)	1.78 (0.070)	1.02 (0.040)	0.76 (0.030)	1.27 (0.050)	14
H	0603	1	1.80 (0.071)	1.20 (0.047)	1.10 (0.043)	0.45 (0.018)	-	0.33 (0.013)	0.95 (0.037)	1.02 (0.040)	1.64 (0.065)	0.64 (0.025)	1.05 (0.041)	9.6
H	0805	1	2.40 (0.094)	1.71 (0.067)	1.45 (0.057)	0.65 (0.026)	-	0.44 (0.017)	1.02 (0.040)	1.78 (0.070)	1.02 (0.040)	0.76 (0.030)	1.27 (0.050)	14
H	1008	1	2.92 (0.115)	2.79 (0.110)	2.10 (0.083)	1.30 (0.051)	-	0.45 (0.018)	1.52 (0.060)	2.54 (0.100)	1.02 (0.040)	1.27 (0.050)	2.03 (0.080)	30
H	1812	2	4.80 (0.189)	3.50 (0.138)	3.50 (0.138)	1.40 (0.055)	1.10 (0.043)	-	-	2.80 (0.110)	1.50 (0.059)	3.00 (0.118)	-	160
H	2220	3	5.90 (0.232)	5.20 (0.205)	4.30 (0.169)	4.00±0.20 (0.157±0.008)	0.70±0.20 (0.028±0.008)	-	-	4.50 (0.177)	2.00 (0.079)	4.00 (0.157)	-	300

# Wire Wound Chip Inductor (Ferrite)



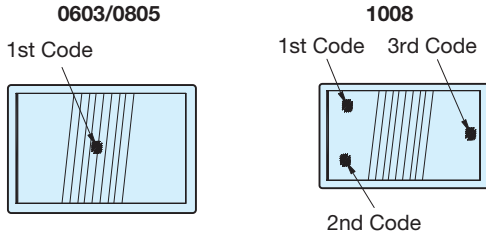
## LCWF Series

### COLOR CODING

0603 / 0805 / 1008 Type

Because of small sizes, these parts are marked with a single color dot.

The inductance value represented by the dot is shown on the data page for each type.



### HOW TO ORDER

<b>LC</b>	<b>WF</b>	<b>0603</b>	<b>M</b>	<b>101</b>	<b>G</b>	<b>T</b>	<b>A</b>	<b>R</b>
<b>Family</b>	<b>Series</b>	<b>Size</b>	<b>Tolerance</b>	<b>Inductance</b>	<b>Style</b>	<b>Termination</b>	<b>Special</b>	<b>Packaging</b>
LC = Chip Inductor	WF = Wire Wound Ferrite	0603 0805 1008 1210 1812 2220	J = 5% K = 10% M = 20%	39N = 0.039μH R39 = 0.390μH 3R9 = 3.90μH 390 = 39μH 391 = 390μH 392 = 3900μH 103 = 10,000μH	G = Standard H = High Current/ High Q R = Low Profile	T = Sn Plating	A = Standard	R = 7" Reel

### STANDARD ELECTRICAL SPECIFICATIONS

0603								
Codes	Inductance (μH)	Tolerance	Test Freq. (MHz)	Q Typ.	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code
1R0	1.0	±10, ±20%	7.96	16	390	0.416	860	Black
1R5	1.5	±10, ±20%	7.96	16	160	0.520	720	Brown
1R8	1.8	±10, ±20%	7.96	16	121	0.559	640	Red
2R2	2.2	±10, ±20%	7.96	16	103	0.728	600	Orange
2R7	2.7	±10, ±20%	7.96	16	72	0.806	540	Yellow
3R3	3.3	±10, ±20%	7.96	16	66	0.910	500	Green
3R9	3.9	±10, ±20%	7.96	16	61	1.079	460	Blue
4R7	4.7	±10, ±20%	7.96	16	51	1.261	400	Violet
5R6	5.6	±10, ±20%	7.96	16	47	1.430	380	Gray
6R8	6.8	±10, ±20%	7.96	16	43	1.950	340	White
8R2	8.2	±10, ±20%	7.96	16	40	2.184	300	Black
100	10	±10, ±20%	2.52	14	36	2.405	280	Brown
120	12	±10, ±20%	2.52	14	32	2.964	260	Red
150	15	±10, ±20%	2.52	14	29	3.380	240	Orange
180	18	±10, ±20%	2.52	14	28	3.770	220	Yellow
220	22	±10, ±20%	2.52	14	24	4.693	200	Green
270	27	±10, ±20%	2.52	14	20	6.760	140	Blue
330	33	±10, ±20%	2.52	14	15	8.580	120	Violet

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A



# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 0805

Codes	Inductance (μH)	Tolerance	Test Freq. (MHz)	Q Typ.	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code
R11	0.11	±10%	25.2	25	1200	0.05	2000	White
R12	0.12	±5, ±10%	25.2	20	700	0.18	1100	Violet
R15	0.15	±5, ±10%	25.2	20	900	0.18	1100	Gray
R18	0.18	±5, ±10%	25.2	20	600	0.20	800	Black
R22	0.22	±5, ±10%	25.2	20	550	0.25	700	Brown
R27	0.27	±5, ±10%	25.2	20	550	0.38	700	Red
R33	0.33	±5, ±10%	25.2	20	550	0.35	650	Orange
R39	0.39	±5, ±10%	25.2	20	420	0.35	600	Yellow
R47	0.47	±5, ±10%	25.2	20	350	0.45	600	Green
R56	0.56	±5, ±10%	25.2	20	300	0.45	550	Blue
R62	0.62	±5, ±10%	25.2	30	640	0.45	980	Brown
R68	0.68	±5, ±10%	25.2	20	300	0.60	500	Violet
R82	0.82	±5, ±10%	25.2	20	300	0.55	500	Gray
R91	0.91	±5, ±10%	25.2	30	500	0.55	900	Yellow
1R0	1.0	±5, ±10%	7.96	15	280	0.80	450	White
1R2	1.2	±5, ±10%	7.96	15	280	0.90	400	Black
1R5	1.5	±5, ±10%	7.96	15	250	1.05	350	Brown
1R8	1.8	±5, ±10%	7.96	15	120	1.00	350	Red
2R2	2.2	±5, ±10%	7.96	15	110	1.10	320	Orange
2R7	2.7	±5, ±10%	7.96	15	70	1.20	320	Yellow
3R3	3.3	±5, ±10%	7.96	15	60	1.50	300	Green
3R9	3.9	±5, ±10%	7.96	15	55	1.75	300	Blue
4R7	4.7	±5, ±10%	7.96	15	45	2.10	200	Violet
5R6	5.6	±5, ±10%	7.96	15	40	2.30	250	Gray
6R8	6.8	±5, ±10%	7.96	15	36	2.70	200	White
8R2	8.2	±5, ±10%	7.96	15	33	3.30	180	Black
100	10	±5, ±10%	2.52	10	30	4.50	180	Brown
120	12	±5, ±10%	2.52	16	37	2.80	220	Red
150	15	±5, ±10%	2.52	16	30	3.80	200	Orange
180	18	±5, ±10%	2.52	16	23	4.48	180	Yellow
220	22	±5, ±10%	2.52	16	20	6.30	160	Green
270	27	±5, ±10%	2.52	16	19	6.85	140	Blue
330	33	±5, ±10%	2.52	16	18	7.60	120	Violet
390	39	±5, ±10%	2.52	15	16	8.20	100	Gray

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 1008

Codes	Inductance (µH)	Tolerance	Test Freq. (MHz)	Q Typ.	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code		
R12	0.12	±5, ±10%	25.2	26	800	0.30	1000	Brown	Red	Brown
R18	0.18	±5, ±10%	25.2	30	600	0.30	960	Red	Gray	Brown
R20	0.20	±5, ±10%	25.2	30	735	0.30	960	Red	Black	Brown
R22	0.22	±5, ±10%	25.2	27	600	0.40	880	Red	Red	Brown
R27	0.27	±5, ±10%	25.2	29	425	0.42	900	Red	Violet	Brown
R33	0.33	±5, ±10%	25.2	30	400	0.42	900	Orange	Orange	Brown
R39	0.39	±5, ±10%	25.2	30	375	0.45	700	Orange	White	Brown
R47	0.47	±5, ±10%	25.2	30	350	0.50	900	Yellow	Violet	Brown
R56	0.56	±5, ±10%	25.2	30	325	0.55	850	Green	Blue	Brown
R62	0.62	±5, ±10%	25.2	30	460	0.55	900	Blue	Red	Brown
R68	0.68	±5, ±10%	25.2	30	300	0.55	800	Blue	Gray	Brown
R75	0.75	±5, ±10%	25.2	30	420	0.65	880	Violet	Green	Brown
R82	0.82	±5, ±10%	25.2	30	260	0.65	700	Gray	Red	Brown
R91	0.91	±5, ±10%	25.2	30	400	0.65	840	White	Brown	Brown
1R0	1.0	±5, ±10%	7.96	25	245	0.60	600	Brown	Black	Red
1R2	1.2	±5, ±10%	7.96	25	230	0.74	600	Brown	Red	Red
1R5	1.5	±5, ±10%	7.96	25	182	0.85	550	Brown	Green	Red
1R8	1.8	±5, ±10%	7.96	25	135	0.92	500	Brown	Gray	Red
2R2	2.2	±5, ±10%	7.96	25	105	1.10	500	Red	Red	Red
2R7	2.7	±5, ±10%	7.96	25	70	1.22	350	Red	Violet	Red
3R3	3.3	±5, ±10%	7.96	25	55	1.37	350	Orange	Orange	Red
3R9	3.9	±5, ±10%	7.96	25	48	1.66	310	Orange	White	Red
4R7	4.7	±5, ±10%	7.96	25	43	1.68	300	Yellow	Violet	Red
5R6	5.6	±5, ±10%	7.96	25	42	1.75	300	Green	Blue	Red
6R8	6.8	±5, ±10%	7.96	25	39	1.85	300	Blue	Gray	Red
8R2	8.2	±5, ±10%	7.96	25	36	2.00	250	Gray	Red	Red
100	10	±5, ±10%	2.52	20	33	2.32	250	Brown	Black	Orange
120	12	±5, ±10%	2.52	15	28	2.99	200	Brown	Red	Orange
150	15	±5, ±10%	2.52	15	24	3.42	200	Brown	Green	Orange
180	18	±5, ±10%	2.52	15	20	4.65	180	Brown	Gray	Orange
220	22	±5, ±10%	2.52	15	18	5.12	180	Red	Red	Orange
270	27	±5, ±10%	2.52	15	17	5.76	160	Red	Violet	Orange
330	33	±5, ±10%	2.52	15	16	6.44	120	Orange	Orange	Orange
390	39	±5, ±10%	2.52	15	15	6.85	120	Orange	White	Orange
470	47	±5, ±10%	2.52	14	13	9.94	110	Yellow	Violet	Orange
560	56	±5, ±10%	2.52	14	10	10.7	90	Green	Blue	Orange
680	68	±5, ±10%	2.52	14	8	12.8	90	Blue	Gray	Orange
820	82	±5, ±10%	2.52	14	8	18.3	80	Gray	Red	Orange
101	100	±5, ±10%	1	8	7	19.6	120	Brown	Black	Orange

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A



# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 1210

Codes	Inductance (μH)	Tolerance	Test Freq. (MHz)	Q. Min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
R18	0.18	±20%	25.2	30	400	0.28	450
R22	0.22	±20%	25.2	30	350	0.32	450
R27	0.27	±20%	25.2	30	320	0.36	450
R33	0.33	±20%	25.2	30	300	0.40	450
R39	0.39	±20%	25.2	30	250	0.45	450
R47	0.47	±20%	25.2	30	220	0.50	450
R56	0.56	±20%	25.2	30	180	0.55	450
R68	0.68	±20%	25.2	30	160	0.60	450
R82	0.82	±20%	25.2	30	140	0.65	450
1R0	1.0	±10%	7.96	30	120	0.70	400
1R2	1.2	±10%	7.96	30	100	0.75	390
1R5	1.5	±10%	7.96	30	85	0.85	370
1R8	1.8	±10%	7.96	30	80	0.90	350
2R2	2.2	±10%	7.96	30	75	1.00	320
2R7	2.7	±10%	7.96	30	70	1.10	290
3R3	3.3	±10%	7.96	30	60	1.20	260
3R9	3.9	±10%	7.96	30	55	1.30	250
4R7	4.7	±10%	7.96	30	50	1.50	220
5R6	5.6	±10%	7.96	30	45	1.60	200
6R8	6.8	±10%	7.96	30	40	1.80	180
8R2	8.2	±10%	7.96	30	35	2.00	170
100	10	±10%	2.52	30	30	2.10	150
120	12	±10%	2.52	30	20	2.50	140
150	15	±10%	2.52	30	20	2.80	130
180	18	±10%	2.52	30	20	3.30	120
220	22	±10%	2.52	30	20	3.70	110
270	27	±10%	2.52	30	20	5.00	80
330	33	±10%	2.52	30	17	5.60	70
390	39	±10%	2.52	30	16	6.40	65
470	47	±10%	2.52	30	15	7.00	60
560	56	±10%	2.52	30	13	8.00	55
680	68	±10%	2.52	30	12	9.00	50
820	82	±10%	2.52	30	11	10.00	45
101	100	±10%	0.796	20	10	10.00	40
121	120	±10%	0.796	20	10	11.00	70
151	150	±10%	0.796	20	8	15.00	65
181	180	±10%	0.796	20	7	17.00	60
221	220	±10%	0.796	20	7	21.00	50

Test Equipment: L, Q: HP4291 for 0.18μH~82μH; HP4284 for 100μH~220μH SRF: HP4291 RDC: Agilent

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 1812

Codes	Inductance (μH)	Tolerance	Test Freq. (MHz)	Q. Min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
R18	0.18	±20%	25.2	30	220	0.24	700
R22	0.22	±20%	25.2	30	200	0.25	665
R27	0.27	±20%	25.2	30	180	0.26	635
R33	0.33	±20%	25.2	30	165	0.28	605
R39	0.39	±20%	25.2	30	150	0.30	575
R47	0.47	±20%	25.2	30	145	0.32	545
R56	0.56	±20%	25.2	30	140	0.36	520
R68	0.68	±20%	25.2	30	135	0.40	500
R82	0.82	±20%	25.2	30	130	0.45	475
1R0	1.0	±10%	7.96	50	100	0.50	450
1R2	1.2	±10%	7.96	50	80	0.55	430
1R5	1.5	±10%	7.96	50	70	0.60	410
1R8	1.8	±10%	7.96	50	60	0.65	390
2R2	2.2	±10%	7.96	50	55	0.70	380
2R7	2.7	±10%	7.96	50	50	0.75	370
3R3	3.3	±10%	7.96	50	45	0.80	355
3R9	3.9	±10%	7.96	50	40	0.90	330
4R7	4.7	±10%	7.96	50	35	1.00	315
5R6	5.6	±10%	7.96	50	33	1.10	300
6R8	6.8	±10%	7.96	50	27	1.20	285
8R2	8.2	±10%	7.96	50	25	1.40	270
100	10	±10%	2.52	50	20	1.60	250
120	12	±10%	2.52	50	18	2.00	225
150	15	±10%	2.52	50	17	2.50	200
180	18	±10%	2.52	50	15	2.80	190
220	22	±10%	2.52	50	13	3.20	180
270	27	±10%	2.52	50	12	3.60	170
330	33	±10%	2.52	50	11	4.00	160
390	39	±10%	2.52	50	10	4.50	150
470	47	±10%	2.52	50	10	5.00	140
560	56	±10%	2.52	50	9	5.50	135
680	68	±10%	2.52	50	9	6.00	130
820	82	±10%	2.52	50	8	7.00	120
101	100	±10%	0.796	40	8	8.00	110
121	120	±10%	0.796	40	6	8.00	110
151	150	±10%	0.796	40	5	9.00	105
181	180	±10%	0.796	40	5	9.50	102
221	220	±10%	0.796	40	4	10.0	100
271	270	±10%	0.796	30	4	15.0	92
331	330	±10%	0.796	30	3.5	15.0	85
391	390	±10%	0.796	30	3	18.0	80
471	470	±10%	0.796	30	3	26.0	62
561	560	±10%	0.796	30	3	30.0	50
681	680	±10%	0.796	30	3	30.0	50
821	820	±10%	0.796	30	2.5	43.0	30

Test Equipment: L, Q: HP4291 for 0.18μH~82μH; HP4284 for 100μH~820μH SRF: HP4291 RDC: Agilent 34401A

### 2220

Codes	Inductance (μH)	Tolerance	Test Freq. (MHz)	Q. Min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
122	1200	±5, ±10%	0.252	20	1.5	17	75
152	1500	±5, ±10%	0.252	20	1.4	20	70
182	1800	±5, ±10%	0.252	20	1.3	30	60
222	2200	±5, ±10%	0.252	20	1.2	35	55
272	2700	±5, ±10%	0.252	20	1.1	55	45
332	3300	±5, ±10%	0.252	20	1.0	60	40
392	3900	±5, ±10%	0.252	20	1.0	70	38
472	4700	±5, ±10%	0.252	20	0.9	78	36
562	5600	±5, ±10%	0.252	20	0.8	85	33
682	6800	±5, ±10%	0.252	20	0.7	110	30
822	8200	±5, ±10%	0.252	20	0.6	125	28
103	10,000	±5, ±10%	0.0796	15	0.5	150	25

Test Equipment: L, Q: HP4284 SRF: HP4291 RDC: Agilent 34401A



# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### LOW PROFILE ELECTRICAL SPECIFICATIONS

#### 0805

Codes	Inductance (µH)	Tolerance	Q. Min.	Test Freq. (MHz)	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
1R0	1.0	±5, ±10%	15	7.96	115	0.90	450
3R3	3.3	±5, ±10%	13	7.96	70	1.40	450
4R7	4.7	±5, ±10%	15	7.96	65	1.90	400
6R8	6.8	±5, ±10%	15	7.96	41	2.40	400
100	10	±5, ±10%	14	7.96	31	2.70	400
150	15	±5, ±10%	12	7.96	28	5.00	300
220	22	±5, ±10%	10	7.96	25	6.00	250

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A

### LARGE CURRENT ELECTRICAL SPECIFICATIONS

#### 0603

Codes	Inductance (µH)	Tolerance	Q Typ.	Test Freq. (MHz)	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code
47N	0.047	±10%	12	7.96	2000	0.075	1800	White
51N	0.051	±10%	12	7.96	1500	0.075	1800	Violet
68N	0.068	±10%	12	7.96	1500	0.12	1800	Gray
72N	0.072	±10%	12	7.96	1500	0.12	1800	Brown
R10	0.10	±10%	12	7.96	1150	0.13	1700	Black
R12	0.12	±5, ±10%	12	7.96	1100	0.15	1700	Orange
R15	0.15	±5, ±10%	15	7.96	1050	0.15	1600	Brown
R18	0.18	±5, ±10%	15	7.96	950	0.15	1500	Green
R22	0.22	±5, ±10%	15	7.96	900	0.30	1200	Red
R24	0.24	±5, ±10%	15	7.96	850	0.16	1460	Green
R27	0.27	±5, ±10%	15	7.96	835	0.30	1460	Yellow
R33	0.33	±5, ±10%	15	7.96	725	0.40	1420	Orange
R39	0.39	±5, ±10%	15	7.96	680	0.41	1400	Blue
R47	0.47	±5, ±10%	15	7.96	640	0.43	1400	Black
R56	0.56	±5, ±10%	15	7.96	630	0.44	1400	Brown
R68	0.68	±5, ±10%	15	7.96	510	0.52	1340	Red
R78	0.78	±5, ±10%	15	7.96	465	0.63	1300	Orange
R82	0.82	±5, ±10%	15	7.96	460	0.69	1200	Yellow
1R0	1.0	±5, ±10%	15	7.96	320	0.81	1100	Green
1R2	1.2	±5, ±10%	15	7.96	270	0.87	1000	Blue
1R5	1.5	±5, ±10%	15	7.96	230	0.96	920	Violet
1R8	1.8	±5, ±10%	15	7.96	210	1.10	900	Gray
2R2	2.2	±5, ±10%	15	7.96	115	1.20	740	White
2R7	2.7	±5, ±10%	15	7.96	100	1.38	700	Black
3R3	3.3	±5, ±10%	15	7.96	84	1.50	680	Brown
3R9	3.9	±5, ±10%	15	7.96	75	1.50	600	Red
4R7	4.7	±5, ±10%	15	7.96	67	2.10	580	Orange
5R6	5.6	±5, ±10%	15	7.96	55	2.37	540	Yellow
6R8	6.8	±5, ±10%	15	7.96	48	3.10	500	Green
7R8	7.8	±5, ±10%	15	7.96	40	3.35	460	Blue
8R2	8.2	±5, ±10%	15	7.96	38	3.50	440	Violet
100	10	±5, ±10%	15	7.96	32	4.46	400	Gray

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 0805

Codes	Inductance (µH)	Tolerance	Test Freq. (MHz)	Q Typ.	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code
R47	0.47	±10, ±20%	25.2	14	850	0.156	1400	Blue
R68	0.68	±10, ±20%	25.2	14	765	0.195	1200	Gray
1R0	1.00	±10, ±20%	7.96	14	208	0.169	1100	Black
1R2	1.20	±10, ±20%	7.96	14	159	0.208	960	Red
1R5	1.50	±10, ±20%	7.96	14	159	0.221	920	Brown
1R8	1.80	±10, ±20%	7.96	14	112	0.260	860	Orange
2R2	2.20	±10, ±20%	7.96	13	87	0.286	740	Red
2R7	2.70	±10, ±20%	7.96	13	72	0.325	680	Yellow
3R3	3.30	±10, ±20%	7.96	12	70	0.364	620	Orange
3R9	3.90	±10, ±20%	7.96	14	61	0.494	580	Green
4R7	4.70	±10, ±20%	7.96	14	51	0.559	520	Yellow
5R6	5.60	±10, ±20%	7.96	12	47	0.650	480	Blue
6R8	6.80	±10, ±20%	7.96	14	46	0.884	420	Green
8R2	8.20	±10, ±20%	7.96	13	33	0.949	400	Violet
100	10	±5, ±10, ±20%	2.52	14	31	1.105	360	Blue
120	12	±5, ±10, ±20%	2.52	14	30	1.17	340	Gray
150	15	±5, ±10, ±20%	2.52	15	28	1.82	300	Violet
180	18	±5, ±10, ±20%	2.52	15	27	2.01	280	White
220	22	±5, ±10, ±20%	2.52	15	20	2.28	240	Gray
270	27	±5, ±10, ±20%	2.52	15	17	2.60	220	Black
330	33	±5, ±10, ±20%	2.52	15	17	3.05	200	White
470	47	±5, ±10, ±20%	2.52	14	15	4.42	160	Black
560	56	±5, ±10, ±20%	2.52	14	10	5.74	150	Yellow
680	68	±5, ±10, ±20%	2.52	14	10	5.78	140	Brown
820	82	±5, ±10, ±20%	2.52	14	10	9.75	100	Orange
101	100	±5, ±10, ±20%	1	10	9	9.75	100	Red

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A

### 1008

Codes	Inductance (µH)	Tolerance	Q Typ.	Test Freq. (MHz)	SRF (MHz) Typ.	DCR (Ω) Max.	IDC (mA) Max.	Color Code		
R22	0.22	±5, ±10%	35	25.2	800	0.15	2600	Red	Red	Brown
R47	0.47	±5, ±10%	35	25.2	460	0.20	2400	Yellow	Violet	Brown
R68	0.68	±5, ±10%	35	25.2	400	0.30	2200	Blue	Gray	Brown
R82	0.82	±5, ±10%	35	25.2	360	0.35	1800	Gray	Red	Brown
1R0	1.0	±5, ±10%	22	7.96	245	0.35	800	Brown	Black	Red
1R2	1.2	±5, ±10%	25	7.96	230	0.40	550	Brown	Red	Red
1R5	1.5	±5, ±10%	25	7.96	182	0.45	550	Brown	Green	Red
1R8	1.8	±5, ±10%	25	7.96	135	0.55	550	Brown	Gray	Red
2R2	2.2	±5, ±10%	22	7.96	105	0.60	500	Red	Red	Red
2R7	2.7	±5, ±10%	25	7.96	70	0.70	500	Red	Violet	Red
3R3	3.3	±5, ±10%	22	7.96	55	0.75	450	Orange	Orange	Red
3R9	3.9	±5, ±10%	25	7.96	50	0.80	450	Orange	White	Red
4R7	4.7	±5, ±10%	22	7.96	45	0.90	400	Yellow	Violet	Red
5R6	5.6	±5, ±10%	22	7.96	42	1.05	400	Green	Blue	Red
6R8	6.8	±5, ±10%	22	7.96	40	1.05	400	Blue	Gray	Red
8R2	8.2	±5, ±10%	22	7.96	36	1.30	350	Gray	Red	Red
100	10	±5, ±10%	20	2.52	35	1.55	300	Brown	Black	Orange
120	12	±5, ±10%	20	2.52	30	2.10	280	Brown	Red	Orange
150	15	±5, ±10%	20	2.52	24	2.38	250	Brown	Green	Orange
180	18	±5, ±10%	20	2.52	20	2.60	200	Brown	Gray	Orange
220	22	±5, ±10%	20	2.52	18	2.92	200	Red	Red	Orange
330	33	±5, ±10%	20	2.52	16	4.10	180	Orange	Orange	Orange
470	47	±5, ±10%	23	2.52	17	7.80	350	Yellow	Violet	Orange
101	100	±5, ±10%	13	1	4	13.2	200	Brown	Black	Yellow
221	220	±5, ±10%	13	1	3	26.5	140	Red	Red	Yellow
331	330	±5, ±10%	13	1	2	32.5	110	Orange	Orange	Yellow

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A





# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 1812

Codes	Inductance (µH)	Tolerance	Q. Min.	Test Freq. (MHz)	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
1R0	1.0	±10%	10	7.96	200	0.11	1050
1R2	1.2	±10%	10	7.96	160	0.12	1000
1R5	1.5	±10%	10	7.96	130	0.15	950
1R8	1.8	±10%	10	7.96	100	0.16	900
2R2	2.2	±10%	10	7.96	80	0.18	850
2R7	2.7	±10%	10	7.96	60	0.20	800
3R3	3.3	±10%	10	7.96	45	0.22	750
3R9	3.9	±10%	10	7.96	40	0.24	700
4R7	4.7	±10%	10	7.96	35	0.27	650
5R6	5.6	±10%	10	7.96	30	0.30	650
6R8	6.8	±10%	10	7.96	28	0.35	600
8R2	8.2	±10%	10	7.96	25	0.40	600
100	10	±10%	10	2.52	22	0.50	550
120	12	±10%	10	2.52	21	0.60	500
150	15	±10%	10	2.52	20	0.70	450
180	18	±10%	10	2.52	19	0.80	400
220	22	±10%	10	2.52	18	0.90	370
270	27	±10%	10	2.52	16	1.20	330
330	33	±10%	10	2.52	14	1.40	300
390	39	±10%	10	2.52	12	1.60	280
470	47	±10%	10	2.52	11.5	1.90	260
560	56	±10%	10	2.52	11	2.20	240
680	68	±10%	10	2.52	10	2.60	220
820	82	±10%	10	2.52	9	3.50	200
101	100	±10%	20	0.796	8	4.00	180
121	120	±10%	20	0.796	7.5	4.50	160
151	150	±10%	20	0.796	7	6.50	140
181	180	±10%	20	0.796	6.5	7.50	120
221	220	±10%	20	0.796	5.5	9.00	120
271	270	±10%	20	0.796	5	11.0	100
331	330	±10%	20	0.796	4	13.0	90
391	390	±10%	20	0.796	3.8	23.0	80
471	470	±10%	20	0.796	3.5	26	75
561	560	±10%	20	0.796	2.8	30	70
681	680	±10%	20	0.796	2.6	40	65
821	820	±10%	20	0.796	2.5	45	60

Test Equipment: L, Q: HP4291 SRF: HP4291 RDC: Agilent 34401A

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### 2220

Codes	Inductance (µH)	Tolerance	Q. Min.	Test Freq. (MHz)	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
1R0	1.0	±10, ±20%	10	7.96	95	0.03	1800
1R2	1.2	±10, ±20%	10	7.96	70	0.035	1700
1R5	1.5	±10, ±20%	10	7.96	55	0.04	1600
1R8	1.8	±10, ±20%	10	7.96	47	0.05	1400
2R2	2.2	±10, ±20%	10	7.96	42	0.06	1300
2R7	2.7	±10, ±20%	10	7.96	37	0.07	1200
3R3	3.3	±10, ±20%	10	7.96	34	0.08	1120
3R9	3.9	±10, ±20%	10	7.96	32	0.09	1050
4R7	4.7	±10, ±20%	10	7.96	29	0.11	950
5R6	5.6	±10, ±20%	10	7.96	26	0.13	880
6R8	6.8	±10, ±20%	10	7.96	24	0.15	810
8R2	8.2	±10, ±20%	10	7.96	22	0.18	750
100	10	±10, ±20%	10	2.52	19	0.21	690
120	12	±10, ±20%	10	2.52	17	0.25	630
150	15	±10, ±20%	10	2.52	16	0.30	580
180	18	±10, ±20%	10	2.52	14	0.36	530
220	22	±5, ±10%	10	2.52	13	0.43	480
270	27	±5, ±10%	10	2.52	11.5	0.52	440
330	33	±5, ±10%	10	2.52	10.5	0.62	400
390	39	±5, ±10%	10	2.52	9.5	0.72	370
470	47	±5, ±10%	10	2.52	8.5	0.85	340
560	56	±5, ±10%	10	2.52	7.8	1.00	310
680	68	±5, ±10%	10	2.52	7.0	1.2	290
820	82	±5, ±10%	10	2.52	6.4	1.4	270
101	100	±5, ±10%	20	0.796	6.0	1.6	250
121	120	±5, ±10%	20	0.796	5.4	1.9	230
151	150	±5, ±10%	20	0.796	4.8	2.2	210
181	180	±5, ±10%	20	0.796	4.4	2.8	190
221	220	±5, ±10%	20	0.796	3.9	3.4	170
271	270	±5, ±10%	20	0.796	3.6	4.2	155
331	330	±5, ±10%	20	0.796	3.2	4.9	140
391	390	±5, ±10%	20	0.796	2.9	5.8	130
471	470	±5, ±10%	20	0.796	2.6	7.0	120
561	560	±5, ±10%	20	0.796	2.4	8.5	110
681	680	±5, ±10%	20	0.796	2.2	10	100
821	820	±5, ±10%	20	0.796	2.0	13	90
102	1000	±5, ±10%	20	0.252	1.8	15	85

Test Equipment: L, Q: HP4291 for 1.0pH ~ 82pH; HP4284 for 100pH ~ 1000pH SRF: HP4291 RDC: Agilent 34401A

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### ENVIRONMENTAL CHARACTERISTICS

#### ELECTRICAL PERFORMANCE TEST

Items	Requirement	Test Methods
Inductance	Refer to standard electrical characteristic spec.	HP4291 or HP4284
Q		HP4291 or HP4284
SRF		HP4291
DC Resistance RDC		Agilent 34401A
Rated Current IDC		Applied the current to coils, The inductance change should be less than 10% to initial value

#### MECHANICAL PERFORMANCE TEST

Items	Requirement	Test Methods
Solderability	The electrodes shall be at least 90% covered with new solder coating	Lead-free inductor: after fluxing(alpha 100 or equiv), inductor shall be dipped in a melted solder bath at 245.5 C, 5.0.5 seconds
Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150°C, 1min. Solder Temperature: 260±5°C Immersion Time: 10±1 seconds
Vibration	Appearance: No damage L change: within±10% Q change: within±30% DCR: within specification	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1 min. Amplitude: 1.5 mm Time: 2 hrs for each axis (X, Y&Z), total 6 hrs

#### CLIMATIC TEST

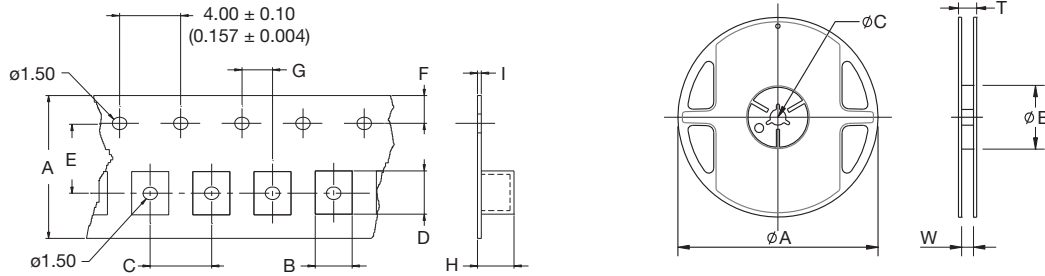
Items	Requirement	Test Methods															
Temperature Cycle	Appearance: No damage L change: within±10% Q change: within±30% DCR: within specification	One cycle: <table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25±3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25±2</td> <td>15</td> </tr> <tr> <td>3</td> <td>125±3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25±2</td> <td>15</td> </tr> </tbody> </table>	Step	Temperature (°C)	Time (min.)	1	-25±3	30	2	25±2	15	3	125±3	30	4	25±2	15
Step		Temperature (°C)	Time (min.)														
1		-25±3	30														
2		25±2	15														
3	125±3	30															
4	25±2	15															
Damp Heat with Load	Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																
High Temperature Storage	Temperature: 85±3°C Relative Humidity: 20% Applied Current: Rated Current Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																
Low Temperature Storage	Temperature: -25±3°C Relative Humidity: 0% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																

# Wire Wound Chip Inductor (Ferrite)



## LCWF Series

### DIMENSIONS



### TAPE DIMENSIONS

mm (inches)

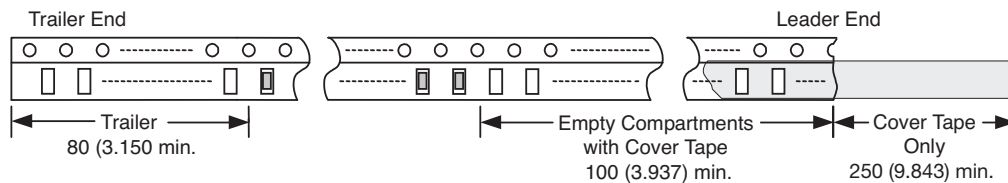
Type	A	B	C	D	E	F	G	H	I	Qty/Reel
0603	8.00 ± 0.20 (0.315 ± 0.008)	1.25 ± 0.10 (0.049 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	1.90 ± 0.10 (0.075 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	1.00 ± 0.05 (0.039 ± 0.002)	0.23 ± 0.05 (0.009 ± 0.002)	4000
0805	8.00 ± 0.20 (0.315 ± 0.008)	1.85 ± 0.10 (0.073 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	2.55 ± 0.10 (0.100 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	1.45 ± 0.05 (0.057 ± 0.002)	0.23 ± 0.05 (0.009 ± 0.002)	2000
1008	8.00 ± 0.20 (0.315 ± 0.008)	2.80 ± 0.10 (0.110 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	2.95 ± 0.10 (0.116 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	2.22 ± 0.05 (0.087 ± 0.002)	0.23 ± 0.05 (0.009 ± 0.002)	2000
1210	8.00 ± 0.20 (0.315 ± 0.008)	2.96 ± 0.10 (0.117 ± 0.004)	4.00 ± 0.10 (0.157 ± 0.004)	3.60 ± 0.10 (0.142 ± 0.004)	3.50 ± 0.05 (0.138 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	2.40 ± 0.05 (0.094 ± 0.002)	0.23 ± 0.05 (0.009 ± 0.002)	2000
1812	12.0 ± 0.20 (0.472 ± 0.008)	3.30 ± 0.10 (0.130 ± 0.004)	8.00 ± 0.10 (0.315 ± 0.004)	5.00 ± 0.10 (0.197 ± 0.004)	5.50 ± 0.05 (0.217 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	3.50 ± 0.05 (0.138 ± 0.002)	0.30 ± 0.05 (0.009 ± 0.002)	500
2200	16.0 ± 0.20 (0.630 ± 0.008)	5.35 ± 0.10 (0.211 ± 0.004)	12.0 ± 0.10 (0.472 ± 0.004)	6.10 ± 0.10 (0.240 ± 0.004)	7.50 ± 0.05 (0.295 ± 0.002)	1.75 ± 0.10 (0.069 ± 0.004)	2.00 ± 0.05 (0.079 ± 0.002)	5.50 ± 0.05 (0.217 ± 0.002)	0.35 ± 0.05 (0.009 ± 0.002)	1000

### REEL DIMENSIONS

mm (inches)

Type	ø A	ø B	ø C	W	T
0603	178 ± 2.00 (7.008 ± 0.079)	60.0 ± 0.50 (2.362 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	9.00 ± 0.30 (0.354 ± 0.012)	12.0 ± 1.00 (0.472 ± 0.039)
0805	178 ± 2.00 (7.008 ± 0.079)	60.0 ± 0.50 (2.362 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	9.00 ± 0.30 (0.354 ± 0.012)	12.0 ± 1.00 (0.472 ± 0.039)
1008	178 ± 2.00 (7.008 ± 0.079)	60.0 ± 0.50 (2.362 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	9.00 ± 0.30 (0.354 ± 0.012)	12.0 ± 1.00 (0.472 ± 0.039)
1210	178 ± 2.00 (7.008 ± 0.079)	60.0 ± 0.50 (2.362 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	9.00 ± 0.30 (0.354 ± 0.012)	12.0 ± 1.00 (0.472 ± 0.039)
1812	178 ± 2.00 (7.008 ± 0.079)	80.0 ± 0.50 (3.150 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	13.2 ± 0.30 (0.520 ± 0.012)	16.0 ± 1.00 (0.630 ± 0.039)
2200	330 ± 2.00 (12.99 ± 0.079)	100 ± 0.50 (3.937 ± 0.020)	13.0 ± 0.30 (0.512 ± 0.012)	17.4 ± 0.3 (0.685 ± 0.012)	22.0 ± 1.00 (0.866 ± 0.039)

### LEADER / TRAILER TAPE



### COVER TAPE PEEL STRENGTH

The force for tearing off cover tape is 0.1~0.6 (N) in the arrow direction at the following conditions:

- Temperature: 5~35°C
- Humidity: 45~85%
- Atmospheric Pressure: 860~1060 hpa

