

# Wound Chip Ferrite Inductors



## Features:

- Very strong solderability by flow soldering, soldering iron or wave soldering.
- Highly accurate dimensions, can be mounted automatically.
- Terminals are highly resistant to pull forces.
- Highly resistant to mechanical shocks and pressure.
- Highly reliable in environments of sudden temperature change and humidity. Super Q characteristics.

These revolutionary, highly reliable wound chip inductors for automatic mounting, have been developed in response to the trend toward high density in electronic equipment.

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

## Applications:

Micro televisions, liquid crystal televisions, video cameras, portable VCRs, car radios, car stereos, thin tape radios, television tuners, mobile telephones, radio and other electronic devices.

Figure 1

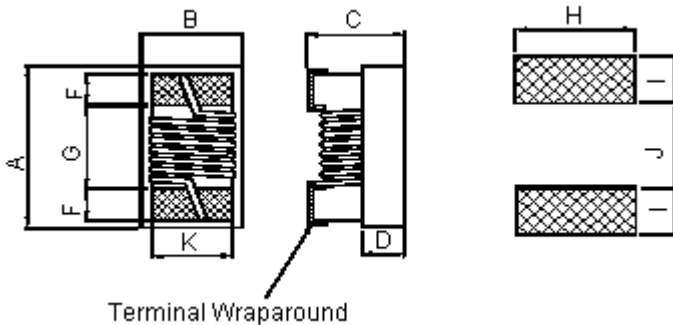
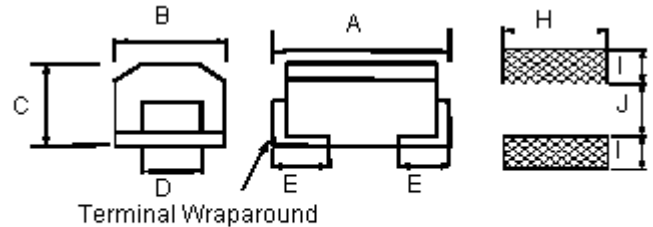


Figure 2



## Dimensions

Size	Figure	A Maximum	B Maximum	C Maximum	D Reference	E	E	G	K Maximum	H Maximum	I Maximum	J Maximum
0805	1	2.29	1.71	1.45	0.51	-	0.44	1.02	1.27	1.78	1.02	0.76
1008		2.92	2.79	2.10	1.20	-	0.45	1.52	2.03	2.54		1.27
1210	2	3.50	2.80	2.50	1.60	0.8	-	-	-	2.00	1.20	1.60
1812		4.80	3.50	3.50	1.80	1.1	-	-	-	2.80	1.50	3.00
0805	1	2.29	1.71	1.00	0.51	-	0.44	1.02	1.27	1.78	1.02	0.76
1008		2.92	2.79	2.10	1.20	-	0.45	1.52	2.03	2.54		1.27
1812	2	4.80	3.50	3.50	1.40	1.1	-	-	-	2.80	1.50	3.00

Dimensions : Millimetres

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 0805 Wound Chip Inductors (Ferrite)

Inductance (nH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Frequency (MHz)	Maximum DC Resistance (Ω)	Maximum Rated Current (mA)
0.15	J, K	20	25.2	900	0.18	1100
0.22				550	0.25	700
0.33					0.35	650
0.47				350	0.45	600
0.68				300	0.60	500
1.00				15	7.96	280
1.50		250	1.05			350
2.20		110	1.10			320
3.30		60	1.50			300
4.70		45	2.10			200
6.80		36	2.70			200
10.00		10	2.52	30	4.50	180

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : J = ±5%, K = ±10%.

L, Q : HP4291 for 0.12 to 10uH.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 1008 Wound Chip Inductors (Ferrite)

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Frequency (MHz)	Maximum DC Resistance (Ω)	Maximum Rated Current (mA)
0.15	J, K	30	25.2	800	0.15	1200
0.22				600	0.25	1200
0.33				400	0.20	1100
0.47				350	0.45	900
0.68				300	0.40	800
1.00		25	7.96	245	0.50	600
1.50				182	0.65	550
2.20				105	0.95	500
3.30				55	1.15	350
4.70				43	1.28	300
6.80		20	2.52	39	1.60	300
10.00				33	2.30	250
15.00				24	2.70	200
22.00				18	3.30	180
33.00				16	4.00	120
47.00	18	14	5.90	110		
68.00	18	12	9.50	90		
100.00	12	1	8	110.00	120	

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : J = ±5%, K = ±10%.

L, Q : HP4291 for 0.12 to 10μH.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 1210 Wound Chip Inductors (Ferrite)

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Frequency (MHz)	Maximum DC Resistance (Ω)	Maximum Rated Current (mA)	
1.0	K	30	7.96	120	0.70	400	
1.5				85	0.85	370	
2.2				75	1.00	320	
3.3				60	1.20	260	
4.7				50	1.50	220	
6.8				40	1.80	180	
10.0			2.52	30	30	2.10	150
15.0					20	2.80	130
22.0					20	3.70	110
33.0					17	5.60	70
47.0					15	7.00	60
68.0					12	9.00	50
100.0		20	0.796	10	10.00	40	
150.0				8	15.00	65	
220.0				7	21.00	50	

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : K = ±10%, K = ±20%.

L, Q : HP4291 for 0.18μH to 82μH.

HP4284 for 100μH to 220μH.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 1812 Wound Chip Inductors (Ferrite)

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Minimum Frequency (MHz)	Maximum DC Resistance (Ω)	Rated Current (mA)	
1.0	K	50	7.960	100.0	0.50	450	
1.5				70.0	0.60	410	
2.2				55.0	0.70	380	
3.3				45.0	0.80	355	
4.7				35.0	1.00	315	
6.8				27.0	1.20	285	
10.0		2.520	50	20.0	1.60	250	
15.0				17.0	2.50	200	
22.0				13.0	3.20	180	
33.0				11.0	4.00	160	
47.0				10.0	5.00	140	
68.0				9.0	6.00	130	
100.0		40	50	0.796	8.0	8.00	110
150.0					5.0	9.00	105
220.0					4.0	10.00	100
330.0			30	3.5	15.00	85	
470.0				3.0	26.00	62	
680.0					30.00	50	

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : K = ±10%.

L, Q : HP4291 for 0.18μH to 82μH.

HP4284 for 100μH to 820μH.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 0805 Wound Chip Inductors (Ferrite) Large Current

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Minimum Frequency (MHz)	Maximum DC Resistance (Ω)	Rated Current (mA)
1.0	J, K	15	L: 7.96/Q : 25.2	115	0.90	450
3.3		13	7.96	70	1.40	
4.7		15		65	1.90	400
6.8				41	2.40	
10		14	31	2.70		

### 1008 Wound Chip Inductors (Ferrite) Large Current

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Minimum Frequency (MHz)	Maximum DC Resistance (Ohm)	Rated Current (mA)
1.0	J, K	22	7.96	245	0.35	800
1.5		25		182	0.45	550
2.2		22		105	0.60	
3.3				55	0.75	450
4.7				45	0.90	400
6.8		40	1.00			
10.0		20	2.52	35	1.50	300
15.0				24	1.90	250
22.0				18	2.80	200
33.0				16	3.50	180

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : J = ±5%, K = ±10%.

L, Q : HP4291.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Standard Electrical Specifications

### 1812 Wound Chip Inductors (Ferrite) Large Current

Inductance (μH)	Tolerance (±%)	Q Minimum	Test Frequency (MHz)	Self Resonant Minimum Frequency (MHz)	Maximum DC Resistance (Ω)	Rated Current (mA)		
1.0	K	10	7.960	200.0	0.11	1050		
1.5				130.0	0.15	950		
2.2				80.0	0.18	850		
3.3				45.0	0.22	750		
4.7				35.0	0.27	650		
6.8				28.0	0.35	600		
10.0				20	0.796	22.0	0.50	550
15.0						20.0	0.70	450
22.0						18.0	0.90	370
33.0						14.0	1.40	300
47.0		11.5	1.90			260		
68.0		10.0	2.60			220		
100.0		8.0	4.00			180		
150.0		7.0	6.50			140		
220.0		5.5	9.00			120		
330.0		4.0	13.00			90		
470.0		3.5	26.00	75				
680.0		2.6	40.00	65				

DC current at which the inductance drops 10% (typical) from its value without current.

Operating temperature range : -25°C to 85°C.

Tolerance : K = ±10%.

L , Q : HP4291 for 0.18μH to 82μH.

HP4284 for 100μH to 820μH.

SRF : HP4291.

RDC : AX-1152B.

# Wound Chip Ferrite Inductors



## Environmental Characteristics

### Mechanical Performance

Item	Specification	Test Method
Vibration	Appearance : no damage L change : within $\pm 10\%$ Q change : within $\pm 30\%$ RDC : within specification	Test device shall be soldered on the substrate Oscillation frequency: 10 to 55 to 10Hz for 1 minute Amplitude: 1.5mm Time: 2 hours for each axis (X, Y & Z), total 6 hours
Resistance to soldering heat	Appearance: no damage	Pre-heating : $150^{\circ}\text{C}$ , 1 minute Solder temperature : $260 \pm 5^{\circ}\text{C}$ Immersion time : $10 \pm 1$ second
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 $245 \pm 5^{\circ}\text{C}$ , $5 \pm 0.5$ seconds.

### Environmental Performance

Item	Specification	Test Method															
Temperature cycle		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (<math>^{\circ}\text{C}</math>)</th> <th>Time (minute)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td><math>-25 \pm 3</math></td> <td>30</td> </tr> <tr> <td>2</td> <td><math>25 \pm 2</math></td> <td>3</td> </tr> <tr> <td>3</td> <td><math>85 \pm 3</math></td> <td>30</td> </tr> <tr> <td>4</td> <td><math>25 \pm 2</math></td> <td>3</td> </tr> </tbody> </table> Total: 100 cycles Measured after exposure in the room condition for 24 hours	Step	Temperature ( $^{\circ}\text{C}$ )	Time (minute)	1	$-25 \pm 3$	30	2	$25 \pm 2$	3	3	$85 \pm 3$	30	4	$25 \pm 2$	3
Step	Temperature ( $^{\circ}\text{C}$ )	Time (minute)															
1	$-25 \pm 3$	30															
2	$25 \pm 2$	3															
3	$85 \pm 3$	30															
4	$25 \pm 2$	3															
Humidity resistance	Appearance: no damage L change: within $\pm 10\%$ Q change: within $\pm 30\%$ RDC: within specification	Temperature : $40 \pm 2^{\circ}\text{C}$ Relative Humidity : 90 to 95% Time : 1000 hours Measured after exposure in the room condition for 24 hours															
High temperature Storage		Temperature : $85 \pm 3^{\circ}\text{C}$ Relative humidity : 20% Applied current : rated Current Time : 1000 hours Measured after exposure in the room condition for 24 hours															
Low temperature storage		Temperature : $-25 \pm 3^{\circ}\text{C}$ Relative humidity : 0% Time : 1000 hours Measured after exposure in the room condition for 24 hours															



## Part Number Table

Description	Part Number
Inductor, Ferrite, 0805, 0.15uH	MCFT000152
Inductor, Ferrite, 0805, 0.22uH	MCFT000153
Inductor, Ferrite, 0805, 0.33uH	MCFT000154
Inductor, Ferrite, 0805, 0.47uH	MCFT000155
Inductor, Ferrite, 0805, 0.68uH	MCFT000156
Inductor, Ferrite, 0805, 1uH	MCFT000157
Inductor, Ferrite, 0805, 1.5uH	MCFT000158
Inductor, Ferrite, 0805, 2.2uH	MCFT000159
Inductor, Ferrite, 0805, 3.3uH	MCFT000160
Inductor, Ferrite, 0805, 4.7uH	MCFT000161
Inductor, Ferrite, 0805, 6.8uH	MCFT000162
Inductor, Ferrite, 0805, 10uH	MCFT000163
Inductor, Ferrite, 1008, 0.15uH	MCFT000164
Inductor, Ferrite, 1008, 0.22uH	MCFT000165
Inductor, Ferrite, 1008, 0.33uH	MCFT000166
Inductor, Ferrite, 1008, 0.47uH	MCFT000167
Inductor, Ferrite, 1008, 0.68uH	MCFT000168
Inductor, Ferrite, 1008, 1uH	MCFT000169
Inductor, Ferrite, 1008, 1.5uH	MCFT000170
Inductor, Ferrite, 1008, 2.2uH	MCFT000171
Inductor, Ferrite, 1008, 3.3uH	MCFT000172
Inductor, Ferrite, 1008, 4.7uH	MCFT000173
Inductor, Ferrite, 1008, 6.8uH	MCFT000174
Inductor, Ferrite, 1008, 10uH	MCFT000175
Inductor, Ferrite, 1008, 15uH	MCFT000176
Inductor, Ferrite, 1008, 22uH	MCFT000177
Inductor, Ferrite, 1008, 33uH	MCFT000178
Inductor, Ferrite, 1008, 47uH	MCFT000179
Inductor, Ferrite, 1008, 68uH	MCFT000180
Inductor, Ferrite, 1008, 100uH	MCFT000181
Inductor, Ferrite, 1210, 1uH	MCFT000182
Inductor, Ferrite, 1210, 1.5uH	MCFT000183
Inductor, Ferrite, 1210, 2.2uH	MCFT000184
Inductor, Ferrite, 1210, 3.3uH	MCFT000185

# Wound Chip Ferrite Inductors



## Part Number Table

Description	Part Number
Inductor, Ferrite, 1210, 4.7uH	MCFT000186
Inductor, Ferrite, 1210, 6.8uH	MCFT000187
Inductor, Ferrite, 1210, 10uH	MCFT000188
Inductor, Ferrite, 1210, 15uH	MCFT000189
Inductor, Ferrite, 1210, 22uH	MCFT000190
Inductor, Ferrite, 1210, 33uH	MCFT000191
Inductor, Ferrite, 1210, 47uH	MCFT000192
Inductor, Ferrite, 1210, 68uH	MCFT000193
Inductor, Ferrite, 1210, 100uH	MCFT000194
Inductor, Ferrite, 1210, 150uH	MCFT000195
Inductor, Ferrite, 1210, 220uH	MCFT000196
Inductor, Ferrite, 1812, 1uH	MCFT000197
Inductor, Ferrite, 1812, 1.5uH	MCFT000198
Inductor, Ferrite, 1812, 2.2uH	MCFT000199
Inductor, Ferrite, 1812, 3.3uH	MCFT000200
Inductor, Ferrite, 1812, 4.7uH	MCFT000201
Inductor, Ferrite, 1812, 6.8uH	MCFT000202
Inductor, Ferrite, 1812, 10uH	MCFT000203
Inductor, Ferrite, 1812, 15uH	MCFT000204
Inductor, Ferrite, 1812, 22uH	MCFT000205
Inductor, Ferrite, 1812, 33uH	MCFT000206
Inductor, Ferrite, 1812, 47uH	MCFT000207
Inductor, Ferrite, 1812, 68uH	MCFT000208
Inductor, Ferrite, 1812, 100uH	MCFT000209
Inductor, Ferrite, 1812, 150uH	MCFT000210
Inductor, Ferrite, 1812, 220uH	MCFT000211
Inductor, Ferrite, 1812, 330uH	MCFT000212
Inductor, Ferrite, 1812, 470uH	MCFT000213
Inductor, Ferrite, 1812, 680uH	MCFT000214

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