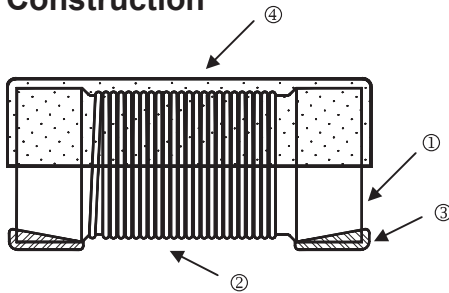




Features

- Wire wound ceramic construction provide high SRF.
- Ultra-compact inductors provide exceptional Q values.
- Low profile, high current are available.
- Miniature SMD chip inductor for fully automated assembly.
- Outstanding endurance from pull-up force, mechanical shock and pressure.
- Tighter tolerance down to $\pm 2\%$.
- Smaller size of 0402 (1005).

Construction



1	Ceramic Core	3	Electrode (Ag/Pd+Ni+Sn)
2	Magnet Wire	4	UV Glue

Applications

RF Products:

- Cellular Phone (CDMA/GSM/PHS)
- Cordless Phone (DECT/CT1CT2)
- Remote Control, Security System
- Wireless PDA
- WLL, Wireless LAN / Mouse / Keyboard / Earphone
- VCO, RF Module & Other Wireless Products
- Base Station, Repeater
- GPS Receiver

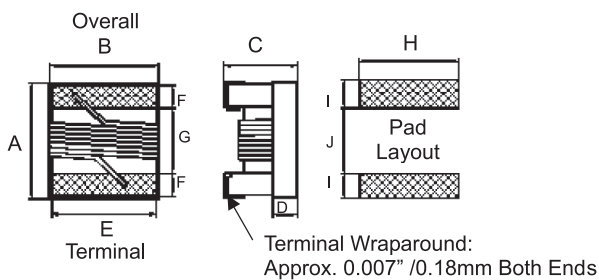
Broad Band Applications:

- CATV Filter, Tuner
- Cable Modem/ XDSL Tuner
- Set Top Box

IT Applications:

- USB 2.0
- IEEE 1394

Dimensions



Standard

Type	Size (Inch)	A max.	B max.	C max.	D Ref.	E	F	G	H	I	J
MCFT02	0402	1.27	0.76	0.61	0.15	0.51	0.23	0.56	0.66	0.5	0.46
MCFT03	0603	1.8	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.64	0.64
MCFT05	0805	2.29	1.73	1.52	0.51	1.27	0.44	1.02	1.78	1.02	0.76
MCFT06	1206	3.45	2.16	1.52	0.5	1.6	0.5	2.2	1.93	1.02	1.78

Dimensions : Millimetres

Low Profile

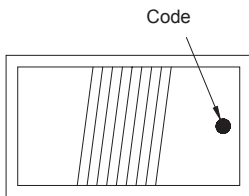
Type	Size (Inch)	A max.	B max.	C max.	D Ref.	E	F	G	H	I	J
MCFT05	0805	2.29	1.73	1.03	0.51	1.27	0.44	1.02	1.78	1.02	0.76

High Current / High Q

Type	Size (Inch)	A max.	B max.	C max.	D Ref.	E	F	G	H	I	J
MCFT03	0603	1.8	1.12	1.02	0.38	0.76	0.33	0.86	1.02	0.64	0.64
MCFT05	0805	2.29	1.73	1.52	0.51	1.27	0.44	1.02	1.78	1.02	0.76

Dimensions : Millimetres

Colour Coding



Color Coding

0603 / 0805 / 1206 Type (0402 Type is No Colour Coding)

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

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

Standard Electrical Specifications

0402 Wire Wound Chip Inductors / Standard

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min. (GHz)	Resistance DC / Max. (Ω)	Current DC / Max. (mA)	900MHz		1.7GHz	
						L	Q	L	Q
1 at 250MHz	10	16	12.7	0.045	1360	1.02	77	1.02	69
2.2 at 250MHz	10, 5	19	10.8	0.07	960	2.19	59	2.23	100
3.3 at 250MHz	10, 5, 2	19	7	0.066	840	3.1	65	3.12	87
4.7 at 250MHz		18	4.7	0.13	640	4.55	48	4.68	68
6.8 at 250MHz		20	4.8	0.083	680	6.56	63	6.93	78
10 at 250MHz		21	3.9	0.195	480	9.8	50	10.1	67
12 at 250MHz		24	3.6	0.12	640	11.9	53	12.7	71
15 at 250MHz		24	3.28	0.172	560	14.6	55	15.5	77
18 at 250MHz		25	3.1	0.23	420	18.3	57	20.3	62
22 at 250MHz		25	2.8	0.3	400	23.2	53	26.8	53
27 at 250MHz		24	2.48	0.3	400	28.7	49	33.5	63
33 at 250MHz		24	2.35	0.35	400	34.9	31	41.7	32
39 at 250MHz		25	2.1	0.55	200	41.7	47	50.2	45
47 at 250MHz		25	2.1	0.83	150	50	38	55.8	37
56 at 250MHz		25	1.76	0.97	100	57.4	49	72.4	40
68 at 250MHz		22	1.62	1.12	100	69.6	45	83.4	38

0603 Wire Wound Chip Inductors / Standard

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min. (GHz)	Resistance DC / Max. (Ω)	Current DC / Max. (mA)	900MHz		1.7GHz		Colour Code
						L	Q	L	Q	
2.2 at 250MHz	10, 5	15	6	0.1	700	2.18	41	2.2	64	White
3.3 at 250MHz	10, 5, 2	22	>6	0.08	700	3.35	47	3.4	65	Red
4.7 at 250MHz		25	5.8	0.12	700	4.65	53	4.8	67	Violet
6.8 at 250MHz		27	5.8	0.11	700	6.75	60	7.1	81	Red
10 at 250MHz		31	4.8	0.13	700	10	66	10.6	83	Orange
12 at 250MHz		35	4	0.13	700	12.3	72	13.5	83	Yellow
15 at 250MHz		35	4	0.17	700	15.4	64	16.8	89	Green
18 at 250MHz		35	3.1	0.17	700	18.7	70	21.4	69	Blue
22 at 250MHz		38	3	0.19	700	22.8	73	26.1	71	Violet
27 at 250MHz		40	2.8	0.22	600	29.2	74	34.6	65	Grey
33 at 250MHz		40	2.3	0.22	600	36.0	67	49.5	42	White
39 at 250MHz		40	2.2	0.25	600	42.7	60	60.2	40	Black
47 at 200MHz		38	2	0.28	600	52.2	62	77.2	35	Brown
56 at 200MHz		38	1.9	0.31	600	62.5	56	97	26	Red
68 at 200MHz		37	1.7	0.34	600	80.5	54	168	21	Orange
82 at 150MHz		34	1.7	0.54	400	96.2	54	177	21	Green
100 at 150MHz		34	1.4	0.58	400	124	49	319.5	13	Blue
120 at 150MHz		32	1.3	0.65	300	166	39	529.3	8	Grey
150 at 100MHz		28	1.3	0.95	280	230	25	-	-	White
180 at 100MHz		25	1.25	1.4	250	305	22	-	-	Black
220 at 100MHz		25	1.2	1.6	250	377	21	-	-	Brown
270 at 100MHz	25	0.9	2.1	200	523	19	-	-	Red	
330 at 100MHz	25	0.9	3.8	100	680.4	20	-	-	Blue	
390 at 100MHz	25	0.9	4.35	100	734.5	29	-	-	Yellow	
470 at 100MHz	23	0.6	3.6	80	-	-	-	-	White	

0805 Wire Wound Chip Inductors / Standard

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min. (GHz)	Resistance DC / Max. (Ω)	Current DC / Max. (mA)	Colour Code
10 at 250MHz	10, 5, 2	60 at 500MHz	4.2	0.1	600	Blue
12 at 250MHz		50 at 500MHz	4	0.15	600	Orange
15 at 250MHz		50 at 500MHz	3.4	0.17	600	Yellow
18 at 250MHz		50 at 500MHz	3.3	0.2	600	Green
22 at 250MHz		50 at 500MHz	2.6	0.22	500	Blue
27 at 250MHz		55 at 500MHz	2.5	0.25	500	Violet

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min. (GHz)	Resistance DC / Max. (Ω)	Current DC / Max. (mA)	Colour Code
33 at 250MHz		60 at 500MHz	2.05	0.27	500	Grey
39 at 250MHz		60 at 500MHz	2	0.29	500	White
47 at 200MHz		60 at 500MHz	1.65	0.31	500	Black
56 at 200MHz		60 at 500MHz	1.55	0.34	500	Brown
68 at 200MHz		60 at 500MHz	1.45	0.38	500	Red
82 at 150MHz		65 at 500MHz	1.3	0.42	400	Orange
100 at 150MHz		65 at 500MHz	1.2	0.46	400	Yellow
120 at 150MHz		50 at 250MHz	1.1	0.51	400	Green
150 at 100MHz		50 at 250MHz	0.92	0.56	400	Blue
180 at 100MHz		50 at 250MHz	0.87	0.64	400	Violet
220 at 100MHz		50 at 250MHz	0.85	0.7	400	Grey
270 at 100MHz		48 at 250MHz	0.65	1	350	White
300 at 100MHz		48 at 250MHz	0.6	1.4	310	Black
390 at 100MHz		48 at 250MHz	0.56	1.5	290	Brown
470 at 50MHz		33 at 100MHz	0.375	1.7	250	Red
560 at 25MHz		23 at 50MHz	0.34	1.9	230	Orange
680 at 25MHz		23 at 50MHz	0.2	2.2	190	Green
820 at 25MHz		23 at 50MHz	0.2	2.35	180	Violet
1000 at 25MHz		20 at 50MHz	0.1	2.5	170	Grey
1,500 at 7.9MHz		16 at 25MHz	0.1	2.5	170	Black
2,200 at 7.9MHz		16 at 7.9MHz	0.06	2.7	160	Red
3,300 at 7.9MHz		15 at 7.9MHz	0.04	4.4	90	Blue
4,700 at 7.9MHz		15 at 7.9MHz	0.04	6.4	90	Green

1206 Wire Wound Chip Inductors / Standard

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min (GHz)	Resistance DC/Max. (Ω)	Current DC/Max. (mA)	Colour Code
10 at 100MHz	10, 5	40 at 300MHz	4	0.08	1000	Red
15 at 100MHz			3.2			Yellow
22 at 100MHz			2.2			Blue
33 at 100MHz	10, 5, 2	50 at 300MHz	1.8	0.11	950	Grey
47 at 100MHz			1.5			0.13
68 at 100MHz		55 at 300MHz	1.2	0.26	Red	
150 at 100MHz		60 at 300MHz	0.95	0.31	750	Blue
220 at 50MHz		55 at 300MHz	0.76	0.50	670	Grey

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. / Min (GHz)	Resistance DC/Max. (Ω)	Current DC/Max. (mA)	Colour Code
330 at 50MHz	10, 5, 2	45 at 150MHz	0.65	0.62	590	Black
470 at 50MHz			0.55	1.30	490	Red
680 at 35MHz			0.45	1.58	430	Yellow
1000 at 35MHz			0.4	2.80	320	Blue

0805 Wire Wound Chip Inductors / Low Profile

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. /Min. (GHz)	Resistance DC/Max (Ω)	Current DC/Max (mA)	Colour Code
10 at 250MHz	10, 5, 2	55 at 750MHz	3.3	0.08	800	Green
12 at 250MHz			3.8	0.1		Blue
15 at 250MHz			2.95			Violet
18 at 250MHz		3.1	0.13	Grey		
22 at 250MHz		2.9	0.15	White		
27 at 250MHz		2.45	0.23	Black		
33 at 250MHz		50 at 500MHz	2.35	0.28	600	Brown
39 at 250MHz			2.2	0.33		Red
47 at 200MHz			2	0.39		Orange
56 at 200MHz			1.85		500	Yellow
68 at 200MHz			1.5			Green
82 at 150MHz			1.5	0.44	Blue	
100 at 150MHz		1.2	0.64	400	Violet	
120 at 150MHz		40 at 250MHz	1.15	0.68	300	Grey
150 at 150MHz			1.05	0.8		White
1000 at 25MHz		16 at 50MHz	0.08	3.5	170	Black

0603 Wire Wound Chip Inductors / High Current

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. /Min. (GHz)	Resistance DC/Max. (Ω)	Current DC/Max. (mA)	Colour Code
6.8 at 250MHz	10, 5	35	5.8	0.054	2100	Orange
10 at 250MHz	10, 5, 2	38	3.7	0.071	2000	Green
12 at 250MHz			3	0.075		Blue
15 at 250MHz			2.8	0.080	1900	Violet
18 at 250MHz		40	0.099	1800	Grey	
22 at 250MHz		42			2.4	White

0805 Wire Wound Chip Inductors / High Q

Inductance (nH)	Tolerance (%)	Quality Factor/Min.	Self Resonant Freq. /Min. (GHz)	Resistance DC/Max. (Ω)	Current DC/Max. (mA)	Colour Code	
10 at 250MHz	10, 5	80 at 1000MHz	3	0.06	1600	Black	
12 at 250MHz				0.045		Orange	
15 at 250MHz	10, 5, 2	75 at 500MHz	2.8	0.1	1200	Black	
18 at 250MHz				0.06	1400	Green	
22 at 250MHz				2	0.1	1200	Black
27 at 250MHz					0.07	1300	Violet
39 at 250MHz				1.6	0.11	1100	White

Mechanical Performance

Item	Requirement	Test Method
Vibration	Appearance: No damage L change: within ±5% Q change: within ±10%	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
Resistance to Soldering Heat		Solder Temperature: 260±5°C Immersion Time: 10±2 seconds
Component Adhesion (Push Test)	1lbs. For 0402 2lbs. For 0603 3lbs. For the rest	The device should be soldered (260±5 for 10 seconds) to a tinned copper subs rate. A dynamiter force gauge should be applied to the side of the component. The device must with stand a minimum force of 2 or 4 pounds without a failure of adhesion on termination
Drop	No damage	Dropping chip by each side and each corner. Drop 10 times in total Drop height: 100 cm Drop weight: 125 g
Solderability	90% covered with solder	Inductor shall be dipped in a melted solder bath at 245±5 for 3 seconds
Resistance to Solvent	No damage on appearance and marking	MIL-STD-202F, Method 215D

Electrical Performance

Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4291B
Q		HP4291B
SRF		HP8753D
DC Resistance RDC		Micro-Ohm meter (Gom-801G)
Rated Current IDC		Applied the current to coils, The inductance change should be less than 10% to initial value
Over load test	Inductors shall have no evidence of electrical and mechanical damage	Applied 2 times of rated allowed DC current to inductor for a period of 5 minutes
Withstanding Voltage test	Inductors shall be no evidence of electrical and mechanical damage.	AC voltage of 500V AC applied between inductors terminal and case for 1 min.
Insulation Resistance test	1,000MΩ min.	100V DC applied between inductor terminal and case

Climatic Test

Item	Requirement	Test Method															
Temperature Characteristic	Appearance: No damage L change: within ±10% Q change: within ±20%	-40 to +125°C															
Humidity		Temperature: 40 ±2°C Relative Humidity: 90 ~ 95% Time: 96 ±2 hrs Measured after exposure in the room condition for 2 hrs															
Low Temperature Storage		Temperature: -40 ±2°C Time: 96 ±2 hrs Inductors are tested after 1 hour at room temperature															
Thermal Shock		One cycle: <table border="1" style="margin-left: 20px;"> <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> Total: 5 cycles	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															
High Temperature Storage	Temperature: 125 ±2°C Time: 96 ±2 hrs Measured after exposure in the room condition for 1hour																
High Temperature Load Life	Temperature: 85 ±2°C Time: 1,000 ±12 hrs Load: Allowed DC current																
Damp Heat with Load	Temperature: 40 ±2°C Relative Humidity: 90 ~ 95% Time: 1,000 ±12 hrs Load: Allowed DC current																

Storage Temperature: 25±3°C; Humidity < 80%RH

Part Number Table

Description	Part Number				
Inductor, 0402, 1nH	MCFT000063	Inductor, 0603, 56nH	MCFT000092	Inductor, 0805, 330nH	MCFT000122
Inductor, 0402, 2.2nH	MCFT000064	Inductor, 0603, 68nH	MCFT000093	Inductor, 0805, 390nH	MCFT000123
Inductor, 0402, 3.3nH	MCFT000065	Inductor, 0603, 82nH	MCFT000094	Inductor, 0805, 470nH	MCFT000124
Inductor, 0402, 4.7nH	MCFT000066	Inductor, 0603, 100nH	MCFT000095	Inductor, 0805, 560nH	MCFT000125
Inductor, 0402, 6.8nH	MCFT000067	Inductor, 0603, 120nH	MCFT000096	Inductor, 0805, 680nH	MCFT000126
Inductor, 0402, 10nH	MCFT000068	Inductor, 0603, 150nH	MCFT000097	Inductor, 0805, 820nH	MCFT000127
Inductor, 0402, 12nH	MCFT000069	Inductor, 0603, 180nH	MCFT000098	Inductor, 0805, 1000nH	MCFT000128
Inductor, 0402, 15nH	MCFT000070	Inductor, 0603, 220nH	MCFT000099	Inductor, 0805, 1500nH	MCFT000129
Inductor, 0402, 18nH	MCFT000071	Inductor, 0603, 270nH	MCFT000100	Inductor, 0805, 2200nH	MCFT000130
Inductor, 0402, 22nH	MCFT000072	Inductor, 0603, 330nH	MCFT000101	Inductor, 0805, 3300nH	MCFT000131
Inductor, 0402, 27nH	MCFT000073	Inductor, 0603, 390nH	MCFT000102	Inductor, 0805, 4700nH	MCFT000132
Inductor, 0402, 33nH	MCFT000074	Inductor, 0603, 470nH	MCFT000103	Inductor, 0805, 10nH	MCFT000133
Inductor, 0402, 39nH	MCFT000075	Inductor, 0805, 10nH	MCFT000104	Inductor, 0805, 15nH	MCFT000134
Inductor, 0402, 47nH	MCFT000076	Inductor, 0805, 12nH	MCFT000105	Inductor, 0805, 22nH	MCFT000135
Inductor, 0402, 56nH	MCFT000077	Inductor, 0805, 15nH	MCFT000106	Inductor, 0805, 33nH	MCFT000136
Inductor, 0402, 68nH	MCFT000078	Inductor, 0805, 18nH	MCFT000107	Inductor, 0805, 47nH	MCFT000137
Inductor, 0603, 2.2nH	MCFT000079	Inductor, 0805, 22nH	MCFT000108	Inductor, 0805, 68nH	MCFT000138
Inductor, 0603, 3.3nH	MCFT000080	Inductor, 0805, 27nH	MCFT000109	Inductor, 0805, 100nH	MCFT000139
Inductor, 0603, 4.7nH	MCFT000081	Inductor, 0805, 33nH	MCFT000110	Inductor, 1206, 10nH	MCFT000140
Inductor, 0603, 6.8nH	MCFT000082	Inductor, 0805, 39nH	MCFT000111	Inductor, 1206, 15nH	MCFT000141
Inductor, 0603, 10nH	MCFT000083	Inductor, 0805, 47nH	MCFT000112	Inductor, 1206, 22nH	MCFT000142
Inductor, 0603, 12nH	MCFT000084	Inductor, 0805, 56nH	MCFT000113	Inductor, 1206, 33nH	MCFT000143
Inductor, 0603, 15nH	MCFT000085	Inductor, 0805, 68nH	MCFT000114	Inductor, 1206, 47nH	MCFT000144
Inductor, 0603, 18nH	MCFT000086	Inductor, 0805, 82nH	MCFT000115	Inductor, 1206, 68nH	MCFT000145
Inductor, 0603, 22nH	MCFT000087	Inductor, 0805, 100nH	MCFT000116	Inductor, 1206, 150nH	MCFT000146
Inductor, 0603, 27nH	MCFT000088	Inductor, 0805, 120nH	MCFT000117	Inductor, 1206, 220nH	MCFT000147
Inductor, 0603, 33nH	MCFT000089	Inductor, 0805, 150nH	MCFT000118	Inductor, 1206, 330nH	MCFT000148
Inductor, 0603, 39nH	MCFT000090	Inductor, 0805, 180nH	MCFT000119	Inductor, 1206, 470nH	MCFT000149
Inductor, 0603, 47nH	MCFT000091	Inductor, 0805, 220nH	MCFT000120	Inductor, 1206, 680nH	MCFT000150
		Inductor, 0805, 270nH	MCFT000121	Inductor, 1206, 1000nH	MCFT000151

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