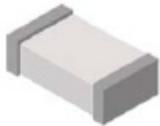
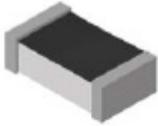


Multilayer Chip Inductor



Features:

- A ceramic material construction for high frequency application up to 10GHz.
- Tight tolerance physical dimensions ($\pm 0.05\text{mm}$).
- Tight inductance tolerance and excellent Q value.
- Available in three compact sizes of 0402, 0603 and 0805.

Applications:

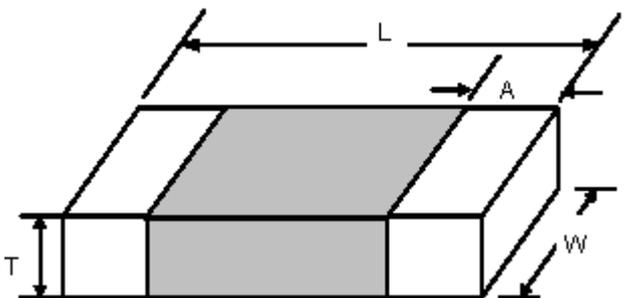
High frequency application.

Cellular phone, pagers.

EMI countermeasure in high frequency circuits and computer communication etc.

WLAN and RF module.

Dimensions:



Dimensions : Millimetres

Size	L	W	T	A (Minimum/Maximum)
0402	1.0 ± 0.10	0.5 ± 0.10	0.5 ± 0.10	0.1/0.30
0603	1.6 ± 0.15	0.8 ± 0.15	0.8 ± 0.15	0.2/0.60
0805	2.0 ± 0.20	1.25 ± 0.20	0.9 ± 0.20	0.2/0.80

Dimensions : Millimetres

Multilayer Chip Inductor



Electrical Specifications

0402 Multilayer Chip Inductors

Inductance (nH)	Tolerance	Quality Factor /Minimum	L/Q Frequency (MHz)	Q (Typical) Frequency (MHz)			Resistance DC/Maximum (Ohm)	Self Resonant Frequency/Minimum (GHz)	Current DC/Maximum (mA)	
1.0	±0.3nH	8	100	11	33	37	0.12	10.00	300	
1.5				12	29	40	0.13	6.00		
2.2				11	26	36	0.16			
3.3	±0.3nH, ±10%			11	28	37	0.19	4.00		
4.7				12			0.24			
6.8	±5%, ±10%			11	26	34	0.32	3.90		
10.0				11	25	31	0.42	3.20		
15.0				12	24	30	0.55	2.30		
22.0				12	23	26	0.80	1.60		
33.0				11	21	23	1.30	0.90		200
47.0				11	19	19	2.20	0.75		150
68.0				10	18	-	2.50	0.60		
100.0							100			

Measuring Equipment : HP-4291B+16192A.

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

0603 Multilayer Chip Inductors

Inductance (nH)	Tolerance	Quality Factor /Minimum	L/Q Frequency (MHz)	Q (Typical) Frequency (MHz)			Resistance DC/Maximum (Ohm)	Self Resonant Frequency/Minimum (GHz)	Current DC/Maximum (mA)
1.0	±0.3nH	8	100	15	36	49	0.10	6.00	500
1.5				14	34	47	0.10		
2.2				15	38	49	0.10		
3.3	±0.3nH, ±10%	10		16	40	51	0.13	4.00	
4.7				14		48	0.20		
6.8	±5%, ±10%	12		15	37	48	0.25	3.75	
10.0				16		47	0.3	3.00	
15.0				16	38	48	0.40	2.30	
22.0				18	40	49	0.50	1.60	
33.0				17	46	46	0.60	1.20	
47.0				17	36	39	0.70	0.90	
68.0		18		35	36	0.85	0.70	300	
100.0		18	28	16	1.20	0.60			

Measuring Equipment : HP-4291B+16197A.

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

<http://www.farnell.com>
<http://www.newark.com>
<http://www.cpc.co.uk>



Multilayer Chip Inductor



Electrical Specifications

0805 Multilayer Chip Inductors

Inductance (nH)	Tolerance	Quality Factor /Minimum	L/Q Frequency (MHz)	Self Resonant Frequency/Minimum (GHz)	Resistance DC/Maximum (Ohm)	Current DC/Maximum (mA)
1.0	±0.3nH	10	100	>6.00	0.10	300
1.5						
2.2						
3.3	±0.3nH, ±10%	12		4.50	0.13	
4.7					0.20	
6.8					0.25	
10.0	±5%, ±10%	15		2.50	0.30	
15.0				2.00	0.40	
22.0				1.70	0.50	
33.0				1.35	0.60	
47.0				1.20	0.70	
68.0				1.00	0.80	
100.0		0.73	1.00			
		18				

Measuring Equipment : HP-4291B+16197A.
Storage Temperature : 25 ±3°C; Humidity <80%RH.

Testing Condition and Requirements

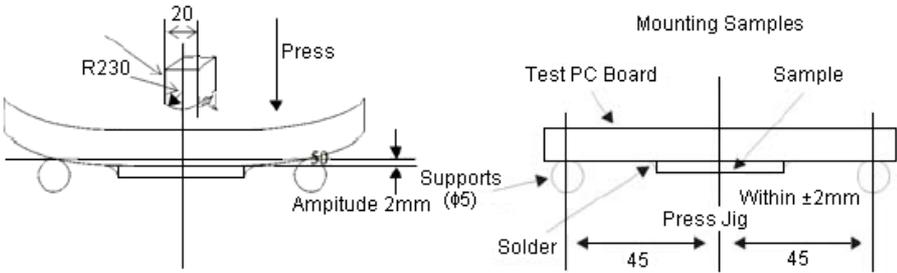
Electrical Characteristics

Test Items	Test Condition	Requirements
Inductance	a. Temperature: 25 ±1°C	Within specified tolerance.
	b. Relative humidity: 45 to 85%RH	
	c. Atmospheric pressure: 86 to 106kPa	
	d. Measuring equipment and fixture: 2012 (0805) HP 4291 + 16197A 1608 (0603) HP 4291 + 16192A 1005 (0402) HP 4291 + 16193A	
Q Value	a. Temperature: 25 ±1°C	In accordance with electrical specification.
	b. Relative Humidity: 45 to 85%RH	
	c. Atmospheric Pressure: 86 to 106kPa	
	d. Measuring equipment and fixture: 2012 (0805) HP 4291 + 16197A 1608 (0603) HP 4291 + 16192A 1005 (0402) HP 4291 + 16193A	

Electrical Characteristics

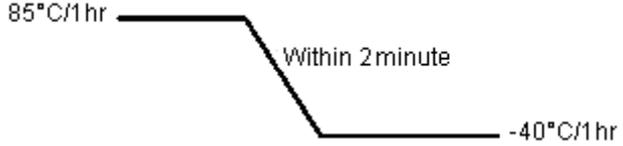
Test Items	Test Condition	Requirements
DC Resistance	a. Temperature: $25 \pm 1^\circ\text{C}$	In accordance with electrical specification.
	b. Relative Humidity: 45 to 85%RH	
	c. Atmospheric Pressure: 86 to 106kPa	
	Measuring equipment: HP 4338	
Temperature Characteristics	a. Temperature range: -30 to $+85^\circ\text{C}$	Within specified tolerance.
	Reference temperature: 25°C	

Mechanical Characteristics

Item	Test Condition	Requirements
Appearance	Inductors shall be visually inspected for visible evidence of defect.	In accordance with specification.
Dimension	Dimension shall be measured with calliper or micrometer	In accordance with dimension specification.
Solderability	Immerse a test sample into a methanol solution containing rosin, preheat it at 150 to 180°C for 3 to 5 seconds and immerse into molten solder of $245 \pm 5^\circ\text{C}$ for 3 ± 1 seconds.	More than 75% of the terminal electrode part shall be covered with fresh solder.
Resistance to Soldering Heat	Immerse a test sample into a methanol solution containing resin, preheat it at 150 to 180°C for 2 to 3 minutes and immerse into molten solder of $260 \pm 5^\circ\text{C}$ for 10 ± 0.5 seconds so that both terminal electrodes are completely submerged.	No visible damage
Bending Strength	<p>Solder the chip to test jig then apply a force in the direction shown in below. The soldering shall be done with the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.</p> 	No mechanical damage shall be observed.

Testing Condition and Requirements

Reliability

Item	Test Condition	Requirements
Thermal Shock	<p>Solder a test sample to printed circuit board, and conduct 100 cycles of test under the conditions shown as below. Cycle:</p> 	No visible damage Inductance variation within 10% Q variation within 20%
High Humidity State Life Test	Keep a test sample in an atmosphere with a temperature of $70 \pm 2^\circ\text{C}$, 90 to 95%RH for 500 ± 12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.	
High Humidity Load Life Test	Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of $70 \pm 2^\circ\text{C}$, 90 to 95%RH for 500 ± 12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.	
High Temperature State Life Test	Keep a test sample in an atmosphere with a temperature of $85 \pm 2^\circ\text{C}$ for 500 ± 12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.	
High Temperature Load	Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of $85 \pm 2^\circ\text{C}$ for 500 ± 12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.	

Part Number Table

Description	Part Number
Inductor, 0402, 1nH	MCFT000024
Inductor, 0402, 1.5nH	MCFT000025
Inductor, 0402, 2.2nH	MCFT000026
Inductor, 0402, 3.3nH	MCFT000027
Inductor, 0402, 4.7nH	MCFT000028
Inductor, 0402, 6.8nH	MCFT000029
Inductor, 0402, 10nH	MCFT000030
Inductor, 0402, 15nH	MCFT000031
Inductor, 0402, 22nH	MCFT000032
Inductor, 0402, 33nH	MCFT000033
Inductor, 0402, 47nH	MCFT000034
Inductor, 0402, 68nH	MCFT000035

Multilayer Chip Inductor



Part Number Table

Description	Part Number
Inductor, 0402, 100nH	MCFT000036
Inductor, 0603, 1nH	MCFT000037
Inductor, 0603, 1.5nH	MCFT000038
Inductor, 0603, 2.2nH	MCFT000039
Inductor, 0603, 3.3nH	MCFT000040
Inductor, 0603, 4.7nH	MCFT000041
Inductor, 0603, 6.8nH	MCFT000042
Inductor, 0603, 10nH	MCFT000043
Inductor, 0603, 15nH	MCFT000044
Inductor, 0603, 22nH	MCFT000045
Inductor, 0603, 33nH	MCFT000046
Inductor, 0603, 47nH	MCFT000047
Inductor, 0603, 68nH	MCFT000048
Inductor, 0603, 100nH	MCFT000049
Inductor, 0805, 1nH	MCFT000050
Inductor, 0805, 1.5nH	MCFT000051
Inductor, 0805, 2.2nH	MCFT000052
Inductor, 0805, 3.3nH	MCFT000053
Inductor, 0805, 4.7nH	MCFT000054
Inductor, 0805, 6.8nH	MCFT000055
Inductor, 0805, 10nH	MCFT000056
Inductor, 0805, 15nH	MCFT000057
Inductor, 0805, 22nH	MCFT000058
Inductor, 0805, 33nH	MCFT000059
Inductor, 0805, 47nH	MCFT000060
Inductor, 0805, 68nH	MCFT000061
Inductor, 0805, 100nH	MCFT000062

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