

Multilayer Ferrite Chip Inductor



CFB Series

MERITEK

FEATURES

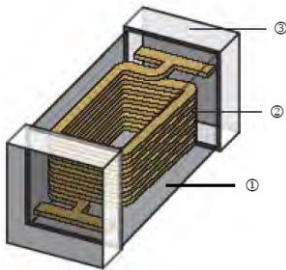
- Closed magnetic circuit avoids crosstalk
- Suitable for high density installation and re-flow soldering
- Sizes 0603 / 0805 / 1206

APPLICATIONS

- Personal Computers
- Portable Equipment
- CD-ROM, Hard Disk, Modem, Printers
- DC-DC Converters
- DSC, DVC, PDA, DVD and HDD

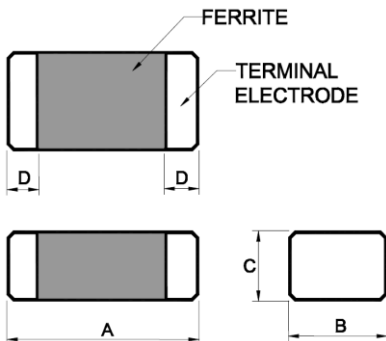


CONSTRUCTION



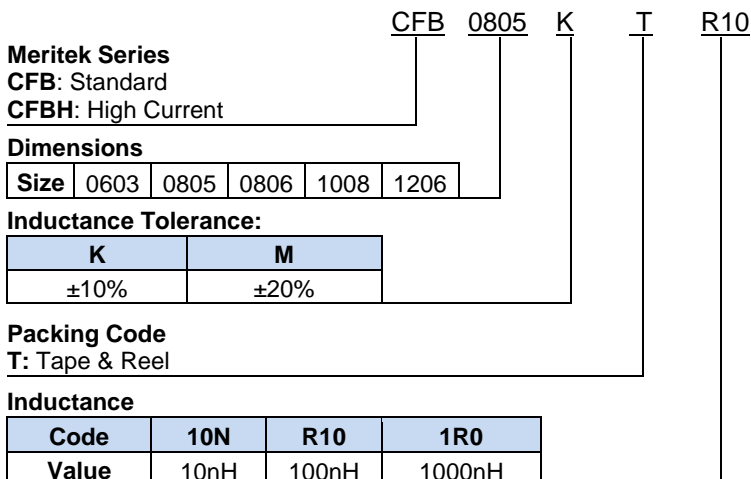
①	Ferrite	②	Internal Electrode	③	Electrode Plating (Ag/Ni/Sn)
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DIMENSIONS



Type	Size (Inch)	A	B	C	D	Weight (g) (1000pcs)
CFB0603	0603	1.60±0.20	0.80±0.20	0.80±0.20	0.30±0.20	6.2
CFB0805 (≤ 2.2μH)	0805	2.00±0.20	1.25±0.20	0.90±0.20	0.50±0.30	10
CFB0805 (≥ 2.7μH)	0805	2.00±0.20	1.25±0.20	1.25±0.20	0.50±0.30	10
CFB1206	1206	3.20±0.20	1.60±0.20	1.10±0.20	0.50±0.30	30
CFBH0805	0805	2.00±0.20	1.25±0.20	0.90±0.10	0.50±0.20	10
CFBH0806	0806	2.00±0.15	1.60±0.15	0.90±0.10	0.50±0.20	12
CFBH1008	1008	2.50±0.20	2.00±0.20	0.90±0.10	0.60±0.20	21

PART NUMBERING SYSTEM





STANDARD ELECTRICAL SPECIFICATIONS

CFB0603 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	L/Q Freq. (MHz)	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
10N	10	±20%	50MHz, 200mV	10	300	0.20	50
33N	33	±20%	50MHz, 200mV	10	270	0.20	50
47N	47	±20%	50MHz, 200mV	10	260	0.30	50
56N	56	±20%	50MHz, 200mV	10	255	0.30	50
68N	68	±20%	50MHz, 200mV	10	250	0.30	50
82N	82	±20%	50MHz, 200mV	10	245	0.30	50
R10	100	±10, ±20%	25MHz, 200mV	15	240	0.50	50
R12	120	±10, ±20%	25MHz, 200mV	15	205	0.50	50
R15	150	±10, ±20%	25MHz, 200mV	15	180	0.60	50
R18	180	±10, ±20%	25MHz, 200mV	15	165	0.60	50
R22	220	±10, ±20%	25MHz, 200mV	15	150	0.80	50
R27	270	±10, ±20%	25MHz, 200mV	15	136	0.80	50
R33	330	±10, ±20%	25MHz, 200mV	15	125	0.85	35
R39	390	±10, ±20%	25MHz, 200mV	15	110	1.00	35
R47	470	±10, ±20%	25MHz, 200mV	15	105	1.35	35
R56	560	±10, ±20%	25MHz, 200mV	15	95	1.55	35
R68	680	±10, ±20%	25MHz, 200mV	15	85	1.70	35
R82	820	±10, ±20%	25MHz, 200mV	15	75	2.10	35
1R0	1000	±10, ±20%	10MHz, 200mV	35	65	0.60	25
1R2	1200	±10, ±20%	10MHz, 200mV	35	60	0.80	25
1R5	1500	±10, ±20%	10MHz, 200mV	35	55	0.80	25
1R8	1800	±10, ±20%	10MHz, 200mV	35	50	0.95	25
2R2	2200	±10, ±20%	10MHz, 200mV	35	45	1.55	15
2R7	2700	±10, ±20%	10MHz, 200mV	35	40	1.35	15
3R3	3300	±10, ±20%	10MHz, 200mV	35	38	1.55	15
3R9	3900	±10, ±20%	10MHz, 200mV	35	35	1.70	15
4R7	4700	±10, ±20%	10MHz, 200mV	35	33	2.10	15
5R6	5600	±10, ±20%	4MHz, 200mV	35	22	1.55	5
6R8	6800	±10, ±20%	4MHz, 200mV	35	20	1.70	5
8R2	8200	±10, ±20%	4MHz, 60 mV	30	18	2.10	5
100	10000	±10, ±20%	2MHz, 60mV	30	17	2.55	5

Multilayer Ferrite Chip Inductor



CFB Series

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CFB0805 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	L/Q Freq. (MHz)	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
47N	47	$\pm 20\%$	50MHz, 200mV	20	320	0.20	300
56N	56	$\pm 20\%$	50MHz, 200mV	20	320	0.20	300
68N	68	$\pm 20\%$	50MHz, 200mV	20	280	0.20	300
82N	82	$\pm 20\%$	50MHz, 200mV	20	255	0.20	300
R10	100	$\pm 10, \pm 20\%$	25MHz, 200mV	20	235	0.30	250
R12	120	$\pm 10, \pm 20\%$	25MHz, 200mV	20	220	0.30	250
R15	150	$\pm 10, \pm 20\%$	25MHz, 200mV	20	200	0.40	250
R18	180	$\pm 10, \pm 20\%$	25MHz, 200mV	20	185	0.40	250
R22	220	$\pm 10, \pm 20\%$	25MHz, 200mV	20	170	0.50	250
R27	270	$\pm 10, \pm 20\%$	25MHz, 200mV	20	150	0.50	250
R33	330	$\pm 10, \pm 20\%$	25MHz, 200mV	20	145	0.55	250
R39	390	$\pm 10, \pm 20\%$	25MHz, 200mV	25	135	0.65	200
R47	470	$\pm 10, \pm 20\%$	25MHz, 200mV	25	125	0.65	200
R56	560	$\pm 10, \pm 20\%$	25MHz, 200mV	25	115	0.75	150
R68	680	$\pm 10, \pm 20\%$	25MHz, 200mV	25	105	0.80	150
R82	820	$\pm 10, \pm 20\%$	25MHz, 200mV	25	100	1.00	150
1R0	1000	$\pm 10, \pm 20\%$	10MHz, 200mV	45	75	0.40	50
1R2	1200	$\pm 10, \pm 20\%$	10MHz, 200mV	45	65	0.50	50
1R5	1500	$\pm 10, \pm 20\%$	10MHz, 200mV	45	60	0.50	50
1R8	1800	$\pm 10, \pm 20\%$	10MHz, 200mV	45	55	0.60	50
2R2	2200	$\pm 10, \pm 20\%$	10MHz, 200mV	45	50	0.65	30
2R7	2700	$\pm 10, \pm 20\%$	10MHz, 200mV	45	45	0.75	30
3R3	3300	$\pm 10, \pm 20\%$	10MHz, 200mV	45	41	0.80	30
3R9	3900	$\pm 10, \pm 20\%$	10MHz, 200mV	45	38	0.90	30
4R7	4700	$\pm 10, \pm 20\%$	10MHz, 200mV	45	35	1.00	30
5R6	5600	$\pm 10, \pm 20\%$	4MHz, 200mV	45	32	0.90	15
6R8	6800	$\pm 10, \pm 20\%$	4MHz, 200mV	45	29	1.00	15
8R2	8200	$\pm 10, \pm 20\%$	4MHz, 200mV	45	26	1.10	15
100	10000	$\pm 10, \pm 20\%$	2MHz, 60mV	45	24	1.15	15
120	12000	$\pm 10, \pm 20\%$	2MHz, 60mV	45	22	1.25	15
150	15000	$\pm 10, \pm 20\%$	1MHz, 60mV	30	19	0.80	5
180	18000	$\pm 10, \pm 20\%$	1MHz, 60mV	30	18	0.90	5
220	22000	$\pm 10, \pm 20\%$	1MHz, 60mV	30	16	1.10	5

Multilayer Ferrite Chip Inductor



CFB Series

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CFB1206 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	L/Q Freq. (MHz)	Q min.	SRF (MHz) min.	DCR (Ω) max.	IDC (mA) max.
47N	47	±20%	50MHz, 200mV	20	320	0.15	300
56N	56	±20%	50MHz, 200mV	20	280	0.25	300
68N	68	±20%	50MHz, 200mV	20	280	0.25	300
82N	82	±20%	50MHz, 200mV	20	250	0.25	300
R10	100	±10, ±20%	25MHz, 200mV	20	235	0.25	250
R12	120	±10, ±20%	25MHz, 200mV	20	220	0.30	250
R15	150	±10, ±20%	25MHz, 200mV	20	200	0.30	250
R18	180	±10, ±20%	25MHz, 200mV	20	185	0.40	250
R22	220	±10, ±20%	25MHz, 200mV	20	170	0.40	250
R27	270	±10, ±20%	25MHz, 200mV	20	150	0.50	250
R33	330	±10, ±20%	25MHz, 200mV	20	145	0.60	250
R39	390	±10, ±20%	25MHz, 200mV	25	135	0.50	200
R47	470	±10, ±20%	25MHz, 200mV	25	125	0.60	200
R56	560	±10, ±20%	25MHz, 200mV	25	115	0.70	150
R68	680	±10, ±20%	25MHz, 200mV	25	105	0.80	150
R82	820	±10, ±20%	25MHz, 200mV	25	100	0.90	150
1R0	1000	±10, ±20%	10MHz, 200mV	45	75	0.40	100
1R2	1200	±10, ±20%	10MHz, 200mV	45	65	0.50	100
1R5	1500	±10, ±20%	10MHz, 200mV	45	60	0.50	80
1R8	1800	±10, ±20%	10MHz, 200mV	45	55	0.50	70
2R2	2200	±10, ±20%	10MHz, 200mV	45	50	0.60	60
2R7	2700	±10, ±20%	10MHz, 200mV	45	45	0.60	60
3R3	3300	±10, ±20%	10MHz, 200mV	45	41	0.70	60
3R9	3900	±10, ±20%	10MHz, 200mV	45	38	0.80	50
4R7	4700	±10, ±20%	10MHz, 200mV	45	35	0.90	50
5R6	5600	±10, ±20%	4MHz, 200mV	45	32	0.70	25
6R8	6800	±10, ±20%	4MHz, 200mV	45	29	0.80	25
8R2	8200	±10, ±20%	4MHz, 200mV	45	26	0.90	25
100	10000	±10, ±20%	2MHz, 60mV	45	24	1.00	25
120	12000	±10, ±20%	2MHz, 60mV	45	22	1.05	15
150	15000	±10, ±20%	1MHz, 60mV	35	19	0.70	5
180	18000	±10, ±20%	1MHz, 60mV	35	18	0.75	5
220	22000	±10, ±20%	1MHz, 60mV	35	16	0.90	5
270	27000	±10, ±20%	1MHz, 60mV	35	14	0.90	5
330	33000	±10, ±20%	1MHz, 60mV	35	13	1.05	5



HIGH CURRENT ELECTRICAL SPECIFICATIONS

CFBH0805 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	Test Freq.	SRF (MHz) min.	DCR (Ω)	IDC (mA) max.
R47	470	±20%	1MHz, 250mV	100	0.10±25%	1100
R68	608	±20%	1MHz, 250mV	100	0.12±25%	1000
R82	820	±20%	1MHz, 250mV	90	0.14±25%	900
1R0	1000	±20%	1MHz, 250mV	90	0.16±25%	800
1R2	1200	±20%	1MHz, 250mV	80	0.16±25%	800
1R5	1500	±20%	1MHz, 250mV	70	0.22±25%	700
1R8	1800	±20%	1MHz, 250mV	60	0.22±25%	700
2R2	2200	±20%	1MHz, 250mV	50	0.25±25%	600
3R3	3300	±20%	1MHz, 250mV	40	0.22±25%	500
4R7	4700	±20%	1MHz, 250mV	30	0.30±25%	500

CFBH0806 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	Test Freq.	SRF (MHz) min.	DCR (Ω)	IDC (mA) max.
R47	470	±20%	1MHz, 250mV	100	0.14±30%	1500
R68	680	±20%	1MHz, 250mV	90	0.15±30%	1500
R82	820	±20%	1MHz, 250mV	80	0.16±30%	1500
1R0	1000	±20%	1MHz, 250mV	60	0.16±30%	1400
1R2	1200	±20%	1MHz, 250mV	60	0.16±30%	1400
1R5	1500	±20%	1MHz, 250mV	50	0.20±30%	1200
1R8	1800	±20%	1MHz, 250mV	50	0.20±30%	1200
2R2	2200	±20%	1MHz, 250mV	40	0.22±30%	1200
3R3	3300	±20%	1MHz, 250mV	30	0.24±30%	1100
4R7	4700	±20%	1MHz, 250mV	20	0.30±30%	1100

CFBH1008 Multilayer Ferrite Chip Inductors Type

Codes	Inductance (nH)	Tolerance	Test Freq.	SRF (MHz) min.	DCR (Ω)	IDC (mA) max.
R47	470	±20%	1MHz, 250mV	100	0.07±25%	1800
R68	680	±20%	1MHz, 250mV	90	0.09±25%	1700
R82	820	±20%	1MHz, 250mV	80	0.10±25%	1700
1R0	1000	±20%	1MHz, 250mV	60	0.11±25%	1600
1R2	1200	±20%	1MHz, 250mV	60	0.11±25%	1600
1R5	1500	±20%	1MHz, 250mV	50	0.13±25%	1500
1R8	1800	±20%	1MHz, 250mV	50	0.13±25%	1500
2R2	2200	±20%	1MHz, 250mV	40	0.17±25%	1300
3R3	3300	±20%	1MHz, 250mV	30	0.16±25%	1200
4R7	4700	±20%	1MHz, 250mV	25	0.20±25%	1100

Multilayer Ferrite Chip Inductor



CFB Series

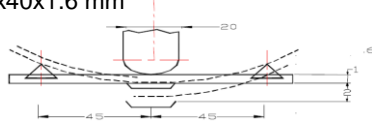
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ENVIRONMENTAL CHARACTERISTICS

Electrical Performance Test

Item	Requirement	Test Method
Inductance	Refer to standard electrical characteristic spec.	HP4291B
Q		HP4291B
SRF		HP4291B
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

Item	Requirement	Test Method
Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal. Electrode should be covered with solder. Inductance: within $\pm 15\%$ of initial value Q: within $\pm 30\%$ of initial value Inductance: within $\pm 20\%$ of initial value (0603 over 12uH)	Pre-heating: 150°C, 1min. Solder Composition: Sn/Ag3.0/Cu0.5 (Pb-Free) Solder Temperature: 260 \pm 5°C (Pb-Free) Immersion Time: 10 \pm 1 sec.
Solderability	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150°C, 1min. Solder Composition: Sn/Ag3.0/Cu0.5 (Pb-Free) Solder Temperature: 245 \pm 5°C (Pb-Free) Immersion Time: 4 \pm 1 sec.
Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the ferrite.	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6 mm Deflection: 2.0 mm Keeping Time: 30 sec. 
Vibration		*For 0402, substrate dimension is 100x40x0.8 mm 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

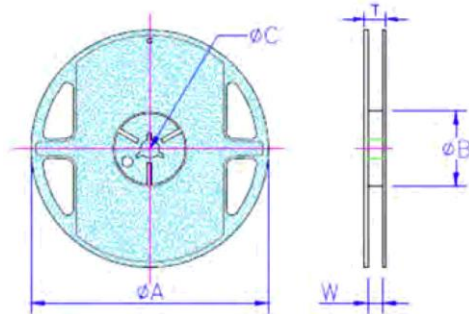
Climatic Test

Item	Requirement	Test Method															
Damp Heat with Load	Appearance: No damage L change: within $\pm 10\%$ of initial value Q change: within $\pm 30\%$ of initial value	Temperature: 40 \pm 2°C Relative Humidity: 90 ~ 95% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs															
Temperature Cycle		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25\pm3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25\pm2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85\pm3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25\pm2</td> <td>3</td> </tr> </tbody> </table> Total: 100 cycles Measured after exposure in the room condition for 24 hrs	Step	Temperature (°C)	Time (min.)	1	-25 \pm 3	30	2	25 \pm 2	3	3	85 \pm 3	30	4	25 \pm 2	3
Step		Temperature (°C)	Time (min.)														
1		-25 \pm 3	30														
2	25 \pm 2	3															
3	85 \pm 3	30															
4	25 \pm 2	3															
High Temperature Resistance	Temperature: 85 \pm 3°C Relative Humidity: 20% Applied Current: Rated Current Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																
Low Temperature Resistance	Temperature: -25 \pm 3°C Relative Humidity: 0% Time: 1000 hrs Measured after exposure in the room condition for 24 hrs																



PACKAGING

Reel Specifications



Unit: mm

Type	A	B	C	W	T	Quality (EA)	
						Paper Tape (Type B)	Polystyrene Tape (Type A)
CFB0603	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
CFB0805(≤2.2uH)	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
CFB0805(≥2.7uH)	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
CFB1206	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
CFBH0805	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	4,000	-
CFBH0806	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000
CFBH1008	178±1	60.0+0.5	13.0±0.2	9.00±0.5	12.0±0.15	-	3,000

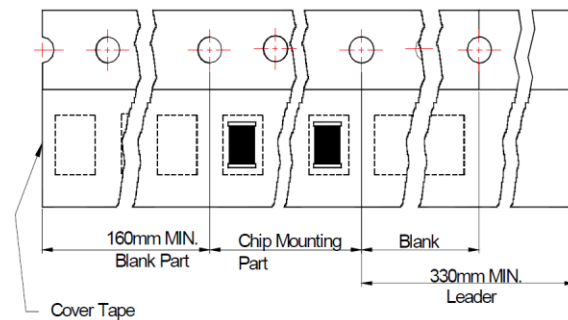
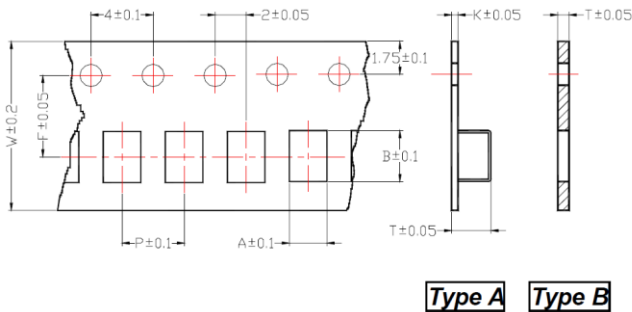
Tape Specifications

Tape Material

Carrier tape : Polystyrene for 0805(≤2.2uH) 1206

Paper for 0603 0805(≥2.7uH)

Cover type : Polystyrene



Unit: mm

Type	A	B	T	W	P	F	K	Tape Type
CFB0603	1.05	1.85	0.95	8.0	4.0	3.5	-	B
CFB0805(≤2.2uH)	1.50	2.42	0.95	8.0	4.0	3.5	-	B
CFB0805(≥2.7uH)	1.50	2.35	1.45	8.0	4.0	3.5	0.22	A
CFB1206	1.88	3.50	1.27	8.0	4.0	3.5	0.22	A
CFBH0805	1.45	2.25	0.95	8.0	4.0	3.5	-	B
CFBH0806	1.88	2.40	1.23	8.0	4.0	3.5	0.23	A
CFBH1008	2.20	2.85	1.40	8.0	4.0	3.5	0.23	A