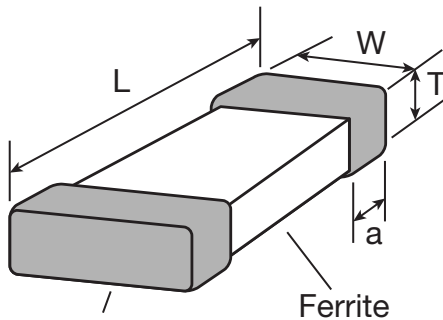


Multilayer Chip Inductors

Features

- No crosstalk between inductors due to magnetic shield
Perfect for high density installation
- Unified automatic chip mounting shape with no directionality
- Excellent solderability and high resistance for either flow or reflow soldering
- Monolithic structure for high reliability

Dimensions



Termination finish is
100% matte Tin (Sn)
over Nickel (Ni)

Unit: mm (inch)

SERIES	L	W	T	a
MLF 1608 (0603)	1.6 ± 0.15 (0.064 ± .006)	0.8 ± 0.15 (0.032 ± .006)	0.8 ± 0.15 (0.032 ± .006) 1.2 ± 0.2 (0.048 ± .008)	0.3 ± 0.2 (0.012 ± .008)
MLF 2012 (0805)	2.0 ± 0.2 (0.080 ± .008)	1.25 ± 0.2 (0.050 ± .008)	0.85 ± 0.2 (0.034 ± .008) 1.25 ± 0.2 (0.050 ± .008)	0.5 ± 0.3 (0.020 ± .012)
MLF 3216 (1206)	3.2 ± 0.2 (0.128 ± .008)	1.6 ± 0.2 (0.064 ± .008)	0.6 ± 0.2 (0.024 ± .008) 1.1 ± 0.2 (0.044 ± .008)	0.5 ± 0.3 (0.020 ± .012)

Operating Temperature Range	-40 to +85° C
Storage Temperature Range	-10 to +40° C

How To Order

MLF1608

Series

47N

Inductance
Value

47N: 47nH (0.047μH)
R12: 0.12μH
1R0: 1μH

M

Tolerance
J: ± 5%
K: ± 10%
M: ± 20%
S: ± 0.3nH

T

Packaging
T: Tape

NOTE: All MLF series have Ferrite core.

Standard termination finish for this product is
100% matte Tin (Sn)

Please Note: Venkel offers Engineering Kits for this product. See page 117 for details.

All components in this section are RoHS compliant per the EU directives and definitions.

Multilayer Chip Inductors

MLF1608 SERIES (0603) - Electrical Characteristics

Inductance (μH)	Inductance Tolerance	Q		Test frequency L, Q (MHz)	Self-resonant frequency (MHz)		DC resistance (Ω)		Rated current (mA) max.	Thickness T (mm)	Part No.*
		min.	nominal		min.	nominal	max.	nominal			
0.047	± 20%	10	20	50	260	350	0.3	0.2	50	0.8	MLF1608-47NM T
0.068	± 20%	10	20	50	250	325	0.3	0.2	50	0.8	MLF1608-68NM T
0.082	± 20%	10	20	50	245	310	0.3	0.2	50	0.8	MLF1608-82NM T
0.1	± 20%, ± 10%	15	25	25	240	295	0.5	0.3	50	0.8	MLF1608-R10□T
0.12	± 20%, ± 10%	15	25	25	205	280	0.5	0.3	50	0.8	MLF1608-R12□T
0.15	± 20%, ± 10%	15	25	25	180	260	0.6	0.4	50	0.8	MLF1608-R15□T
0.18	± 20%, ± 10%	15	25	25	165	245	0.6	0.4	50	0.8	MLF1608-R18□T
0.22	± 20%, ± 10%	15	25	25	150	230	0.8	0.45	50	0.8	MLF1608-R22□T
0.27	± 20%, ± 10%	15	25	25	136	210	0.8	0.5	50	0.8	MLF1608-R27□T
0.33	± 20%, ± 10%	15	25	25	125	200	0.85	0.55	35	0.8	MLF1608-R33□T
0.39	± 20%, ± 10%	15	25	25	110	185	1	0.65	35	0.8	MLF1608-R39□T
0.47	± 20%, ± 10%	15	25	25	105	170	1.35	0.7	35	0.8	MLF1608-R47□T
0.56	± 20%, ± 10%	15	25	25	95	155	1.55	0.75	35	0.8	MLF1608-R56□T
0.68	± 20%, ± 10%	15	25	25	90	140	1.7	0.8	35	0.8	MLF1608-R68□T
0.82	± 20%, ± 10%	15	25	25	85	125	2.1	0.85	35	0.8	MLF1608-R82□T
1	± 20%, ± 10%	35	50	10	75	105	0.6	0.35	25	0.8	MLF1608-1R0□T
1.2	± 20%, ± 10%	35	50	10	65	100	0.8	0.45	25	0.8	MLF1608-1R2□T
1.5	± 20%, ± 10%	35	50	10	60	90	0.8	0.5	25	0.8	MLF1608-1R5□T
1.8	± 20%, ± 10%	35	50	10	55	80	0.95	0.55	25	0.8	MLF1608-1R8□T
2.2	± 20%, ± 10%	35	50	10	50	75	1.15	0.65	15	0.8	MLF1608-2R2□T
2.7	± 20%, ± 10%	35	50	10	45	65	1.35	0.75	15	0.8	MLF1608-2R7□T
3.3	± 20%, ± 10%	35	50	10	40	60	1.55	0.85	15	0.8	MLF1608-3R3□T
3.9	± 20%, ± 10%	35	50	10	35	50	1.7	0.9	15	0.8	MLF1608-3R9□T
4.7	± 20%, ± 10%	35	50	10	33	47	2.1	1	15	0.8	MLF1608-4R7□T
5.6	± 20%, ± 10%	35	55	4	22	45	1.55	0.8	5	0.8	MLF1608-5R6□T
6.8	± 20%, ± 10%	35	55	4	20	40	1.7	0.9	5	0.8	MLF1608-6R8□T
8.2	± 20%, ± 10%	35	55	4	18	38	2.1	1	5	0.8	MLF1608-8R2□T
10	± 20%, ± 10%	30	50	2	17	37	1.85	0.9	3	0.8	MLF1608-100□T
12	± 20%, ± 10%	30	50	2	15	35	2.1	1	3	0.8	MLF1608-120□T
15	± 20%, ± 10%	20	35	1	14	30	1.7	0.8	1	0.8	MLF1608-150□T
18	± 20%, ± 10%	20	35	1	13	28	1.85	0.9	1	0.8	MLF1608-180□T
22	± 20%, ± 10%	20	35	1	11	25	2.1	1	1	0.8	MLF1608-220□T
27	± 20%, ± 10%	20	35	1	10	23	2.75	1.2	1	1.2	MLF1608-270□T
33	± 20%, ± 10%	20	35	1	9	21	2.95	1.3	1	1.2	MLF1608-330□T

*NOTE — Part No. can be written as MLF0603.

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MLF2012 SERIES (0805) - Electrical Characteristics

Inductance (μ H)	Inductance tolerance	Q		Test frequency L, Q (MHz)	Self-resonant frequency (MHz)		DC resistance (Ω)		Rated current (mA) max.	Thickness T (mm)	Part No.*
		min.	nominal		min.	nominal	max.	nominal			
0.047	$\pm 20\%$	15	25	50	320	400	0.2	0.11	300	0.85	MLF2012-47NM T
0.068	$\pm 20\%$	15	25	50	280	350	0.2	0.11	300	0.85	MLF2012-68NM T
0.082	$\pm 20\%$	15	25	50	255	320	0.2	0.11	300	0.85	MLF2012-82NM T
0.1	$\pm 20\%, \pm 10\%$	20	30	25	235	300	0.3	0.16	250	0.85	MLF2012-R10□T
0.12	$\pm 20\%, \pm 10\%$	20	30	25	220	280	0.3	0.16	250	0.85	MLF2012-R12□T
0.15	$\pm 20\%, \pm 10\%$	20	30	25	200	250	0.4	0.21	250	0.85	MLF2012-R15□T
0.18	$\pm 20\%, \pm 10\%$	20	30	25	185	230	0.4	0.21	250	0.85	MLF2012-R18□T
0.22	$\pm 20\%, \pm 10\%$	20	30	25	170	220	0.5	0.26	250	0.85	MLF2012-R22□T
0.27	$\pm 20\%, \pm 10\%$	20	30	25	150	200	0.5	0.26	250	0.85	MLF2012-R27□T
0.33	$\pm 20\%, \pm 10\%$	20	30	25	145	180	0.55	0.31	250	0.85	MLF2012-R33□T
0.39	$\pm 20\%, \pm 10\%$	25	35	25	135	170	0.65	0.36	200	0.85	MLF2012-R39□T
0.47	$\pm 20\%, \pm 10\%$	25	35	25	125	160	0.65	0.36	200	1.25	MLF2012-R47□T
0.56	$\pm 20\%, \pm 10\%$	25	35	25	115	150	0.75	0.41	150	1.25	MLF2012-R56□T
0.68	$\pm 20\%, \pm 10\%$	25	35	25	105	135	0.8	0.46	150	1.25	MLF2012-R68□T
0.82	$\pm 20\%, \pm 10\%$	25	35	25	100	125	1	0.56	150	1.25	MLF2012-R82□T
1	$\pm 20\%, \pm 10\%$	45	55	10	75	105	0.4	0.21	50	0.85	MLF2012-1R0□T
1.2	$\pm 20\%, \pm 10\%$	45	55	10	65	95	0.5	0.26	50	0.85	MLF2012-1R2□T
1.5	$\pm 20\%, \pm 10\%$	45	55	10	60	85	0.5	0.26	50	0.85	MLF2012-1R5□T
1.8	$\pm 20\%, \pm 10\%$	45	55	10	55	78	0.6	0.31	50	0.85	MLF2012-1R8□T
2.2	$\pm 20\%, \pm 10\%$	45	60	10	50	70	0.65	0.36	30	0.85	MLF2012-2R2□T
2.7	$\pm 20\%, \pm 10\%$	45	60	10	45	64	0.75	0.41	30	1.25	MLF2012-2R7□T
3.3	$\pm 20\%, \pm 10\%$	45	60	10	41	58	0.8	0.46	30	1.25	MLF2012-3R3□T
3.9	$\pm 20\%, \pm 10\%$	45	60	10	38	53	0.9	0.51	30	1.25	MLF2012-3R9□T
4.7	$\pm 20\%, \pm 10\%$	45	60	10	35	48	1	0.56	30	1.25	MLF2012-4R7□T
5.6	$\pm 20\%, \pm 10\%$	50	60	4	32	44	0.9	0.51	15	1.25	MLF2012-5R6□T
6.8	$\pm 20\%, \pm 10\%$	50	60	4	29	40	1	0.56	15	1.25	MLF2012-6R8□T
8.2	$\pm 20\%, \pm 10\%$	50	60	4	26	36	1.1	0.61	15	1.25	MLF2012-8R2□T
10	$\pm 20\%, \pm 10\%$	50	60	2	24	33	1.15	0.66	15	1.25	MLF2012-100□T
12	$\pm 20\%, \pm 10\%$	50	60	2	22	30	1.25	0.71	15	1.25	MLF2012-120□T
15	$\pm 20\%, \pm 10\%$	30	40	1	19	27	0.8	0.46	5	1.25	MLF2012-150□T
18	$\pm 20\%, \pm 10\%$	30	40	1	18	25	0.9	0.51	5	1.25	MLF2012-180□T
22	$\pm 20\%, \pm 10\%$	30	40	1	16	22	1.1	0.61	5	1.25	MLF2012-220□T
27	$\pm 20\%, \pm 10\%$	30	40	1	14	20	1.5	0.66	5	1.25	MLF2012-270□T
33	$\pm 20\%, \pm 10\%$	30	40	0.4	13	18	1.25	0.71	5	1.25	MLF2012-330□T

*NOTE — Part No. can be written as MLF0805.

Multilayer Chip Inductors

MLF3216 SERIES (1206) - Electrical Characteristics

Inductance (μ H)	Inductance tolerance	Q		Test frequency L, Q (MHz)	Self-resonant frequency (MHz)		DC resistance (Ω)		Rated current (mA) max.	Thickness T (mm)	Part No.*
		min.	nominal		min.	nominal	max.	nominal			
0.047	$\pm 20\%$	20	30	50	320	400	0.15	0.08	300	0.6 \pm 0.2	MLF3216-47NM T
0.068	$\pm 20\%$	20	30	50	280	330	0.25	0.13	300	0.6 \pm 0.2	MLF3216-68NM T
0.1	$\pm 20\%, \pm 10\%$	20	30	25	235	280	0.25	0.13	250	0.6 \pm 0.2	MLF3216-R10□T
0.12	$\pm 20\%, \pm 10\%$	20	30	25	220	260	0.3	0.18	250	0.6 \pm 0.2	MLF3216-R12□T
0.15	$\pm 20\%, \pm 10\%$	20	30	25	200	240	0.3	0.18	250	0.6 \pm 0.2	MLF3216-R15□T
0.18	$\pm 20\%, \pm 10\%$	20	30	25	185	220	0.4	0.23	250	0.6 \pm 0.2	MLF3216-R18□T
0.22	$\pm 20\%, \pm 10\%$	20	30	25	170	200	0.4	0.23	250	0.6 \pm 0.2	MLF3216-R22□T
0.27	$\pm 20\%, \pm 10\%$	20	30	25	150	180	0.5	0.28	250	0.6 \pm 0.2	MLF3216-R27□T
0.33	$\pm 20\%, \pm 10\%$	20	30	25	145	170	0.6	0.34	250	0.6 \pm 0.2	MLF3216-R33□T
0.39	$\pm 20\%, \pm 10\%$	25	35	25	135	160	0.5	0.28	200	1.1 \pm 0.3	MLF3216-R39□T
0.47	$\pm 20\%, \pm 10\%$	25	35	25	125	145	0.6	0.34	200	1.1 \pm 0.3	MLF3216-R47□T
0.56	$\pm 20\%, \pm 10\%$	25	35	25	115	135	0.7	0.39	150	1.1 \pm 0.3	MLF3216-R56□T
0.68	$\pm 20\%, \pm 10\%$	25	35	25	105	125	0.8	0.44	150	1.1 \pm 0.3	MLF3216-R68□T
0.82	$\pm 20\%, \pm 10\%$	25	35	25	100	115	0.9	0.5	150	1.1 \pm 0.3	MLF3216-R82□T
1	$\pm 20\%, \pm 10\%$	45	60	10	75	90	0.4	0.23	100	0.6 \pm 0.2	MLF3216-1R0□T
1.2	$\pm 20\%, \pm 10\%$	45	60	10	65	80	0.5	0.28	100	0.6 \pm 0.2	MLF3216-1R2□T
1.5	$\pm 20\%, \pm 10\%$	45	60	10	60	70	0.5	0.28	50	1.1 \pm 0.3	MLF3216-1R5□T
1.8	$\pm 20\%, \pm 10\%$	45	60	10	55	66	0.5	0.28	50	1.1 \pm 0.3	MLF3216-1R8□T
2.2	$\pm 20\%, \pm 10\%$	45	60	10	50	58	0.6	0.34	50	1.1 \pm 0.3	MLF3216-2R2□T
2.7	$\pm 20\%, \pm 10\%$	45	60	10	45	53	0.6	0.34	50	1.1 \pm 0.3	MLF3216-2R7□T
3.3	$\pm 20\%, \pm 10\%$	45	65	10	41	49	0.07	0.39	50	1.1 \pm 0.3	MLF3216-3R3□T
3.9	$\pm 20\%, \pm 10\%$	45	65	10	38	45	0.8	0.44	50	1.1 \pm 0.3	MLF3216-3R9□T
4.7	$\pm 20\%, \pm 10\%$	45	65	10	35	41	0.9	0.5	50	1.1 \pm 0.3	MLF3216-4R7□T
5.6	$\pm 20\%, \pm 10\%$	50	65	4	32	38	0.7	0.39	25	1.1 \pm 0.3	MLF3216-5R6□T
6.8	$\pm 20\%, \pm 10\%$	50	65	4	29	34	0.8	0.44	25	1.1 \pm 0.3	MLF3216-6R8□T
8.2	$\pm 20\%, \pm 10\%$	50	65	4	26	31	0.9	0.5	25	1.1 \pm 0.3	MLF3216-8R2□T
10	$\pm 20\%, \pm 10\%$	50	65	2	24	28	1	0.55	25	1.1 \pm 0.3	MLF3216-100□T
12	$\pm 20\%, \pm 10\%$	50	65	2	22	26	1.05	0.6	15	1.1 \pm 0.3	MLF3216-120□T
15	$\pm 20\%, \pm 10\%$	35	45	1	19	23	0.7	0.39	5	1.1 \pm 0.3	MLF3216-150□T
18	$\pm 20\%, \pm 10\%$	35	45	1	18	21	0.7	0.39	5	1.1 \pm 0.3	MLF3216-180□T
22	$\pm 20\%, \pm 10\%$	35	45	1	16	19	0.9	0.5	5	1.1 \pm 0.3	MLF3216-220□T
27	$\pm 20\%, \pm 10\%$	35	45	1	14	17	0.9	0.5	5	1.1 \pm 0.3	MLF3216-270□T
33	$\pm 20\%, \pm 10\%$	35	45	0.4	13	16	1.05	0.6	5	1.1 \pm 0.3	MLF3216-330□T

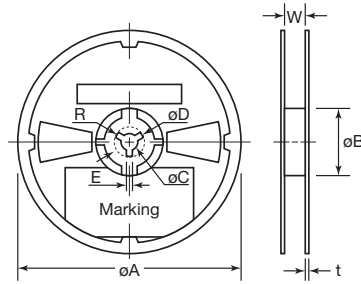
*NOTE — Part No. can be written as MLF1206.

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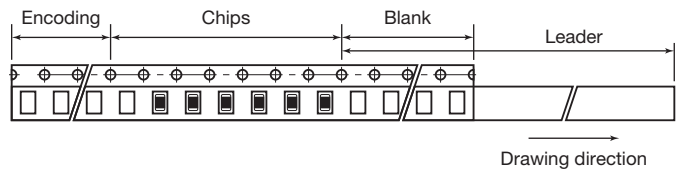
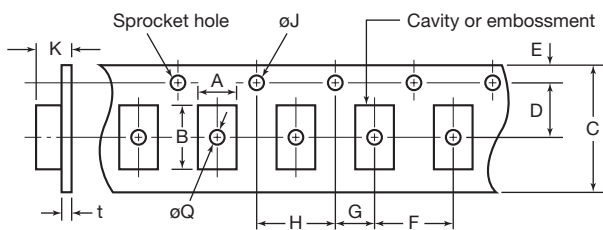
Reel Dimensions



Dimensions (unit = mm)

Series	Product's Thickness (mm)	Quantities (pieces) Taping (/reel)	Reel Dimensions (mm)				
			ϕA	ϕB	ϕC	W	t
MLF 1608	0.8 ± 0.15	4000 (4mm pitch)	178 ± 2	60 ± 2	13 ± 0.5	10 ± 1.5	2.5 ± 0.2
	1.2 ± 0.2	2000 (4mm pitch)					
MLF 2012	0.85 ± 0.2	4000 (4mm pitch)	178 ± 2	60 ± 2	13 ± 0.5	10 ± 1.5	2.5 ± 0.2
	1.25 ± 0.2	2000 (4mm pitch)					
MLF 3216	0.6 ± 0.2	4000 (4mm pitch)	178 ± 2	60 ± 2	13 ± 0.5	10 ± 1.5	2.5 ± 0.2
	1.1 ± 0.3	2000 or 3000 (4mm pitch)					

Taping Dimensions



Tape Dimensions (unit = mm)

Series	Tape Dimensions (mm)												Tape Material	Taping Dimensions (mm)		
	A	B	C	D	E	F	G	H	ϕJ	K	t	ϕQ		Leader	Blank	Ending
MLF 1608	1.1	1.9	8	3.5	1.75	4	2	4	1.5	1.1 max. 2 max.	0.3		Paper	150 min.	80 min.	40 min.
MLF 2012	1.5	2.3	8	3.5	1.75	4	2	4	1.5	1.5 max. 2 max.	0.3	0.5	Paper			
MLF 3216	1.9	3.5	8	3.5	1.75	4	2	4	1.5	1.1 max. 2 max.	0.3	0.5	Paper			

All components in this section are RoHS compliant per the EU directives and definitions.