

TYPE MLF (MIC)

FEATURES

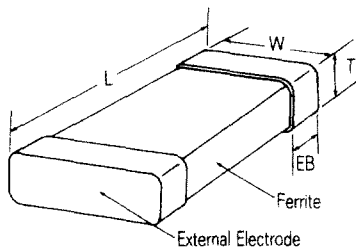
SMEC offers a product that utilizes a unique technology to provide a Surface Mount Chip Inductor, that is unlike any coil type inductor. Magnetic materials technology and multilayer technology is used to produce chip inductors that do not use any windings. This multilayer process uses alternate ferrite and conductor layers to form a completely monolithic structure.

Some of the features provided are:

- High Volumetric efficiency.
- Magnetic shield eliminates crosstalk, perfect for high density surface mount applications.
- Excellent solderability with all reflow techniques.
- No polarity.

DIMENSIONS

(mm) Inches					
Type	L	W	T	EB	Termination
(1005) 0402	0.040 (1.0)	0.020 (0.5)	0.020 (0.5)	0.010 (0.25)	Ni/Sn
(1608) 0603	0.063 (1.6)	0.031 (0.8)	0.031 (0.8)	0.012 (0.3)	Ni/Sn
(2012) 0805	0.079 (2.0)	0.049 (1.25)	0.033 (0.85)	0.020 (0.5)	Ni/Sn
(3216) 1206	0.126 (3.2)	0.063 (1.6)	0.049 (1.25)	0.020 (0.5)	Ni/Sn
(3225) 1210	0.126 (3.2)	0.100 (2.5)	0.043 (1.1)	0.020 (0.5)	Ni/Sn
(3225) 1210	0.126 (3.2)	0.100 (2.5)	0.100 (2.5)	0.020 (0.5)	Ni/Sn



TAPE PACKAGING

Type	Taping	Thickness	Qty./Reel	Pitch
0402	Embossed	0.020 (0.5)	10,000	0.079 (2.0)
0603	Embossed	0.031 (0.8)	4,000	0.157 (4.0)
	Embossed	0.047 (1.2)	2,000	0.157 (4.0)
0805	Embossed	0.033 (0.85)	4,000	0.157 (4.0)
	Embossed	0.049 (1.25)	2,000	0.157 (4.0)
1206	Paper	0.024 (0.6)	4,000	0.079 (2.0)
	Embossed	0.043 (1.1)	2,000	0.157 (4.0)
	Embossed	0.063 (1.6)	2,000	0.157 (4.0)
1210	Embossed	0.043 (1.1)	1,000	0.157 (4.0)

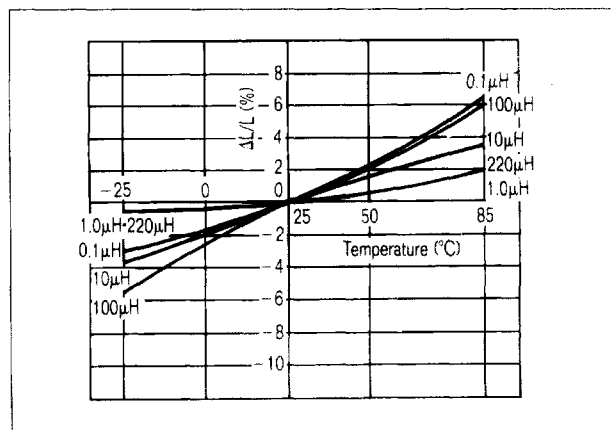
ORDERING INFORMATION

MLF3216A - 4R7	K	B
MIC1206A - 4R7	K	T
Type		Packing
		B: Bulk Pack
		T: Tape & Reel

Inductance Value in Micro Henrys. The first two digits represent significant figures. The last specifies the number of zeros to follow. The 'R' represents a decimal point. (4.7 Micro Henrys illustrated.)

Tolerance
S: $\pm 0.3nH$
J: $\pm 5\%$
K: $\pm 10\%$
M: $\pm 20\%$

TEMPERATURE CHARACTERISTICS



MULTILAYER CHIP INDUCTORS — TYPE MLF (MIC)

TYPE MLF1005 (0402) ELECTRICAL SPECIFICATIONS

EIA (0402) Part No.	EIA (1005) Part No.	Thickness (mm)	Inductance (nH)	Q min.	Q nominal	L, Q Test Freq. (MHz)	SRF (MHz) typ.	DC Resistance (Ω) max.	Rated D Current (mA) max.
MIC0402-1N0S	MLF1005-1N0S	0.5	1.0 ± 0.3nH	8	30	50	>6000	0.10	300
MIC0402-1N2S	MLF1005-1N2S	0.5	1.2 ± 0.3nH	8	30	50	>6000	0.10	300
MIC0402-1N5S	MLF1005-1N5S	0.5	1.5 ± 0.3nH	6	30	50	>6000	0.10	300
MIC0402-1N8S	MLF1005-1N8S	0.5	1.8 ± 0.3nH	6	30	50	>6000	0.10	300
MIC0402-2N2S	MLF1005-2N2S	0.5	2.2 ± 0.3nH	6	30	50	>6000	0.20	300
MIC0402-2N7S	MLF1005-2N7S	0.5	2.7 ± 0.3nH	7	30	52	5500	0.20	300
MIC0402-3N3K	MLF1005-3N3K	0.5	3.3 ± 10%	7	28	49	5000	0.30	300
MIC0402-3N9K	MLF1005-3N9K	0.5	3.9 ± 10%	7	30	46	4700	0.30	300
MIC0402-4N7K	MLF1005-4N7K	0.5	4.7 ± 10%	7	28	43	4300	0.40	300
MIC0402-5N6K	MLF1005-5N6K	0.5	5.6 ± 10%	7	28	40	4000	0.40	300
MIC0402-6N8K	MLF1005-6N8K	0.5	6.8 ± 10%	10	28	37	3650	0.50	300
MIC0402-8N2K	MLF1005-8N2K	0.5	8.2 ± 10%	9	28	32	3200	0.50	300
MIC0402-10NK	MLF1005-10NK	0.5	10.0 ± 10%	9	23	22	2800	0.60	300
MIC0402-12NK	MLF1005-12NK	0.5	12.0 ± 10%	10	24	18	2700	0.60	300
MIC0402-15NK	MLF1005-15NK	0.5	15.0 ± 10%	12	25	15	2200	0.70	300
MIC0402-16NK	MLF1005-16NK	0.5	18.0 ± 10%	10	17	—	2000	0.80	300
MIC0402-22NK	MLF1005-22NK	0.5	22.0 ± 10%	11	23	—	1800	0.90	300
MIC0402-27NK	MLF1005-27NK	0.5	27.0 ± 10%	12	20	—	1600	1.00	300

TYPE MLF1608 (0603) ELECTRICAL SPECIFICATIONS

EIA (0603) Part No.	EIA (1608) Part No.	Thickness (mm)	Inductance (nH)	Q min.	L, Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) max.	Rated DC Current (mA) Max.
MIC0603D-47NM	MLF1608D-47NM	0.8	0.047 ± 20%	10	50	260	0.30	50
MIC0603D-68NM	MLF1608D-68NM	0.8	0.068 ± 20%	10	50	250	0.30	50
MIC0603D-82NM	MLF1608D-82NM	0.8	0.082 ± 20%	10	50	245	0.30	50
MIC0603D-R10K	MLF1608D-R10K	0.8	0.10 ± 10%	15	25	240	0.50	50
MIC0603D-R12K	MLF1608D-R12K	0.8	0.12 ± 10%	15	25	205	0.50	50
MIC0603D-R15K	MLF1608D-R15K	0.8	0.15 ± 10%	15	25	180	0.60	50
MIC0603D-R18K	MLF1608D-R18K	0.8	0.18 ± 10%	15	25	165	0.60	50
MIC0603D-R22K	MLF1608D-R22K	0.8	0.22 ± 10%	15	25	150	0.80	50
MIC0603D-R27K	MLF1608D-R27K	0.8	0.27 ± 10%	15	25	136	0.80	50
MIC0603D-R33K	MLF1608D-R33K	0.8	0.33 ± 10%	15	25	125	0.85	35
MIC0603D-R39K	MLF1608D-R39K	0.8	0.39 ± 10%	15	25	110	1.00	35
MIC0603D-R47K	MLF1608D-R47K	0.8	0.47 ± 10%	15	25	105	1.35	35
MIC0603D-R56K	MLF1608D-R56K	0.8	0.56 ± 10%	15	25	95	1.55	35
MIC0603D-R68K	MLF1608D-R68K	0.8	0.68 ± 10%	15	25	90	1.70	35
MIC0603D-R82K	MLF1608D-R82K	0.8	0.82 ± 10%	15	25	85	2.10	35
MIC0603A-1R0K	MLF1608A-1R0K	0.8	1.0 ± 10%	35	10	75	0.60	25
MIC0603A-1R2K	MLF1608A-1R2K	0.8	1.2 ± 10%	35	10	65	0.80	25
MIC0603A-1R5K	MLF1608A-1R5K	0.8	1.5 ± 10%	35	10	30	0.80	25
MIC0603A-1R8K	MLF1608A-1R8K	0.8	1.8 ± 10%	35	10	55	0.95	25
MIC0603A-2R2K	MLF1608A-2R2K	0.8	2.2 ± 10%	35	10	50	1.15	15
MIC0603A-2R7K	MLF1608A-2R7K	0.8	2.7 ± 10%	35	10	45	1.35	15
MIC0603A-3R3K	MLF1608A-3R3K	0.8	3.3 ± 10%	35	10	40	1.55	15
MIC0603A-3R9K	MLF1608A-3R9K	0.8	3.9 ± 10%	35	10	35	1.70	15
MIC0603A-4R7K	MLF1608A-4R7K	0.8	4.7 ± 10%	35	10	33	2.10	15
MIC0603E-5R6K	MLF1608E-5R6K	0.8	5.6 ± 10%	35	4	22	1.55	5
MIC0603E-6R8K	MLF1608E-6R8K	0.8	6.8 ± 10%	35	4	20	1.70	5
MIC0603E-8R2K	MLF1608E-8R2K	0.8	8.2 ± 10%	35	4	18	2.10	5
MIC0603K-100K	MLF1608K-100K	0.8	10.0 ± 10%	30	2	17	1.85	3
MIC0603K-120K	MLF1608K-120K	0.8	12.0 ± 10%	30	2	15	2.10	3
MIC0603C-150K	MLF1608C-150K	0.8	15.0 ± 10%	20	1	14	1.70	1
MIC0603C-180K	MLF1608C-180K	0.8	18.0 ± 10%	20	1	13	1.85	1
MIC0603C-220K	MLF1608C-220K	0.8	22.0 ± 10%	20	1	11	2.10	1
MIC0603C-270K	MLF1608C-270K	1.2	27.0 ± 10%	20	1	10	2.75	1
MIC0603C-330K	MLF1608C-330K	1.2	33.0 ± 10%	20	1	9	2.95	1

MULTILAYER CHIP INDUCTORS — TYPE MLF (MIC)

TYPE MLF2012 (0805) ELECTRICAL SPECIFICATIONS

EIA (0805) Part No.	EIA (2012) Part No.	Thickness (mm)	Inductance (μH)	Q min.	L, Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) max.	Rated DC Current (mA) Max.
MIC0805D-47NM	MLF2012D-47NM	0.85	0.047 ± 20%	15	50	320	0.2	300
MIC0805D-68NM	MLF2012D-68NM	0.85	0.068 ± 20%	15	50	280	0.2	300
MIC0805D-82NM	MLF2012D-82NM	0.85	0.082 ± 20%	15	50	255	0.2	300
MIC0805D-R10K	MLF2012D-R10K	0.85	0.10 ± 10%	20	25	235	0.3	250
MIC0805D-R12K	MLF2012D-R12K	0.85	0.12 ± 10%	20	25	220	0.3	250
MIC0805D-R15K	MLF2012D-R15K	0.85	0.15 ± 10%	20	25	200	0.4	250
MIC0805D-R18K	MLF2012D-R18K	0.85	0.18 ± 10%	20	25	185	0.4	250
MIC0805D-R22K	MLF2012D-R22K	0.85	0.22 ± 10%	20	25	170	0.5	250
MIC0805D-R27K	MLF2012D-R27K	0.85	0.27 ± 10%	20	25	150	0.5	250
MIC0805D-R33K	MLF2012D-R33K	0.85	0.33 ± 10%	20	25	145	0.55	250
MIC0805D-R39K	MLF2012D-R39K	0.85	0.39 ± 10%	25	25	135	0.65	200
MIC0805D-R47K	MLF2012D-R47K	1.25	0.47 ± 10%	25	25	125	0.65	200
MIC0805D-R56K	MLF2012D-R56K	1.25	0.56 ± 10%	25	25	115	0.75	150
MIC0805D-R68K	MLF2012D-R68K	1.25	0.68 ± 10%	25	25	105	0.8	150
MIC0805D-R82K	MLF2012D-R82K	1.25	0.82 ± 10%	25	25	100	1.0	150
MIC0805A-1R0K	MLF2012A-1R0K	0.85	1.0 ± 10%	45	10	75	0.4	50
MIC0805A-1R2K	MLF2012A-1R2K	0.85	1.2 ± 10%	45	10	65	0.5	50
MIC0805A-1R5K	MLF2012A-1R5K	0.85	1.5 ± 10%	45	10	60	0.5	50
MIC0805A-1R8K	MLF2012A-1R8K	0.85	1.8 ± 10%	45	10	55	0.6	50
MIC0805A-2R2K	MLF2012A-2R2K	0.85	2.2 ± 10%	45	10	50	0.65	30.0
MIC0805A-2R7K	MLF2012A-2R7K	1.25	2.7 ± 10%	45	10	45	0.75	30.0
MIC0805A-3R3K	MLF2012A-3R3K	1.25	3.3 ± 10%	45	10	41	0.8	30.0
MIC0805A-3R9K	MLF2012A-3R9K	1.25	3.9 ± 10%	45	10	38	0.9	30.0
MIC0805A-4R7K	MLF2012A-4R7K	1.25	4.7 ± 10%	45	10	35	1.0	30.0
MIC0805E-5R6K	MLF2012E-5R6K	1.25	5.6 ± 10%	50	4.0	32	0.9	15.0
MIC0805E-6R8K	MLF2012E-6R8K	1.25	6.8 ± 10%	50	4.0	29	1.0	15.0
MIC0805E-8R2K	MLF2012E-8R2K	1.25	8.2 ± 10%	50	4.0	26	1.1	15.0
MIC0805E-100K	MLF2012E-100K	1.25	10.0 ± 10%	50	2.0	24	1.15	15.0
MIC0805E-120K	MLF2012E-120K	1.25	12.0 ± 10%	50	2.0	22	1.25	15.0
MIC0805C-150K	MLF2012C-150K	1.25	15.0 ± 10%	30	1.0	19	0.8	5.0
MIC0805C-180K	MLF2012C-180K	1.25	18.0 ± 10%	30	1.0	18	0.8	5.0
MIC0805C-220K	MLF2012C-220K	1.25	22.0 ± 10%	30	1.0	16	1.1	5.0
MIC0805C-270K	MLF2012C-270K	1.25	27.0 ± 10%	30	1.0	14	1.15	5.0
MIC0805C-330K	MLF2012C-330K	1.25	33.0 ± 10%	30	0.4	13	1.25	5.0
MIC0805K-390K	MLF2012K-390K	1.25	39.0 ± 10%	35	2.0	8.0	2.90	4.0
MIC0805K-470K	MLF2012K-470K	1.25	47.0 ± 10%	35	2.0	7.5	3.00	4.0
MIC0805K-560K	MLF2012K-560K	1.25	56.0 ± 10%	35	2.0	7.0	3.10	4.0
MIC0805C-680K	MLF2012C-680K	1.25	68.0 ± 10%	25	1.0	6.5	2.90	1.0
MIC0805C-820K	MLF2012C-820K	1.25	82.0 ± 10%	25	1.0	6.0	3.00	1.0
MIC0805C-101K	MLF2012C-101K	1.25	100.0 ± 10%	25	1.0	5.5	3.10	1.0

TYPE MLF3216 (1206) ELECTRICAL SPECIFICATIONS

EIA (1206) Part No.	EIA (3216) Part No.	Thickness (mm)	Inductance (μH)	Q min.	L, Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) max.	Rated DC Current (mA) Max.
MIC1206D-47NM	MLF3216D-47NM	0.6	0.047 ± 20%	20	50	320	0.15	300
MIC1206D-68NM	MLF3216D-68NM	0.6	0.068 ± 20%	20	50	280	0.25	300
MIC1206D-R10K	MLF3216D-R10K	0.6	0.10 ± 10%	20	25	235	0.25	250
MIC1206D-R12K	MLF3216D-R12K	0.6	0.12 ± 10%	20	25	220	0.30	250
MIC1206D-R15K	MLF3216D-R15K	0.6	0.15 ± 10%	20	25	200	0.30	250
MIC1206D-R18K	MLF3216D-R18K	0.6	0.18 ± 10%	20	25	185	0.40	250
MIC1206D-R22K	MLF3216D-R22K	0.6	0.22 ± 10%	20	25	170	0.40	250
MIC1206D-R27K	MLF3216D-R27K	0.6	0.27 ± 10%	20	25	150	0.50	250
MIC1206D-R33K	MLF3216D-R33K	0.6	0.33 ± 10%	20	25	145	0.60	250
MIC1206D-R39K	MLF3216D-R39K	1.1	0.39 ± 10%	25	25	135	0.50	200
MIC1206D-R47K	MLF3216D-R47K	1.1	0.47 ± 10%	25	25	125	0.60	200
MIC1206D-R56K	MLF3216D-R56K	1.1	0.56 ± 10%	25	25	115	0.70	150
MIC1206D-R68K	MLF3216D-R68K	1.1	0.68 ± 10%	25	25	105	0.80	150
MIC1206D-R82K	MLF3216D-R82K	1.1	0.82 ± 10%	25	25	100	0.90	150
MIC1206A-1R0K	MLF3216A-1R0K	0.6	1.0 ± 10%	45	10	75	0.40	100
MIC1206A-1R2K	MLF3216A-1R2K	0.6	1.2 ± 10%	45	10	65	0.50	100
MIC1206A-1R5K	MLF3216A-1R5K	1.1	1.5 ± 10%	45	10	60	0.50	50
MIC1206A-1R8K	MLF3216A-1R8K	1.1	1.8 ± 10%	45	10	55	0.50	50
MIC1206A-2R2K	MLF3216A-2R2K	1.1	2.2 ± 10%	45	10	50	0.60	50
MIC1206A-2R7K	MLF3216A-2R7K	1.1	2.7 ± 10%	45	10	45	0.60	50
MIC1206A-3R3K	MLF3216A-3R3K	1.1	3.3 ± 10%	45	10	41	0.70	50
MIC1206A-3R9K	MLF3216A-3R9K	1.1	3.9 ± 10%	45	10	38	0.80	50
MIC1206A-4R7K	MLF3216A-4R7K	1.1	4.7 ± 10%	45	10	35	0.90	50
MIC1206E-5R6K	MLF3216E-5R6K	1.1	5.6 ± 10%	50	4.0	32	0.70	25
MIC1206E-6R8K	MLF3216E-6R8K	1.1	6.8 ± 10%	50	4.0	29	0.80	25
MIC1206E-8R2K	MLF3216E-8R2K	1.1	8.2 ± 10%	50	4.0	26	0.90	25
MIC1206E-100K	MLF3216E-100K	1.1	10.0 ± 10%	50	2.0	24	1.00	25
MIC1206E-120K	MLF3216E-120K	1.1	12.0 ± 10%	50	2.0	22	1.05	15
MIC1206C-150K	MLF3216C-150K	1.1	15.0 ± 10%	35	1.0	19	0.70	5
MIC1206C-180K	MLF3216C-180K	1.1	18.0 ± 10%	35	1.0	18	0.70	5
MIC1206C-220K	MLF3216C-220K	1.1	22.0 ± 10%	35	1.0	16	0.90	5
MIC1206C-270K	MLF3216C-270K	1.1	27.0 ± 10%	35	1.0	14	0.90	5
MIC1206C-330K	MLF3216C-330K	1.1	33.0 ± 10%	35	0.4	13	1.05	5

TYPE MLF3225 (1210) ELECTRICAL SPECIFICATIONS

EIA (1210) Part No.	EIA (3225) Part No.	Thickness (mm)	Inductance (μH)	Q min.	L, Q Test Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) max.	Rated DC Current (mA) Max.
MIC1210E-390K	MLF3225E-390K	1.1	39.0 ± 10%	35	0.4	13	1.20	5
MIC1210E-470K	MLF3225E-470K	1.1	47.0 ± 10%	35	0.4	10	1.30	5
MIC1210E-560K	MLF3225E-560K	1.1	56.0 ± 10%	35	0.4	10	1.50	5
MIC1210K-680K	MLF3225K-680K	2.5	68.0 ± 10%	55	2.0	10	3.10	10
MIC1210K-820K	MLF3225K-820K	2.5	82.0 ± 10%	55	2.0	9	3.40	10
MIC1210K-101K	MLF3225K-101K	2.5	100.0 ± 10%	55	1.0	8	3.80	10
MIC1210C-121K	MLF3225C-121K	2.5	120.0 ± 10%	35	0.2	6	2.30	5
MIC1210C-151K	MLF3225C-151K	2.5	150.0 ± 10%	35	0.2	6	2.60	5
MIC1210C-181K	MLF3225C-181K	2.5	180.0 ± 10%	35	0.2	5	2.80	5
MIC1210C-221K	MLF3225C-221K	2.5	220.0 ± 10%	35	0.2	5	3.10	5