

INDUCTORS

Multilayer Chip



MLF SERIES - Shielded Inductor

TDK's MLF Multilayer Chip Inductor combines high performance with the most compact design available today. MLF Inductor's multilayer technology utilizes ferrite paste and electric conductor paste layered in a monolithic structure. Sintering of ferrite and electric conductors forms a perfect closed magnetic circuit and a magnetic shield. Magnetic shielding is ideally suited for high density circuit application in disk drives, personal computers, measuring equipment, and telephone equipment.

Electrical Specification

Inductance Range and Tolerances

0603: 0.047 μ H/.082 μ H 20%
0603: 0.1 μ H/33.0 μ H 10%
0805: 0.047 μ H/.082 μ H 20%
0805: 0.10 μ H/100 μ H 10%
1206: 0.047 μ H/.068 μ H 20%

Solderability

Pre-heat 150°C to 180°C for 2 min. Solder temperature 230°C for 4 sec. At least 75% of electrode (terminal) shall be covered by solder.

Environmental Characteristics

Operating Temperature Range

-25°C to + 85°C

Part Number Configuration

MLF	0805	-	220	K
(1)	(2)	(3)	(4)	

(1) Series name

(2) Case size (see size chart)

(3) Inductance

(4) Tolerance

Moisture, Vibration and Shock Resistance

Conforms to MIL-STD-202E, but is not MIL-STD-202E qualified

Life Test

1,000 hours at rated DC at +85°C

Resistance to Solvents

Conforms to MIL-STD-202E, but is not MIL-STD-202E qualified

Marking

Packaging will only include: TDK Logo and Part Number and Inspection Number

Packaging

Embossed & Paper—See Chart.

Packaging style

Taping (ϕ 178 mm [7.008 inches] reel)

INDUCTORS

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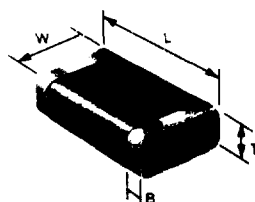
MLF SERIES - Shielded Inductor

Size Chart inches (mm)

	W	L	T	B	
0603	0.063 (1.6)	0.031 (0.8)	0.031 (0.8)	0.012 (0.3)	Ni/Sn
	0.063 (1.6)	0.031 (0.8)	0.047 (1.2)	0.012 (0.3)	Ni/Sn
0805	0.079 (2.0)	0.049 (1.25)	0.033 (0.85)	0.020 (0.5)	Ni/Sn
	0.079 (2.0)	0.049 (1.25)	0.049 (1.25)	0.020 (0.5)	Ni/Sn
1206	0.126 (3.2)	0.063 (1.6)	0.024 (0.6)	0.020 (0.5)	Ni/Sn
	0.126 (3.2)	0.063 (1.6)	0.043 (1.1)	0.020 (0.5)	Ni/Sn
	0.126 (3.2)	0.063 (1.6)	0.063 (1.6)	0.020 (0.5)	Ni/Sn

Packaging

	Qty./reel
Embossed	4,000
Embossed	2,000
Embossed	4,000
Embossed	2,000
Paper	4,000
Embossed	2,000
Embossed	2,000



MLF0603 TYPE

Electrical Characteristics

Designator Part Number	TDK Manufacturing Part Number	Thickness (mm)	Inductance (μ H)	Q	LQ Test Min. Freq. (MHz)	SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
MLF0603-047M	MLF1608D47NM	0.8	0.047 $\pm$ 20%	10	50	260	0.30	50
MLF0603-068M	MLF1608D68NM	0.8	0.068 $\pm$ 20%	10	50	250	0.30	50
MLF0603-082M	MLF1608D82NM	0.8	0.082 $\pm$ 20%	10	50	245	0.30	50
MLF0603-R10K	MLF1608DR10K	0.8	0.10 $\pm$ 10%	15	25	240	0.50	50
MLF0603-R12K	MLF1608DR12K	0.8	0.12 $\pm$ 10%	15	25	205	0.50	50
MLF0603-R15K	MLF1608DR15K	0.8	0.15 $\pm$ 10%	15	25	180	0.60	50
MLF0603-R18K	MLF1608DR18K	0.8	0.18 $\pm$ 10%	15	25	165	0.60	50
MLF0603-R22K	MLF1608DR22K	0.8	0.22 $\pm$ 10%	15	25	150	0.80	50
MLF0603-R27K	MLF1608DR27K	0.8	0.27 $\pm$ 10%	15	25	136	0.80	50
MLF0603-R33K	MLF1608DR33K	0.8	0.33 $\pm$ 10%	15	25	125	0.85	35
MLF0603-R39K	MLF1608DR39K	0.8	0.39 $\pm$ 10%	15	25	110	1.00	35
MLF0603-R47K	MLF1608DR47K	0.8	0.47 $\pm$ 10%	15	25	105	1.35	35
MLF0603-R56K	MLF1608DR56K	0.8	0.56 $\pm$ 10%	15	25	95	1.55	35
MLF0603-R68K	MLF1608DR68K	0.8	0.68 $\pm$ 10%	15	25	90	1.70	35
MLF0603-R82K	MLF1608DR82K	0.8	0.82 $\pm$ 10%	15	25	85	2.10	35
MLF0603-1R0K	MLF1608A1R0K	0.8	1.0 $\pm$ 10%	35	10	75	0.60	25
MLF0603-1R2K	MLF1608A1R2K	0.8	1.2 $\pm$ 10%	35	10	65	0.80	25
MLF0603-1R5K	MLF1608A1R5K	0.8	1.5 $\pm$ 10%	35	10	60	0.80	25
MLF0603-1R8K	MLF1608A1R8K	0.8	1.8 $\pm$ 10%	35	10	55	0.95	25
MLF0603-2R2K	MLF1608A2R2K	0.8	2.2 $\pm$ 10%	35	10	50	1.15	15
MLF0603-2R7K	MLF1608A2R7K	0.8	2.7 $\pm$ 10%	35	10	45	1.35	15

INDUCTORS

Multilayer Chip

MLF SERIES - Shielded Inductor

MLF0603 TYPE (Continued)

Electrical Characteristics

Distributor Part Number	TDK Manufacturing Part Number	Thickness (mm)	Inductance (µH)	Q	LQ Test Inductance (nH)	SFR (MHz)	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
MLF0603-3R3K	MLF1608A3R3K	0.8	3.3±10%	35	10	40	1.55	15
MLF0603-3R9K	MLF1608A3R9K	0.8	3.9±10%	35	10	35	1.70	15
MLF0603-4R7K	MLF1608A4R7K	0.8	4.7±10%	35	10	33	2.10	15
MLF0603-5R6K	MLF1608E5R6K	0.8	5.6±10%	35	4	22	1.55	5
MLF0603-6R8K	MLF1608E6R8K	0.8	6.8±10%	35	4	20	1.70	5
MLF0603-8R2K	MLF1608E8R2K	0.8	8.2±10%	35	4	18	2.10	5
MLF0603-100K	MLF1608E100K	0.8	10±10%	30	2	17	1.85	3
MLF0603-120K	MLF1608E120K	0.8	12±10%	30	2	15	2.10	3
MLF0603-150K	MLF1608C150K	0.8	15±10%	20	1	14	1.70	1
MLF0603-180K	MLF1608C180K	0.8	18±10%	20	1	13	1.85	1
MLF0603-220K	MLF1608C220K	0.8	22±10%	20	1	11	2.10	1
MLF0603-270K	MLF1608C270K	1.2	27±10%	20	1	10	2.75	1
MLF0603-330K	MLF1608C330K	1.2	33±10%	20	1	9	2.95	1

MLF0805 TYPE

Distributor Part Number	TDK Manufacturing Part Number	Thickness (mm)	Inductance (µH)	Q	LQ Test Inductance (nH)	SFR (MHz)	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
MLF0805-047M	MLF2012D47NM	0.85	0.047±20%	15	50	320	0.2	300
MLF0805-068M	MLF2012D68NM	0.85	0.068±20%	15	50	280	0.2	300
MLF0805-082M	MLF2012D82NM	0.85	0.082±20%	15	50	255	0.2	300
MLF0805-R10K	MLF2012DR10K	0.85	0.10±10%	20	25	235	0.3	250
MLF0805-R12K	MLF2012DR12K	0.85	0.12±10%	20	25	220	0.3	250
MLF0805-R15K	MLF2012DR15K	0.85	0.15±10%	20	25	200	0.4	250
MLF0805-R18K	MLF2012DR18K	0.85	0.18±10%	20	25	185	0.4	250
MLF0805-R22K	MLF2012DR22K	0.85	0.22±10%	20	25	170	0.5	250
MLF0805-R27K	MLF2012DR27K	0.85	0.27±10%	20	25	150	0.5	250
MLF0805-R33K	MLF2012DR33K	0.85	0.33±10%	20	25	145	0.55	250
MLF0805-R39K	MLF2012DR39K	0.85	0.39±10%	25	25	135	0.65	200
MLF0805-R47K	MLF2012DR47K	1.25	0.47±10%	25	25	125	0.65	200
MLF0805-R56K	MLF2012DR56K	1.25	0.56±10%	25	25	115	0.75	150
MLF0805-R68K	MLF2012DR68K	1.25	0.68±10%	25	25	105	0.8	150
MLF0805-R82K	MLF2012DR82K	1.25	0.82±10%	25	25	100	1.0	150
MLF0805-1R0K	MLF2012A1R0K	0.85	1.0±10%	45	10	75	0.4	50
MLF0805-1R2K	MLF2012A1R2K	0.85	1.2±10%	45	10	65	0.5	50
MLF0805-1R5K	MLF2012A1R5K	0.85	1.5±10%	45	10	60	0.5	50
MLF0805-1R8K	MLF2012A1R8K	0.85	1.8±10%	45	10	55	0.6	50

INDUCTORS

Multilayer Chip

MLF SERIES - Shielded Inductor

MLF0805 TYPE (Continued)

Electrical Characteristics

	Manufacturing Part Number	Thickness (mm)	Inductance (nH)	Q Factor @ 100kHz	DC Resistance (mΩ) Max.	DC Resistance (mΩ) Max.	Rated DC Current (mA) Max.
MLF0805-2R2K	MLF2012A2R2K	0.85	2.2±10%	45	10.0	50	0.65 30.0
MLF0805-2R7K	MLF2012A2R7K	1.25	2.7±10%	45	10.0	45	0.75 30.0
MLF0805-3R3K	MLF2012A3R3K	1.25	3.3±10%	45	10.0	41	0.8 30.0
MLF0805-3R9K	MLF2012A3R9K	1.25	3.9±10%	45	10.0	38	0.9 30.0
MLF0805-4R7K	MLF2012A4R7K	1.25	4.7±10%	45	10.0	35	1.0 30.0
MLF0805-5R6K	MLF2012E5R6K	1.25	5.6±10%	50	4.0	32	0.9 15.0
MLF0805-6R8K	MLF2012E6R8K	1.25	6.8±10%	50	4.0	29	1.0 15.0
MLF0805-8R2K	MLF2012E8R2K	1.25	8.2±10%	50	4.0	26	1.1 15.0
MLF0805-100K	MLF2012E100K	1.25	10±10%	50	2.0	24	1.15 15.0
MLF0805-120K	MLF2012E120K	1.25	12±10%	50	2.0	22	1.25 15.0
MLF0805-150K	MLF2012C150K	1.25	15±10%	30	1.0	19	0.8 5.0
MLF0805-180K	MLF2012C180K	1.25	18±10%	30	1.0	18	0.9 5.0
MLF0805-220K	MLF2012C220K	1.25	22±10%	30	1.0	16	1.1 5.0
MLF0805-270K	MLF2012C270K	1.25	27±10%	30	1.0	14	1.15 5.0
MLF0805-330K	MLF2012C330K	1.25	33±10%	30	0.4	13	1.25 5.0
MLF0805-390K	MLF2012K390K	1.25	39±10%	35	2.0	8.0	2.90 4.0
MLF0805-470K	MLF2012K470K	1.25	47±10%	35	2.0	7.5	3.00 4.0
MLF0805-560K	MLF2012K560K	1.25	56±10%	35	2.0	7.0	3.10 4.0
MLF0805-680K	MLF2012C680K	1.25	68±10%	25	1.0	6.5	2.90 2.0
MLF0805-820K	MLF2012C820K	1.25	82±10%	25	1.0	6.0	3.00 2.0
MLF0805-101K	MLF2012C101K	1.25	100±10%	25	1.0	5.5	3.10 2.0

INDUCTORS

Multilayer Chip

MLF SERIES - Shielded Inductor

MLF1206 TYPE

Electrical Characteristics

Part Number	Manufacturing Part Number	Thickness (mm)	Inductance (μH)	Q	LQ Test Min. Freq. (MHz)	SRF (MHz)	DC Resistance (Ω) Max.	Rated DC Current (mA) Max.
MLF1206-047M	MLF3216D47NM	0.6	0.047±20%	20	50	320	0.15	300
MLF1206-068M	MLF3216D68NM	0.6	0.068±20%	20	50	280	0.25	300
MLF1206-R10K	MLF3216DR10K	0.6	0.10±10%	20	25	235	0.25	250
MLF1206-R12K	MLF3216DR12K	0.6	0.12±10%	20	25	220	0.30	250
MLF1206-R15K	MLF3216DR15K	0.6	0.15±10%	20	25	200	0.30	250
MLF1206-R18K	MLF3216DR18K	0.6	0.18±10%	20	25	185	0.40	250
MLF1206-R22K	MLF3216DR22K	0.6	0.22±10%	20	25	170	0.40	250
MLF1206-R27K	MLF3216DR27K	0.6	0.27±10%	20	25.0	150	0.50	250
MLF1206-R33K	MLF3216DR33K	0.6	0.33±10%	20	25.0	145	0.60	250
MLF1206-R39K	MLF3216DR39K	1.1	0.39±10%	25	25.0	135	0.50	200
MLF1206-R47K	MLF3216DR47K	1.1	0.47±10%	25	25.0	125	0.60	200
MLF1206-R56K	MLF3216DR56K	1.1	0.56±10%	25	25.0	115	0.70	150
MLF1206-R68K	MLF3216DR68K	1.1	0.68±10%	25	25.0	105	0.80	150
MLF1206-R82K	MLF3216DR82K	1.1	0.82±10%	25	25.0	100	0.90	150
MLF1206-1R0K	MLF3216A1R0K	0.6	1.0±10%	45	10.0	75	0.40	100
MLF1206-1R2K	MLF3216A1R2K	0.6	1.2±10%	45	10.0	65	0.50	100
MLF1206-1R5K	MLF3216A1R5K	1.1	1.5±10%	45	10.0	60	0.50	50
MLF1206-1R8K	MLF3216A1R8K	1.1	1.8±10%	45	10.0	55	0.50	50
MLF1206-2R2K	MLF3216A2R2K	1.1	2.2±10%	45	10.0	50	0.60	50
MLF1206-2R7K	MLF3216A2R7K	1.1	2.7±10%	45	10.0	45	0.60	50
MLF1206-3R3K	MLF3216A3R3K	1.1	3.3±10%	45	10.0	41	0.70	50
MLF1206-3R9K	MLF3216A3R9K	1.1	3.9±10%	45	10.0	38	0.80	50
MLF1206-4R7K	MLF3216A4R7K	1.1	4.7±10%	45	10.0	35	0.90	50
MLF1206-5R6K	MLF3216E5R6K	1.1	5.6±10%	50	4.0	32	0.70	25
MLF1206-6R8K	MLF3216E6R8K	1.1	6.8±10%	50	4.0	29	0.80	25
MLF1206-8R2K	MLF3216E8R2K	1.1	8.2±10%	50	4.0	26	0.90	25
MLF1206-100K	MLF3216E100K	1.1	10±10%	50	2.0	24	1.00	25
MLF1206-120K	MLF3216E120K	1.1	12±10%	50	2.0	22	1.05	15
MLF1206-150K	MLF3216C150K	1.1	15±10%	35	1.0	19	0.70	5
MLF1206-180K	MLF3216C180K	1.1	18±10%	35	1.0	18	0.70	5
MLF1206-220K	MLF3216C220K	1.1	22±10%	35	1.0	16	0.90	5
MLF1206-270K	MLF3216C270K	1.1	27±10%	35	1.0	14	0.90	5
MLF1206-330K	MLF3216C330K	1.1	33±10%	35	0.4	13	1.05	5