TDK

SMD Inductors(Coils)
For Signal Line(Multilayer, Magnetic Shielded)

Conformity to RoHS Directive

MLF Series MLF1608

FEATURES

- High-reliability monolithic structure.
- Ferrite core and magnetic shielding enables the design of compact circuits with high packing density.
- Excellent solderability and high heat resistance permits either flow or reflow soldering.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

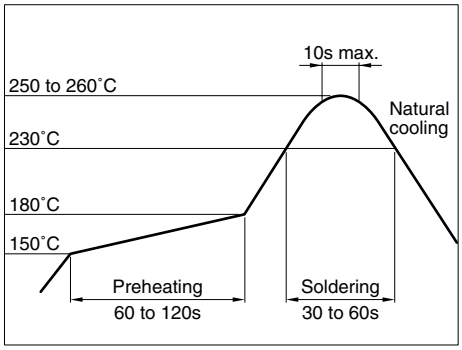
Digital cellular phone, tuner, personal computers, audio, or various electronic appliances.

SPECIFICATIONS

Operating temperature range	–25 to +85°C
Storage temperature range	–40 to +85°C[Unit of products]

RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLF	1608	A	1R0	K	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions L×W

1608	1.6×0.8mm

(3) Material code

(4) Inductance value

47N	47nH[0.047µH]
R15	0.15µH
1R0	1µH

(5) Inductance tolerance

K	±10%
M	±20%

(6) Packaging style

T	Taping [reel]

PACKAGING STYLE AND QUANTITIES

Packaging style	Product's thickness	Quantity
Taping	0.8mm	4000 pieces/reel

HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components.
  The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- The inductance value may change due to magnetic saturation if the current exceeds the rated maximum.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.
- Please contact our Sales office when your application are considered the following:
  The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN

Weight: 4mg

Dimensions in mm

ELECTRICAL CHARACTERISTICS

Inductance (μH)	Inductance tolerance	Q		Test frequency	Test current	Self-resonant frequency (MHz)		DC resistance (Ω)		Rated current	Thickness T	Part No.
		min.	nom.	L, Q (MHz)	L, Q (mA)	min.	nom.	max.	nom.	(mA)max.	(mm)	
0.047	±20%	10	20	50	1.0	260	350	0.3	0.2	50	0.8	MLF1608D47N*1MT
0.068	±20%	10	20	50	1.0	250	325	0.3	0.2	50	0.8	MLF1608D68NMT
0.082	±20%	10	20	50	1.0	245	310	0.3	0.2	50	0.8	MLF1608D82NMT
0.1	±20, ±10%	15	25	25	1.0	240	295	0.5	0.3	50	0.8	MLF1608DR10□*2T
0.12	±20, ±10%	15	25	25	1.0	205	280	0.5	0.3	50	0.8	MLF1608DR12□T
0.15	±20, ±10%	15	25	25	1.0	180	260	0.6	0.4	50	0.8	MLF1608DR15□T
0.18	±20, ±10%	15	25	25	1.0	165	245	0.6	0.4	50	0.8	MLF1608DR18□T
0.22	±20, ±10%	15	25	25	1.0	150	230	0.8	0.45	50	0.8	MLF1608DR22□T
0.27	±20, ±10%	15	25	25	1.0	136	210	0.8	0.5	50	0.8	MLF1608DR27□T
0.33	±20, ±10%	15	25	25	1.0	125	200	0.85	0.55	35	0.8	MLF1608DR33□T
0.39	±20, ±10%	15	25	25	1.0	110	185	1	0.65	35	0.8	MLF1608DR39□T
0.47	±20, ±10%	15	25	25	1.0	105	170	1.35	0.7	35	0.8	MLF1608DR47□T
0.56	±20, ±10%	15	25	25	1.0	95	155	1.55	0.75	35	0.8	MLF1608DR56□T
0.68	±20, ±10%	15	25	25	1.0	90	140	1.7	0.8	35	0.8	MLF1608DR68□T
0.82	±20, ±10%	15	25	25	1.0	85	125	2.1	0.85	35	0.8	MLF1608DR82□T
1	±20, ±10%	35	50	10	1.0	75	105	0.6	0.35	25	0.8	MLF1608A1R0□T
1.2	±20, ±10%	35	50	10	1.0	65	100	0.8	0.45	25	0.8	MLF1608A1R2□T
1.5	±20, ±10%	35	50	10	1.0	60	90	0.8	0.5	25	0.8	MLF1608A1R5□T
1.8	±20, ±10%	35	50	10	1.0	55	80	0.95	0.55	25	0.8	MLF1608A1R8□T
2.2	±20, ±10%	35	50	10	1.0	50	75	1.15	0.65	15	0.8	MLF1608A2R2□T
2.7	±20, ±10%	35	50	10	1.0	45	65	1.35	0.75	15	0.8	MLF1608A2R7□T
3.3	±20, ±10%	35	50	10	1.0	40	60	1.55	0.85	15	0.8	MLF1608A3R3□T
3.9	±20, ±10%	35	50	10	1.0	35	50	1.7	0.9	15	0.8	MLF1608A3R9□T
4.7	±20, ±10%	35	50	10	1.0	33	47	2.1	1	15	0.8	MLF1608A4R7□T
5.6	±20, ±10%	35	55	4	0.1	22	45	1.55	0.8	5	0.8	MLF1608E5R6□T
6.8	±20, ±10%	35	55	4	0.1	20	40	1.7	0.9	5	0.8	MLF1608E6R8□T
8.2	±20, ±10%	35	55	4	0.1	18	38	2.1	1	5	0.8	MLF1608E8R2□T
10	±20, ±10%	30	50	2	0.1	17	37	1.85	0.9	3	0.8	MLF1608E100□T
12	±20, ±10%	30	50	2	0.1	15	35	2.1	1	3	0.8	MLF1608E120□T
15	±20, ±10%	20	35	1	0.1	14	30	1.7	0.8	1	0.8	MLF1608C150□T
18	±20, ±10%	20	35	1	0.1	13	28	1.85	0.9	1	0.8	MLF1608C180□T
22	±20, ±10%	20	35	1	0.1	11	25	2.1	1	1	0.8	MLF1608C220□T
27	±20, ±10%	20	35	1	0.1	10	23	2.75	1.2	1	0.8	MLF1608C270□T
33	±20, ±10%	20	35	1	0.1	9	21	2.95	1.3	1	0.8	MLF1608C330□T

*1 47N means for 47nH (0.047μH).

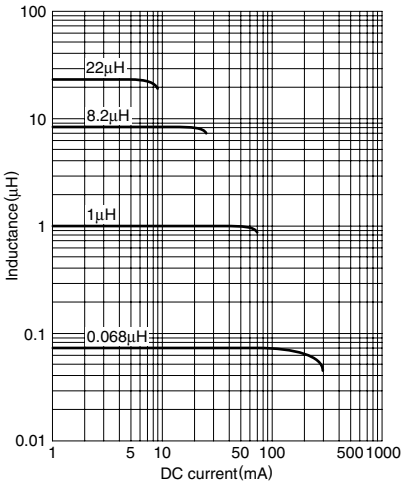
*2 □: Please specify inductance tolerance, M(±20%) or K(±10%).

- Test equipment
  Inductance, Q: Ag4294A-16034G

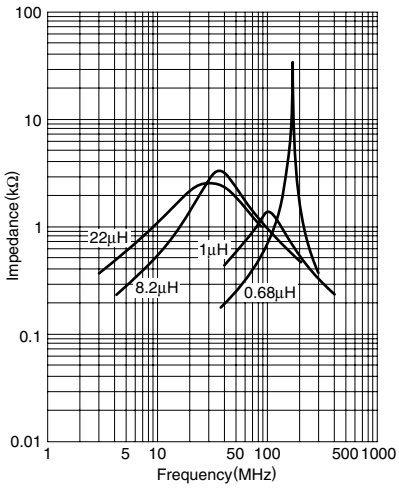
- All specifications are subject to change without notice.

TYPICAL ELECTRICAL CHARACTERISTICS

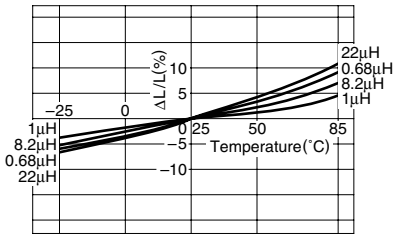
INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



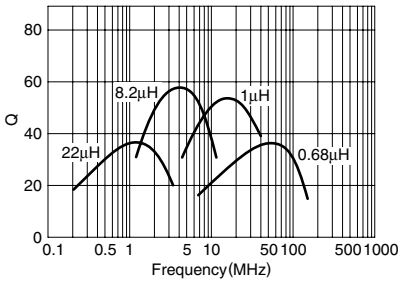
IMPEDANCE vs. FREQUENCY CHARACTERISTICS



INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS

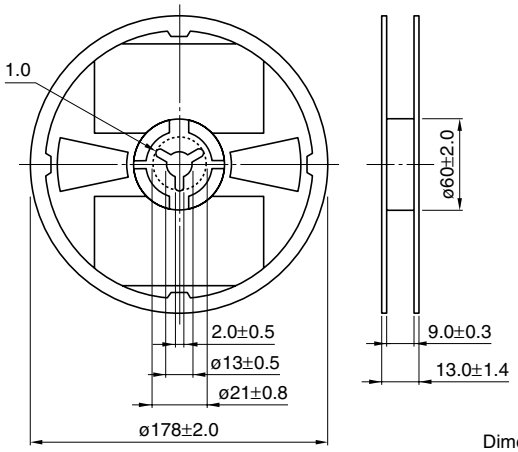


Q vs. FREQUENCY CHARACTERISTICS



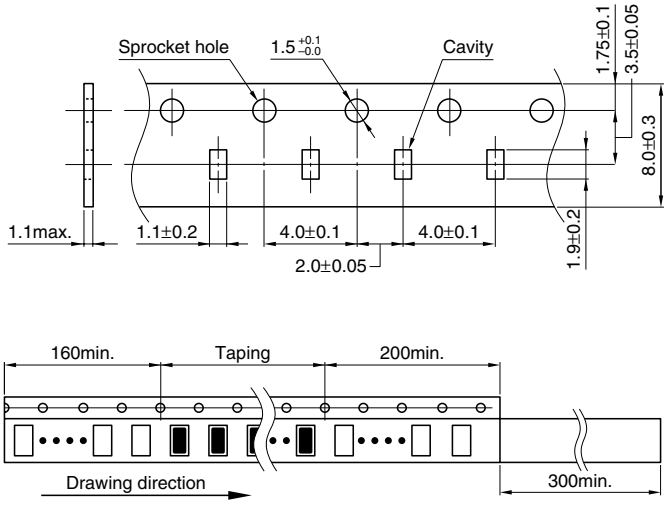
PACKAGING STYLES

REEL DIMENSIONS



Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm