

# Inductors

For General Applications  
SMD

## MLF Series MLF2012 Type

### 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.

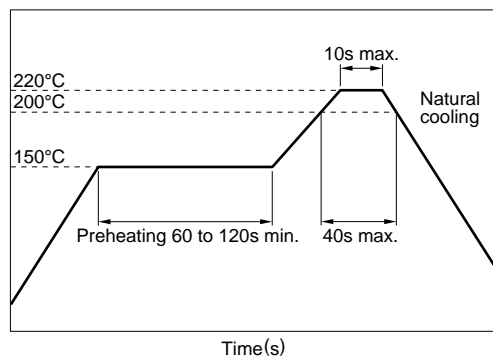
### APPLICATIONS

Personal computers, HDDs, or other various electronic appliances.

### SPECIFICATIONS

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

### RECOMMENDED REFLOW SOLDERING CONDITIONS



### 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
2012	2.0×1.25mm

(3) Material code

(4) Inductance value

47N	47nH[0.047μH]
R15	0.15μH
1R0	1μH
100	10μH

(5) Inductance tolerance

K	±10%
M	±20%

(6) Packaging style

T	Taping [reel]
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### PACKAGING STYLE AND QUANTITIES

Packaging style	Product's thickness	Quantity
Taping	0.8/0.85mm	4000 pieces/reel
	1.25mm	2000 pieces/reel

### HANDLING AND PRECAUTIONS

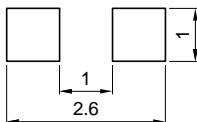
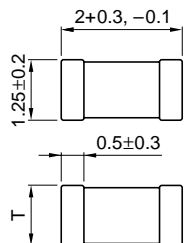
- Before soldering, be sure to preheat components.  
The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board 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 300°C. Soldering time should not exceed 3 seconds.

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### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



T	Weight(mg)
0.85±0.2	10
1.25±0.2	14

Dimensions in mm

### 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.	nom.		min.	nom.	max.	nom.			
0.047	±20%	15	25	50	320	400	0.2	0.11	300	0.85	MLF2012D47N*1X*2T
0.068	±20%	15	25	50	280	350	0.2	0.11	300	0.85	MLF2012D68NXT
0.082	±20%	15	25	50	255	320	0.2	0.11	300	0.85	MLF2012D82NXT
0.1	±20, ±10%	20	30	25	235	300	0.3	0.16	250	0.85	MLF2012DR10XT
0.12	±20, ±10%	20	30	25	220	280	0.3	0.16	250	0.85	MLF2012DR12XT
0.15	±20, ±10%	20	30	25	200	250	0.4	0.21	250	0.85	MLF2012DR15XT
0.18	±20, ±10%	20	30	25	185	230	0.4	0.21	250	0.85	MLF2012DR18XT
0.22	±20, ±10%	20	30	25	170	220	0.5	0.26	250	0.85	MLF2012DR22XT
0.27	±20, ±10%	20	30	25	150	200	0.5	0.26	250	0.85	MLF2012DR27XT
0.33	±20, ±10%	20	30	25	145	180	0.55	0.31	250	0.85	MLF2012DR33XT
0.39	±20, ±10%	25	35	25	135	170	0.65	0.36	200	0.85	MLF2012DR39XT
0.47	±20, ±10%	25	35	25	125	160	0.65	0.36	200	1.25	MLF2012DR47XT
0.56	±20, ±10%	25	35	25	115	150	0.75	0.41	150	1.25	MLF2012DR56XT
0.68	±20, ±10%	25	35	25	105	135	0.8	0.46	150	1.25	MLF2012DR68XT
0.82	±20, ±10%	25	35	25	100	125	1	0.56	150	1.25	MLF2012DR82XT
1	±20, ±10%	45	55	10	75	105	0.4	0.21	50	0.85	MLF2012A1R0XT
1.2	±20, ±10%	45	55	10	65	95	0.5	0.26	50	0.85	MLF2012A1R2XT
1.5	±20, ±10%	45	55	10	60	85	0.5	0.26	50	0.85	MLF2012A1R5XT
1.8	±20, ±10%	45	55	10	55	78	0.6	0.31	50	0.85	MLF2012A1R8XT
2.2	±20, ±10%	45	60	10	50	70	0.65	0.36	30	0.85	MLF2012A2R2XT
2.7	±20, ±10%	45	60	10	45	64	0.75	0.41	30	1.25	MLF2012A2R7XT
3.3	±20, ±10%	45	60	10	41	58	0.8	0.46	30	1.25	MLF2012A3R3XT
3.9	±20, ±10%	45	60	10	38	53	0.9	0.51	30	1.25	MLF2012A3R9XT
4.7	±20, ±10%	45	60	10	35	48	1	0.56	30	1.25	MLF2012A4R7XT
5.6	±20, ±10%	50	60	4	32	44	0.9	0.51	15	1.25	MLF2012E5R6XT
6.8	±20, ±10%	50	60	4	29	40	1	0.56	15	1.25	MLF2012E6R8XT
8.2	±20, ±10%	50	60	4	26	36	1.1	0.61	15	1.25	MLF2012E8R2XT
10	±20, ±10%	50	60	2	24	33	1.15	0.66	15	1.25	MLF2012E100XT
12	±20, ±10%	50	60	2	22	30	1.25	0.71	15	1.25	MLF2012E120XT
15	±20, ±10%	30	40	1	19	27	0.8	0.46	5	1.25	MLF2012C150XT
18	±20, ±10%	30	40	1	18	25	0.9	0.51	5	1.25	MLF2012C180XT
22	±20, ±10%	30	40	1	16	22	1.1	0.61	5	1.25	MLF2012C220XT
27	±20, ±10%	30	40	1	14	20	1.15	0.66	5	1.25	MLF2012C270XT
33	±20, ±10%	30	40	0.4	13	18	1.25	0.71	5	1.25	MLF2012C330XT
39	±20, ±10%	35	55	2	8	15	2.9	2	4	1.25	MLF2012K390XT
47	±20, ±10%	35	55	2	7.5	14	3	2.1	4	1.25	MLF2012K470XT
56	±20, ±10%	35	55	2	7	13	3.1	2.2	4	1.25	MLF2012K560XT
68	±20, ±10%	25	40	1	6.5	12	2.9	2	2	1.25	MLF2012C680XT
82	±20, ±10%	25	40	1	6	11	3	2.1	2	1.25	MLF2012C820XT
100	±20, ±10%	25	40	1	5.5	10	3.1	2.2	2	1.25	MLF2012C101XT

\*1 47N means for 47nH (0.047μH).

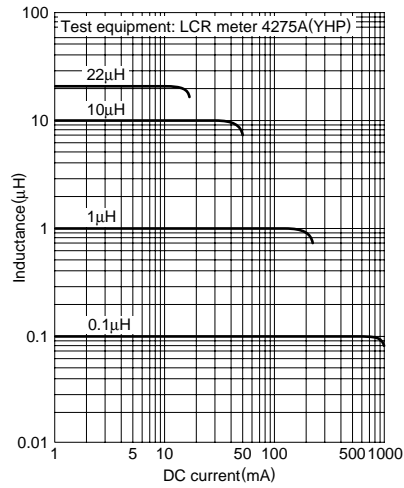
\*2 X: Please specify inductance tolerance, M(±20%) or K(±10%)

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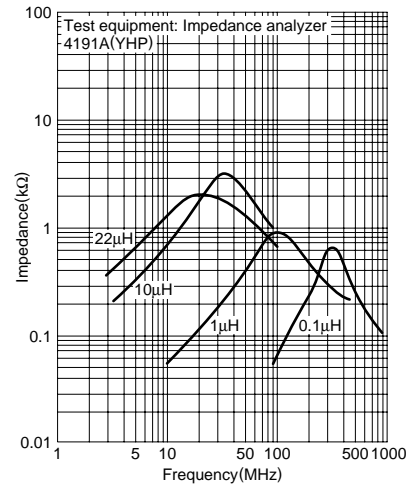
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MLF Series MLF2012 Type

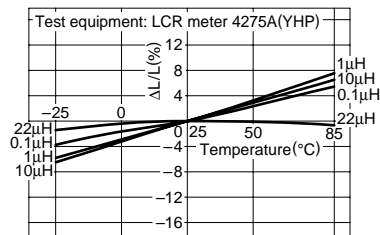
## TYPICAL ELECTRICAL CHARACTERISTICS INDUCTANCE CHANGE vs. DC SUPERPOSITION CHARACTERISTICS



## IMPEDANCE vs. FREQUENCY CHARACTERISTICS



## INDUCTANCE CHANGE vs. TEMPERATURE CHARACTERISTICS



## Q vs. FREQUENCY CHARACTERISTICS

