	Series	Structure	Size Code in inch (in mm)	Inductance Range (H) 0.1n 1n 10n 100n 1μ 10μ 100μ 1m 10m	Rated Current (A) 10m 100m 1 10 100
Inductors for Power Lines	DFE252008C p310	Wire Wound Metal Alloy Core Type	1008 (2520)	470nH 4.7μH	1.1A 3A
	DFE252010C p312		1008 (2520)	470nH 10μH	1A 3.5A
	DFE252010F p344		1008 (2520)	330nH 10μH	1.3A 6.8A
	DFE252010P p332		1008 (2520)	330nH 4.7μH	1.7A 5.7A
	DFE252010R p324		1008 (2520)	1μH 4.7μH	1.4A 3A
	DFE252012C p314		1008 (2520)	470nH 10μH	1A 3.8A
	DFE252012F p346		1008 (2520)	330nH 10μH	1.4A 7.6A
	DFE252012P p334		1008 (2520)	330nH 4.7μH	2A 6.6A
	DFE252012R p326		1008 (2520)	1μH 4.7μH	1.7A 3.4A
	DFE322510C p316		1210 (3225)	470nH 10μH	1A 3.8A
	DFE322512C p318		1210 (3225)	470nH 10μH	1.2A 4.7A
	DFE322512F p348		1210 (3225)	470nH 10μH	1.7A 6.7A
	FDSD0412 p350		1515 (4040)	330nH 4.7μH	2.5A 7.5A
	FDSD0415 p352		1515 (4040)	220nH 4.7μH	2.9A 12A
	FDSD0420 p354		1515 (4040)	470nH 330μH	2.5A 11A
	FDSD0512 p356		2019 (5249)	1μH 6.8μH	2.3A 6.1A
	FDSD0515 p358		2019 (5249)	1μH 4.7μH	3.2A 7A
	FDSD0518 p360		2019 (5249)	680nH 10μH	2.7A 9A
	FDV0530 p364		2322 (5856)	110nH 4.7μH	3.6A 19.6A
	FCUL0530 p378		2322 (5857)	360nH 470nH	16A 18A
	FCUL0624 p380		2726 (6866)	220nH 470nH	17A 24A
	FCUL0630 p382		2726 (6866)	120nH 680nH	15A 32A
	FDUE0640 p369		2726 (6967)	150nH 420nH	22A 33A
	FDUE0650 p370		2726 (6967)	600nH 1μH	16A 18A
	FDV0618 p365		2726 (6967)	240nH 3.3μH	4.1A 14A
	FDV0620 p366		2726 (6967)	200nH 4.7μH	3.5A 16.2A
	FDVE0630 p367		2726 (6967)	160nH 10μH	3.1A 20.7A
	FDSD0630 p362		2726 (7066)	680nH 10μH	5.4A 17A
	FCUL1040 p384		4239 (106100)	180nH 420nH	34A 53A
	FCUL1060 p386		4239 (106100)	360nH 560nH	34A 41A
	FDUE1040D p371		4239 (106100)	220nH 1μH	18A 32A
	FDVE1040 p368		4239 (106100)	1.5μH 10μH	6.1A 14.6A
	FDA1055 p375		4242 (108108)	560nH 5.6μH	8A 27.7A
	FDUE1245 p372		4848 (123121)	500nH 2.2μH	17A 30A
	FDA1254 p377		5049 (126125)	680nH 8μH	9.1A 29.1A
	FDUE1260 p373		5050 (127127)	450nH	42A
Inductors for General Circuits	LQB15NN_10 p165	Multilayer Type	0402 (1005)	220nH 560nH	300mA 380mA
	LQB18NN_10 p167		0603 (1608)	220nH 560nH	300mA 450mA
	LQM18NN_00 p183		0603 (1608)	47nH 2.2μH	15mA 50mA
	LQM21NN_10 p185		0805 (2012)	100nH 4.7μH	30mA 250mA
	LLB2520 p422	Wire Wound Ferrite Core Type	1008 (2520)	1μH 47μH	100mA 480mA
	LLM2520 p423		1008 (2520)	100nH 220μH	44mA 570mA
	LQH31HN_03 p169		1206 (3216)	54nH 880nH	180mA 920mA
	LQH31MN_03 p171		1206 (3216)	150nH 100μH	45mA 250mA
	LLM3225 p425		1210 (3225)	100nH 1mH	19mA 600mA
	LQH32MN_23 p173		1210 (3225)	1μH 560μH	40mA 445mA
	LQH44NN_03 p181		1515 (4040)	510nH 470μH	145mA 4.5A
	LQH43MN_03 p175		1812 (4532)	1μH 1.5mH	40mA 500mA
	LQH43NN_03 p178		1812 (4532)	1μH 2.4mH	25mA 500mA
	LQW04CA_00 p187		03019 (0805)	60nH 510nH	200mA 620mA
	LQW15CA_00 p188		0402 (1005)	22nH 2μH	130mA 1.3A

Continued on the following page. ↗

Part Numbering

Inductors for General Use

(Part Number)

LQ	M	18	N	N	47N	M	0	0	D
❶	❷	❸	❹	❺	❻	❼	❽	❾	❿

❶Product ID

Product ID	
LQ	Chip Inductors (Chip Coils)

❷Structure

Code	Structure
B	Multilayer Type (Ferrite Core)
H	Wire Wound Type (Ferrite Core)
M	Multilayer Type (Ferrite Core)
W	Wire Wound Type (Ferrite Core)

❷Dimensions (LxW)

Code	Nominal Dimensions (LxW)	Size Code (in inch)
04	0.8x0.4mm	03019
15	1.0x0.5mm	0402
18	1.6x0.8mm	0603
21	2.0x1.25mm	0805
31	3.2x1.6mm	1206
32	3.2x2.5mm	1210
43	4.5x3.2mm	1812
44	4.0x4.0mm	1515

❹Applications and Characteristics

Code	Series	Applications and Characteristics
C	LQW	for Choke
N	LQB/LQM	for Resonant Circuit
N	LQH	for Resonant Circuit
M		for Resonant Circuit (Coating Type)

❺Category

Code	Category	
A	General	Impedance Device (Near GHz Band)
N	General	Standard Type

❻Inductance

Expressed by three-digit alphanumerics. The unit is micro-henry (μH). The first and second figures are significant digits, and the third figure expresses the number of zeros that follow the two figures. If there is a decimal point, it is expressed by the capital letter "**R**." In this case, all figures are significant digits. If inductance is less than 0.1μH, the inductance code is expressed by a combination of two figures and the capital letter "**N**," and the unit of inductance is nano-henry (nH).
The capital letter "**N**" indicates the unit of "nH," and also expresses a decimal point. In this case, all figures are significant digits.

❼Inductance Tolerance

Code	Inductance Tolerance
J	±5%
K	±10%
M	±20%
N	±30%

❽Features

Code	Features	Series
0	Standard Type	LQM*1 /LQH*2/LQW
1	Standard Type	LQB/LQM21N
2	Standard Type	LQH32M

*1 Except for LQM21N Series
*2 Except for LQH32 Series

❾Electrode

▪Lead (Pb) Free

Code	Electrode	Series
0	Sn	LQB/LQM/LQW
3	LF Solder	LQH

❿Packaging

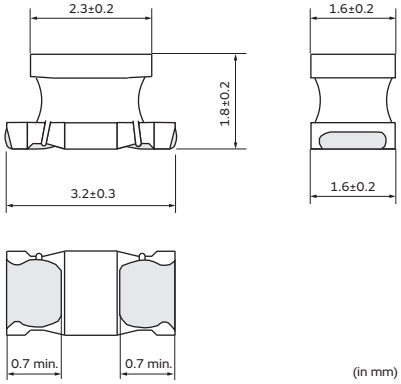
Code	Packaging	Series
K	Embossed Taping (ø330mm Reel)	LQH/LQM21*1
L	Embossed Taping (ø180mm Reel)	LQH/LQM21*1
B	Bulk	LQB/LQM/LQW
J	Paper Taping (ø330mm Reel)	LQB/LQM18/LQM21*2
D	Paper Taping (ø180mm Reel)	LQB/LQM18/LQM21*2/LQW

*1 LQM21N(2.7 - 4.7μH) only.
*2 LQM21N(0.1 - 2.2μH) only.

Inductors for General Circuits

LQH31MN_03 Series 1206 (3216) inch (mm)

Appearance/Dimensions



(in mm)

Packaging

Code	Packaging	Minimum Quantity
K	ø330mm Embossed Taping	7500
L	ø180mm Embossed Taping	2000

Rated Value (□: packaging code)

Part Number	Inductance	Inductance Test Frequency	Q (min.)	Q Test Frequency	Rated Current	DC Resistance	S.R.F.* (min.)
LQH31MNR15K03□	0.15μH ±10%	1MHz	20	25.2MHz	250mA	0.39Ω±40%	250MHz
LQH31MNR22K03□	0.22μH ±10%	1MHz	20	25.2MHz	240mA	0.43Ω±40%	250MHz
LQH31MNR33K03□	0.33μH ±10%	1MHz	30	25.2MHz	230mA	0.45Ω±40%	250MHz
LQH31MNR47K03□	0.47μH ±10%	1MHz	30	25.2MHz	215mA	0.83Ω±40%	200MHz
LQH31MNR56K03□	0.56μH ±10%	1MHz	30	25.2MHz	200mA	0.61Ω±40%	180MHz
LQH31MNR68K03□	0.68μH ±10%	1MHz	30	25.2MHz	190mA	0.67Ω±40%	160MHz
LQH31MNR82K03□	0.82μH ±10%	1MHz	30	25.2MHz	185mA	0.73Ω±40%	120MHz
LQH31MN1R0K03□	1.0μH ±10%	1MHz	35	10MHz	175mA	0.49Ω±30%	100MHz
LQH31MN1R2J03□	1.2μH ±5%	1MHz	35	10MHz	165mA	0.37Ω±30%	90MHz
LQH31MN1R2K03□	1.2μH ±10%	1MHz	35	10MHz	165mA	0.9Ω±30%	90MHz
LQH31MN1R5J03□	1.5μH ±5%	1MHz	35	10MHz	155mA	1.0Ω±30%	75MHz
LQH31MN1R5K03□	1.5μH ±10%	1MHz	35	10MHz	155mA	1.0Ω±30%	75MHz
LQH31MN1R8J03□	1.8μH ±5%	1MHz	35	10MHz	150mA	1.6Ω±30%	60MHz
LQH31MN1R8K03□	1.8μH ±10%	1MHz	35	10MHz	150mA	1.6Ω±30%	60MHz
LQH31MN2R2J03□	2.2μH ±5%	1MHz	35	10MHz	140mA	0.7Ω±30%	50MHz
LQH31MN2R2K03□	2.2μH ±10%	1MHz	35	10MHz	140mA	0.7Ω±30%	50MHz
LQH31MN2R7J03□	2.7μH ±5%	1MHz	35	10MHz	135mA	0.55Ω±30%	43MHz
LQH31MN2R7K03□	2.7μH ±10%	1MHz	35	10MHz	135mA	0.55Ω±30%	43MHz
LQH31MN3R3J03□	3.3μH ±5%	1MHz	35	8MHz	130mA	0.61Ω±30%	38MHz
LQH31MN3R3K03□	3.3μH ±10%	1MHz	35	8MHz	130mA	0.61Ω±30%	38MHz
LQH31MN3R9J03□	3.9μH ±5%	1MHz	35	8MHz	125mA	1.5Ω±30%	35MHz
LQH31MN3R9K03□	3.9μH ±10%	1MHz	35	8MHz	125mA	1.5Ω±30%	35MHz
LQH31MN4R7J03□	4.7μH ±5%	1MHz	35	8MHz	120mA	1.7Ω±30%	31MHz
LQH31MN4R7K03□	4.7μH ±10%	1MHz	35	8MHz	120mA	1.7Ω±30%	31MHz
LQH31MN5R6J03□	5.6μH ±5%	1MHz	35	8MHz	115mA	1.8Ω±30%	28MHz
LQH31MN5R6K03□	5.6μH ±10%	1MHz	35	8MHz	115mA	1.8Ω±30%	28MHz
LQH31MN6R8J03□	6.8μH ±5%	1MHz	35	8MHz	110mA	2.0Ω±30%	25MHz
LQH31MN6R8K03□	6.8μH ±10%	1MHz	35	8MHz	110mA	2.0Ω±30%	25MHz
LQH31MN8R2J03□	8.2μH ±5%	1MHz	35	8MHz	105mA	2.2Ω±30%	23MHz
LQH31MN8R2K03□	8.2μH ±10%	1MHz	35	8MHz	105mA	2.2Ω±30%	23MHz
LQH31MN100J03□	10μH ±5%	1MHz	35	5MHz	100mA	2.5Ω±30%	20MHz

Operating temp. range (Self-temp. rise not included): -40 to 85°C
Class of Magnetic Shield: No Shield
*S.R.F.: Self-Resonant Frequency
When rated current is applied to the products, self-temperature rise shall be limited to 20°C max and Inductance will be within ±10% of initial inductance value.

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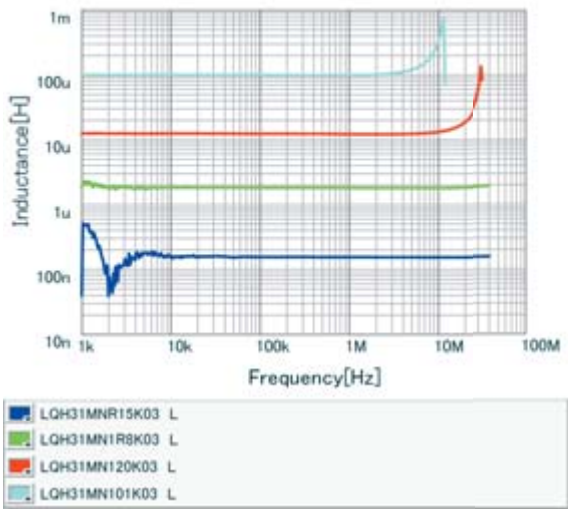
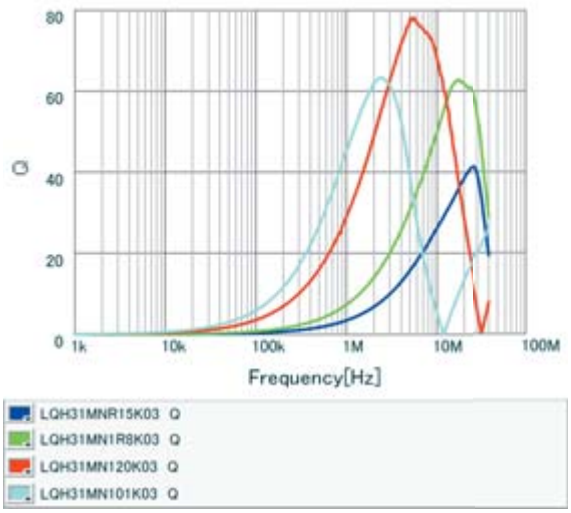
Part Number	Inductance	Inductance Test Frequency	Q (min.)	Q Test Frequency	Rated Current	DC Resistance	S.R.F.* (min.)
LQH31MN100K03□	10μH ±10%	1MHz	35	5MHz	100mA	2.5Ω±30%	20MHz
LQH31MN120J03□	12μH ±5%	1MHz	35	5MHz	95mA	2.7Ω±30%	18MHz
LQH31MN120K03□	12μH ±10%	1MHz	35	5MHz	95mA	2.7Ω±30%	18MHz
LQH31MN150J03□	15μH ±5%	1MHz	35	5MHz	90mA	3.0Ω±30%	16MHz
LQH31MN150K03□	15μH ±10%	1MHz	35	5MHz	90mA	3.0Ω±30%	16MHz
LQH31MN180J03□	18μH ±5%	1MHz	35	5MHz	85mA	3.4Ω±30%	15MHz
LQH31MN180K03□	18μH ±10%	1MHz	35	5MHz	85mA	3.4Ω±30%	15MHz
LQH31MN220J03□	22μH ±5%	1MHz	40	2.5MHz	85mA	3.1Ω±30%	14MHz
LQH31MN220K03□	22μH ±10%	1MHz	40	2.5MHz	85mA	3.1Ω±30%	14MHz
LQH31MN270J03□	27μH ±5%	1MHz	40	2.5MHz	85mA	3.4Ω±30%	13MHz
LQH31MN270K03□	27μH ±10%	1MHz	40	2.5MHz	85mA	3.4Ω±30%	13MHz
LQH31MN330J03□	33μH ±5%	1MHz	40	2.5MHz	80mA	3.8Ω±30%	12MHz
LQH31MN330K03□	33μH ±10%	1MHz	40	2.5MHz	80mA	3.8Ω±30%	12MHz
LQH31MN390J03□	39μH ±5%	1MHz	40	2.5MHz	55mA	7.2Ω±30%	11MHz
LQH31MN390K03□	39μH ±10%	1MHz	40	2.5MHz	55mA	7.2Ω±30%	11MHz
LQH31MN470J03□	47μH ±5%	1MHz	40	2.5MHz	55mA	8.0Ω±30%	10MHz
LQH31MN470K03□	47μH ±10%	1MHz	40	2.5MHz	55mA	8.0Ω±30%	10MHz
LQH31MN560J03□	56μH ±5%	1MHz	40	2.5MHz	50mA	8.9Ω±30%	9.0MHz
LQH31MN560K03□	56μH ±10%	1MHz	40	2.5MHz	50mA	8.9Ω±30%	9.0MHz
LQH31MN680J03□	68μH ±5%	1MHz	40	2.5MHz	50mA	9.9Ω±30%	8.5MHz
LQH31MN680K03□	68μH ±10%	1MHz	40	2.5MHz	50mA	9.9Ω±30%	8.5MHz
LQH31MN820J03□	82μH ±5%	1MHz	40	2.5MHz	45mA	11.0Ω±30%	7.5MHz
LQH31MN820K03□	82μH ±10%	1MHz	40	2.5MHz	45mA	11.0Ω±30%	7.5MHz
LQH31MN101J03□	100μH ±5%	1MHz	40	2.5MHz	45mA	12.0Ω±30%	7.0MHz
LQH31MN101K03□	100μH ±10%	1MHz	40	2.5MHz	45mA	12.0Ω±30%	7.0MHz

Operating temp. range (Self-temp. rise not included): -40 to 85°C
Class of Magnetic Shield: No Shield
*S.R.F.: Self-Resonant Frequency
When rated current is applied to the products, self-temperature rise shall be limited to 20°C max and Inductance will be within ±10% of initial inductance value.

Inductance-Frequency Characteristics (Typ.)



Q-Frequency Characteristics (Typ.)



Inductors for General Circuits ⚠Caution/Notice

⚠Caution

Rating

1. About the Rated Current
Do not use products beyond the rated current as this may create excessive heat and deteriorate the insulation resistance.

2. About Excessive Surge Current
Surge current (pulse current or rush current) greater than the specified rated current applied to the product may cause a critical failure, such as an open circuit or burnout caused by excessive temperature rise.
Please contact us in advance if applying a surge current.

Notice

Storage and Operating Condition

<Operating Environment>
Do not use products in a chemical atmosphere such as chlorine gas, acid or sulfide gas.
<Storage Requirements>
1. Storage Period
The LQB series and LQM series should be used within 6 months; the other products should be used within 12 months.
Check solderability if this period is exceeded.
2. Storage Conditions
(1) Store products in a warehouse in compliance with the following conditions:
Temperature: -10 to +40 degrees C.
Humidity: 15 to 85% (relative humidity)
Do not subject products to rapid changes in temperature and humidity.
Do not store them in a chemical atmosphere such as one containing sulfurous acid gas or alkaline gas.
This will prevent electrode oxidation, which causes poor solderability and possible corrosion of inductors.
(2) Do not store products in bulk packaging to prevent collision among inductors, which causes core chipping and wire breakage.
(3) Store products on pallets to protect from humidity, dust, etc.
(4) Avoid heat shock, vibration, direct sunlight, etc.

Handling

This item is designed to have sufficient strength, but handle with care to avoid chipping or breaking its ceramic structure.
LQH_M/N series
- To prevent breaking the wire, avoid touching with sharp materials, such as tweezers or the bristles of a cleaning brush, to the wire wound portion of this product.
- To prevent breaking the core, avoid applying excessive mechanical shock to products mounted on the board.

LQW_C series
- To prevent breaking the wire, avoid touching with sharp materials, such as tweezers or other materials such as the bristles of a cleaning brush, to the wire wound portion.
- To prevent breaking the core, avoid applying excessive mechanical shock to products mounted on the board.
- In some mounting machines, when picking up components, a support pin pushes the components up from the bottom of the base tape. In this case, please remove the support pin. The support pin may damage the components and break the wire.
- In rare cases, the laser recognition cannot recognize this component. Please contact us when you use laser recognizion. (There is no problem with the permeation and reflection type.)
- The product temperature rises about 40°C maximum when the permissible current is applied to LQW15C. Please use caution regarding the temperature of the substrate and air around the part.

LQB series and LQM series
- There is the possibility that magnetism may change the inductance value. Do not use a magnet or tweezers with magnetism when handling chip inductors. (The tip of the tweezers should be molded with resin or pottery.)
- When excessive current over the rated current is applied, it may cause the inductance value to change due to magnetism.

<Transportation>
Do not apply excessive vibration or mechanical shock to product.

Continued on the following page.↗

Inductors for General Circuits ⚠Caution/Notice

Continued from the preceding page.↘

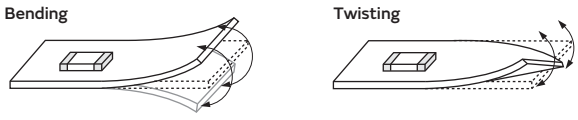
<Resin Coating>

When coating products with resin, the relatively high resin curing stress may change inductance values.
For exterior coating, select resin carefully so that electrical and mechanical performance of the product is not affected. Prior to use, please evaluate reliability with the product mounted in your application set.
(LQH/LQW series)

An open circuit issue may occur by mechanical stress caused by the resin, amount/cured shape of resin, or operating conditions, etc. Some resins containing impurities or chloride may possibly generate chlorine by hydrolysis under some operating conditions, causing corrosion of the inductor wire and leading to an open circuit.

<Handling of a Substrate>

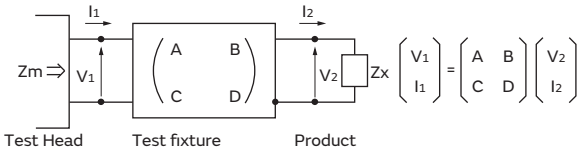
After mounting products on a substrate, do not apply any stress to the product caused by bending or twisting the substrate when cropping the substrate, inserting and removing a connector from the substrate, or tightening a screw to the substrate.
Excessive mechanical stress may cause cracking in the Product.



Measuring Method

Measuring Method of Inductance/Q

1. Residual elements and stray elements of test fixtures can be described by F-parameter as shown in the following:



2. The impedance of chip inductors (chip coils) Zx and measured value Zm can be described by input/output current/voltage.

$$Zm = \frac{V_1}{I_1} \quad , \quad Zx = \frac{V_2}{I_2}$$

3. Thus, the relation between Zx and Zm is shown in the following:

$$Zx = \alpha \frac{Zm - \beta}{1 - Zm\Gamma}$$

where, $\alpha = D / A = 1$
$\beta = B / D = Zsm - (1 - Yom\ Zsm)\ Zss$
$\Gamma = C / A = Yom$

Zsm: measured impedance of short chip
Zss: residual impedance of short chip*
Yom: measured admittance when opening the fixture

*Residual impedance of short chip

Residual Impedance	Series
0.556nH	**LQW04CA/15CA**

4. Lx and Qx should be calculated with the following equation.

$$Lx = \frac{Im\ (Zx)}{2\pi f} \quad , \quad Qx = \frac{Im\ (Zx)}{Re\ (Zx)}$$

Lx: Inductance of chip Inductors (chip coils)
Qx: Q of chip Inductors (chip coils)
f: Measuring frequency

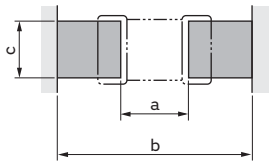
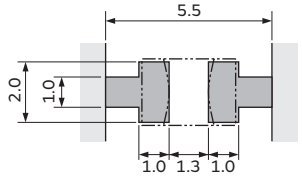
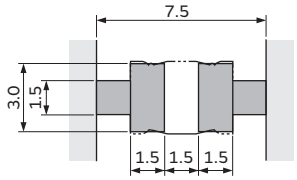
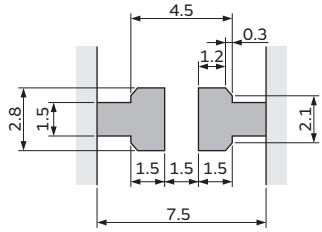
Inductors for General Circuits Soldering and Mounting

1. Standard Land Pattern Dimensions

A high Q value is achieved when the PCB electrode land pattern is designed so that it does not project beyond the chip Inductor's (chip coil's) electrode.

Land Pattern + Solder Resist Land Pattern Solder Resist

(in mm)

Series	Standard Land Dimensions
LQB15N **LQB18N** **LQM18N** **LQM21N** **LQH31M** **LQH44N** **LQW04CA_00** **LQW15CA_00**	
LQH32M	
LQH43M	
LQH43N	

Part Number		a	b	c
LQB15NN	Reflow	0.4	1.2 to 1.4	0.5
LQB18N **LQM18N**	Flow	0.7	2.2 to 2.6	0.7
	Reflow		1.8 to 2.0	
LQM21N		1.2	3.0 to 4.0	1.0
LQH31M		1.0	4.5	1.5
LQH44N		1.3	4.4	3.0
LQW04CA_00		0.45	1.05	0.48
LQW15CA_00		0.45	1.45	0.64

Attention should be paid to potential magnetic coupling effects when using the Inductor (coil) as a resonator.

2. Standard Soldering Conditions

(1) Soldering method

Chip Inductors (Chip coils) can be flow or reflow soldered.

Please contact Murata regarding other soldering methods.

Solder: Use Sn-3.0Ag-0.5Cu solder.

Flux: Use rosin-based flux, but not strongly acidic flux (with chlorine content exceeding 0.2wt%).

Do not use water-soluble flux.

For additional mounting methods, please contact Murata.

Continued on the following page.↗

Inductors for General Circuits Soldering and Mounting

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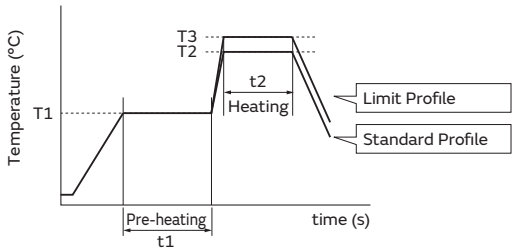
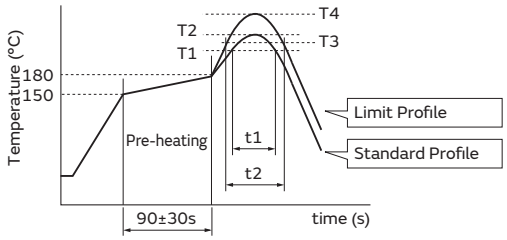
(2) Soldering profile

●Flow Soldering profile
(Sn-3.0Ag-0.5Cu solder)



Series	Pre-heating		Standard Profile			Limit Profile		
			Heating		Cycle of flow	Heating		Cycle of flow
	Temp. (T1)	Time. (t1)	Temp. (T2)	Time. (t2)		Temp. (T3)	Time. (t1)	
LQB18N LQM18N LQM21N LQH31M	150°C	60s min.	250°C	4 to 6s	2 times max.	265±3°C	5s max.	2 times max.
LQH32M	150°C	60s min.	250°C	4 to 6s	2 times max.	265±3°C	5s max.	1 time

●Reflow Soldering profile
(Sn-3.0Ag-0.5Cu solder)



Series	Standard Profile				Limit Profile			
	Heating		Peak temperature (T2)	Cycle of reflow	Heating		Peak temperature (T4)	Cycle of reflow
	Temp. (T1)	Time. (t1)			Temp. (T3)	Time. (t2)		
LQB15N LQB18N LQM18N LQM21N LQH31M LQH43N LQH44N LQW04CA LQW15CA	220°C	30 to 60s	245±3°C	2 times max.	230°C	60s max.	260°C/10s	2 times max.
LQH32M LQH43M	220°C	30 to 60s	245±3°C	2 times max.	230°C	60s max.	260°C/10s	1 time

(3) Reworking with a Soldering Iron

*Except for LQW04CA

Preheating at 150°C for 1 minute is required. Do not directly touch the ceramic element with the tip of the soldering iron. The reworking soldering conditions are as follows:

Soldering iron power output: 80W max.
Temperature of soldering iron tip: 350°C
Diameter of soldering iron end: 3.0mm max.
Soldering time: within 3 s

Please keep the fix time with the soldering iron within 2 times.

Continued on the following page. ↗

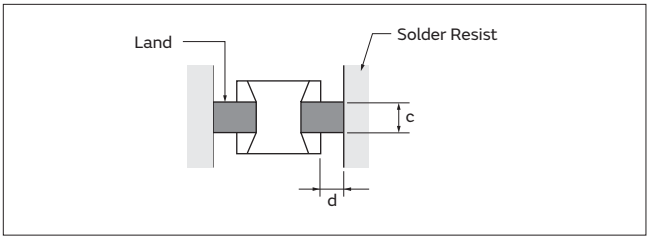
Inductors for General Circuits Soldering and Mounting

Continued from the preceding page. ↘

3. Mounting Instructions

(1) Land Pattern Dimensions

Large lands reduce the Q of the mounted chip. Also, large protruding land areas (bordered by lines having the dimensions "c" and "d" shown) cause floating and electrode leaching.

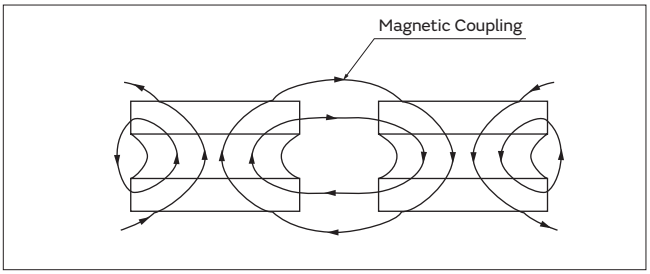


(2) Land Pattern Designing (LQH series)

Please follow the recommended patterns. Otherwise, their performance, which includes electrical performance or solderability, may be affected, or result in “position shift” in the soldering process.

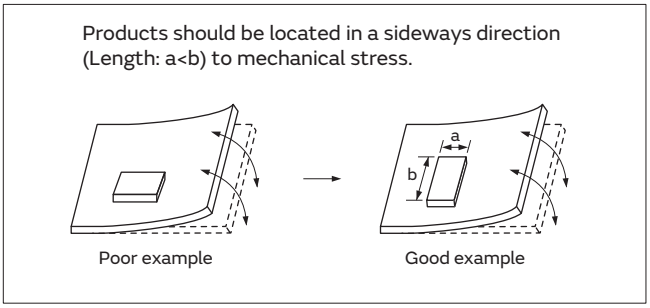
(3) Magnetic Coupling

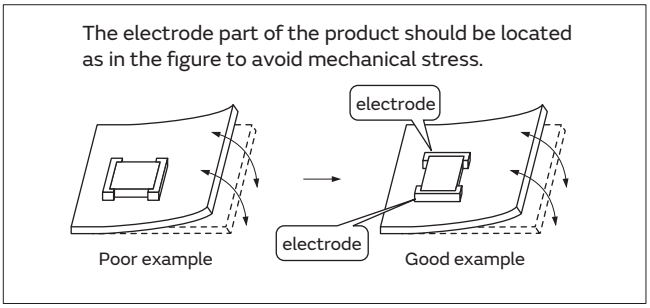
Since some chip inductors (chip coils) are constructed like an open magnetic circuit, narrow spacing between inductors (coils) may cause magnetic coupling. LQB/LQM series have a magnetically shielded structure. The structure makes their coupling coefficient smaller than that of conventional chip inductors (chip coils).



(4) PCB Warping

The PCB should be designed so that products are not subjected to mechanical stress caused by warping the board.



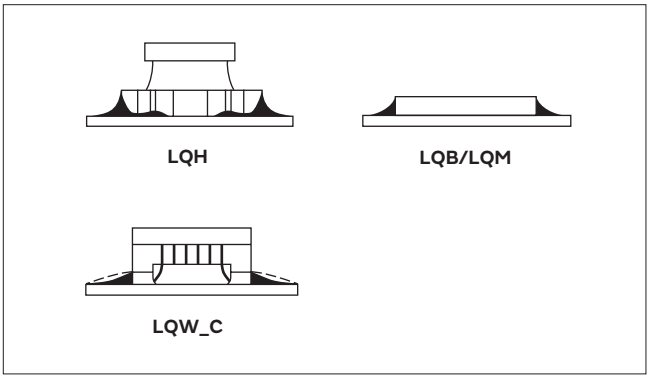


(5) Amount of Solder Paste

Excessive solder causes electrode corrosion, while insufficient solder causes low electrode bonding strength. Adjust the amount of solder paste as shown on the right so that the correct amount is applied.

Guideline of solder paste thickness

- LQM: 100 to 150μm
- LQB: 100 to 200μm
- LQH: 200 to 300μm
- LQW04CA: 80 to 100μm
- LQW15CA: 50 to 100μm



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Inductors for General Circuits Soldering and Mounting

Continued from the preceding page. ↘

4. Cleaning

The following conditions should be observed when cleaning chip inductors (chip coils):

(1) Cleaning Temperature: 60°C max. (40°C max. for alcohol cleaning agents)

(2) Ultrasonic
Output: 20W/l max.
Duration: 5 minutes max.
Frequency: 28 to 40kHz
Care should be taken not to cause resonance of the PCB and mounted products.

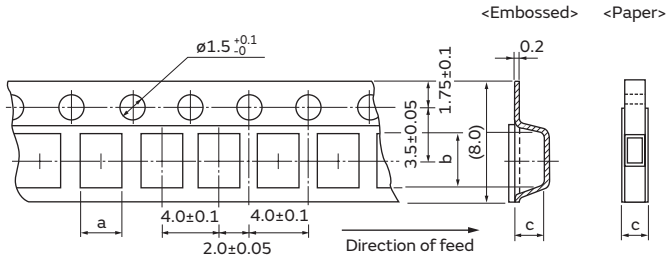
(3) Cleaning agent
The following cleaning agents have been tested on individual components. Evaluation in complete assembly should be done prior to production.
(a) Alcohol cleaning agents
Isopropyl alcohol (IPA)
(b) Aqueous cleaning agents
Pine Alpha ST-100S

(4) Ensure that flux residue is completely removed. Component should be thoroughly dried after aqueous agents have been removed with deionized water.

For additional cleaning methods, please contact Murata.

Inductors for General Circuits Packaging

Minimum Quantity and 8mm Width Taping Dimensions



The dimension of the cavity of embossed tape is measured at the bottom side.

Paper Tape

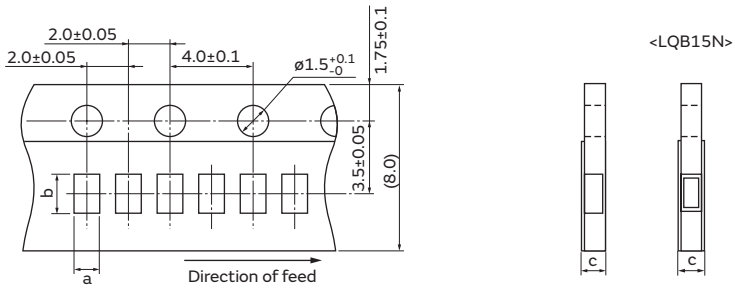
Part Number	Dimensions		Total Thickness of Tape	Packaging Code (Minimum Qty. (pcs.))		
	a	b	c	ø180mm reel	ø330mm reel	Bulk
LQB18N	1.05	1.85	1.1 max.	**D** (4000)	—	**B** (1000)
LQM21N (0.1 to 2.2μH)	1.45	2.25	1.1 max.	**D** (4000)	**J** (10000)	**B** (1000)
LQM18N	1.05	1.85	1.1 max.	**D** (4000)	**J** (10000)	**B** (1000)

Embossed Tape

Part Number	Dimensions		Depth of Cavity	Packaging Code (Minimum Qty. (pcs.))		
	a	b	c	ø180mm reel	ø330mm reel	Bulk
LQM21N (2.7 to 4.7μH)	1.45	2.25	1.3	**L** (3000)	**K** (10000)	**B** (1000)
LQH31M	1.9	3.6	2.0	**L** (2000)	**K** (7500)	—
LQH32M	2.9	3.6	2.1	**L** (2000)	**K** (7500)	—

(in mm)

Minimum Quantity and 8mm Width Taping Dimensions



Paper Tape

Part Number	Dimensions		Total Thickness of Tape	Packaging Code (Minimum Qty. (pcs.))		
	a	b	c	ø180mm reel	ø330mm reel	Bulk
LQB15N	0.65	1.15	0.8 max.	**D** (10000)	—	**B** (1000)
LQW04CA_00	0.59	1.01	0.71 max.	**D** (10000)	—	**B** (500)
LQW15CA_00	0.66	1.22	0.9 max.	**D** (10000)	—	**B** (500)

(in mm)

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Inductors for General Circuits Packaging

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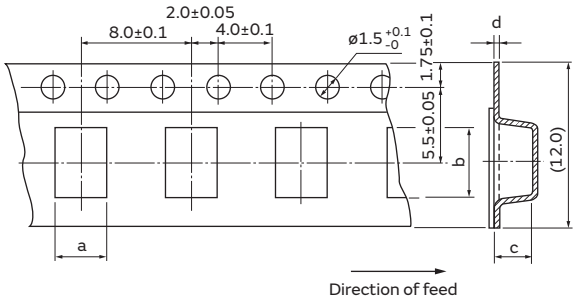
Minimum Quantity and 12mm Width Embossed Taping Dimensions



The dimension of the cavity of embossed tape is measured at the bottom side.

Embossed Tape

Part Number	Dimensions (*c: Depth of Cavity)				Packaging Code (Minimum Qty. (pcs.))		
	a	b	c	d	ø180mm reel	ø330mm reel	Bulk
LQH43M	3.6	4.9	2.7	0.3	**L** (500)	**K** (2500)	—
LQH43N	3.6	4.9	2.7	0.3	**L** (500)	**K** (2500)	—
LQH44N	4.3	4.3	4.7	0.4	**L** (250)	**K** (1500)	—

(in mm)