

	Series	Structure	Size Code in inch (in mm)	Inductance Range (H)										Rated Current (A)						
				0.1n	1n	10n	100n	1μ	10μ	100μ	1m	10m	10m	100m	1	10	100			
RF Inductors	LQG15HN_02 p201	Multilayer Type	0402 (1005)	1nH	120nH											150mA	1A			
	LQG15HS_02 p204		0402 (1005)	1nH	270nH												110mA	1A		
	LQG18HN_00 p208		0603 (1608)	1.2nH	100nH												350mA	1.1A		
	LQW21HN_00 p289	Wire Wound Ferrite Core Type	0805 (2012)			470nH		2.2μH								75mA	160mA			
	LQP02HQ_02 p210	Film Type	01005 (0402)	0.2nH	56nH											100mA	1A			
	LQP02TN_02 p214		01005 (0402)	0.2nH	39nH											90mA	320mA			
	LQP02TQ_02 p218		01005 (0402)	0.2nH	22nH											120mA	990mA			
	LQP03HQ_02 p221		0201 (0603)	0.6nH	150nH											80mA	1.1A			
	LQP03PN_02 p225		0201 (0603)	2.2nH	4.7nH											900mA	1.4A			
	LQP03TG_02 p227		0201 (0603)	0.1nH	120nH											80mA	850mA			
	LQP03TN_02 p231		0201 (0603)	0.6nH	270nH											60mA	850mA			
	LQP03TQ_02 p235		0201 (0603)	0.6nH	13nH											250mA	1A			
	LQP15MN_02 p238		0402 (1005)	1nH	33nH											60mA	400mA			
	LQP18MN_02 p240		0603 (1608)	1.3nH	100nH											50mA	300mA			
	LQW03AW_00 p242		Wire Wound Non-Magnetic Core Type	0201 (0603)	1nH	15.5nH											230mA	900mA		
	LQW04AN_00 p244			03015 (0804)	0.8nH	33nH											140mA	1.8A		
	LQW04AN_10 p249	03015 (0804)			36nH		56nH									180mA	200mA			
	LQW15AN_00 p250	0402 (1005)		1.5nH	120nH											110mA	1A			
	LQW15AN_10 p256	0402 (1005)		1.3nH	8.4nH											640mA	1.2A			
	LQW15AN_80 p258	0402 (1005)		1.3nH	75nH											320mA	3.15A			
	LQW18AN_00 p265	0603 (1608)		2.2nH	470nH											75mA	850mA			
	LQW18AN_10 p268	0603 (1608)		2.2nH	33nH											550mA	1.4A			
	LQW18AN_80 p270	0603 (1608)		2.2nH	390nH											190mA	3.2A			
	LQW18AS_00 p275	0603 (1608)		1.6nH	390nH											100mA	700mA			
	LQW2BAN_00 p278	0805 (2015)		3.2nH	200nH											750mA	3.8A			
	LQW2BAS_00 p281	0805 (2015)		2.8nH	820nH											180mA	800mA			
	LQW2BHN_03 p283	0805 (2015)		3.3nH	470nH											160mA	1.32A			
	LQW2BHN_13 p285	0805 (2015)		2.7nH	27nH											900mA	1.9A			
	LQW2UAS_00 p286	1008 (2520)			12nH		4.7μH									260mA	1A			
	LQW31HN_03 p290	1206 (3216)			8.8nH		100nH									230mA	750mA			

● Part Numbering

RF Inductors

(Part Number)

LQ	G	15	H	N	1N0	S	0	2	D
1	2	3	4	5	6	7	8	9	10

① Product ID

Product ID	
LQ	Chip Inductors (Chip Coils)

② Structure

Code	Structure
G	Multilayer Type (Air-core Inductors (Coils))
H	Wire Wound Type (Ferrite Core)
P	Film Type
W	Wire Wound Type (Air-core Inductors (Coils))
	Wire Wound Type (Ferrite Core)

② Dimensions (LxW)

Code	Nominal Dimensions (LxW)	Size Code (in inch)
02	0.4×0.2mm	01005
03	0.6×0.3mm	0201
04	0.8×0.4mm	03015
15	1.0×0.5mm	0402
18	1.6×0.8mm	0603
21	2.0×1.25mm	0805
2B	2.0×1.5mm	0805
2U	2.5×2.0mm	1008
31	3.2×1.6mm	1206

④ Applications and Characteristics

Code	Series	Applications and Characteristics
H	LQG	Multilayer Air-core Inductors (Coils)
	LQP	Film Type (High Q Type)
M	LQP	Film Type
P		Film Type (For Large Current)
T		Film Type (Low DC Resistance Type)
A	LQW	High Q Type (UHF-SHF)
H		High Q Type (VHF-UHF)
H	LQH	for High-frequency Resonant Circuit

⑤ Category

Code	Category	
G/N	General	
S		Standard Type
Q		High Q Type
W		Specialty Dimensions

⑩ Packaging

Code	Packaging	Series
K	Embossed Taping (ø330mm Reel)	LQH/LQW□□H*2
L/E	Embossed Taping (ø180mm Reel)	LQH/LQW2BA/LQW2UA/LQW□□H/LQP
B	Bulk	LQW/LQG/LQP
J	Paper Taping (ø330mm Reel)	LQW18A/LQG/LQP*1
D	Paper Taping (ø180mm Reel)	LQW□□A*3 /LQG/LQP

*1 Except for LQP02T *2 Except for LQW21H *3 Except for LQW2BA/LQW2UA

⑥ Inductance

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. For those products whose inductance values are specified using three designated digits, these values may be indicated using the closest two digits instead.

⑦ Inductance Tolerance

Code	Inductance Tolerance
B	±0.1nH
C	±0.2nH
D	±0.5nH
F	±1%
G	±2%
H	±3%
J	±5%
K	±10%
S	±0.3nH
W	±0.05nH

⑧ Features

Code	Features	Series
0	Standard Type	LQG/LQP/LQW/LQH*1
1	High-Q/Low DC Resistance	LQW15A/18A/2BH
8	Low DC Resistance, Large Rated Current	LQW15A/LQW18A

*1 Except for LQH32 Series

⑨ Electrode

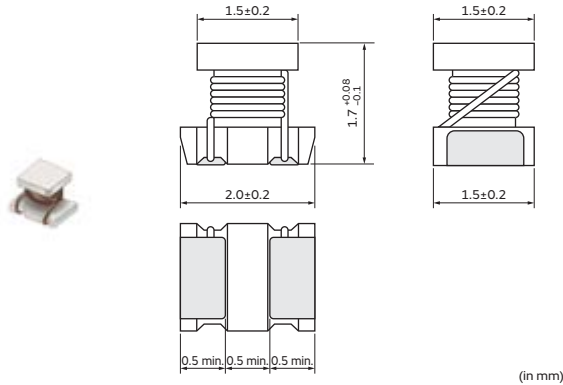
•Lead (Pb) Free

Code	Electrode	Series
0	Sn	LQG18H/LQW□□A/LQW□□C
2		LQG15H/LQP02T/LQP03T/ LQP15T/LQP□□M
3	LF Solder	LQW□□H/LQH

RF Inductors

LQW2BHN_03 Series 0805 (2015) inch (mm)

Appearance/Dimensions



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	Max. of DC Resistance	S.R.F.* (min.)
LQW2BHN3N3D03□	3.3nH ±0.5nH	100MHz	10	250MHz	910mA	0.05Ω	6000MHz
LQW2BHN6N8D03□	6.8nH ±0.5nH	100MHz	20	250MHz	680mA	0.11Ω	5400MHz
LQW2BHN8N2D03□	8.2nH ±0.5nH	100MHz	20	250MHz	630mA	0.12Ω	3900MHz
LQW2BHN10NJ03□	10nH ±5%	100MHz	30	250MHz	1320mA	0.03Ω	3300MHz
LQW2BHN12NJ03□	12nH ±5%	100MHz	30	250MHz	680mA	0.11Ω	3200MHz
LQW2BHN15NJ03□	15nH ±5%	100MHz	30	250MHz	630mA	0.12Ω	2700MHz
LQW2BHN18NJ03□	18nH ±5%	100MHz	30	250MHz	690mA	0.10Ω	2600MHz
LQW2BHN22NJ03□	22nH ±5%	100MHz	30	250MHz	720mA	0.09Ω	2100MHz
LQW2BHN27NJ03□	27nH ±5%	100MHz	40	250MHz	540mA	0.17Ω	2300MHz
LQW2BHN33NG03□	33nH ±2%	100MHz	40	250MHz	570mA	0.15Ω	1900MHz
LQW2BHN33NJ03□	33nH ±5%	100MHz	40	250MHz	570mA	0.15Ω	1900MHz
LQW2BHN39NG03□	39nH ±2%	100MHz	40	250MHz	730mA	0.09Ω	1700MHz
LQW2BHN39NJ03□	39nH ±5%	100MHz	40	250MHz	730mA	0.09Ω	1700MHz
LQW2BHN47NG03□	47nH ±2%	100MHz	40	200MHz	450mA	0.23Ω	1600MHz
LQW2BHN47NJ03□	47nH ±5%	100MHz	40	200MHz	450mA	0.23Ω	1600MHz
LQW2BHN56NG03□	56nH ±2%	100MHz	40	200MHz	430mA	0.26Ω	1500MHz
LQW2BHN56NJ03□	56nH ±5%	100MHz	40	200MHz	430mA	0.26Ω	1500MHz
LQW2BHN68NG03□	68nH ±2%	100MHz	40	200MHz	460mA	0.23Ω	1200MHz
LQW2BHN68NJ03□	68nH ±5%	100MHz	40	200MHz	460mA	0.23Ω	1200MHz
LQW2BHN82NG03□	82nH ±2%	100MHz	40	150MHz	320mA	0.42Ω	1100MHz
LQW2BHN82NJ03□	82nH ±5%	100MHz	40	150MHz	320mA	0.42Ω	1100MHz
LQW2BHNR10G03□	100nH ±2%	100MHz	35	150MHz	270mA	0.55Ω	900MHz
LQW2BHNR10J03□	100nH ±5%	100MHz	40	150MHz	350mA	0.38Ω	900MHz
LQW2BHNR12G03□	120nH ±2%	100MHz	40	150MHz	320mA	0.40Ω	750MHz
LQW2BHNR12J03□	120nH ±5%	100MHz	40	150MHz	320mA	0.40Ω	750MHz
LQW2BHNR15G03□	150nH ±2%	100MHz	30	150MHz	260mA	0.68Ω	350MHz
LQW2BHNR15J03□	150nH ±5%	100MHz	30	150MHz	390mA	0.47Ω	350MHz
LQW2BHNR18G03□	180nH ±2%	100MHz	35	100MHz	250mA	0.71Ω	700MHz
LQW2BHNR18J03□	180nH ±5%	100MHz	35	100MHz	250mA	0.71Ω	700MHz
LQW2BHNR22G03□	220nH ±2%	100MHz	35	100MHz	240mA	0.70Ω	500MHz
LQW2BHNR22J03□	220nH ±5%	100MHz	35	100MHz	240mA	0.70Ω	500MHz
LQW2BHNR27J03□	270nH ±5%	10MHz	15	25.2MHz	190mA	2.00Ω	550MHz
LQW2BHNR27K03□	270nH ±10%	10MHz	15	25.2MHz	190mA	2.00Ω	550MHz

Operating temp. range (Self-temp. rise not included): -40 to 85°C

*S.R.F.: Self-Resonant Frequency

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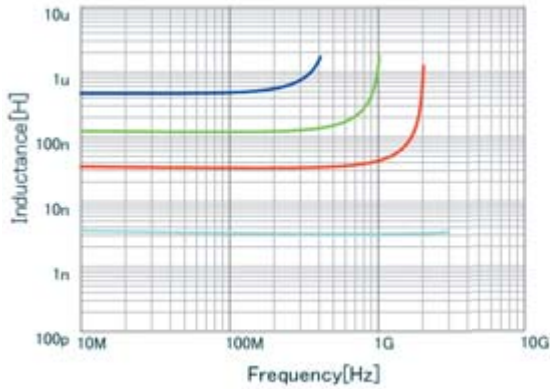
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Part Number	Inductance	Inductance Test Frequency	Q (min.)	Q Test Frequency	Rated Current	Max. of DC Resistance	S.R.F.* (min.)
LQW2BHNR33J03□	330nH ±5%	10MHz	15	25.2MHz	180mA	2.20Ω	500MHz
LQW2BHNR33K03□	330nH ±10%	10MHz	15	25.2MHz	180mA	2.20Ω	500MHz
LQW2BHNR39J03□	390nH ±5%	10MHz	15	25.2MHz	170mA	2.50Ω	400MHz
LQW2BHNR39K03□	390nH ±10%	10MHz	15	25.2MHz	170mA	2.50Ω	400MHz
LQW2BHNR47J03□	470nH ±5%	10MHz	15	25.2MHz	160mA	2.80Ω	350MHz
LQW2BHNR47K03□	470nH ±10%	10MHz	15	25.2MHz	160mA	2.80Ω	350MHz

Operating temp. range (Self-temp. rise not included): -40 to 85°C

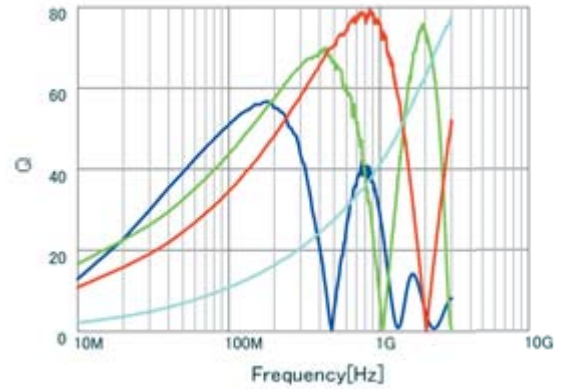
*S.R.F.: Self-Resonant Frequency

Inductance-Frequency Characteristics (Typ.)



- LQW2BHNR47K03 L
- LQW2BHNR12J03 L
- LQW2BHN33NJ03 L
- LQW2BHN33D03 L

Q-Frequency Characteristics (Typ.)

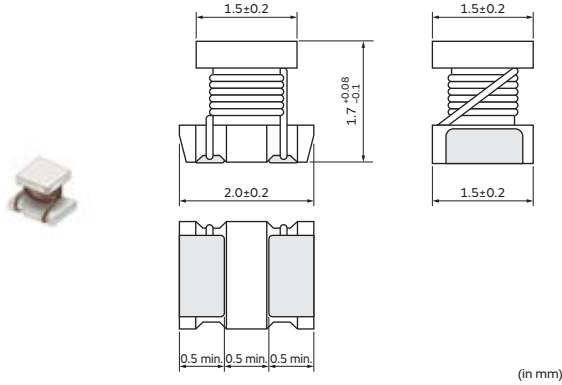


- LQW2BHNR47K03 Q
- LQW2BHNR12J03 Q
- LQW2BHN33NJ03 Q
- LQW2BHN33D03 Q

RF Inductors

LQW2BHN_13 Series 0805 (2015) inch (mm)

Appearance/Dimensions



Packaging

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

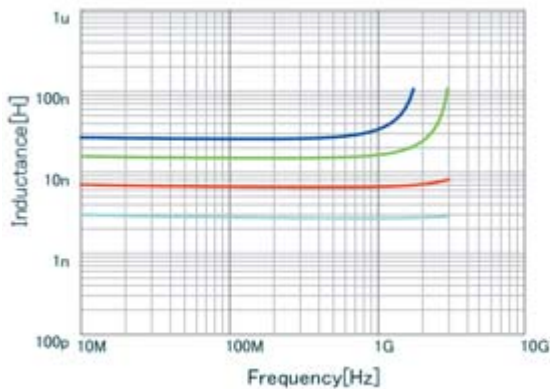
Rated Value (□: packaging code)

Part Number	Inductance	Inductance Test Frequency	Q (min.)	Q Test Frequency	Rated Current	Max. of DC Resistance	S.R.F.* (min.)
LQW2BHN2N7D13□	2.7nH ±0.5nH	100MHz	20	250MHz	1900mA	0.02Ω	6000MHz
LQW2BHN3N1D13□	3.1nH ±0.5nH	100MHz	20	250MHz	1800mA	0.02Ω	6000MHz
LQW2BHN3N3D13□	3.3nH ±0.5nH	100MHz	20	250MHz	1700mA	0.02Ω	6000MHz
LQW2BHN5N6D13□	5.6nH ±0.5nH	100MHz	35	250MHz	1500mA	0.02Ω	6000MHz
LQW2BHN6N8D13□	6.8nH ±0.5nH	100MHz	35	250MHz	1400mA	0.02Ω	5400MHz
LQW2BHN8N6D13□	8.6nH ±0.5nH	100MHz	35	250MHz	1300mA	0.03Ω	3900MHz
LQW2BHN10N13□	10nH ±5%	100MHz	35	250MHz	1320mA	0.03Ω	3300MHz
LQW2BHN12NK13□	12nH ±10%	100MHz	40	250MHz	1100mA	0.04Ω	3200MHz
LQW2BHN15NK13□	15nH ±10%	100MHz	40	250MHz	1000mA	0.04Ω	3100MHz
LQW2BHN18NK13□	18.8nH ±10%	100MHz	40	250MHz	1000mA	0.05Ω	2600MHz
LQW2BHN21NK13□	21nH ±10%	100MHz	40	250MHz	950mA	0.05Ω	2200MHz
LQW2BHN27NK13□	27nH ±10%	100MHz	40	250MHz	900mA	0.06Ω	1800MHz

Operating temp. range (Self-temp. rise not included): -40 to 85°C

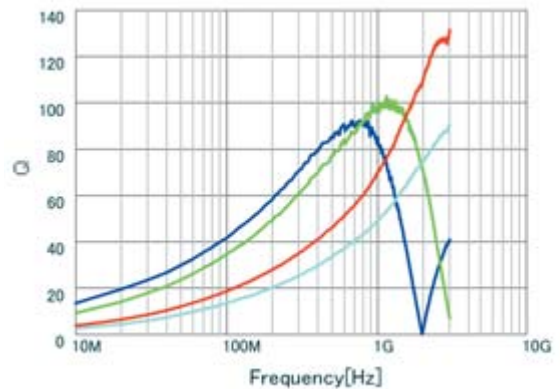
*S.R.F.: Self-Resonant Frequency

Inductance-Frequency Characteristics (Typ.)



■	LQW2BHN27NK13 L
■	LQW2BHN15NK13 L
■	LQW2BHN6N8D13 L
■	LQW2BHN2N7D13 L

Q-Frequency Characteristics (Typ.)



■	LQW2BHN27NK13 Q
■	LQW2BHN15NK13 Q
■	LQW2BHN6N8D13 Q
■	LQW2BHN2N7D13 Q

RF Inductors ⚠️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 LQG 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.

LQW_A/LQW_H 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.
- 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 recognition. (There is no problem with the permeation and reflection type.)

LQH_H 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.

LQG,LQP series (except LQP02_02/LQP03_02)

- The pattern of the chip Inductors is covered with protective film. Take care to avoid damaging the chip Inductors when handling it with pick-up nozzles, sharp instruments, etc.

<Transportation>

Do not apply excessive vibration or mechanical shock to products.

Continued on the following page. ↗

RF Inductors Soldering and Mounting

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.

(LQW, LQH 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.

(LQP02_02/LQP03_02)

When products are coated with resin, please contact us in advance.

<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.

Bending



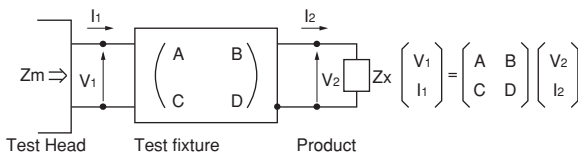
Twisting



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) Z_x and measured value Z_m can be described by input/output current/voltage.

$$Z_m = \frac{V_1}{I_1}, \quad Z_x = \frac{V_2}{I_2}$$

3. Thus, the relation between Z_x and Z_m is shown in the following:

$$Z_x = \alpha \frac{Z_m - \beta}{1 - Z_m \Gamma}$$

$$\text{where, } \alpha = D / A = 1$$

$$\beta = B / D = Z_{sm} - (1 - Y_{om} Z_{sm}) Z_{ss}$$

$$\Gamma = C / A = Y_{om}$$

(Z_{sm} : measured impedance of short chip
 Z_{ss} : residual impedance of short chip*
 Y_{om} : measured admittance when opening the fixture)

*Residual impedance of short chip

Residual Impedance	Series
0nH	LQG15H/LQP03TG
0.110nH	LQP02HQ/LQP02TN/LQP02TQ
0.464nH	LQW04AN
0.480nH	LQP03HQ/LQP03TN_02/LQW03AW
0.556nH	LQG15HN, LQW15A, LQP15M
0.771nH	LQG18H, LQP18M, LQW18A, LQW21H/LQW2BAN

4. L_x and Q_x should be calculated with the following equation.

$$L_x = \frac{\text{Im}(Z_x)}{2\pi f}, \quad Q_x = \frac{\text{Im}(Z_x)}{\text{Re}(Z_x)}$$

L_x : Inductance of chip Inductors (chip coils)
 Q_x : Q of chip Inductors (chip coils)
 f : Measuring frequency

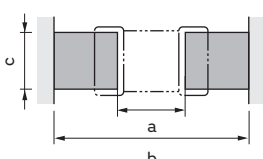
Please contact us for LQW18AS, LQW2BAS, LQW2UAS, because they are different from other inductors regarding the inductance calculation method.

RF Inductors 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			
LQG15H LQG18H LQP02TN LQP02TQ LQP03T LQP15M LQP18M LQW03A LQW04A LQW15A LQW18A LQW21H LQW2BH LQW2BA LQW2UA LQW31H LQH31H				
	Part Number	a	b	c
	LQG15H	0.4	1.4 to 1.5	0.5 to 0.6
	LQG18H	0.6 to 0.8	1.8 to 2.2	0.6 to 0.8
	LQP02TN	0.16 to 0.2	0.4 to 0.56	0.2 to 0.23
	LQP02HQ/TQ	0.2	0.56	0.16
	LQP03HQ	0.3	0.9	0.25 to 0.3
	LQP03TN/TG/PN	0.2 to 0.3	0.8 to 0.9	0.2 to 0.3
	LQP03TQ	0.3	0.9	0.25
	LQP15M	0.4	1.4 to 1.5	0.5 to 0.6
	LQP18M	0.7 to 0.9	1.8 to 2.2	0.6 to 0.8
	LQW03A	0.23	0.65	0.4
	LQW04A	0.4	1.0	0.4
	LQW15A_00/10	0.5	1.2	0.65
	LQW15A_80	0.6	1.42	0.66
	LQW18AN_00/10/ AS_00	0.6 to 0.8	1.9 to 2.0	0.7 to 1.0
	LQW18A_80	0.86	2.0	1.15
	LQW21H	1.0	2.6	1.2
	LQW2BH	0.8	3.0	1.2
	LQW2BA	0.76	2.8	1.78
LQW2UA	1.27	3.3	2.54	
LQH31H	1.0	4.5	1.5	
LQW31H	1.0	4.5	1.5	

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.

For LQG, LQP,

LQW03A/04A/15A/18A/21H/2BA/2UA series, please use reflow soldering.

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.

The flux used for the LQW03/04/15/18/21/2BA/2UA series should be a rosin-based flux that includes a middle activator equivalent to 0.06wt% to 0.1wt% chlorine.

For additional mounting methods, please contact Murata.

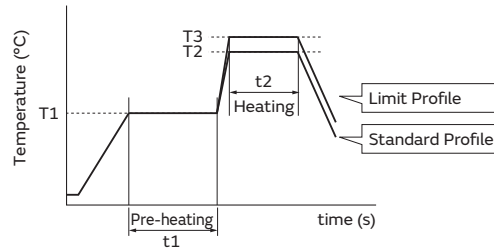
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RF Inductors Soldering and Mounting

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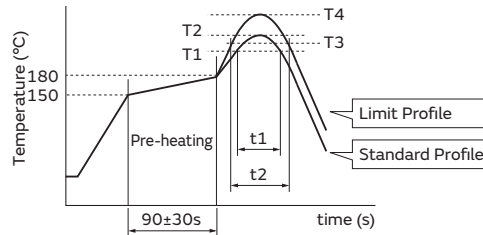
(2) Soldering profile

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



Series	Pre-heating		Standard Profile			Limit Profile		
	Temp. (T1)	Time. (t1)	Heating		Cycle of flow	Heating		Cycle of flow
			Temp. (T2)	Time. (t2)		Temp. (T3)	Time. (t2)	
LQW2BH/31H LQH31H	150°C	60s min.	250°C	4 to 6s	2 times max.	265±3°C	5s max.	2 times max.

●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)		
LQG15H/18H LQW03A/04A/15A/18A/21H LQW2BA/2UA LQP02T/03T/15M/18M LQW2BH/31H LQH31H	220°C	30 to 60s	245±3°C	2 times max.	230°C	60s max.	260°C/10s	2 times max.

(3) Reworking with a Soldering Iron

*Except for LQP02T/LQW04AN/03AW/15AN_80

Series

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.

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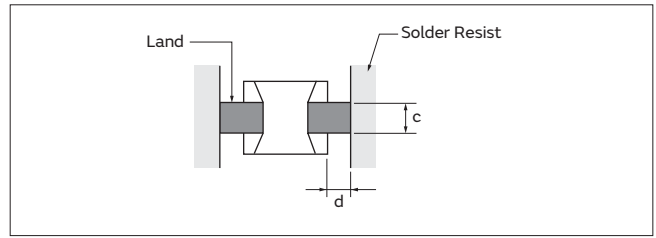
RF Inductors Soldering and Mounting

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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.

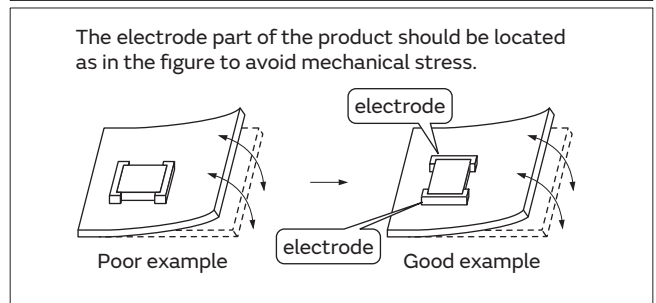
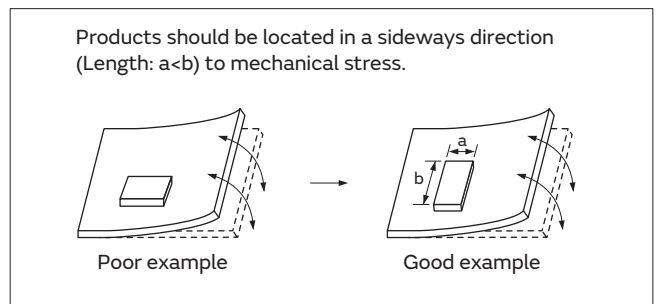


(2) Land Pattern Designing (LQW series)

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) PCB Warping

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



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RF Inductors Soldering and Mounting

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(4) Amount of Solder Paste

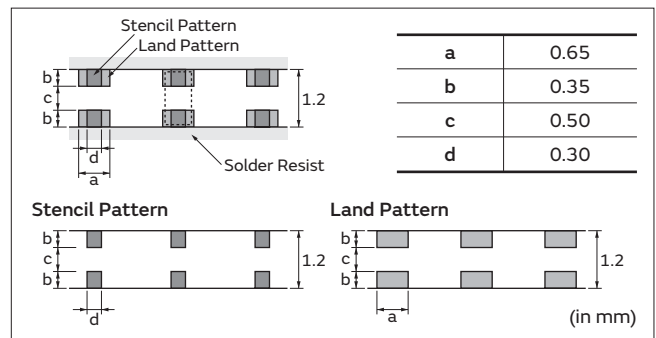
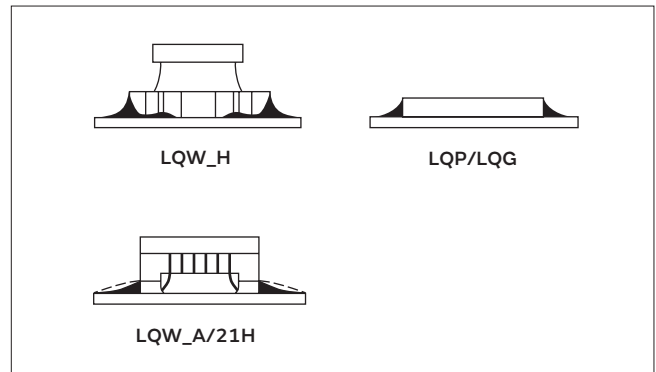
Excessive solder causes electrode corrosion, while insufficient solder causes low electrode bonding strength. Adjust the amount of solder paste as shown on the right so that the correct amount is applied.

Guideline of solder paste thickness

- LQP (*Except for LQP02TN/LQP02TQ/HQ/LQP03TQ/HQ),LQG,LQW15AN_00/LQW15AN_10/LQW18AN/LQW21H/LQW2BA/LQW2UA: 100 to 150μm
- LQP02TN: 50 to 80μm
- LQP02TQ/HQ: 50 to 65μm
- LQP03TQ/HQ: 100μm
- LQW03A/LQW04A: 80 to 100μm
- LQW15AN_80: 50 to 100μm
- LQW_H: 200 to 300μm

LQW15A Series:

Too much solder may cause slant or rotation of the chip at the time of solder melting. Please reduce the amount of solder by using a smaller solder area than the land pattern, as shown in the figure at right.



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.

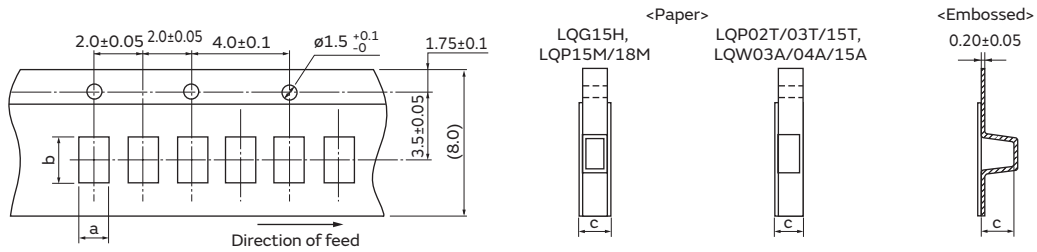
- Alcohol cleaning agents
 - Isopropyl alcohol (IPA)
- Aqueous cleaning agents
 - Pine Alpha ST-100S

- (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.

RF Inductors Packaging

Minimum Quantity and 8mm Width Taping Dimensions



Paper Tape

Part Number	Dimensions		Total Thickness of Tape c	Packaging Code (Minimum Qty. (pcs.))		
	a	b		ø180mm reel	ø330mm reel	Bulk
LQG15H	0.62	1.12	0.8 max.	D (10000)	J (50000)	B (1000)
LQP02TN	0.24	0.47	0.39 max.	D (20000)	—	B (500)
LQP02TQ	0.23	0.45	0.39 max.	D (20000)	—	B (500)
LQP03HQ	0.36	0.68	0.55 max.	D (15000)	J (50000)	B (500)
LQP03TN/TG/TQ *1	0.35	0.65/0.67	0.55 max.	D (15000)	J (50000)	B (500)
LQP15M	0.70	1.20	0.8 max.	D (10000)	J (50000)	B (500)
LQP18M	1.19	2.0	0.8 max.	D (4000)	J (10000)	B (500)
LQW03A	0.52	0.65	0.75 max.	D (10000)	—	—
LQW04A	0.49	0.91	0.75 max.	D (10000)	—	B (500)
LQW15A_00 *2	0.64/0.66/0.69	1.18	0.8 max.	D (10000)	—	B (500)
LQW15A_10 *3	0.66/0.69	1.18	0.8 max.	D (10000)	—	B (500)
LQW15A_80	0.75	1.18	0.8 max.	D (10000)	—	B (500)

*1 0.67 (LQP03TG - LQP03TN_02; 0.6 to 62nH, 130 to 270nH · LQP03PN, LQP03TQ)

0.65 (LQP03TN_02; 68 to 120nH)

*2 0.69 (1.5nH, 2.4 to 2.8nH, 3.9 to 4.8nH, 5.8 to 6.8nH, 8.2 to 9.9nH, 11nH, 12nH, 15nH)

0.66 (1.6 to 1.8nH, 2.9nH, 3.0nH, 3.1nH, 3.2nH, 4.9 to 5.1nH, 6.9 to 7.5nH, 10nH, 13nH, 16 to 23nH, 100nH, 120nH)

0.64 (24 to 91nH)

*3 0.69 (1.3nH, 1.4nH)

0.66 (2.2 to 8.4nH)

Embossed Tape

Part Number	Dimensions		Total Thickness of Tape c	Packaging Code (Minimum Qty. (pcs.))		
	a	b		ø180mm reel	ø330mm reel	Bulk
LQP02HQ	0.24	0.46	0.34 max.	E (15000)	—	B (500)

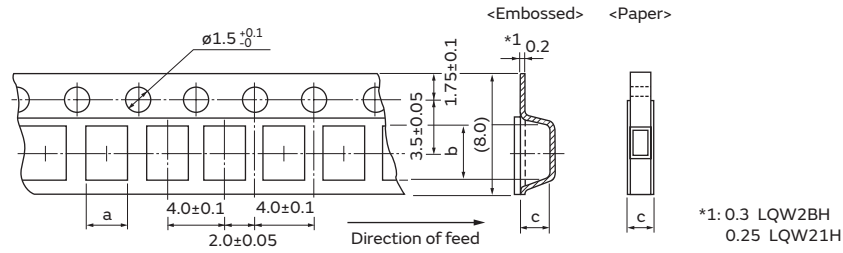
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RF Inductors Packaging

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Minimum Quantity and 8mm Width Taping Dimensions



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

Paper Tape

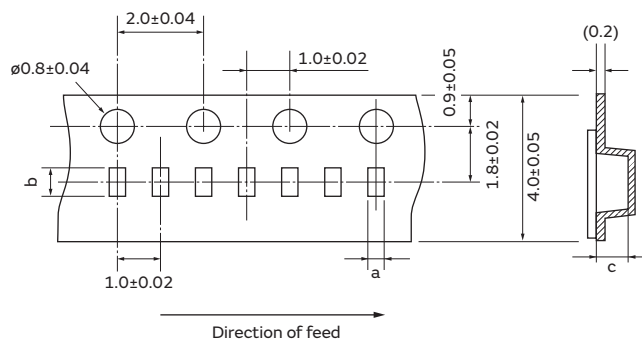
Part Number	Dimensions		Total Thickness of Tape	Packaging Code (Minimum Qty. (pcs.))		
	a	b		Ø180mm reel	Ø330mm reel	Bulk
LQG18H	1.05	1.85	1.1 max.	D (4000)	J (10000)	B (1000)
LQW18AN_00	1.0	1.8	1.1 max.	D (4000)	J (10000)	B (500)
LQW18AN_10	1.1	1.9	1.1 max.	D (4000)	J (10000)	B (500)
LQW18AN_80	1.15	1.9	1.1 max.	D (4000)	J (10000)	B (500)
LQW18AS_00	1.06	1.86	1.1 max.	D (4000)	J (10000)	B (500)

Embossed Tape

Part Number	Dimensions		Depth of Cavity	Packaging Code (Minimum Qty. (pcs.))		
	a	b		Ø180mm reel	Ø330mm reel	Bulk
LQP02HQ	0.24	0.46	0.34 max.	L (30000)	—	B (500)
LQH31H, LQW31H	1.9	3.6	2.0	L (2000)	K (7500)	—
LQW21H	1.55	2.3	1.1	L (3000)	—	B (500)
LQW2BH	1.75	2.3	2.0	L (2000)	K (7500)	—
LQW2BA	1.8	2.3	1.65	L (2000)	—	—
LQW2UA	2.7	2.8	2.15	L (2000)	—	—

(in mm)

Minimum Quantity and 4mm Width Taping Dimensions



Embossed Tape

Part Number	Dimensions		Total Thickness of Tape	Packaging Code (Minimum Qty. (pcs.))		
	a	b		Ø180mm reel	Ø330mm reel	Bulk
LQP02HQ	0.24	0.46	0.34 max.	L (30000)	—	B (500)
LQP02TN	0.21	0.43	0.23 max.	L (40000)	—	B (500)
LQP02TQ	0.22	0.47	0.23 max.	L (40000)	—	B (500)

(in mm)