

## 1. Standard Land 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 (chip coil) electrode.

Land Pattern + Solder Resist  
 Land Pattern  
 Solder Resist  
 (in mm)

Series	Standard Land Dimensions															
<b>LQG15HH</b> <b>LQG18HH</b>		<table border="1"> <thead> <tr> <th>Part Number</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td><b>LQG15HH</b></td> <td>0.4</td> <td>1.4-1.5</td> <td>0.5-0.6</td> </tr> <tr> <td><b>LQG18HH</b></td> <td>0.6-0.8</td> <td>1.8-2.2</td> <td>0.6-0.8</td> </tr> </tbody> </table>	Part Number	a	b	c	<b>LQG15HH</b>	0.4	1.4-1.5	0.5-0.6	<b>LQG18HH</b>	0.6-0.8	1.8-2.2	0.6-0.8		
		Part Number	a	b	c											
<b>LQG15HH</b>	0.4	1.4-1.5	0.5-0.6													
<b>LQG18HH</b>	0.6-0.8	1.8-2.2	0.6-0.8													
<b>LQH32CH</b>																

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.  
 As for LQG series, please use reflow soldering.

Solder: Use H60A, H63A (JIS Z 3282) or equivalent.

Use solder paste equivalent to H60A for LQG15HH/18HH.

In case of Lead-free solder, use Sn-3.0Ag-0.5Cu solder.

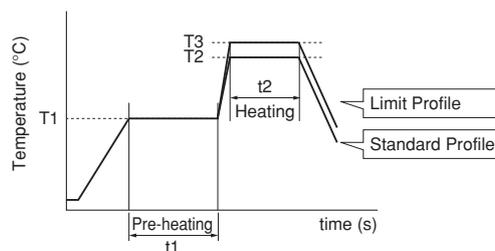
Flux: Use rosin-based flux, but not strongly acidic flux (with chlorine content exceeding 0.2wt%).

Do not use water-soluble flux.

For additional mounting methods, please contact Murata.

### (2) Soldering profile

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



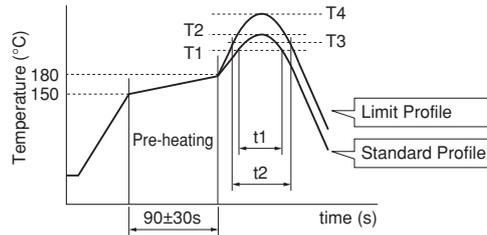
Series	Pre-heating		Standard Profile			Limit Profile		
	Temp. (T1)	Time. (t1)	Heating		Cycle of flow	Heating		Cycle of flow
			Temp. (T2)	Time. (t2)		Temp. (T3)	Time. (t2)	
<b>LQH32CH</b>	150°C	60s min.	250°C	4 to 6s	2 times	265±3°C	5s max.	1 times

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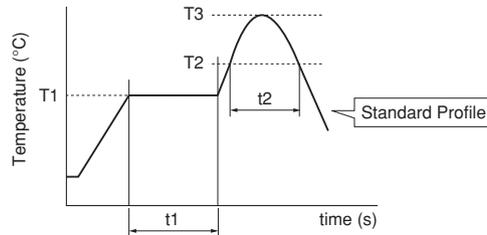
● Reflow Soldering profile

① Soldering profile for Lead-free solder (Sn-3Ag-0.5Cu)



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)		
LQG15HH/18HH	220°C	30 to 60s	245±3°C	2 times max.	230°C	60s max.	260°C/10s	2 times max.
LQH32CH								1 times

② Soldering profile for Eutectic solder (Limit profile: refer to ①)



Series	Pre-heating		Standard Profile			
	Temp. (T1)	Time. (t1)	Heating		Peak temperature (T3)	Cycle of reflow
			Temp. (T2)	Time. (t2)		
LQG15HH/18HH	150°C	60s min.	183°C	60s max.	230°C	2 times max.
LQH32CH						

(3) Reworking with Soldering Iron

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

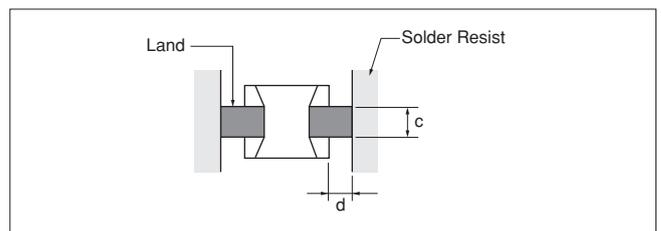
Diameter of soldering iron end: 3.0mm max.

Soldering time: within 3 s

3. Mounting Instructions

(1) Land Pattern Dimensions

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

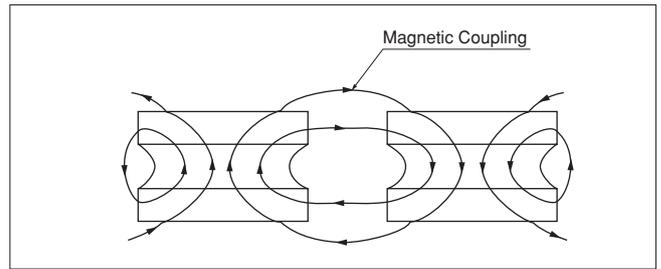


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(2) Magnetic Coupling

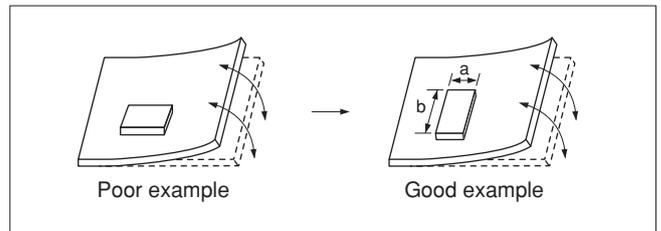
Since some chip inductors (chip coils) are constructed like an open magnetic circuit, narrow spacing between inductors (coils) may cause magnetic coupling.



(3) PCB Warping

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

Products should be located in the sideways direction (Length:  $a < b$ ) to the mechanical stress.



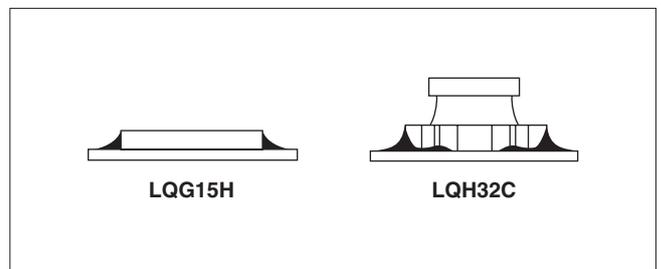
(4) Amount of Solder Paste

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 solder is applied.

● Guideline of solder paste thickness

LQG: 100 to 150 $\mu$ m

LQH: 200 to 300 $\mu$ m



(5) Amount of Adhesive

If too much adhesive is applied, then it may overflow into the land or termination areas and yield poor solderability. In contrast, if insufficient adhesive is applied, or if the adhesive is not sufficiently hardened, then the chip may become detached during flow soldering. Apply the adhesive in accordance with the following conditions:

Part Number	Typical Application Amount (in:mg)
	LQH32C

4. Cleaning

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

In case of cleaning, please contact Murata engineering.

(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.