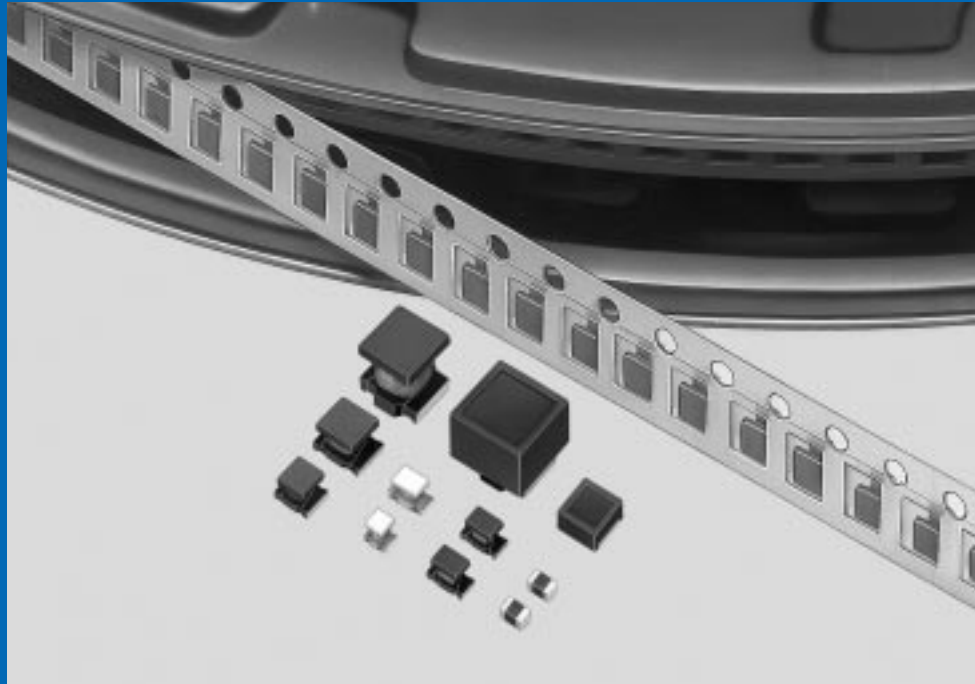




# CHIP COIL

## CHIP COIL


























*Innovator  
in Electronics*

Murata  
Manufacturing Co., Ltd.

Murata's LQ□ series of chip coils consists of compact, high-performance inductors. Their innovative coil and case structures mean low DC resistance and outstanding

high-frequency characteristics. The series is designed for a variety of applications, facilitating component selection for individual circuit requirements.

■PRODUCTS GUIDE

| Application                | Part Number                | Structure                        | Dimensions  |   | Inductance Range (H) |     |      |    |     |      |    | Page |     |       |       |
|----------------------------|----------------------------|----------------------------------|---|---|----------------------|-----|------|----|-----|------|----|------|-----|-------|-------|
|                            |                            |                                  | (mm)  | (inch)  | 1n                   | 10n | 100n | 1μ | 10μ | 100μ | 1m |      | 10m |       |       |
| General Frequency Range    | LQH1N                      | Wound coil (ferrite core)        |    | 1206  |                      |     |      |    |     |      |    |      |     | 3-7   |       |
|                            | LQH3N                      |                                  |    | 1210  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQH (N) 4N                 |                                  |    | 1812  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQG11N                     | Magnetically shielded multilayer |    | 0603  |                      |     |      |    |     |      |    |      |     | 8-9   |       |
|                            | LQG21N                     |                                  |    | 0805  |                      |     |      |    |     |      |    |      |     | 10-11 |       |
| Tight inductance tolerance | LQS33N                     | Magnetically shielded            |    | 1214  |                      |     |      |    |     |      |    |      |     | 12-13 |       |
| High-frequency Range       | LQG10A                     | Multilayer                       |    | 0402  |                      |     |      |    |     |      |    |      |     | 14-16 |       |
|                            | LQG11A                     |                                  |    | 0603  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | Tight inductance tolerance | LQP10A                           | Thin film   |  | 0402                 |     |      |    |     |      |    |      |     |       | 17-20 |
|                            |                            | LQP11A                           |   |  | 0603                 |     |      |    |     |      |    |      |     |       |       |
|                            | LQW1608A                   | Wound coil (air core)            |    | 0603  |                      |     |      |    |     |      |    |      |     | 21-23 |       |
|                            | LQN21A                     |                                  |   | 0805  |                      |     |      |    |     |      |    |      |     | 24-27 |       |
|                            | LQN1A                      |                                  |  | 1206  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQN1H                      | Wound coil (ferrite core)        |  | 1206  |                      |     |      |    |     |      |    |      |     | 28    |       |
| Chokes                     | LQH1C                      | Wound coil                       |  | 1206  |                      |     |      |    |     |      |    |      |     | 29-31 |       |
|                            | LQH3C                      |                                  |  | 1210  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQH4C                      |                                  |  | 1812  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQG21C                     | Magnetically shielded multilayer |  | 0805  |                      |     |      |    |     |      |    |      |     | 32    |       |
|                            | LQG21F                     |                                  |  | 0805  |                      |     |      |    |     |      |    |      |     | 33-34 |       |
|                            | LQG3216F                   |                                  |  | 1206  |                      |     |      |    |     |      |    |      |     |       |       |
|                            | LQN6C                      | Wound coil                       |  | 2220  |                      |     |      |    |     |      |    |      |     | 39-41 |       |
|                            | LQS33C                     | Magnetically shielded            |  | 1212  |                      |     |      |    |     |      |    |      |     | 37-38 |       |
|                            | LQS66C                     |                                  |  | 2525  |                      |     |      |    |     |      |    |      |     |       |       |

Please refer to the usage conditions;

- Notice of Chip Coil .....P.42—P.45
- Dimensions of Taping.....P.46
- Design Kit .....P.47—P.50
- Information of Chip Coil .....P.51

## ■PART NUMBERING

(Please specify the part number when ordering.)

(Ex.) 

|    |   |   |   |     |   |    |
|----|---|---|---|-----|---|----|
| LQ | H | 3 | N | 331 | K | 34 |
|----|---|---|---|-----|---|----|

  
① ② ③ ④ ⑤ ⑥ ⑦

|    |   |    |   |     |   |    |
|----|---|----|---|-----|---|----|
| LQ | N | 21 | A | 10N | J | 04 |
|----|---|----|---|-----|---|----|

  
① ② ③ ④ ⑤ ⑥ ⑦

|    |   |    |   |     |   |    |    |
|----|---|----|---|-----|---|----|----|
| LQ | G | 21 | N | R10 | K | 10 | T1 |
|----|---|----|---|-----|---|----|----|

  
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

**①** Chip Coil

**②** Form · Structure

| Mark | Form · Structure              |
|------|-------------------------------|
| H    | Wire wound with coating       |
| N    | Wire wound without coating    |
| S    | Wire wound with shielded core |
| P    | Thin film                     |
| G    | Multilayer                    |
| W    | Horizontal wire wound         |

**③** Size

| Mark | Size                 |
|------|----------------------|
| 1    | 3.2X1.6mm            |
| 3    | 3.2X2.5mm            |
| 4    | 4.5X3.2mm            |
| 6    | 5.7X5.0mm            |
| 10   | 1.0X0.5mm            |
| 11   | 1.6X0.8mm            |
| 21   | 2.0X1.25 (1.5) mm    |
| 33   | 3.2X3.5mm, 3.3X3.3mm |
| 66   | 6.3X6.3mm            |
| 1608 | 1.6X0.8mm            |
| 3216 | 3.2X1.6mm            |

**④** Characteristic · Applications

| Mark | Characteristic · Applications       |
|------|-------------------------------------|
| N    | General use                         |
| C    | Choke coil                          |
| A    | Air coil                            |
| H    | High Q                              |
| F    | For DC power supply line choke coil |

**⑤** Inductance

Example : 330 $\mu$ H→331    33nH→33N  
 33 $\mu$ H→330    3.3nH→3N3  
 3.3 $\mu$ H→3R3  
 0.33 $\mu$ H→R33

**⑥** Inductance Tolerance

| Mark | Tolerance |
|------|-----------|
| G    | ± 2%      |
| J    | ± 5%      |
| K    | ±10%      |
| M    | ±20%      |
| N    | ±30%      |
| B    | ±0.1nH    |
| C    | ±0.2nH    |
| S    | ±0.3nH    |
| D    | ±0.5nH    |

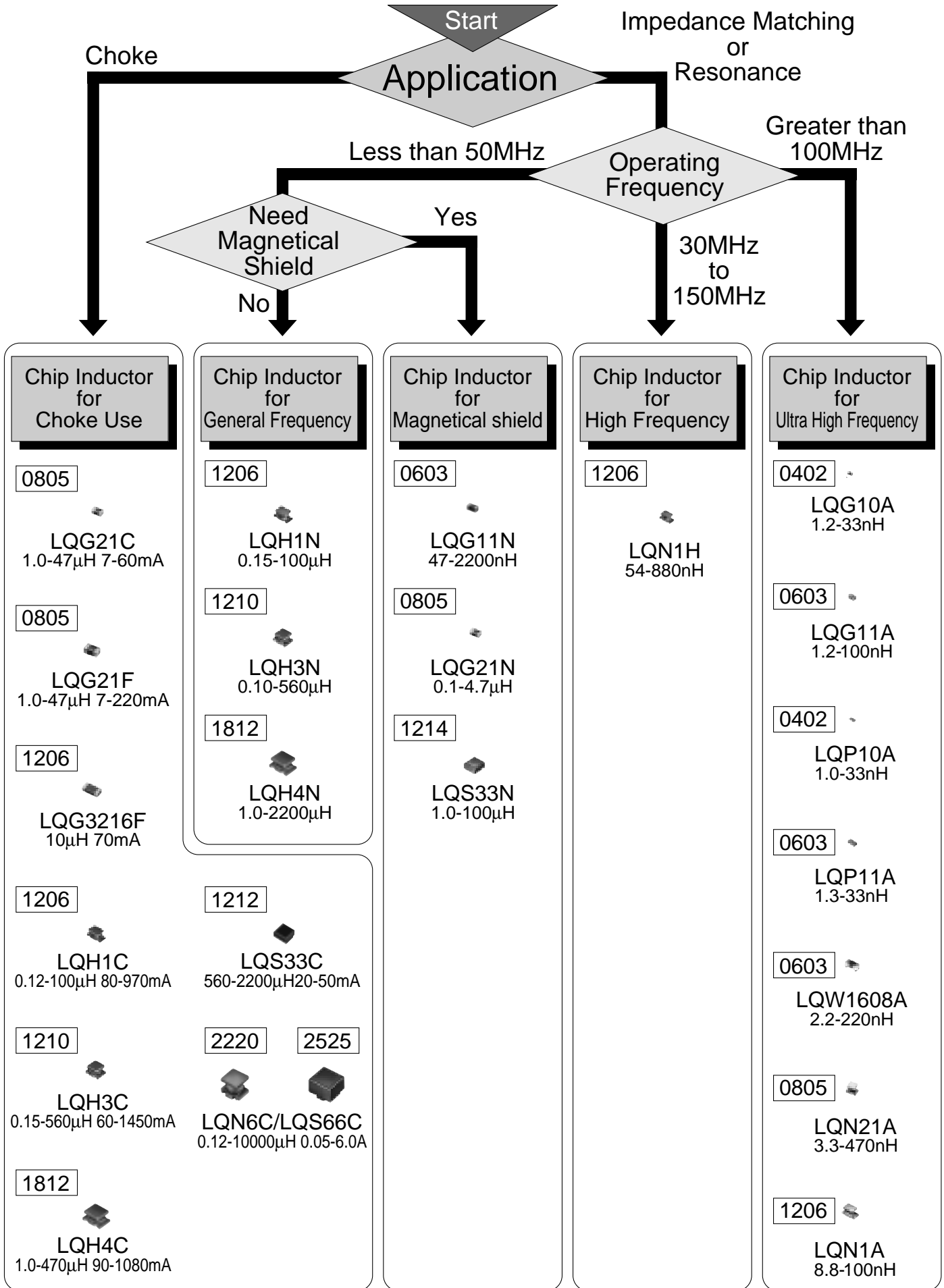
**⑦** Additional Number

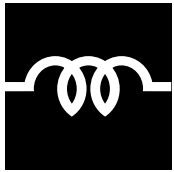
**⑧** Packaging Code

(LQG21N/21C/LQP10A/11A/  
 LQG10A/11A/LQW1608A)

| Mark | Packaging                  |
|------|----------------------------|
| T1   | Taped ( $\phi$ 180mm Reel) |
| T2   | Taped ( $\phi$ 330mm Reel) |
| B1   | Bulk package               |

# CHIP INDUCTOR SELECTION





# CHIP COIL



Standard Chip Coil **LQH1N/LQH3N/LQH(N)4N** Series

## Wire Wound Chip Coil with High Q Value at High Frequencies and Low DC Resistance

The chip coil LQH/LQN series consists of miniature chip inductors wound on a special ferrite core and are made possible by an automatic winding technique developed by Murata. These inductors have a high Q at high frequencies and low DC resistance, making them very well suited to enhancing the performance of electronic circuits in video, communications, and audio equipment.

### FEATURES

1. There are three different inductor types: the LQH1N, LQH3N and LQH(N)4N series. These three series cover a wide inductance range (from 0.1μH to 2.2mH).
2. The series has outstanding frequency characteristics and a high Q value at high frequencies.
3. The low DC resistance permits high current flow.
4. The series has excellent solder heat resistance. Both flow and reflow soldering methods can be employed.

#### ● LQH1N

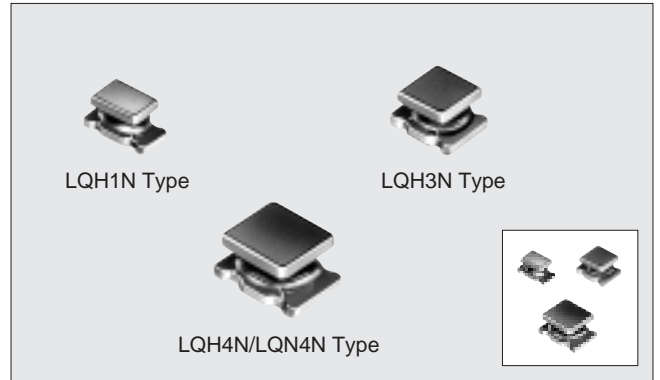
Miniature size (3.2×1.6×1.8mm) allows parallel mounting at 2.5mm pitch. The series is suitable for portable audio-visual equipment.

#### ● LQH3N

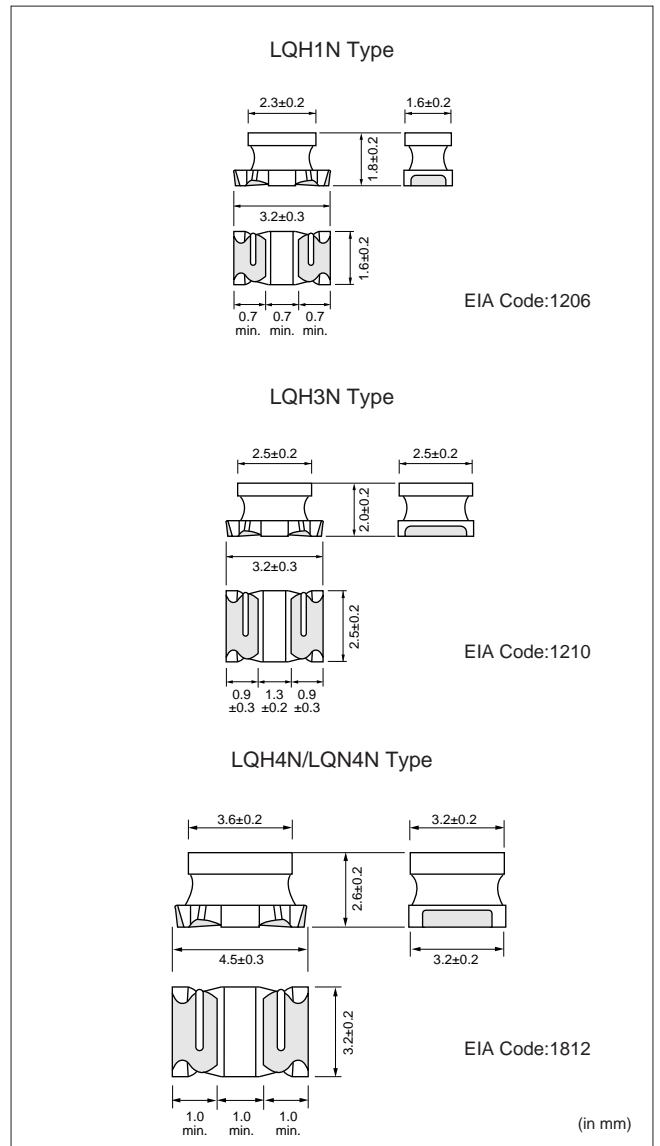
A high Q value makes this series suitable for circuits up to 100MHz in frequency. The series is excellent for video equipment.

#### ● LQH(N)4N

This series offers high inductance values and high current capacity. At 10μH, up to 450mA designs are possible, resulting in excellent performance when the inductors are used as choke coils.



### DIMENSIONS



■SPECIFICATIONS

LQH1N

| Part Number    | Inductance        |               |                | Q                   |                | DC Resistance (Ω) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |          |    |     |
|----------------|-------------------|---------------|----------------|---------------------|----------------|-------------------|------------------------------------|------------------------|-----------------------|----------|----|-----|
|                | Nominal Value(μH) | Tolerance (%) | Test Frequency | Nominal Value(min.) | Test Frequency |                   |                                    |                        |                       |          |    |     |
| LQH1NR15K04    | 0.15              | ±10           | 1MHz           | 20                  | 25MHz          | 0.39±40%          | 250                                | 250                    | -25 to +85°C          |          |    |     |
| LQH1NR22K04    | 0.22              |               |                |                     |                | 0.43±40%          |                                    | 240                    |                       |          |    |     |
| LQH1NR33K04    | 0.33              |               |                |                     |                | 0.45±40%          |                                    | 230                    |                       |          |    |     |
| LQH1NR47K04    | 0.47              |               |                |                     |                | 0.83±40%          |                                    | 215                    |                       |          |    |     |
| LQH1NR56K04    | 0.56              |               |                | 0.61±40%            |                | 200               |                                    |                        |                       |          |    |     |
| LQH1NR68K04    | 0.68              |               |                | 0.67±40%            |                | 180               |                                    |                        |                       |          |    |     |
| LQH1NR82K04    | 0.82              |               |                | 0.73±40%            |                | 160               |                                    |                        |                       |          |    |     |
| LQH1NR82K04    | 0.82              |               |                |                     |                | 120               | 185                                |                        |                       |          |    |     |
| LQH1N1R0K04    | 1.0               | ±10           | 1MHz           | 30                  | 10MHz          | 0.49±30%          | 100                                | 175                    |                       |          |    |     |
| LQH1N1R2K04    | 1.2               |               |                |                     |                | 0.9 ±30%          | 90                                 | 165                    |                       |          |    |     |
| LQH1N1R5K(J)04 | 1.5               |               |                | 1.0 ±30%            |                | 75                | 155                                |                        |                       |          |    |     |
| LQH1N1R8K(J)04 | 1.8               |               |                | 1.6 ±30%            |                | 60                | 150                                |                        |                       |          |    |     |
| LQH1N2R2K(J)04 | 2.2               |               |                | 0.7 ±30%            |                | 50                | 140                                |                        |                       |          |    |     |
| LQH1N2R7K(J)04 | 2.7               |               |                | 0.55±30%            |                | 43                | 135                                |                        |                       |          |    |     |
| LQH1N3R3K(J)04 | 3.3               |               |                | ±10 (±5)            |                | 1MHz              | 35                                 | 8MHz                   |                       | 0.61±30% | 38 | 130 |
| LQH1N3R9K(J)04 | 3.9               |               |                |                     |                |                   |                                    |                        |                       | 1.5 ±30% | 35 | 125 |
| LQH1N4R7K(J)04 | 4.7               |               |                |                     |                |                   |                                    |                        |                       | 1.7 ±30% | 31 | 120 |
| LQH1N5R6K(J)04 | 5.6               |               |                |                     |                |                   |                                    |                        |                       | 1.8 ±30% | 28 | 115 |
| LQH1N6R8K(J)04 | 6.8               | 2.0 ±30%      | 25             |                     | 110            |                   |                                    |                        |                       |          |    |     |
| LQH1N8R2K(J)04 | 8.2               | 2.2 ±30%      | 23             |                     | 105            |                   |                                    |                        |                       |          |    |     |
| LQH1N100K(J)04 | 10                | 2.5 ±30%      | 20             |                     | 100            |                   |                                    |                        |                       |          |    |     |
| LQH1N120K(J)04 | 12                | 2.7 ±30%      | 18             |                     | 95             |                   |                                    |                        |                       |          |    |     |
| LQH1N150K(J)04 | 15                | ±10 (±5)      | 1MHz           | 40                  | 5MHz           | 3.0 ±30%          | 16                                 | 90                     |                       |          |    |     |
| LQH1N180K(J)04 | 18                |               |                |                     |                | 3.4 ±30%          | 15                                 | 85                     |                       |          |    |     |
| LQH1N220K(J)04 | 22                |               |                | 3.1 ±30%            |                | 14                | 85                                 |                        |                       |          |    |     |
| LQH1N270K(J)04 | 27                |               |                | 3.4 ±30%            |                | 13                | 80                                 |                        |                       |          |    |     |
| LQH1N330K(J)04 | 33                |               |                | 3.8 ±30%            |                | 12                | 80                                 |                        |                       |          |    |     |
| LQH1N390K(J)04 | 39                |               |                | 7.2 ±30%            |                | 11                | 55                                 |                        |                       |          |    |     |
| LQH1N470K(J)04 | 47                |               |                | 8.0 ±30%            |                | 10                | 55                                 |                        |                       |          |    |     |
| LQH1N560K(J)04 | 56                |               |                | 8.9 ±30%            |                | 9.0               | 50                                 |                        |                       |          |    |     |
| LQH1N680K(J)04 | 68                |               |                | 9.9 ±30%            |                | 8.5               | 50                                 |                        |                       |          |    |     |
| LQH1N820K(J)04 | 82                |               |                | 11 ±30%             |                | 7.5               | 45                                 |                        |                       |          |    |     |
| LQH1N101K(J)04 | 100               | 12 ±30%       | 7.0            | 45                  |                |                   |                                    |                        |                       |          |    |     |

LQH3N

| Part Number    | Inductance        |               |                | Q                   |                | DC Resistance (Ωmax.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|----------------|-------------------|---------------|----------------|---------------------|----------------|-----------------------|------------------------------------|------------------------|-----------------------|
|                | Nominal Value(μH) | Tolerance (%) | Test Frequency | Nominal Value(min.) | Test Frequency |                       |                                    |                        |                       |
| LQH3NR10M34    | 0.10              | ±20           | 1MHz           | 20                  | 25.2MHz        | 0.25                  | 200                                | 700                    | -25 to +85°C          |
| LQH3NR18M34    | 0.18              |               |                |                     |                |                       |                                    | 650                    |                       |
| LQH3NR27M34    | 0.27              |               |                | 600                 |                |                       |                                    |                        |                       |
| LQH3NR39M34    | 0.39              |               |                |                     |                |                       |                                    | 530                    |                       |
| LQH3NR56M34    | 0.56              |               |                | 160                 |                |                       |                                    |                        |                       |
| LQH3NR68M34    | 0.68              |               |                |                     |                |                       |                                    | 470                    |                       |
| LQH3NR82M34    | 0.82              |               |                | 120                 |                |                       |                                    |                        |                       |
| LQH3N1R0M34    | 1.0               |               |                |                     |                |                       |                                    | 100                    |                       |
| LQH3N1R2M34    | 1.2               |               |                | 425                 |                |                       |                                    |                        |                       |
| LQH3N1R5K34    | 1.5               |               |                |                     |                |                       |                                    | ±10                    |                       |
| LQH3N1R8K34    | 1.8               | 0.6           | 60             | 390                 |                |                       |                                    |                        |                       |
| LQH3N2R2K34    | 2.2               | 0.7           | 50             | 370                 |                |                       |                                    |                        |                       |
| LQH3N2R7K34    | 2.7               | 0.8           | 43             | 320                 |                |                       |                                    |                        |                       |
| LQH3N3R3K34    | 3.3               | 0.9           | 38             | 300                 |                |                       |                                    |                        |                       |
| LQH3N3R9K34    | 3.9               | 1.0           | 35             | 290                 |                |                       |                                    |                        |                       |
| LQH3N4R7K34    | 4.7               | 1.1           | 31             | 270                 |                |                       |                                    |                        |                       |
| LQH3N5R6K34    | 5.6               | 1.2           | 28             | 250                 |                |                       |                                    |                        |                       |
| LQH3N6R8K34    | 6.8               | 1.3           | 25             | 240                 |                |                       |                                    |                        |                       |
| LQH3N8R2K34    | 8.2               | 1.5           | 23             | 225                 |                |                       |                                    |                        |                       |
| LQH3N100K(J)34 | 10                | ±10 (±5)      | 1MHz           | 35                  | 1MHz           | 1.6                   | 20                                 | 190                    |                       |
| LQH3N120K(J)34 | 12                |               |                |                     |                | 1.8                   | 18                                 | 180                    |                       |
| LQH3N150K(J)34 | 15                |               |                |                     |                | 2.0                   | 16                                 | 170                    |                       |
| LQH3N180K(J)34 | 18                |               |                |                     |                | 2.2                   | 15                                 | 165                    |                       |
| LQH3N220K(J)34 | 22                |               |                |                     |                | 2.5                   | 14                                 | 150                    |                       |
| LQH3N270K(J)34 | 27                |               |                |                     |                | 2.8                   | 13                                 | 125                    |                       |
| LQH3N330K(J)34 | 33                |               |                |                     |                | 3.1                   | 12                                 | 115                    |                       |
| LQH3N390K(J)34 | 39                |               |                |                     |                | 3.5                   | 11                                 | 110                    |                       |
| LQH3N470K(J)34 | 47                |               |                |                     |                | 3.9                   | 10                                 | 85                     |                       |
| LQH3N560K(J)34 | 56                |               |                |                     |                | 4.3                   | 9.0                                | 80                     |                       |
| LQH3N680K(J)34 | 68                | 4.9           | 8.5            | 70                  |                |                       |                                    |                        |                       |
| LQH3N820K(J)34 | 82                | 5.5           | 796kHz         | 40                  | 796kHz         | 6.2                   | 8.0                                | 80                     |                       |
| LQH3N101K(J)34 | 100               | 7.0           |                |                     |                | 7.5                   | 75                                 |                        |                       |
| LQH3N121K(J)34 | 120               | 8.0           |                |                     |                | 7.0                   | 70                                 |                        |                       |
| LQH3N151K(J)34 | 150               | 9.3           |                |                     |                | 6.0                   | 65                                 |                        |                       |
| LQH3N181K(J)34 | 180               | 10.2          |                |                     |                | 5.5                   |                                    |                        |                       |
| LQH3N221K(J)34 | 220               | 11.8          |                |                     |                | 5.0                   | 50                                 |                        |                       |
| LQH3N271K(J)34 | 270               | 12.5          |                |                     |                |                       |                                    |                        |                       |
| LQH3N331K(J)34 | 330               | 13.0          |                |                     |                | 45                    |                                    |                        |                       |
| LQH3N391K(J)34 | 390               | 22.0          |                |                     |                |                       |                                    |                        |                       |
| LQH3N471K(J)34 | 470               | 25.0          |                |                     |                | 40                    |                                    |                        |                       |
| LQH3N561K(J)34 | 560               | 28.0          |                |                     |                |                       |                                    |                        |                       |

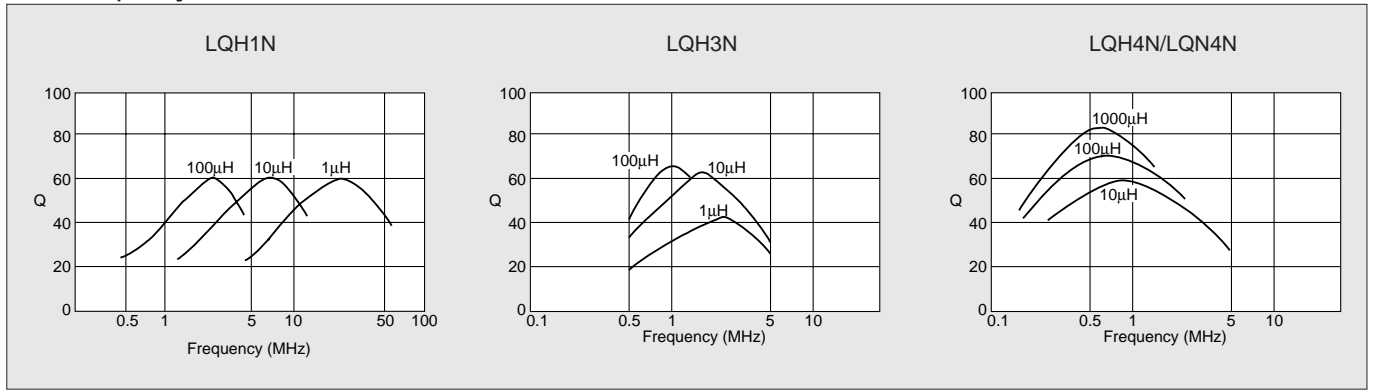
LQH4N/LQN4N

| Part Number    | Inductance        |               |                | Q                   |                | DC Resistance (Ωmax.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |        |
|----------------|-------------------|---------------|----------------|---------------------|----------------|-----------------------|------------------------------------|------------------------|-----------------------|--------|
|                | Nominal Value(μH) | Tolerance (%) | Test Frequency | Nominal Value(min.) | Test Frequency |                       |                                    |                        |                       |        |
| LQH4N1R0M04    | 1.0               | ±20           | 1MHz           | 20                  | 1MHz           | 0.20                  | 120                                | 500                    | -25 to +85°C          |        |
| LQH4N1R2M04    | 1.2               |               |                |                     |                |                       | 100                                |                        |                       |        |
| LQH4N1R5M04    | 1.5               |               |                |                     |                | 0.30                  | 85                                 |                        |                       |        |
| LQH4N1R8M04    | 1.8               |               |                |                     |                |                       | 75                                 |                        |                       |        |
| LQH4N2R2M04    | 2.2               |               |                |                     |                | 0.32                  | 62                                 |                        |                       |        |
| LQH4N2R7M04    | 2.7               |               |                |                     |                |                       | 53                                 |                        |                       |        |
| LQH4N3R3M04    | 3.3               |               |                |                     |                | 0.35                  | 47                                 |                        |                       |        |
| LQH4N3R9M04    | 3.9               |               |                |                     |                | 0.38                  | 41                                 |                        |                       |        |
| LQH4N4R7K04    | 4.7               | ±10           |                | 30                  |                | 0.40                  | 38                                 |                        |                       |        |
| LQH4N5R6K04    | 5.6               |               |                |                     |                | 0.47                  | 33                                 |                        |                       |        |
| LQH4N6R8K04    | 6.8               |               |                |                     |                | 0.50                  | 31                                 |                        |                       |        |
| LQH4N8R2K04    | 8.2               |               |                |                     |                | 0.56                  | 27                                 |                        |                       |        |
| LQH4N100K(J)04 | 10                | ±10 (±5)      |                | 35                  |                | 796kHz                | 0.62                               | 23                     |                       | 400    |
| LQH4N120K(J)04 | 12                |               |                |                     |                |                       | 0.73                               | 21                     |                       | 380    |
| LQH4N150K(J)04 | 15                |               |                |                     |                |                       | 0.82                               | 19                     |                       | 360    |
| LQH4N180K(J)04 | 18                |               |                |                     |                |                       | 0.94                               | 17                     |                       | 340    |
| LQH4N220K(J)04 | 22                |               |                |                     |                |                       | 1.1                                | 15                     |                       | 320    |
| LQH4N270K(J)04 | 27                |               |                |                     |                |                       | 1.2                                | 14                     |                       | 300    |
| LQH4N330K(J)04 | 33                |               |                |                     |                |                       | 1.4                                | 12                     |                       | 270    |
| LQH4N390K(J)04 | 39                |               |                |                     |                |                       | 1.5                                | 11                     |                       | 240    |
| LQH4N470K(J)04 | 47                |               |                |                     |                |                       | 1.7                                | 10                     |                       | 220    |
| LQH4N560K(J)04 | 56                |               |                |                     |                |                       | 1.9                                | 9.3                    |                       | 200    |
| LQH4N680K(J)04 | 68                |               |                |                     |                |                       | 2.2                                | 8.4                    |                       | 180    |
| LQH4N820K(J)04 | 82                |               |                |                     |                |                       | 40                                 | 1kHz                   |                       | 252kHz |
| LQH4N101K(J)04 | 100               |               | 2.5            |                     | 6.8            |                       |                                    |                        | 160                   |        |
| LQH4N121K(J)04 | 120               |               | 3.0            |                     | 6.2            |                       |                                    |                        | 150                   |        |
| LQH4N151K(J)04 | 150               |               | 3.7            |                     | 5.5            |                       |                                    |                        | 130                   |        |
| LQH4N181K(J)04 | 180               |               | 4.5            |                     | 5.0            |                       |                                    |                        | 120                   |        |
| LQH4N221K(J)04 | 220               | 5.4           | 4.5            | 110                 |                |                       |                                    |                        |                       |        |
| LQH4N271K(J)04 | 270               | 6.8           | 4.0            | 100                 |                |                       |                                    |                        |                       |        |
| LQH4N331K(J)04 | 330               | 8.2           | 3.6            | 95                  |                |                       |                                    |                        |                       |        |
| LQH4N391K(J)04 | 390               | 9.7           | 3.3            | 90                  |                |                       |                                    |                        |                       |        |
| LQH4N471K(J)04 | 470               | 11.8          | 3.0            | 80                  |                |                       |                                    |                        |                       |        |
| LQH4N561K(J)04 | 560               | 14.5          | 2.7            | 70                  |                |                       |                                    |                        |                       |        |
| LQH4N681K(J)04 | 680               | 17.0          | 2.5            | 65                  |                |                       |                                    |                        |                       |        |
| LQH4N821K(J)04 | 820               | 20.5          | 2.2            | 60                  |                |                       |                                    |                        |                       |        |
| LQH4N102K(J)04 | 1000              | 25.0          | 2.0            | 50                  |                |                       |                                    |                        |                       |        |
| LQH4N122K(J)04 | 1200              | 30.0          | 1.8            | 45                  |                |                       |                                    |                        |                       |        |
| LQH4N152K(J)04 | 1500              | 37.0          | 1.6            | 40                  |                |                       |                                    |                        |                       |        |
| LQN4N182K(J)04 | 1800              | 45.0          | 1.5            | 35                  |                |                       |                                    |                        |                       |        |
| LQN4N222K(J)04 | 2200              | 50.0          | 1.3            | 30                  |                |                       |                                    |                        |                       |        |

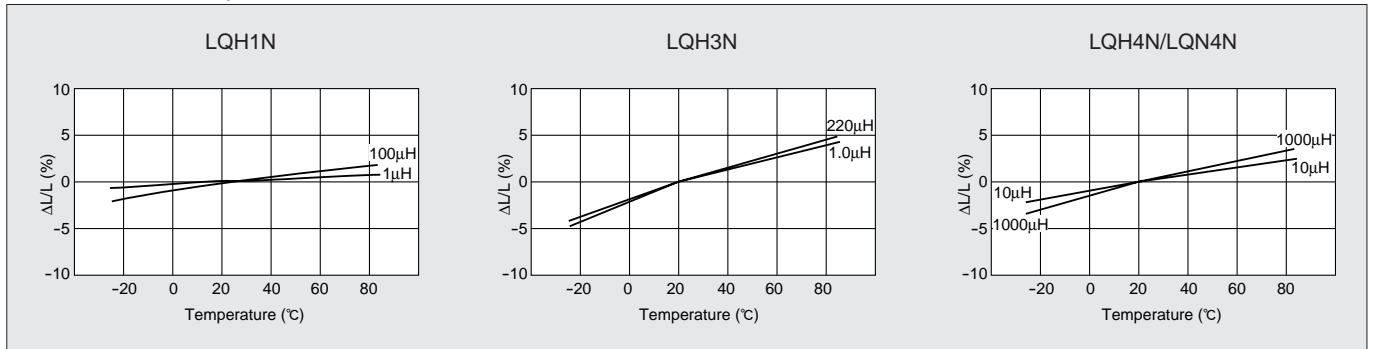


■ TYPICAL ELECTRICAL CHARACTERISTICS

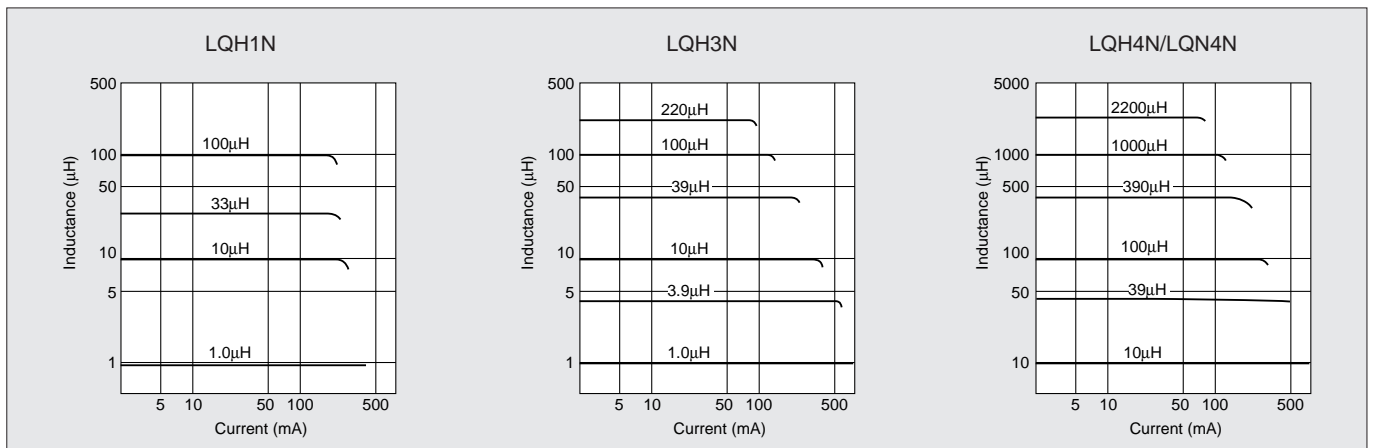
● Q - Frequency Characteristics



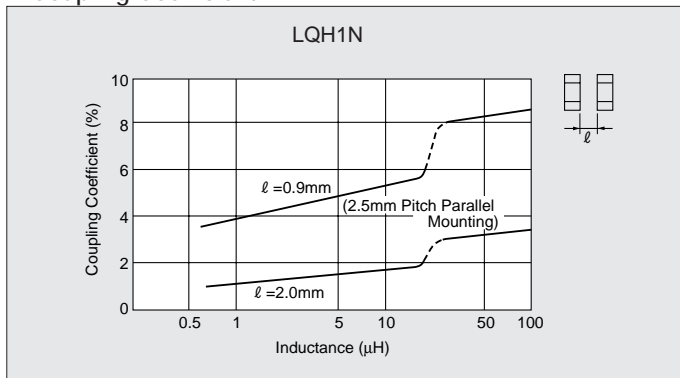
● Inductance - Temperature Characteristics

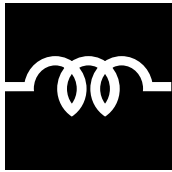


● Inductance - Current Characteristics



● Coupling Coefficient





# CHIP COIL



## Multilayer Chip Inductor LQG11N Series

# Magnetically Shielded Multilayer Chip Coil Excellent for High Density Mounting

The LQG11N series, of magnetically shielded chip coil was developed by using original multilayer process technology and magnetic materials.

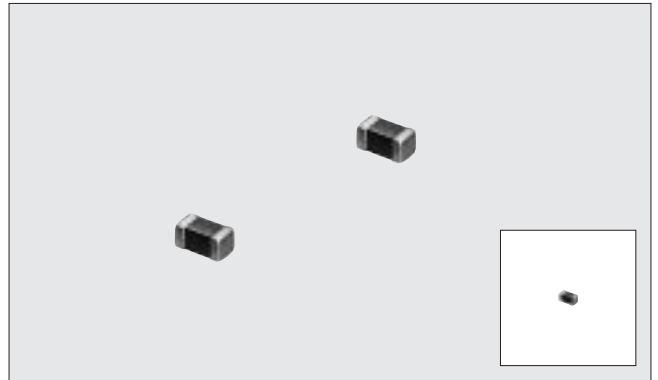
Compact size is suitable for high density mounting. Shielded construction is not affected by interference from peripheral components.

### ■FEATURES

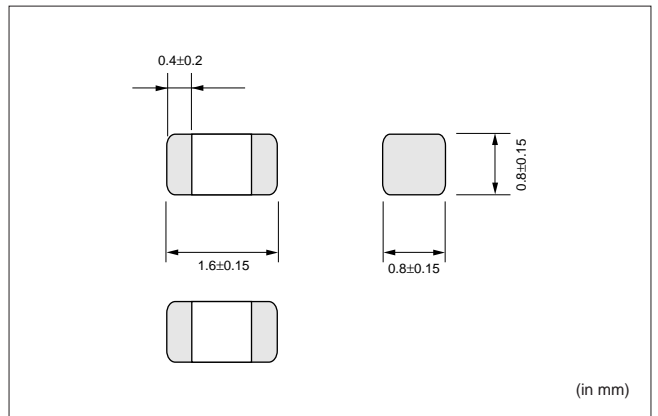
1. Magnetically shielded structure provides excellent characteristics in cross talk and magnetic coupling.
2. Compact size (1.6X0.8mm) and light weight.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance. Both flow and reflow soldering can be applicable.

### ■APPLICATIONS

- Resonance circuit, traps, filter circuits and RF choke in telecommunication equipments, cordless phones, radio equipments.



### ■DIMENSIONS

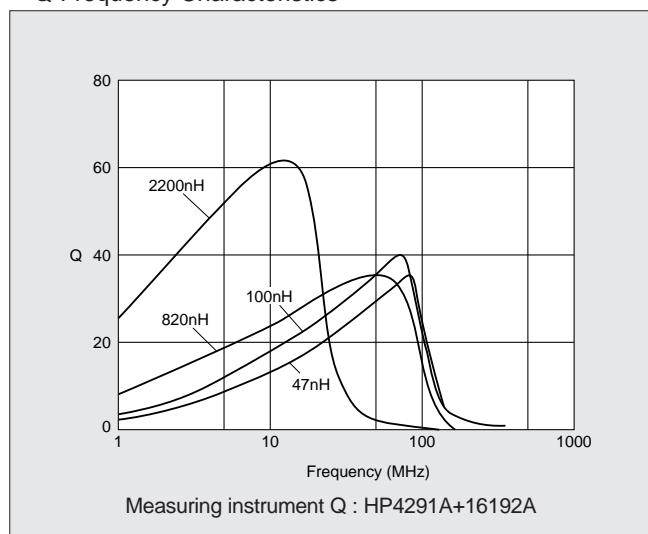


**■ SPECIFICATIONS**

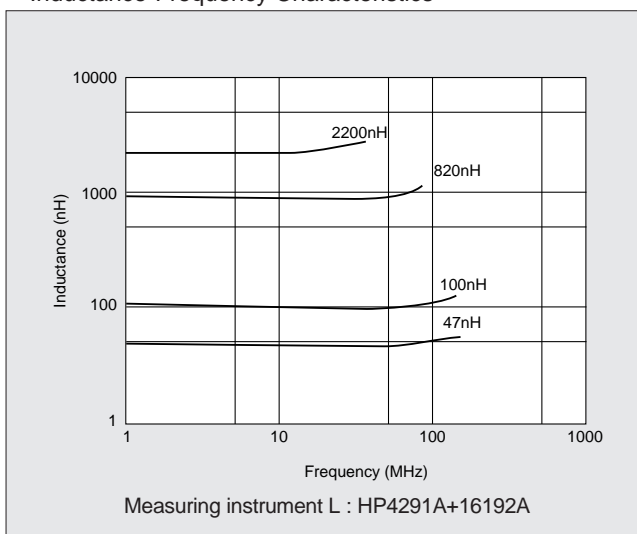
| Part Number  | Inductance         |               | Q                   |                      | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |      |
|--------------|--------------------|---------------|---------------------|----------------------|------------------------|------------------------------------|------------------------|-----------------------|------|
|              | Nominal Value (nH) | Tolerance (%) | Nominal Value(min.) | Test Frequency (MHz) |                        |                                    |                        |                       |      |
| LQG11N47NM00 | 47                 | ±20           | 10                  | 50                   | 0.30                   | 260                                | 50                     | -25 to +85°C          |      |
| LQG11N68NM00 | 68                 |               |                     |                      |                        | 250                                |                        |                       |      |
| LQG11N82NM00 | 82                 |               |                     |                      |                        | 245                                |                        |                       |      |
| LQG11NR10K00 | 100                | ±10           | 15                  | 25                   | 0.50                   | 240                                |                        |                       |      |
| LQG11NR12K00 | 120                |               |                     |                      |                        | 205                                |                        |                       |      |
| LQG11NR15K00 | 150                |               |                     |                      |                        | 180                                |                        |                       |      |
| LQG11NR18K00 | 180                |               |                     |                      | 0.60                   | 165                                |                        |                       |      |
| LQG11NR22K00 | 220                |               |                     |                      |                        | 0.80                               |                        |                       | 150  |
| LQG11NR27K00 | 270                |               |                     |                      |                        |                                    |                        |                       | 136  |
| LQG11NR33K00 | 330                |               |                     |                      | 0.85                   |                                    |                        |                       | 125  |
| LQG11NR39K00 | 390                |               |                     |                      |                        | 1.00                               |                        |                       | 110  |
| LQG11NR47K00 | 470                |               |                     |                      |                        |                                    |                        |                       | 1.35 |
| LQG11NR56K00 | 560                |               |                     |                      | 1.55                   |                                    | 95                     |                       |      |
| LQG11NR68K00 | 680                |               |                     |                      |                        | 1.70                               | 90                     |                       |      |
| LQG11NR82K00 | 820                |               |                     |                      |                        |                                    | 2.10                   | 85                    |      |
| LQG11N1R0K00 | 1000               | 35            | 10                  | 0.60                 | 75                     |                                    |                        | 25                    |      |
| LQG11N1R2K00 | 1200               |               |                     | 0.80                 | 65                     |                                    |                        |                       |      |
| LQG11N1R5K00 | 1500               |               |                     |                      | 60                     |                                    |                        |                       |      |
| LQG11N1R8K00 | 1800               |               |                     | 0.95                 | 55                     |                                    |                        |                       |      |
| LQG11N2R2K00 | 2200               |               |                     |                      | 50                     | 15                                 |                        |                       |      |

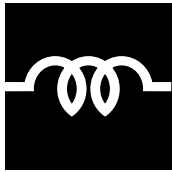
**■ TYPICAL ELECTRICAL CHARACTERISTICS**

● Q-Frequency Characteristics



● Inductance-Frequency Characteristics





# CHIP COIL



## Multilayer Chip Coil **LQG21N** Series

# Magnetically Shielded Multilayer Chip Coil Low Drift Excellent for High Density Mounting

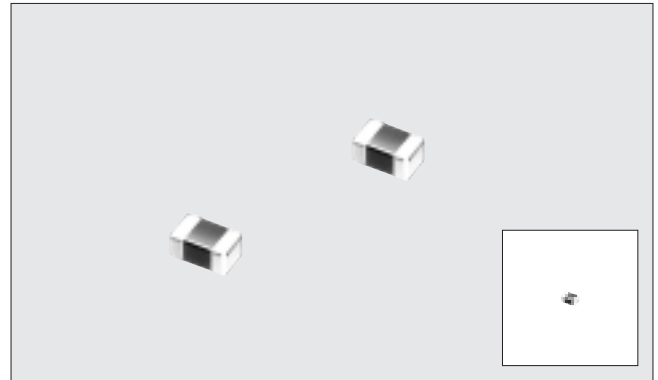
The LQG21N series consists of magnetically shielded chip coils developed using original Murata multilayer process technology and magnetic materials. The coils occupy one quarter the volume of conventional chip coils and feature high reliability.

### ■FEATURES

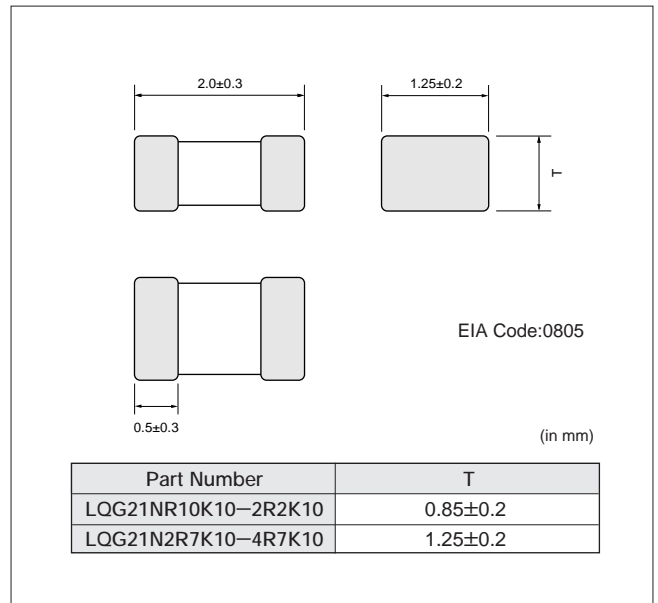
1. Magnetically shielded structure provides excellent crosstalk characteristics.
2. Compact (2.0×1.25mm) and lightweight.
3. Low inductance drift resulting from soldering, environmental tests, etc.
4. Outstanding solder heat resistance. Either flow or reflow soldering can be used.

### ■APPLICATIONS

- Hard-disk drives
- Audio-Visual equipment
- Telecommunications equipment



### ■DIMENSIONS

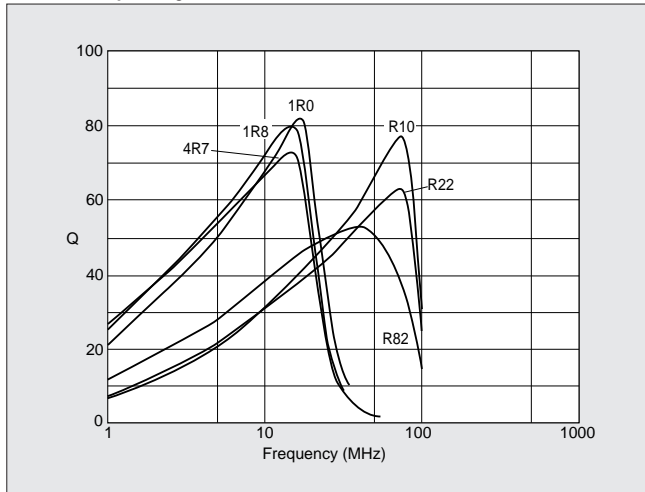


**■ SPECIFICATIONS**

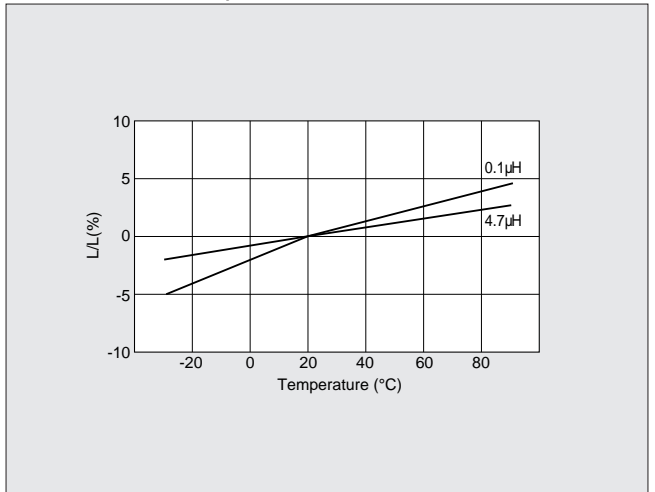
| Part Number  | Inductance        |               |                | Q                   |                | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|--------------|-------------------|---------------|----------------|---------------------|----------------|------------------------|------------------------------------|------------------------|-----------------------|
|              | Nominal Value(μH) | Tolerance (%) | Test Frequency | Nominal Value(min.) | Test Frequency |                        |                                    |                        |                       |
| LOG21NR10K10 | 0.10              | ±10           | 25MHz          | 20                  | 25MHz          | 0.26                   | 340                                | 250                    | -40 to +85°C          |
| LOG21NR12K10 | 0.12              |               |                |                     |                | 0.29                   | 310                                |                        |                       |
| LOG21NR15K10 | 0.15              |               |                |                     |                | 0.32                   | 270                                |                        |                       |
| LOG21NR18K10 | 0.18              |               |                |                     |                | 0.35                   | 250                                |                        |                       |
| LOG21NR22K10 | 0.22              |               |                |                     |                | 0.38                   | 220                                |                        |                       |
| LOG21NR27K10 | 0.27              |               |                |                     |                | 0.42                   | 200                                |                        |                       |
| LOG21NR33K10 | 0.33              |               |                |                     |                | 0.48                   | 180                                |                        |                       |
| LOG21NR39K10 | 0.39              |               |                |                     |                | 0.53                   | 165                                |                        |                       |
| LOG21NR47K10 | 0.47              |               |                |                     |                | 0.57                   | 150                                |                        |                       |
| LOG21NR56K10 | 0.56              |               |                |                     |                | 0.63                   | 140                                |                        |                       |
| LOG21NR68K10 | 0.68              |               | 0.72           | 125                 |                |                        |                                    |                        |                       |
| LOG21NR82K10 | 0.82              |               | 0.81           | 115                 |                |                        |                                    |                        |                       |
| LOG21N1R0K10 | 1.0               |               | 10MHz          | 45                  | 10MHz          | 0.40                   | 107                                | 50                     |                       |
| LOG21N1R2K10 | 1.2               |               |                |                     |                | 0.47                   | 97                                 |                        |                       |
| LOG21N1R5K10 | 1.5               |               |                |                     |                | 0.50                   | 87                                 |                        |                       |
| LOG21N1R8K10 | 1.8               |               |                |                     |                | 0.57                   | 80                                 |                        |                       |
| LOG21N2R2K10 | 2.2               |               |                |                     |                | 0.63                   | 71                                 |                        |                       |
| LOG21N2R7K10 | 2.7               |               |                |                     |                | 0.69                   | 66                                 |                        |                       |
| LOG21N3R3K10 | 3.3               |               |                |                     |                | 0.80                   | 59                                 |                        |                       |
| LOG21N3R9K10 | 3.9               |               |                |                     |                | 0.89                   | 53                                 |                        |                       |
| LOG21N4R7K10 | 4.7               | 1.00          |                |                     |                | 47                     |                                    |                        |                       |

**■ TYPICAL ELECTRICAL CHARACTERISTICS**

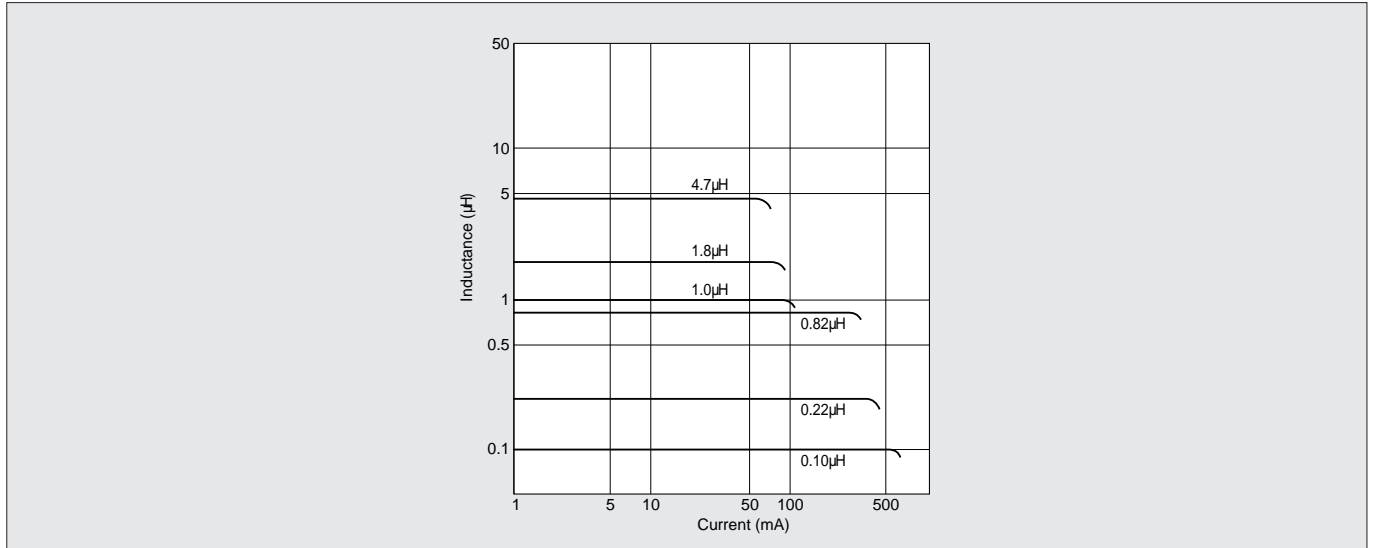
● Q - Frequency Characteristics

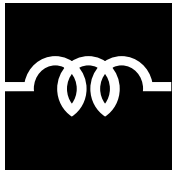


● Inductance - Temperature Characteristics



● Inductance - Current Characteristics





# CHIP COIL



Small Tolerance Chip Coil **LQS33N** Series for Oscillation Circuits

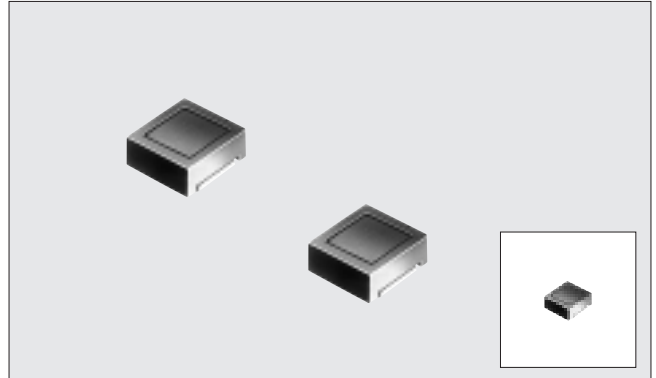
## High Q, Magnetically Shielded Chip Coil with Tight Inductance Tolerance ( $\pm 2\%$ ), Perfect in Oscillation Circuits

The LQS33N series consists of closed, magnetically shielded chip inductors wound on ferrite bobbins developed by Murata.

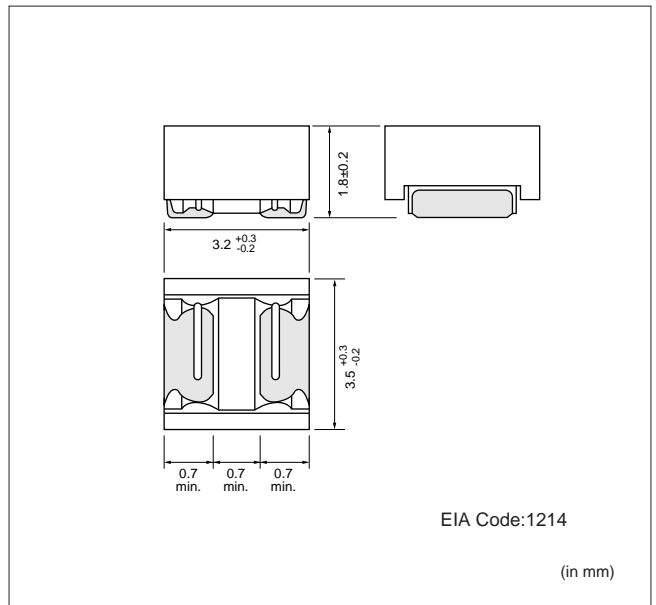
Their high Q value virtually eliminates interference with nearby circuits. This, combined with their tight inductance tolerance, makes these chip inductors excellent in resonant circuits.

### ■FEATURES

1. The coil's outstanding stability yields a reduction in inductor tolerance to within  $\pm 2\%$ .
2. Its high Q (typically greater than 80) is present at all inductance values and is the basis of this chip coil's outstanding low loss circuit characteristics.
3. The ferrite core shielding structure both eliminates external interference and facilitates high mounting density.
4. Small inductance variation with respect to temperature change makes these coils applicable in traps or LC filters for stable frequency characteristics.
5. This series is thin and compact, with a thickness of merely 1.8mm.



### ■DIMENSIONS

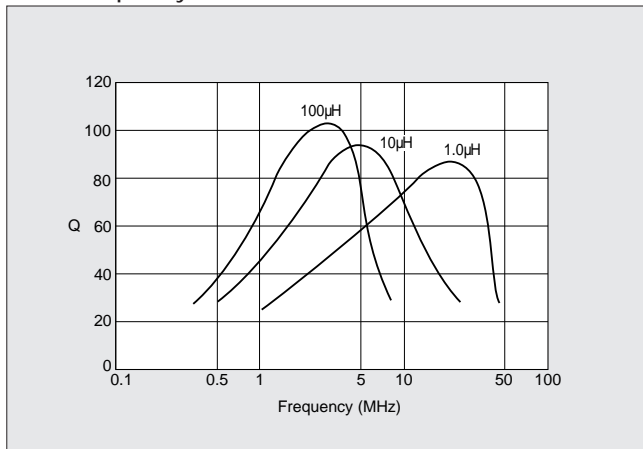


**■ SPECIFICATIONS**

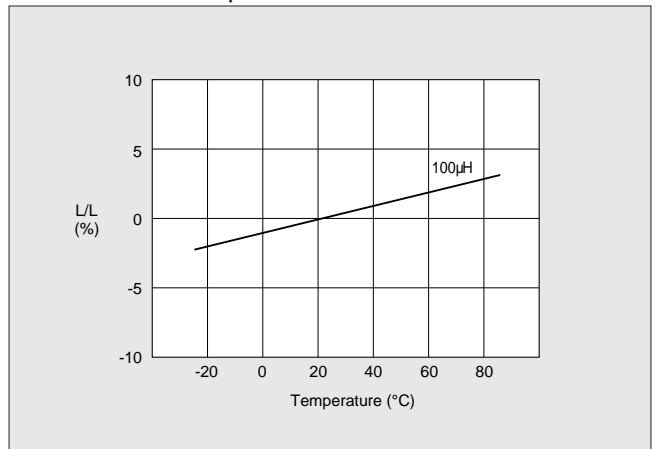
| Part Number     | Inductance        |               |                | Q                 |            | DC Resistance (Ω) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|-----------------|-------------------|---------------|----------------|-------------------|------------|-------------------|------------------------------------|------------------------|-----------------------|
|                 | Nominal Value(μH) | Tolerance (%) | Test Frequency | Peak Value (Typ.) | Min. Value |                   |                                    |                        |                       |
| LQS33N1R0G(J)04 | 1.0               | ±2 (±5)       | 7.96 MHz       | 85                | 60         | 7.96 MHz          | 0.19±30%                           | 120                    | -25 to +85°C          |
| LQS33N1R2G(J)04 | 1.2               |               |                |                   |            |                   | 0.22±30%                           | 100                    |                       |
| LQS33N1R5G(J)04 | 1.5               |               |                |                   |            |                   | 0.26±30%                           | 80                     |                       |
| LQS33N1R8G(J)04 | 1.8               |               |                |                   |            |                   | 0.28±30%                           | 70                     |                       |
| LQS33N2R2G(J)04 | 2.2               |               |                |                   |            |                   | 0.33±30%                           | 60                     |                       |
| LQS33N2R7G(J)04 | 2.7               |               |                | 0.39±30%          |            |                   | 55                                 |                        |                       |
| LQS33N3R3G(J)04 | 3.3               |               |                | 0.43±30%          |            |                   | 50                                 |                        |                       |
| LQS33N3R9G(J)04 | 3.9               |               |                | 0.45±30%          |            |                   | 45                                 |                        |                       |
| LQS33N4R7G(J)04 | 4.7               |               |                | 0.52±30%          |            |                   | 40                                 |                        |                       |
| LQS33N5R6G(J)04 | 5.6               |               |                | 0.56±30%          |            |                   | 37                                 |                        |                       |
| LQS33N6R8G(J)04 | 6.8               |               | 0.62±30%       | 35                |            |                   |                                    |                        |                       |
| LQS33N8R2G(J)04 | 8.2               |               | 0.69±30%       | 32                |            |                   |                                    |                        |                       |
| LQS33N100G(J)04 | 10                |               | 2.52 MHz       | 90                | 70         | 2.52 MHz          | 0.94±30%                           | 30                     |                       |
| LQS33N120G(J)04 | 12                |               |                |                   |            |                   | 1.1 ±30%                           | 27                     |                       |
| LQS33N150G(J)04 | 15                |               |                |                   |            |                   | 1.2 ±30%                           | 25                     |                       |
| LQS33N180G(J)04 | 18                |               |                |                   |            |                   | 1.3 ±30%                           | 23                     |                       |
| LQS33N220G(J)04 | 22                |               |                |                   |            |                   | 1.5 ±30%                           | 20                     |                       |
| LQS33N270G(J)04 | 27                |               |                | 1.7 ±30%          |            |                   | 18                                 |                        |                       |
| LQS33N330G(J)04 | 33                |               |                | 2.4 ±30%          |            |                   | 16                                 |                        |                       |
| LQS33N390G(J)04 | 39                |               |                | 2.6 ±30%          |            |                   | 15                                 |                        |                       |
| LQS33N470G(J)04 | 47                | 3.0 ±30%      |                | 14                |            |                   |                                    |                        |                       |
| LQS33N560G(J)04 | 56                | 3.3 ±30%      |                | 13                |            |                   |                                    |                        |                       |
| LQS33N680G(J)04 | 68                | 5.3 ±30%      | 12             |                   |            |                   |                                    |                        |                       |
| LQS33N820G(J)04 | 82                | 5.8 ±30%      | 11             |                   |            |                   |                                    |                        |                       |
| LQS33N101G(J)04 | 100               | 6.6 ±30%      | 10             |                   |            |                   |                                    |                        |                       |

**■ TYPICAL ELECTRICAL CHARACTERISTICS**

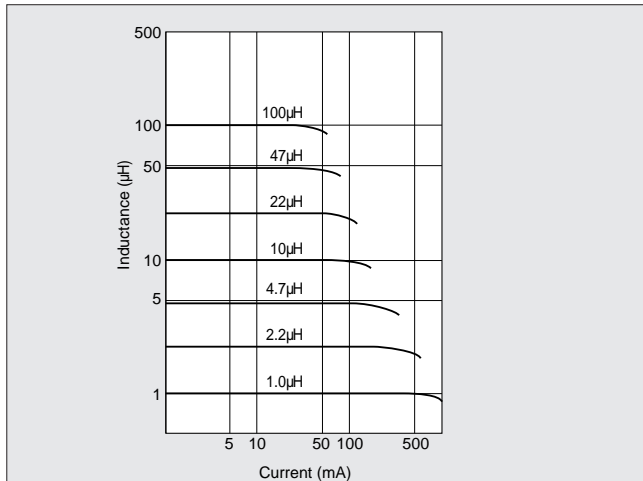
● Q - Frequency Characteristics



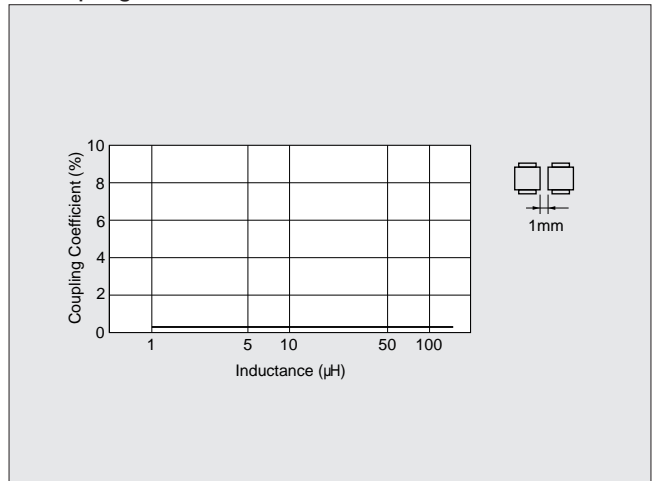
● Inductance - Temperature Characteristics

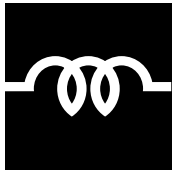


● Inductance - Current Characteristics



● Coupling Coefficient





# CHIP COIL



## Multilayer Chip Inductor **LQG10A/11A** Series for High Frequency

### High-Q, Stable Inductance in High Frequency Range Small Size Multilayer Chip Inductor for High Frequency Range

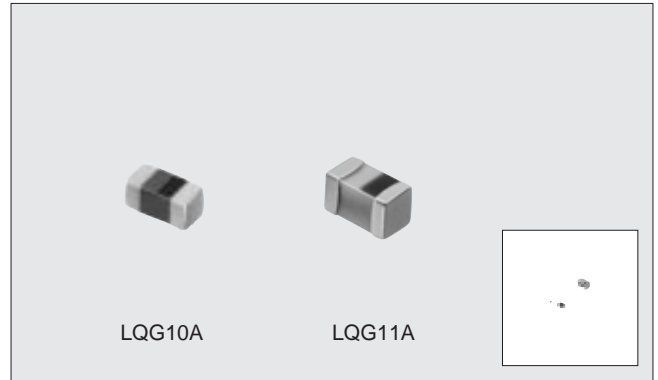
The LQG10A/11A series are chip inductors specifically designed for high frequency applications. The LQG10A/11A series is designed to realize stable characteristics in high frequency range applying integrated multilayer process. The integrated multilayer process enables a wide range of inductance values with tight tolerance.

#### ■FEATURES

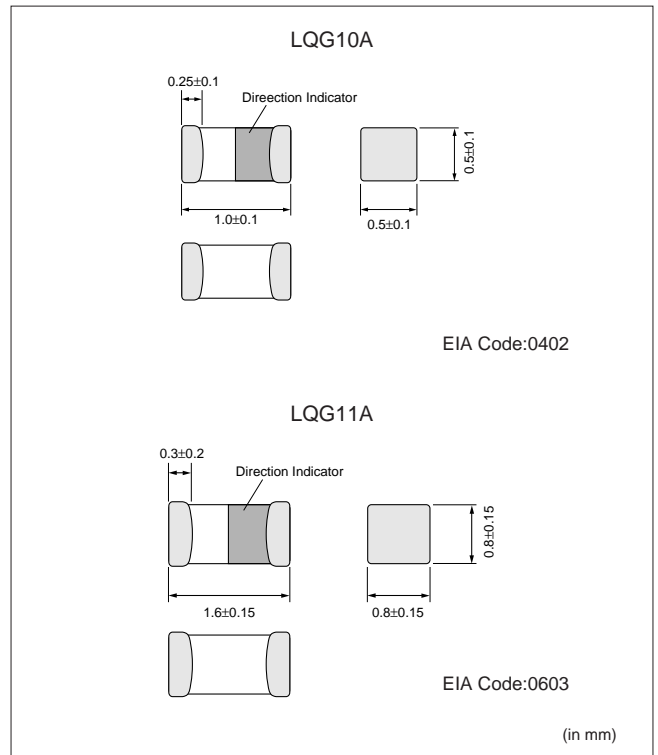
1. High-Q, stable inductance in high frequency is achieved by the unique low-capacitance structure. It is suitable for mobile communication equipment.
2. The small size of LQG10A (1.0X0.5X0.5mm) is ideal for small mobile equipment.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance.

#### ■APPLICATIONS

- High frequency circuit of telecommunication equipment such as CDMA, DECT, PHS, PCS, PCN, GSM and DCS.



#### ■DIMENSIONS





■SPECIFICATIONS

LQG10A

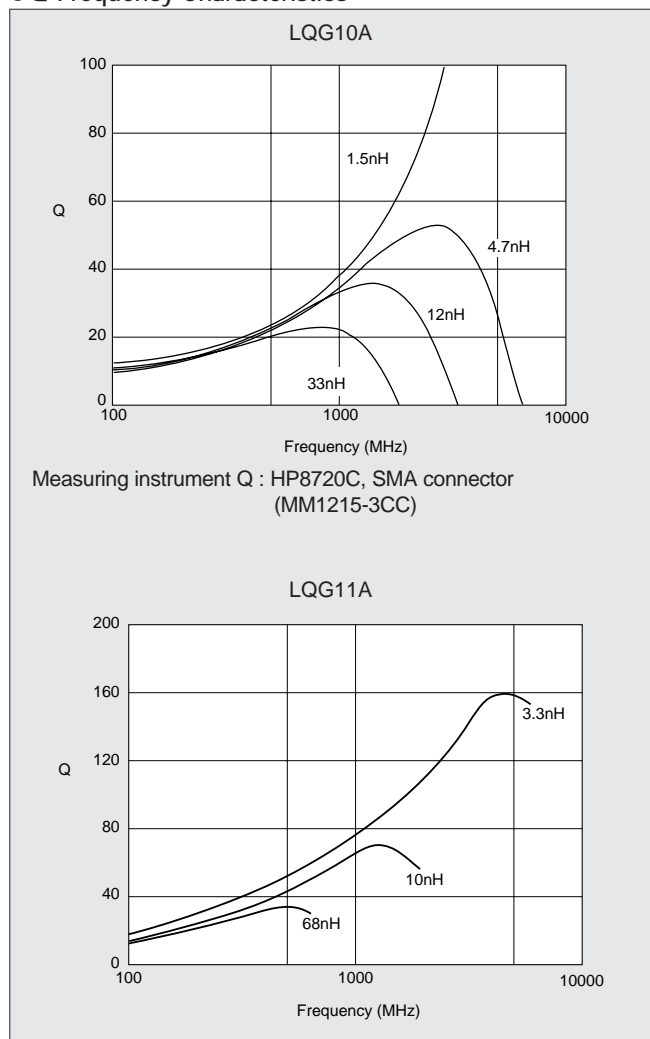
| Part Number  | Inductance         |           |                      | Q                    |                      |               | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min) | Allowable Current (mA) | Operating Temp. Range |               |             |    |    |    |      |      |
|--------------|--------------------|-----------|----------------------|----------------------|----------------------|---------------|------------------------|-----------------------------------|------------------------|-----------------------|---------------|-------------|----|----|----|------|------|
|              | Nominal Value (nH) | Tolerance | Test Frequency (MHz) | Nominal Value (min.) | Test Frequency (MHz) | 500MHz (typ.) |                        |                                   |                        |                       | 800MHz (typ.) | 1GHz (typ.) |    |    |    |      |      |
| LQG10A1N2S00 | 1.2                | ±0.3nH    | 100                  | 8                    | 100                  | 25            | 35                     | 38                                | 0.10                   | 200                   | -40 to +85°C  |             |    |    |    |      |      |
| LQG10A1N5S00 | 1.5                |           |                      |                      |                      |               | 33                     |                                   |                        |                       |               |             |    |    |    |      |      |
| LQG10A1N8S00 | 1.8                |           |                      |                      |                      | 24            | 31                     | 34                                |                        |                       |               |             |    |    |    |      |      |
| LQG10A2N2S00 | 2.2                |           |                      |                      |                      |               | 22                     | 30                                |                        |                       |               | 33          |    |    |    |      |      |
| LQG10A2N7S00 | 2.7                |           |                      |                      |                      | 29            |                        | 32                                |                        |                       |               | 0.17        |    |    |    |      |      |
| LQG10A3N3S00 | 3.3                |           |                      |                      |                      |               |                        |                                   |                        |                       |               | 0.19        |    |    |    |      |      |
| LQG10A3N9S00 | 3.9                |           |                      |                      |                      | 23            | 29                     | 32                                |                        |                       |               | 0.19        |    |    |    |      |      |
| LQG10A4N7S00 | 4.7                |           |                      |                      |                      |               |                        |                                   |                        |                       |               | 0.23        |    |    |    |      |      |
| LQG10A5N6S00 | 5.6                |           |                      |                      |                      | ±5%           | 100                    | 8                                 |                        |                       |               | 100         | 23 | 29 | 32 | 0.26 | 5300 |
| LQG10A6N8J00 | 6.8                |           |                      |                      |                      |               |                        |                                   |                        |                       |               |             |    | 29 |    | 32   | 0.29 |
| LQG10A8N2J00 | 8.2                | 24        | 31                   | 34                   | 0.33                 |               |                        |                                   | 3600                   |                       |               |             |    |    |    |      |      |
| LQG10A10NJ00 | 10                 |           | 30                   |                      | 34                   |               |                        |                                   | 0.35                   | 3200                  |               |             |    |    |    |      |      |
| LQG10A12NJ00 | 12                 | 30        | 31                   | 33                   | 0.41                 |               |                        |                                   | 2800                   |                       |               |             |    |    |    |      |      |
| LQG10A15NJ00 | 15                 |           |                      |                      | 0.46                 |               |                        |                                   | 2300                   |                       |               |             |    |    |    |      |      |
| LQG10A18NJ00 | 18                 | 23        | 29                   | 32                   | 0.51                 |               |                        |                                   | 2100                   |                       |               |             |    |    |    |      |      |
| LQG10A22NJ00 | 22                 |           |                      |                      | 0.58                 |               |                        |                                   | 1800                   |                       |               |             |    |    |    |      |      |
| LQG10A27NJ00 | 27                 | 22        | 27                   | 27                   | 0.67                 |               |                        |                                   | 1600                   |                       |               |             |    |    |    |      |      |
| LQG10A33NJ00 | 33                 |           |                      |                      |                      |               |                        |                                   | 23                     | 24                    | 1500          |             |    |    |    |      |      |

LQG11A

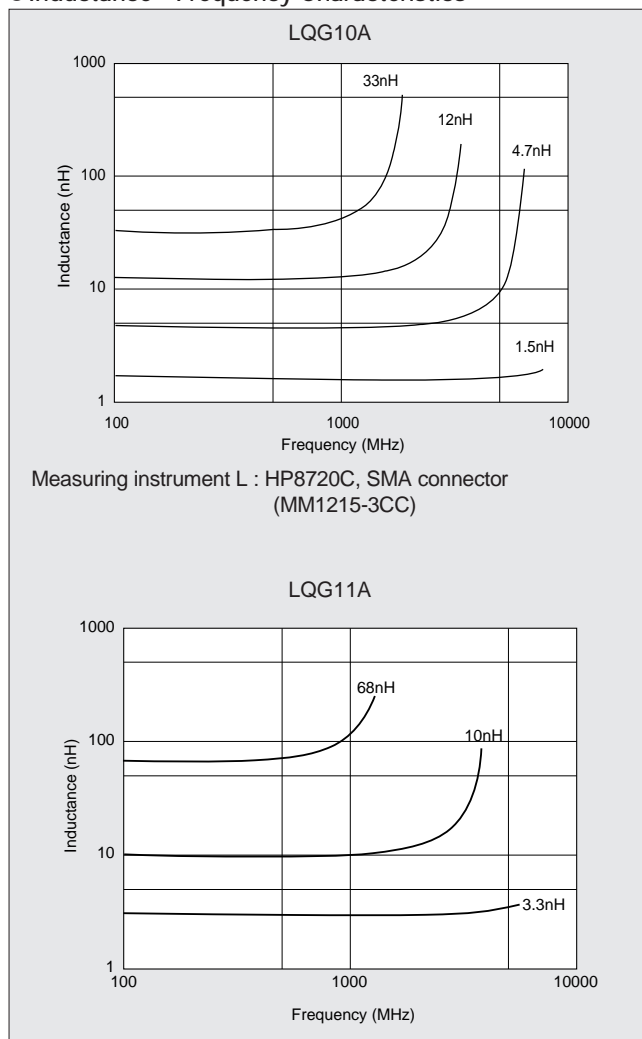
| Part Number     | Inductance         |           |                      | Q                    |                      | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|-----------------|--------------------|-----------|----------------------|----------------------|----------------------|------------------------|------------------------------------|------------------------|-----------------------|
|                 | Nominal Value (nH) | Tolerance | Test Frequency (MHz) | Nominal Value (min.) | Test Frequency (MHz) |                        |                                    |                        |                       |
| LQG11A1N2S00    | 1.2                | ±0.3nH    | 100                  | 12                   | 100                  | 0.10                   | 6000                               | 300                    | -40 to +85°C          |
| LQG11A1N5S00    | 1.5                |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11A1N8S00    | 1.8                |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11A2N2S00    | 2.2                |           |                      |                      |                      | 0.15                   |                                    |                        |                       |
| LQG11A2N7S00    | 2.7                |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11A3N3S00    | 3.3                |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11A3N9S00    | 3.9                |           |                      |                      |                      | 0.20                   | 5000                               |                        |                       |
| LQG11A4N7S00    | 4.7                |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11A5N6S00    | 5.6                |           |                      |                      |                      | ±5% (±10%)             | 100                                |                        |                       |
| LQG11A6N8J(K)00 | 6.8                | 0.30      | 3500                 |                      |                      |                        |                                    |                        |                       |
| LQG11A8N2J(K)00 | 8.2                |           |                      | 0.35                 | 3000                 |                        |                                    |                        |                       |
| LQG11A10NJ(K)00 | 10                 | 0.40      | 2800                 |                      |                      |                        |                                    |                        |                       |
| LQG11A12NJ(K)00 | 12                 |           |                      | 0.45                 | 2600                 |                        |                                    |                        |                       |
| LQG11A15NJ(K)00 | 15                 | 0.50      | 2300                 |                      |                      |                        |                                    |                        |                       |
| LQG11A18NJ(K)00 | 18                 |           |                      | 0.55                 | 2000                 |                        |                                    |                        |                       |
| LQG11A22NJ(K)00 | 22                 | 0.60      | 1700                 |                      |                      |                        |                                    |                        |                       |
| LQG11A27NJ(K)00 | 27                 |           |                      | 0.65                 | 1500                 |                        |                                    |                        |                       |
| LQG11A33NJ(K)00 | 33                 | 0.70      | 1200                 |                      |                      |                        |                                    |                        |                       |
| LQG11A39NJ(K)00 | 39                 |           |                      | 0.75                 | 1100                 |                        |                                    |                        |                       |
| LQG11A47NJ(K)00 | 47                 | 0.80      | 1000                 |                      |                      |                        |                                    |                        |                       |
| LQG11A56NJ(K)00 | 56                 |           |                      | 0.85                 | 900                  |                        |                                    |                        |                       |
| LQG11A68NJ(K)00 | 68                 | 0.90      | 800                  |                      |                      |                        |                                    |                        |                       |
| LQG11A82NJ(K)00 | 82                 |           |                      |                      |                      |                        |                                    |                        |                       |
| LQG11AR10J(K)00 | 100                |           |                      |                      |                      |                        |                                    |                        |                       |

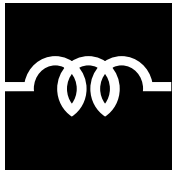
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Q-Frequency Characteristics



● Inductance - Frequency Characteristics





# CHIP COIL



Thin Film Chip Coil **LQP10A/LQP11A** Series for High Frequency

## Tight Inductance Tolerance Chip Coil for High Frequency Application Small Size and Tight Inductance Tolerance ( $\pm 0.2\text{nH}$ or $\pm 2\%$ )

The LQP10A/LQP11A series consists of chip coils with a tight inductance tolerance ( $\pm 0.2\text{nH}$  or  $\pm 2\%$ ) achieved even in low inductance region.

### FEATURES

1. Tight inductance tolerance ( $\pm 0.2\text{nH}$ ,  $\pm 2\%$ ) realized by thin-film technology enables assemble with no tuning.
2. High self resonant frequency due to low stray capacitance and close inductance distribution provide stable inductance in high frequency circuit such as telecommunication equipment.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance.

#### ● LQP10A

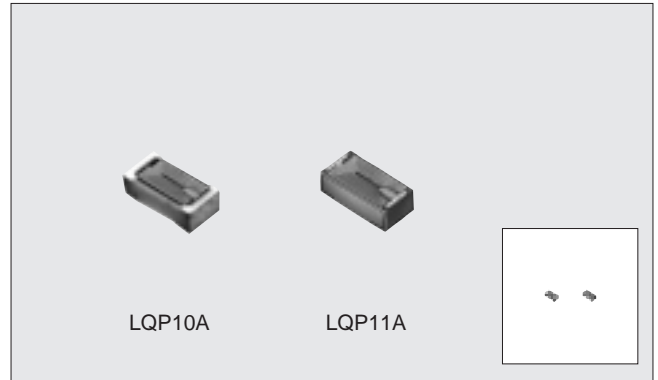
Ultra-Small size 0402 inductor which is low, and lightest weight (half of multilayer type) in the world enables to miniaturize mobile telephone.

#### ● LQP11A

Small size of 0603 (LQP11A) is suitable for small hand held equipment, especially for card size equipment.

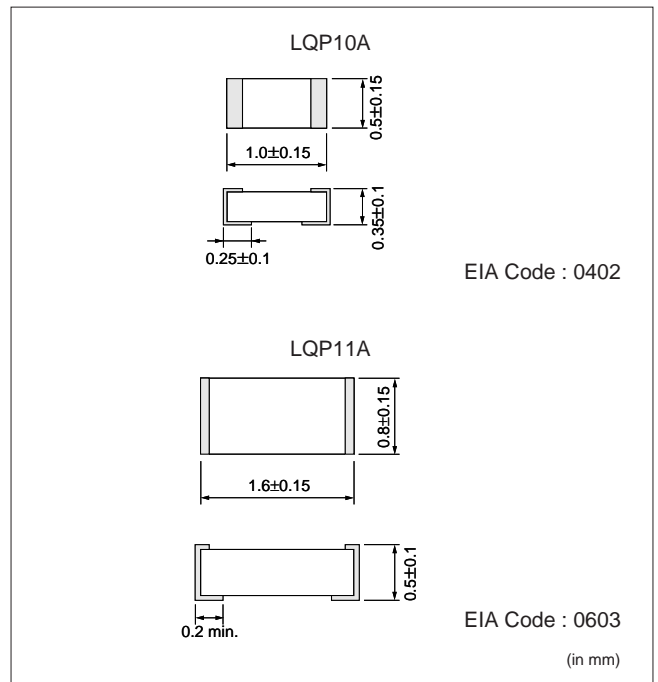
### APPLICATIONS

- High frequency circuit of telecommunication equipment, such as DECT, PHS, PCS, PCN, GSM, DCS and CDMA.
- Impedance Matching—Power-AMP Module (PA), SAW filter
- Resonance circuits—VCO



The appearance of coil pattern depends on the part number.

### DIMENSIONS



Use plastic tweezers when treating with tweezers.

■SPECIFICATIONS

LQG10A

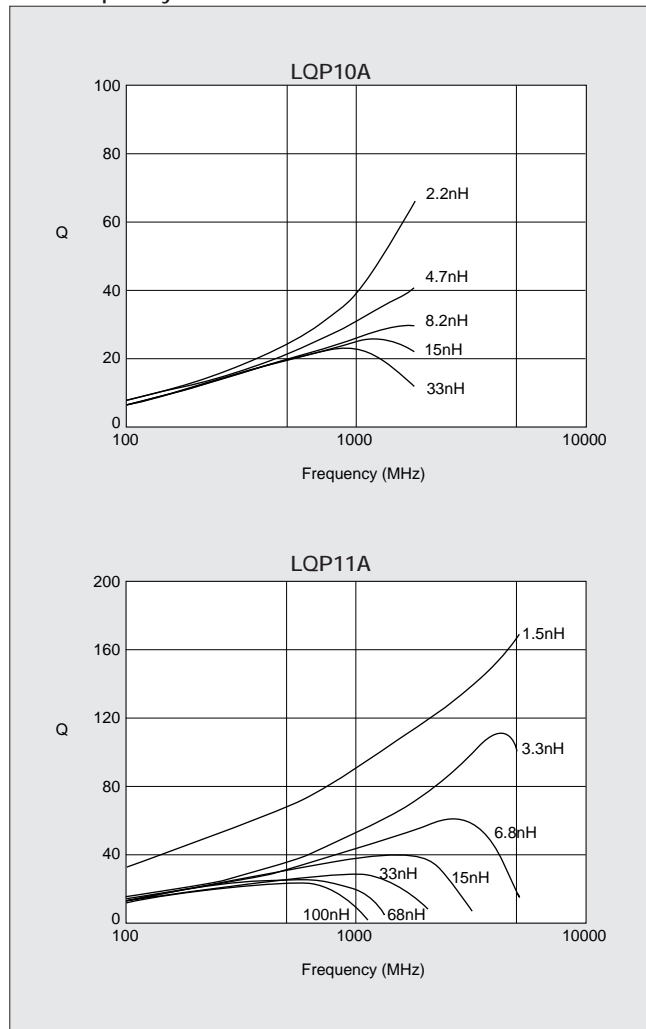
| Part Number     | Inductance         |                    |                      | Q             |            |                      | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min) | Allowable Current (mA) | Operating Temp. Range |
|-----------------|--------------------|--------------------|----------------------|---------------|------------|----------------------|------------------------|-----------------------------------|------------------------|-----------------------|
|                 | Nominal Value (nH) | Tolerance          | Test Frequency (MHz) | Typical @1GHz | Min. Value | Test Frequency (MHz) |                        |                                   |                        |                       |
| LQP10A1N0B(C)00 | 1.0                | ±0.1nH<br>(±0.2nH) | 500                  | 50            | 13         | 500                  | 0.1                    | 6000                              | 400                    | -40<br>to<br>+85°C    |
| LQP10A1N1B(C)00 | 1.1                |                    |                      |               |            |                      |                        |                                   | 390                    |                       |
| LQP10A1N2B(C)00 | 1.2                |                    |                      |               |            |                      |                        |                                   | 280                    |                       |
| LQP10A1N3B(C)00 | 1.3                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A1N5B(C)00 | 1.5                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A1N6B(C)00 | 1.6                |                    |                      | 220           |            |                      |                        |                                   |                        |                       |
| LQP10A1N8B(C)00 | 1.8                |                    |                      | 280           |            |                      |                        |                                   |                        |                       |
| LQP10A2N0B(C)00 | 2.0                |                    |                      | 40            |            |                      | 0.3                    | 220                               |                        |                       |
| LQP10A2N2B(C)00 | 2.2                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A2N4B(C)00 | 2.4                |                    |                      | 35            |            |                      | 0.4                    | 190                               |                        |                       |
| LQP10A2N7B(C)00 | 2.7                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A3N0B(C)00 | 3.0                |                    |                      | 30            |            |                      | 0.5                    | 170                               |                        |                       |
| LQP10A3N3B(C)00 | 3.3                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A3N6B(C)00 | 3.6                |                    |                      | 28            |            |                      | 0.6                    | 160                               |                        |                       |
| LQP10A3N9B(C)00 | 3.9                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A4N3B(C)00 | 4.3                |                    |                      | 29            |            |                      | 0.7                    | 140                               |                        |                       |
| LQP10A4N7B(C)00 | 4.7                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A5N1B(C)00 | 5.1                |                    |                      | 26            |            |                      | 0.9                    | 130                               |                        |                       |
| LQP10A5N6B(C)00 | 5.6                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A6N2B(C)00 | 6.2                |                    |                      | 25            |            |                      | 1.1                    | 110                               |                        |                       |
| LQP10A6N8B(C)00 | 6.8                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A7N5B(C)00 | 7.5                | 22                 | 1.3                  | 100           |            |                      |                        |                                   |                        |                       |
| LQP10A8N2B(C)00 | 8.2                |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A9N1B(C)00 | 9.1                | 21                 | 1.6                  | 90            |            |                      |                        |                                   |                        |                       |
| LQP10A10NG(J)00 | 10                 |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A12NG(J)00 | 12                 | 20                 | 1.8                  | 80            |            |                      |                        |                                   |                        |                       |
| LQP10A15NG(J)00 | 15                 |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A18NG(J)00 | 18                 | 70                 | 2.0                  |               |            |                      |                        |                                   |                        |                       |
| LQP10A22NG(J)00 | 22                 |                    |                      |               |            |                      |                        |                                   |                        |                       |
| LQP10A27NG(J)00 | 27                 | 60                 | 2.6                  |               |            |                      |                        |                                   |                        |                       |
| LQP10A33NG(J)00 | 33                 |                    |                      |               |            |                      |                        |                                   |                        |                       |

## LQG11A

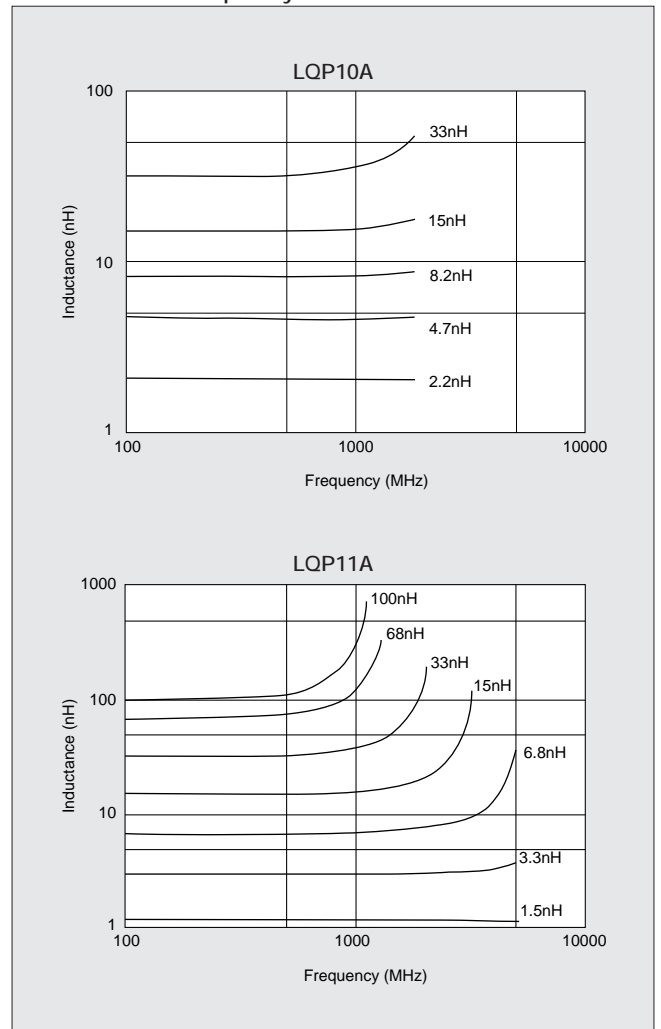
| Part Number  | Inductance         |                    |                      | Q                 |            |                      | DC Resistance ( $\Omega$ max.) | Self-resonant Frequency (MHz min) | Allowable Current (mA) | Operating Temp. Range |
|--------------|--------------------|--------------------|----------------------|-------------------|------------|----------------------|--------------------------------|-----------------------------------|------------------------|-----------------------|
|              | Nominal Value (nH) | Tolerance          | Test Frequency (MHz) | Peak Value (Typ.) | Min. Value | Test Frequency (MHz) |                                |                                   |                        |                       |
| LQP11A1N3C00 | 1.3                | $\pm 0.2\text{nH}$ | 500                  | 160               | 17         | 500                  | 0.3                            | 6000                              | 300                    | -40 to +85°C          |
| LQP11A1N5C00 | 1.5                |                    |                      | 140               |            |                      | 0.4                            |                                   |                        |                       |
| LQP11A1N8C00 | 1.8                |                    |                      | 120               |            |                      |                                |                                   |                        |                       |
| LQP11A2N2C00 | 2.2                |                    |                      | 100               |            |                      |                                |                                   |                        |                       |
| LQP11A2N7C00 | 2.7                |                    |                      | 90                |            |                      |                                |                                   |                        |                       |
| LQP11A3N3C00 | 3.3                |                    |                      | 85                |            |                      | 0.5                            |                                   | 5900                   |                       |
| LQP11A3N9C00 | 3.9                |                    |                      | 80                |            |                      |                                |                                   |                        |                       |
| LQP11A4N7C00 | 4.7                |                    |                      | 75                |            |                      |                                |                                   |                        |                       |
| LQP11A5N6C00 | 5.6                |                    |                      | 65                |            |                      | 0.6                            | 4700                              |                        |                       |
| LQP11A6N8C00 | 6.8                |                    |                      | 63                |            |                      | 0.7                            | 4300                              |                        |                       |
| LQP11A8N2C00 | 8.2                |                    |                      | 57                |            |                      | 0.8                            | 3600                              | 150                    |                       |
| LQP11A10NG00 | 10                 |                    |                      | 55                |            |                      | 1.0                            | 3400                              |                        |                       |
| LQP11A12NG00 | 12                 |                    |                      | 50                |            |                      |                                | 3000                              |                        |                       |
| LQP11A15NG00 | 15                 |                    |                      | 43                |            |                      | 1.3                            | 2700                              |                        |                       |
| LQP11A18NG00 | 18                 | 39                 | 1.5                  | 2300              | 100        |                      |                                |                                   |                        |                       |
| LQP11A22NG00 | 22                 | 38                 | 1.9                  | 2100              |            |                      |                                |                                   |                        |                       |
| LQP11A27NG00 | 27                 | 32                 | 2.4                  | 1900              |            |                      |                                |                                   |                        |                       |
| LQP11A33NG00 | 33                 | 30                 | 2.8                  | 1700              |            |                      |                                |                                   |                        |                       |
| LQP11A39NG00 | 39                 | 28                 |                      | 1400              |            |                      |                                |                                   |                        |                       |
| LQP11A47NG00 | 47                 | 26                 | 300                  | 2.2               | 1200       | 50                   |                                |                                   |                        |                       |
| LQP11A56NG00 | 56                 | 28                 |                      | 3.4               | 1000       |                      |                                |                                   |                        |                       |
| LQP11A68NG00 | 68                 | 27                 |                      | 3.5               | 900        |                      |                                |                                   |                        |                       |
| LQP11A82NG00 | 82                 |                    |                      | 4.6               | 800        |                      |                                |                                   |                        |                       |
| LQP11AR10G00 | 100                | 25                 |                      | 6.1               | 700        |                      |                                |                                   |                        |                       |

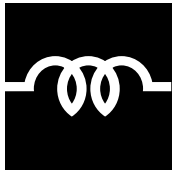
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Q-Frequency Characteristics



● Inductance - Frequency Characteristics





# CHIP COIL



## Wire Wound Chip Coil **LQW1608A** Series for High Frequency

### High-Q and Tight Inductance Tolerance ( $\pm 0.2\text{nH}$ or $\pm 2\%$ ) Ultra Small Wire Wound Air-core Chip Coil

The LQW1608A series which consists of air-core chip coil using a miniature alumina core.

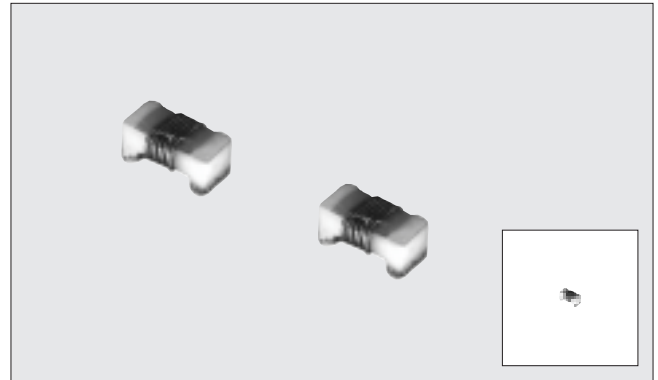
The tight inductance tolerance ( $\pm 0.2\text{nH}$ ,  $\pm 2\%$ ) is available due to Murata's original winding technology. The series has high Q value and high self resonant frequency in high frequency range. It is suitable for high frequency circuits which are used in telecommunication equipment.

#### ■FEATURES

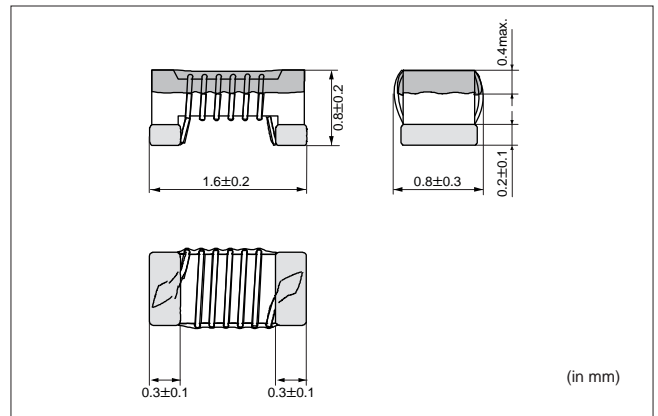
1. Horizontal winding structure enables tight inductance tolerance ( $\pm 0.2\text{nH}$ ,  $\pm 2\%$ ). Stable circuit operation is possible.
2. Broad range of inductance (3.9nH to 220nH).
3. The subminiature dimensions (1.6X0.8mm) allow high density mounting.
4. The high self resonant frequency realizes high-Q value and stable inductance at high frequency.
5. Low DC resistance design is ideal for low loss, high output and low power consumption.
4. Resin-coated surface enables excellent mounting.

#### ■APPLICATIONS

- High frequency circuit in telecommunication equipment, such as DECT, PHS, PCS, PCN, GSM and CDMA.
- Impedance Matching—Power-AMP Module (PA), SAW filter
- Resonance circuits—VCO



#### ■DIMENSIONS



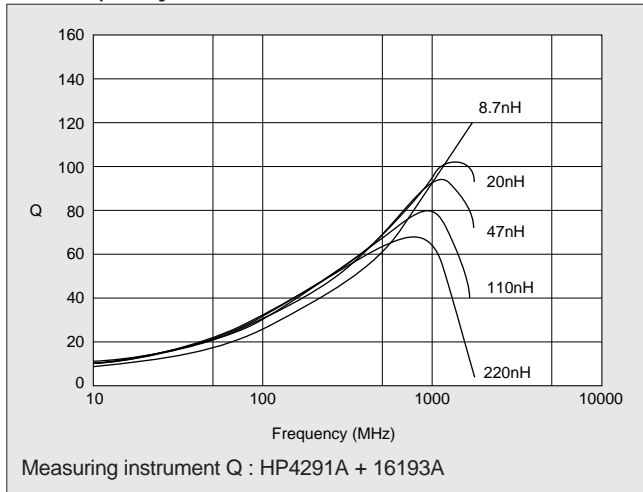
## ■ SPECIFICATIONS

| Part Number       | Inductance         |                                 |                      | Q                    |                      |                   |                   |                   | DC Resistance ( $\Omega$ max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |      |                            |     |      |    |     |      |     |
|-------------------|--------------------|---------------------------------|----------------------|----------------------|----------------------|-------------------|-------------------|-------------------|--------------------------------|------------------------------------|------------------------|-----------------------|------|----------------------------|-----|------|----|-----|------|-----|
|                   | Nominal Value (nH) | Tolerance                       | Test Frequency (MHz) | Nominal Value (min.) | Test Frequency (MHz) | 300 (MHz) Typical | 800 (MHz) Typical | 1.5 (GHz) Typical |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A2N2D00    | 2.2                | $\pm 0.5$ nH                    | 100                  | 16                   | 250                  | 45                | 80                | 110               | 0.049                          | 6000                               | 700                    | -25 to +85°C          |      |                            |     |      |    |     |      |     |
| LQW1608A3N6D(C)00 | 3.6                | $\pm 0.5$ nH<br>( $\pm 0.2$ nH) |                      | 25                   |                      |                   | 75                | 95                | 0.059                          |                                    | 850                    |                       |      |                            |     |      |    |     |      |     |
| LQW1608A3N9D(C)00 | 3.9                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A4N3D(C)00 | 4.3                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A4N7D00    | 4.7                | $\pm 0.5$ nH                    |                      | 35                   |                      |                   | 45                | 80                | 100                            |                                    | 0.082                  |                       | 750  |                            |     |      |    |     |      |     |
| LQW1608A5N6D(C)00 | 5.6                | $\pm 0.5$ nH<br>( $\pm 0.2$ nH) |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A6N2D(C)00 | 6.2                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A6N8D(C)00 | 6.8                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A7N5D00    | 7.5                | $\pm 0.5$ nH                    |                      | 40                   |                      |                   | 50                | 85                | 105                            |                                    | 0.11                   |                       | 650  |                            |     |      |    |     |      |     |
| LQW1608A8N2D00    | 8.2                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A8N7D00    | 8.7                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A9N1D00    | 9.1                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A9N5D00    | 9.5                |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A10NJ(G)00 | 10                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      | $\pm 5\%$<br>( $\pm 2\%$ ) | 38  | 200  | 90 | 105 | 0.13 | 600 |
| LQW1608A11NJ(G)00 | 11                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A12NJ(G)00 | 12                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A13NJ(G)00 | 13                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A15NJ(G)00 | 15                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A16NJ(G)00 | 16                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A18NJ(G)00 | 18                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A20NJ(G)00 | 20                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A22NJ(G)00 | 22                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A24NJ(G)00 | 24                 | 50                              |                      | 34                   |                      |                   | 150               | 95                | 105                            |                                    | 0.16                   |                       | 5500 |                            |     |      |    |     |      |     |
| LQW1608A27NJ(G)00 | 27                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       | 4900 |                            |     |      |    |     |      |     |
| LQW1608A30NJ(G)00 | 30                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       | 0.17 | 4600                       | 500 |      |    |     |      |     |
| LQW1608A33NJ(G)00 | 33                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     | 3800 |    |     |      |     |
| LQW1608A36NJ(G)00 | 36                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       | 0.23 | 3200                       | 420 |      |    |     |      |     |
| LQW1608A39NJ(G)00 | 39                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     | 3700 |    |     |      |     |
| LQW1608A43NJ(G)00 | 43                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       | 0.26 | 2900                       | 400 |      |    |     |      |     |
| LQW1608A47NJ(G)00 | 47                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     | 2800 |    |     |      |     |
| LQW1608A51NJ(G)00 | 51                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       | 0.29 | 2700                       | 380 |      |    |     |      |     |
| LQW1608A56NJ(G)00 | 56                 |                                 |                      |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     | 2600 |    |     |      |     |
| LQW1608A62NJ(G)00 | 62                 | 0.33                            |                      | 2500                 |                      |                   | 370               |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A68NJ(G)00 | 68                 |                                 |                      |                      |                      |                   |                   | 0.35              |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A72NJ(G)00 | 72                 | 0.38                            |                      | 2400                 |                      |                   | 360               |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A75NJ(G)00 | 75                 |                                 |                      |                      |                      |                   |                   | 0.51              |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A82NJ(G)00 | 82                 | 0.56                            |                      | 2300                 |                      |                   | 280               |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608A91NJ(G)00 | 91                 |                                 |                      |                      |                      |                   |                   | 0.38              |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR10J(G)00 | 100                | 0.60                            |                      | 2200                 |                      |                   | 340               |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR11J(G)00 | 110                |                                 |                      |                      |                      |                   |                   | 0.29              |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR12J(G)00 | 120                | 0.64                            | 1900                 | 270                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR13J(G)00 | 130                |                                 |                      |                      | 0.60                 |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR15J(G)00 | 150                | 0.68                            | 1800                 | 220                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR16J(G)00 | 160                |                                 |                      |                      | 0.64                 |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR18J(G)00 | 180                | 1.2                             | 1350                 | 200                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR20J(G)00 | 200                |                                 |                      |                      | 1.3                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
| LQW1608AR22J(G)00 | 220                | 1.4                             | 1450                 | 170                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    |                                 |                      |                      | 1.4                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    | 1.5                             | 1400                 | 160                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    |                                 |                      |                      | 1.5                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    | 2.1                             | 1350                 | 150                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    |                                 |                      |                      | 2.1                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    | 2.2                             | 1300                 | 140                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    |                                 |                      |                      | 2.2                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    | 2.4                             | 1250                 | 120                  |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    |                                 |                      |                      | 2.4                  |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |
|                   |                    | 2.5                             | 1200                 |                      |                      |                   |                   |                   |                                |                                    |                        |                       |      |                            |     |      |    |     |      |     |

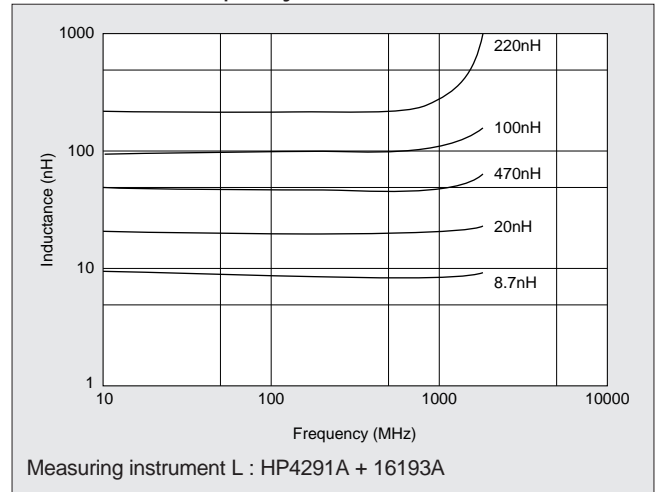


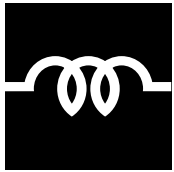
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Q-Frequency Characteristics



● Inductance - Frequency Characteristics





# CHIP COIL



## Wire Wound Chip Coil LQN21A/LQN1A Series for High Frequency

### Small Winding-type Air-core Chip Coil with High Q value at High Frequencies and Low DC Resistance

The LQN21A/LQN1A series consists of air-core chip coil using a sub-miniature alumina core as a bobbin. The high Q value at high frequencies and high self-resonant frequencies make this coil perfect for use in the high frequency circuits of communications equipment.

#### FEATURES

1. LQN21A series covers inductance range from 3.3nH to 470nH.
2. Their high self-resonant frequency characteristic yields a high Q value and highly stable inductance at high frequencies.
3. Low DC resistance design enables to handle higher allowable current.
4. The series has excellent solder heat resistance. Both flow and reflow soldering methods can be employed.

#### LQN21Axxxx04

Inductance tolerance  $\pm 0.5\text{nH}$  (8.2nH max.),  $\pm 5\%$  (10nH to 220nH) and  $\pm 10\%$  (270nH to 470nH) are realized. The sub miniature dimensions (2.0X1.5mm) allow high density mounting.

#### LQN21A (Tight inductance tolerance)

Tight inductance tolerance of  $\pm 2\%$  is available.

#### LQN21Axxxx44

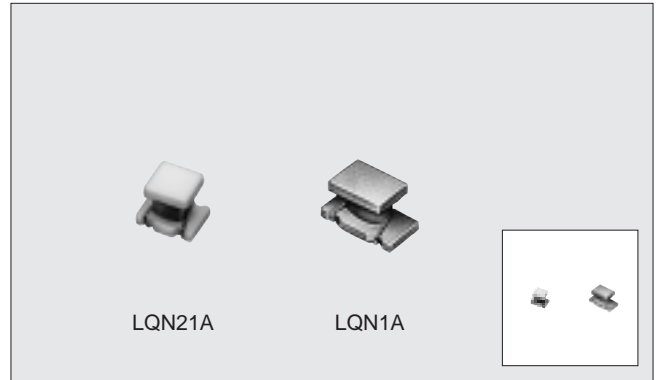
LQN21Axxxx44 using thick wire ( $\phi 0.12\text{mm}$ ) has higher Q value than existing LQN21A series. Low DC resistance design enables to handle higher current. LQN21Axxxx44 covers inductance range from 2.7nH to 27nH.

#### LQN1A

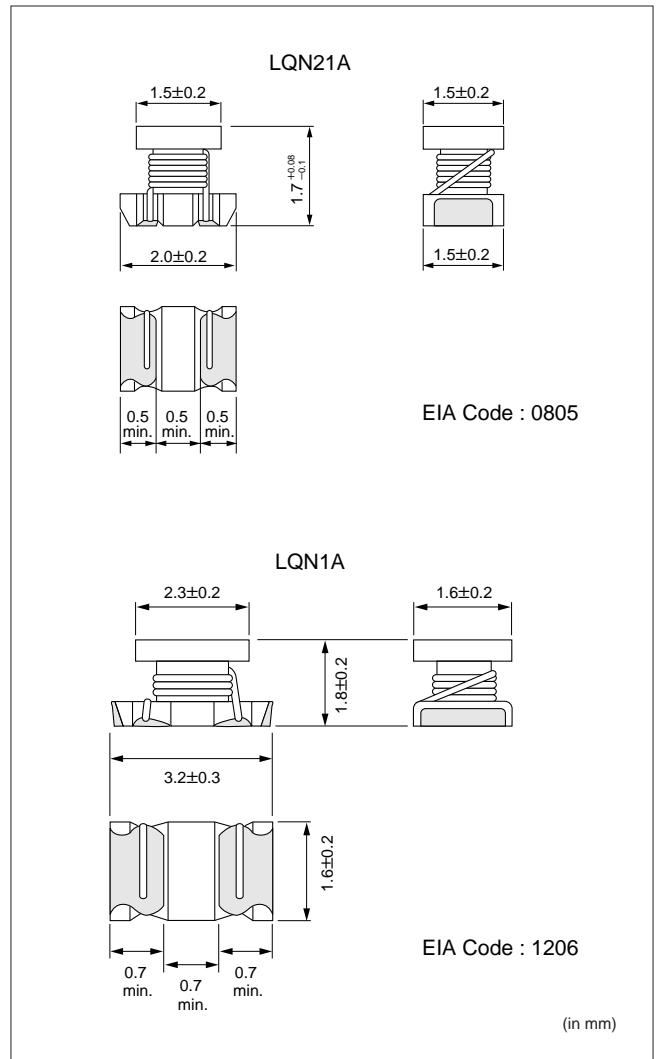
Miniature size (3.2X1.6X1.8mm) allows parallel mounting at 2.5mm pitch. Inductance tolerance  $\pm 5\%$  realized.

#### APPLICATIONS

- High frequency circuit in telecommunication equipment, such as DECT, PHS, PCS, PCN, GSM and CDMA.
- Impedance Matching—Power-AMP Module (PA), SAW filter
- Resonance circuits—VCO



#### DIMENSIONS



■SPECIFICATIONS

LQN21Axxxx04

| Part Number     | Inductance         |            |                      | Q *1              |            |                      | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|-----------------|--------------------|------------|----------------------|-------------------|------------|----------------------|------------------------|------------------------------------|------------------------|-----------------------|
|                 | Nominal Value (nH) | Tolerance  | Test Frequency (MHz) | Peak Value (Typ.) | Min. Value | Test Frequency (MHz) |                        |                                    |                        |                       |
| LQN21A3N3D04    | 3.3                | ±0.5nH     | 100                  | 70                | 10         | 250                  | 0.05                   | 6000                               | 910                    | -25 to +85°C          |
| LQN21A6N8D(K)04 | 6.8                | ±0.5nH     |                      |                   | 20         |                      | 0.11                   | 5400                               | 680                    |                       |
| LQN21A8N2D(K)04 | 8.2                | (±10%)     |                      |                   | 80         |                      | 0.12                   | 3900                               | 630                    |                       |
| LQN21A10NJ(K)04 | 10                 | ±5% (±10%) |                      |                   | 65         |                      | 0.03                   | 3300                               | 1320                   |                       |
| LQN21A12NJ(K)04 | 12                 |            |                      |                   | 30         |                      | 0.11                   | 3200                               | 680                    |                       |
| LQN21A15NJ(K)04 | 15                 |            |                      |                   | 70         |                      | 0.12                   | 2700                               | 630                    |                       |
| LQN21A18NJ(K)04 | 18                 |            |                      |                   | 65         |                      | 0.10                   | 2600                               | 690                    |                       |
| LQN21A22NJ(K)04 | 22                 |            |                      |                   | 80         |                      | 0.09                   | 2100                               | 720                    |                       |
| LQN21A27NJ(K)04 | 27                 |            |                      |                   | 70         |                      | 0.17                   | 2300                               | 540                    |                       |
| LQN21A33NJ(K)04 | 33                 |            |                      |                   | 65         |                      | 0.15                   | 1900                               | 570                    |                       |
| LQN21A39NJ(K)04 | 39                 |            |                      |                   | 80         |                      | 0.09                   | 1700                               | 730                    |                       |
| LQN21A47NJ(K)04 | 47                 |            |                      |                   | 65         |                      | 0.23                   | 1600                               | 450                    |                       |
| LQN21A56NJ(K)04 | 56                 |            |                      |                   | 70         |                      | 0.26                   | 1500                               | 430                    |                       |
| LQN21A68NJ(K)04 | 68                 | 65         |                      |                   | 0.23       |                      | 1200                   | 460                                |                        |                       |
| LQN21A82NJ(K)04 | 82                 | 60         |                      |                   | 0.42       |                      | 1100                   | 320                                |                        |                       |
| LQN21AR10J(K)04 | 100                | 70         |                      |                   | 0.38       |                      | 900                    | 350                                |                        |                       |
| LQN21AR12J(K)04 | 120                | 50         |                      |                   | 0.40       |                      | 750                    | 320                                |                        |                       |
| LQN21AR15J(K)04 | 150                | 45         |                      |                   | 0.47       |                      | 350                    | 390                                |                        |                       |
| LQN21AR18J(K)04 | 180                | 35         |                      |                   | 0.71       |                      | 700                    | 250                                |                        |                       |
| LQN21AR22J(K)04 | 220                | 30         |                      |                   | 0.70       |                      | 500                    | 240                                |                        |                       |
| LQN21AR27K04    | 270                | ±10%       | 10                   | 50                | 15         | 25.2                 | 2.00                   | 550                                | 190                    |                       |
| LQN21AR33K04    | 330                |            |                      |                   |            |                      | 2.20                   | 500                                | 180                    |                       |
| LQN21AR39K04    | 390                |            |                      |                   |            |                      | 2.50                   | 400                                | 170                    |                       |
| LQN21AR47K04    | 470                |            |                      |                   |            |                      | 2.80                   | 350                                | 160                    |                       |

LQN21A (Tight inductance tolerance)

| Part Number  | Inductance         |           |                      | Q *1              |            |                      | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|--------------|--------------------|-----------|----------------------|-------------------|------------|----------------------|------------------------|------------------------------------|------------------------|-----------------------|
|              | Nominal Value (nH) | Tolerance | Test Frequency (MHz) | Peak Value (Typ.) | Min. Value | Test Frequency (MHz) |                        |                                    |                        |                       |
| LQN21A33NG04 | 33                 | ±2%       | 100                  | 65                | 40         | 250                  | 0.15                   | 1900                               | 570                    | -25 to +85°C          |
| LQN21A39NG04 | 39                 |           |                      | 80                |            |                      | 0.09                   | 1700                               | 730                    |                       |
| LQN21A47NG04 | 47                 |           |                      | 65                |            |                      | 0.23                   | 1600                               | 450                    |                       |
| LQN21A56NG04 | 56                 |           |                      | 70                |            |                      | 0.26                   | 1500                               | 430                    |                       |
| LQN21A68NG04 | 68                 |           |                      | 65                |            |                      | 0.23                   | 1200                               | 460                    |                       |
| LQN21A82NG04 | 82                 |           |                      | 60                |            |                      | 0.42                   | 1100                               | 320                    |                       |
| LQN21AR10G04 | 100                |           |                      | 55                |            |                      | 0.55                   | 900                                | 270                    |                       |
| LQN21AR12G04 | 120                |           |                      | 50                |            |                      | 0.40                   | 750                                | 320                    |                       |
| LQN21AR15G04 | 150                |           |                      | 55                |            |                      | 0.68                   | 350                                | 260                    |                       |
| LQN21AR18G04 | 180                |           |                      | 50                |            |                      | 0.71                   | 700                                | 250                    |                       |
| LQN21AR22G04 | 220                |           |                      | 35                |            |                      | 0.70                   | 500                                | 240                    |                       |

\*1 Measured with LCR meter YHP4191A, measuring tap 16193A.

\*2 Measured with Network Analyzer HP8753C.

LQN21Axxxx44

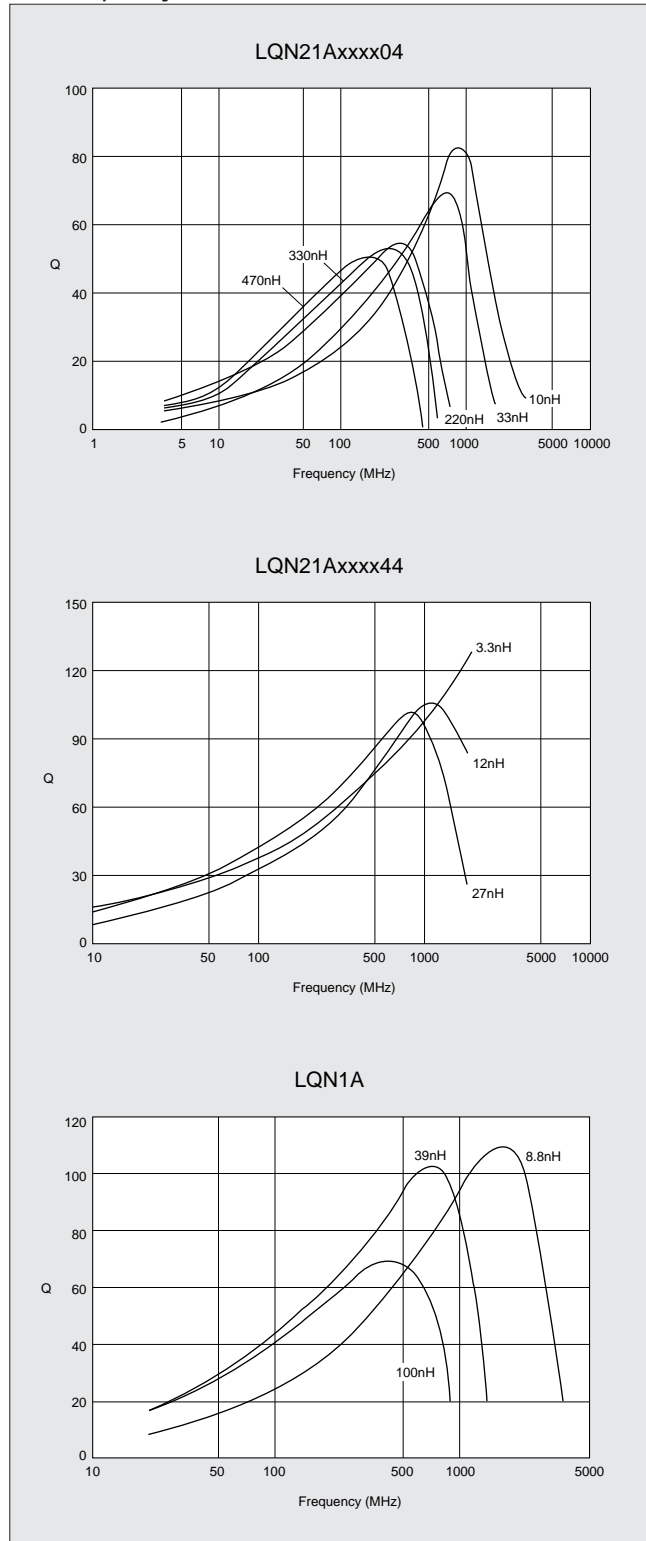
| Part Number  | Inductance         |           |                      | Q                    |                      |               |               | DC Resistance (Ω max.) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |      |
|--------------|--------------------|-----------|----------------------|----------------------|----------------------|---------------|---------------|------------------------|------------------------------------|------------------------|-----------------------|------|
|              | Nominal Value (nH) | Tolerance | Test Frequency (MHz) | Nominal Value (min.) | Test Frequency (MHz) | 800MHz (Typ.) | 1.5GHz (Typ.) |                        |                                    |                        |                       |      |
| LQN21A2N7D44 | 2.7                | ±0.5nH    | 100                  | 20                   | 250                  | 85            | 120           | 0.02                   | 6000                               | 1900                   | -25 to +85°C          |      |
| LQN21A3N1D44 | 3.1                |           |                      |                      |                      |               | 1800          |                        |                                    |                        |                       |      |
| LQN21A3N3D44 | 3.3                |           |                      |                      |                      |               | 1700          |                        |                                    |                        |                       |      |
| LQN21A5N6D44 | 5.6                |           |                      |                      |                      |               | 1500          |                        |                                    |                        |                       |      |
| LQN21A6N8D44 | 6.8                |           |                      |                      |                      |               | 5400          |                        |                                    | 1400                   |                       |      |
| LQN21A8N6D44 | 8.6                |           |                      |                      |                      |               |               |                        |                                    | 1300                   |                       |      |
| LQN21A10NJ44 | 10                 | ±5%       | 40                   | 250                  | 105                  | 75            | 85            | 0.03                   | 3300                               |                        |                       |      |
| LQN21A12NK44 | 12                 | ±10%      |                      |                      |                      |               | 100           |                        | 90                                 | 0.04                   |                       | 1100 |
| LQN21A15NK44 | 15                 |           |                      |                      |                      |               |               |                        |                                    |                        |                       | 1000 |
| LQN21A18NK44 | 18.8               |           |                      |                      |                      |               |               |                        |                                    |                        |                       | 2600 |
| LQN21A21NK44 | 21                 |           |                      |                      |                      |               |               |                        |                                    |                        |                       | 950  |
| LQN21A27NK44 | 27                 |           |                      |                      |                      |               |               |                        |                                    |                        |                       | 900  |

LQN1A

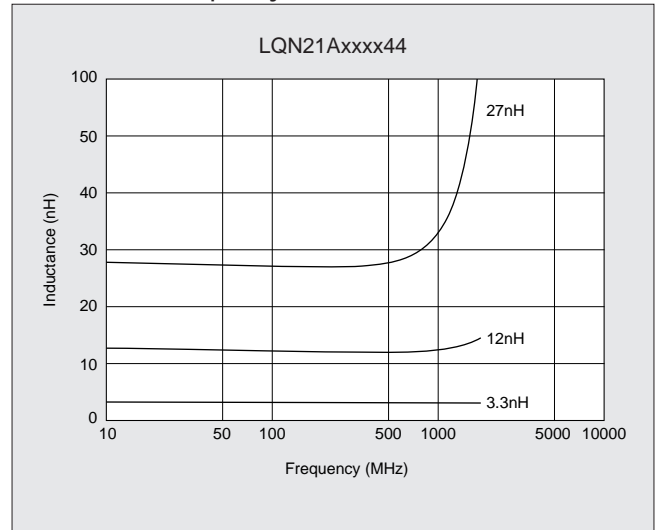
| Part Number    | Inductance         |               |                | Q                 |            |                | DC Resistance (Ω) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |
|----------------|--------------------|---------------|----------------|-------------------|------------|----------------|-------------------|------------------------------------|------------------------|-----------------------|
|                | Nominal Value (nH) | Tolerance (%) | Test Frequency | Peak Value (Typ.) | Min. Value | Test Frequency |                   |                                    |                        |                       |
| LQN1A8N8J(K)04 | 8.8                | ±5 (±10)      | 100MHz         | 100               | 60         | 436MHz         | 0.029±40%         | 1000                               | 750                    | -25 to +85°C          |
| LQN1A15NJ(K)04 | 14.7               |               |                |                   |            |                | 0.035±40%         |                                    | 680                    |                       |
| LQN1A17NJ(K)04 | 17                 |               |                |                   |            |                | 0.037±40%         |                                    | 650                    |                       |
| LQN1A23NJ(K)04 | 23                 |               |                |                   |            |                | 0.046±40%         |                                    | 590                    |                       |
| LQN1A27NJ(K)04 | 27                 |               |                |                   |            |                | 0.051±40%         |                                    | 560                    |                       |
| LQN1A33NJ(K)04 | 33                 |               |                |                   |            |                | 0.057±40%         |                                    | 530                    |                       |
| LQN1A39NJ(K)04 | 39                 |               |                |                   |            |                | 0.067±40%         |                                    | 490                    |                       |
| LQN1A47NJ(K)04 | 47                 |               |                |                   |            |                | 0.110±40%         |                                    | 380                    |                       |
| LQN1A56NJ(K)04 | 56                 |               |                |                   |            |                | 0.140±40%         |                                    | 330                    |                       |
| LQN1A64NJ(K)04 | 64                 |               |                |                   |            |                | 0.180±40%         |                                    | 290                    |                       |
| LQN1A84NJ(K)04 | 84                 |               |                |                   |            |                | 0.280±40%         |                                    | 240                    |                       |
| LQN1AR10J(K)04 | 100                |               |                |                   |            |                | 0.300±40%         |                                    | 230                    |                       |

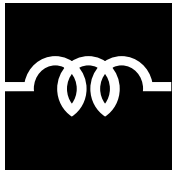
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Q-Frequency Characteristics



● Inductance-Frequency Characteristics





# CHIP COIL



High Q Chip Coil **LQN1H** for High Frequency

## Wire Wound Chip Coil with High Q from 30MHz to 150MHz and Stable Inductance

The LQN1H series consists of wire wound chip coils which use ferrite cores for high frequency application. Their high Q values from 30MHz to 150MHz and low DC resistance make them suitable in high-frequency resonator circuits.

### FEATURES

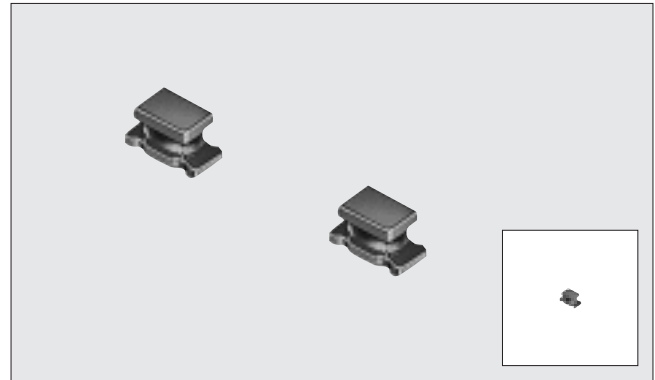
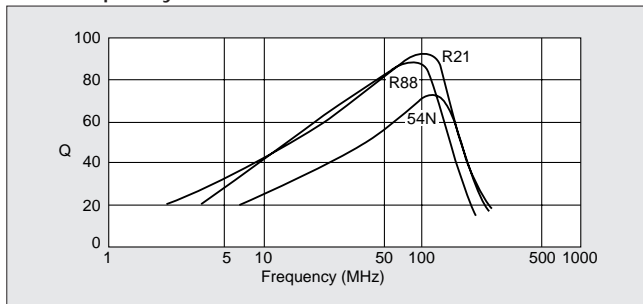
1. Same dimensions as LQN1A/LQH1N/LQH1C series enables design flexibility.
2. Broad range of inductance 54 to 880nH.
3. High Q value and stable inductance at high frequency (30MHz to 150MHz).
4. Both flow and reflow soldering methods are applicable due to excellent solder heat resistance.
5. Miniature size (3.2X1.6X1.8mm) allows parallel mounting at 2.5mm pitch.

### APPLICATIONS

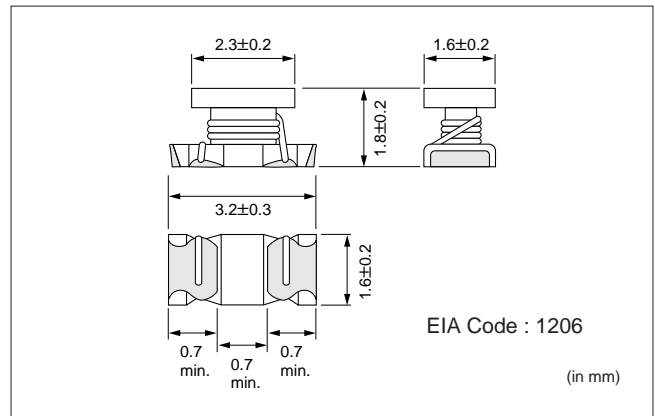
- Voltage controlled oscillators, traps, and filter circuits in mobile communication equipments, cordless phones, various radio equipment, FM radio turners, TV turners (VHF low), VIF circuits.

### TYPICAL ELECTRICAL CHARACTERISTICS

- Q-Frequency Characteristics

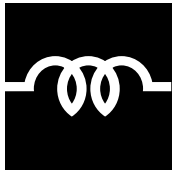


### DIMENSIONS



### SPECIFICATIONS

| Part Number    | Inductance         |               |                | Q                 |            |                | DC Resistance (Ω) | Self-resonant Frequency (MHz min.) | Allowable Current (mA) | Operating Temp. Range |     |
|----------------|--------------------|---------------|----------------|-------------------|------------|----------------|-------------------|------------------------------------|------------------------|-----------------------|-----|
|                | Nominal Value (nH) | Tolerance (%) | Test Frequency | Peak Value (Typ.) | Min. Value | Test Frequency |                   |                                    |                        |                       |     |
| LQN1H54NK04    | 54                 | ±10           | 1MHz           | 65                | 50         | 100MHz         | 0.035±30%         | 800                                | 920                    | -25 to +85°C          |     |
| LQN1H95NK04    | 95                 |               |                | 75                |            |                | 0.047±30%         | 650                                | 790                    |                       |     |
| LQN1HR14K(J)04 | 145                | 80            |                | 0.061±30%         |            |                | 500               | 700                                |                        |                       |     |
| LQN1HR21K(J)04 | 215                | ±10           |                | 85                | 60         |                | 0.11 ±30%         | 430                                | 520                    |                       |     |
| LQN1HR29K(J)04 | 290                |               |                |                   |            |                | 0.17 ±30%         | 360                                | 420                    |                       |     |
| LQN1HR39K(J)04 | 390                | (±5)          |                | 85                | 60         |                | 100MHz            | 0.26 ±30%                          | 300                    |                       | 330 |
| LQN1HR50K(J)04 | 500                |               |                |                   |            |                |                   | 0.44 ±30%                          | 270                    |                       | 260 |
| LQN1HR61K(J)04 | 610                | ±10           |                | 85                | 60         |                | 100MHz            | 0.48 ±30%                          | 240                    |                       | 250 |
| LQN1HR75K(J)04 | 750                |               |                |                   |            |                |                   | 0.79 ±30%                          | 220                    |                       | 190 |
| LQN1HR88K(J)04 | 880                |               |                |                   |            |                |                   | 0.86 ±30%                          | 200                    |                       | 180 |



# CHIP COIL



Miniature Chip Coil **LQH1C/LQH3C/LQH4C** Series for Power Line Choke

## Miniature Chip Coil for Power Line Choke Has High Current Capacity, Low DC Resistance, Large Inductance

The LQH1C, LQH3C and LQH4C series consist of miniature chip coils with low DC resistance, high current capacity, and high impedance characteristics. These features are made possible by the development of Murata's innovative automatic winding techniques. They are excellent for use as choke coils in DC power supply circuits.

### FEATURES

1. The LQH1C, LQH3C and LQH4C series have an open magnetic structure. The series have a combined inductance range of 0.12μH to 560μH and are applicable in a wide variety of applications.
2. The series exhibit low voltage drops and small variations in inductance with respect to temperature rise and DC current level. This makes them excellent for use as power supply line choke coils.
3. The series has excellent solder heat resistance. Both flow and reflow soldering methods can be employed.

#### ● LQH1C

Miniature size (3.2×1.6×1.8mm) allows parallel mounting at 2.5mm pitch. Despite their small size, at 0.12μH these coils have a maximum current rating of 970mA.

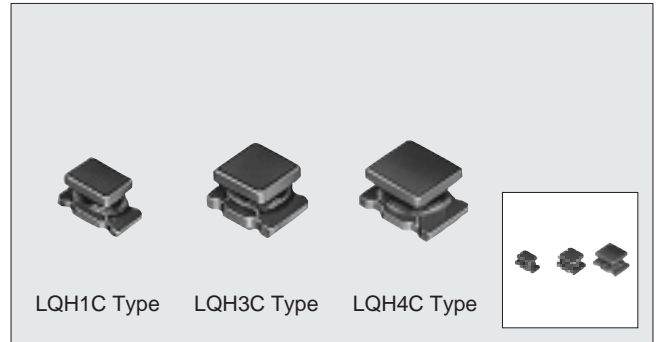
#### ● LQH3C

The low DC resistance means high current and high inductance.

For inductance ranging from 0.15μH to 10μH, LQH3C coils have very low DC resistance.

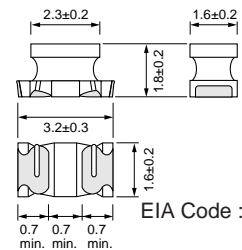
#### ● LQH4C

The LQH4C has miniature size 4.5mm×3.2mm and realized low height 2.8mm max.



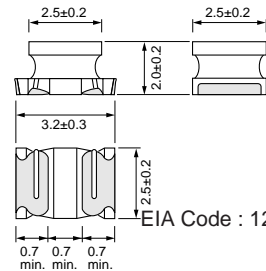
### DIMENSIONS

#### LQH1C Type



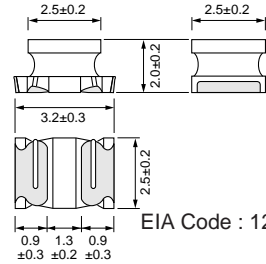
EIA Code : 1206

#### LQH3C xx24 Series



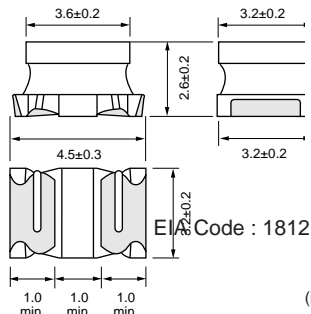
EIA Code : 1210

#### LQH3C xx34 Series



EIA Code : 1210

#### LQH4C Type



EIA Code : 1812

(in mm)

■SPECIFICATIONS

LQH1C

| Part Number | Inductance         |               |                | DC Resistance (Ω) | Self-resonant Frequency (MHz) |      | Allowable Current (mA) | Operating Temp. Range |
|-------------|--------------------|---------------|----------------|-------------------|-------------------------------|------|------------------------|-----------------------|
|             | Nominal Value (μH) | Tolerance (%) | Test Frequency |                   | Typ.                          | Min. |                        |                       |
| LQH1CR12M04 | 0.12               | ±20           | 1MHz           | 0.08±40%          | 900                           | 250  | 970                    | -25 to +85°C          |
| LQH1CR22M04 | 0.22               |               |                | 570               | 850                           |      |                        |                       |
| LQH1CR47M04 | 0.47               |               |                | 310               | 700                           |      |                        |                       |
| LQH1C1R0M04 | 1.0                |               |                | 190               | 510                           |      |                        |                       |
| LQH1C2R2M04 | 2.2                |               |                | 110               | 430                           |      |                        |                       |
| LQH1C4R7M04 | 4.7                |               |                | 67                | 340                           |      |                        |                       |
| LQH1C100K04 | 10                 | ±10           | 1MHz           | 1.3 ±30%          | 42                            | 20   | 230                    |                       |
| LQH1C220K04 | 22                 |               |                | 3.0 ±30%          | 26                            | 14   | 160                    |                       |
| LQH1C470K04 | 47                 |               |                | 8.0 ±30%          | 18                            | 10   | 100                    |                       |
| LQH1C101K04 | 100                |               |                | 12.0 ±30%         | 12                            | 7    | 80                     |                       |

LQH3C

| Part Number  | Inductance         |               |                | DC Resistance (Ω) | Self-resonant Frequency (MHz) |      | Allowable Current (mA) | Operating Temp. Range |     |
|--------------|--------------------|---------------|----------------|-------------------|-------------------------------|------|------------------------|-----------------------|-----|
|              | Nominal Value (μH) | Tolerance (%) | Test Frequency |                   | Typ.                          | Min. |                        |                       |     |
| LQH3CR15M24* | 0.15               | ±20           | 1MHz           | 0.028±30%         | 680                           | 400  | 1450                   | -25 to +85°C          |     |
| LQH3CR27M24* | 0.27               |               |                | 0.034±30%         | 490                           | 250  | 1250                   |                       |     |
| LQH3CR47M24* | 0.47               |               |                | 0.042±30%         | 370                           | 150  | 1100                   |                       |     |
| LQH3C1R0M24* | 1.0                |               |                | 0.060±30%         | 200                           | 100  | 1000                   |                       |     |
| LQH3C2R2M24* | 2.2                |               |                | 0.097±30%         | 120                           | 64   | 790                    |                       |     |
| LQH3C4R7M24* | 4.7                |               |                | 0.15 ±30%         | 77                            | 43   | 650                    |                       |     |
| LQH3C100K24* | 10                 | ±10           | 1MHz           | 0.30 ±30%         | 50                            | 26   | 450                    |                       |     |
| LQH3C1R0M34  | 1.0                | ±20           |                | 0.09 ±30%         | 150                           | 96   | 800                    |                       |     |
| LQH3C2R2M34  | 2.2                |               |                | 0.13 ±30%         | 100                           | 64   | 600                    |                       |     |
| LQH3C4R7M34  | 4.7                |               |                | 0.20 ±30%         | 66                            | 43   | 450                    |                       |     |
| LQH3C100K34  | 10                 | ±10           |                | 1MHz              | 0.44 ±30%                     | 40   | 26                     |                       | 300 |
| LQH3C220K34  | 22                 |               |                |                   | 0.71 ±30%                     | 27   | 19                     |                       | 250 |
| LQH3C470K34  | 47                 |               | 1.3 ±30%       |                   | 19                            | 15   | 170                    |                       |     |
| LQH3C101K34  | 100                |               | 3.5 ±30%       |                   | 13                            | 10   | 100                    |                       |     |
| LQH3C221K34  | 220                |               | 8.4 ±30%       |                   | 8.5                           | 6.8  | 70                     |                       |     |
| LQH3C331K34  | 330                |               | 10.0 ±30%      |                   | 7.0                           | 5.6  | 60                     |                       |     |
| LQH3C391K34  | 390                | 1kHz          | 17.0 ±30%      | 6.6               | 5.0                           |      |                        |                       |     |
| LQH3C471K34  | 470                |               | 19.0 ±30%      | 6.2               |                               |      |                        |                       |     |
| LQH3C561K34  | 560                | 22.0 ±30%     | 5.7            |                   |                               |      |                        |                       |     |

\*Low DC Resistance type.

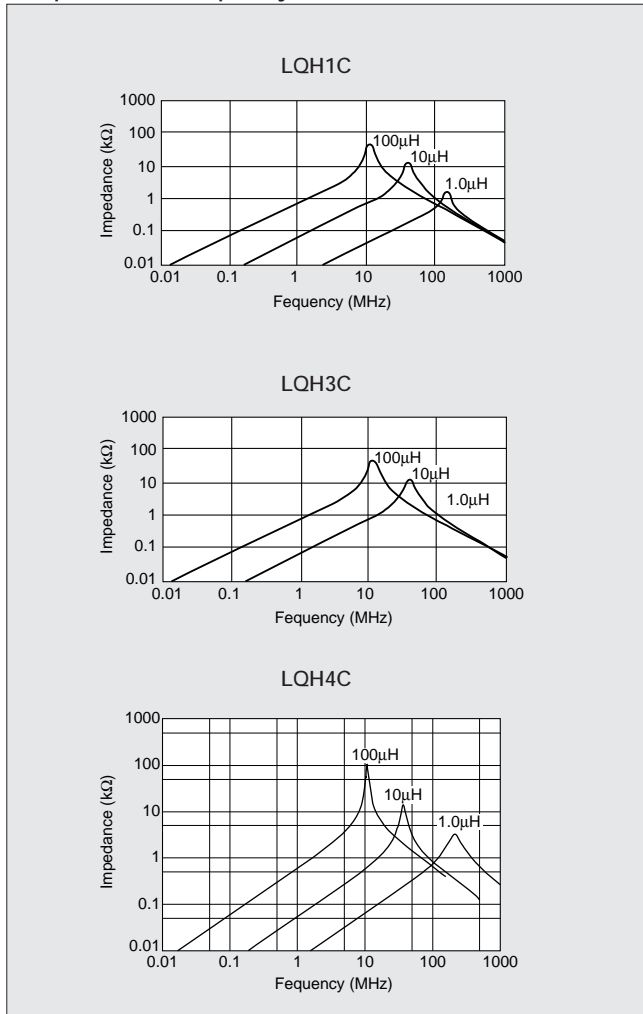
LQH4C

| Part Number | Inductance         |               |                | DC Resistance (Ω max.) | Self-resonant Frequency (MHz) | Allowable Current (mA) | Operating Temp. Range |    |
|-------------|--------------------|---------------|----------------|------------------------|-------------------------------|------------------------|-----------------------|----|
|             | Nominal Value (μH) | Tolerance (%) | Test Frequency |                        |                               |                        |                       |    |
| LQH4C1R0M04 | 1.0                | ±20           | 1MHz           | 0.08                   | 100                           | 1080                   | -25 to +85°C          |    |
| LQH4C1R5M04 | 1.5                |               |                | 0.09                   | 85                            | 1000                   |                       |    |
| LQH4C2R2M04 | 2.2                |               |                | 0.11                   | 60                            | 900                    |                       |    |
| LQH4C3R3M04 | 3.3                |               |                | 0.13                   | 47                            | 800                    |                       |    |
| LQH4C4R7M04 | 4.7                |               |                | 0.15                   | 35                            | 750                    |                       |    |
| LQH4C6R8M04 | 6.8                |               |                | 0.20                   | 30                            | 720                    |                       |    |
| LQH4C100K04 | 10                 | ±10           | 1MHz           | 0.24                   | 23                            | 650                    |                       |    |
| LQH4C150K04 | 15                 |               |                | 0.32                   | 20                            | 570                    |                       |    |
| LQH4C220K04 | 22                 |               |                | 0.6                    | 15                            | 420                    |                       |    |
| LQH4C330K04 | 33                 |               |                | 1.0                    | 12                            | 310                    |                       |    |
| LQH4C470K04 | 47                 |               |                | 1.1                    | 10                            | 280                    |                       |    |
| LQH4C680K04 | 68                 |               |                | 1.7                    | 8.4                           | 220                    |                       |    |
| LQH4C101K04 | 100                |               |                | 2.2                    | 6.8                           | 190                    |                       |    |
| LQH4C151K04 | 150                |               |                | 3.5                    | 5.5                           | 130                    |                       |    |
| LQH4C221K04 | 220                |               |                | 4.0                    | 4.5                           | 110                    |                       |    |
| LQH4C331K04 | 330                |               |                | 6.8                    | 3.6                           | 100                    |                       |    |
| LQH4C471K04 | 470                |               |                | 1kHz                   | 8.5                           | 3.0                    |                       | 90 |

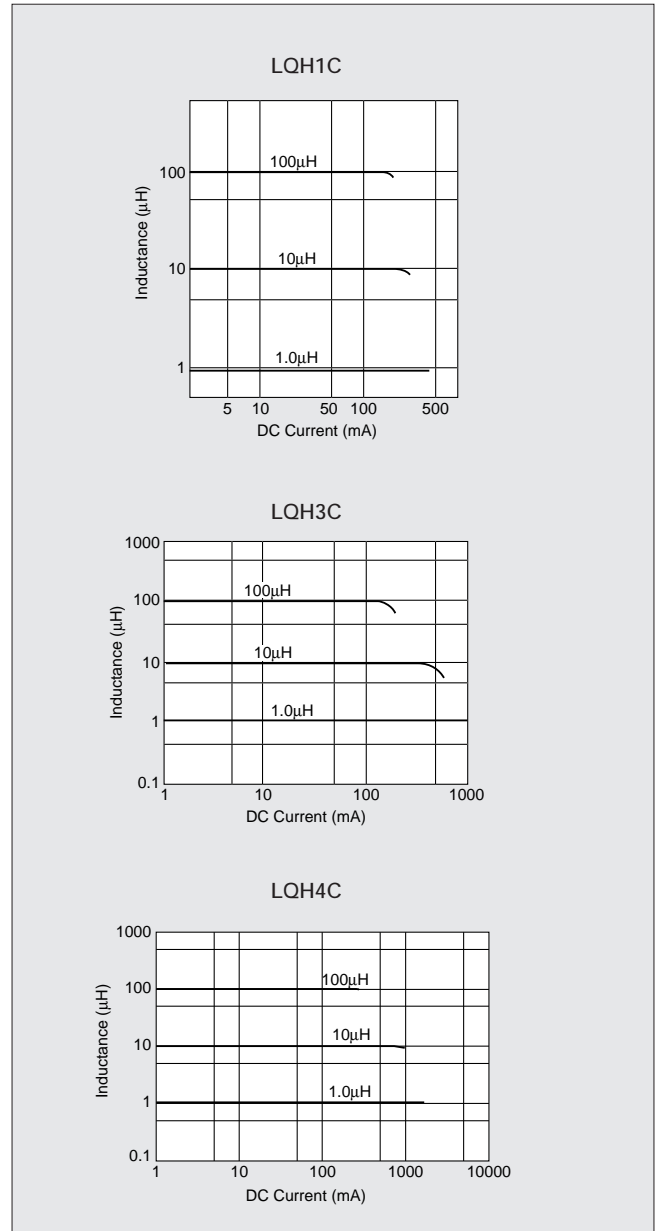


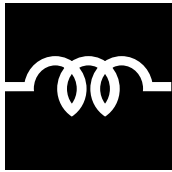
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Impedance - Frequency Characteristics



● Direct Current Characteristics





# CHIP COIL



## Multilayer Chip Coil **LQG21C** Series

# Low DC Resistance Choke for Power Lines Has Magnetically Shielded Structure

The LQG21C series consists of magnetically shielded chip coil developed with original Murata multilayer process technology and incorporating magnetic materials. It has less than half the DC resistance of our conventional multilayer chip coils as well as high inductance.

### ■FEATURES

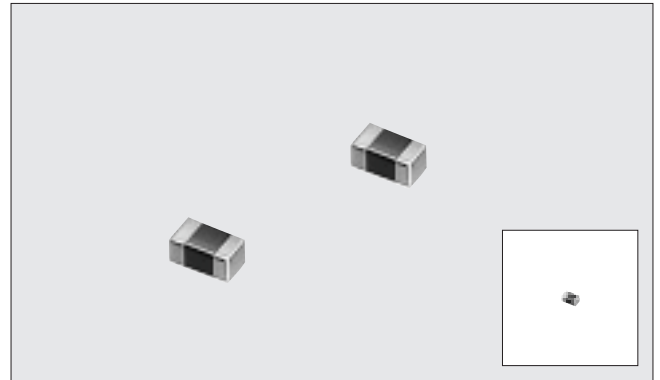
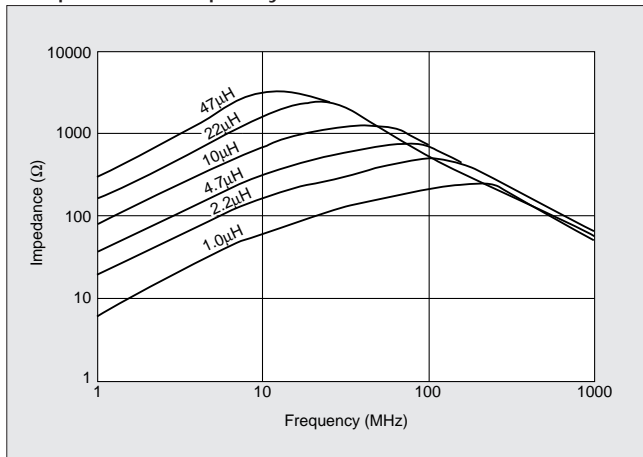
1. The inductors have very low DC resistance.
2. The series has an inductance range of 1.0μH to 47μH.
3. Magnetically shielded structure provides excellent crosstalk characteristics.
4. Compact (2.0×1.25mm) and lightweight.
5. Outstanding solder heat resistance. Either flow or reflow soldering methods can be employed.

### ■APPLICATIONS

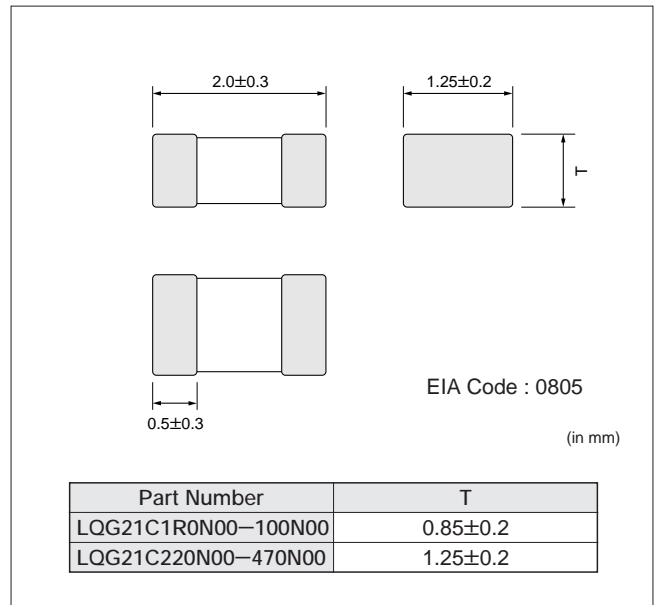
- Power lines (for choke use)

### ■TYPICAL ELECTRICAL CHARACTERISTICS

- Impedance-Frequency Characteristics

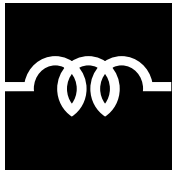


### ■DIMENSIONS



### ■SPECIFICATIONS

| Part Number  | Inductance         |               |                | DC Resistance (Ω max.) | Self-resonant Frequency (MHz) |      | Allowable Current (mA) | Operating Temp. Range |
|--------------|--------------------|---------------|----------------|------------------------|-------------------------------|------|------------------------|-----------------------|
|              | Nominal Value (μH) | Tolerance (%) | Test Frequency |                        | Typ.                          | Min. |                        |                       |
| LQG21C1R0N00 | 1.0                | ±30           | 1MHz           | 0.10                   | 150                           | 75   | 60                     | -40 to +85°C          |
| LQG21C2R2N00 | 2.2                |               |                | 0.17                   | 100                           | 50   | 40                     |                       |
| LQG21C4R7N00 | 4.7                |               |                | 0.30                   | 70                            | 35   | 30                     |                       |
| LQG21C100N00 | 10                 |               |                | 0.50                   | 45                            | 24   | 15                     |                       |
| LQG21C220N00 | 22                 |               |                | 0.65                   | 20                            | 16   | 13                     |                       |
| LQG21C470N00 | 47                 |               |                | 1.20                   | -                             | 7.5  | 7                      |                       |



# CHIP COIL



## Multilayer Chip Coil **LQG21F** Series

# Magnetically Shielded Multilayer Chip Coil for Choke with Excellent Direct Current Characteristics

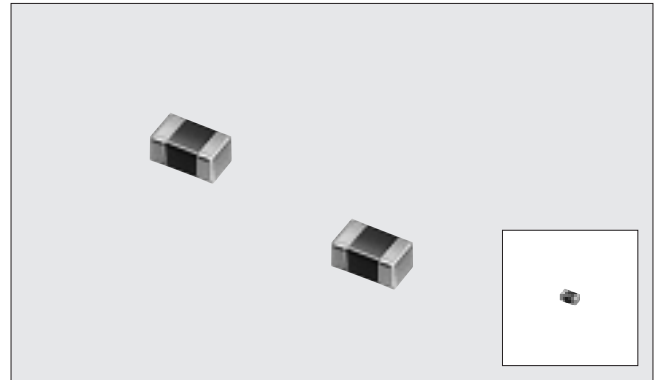
LQG21F series consists of magnetically shielded chip coils based on Murata's technologies of multilayer process and magnetic materials. Excellent direct current characteristics are realized by using magnetic materials which have excellent saturation characteristics. The inductance of LQG21F is four times as large as that of conventional items.

### ■FEATURES

1. LQG21F series is suitable for power line choke because of its excellent direct current characteristics. The series has larger rated current (60mA at 10μH) than conventional rated current.
2. Low DC resistance is realized.
3. The cross talk characteristics are excellent because of the use of magnetically shielded structure.
4. Small size (2.0×1.25mm) and light weight.
5. The series has excellent solder heat resistance. Both flow and reflow soldering can be employed.

### ■APPLICATIONS

- Circuits for DC power line choke of telecommunication equipment such as DVC, digital camera, PDA, MD and DVD-RAM.



### ■DIMENSIONS

EIA Code : 0805  
(in mm)

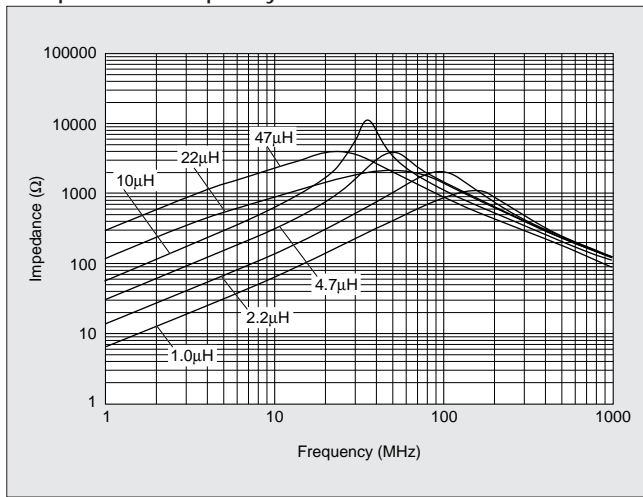
| Part Number         | T        |
|---------------------|----------|
| LQG21F1R0N00-2R2N00 | 0.85±0.2 |
| LQG21F4R7N00-47N000 | 1.25±0.2 |

### ■SPECIFICATIONS

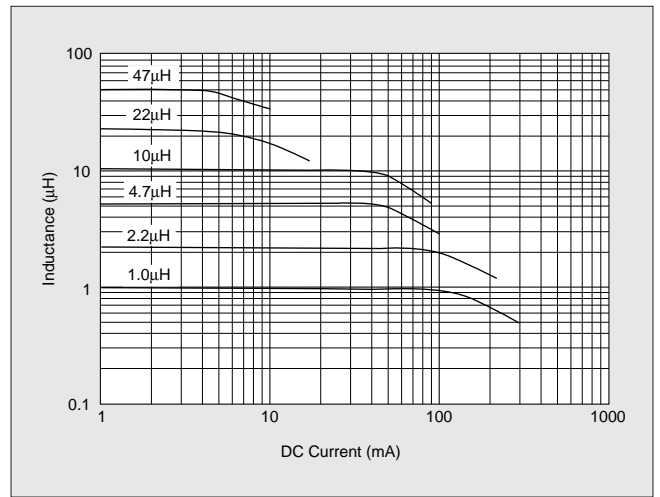
| Part Number  | Inductance         |               |                | DC Resistance (Ω ±30%) | Self-resonant Frequency (MHz Min.) | Allowable Current (mA) | Operating Temp. Range |
|--------------|--------------------|---------------|----------------|------------------------|------------------------------------|------------------------|-----------------------|
|              | Nominal Value (μH) | Tolerance (%) | Test Frequency |                        |                                    |                        |                       |
| LQG21F1R0N00 | 1.0                | ±30           | 1MHz           | 0.20                   | 105                                | 220                    | -40 to +85°C          |
| LQG21F2R2N00 | 2.2                |               |                | 0.28                   | 70                                 | 150                    |                       |
| LQG21F4R7N00 | 4.7                |               |                | 0.30                   | 25                                 | 80                     |                       |
| LQG21F100N00 | 10                 |               |                | 0.50                   | 15                                 | 60                     |                       |
| LQG21F220N00 | 22                 |               |                | 0.35                   | 15                                 | 13                     |                       |
| LQG21F470N00 | 47                 |               |                | 0.60                   | 7.5                                | 7                      |                       |

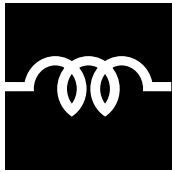
■ TYPICAL ELECTRICAL CHARACTERISTICS

● Impedance Frequency Characteristics



● Direct Current Characteristics





# CHIP COIL



## Multilayer Chip Coil **LQG3216F** Series

# Magnetically Shielded Multilayer Thin Type Chip Coil with Excellent Direct Current Characteristics

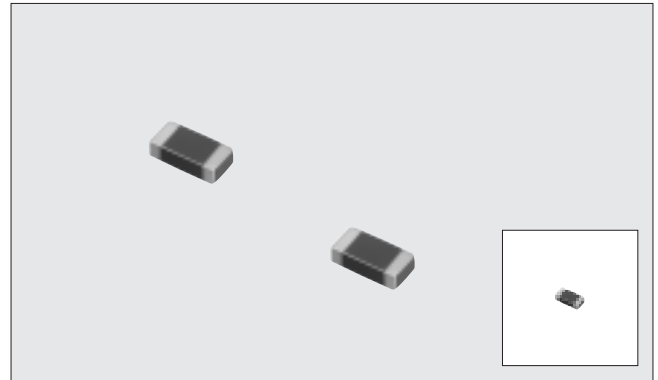
LQG3216F series consists of magnetically shielded chip coils based on Murata's technologies of multilayer process and magnetic materials. Excellent direct current characteristics and low DC resistance are realized by using magnetic materials which have excellent saturation characteristics and high permeability.

### ■FEATURES

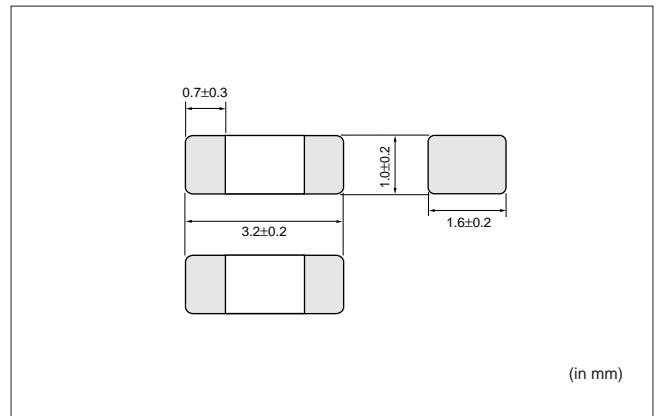
1. LQG3216F series is suitable for power line choke because of its excellent direct current characteristics and large rated current. (70mA at 10μH)
2. Low DC resistance is realized.
3. The cross talk characteristics are excellent because of magnetically shielded structure.
4. Low profile 1.0mm.
5. The series has excellent solder heat resistance. Both flow and reflow soldering can be employed.

### ■APPLICATIONS

- Circuits for DC power line choke of telecommunication equipments such as PDA, Note-PC, digital camera, PDA, DVC, MD and DVD-RAM.



### ■DIMENSIONS

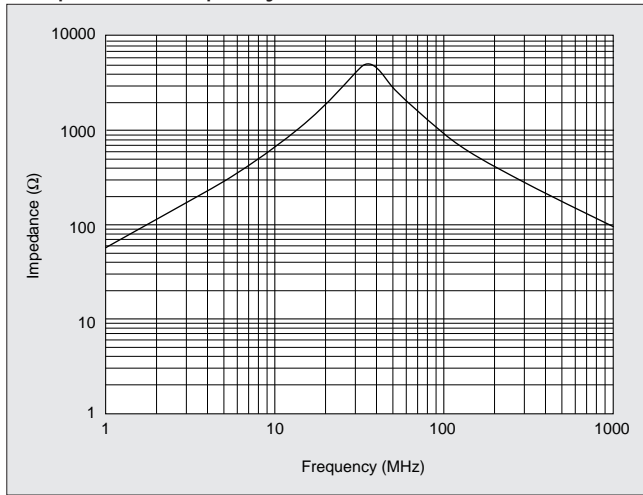


### ■SPECIFICATIONS

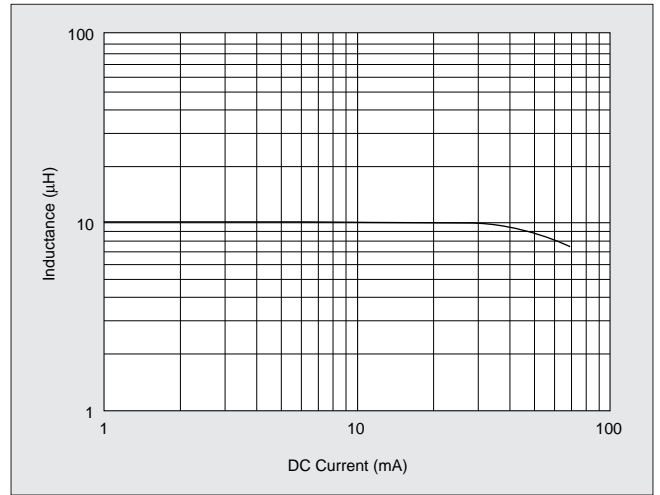
| Part Number    | Inductance         |               |                | DC Resistance (Ω max.) | Self-resonant Frequency (MHz Min.) | Allowable Current (mA) | Operating Temp. Range |
|----------------|--------------------|---------------|----------------|------------------------|------------------------------------|------------------------|-----------------------|
|                | Nominal Value (μH) | Tolerance (%) | Test Frequency |                        |                                    |                        |                       |
| LQG3216F100M00 | 10                 | ±20           | 1MHz           | 0.50                   | 20                                 | 70                     | -40 to +85°C          |

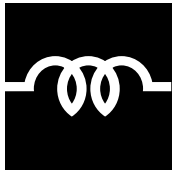
### ■ TYPICAL ELECTRICAL CHARACTERISTICS

#### ● Impedance Frequency Characteristics



#### ● Direct Current Characteristics





# CHIP COIL



## Magnetically Shielded Choke Coil **LQS33C** Series

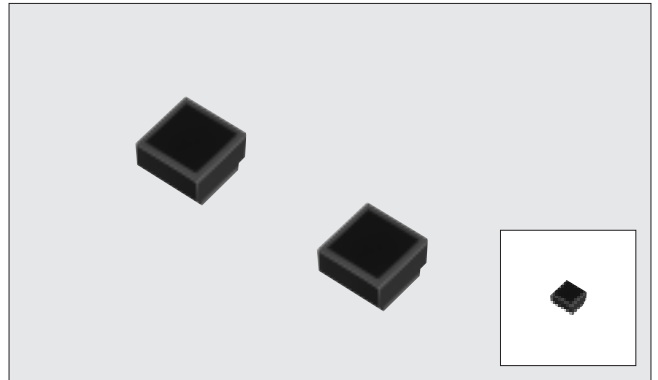
### Small Size, Low Profile and Magnetically Shielded Chip Coil for Choke Excellent for EL Back Light Driver Circuit

#### ■FEATURES

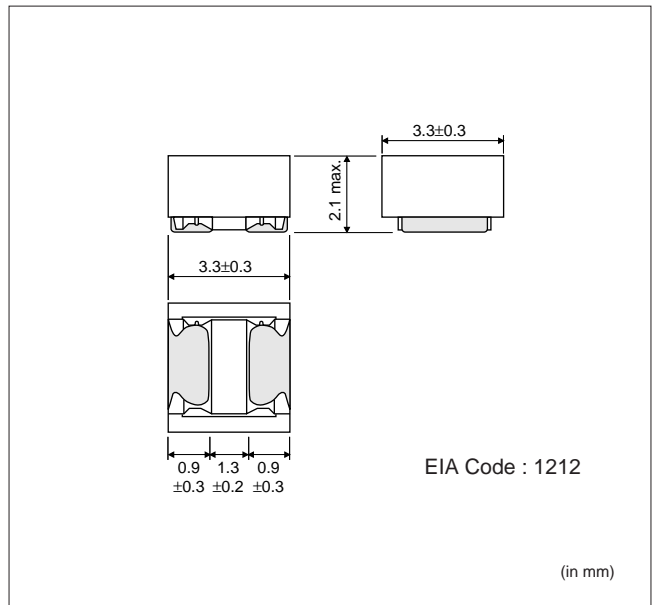
1. Low profile dimension (2.1mm max.) and small size of 1212 (3.3×3.3mm) is suitable for portable equipment.
2. The series have low DC Resistance.
3. LQS33C series have large inductance of 560μH to 2200μH.
4. Magnetically shielded structure prevents interference occurring between peripheral components.

#### ■APPLICATIONS

- For EL back light driver circuit



#### ■DIMENSIONS

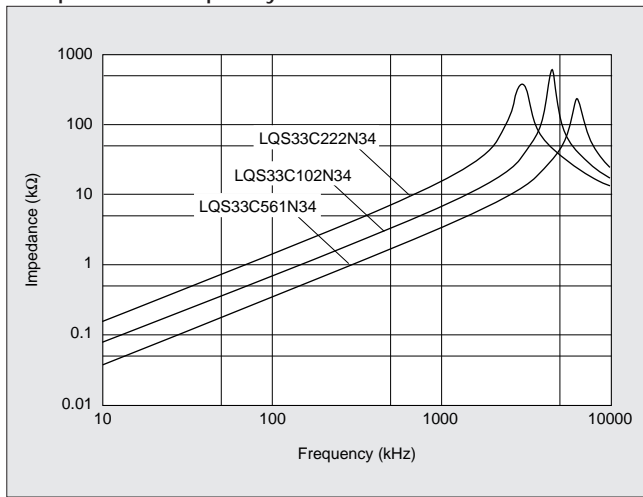


#### ■SPECIFICATIONS

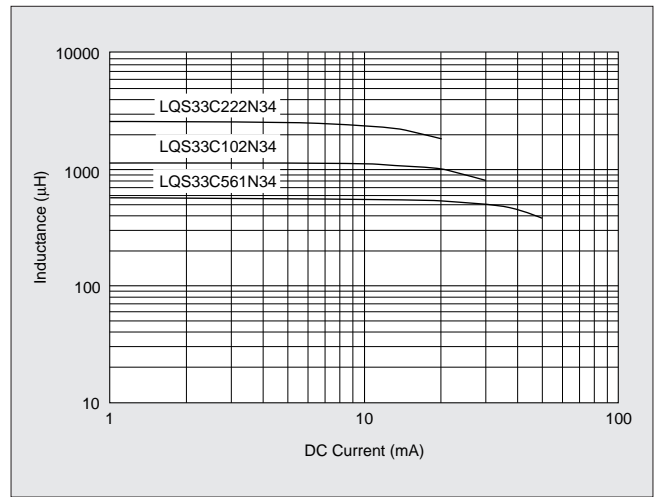
| Part Number  | Inductance         |               |                | DC Resistance (Ω ±30%) | Self-resonant Frequency (MHz Min.) | Allowable Current (mA) | Operating Temp. Range |
|--------------|--------------------|---------------|----------------|------------------------|------------------------------------|------------------------|-----------------------|
|              | Nominal Value (μH) | Tolerance (%) | Test Frequency |                        |                                    |                        |                       |
| LQS33C561N34 | 560                | ±30           | 100kHz         | 7.8                    | 3.0                                | 50                     | -25<br>to<br>+85°C    |
| LQS33C681N34 | 680                |               |                | 9.1                    | 2.6                                | 40                     |                       |
| LQS33C102N34 | 1000               |               | 10kHz          | 11                     | 2.1                                | 30                     |                       |
| LQS33C152N34 | 1500               |               |                | 23                     | 1.7                                | 25                     |                       |
| LQS33C222N34 | 2200               |               |                | 28                     | 1.5                                | 20                     |                       |

■ TYPICAL ELECTRICAL CHARACTERISTICS

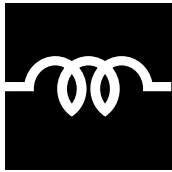
● Impedance Frequency Characteristics



● Direct Current Characteristics







# CHIP COIL



## Large Current Choke Coil **LQN6C/LQS66C** Series

### Choke Coil for DC/DC Converters and DC Power Lines with Low DC Resistance, Large Current Capacity and Large Inductance

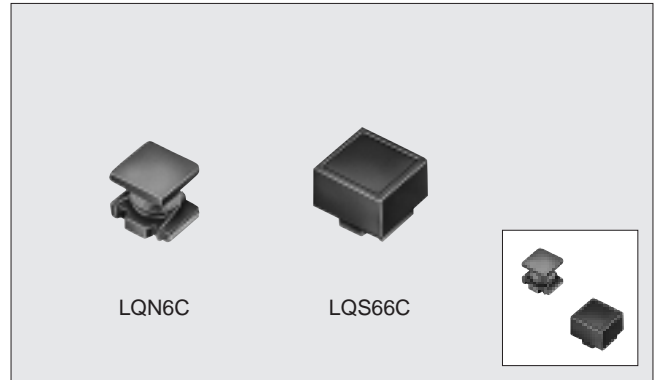
The LQN6C/LQS66C series are choke coils which have achieved low direct current resistance, large current capacity and large inductance by using high performance thick wire wrapping technology. Because the LQS66C series has a shielded construction, it can be mounted in high density without interference occurring between peripheral components. They are optimum for use as choke coils in DC/DC converters and DC power supply circuits.

#### ■FEATURES

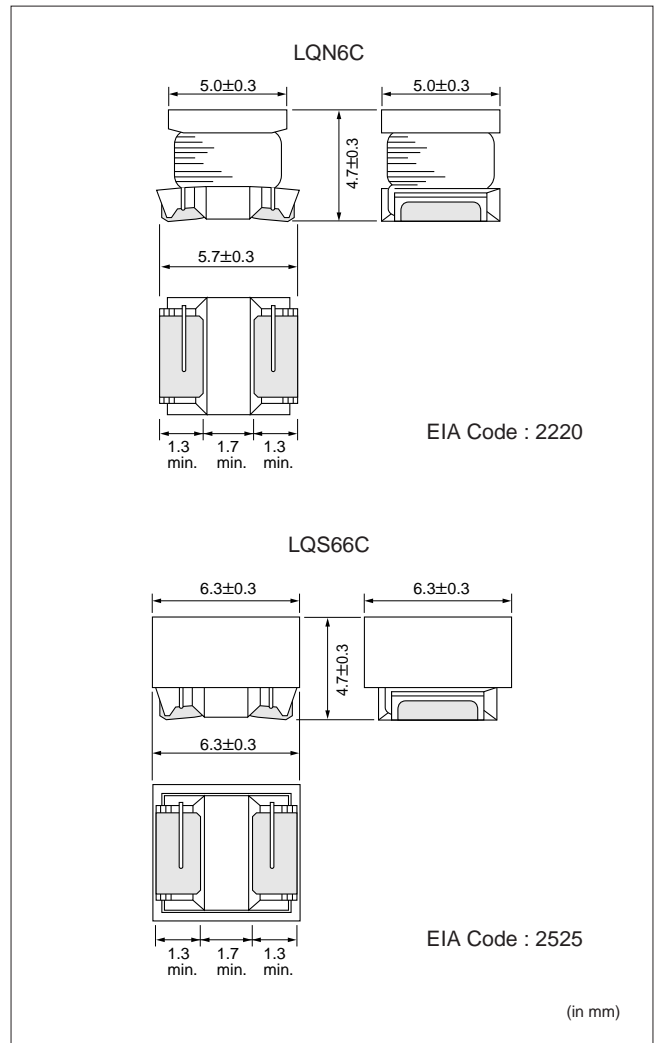
1. Both the LQN6C series with its open magnetic path construction and the LQS66C series with its magnetic shielding construction allow application to a wide variety of uses.
2. The inductance range covers from 0.12μH up to 10000μH allowing minute compatibility with the E6 series at 1μH to 1000μH.
3. Because the direct current resistance is small as well as the voltage drop and power consumption being small also, they are optimum for use as choke coils for DC power supply circuits.

#### ■APPLICATIONS

- Camcorders, portable AV equipment, etc.
- DC/DC converters and DC power supplies.



#### ■DIMENSIONS



## ■ SPECIFICATIONS

### LQN6C

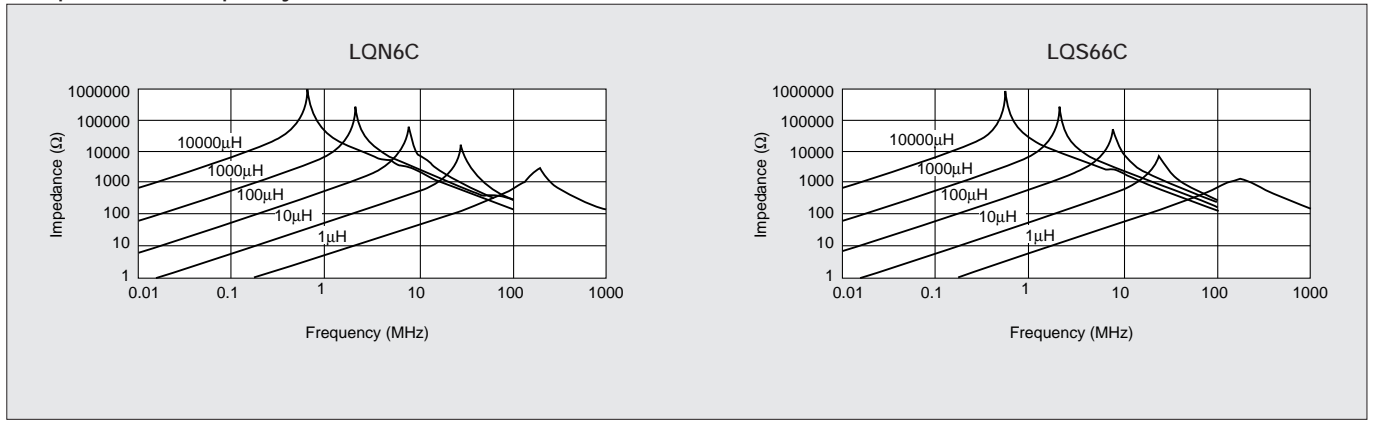
| Part Number | Inductance                      |               |                | DC Resistance ( $\Omega \pm 40\%$ ) | Self-resonant Frequency (MHz min.) | Allowable Current (A) | Operating Temp. Range |
|-------------|---------------------------------|---------------|----------------|-------------------------------------|------------------------------------|-----------------------|-----------------------|
|             | Nominal Value ( $\mu\text{H}$ ) | Tolerance (%) | Test Frequency |                                     |                                    |                       |                       |
| LQN6CR12M04 | 0.12                            | $\pm 20$      | 1MHz           | 0.007                               | 450                                | 6.0                   | -25 to +80°C          |
| LQN6CR27M04 | 0.27                            |               |                | 0.010                               | 300                                | 5.3                   |                       |
| LQN6CR47M04 | 0.47                            |               |                | 0.013                               | 200                                | 4.8                   |                       |
| LQN6C1R0M04 | 1.0                             |               |                | 0.019                               | 150                                | 4.0                   |                       |
| LQN6C1R5M04 | 1.5                             |               |                | 0.022                               | 110                                | 3.7                   |                       |
| LQN6C2R2M04 | 2.2                             |               |                | 0.029                               | 80                                 | 3.2                   |                       |
| LQN6C3R3M04 | 3.3                             |               |                | 0.036                               | 40                                 | 2.9                   |                       |
| LQN6C4R7M04 | 4.7                             |               |                | 0.041                               | 30                                 | 2.7                   |                       |
| LQN6C6R8M04 | 6.8                             |               |                | 0.074                               | 25                                 | 2.0                   |                       |
| LQN6C100M04 | 10                              |               |                | 0.093                               | 20                                 | 1.7                   |                       |
| LQN6C150M04 | 15                              |               |                | 0.15                                | 17                                 | 1.4                   |                       |
| LQN6C220M04 | 22                              |               |                | 0.19                                | 15                                 | 1.2                   |                       |
| LQN6C330M04 | 33                              |               | 0.32           | 12                                  | 0.9                                |                       |                       |
| LQN6C470M04 | 47                              |               | 0.40           | 10                                  | 0.8                                |                       |                       |
| LQN6C680M04 | 68                              |               | 0.67           | 7.6                                 | 0.64                               |                       |                       |
| LQN6C101M04 | 100                             |               | 0.86           | 6.5                                 | 0.56                               |                       |                       |
| LQN6C151M04 | 150                             |               | 1.9            | 5.0                                 | 0.42                               |                       |                       |
| LQN6C221M04 | 220                             |               | 2.4            | 4.0                                 | 0.32                               |                       |                       |
| LQN6C331M04 | 330                             |               | 4.4            | 3.1                                 | 0.27                               |                       |                       |
| LQN6C471M04 | 470                             |               | 5.4            | 2.4                                 | 0.24                               |                       |                       |
| LQN6C681M04 | 680                             |               | 8.1            | 1.9                                 | 0.19                               |                       |                       |
| LQN6C102M04 | 1000                            |               | 10.3           | 1.7                                 | 0.15                               |                       |                       |
| LQN6C222M04 | 2200                            |               | 21.5           | 1.2                                 | 0.10                               |                       |                       |
| LQN6C472M04 | 4700                            |               | 43.6           | 0.8                                 | 0.07                               |                       |                       |
| LQN6C103M04 | 10000                           |               | 100            | 0.5                                 | 0.05                               |                       |                       |

### LQS66C

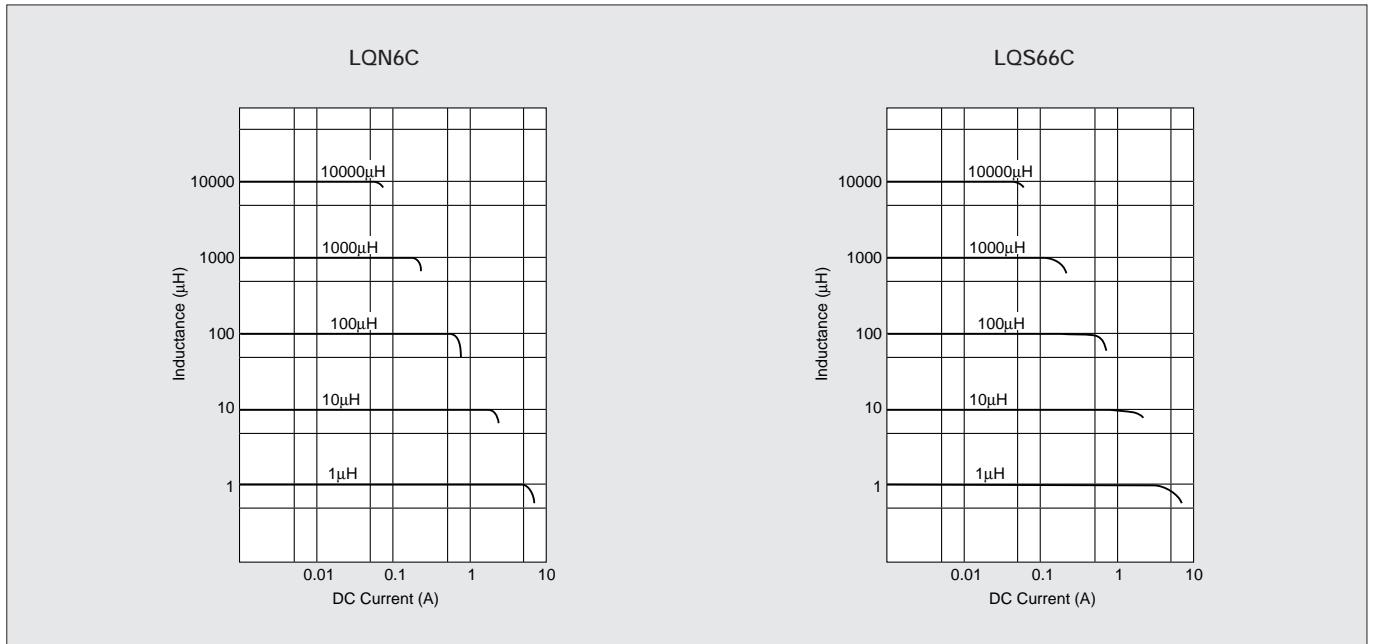
| Part Number  | Inductance                      |               |                | DC Resistance ( $\Omega \pm 40\%$ ) | Self-resonant Frequency (MHz min.) | Allowable Current (A) | Operating Temp. Range |
|--------------|---------------------------------|---------------|----------------|-------------------------------------|------------------------------------|-----------------------|-----------------------|
|              | Nominal Value ( $\mu\text{H}$ ) | Tolerance (%) | Test Frequency |                                     |                                    |                       |                       |
| LQS66CR27M04 | 0.27                            | $\pm 20$      | 1MHz           | 0.007                               | 300                                | 6.0                   | -25 to +80°C          |
| LQS66CR68M04 | 0.68                            |               |                | 0.010                               | 180                                | 5.3                   |                       |
| LQS66C1R0M04 | 1.0                             |               |                | 0.013                               | 150                                | 4.7                   |                       |
| LQS66C1R5M04 | 1.5                             |               |                | 0.016                               | 110                                | 3.8                   |                       |
| LQS66C2R2M04 | 2.2                             |               |                | 0.019                               | 80                                 | 3.3                   |                       |
| LQS66C3R3M04 | 3.3                             |               |                | 0.022                               | 40                                 | 2.6                   |                       |
| LQS66C4R7M04 | 4.7                             |               |                | 0.025                               | 30                                 | 2.2                   |                       |
| LQS66C6R8M04 | 6.8                             |               |                | 0.029                               | 25                                 | 1.8                   |                       |
| LQS66C100M04 | 10                              |               |                | 0.036                               | 20                                 | 1.6                   |                       |
| LQS66C150M04 | 15                              |               |                | 0.069                               | 17                                 | 1.3                   |                       |
| LQS66C220M04 | 22                              |               |                | 0.087                               | 15                                 | 1.1                   |                       |
| LQS66C330M04 | 33                              |               |                | 0.14                                | 12                                 | 0.86                  |                       |
| LQS66C470M04 | 47                              |               | 0.17           | 10                                  | 0.76                               |                       |                       |
| LQS66C680M04 | 68                              |               | 0.29           | 7.6                                 | 0.60                               |                       |                       |
| LQS66C101M04 | 100                             |               | 0.36           | 6.5                                 | 0.52                               |                       |                       |
| LQS66C151M04 | 150                             |               | 0.63           | 5.0                                 | 0.42                               |                       |                       |
| LQS66C221M04 | 220                             |               | 0.79           | 4.0                                 | 0.35                               |                       |                       |
| LQS66C331M04 | 330                             |               | 1.8            | 3.2                                 | 0.28                               |                       |                       |
| LQS66C471M04 | 470                             |               | 2.2            | 2.5                                 | 0.24                               |                       |                       |
| LQS66C681M04 | 680                             |               | 3.9            | 2.0                                 | 0.20                               |                       |                       |
| LQS66C102M04 | 1000                            |               | 4.9            | 1.7                                 | 0.16                               |                       |                       |
| LQS66C222M04 | 2200                            |               | 9.4            | 1.2                                 | 0.10                               |                       |                       |
| LQS66C472M04 | 4700                            |               | 19.5           | 0.8                                 | 0.07                               |                       |                       |
| LQS66C103M04 | 10000                           |               | 39.7           | 0.5                                 | 0.05                               |                       |                       |

### ■ TYPICAL ELECTRICAL CHARACTERISTICS

#### ● Impedance - Frequency Characteristics



#### ● Direct Current Characteristics


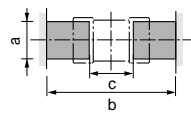

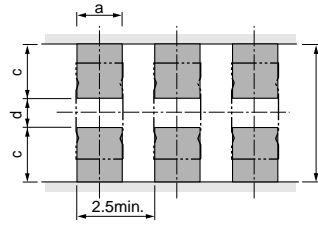

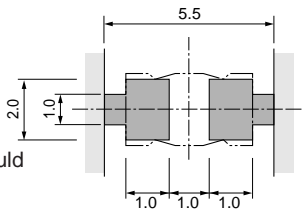

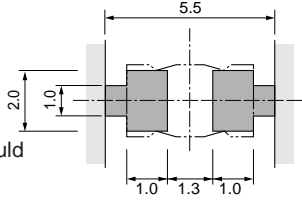

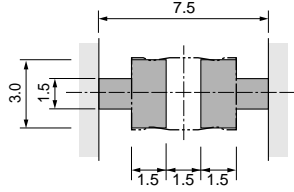

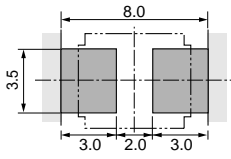


Notice of Chip Coil

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 coil electrode.

Land Solder Resist (in mm)

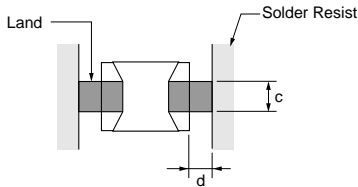
| Series  | Standard Land Dimensions (Flow and Reflow)   |   |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
|---|--|---|---------|---|---|------|---|---|--------|---------|----------|-----|--------|---------|---------|----------|--------|-----|---------|-----|---------|----------------|-----|---------|-----|----------|---------|---------|---------|---------|-----|-----|-----|----------|-----|---------|-----|
| LQG11N<br>LQG21N<br>LQG21C<br>LQG21F<br>LQG3216F<br>LQP10A/11A<br>LQG10A/11A<br> |   |   |         | <table border="1"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> </tr> </thead> <tbody> <tr> <td>LQG10A</td> <td>0.5-0.6</td> <td>1.4-1.5</td> <td>0.4</td> </tr> <tr> <td>LQG11A</td> <td>0.6-0.8</td> <td>1.8-2.2</td> <td>0.6-0.8</td> </tr> <tr> <td rowspan="2">LQG11N</td> <td rowspan="2">0.7</td> <td>2.2-2.6</td> <td rowspan="2">0.7</td> </tr> <tr> <td>1.8-2.0</td> </tr> <tr> <td>LQG21N/21C/21F</td> <td>1.0</td> <td>3.0-4.0</td> <td>1.2</td> </tr> <tr> <td>LQP10A</td> <td>0.5-0.6</td> <td>1.4-1.5</td> <td>0.4</td> </tr> <tr> <td>LQP11A</td> <td>0.7</td> <td>2.6</td> <td>0.6</td> </tr> <tr> <td>LQG3216F</td> <td>1.2</td> <td>4.2-5.2</td> <td>2.0</td> </tr> </tbody> </table> | Type  | a    | b | c | LQG10A | 0.5-0.6 | 1.4-1.5  | 0.4 | LQG11A | 0.6-0.8 | 1.8-2.2 | 0.6-0.8  | LQG11N | 0.7 | 2.2-2.6 | 0.7 | 1.8-2.0 | LQG21N/21C/21F | 1.0 | 3.0-4.0 | 1.2 | LQP10A   | 0.5-0.6 | 1.4-1.5 | 0.4     | LQP11A  | 0.7 | 2.6 | 0.6 | LQG3216F | 1.2 | 4.2-5.2 | 2.0 |
| Type  | a  | b   | c       |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQG10A  | 0.5-0.6  | 1.4-1.5   | 0.4     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQG11A  | 0.6-0.8  | 1.8-2.2   | 0.6-0.8 |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQG11N  | 0.7  | 2.2-2.6   | 0.7     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
|   |  | 1.8-2.0   |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQG21N/21C/21F  | 1.0  | 3.0-4.0   | 1.2     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQP10A  | 0.5-0.6  | 1.4-1.5   | 0.4     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQP11A  | 0.7  | 2.6   | 0.6     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQG3216F  | 1.2  | 4.2-5.2   | 2.0     |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQH1N/1C<br>LQN1A/1H<br>LQN21A<br>LQW1608A<br>                                  | If mounted at 2.5mm intervals as indicated in the diagram at left, attention should be paid to potential magnetic coupling effects when using the coil as a resonator. Refer to the coupling factor graph in the typical electrical characteristics section.<br>(LQW1608A : Reflow soldering should be applied.) |    |         |   | <table border="1"> <thead> <tr> <th>Type</th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>LQH1N/1C</td> <td>1.5</td> <td>4.5</td> <td>1.75</td> <td>1.0</td> </tr> <tr> <td>LQN1A/1H</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>LQN21A</td> <td>1.2</td> <td>3.0</td> <td>1.1</td> <td>0.8</td> </tr> <tr> <td>LQW1608A</td> <td>0.7-1.0</td> <td>1.8-2.0</td> <td>0.6-0.7</td> <td>0.6-0.8</td> </tr> </tbody> </table> | Type | a | b | c      | d       | LQH1N/1C | 1.5 | 4.5    | 1.75    | 1.0     | LQN1A/1H |        |     |         |     | LQN21A  | 1.2            | 3.0 | 1.1     | 0.8 | LQW1608A | 0.7-1.0 | 1.8-2.0 | 0.6-0.7 | 0.6-0.8 |     |     |     |          |     |         |     |
| Type  | a  | b   | c       | d   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQH1N/1C  | 1.5  | 4.5   | 1.75    | 1.0   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQN1A/1H  |  |   |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQN21A  | 1.2  | 3.0   | 1.1     | 0.8   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQW1608A  | 0.7-1.0  | 1.8-2.0   | 0.6-0.7 | 0.6-0.8   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQH3Cxx24<br>Series<br>LOS33N<br>  | (LQS33N : Reflow soldering should be applied.)   |  |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQH3N<br>LQH3Cxx34<br>Series<br>LOS33C<br>                                     | (LQS33C : Reflow soldering should be applied.)   |  |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQH4N<br>LQN4N<br>LQH4C<br>  |   |   |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |
| LQN6C<br>LQS66C<br>  | (LQN6C/LQS66C : Reflow soldering should be applied.)   |  |         |   |   |      |   |   |        |         |          |     |        |         |         |          |        |     |         |     |         |                |     |         |     |          |         |         |         |         |     |     |     |          |     |         |     |

Notice of Chip Coil

2. 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 below) cause floating and electrode cracks.

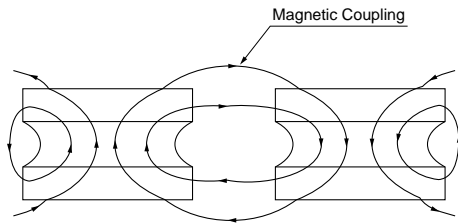


② Magnetic Coupling

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

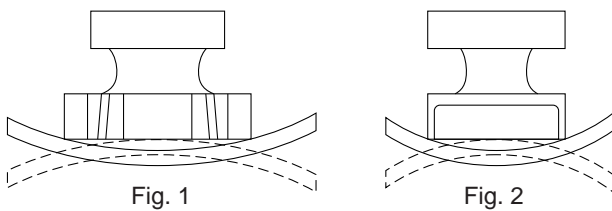
(Please refer to Page 54 for coil-to-coil spacing and coupling coefficient.)

The LQS and LQG series have a magnetically shielded structure. The structure makes their coupling coefficient smaller than that of conventional chip coils. In particular, the LQS33N series has a very small coupling coefficient.



③ PCB Warping

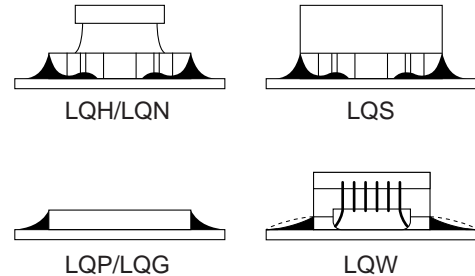
Arrange chip coils to minimize stress caused by PCB warping.



The arrangement shown in Fig. 2 is more effective in preventing stress than that shown in Fig. 1.

④ Amount of Solder Paste

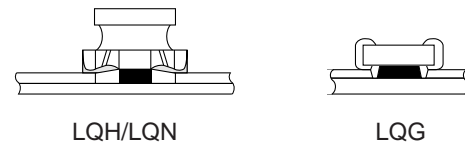
Excessive solder causes electrode corrosion, while insufficient solder causes low electrode bonding strength. Adjust the amount of solder paste so that solder is applied as shown below.



● Standard thickness of solder paste : 200 to 300μm  
(LQP10A : 100μm, LQG Series, LQP11A/LQW1608A : 100μm to 150μm)

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.



|                | Typical Application Amount (in mg) |           |           |
|----------------|------------------------------------|-----------|-----------|
|                | MR-8153RA                          | NF-3000   | UVS-50R-2 |
| LQG11N         | 0.05-0.06                          | 0.06-0.07 | 0.06-0.07 |
| LQG21N/21C/21F | 0.15-0.20                          | 0.20-0.25 | 0.20-0.25 |
| LQG3216F       | 0.20-0.25                          | 0.25-0.30 | 0.25-0.30 |
| LQN21A         | 0.16-0.18                          | 0.21-0.23 | 0.21-0.23 |
| LQH1N/1C       | 0.18-0.20                          | 0.20-0.25 | 0.20-0.25 |
| LQN1A/1H       | 0.20-0.23                          | 0.27-0.35 | 0.27-0.35 |
| LQH3N/3C       | 0.20-0.23                          | 0.27-0.35 | 0.27-0.35 |
| LQH(N)4N/4C    | 0.45-0.50                          | 0.60-0.80 | 0.60-0.80 |

Notice of Chip Coil

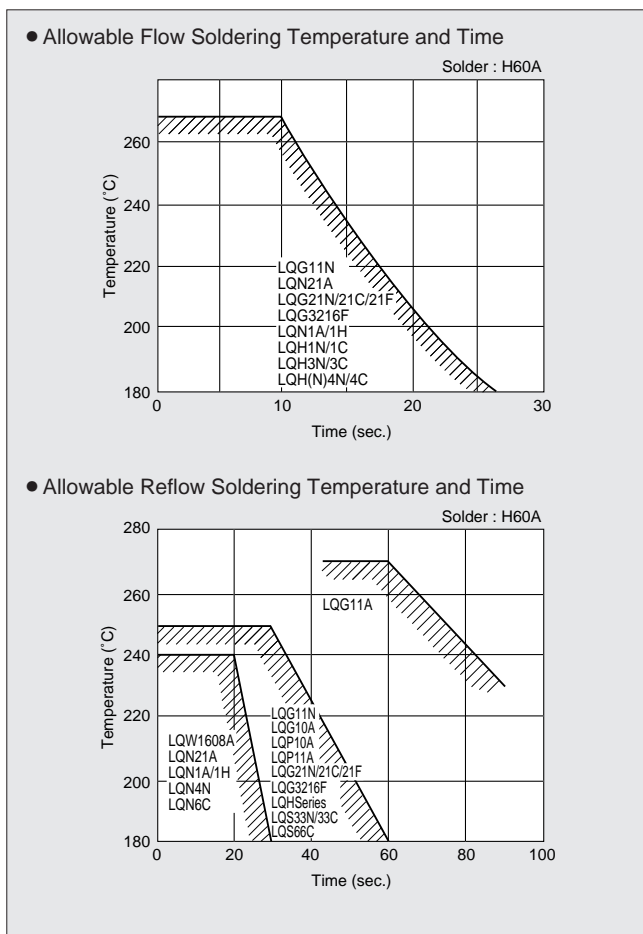
3. Standard Soldering Conditions

① Soldering Method

Chip coils can be flow or reflow soldered. (LQS33N, LQS66C and LQP11A should only be reflow soldered)  
Please contact Murata regarding other soldering methods.  
The volume of solder can cause minor fluctuations in inductance value. Therefore, carefully control the amount of solder when soldering the LQP10A/11A, LQG10A/11A and LQW1608A series.

② Soldering Temperature and Time

Solder within the temperature and time combinations indicated by the slanted lines in the following graphs. If soldering is repeated, please note that the allowed time is the accumulated time.



③ Solder and Flux

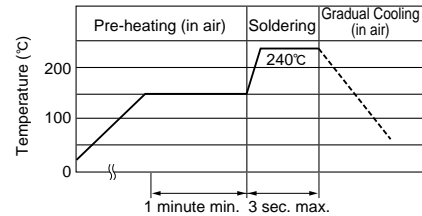
Solder : Use H60A, H63A, (JIS Z 3282) or equivalent.

Use solder paste equivalent to H60A for LQP10A/11A and LQG10A/11A.

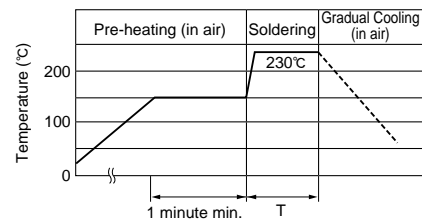
Flux : Use rosin-based flux, but not strongly acidic flux (with chlorine content exceeding 0.2wt%).  
Do not use water - soluble flux.

④ Standard Soldering Conditions

● Flow Solder



● Reflow Solder



| Series                | Pre-heating (150°C) | Soldering Time (T) | Soldering Temp. (°C) |
|-----------------------|---------------------|--------------------|----------------------|
| LQG21N/21C/21F        | 60 sec. min.        | 10 sec. max.       | 230                  |
| LQG3216F              |                     |                    |                      |
| LQH1N/1C              |                     |                    |                      |
| LQN1A/1H              |                     |                    |                      |
| LQW1608A              |                     |                    |                      |
| LQN21A                |                     |                    |                      |
| LQH3N/3C              |                     |                    |                      |
| LQH4N/LQN4N/LQH4C     |                     |                    |                      |
| LQS33N/33C            |                     |                    |                      |
| LQN6C/LQS66C          |                     |                    |                      |
| LQG10A/11A/LQP10A/11A | 20 sec. max.        |                    |                      |

⑤ 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 : 30W max.
- Temperature of soldering iron tip : 280°C
- Diameter of soldering iron end : 3.0mm max.
- Soldering time : within 3 sec.

## Notice of Chip Coil

### 4. Cleaning

The following conditions should be observed when cleaning chip coils.

- ① Cleaning Temperature : 60°C max. (40°C max. for CFC alternatives and 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) CFC alternatives and alcohol cleaning agents
    - Isopropyl alcohol (IPA)
    - HCFC-225
  - b) Aqueous cleaning agents
    - Surface active agent (Clean Thru 750H)
    - High grade alcohol (Pine Alpha ST-100S)
    - Hydrocarbon (Techno Cleaner 335)
    - Alkaline saponifier (Aqua Cleaner 240-cleaner should be diluted to 20% using deionized water.)
    - LQS series : Aqueous agents should not be used because they may cause quality deterioration.
    - LQH series : Surface active agent and high grade alcohol can be used.
- 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.

### 5. 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.

### 6. Caution for Use

This item is designed to have sufficient strength, but handle with care not to make it chipped or broken due to its ceramic structure.

- LQW Series
  - Sharp material, such as a pair of tweezers, shall not touch to the winding portion to prevent the breaking of wire.
  - Do not give excessive mechanical shock to the products mounted on the board to prevent the breaking of the core.
  - In some mounting machines, when picking up components support pin pushes up the components from the bottom of base tape. In this case, please remove the support pin. The support pin may damage the components and break wire.
- LQH/LQN Series
  - Sharp material, such as a pair of tweezers, shall not touch to the winding portion to prevent the breaking of wire.
  - Do not give excessive mechanical shock to the products mounted on the board to prevent the breaking of the core.

- LQP Series
  - The pattern of the chip coil is covered with the protection film. But the handling the chip coil shall be taken care so that the chip coil would not be damaged with the pick-up nozzle, the sharp substance and so on.
- LQG□N/□C/□F Series
  - There is possibility that the inductance value change due to magnetism. Don't use a magnet or a pair of tweezers with magnetism when chip coil are handled. (The tip of the tweezers should be molded with resin or pottery.)

### 7. Handling

- ① Avoid applying excessive stress to products to prevent damage.
- ② Do not touch winding with sharp objects such as tweezers to prevent wire breakage.
- ③ Do not apply excessive force to products mounted on boards to prevent core breakage.

### 8. Operating Environment

Do not use products in corrosive gases atmosphere such as chlorine gas, acid or sulfide gas.

### 9. Storage Requirements

- ① Storage Period
 

Products should be used within 12 months reckon from the date of our out-going inspection.

Solderability should be verified if this period is exceeded. (LQS33N/33C, LQP21A series should be used within 6 months.)
- ② Storage conditions
  - a) Store products in a warehouse in compliance with the following conditions :
    - Temperature : -10 to 40°C
    - Humidity : 30 to 70% (relative humidity)

Do not subject products to rapid changes in temperature and humidity.

Do not store them in corrosive gases atmosphere such as one containing sulfurous acid gas or alkaline gas.

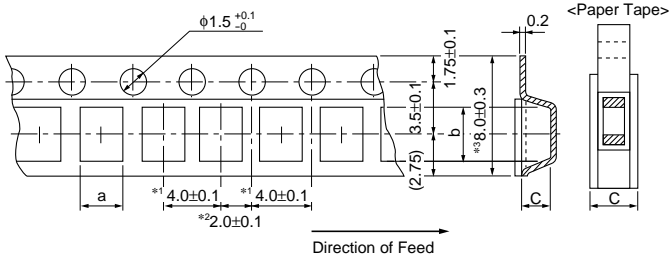
This will prevent electrode oxidation which causes poor solderability and possible corrosion of coils.
  - b) Do not store products in bulk packaging to prevent collision among coils which causes core chipping and wire breakage.
  - c) Store products on pallets to protect from humidity, dust, etc.
  - d) Avoid heat shock, vibration, direct sunlight, etc.

### 10. Transportations

Do not apply excessive vibration or mechanical shock to products.

Dimensions of Taping

LQG21N/21C/21F, LQG3216F, LQG10A/11A/11N, LQH1N/1C, LQN1A/1H, LQN21A, LQH3N/3C, LQP10A/11A, LQW1608A (8mm Tape)



LQG10A/LQP10A/LQW1608A

- \*1 : 2.0±0.05
- \*2 : 1.0±0.05
- \*3 : 8.0±0.2

● Paper Tape

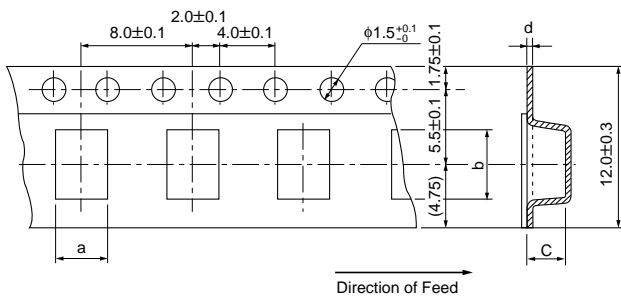
| Series              | a    | b    | c   | Minimum Quantity |             |
|---------------------|------|------|-----|------------------|-------------|
|                     |      |      |     | φ180mm Reel      | φ330mm Reel |
| LQG21NR10K10-2R2K10 | 1.45 | 2.25 | 1.1 | 4,000            | 10,000      |
| LQG21C1R0N00-100N00 |      |      |     |                  |             |
| LQG21F1R0N00-2R2N00 |      |      |     |                  |             |
| LQG10A              | 0.62 | 1.12 | 1.0 | 10,000           | 50,000      |
| LQG11A              |      |      | 1.1 |                  |             |
| LQG11N              | 1.05 | 1.85 | 1.1 | 4,000            | 10,000      |
| LQP10A              | 0.70 | 1.20 | 1.0 | 10,000           | —           |
| LQP11A              | 1.19 | 2.00 | 1.0 | 4,000            | 10,000      |
| LQW1608A            | 1.10 | 1.00 | 1.1 |                  |             |

● Plastic Tape

| Series              | a    | b   | c   | Minimum Quantity |             |
|---------------------|------|-----|-----|------------------|-------------|
|                     |      |     |     | φ180mm Reel      | φ330mm Reel |
| LQG21N2R7K10-4R7K10 | 1.55 | 2.3 | 1.3 | 3,000            | 10,000      |
| LQG21C220N00-470N00 |      |     |     |                  |             |
| LQG21F4R7N00-470N00 |      |     |     |                  |             |
| LQG3216F            | 1.9  | 3.5 | 2.0 | 2,000            | 7,500       |
| LQH1N/1C · LQN1A/1H |      |     |     |                  |             |
| LQN21A              | 1.75 | 2.3 | 2.1 | 2,000            | 7,500       |
| LQH3N/LQH3C         | 2.9  | 3.6 | 2.1 |                  |             |

(in mm)

LQS33N/33C, LQH(N)4N, LQH4C, LQN6C, LQS66C (12mm Tape)



| Series        | a   | b   | c   | d   | Minimum Quantity |             |
|---------------|-----|-----|-----|-----|------------------|-------------|
|               |     |     |     |     | φ180mm Reel      | φ330mm Reel |
| LQS33N/LQS33C | 3.9 | 3.7 | 1.9 | 0.3 | 1,000            | —           |
| LQH(N)4N      | 3.6 | 4.9 | 2.7 |     | 500              | 2,500       |
| LQH4C         |     |     |     | —   |                  |             |
| LQN6C         | 5.4 | 6.1 | 5.0 | 0.4 | 350              | 1,500       |
| LQS66C        | 6.7 | 6.7 | 5.2 |     |                  | —           |

(in mm)





# CHIP COIL

## Design Kit



### DESIGN KIT

Various chip coils are available in design kits assembled according to application.

<Design Kit for High Frequency Range>

Part Number : EKLB11EB

Contents : LQW1608A/LQN21A/LQN1H/  
LQP10A/LQP11A



#### EKLB11EB

| No. | Part Number    | QTY. (pcs.) |
|-----|----------------|-------------|
| 1   | LQW1608A3N9D00 | 20          |
| 2   | LQW1608A4N7D00 | 20          |
| 3   | LQW1608A5N6D00 | 20          |
| 4   | LQW1608A6N8D00 | 20          |
| 5   | LQW1608A8N2D00 | 20          |
| 6   | LQW1608A10NJ00 | 20          |
| 7   | LQW1608A12NJ00 | 20          |
| 8   | LQW1608A15NJ00 | 20          |
| 9   | LQW1608A18NJ00 | 20          |
| 10  | LQW1608A22NJ00 | 20          |
| 11  | LQW1608A27NJ00 | 20          |
| 12  | LQW1608A33NJ00 | 20          |
| 13  | LQW1608A39NJ00 | 20          |
| 14  | LQW1608A47NJ00 | 20          |
| 15  | LQW1608A56NJ00 | 20          |
| 16  | LQW1608A68NJ00 | 20          |
| 17  | LQW1608A82NJ00 | 20          |
| 18  | LQW1608AR10J00 | 20          |
| 19  | LQW1608AR12J00 | 20          |
| 20  | LQW1608AR15J00 | 20          |
| 21  | LQW1608AR18J00 | 20          |
| 22  | LQW1608AR22J00 | 20          |
| 23  | LQN21A3N3D04   | 20          |
| 24  | LQN21A6N8D04   | 20          |
| 25  | LQN21A8N2D04   | 20          |
| 26  | LQN21A10NJ04   | 20          |
| 27  | LQN21A12NJ04   | 20          |
| 28  | LQN21A15NJ04   | 20          |
| 29  | LQN21A18NJ04   | 20          |

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 30  | LQN21A22NJ04 | 20          |
| 31  | LQN21A27NJ04 | 20          |
| 32  | LQN21A33NJ04 | 20          |
| 33  | LQN21A39NJ04 | 20          |
| 34  | LQN21A47NJ04 | 20          |
| 35  | LQN21A56NJ04 | 20          |
| 36  | LQN21A68NJ04 | 20          |
| 37  | LQN21A82NJ04 | 20          |
| 38  | LQN21AR10J04 | 20          |
| 39  | LQN21AR12J04 | 20          |
| 40  | LQN21AR15J04 | 20          |
| 41  | LQN21AR18J04 | 20          |
| 42  | LQN21AR22J04 | 20          |
| 43  | LQN1H54NK04  | 20          |
| 44  | LQN1H95NK04  | 20          |
| 45  | LQN1HR14K04  | 20          |
| 46  | LQN1HR21K04  | 20          |
| 47  | LQN1HR29K04  | 20          |
| 48  | LQN1HR39K04  | 20          |
| 49  | LQN1HR50K04  | 20          |
| 50  | LQN1HR61K04  | 20          |
| 51  | LQN1HR75K04  | 20          |
| 52  | LQN1HR88K04  | 20          |
| 53  | LQP10A1N0C00 | 20          |
| 54  | LQP10A1N2C00 | 20          |
| 55  | LQP10A1N5C00 | 20          |
| 56  | LQP10A1N8C00 | 20          |
| 57  | LQP10A2N2C00 | 20          |
| 58  | LQP10A2N7C00 | 20          |
| 59  | LQP10A3N3C00 | 20          |
| 60  | LQP10A3N9C00 | 20          |
| 61  | LQP10A4N7C00 | 20          |
| 62  | LQP10A5N6C00 | 20          |
| 63  | LQP10A6N8C00 | 20          |
| 64  | LQP10A8N2C00 | 20          |
| 65  | LQP10A10NG00 | 20          |
| 66  | LQP10A12NG00 | 20          |
| 67  | LQP10A15NG00 | 20          |
| 68  | LQP10A18NG00 | 20          |
| 69  | LQP10A22NG00 | 20          |
| 70  | LQP10A27NG00 | 20          |
| 71  | LQP10A33NG00 | 20          |
| 72  | LQP11A1N3C00 | 20          |
| 73  | LQP11A1N5C00 | 20          |
| 74  | LQP11A1N8C00 | 20          |
| 75  | LQP11A2N2C00 | 20          |
| 76  | LQP11A2N7C00 | 20          |
| 77  | LQP11A3N3C00 | 20          |
| 78  | LQP11A3N9C00 | 20          |
| 79  | LQP11A4N7C00 | 20          |
| 80  | LQP11A5N6C00 | 20          |
| 81  | LQP11A6N8C00 | 20          |
| 82  | LQP11A8N2C00 | 20          |
| 83  | LQP11A10NG00 | 20          |
| 84  | LQP11A12NG00 | 20          |
| 85  | LQP11A15NG00 | 20          |
| 86  | LQP11A18NG00 | 20          |
| 87  | LQP11A22NG00 | 20          |
| 88  | LQP11A27NG00 | 20          |
| 89  | LQP11A33NG00 | 20          |

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&lt;Design Kit for General Frequency Range&gt;

Part Number : EKLB21EB

Contents : LQH3C/LQH3N/LQH4C/LQH4N/LQN4N

## EKLB21EB

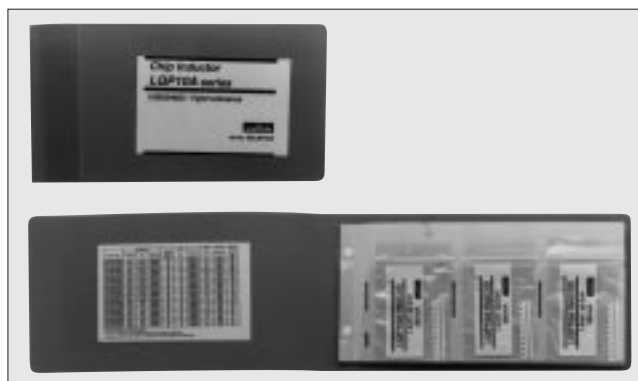
| No. | Part Number | QTY. (pcs.) |
|-----|-------------|-------------|
| 1   | LQH3C1R0M34 | 20          |
| 2   | LQH3C2R2M34 | 20          |
| 3   | LQH3C4R7M34 | 20          |
| 4   | LQH3C100K34 | 20          |
| 5   | LQH3C470K34 | 20          |
| 6   | LQH3C221K34 | 20          |
| 7   | LQH3C391K34 | 20          |
| 8   | LQH3C561K34 | 20          |
| 9   | LQH3NR10M34 | 20          |
| 10  | LQH3NR18M34 | 20          |
| 11  | LQH3NR27M34 | 20          |
| 12  | LQH3NR39M34 | 20          |
| 13  | LQH3NR56M34 | 20          |
| 14  | LQH3NR68M34 | 20          |
| 15  | LQH3NR82M34 | 20          |
| 16  | LQH3N1R0M34 | 20          |
| 17  | LQH3N1R5K34 | 20          |
| 18  | LQH3N2R2K34 | 20          |
| 19  | LQH3N3R3K34 | 20          |
| 20  | LQH3N4R7K34 | 20          |
| 21  | LQH3N6R8K34 | 20          |
| 22  | LQH3N100K34 | 20          |
| 23  | LQH3N120K34 | 20          |
| 24  | LQH3N150K34 | 20          |
| 25  | LQH3N220K34 | 20          |
| 26  | LQH3N330K34 | 20          |
| 27  | LQH3N470K34 | 20          |
| 28  | LQH3N680K34 | 20          |
| 29  | LQH3N101K34 | 20          |
| 30  | LQH3N121K34 | 20          |
| 31  | LQH3N181K34 | 20          |
| 32  | LQH3N271K34 | 20          |
| 33  | LQH3N391K34 | 20          |
| 34  | LQH3N561K34 | 20          |
| 35  | LQH4C1R0M04 | 20          |
| 36  | LQH4C1R5M04 | 20          |
| 37  | LQH4C2R2M04 | 20          |
| 38  | LQH4C3R3M04 | 20          |
| 39  | LQH4C4R7M04 | 20          |
| 40  | LQH4C6R8M04 | 20          |
| 41  | LQH4C100K04 | 20          |
| 42  | LQH4C150K04 | 20          |
| 43  | LQH4C220K04 | 20          |

| No. | Part Number | QTY. (pcs.) |
|-----|-------------|-------------|
| 44  | LQH4C330K04 | 20          |
| 45  | LQH4C470K04 | 20          |
| 46  | LQH4C680K04 | 20          |
| 47  | LQH4C101K04 | 20          |
| 48  | LQH4C151K04 | 20          |
| 49  | LQH4C221K04 | 20          |
| 50  | LQH4C331K04 | 20          |
| 51  | LQH4C471K04 | 20          |
| 52  | LQH4N180K04 | 20          |
| 53  | LQH4N270K04 | 20          |
| 54  | LQH4N390K04 | 20          |
| 55  | LQH4N560K04 | 20          |
| 56  | LQH4N820K04 | 20          |
| 57  | LQH4N121K04 | 20          |
| 58  | LQH4N221K04 | 20          |
| 59  | LQH4N331K04 | 20          |
| 60  | LQH4N471K04 | 20          |
| 61  | LQH4N681K04 | 20          |
| 62  | LQH4N821K04 | 20          |
| 63  | LQH4N102K04 | 20          |
| 64  | LQH4N122K04 | 20          |
| 65  | LQH4N152K04 | 20          |
| 66  | LQN4N182K04 | 20          |
| 67  | LQN4N222K04 | 20          |

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| Part Number | Contents                                    |
|-------------|---|
| EKLM11UB    | LQP11A                                      |
| EKLM12UA    | LQN21A                                      |
| EKLM13UA    | LQG11A                                      |
| EKLM14UB    | LQP10A                                      |
| EKLM15UA    | LQG10A                                      |
| EKLM16UA    | LQW1608A tight tolerance ( $\pm 2\%$ 0.2nH) |
| EKLM17UA    | LQW1608A tolerance ( $\pm 5\%$ 0.5nH)       |
| EKLM21UA    | LQG21N/LQG21C                               |

<Design Kit for Individual Series>



EKLM11UB

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LQP11A1N3C00 | 20          |
| 2   | LQP11A1N5C00 | 20          |
| 3   | LQP11A1N8C00 | 20          |
| 4   | LQP11A2N2C00 | 20          |
| 5   | LQP11A2N7C00 | 20          |
| 6   | LQP11A3N3C00 | 20          |
| 7   | LQP11A3N9C00 | 20          |
| 8   | LQP11A4N7C00 | 20          |
| 9   | LQP11A5N6C00 | 20          |
| 10  | LQP11A6N8C00 | 20          |
| 11  | LQP11A8N2C00 | 20          |
| 12  | LQP11A10NG00 | 20          |
| 13  | LQP11A12NG00 | 20          |
| 14  | LQP11A15NG00 | 20          |
| 15  | LQP11A18NG00 | 20          |
| 16  | LQP11A22NG00 | 20          |
| 17  | LQP11A27NG00 | 20          |
| 18  | LQP11A33NG00 | 20          |
| 19  | LQP11A39NG00 | 20          |
| 20  | LQP11A47NG00 | 20          |
| 21  | LQP11A56NG00 | 20          |
| 22  | LQP11A68NG00 | 20          |
| 23  | LQP11A82NG00 | 20          |
| 24  | LQP11AR10G00 | 20          |

EKLM12UA

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LQN21A3N3D04 | 20          |
| 2   | LQN21A6N8D04 | 20          |
| 3   | LQN21A8N2D04 | 20          |
| 4   | LQN21A10NJ04 | 20          |
| 5   | LQN21A12NJ04 | 20          |
| 6   | LQN21A15NJ04 | 20          |
| 7   | LQN21A18NJ04 | 20          |
| 8   | LQN21A22NJ04 | 20          |
| 9   | LQN21A27NJ04 | 20          |
| 10  | LQN21A33NJ04 | 20          |
| 11  | LQN21A39NJ04 | 20          |
| 12  | LQN21A47NJ04 | 20          |
| 13  | LQN21A56NJ04 | 20          |
| 14  | LQN21A68NJ04 | 20          |
| 15  | LQN21A82NJ04 | 20          |
| 16  | LQN21AR10J04 | 20          |
| 17  | LQN21AR12J04 | 20          |
| 18  | LQN21AR15J04 | 20          |
| 19  | LQN21AR18J04 | 20          |
| 20  | LQN21AR22J04 | 20          |

EKLM13UA

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LOG11A1N2S00 | 20          |
| 2   | LOG11A1N5S00 | 20          |
| 3   | LOG11A1N8S00 | 20          |
| 4   | LOG11A2N2S00 | 20          |
| 5   | LOG11A2N7S00 | 20          |
| 6   | LOG11A3N3S00 | 20          |
| 7   | LOG11A3N9S00 | 20          |
| 8   | LOG11A4N7S00 | 20          |
| 9   | LOG11A5N6S00 | 20          |
| 10  | LOG11A6N8J00 | 20          |
| 11  | LOG11A8N2J00 | 20          |
| 12  | LOG11A10NJ00 | 20          |
| 13  | LOG11A12NJ00 | 20          |
| 14  | LOG11A15NJ00 | 20          |
| 15  | LOG11A18NJ00 | 20          |
| 16  | LOG11A22NJ00 | 20          |
| 17  | LOG11A27NJ00 | 20          |
| 18  | LOG11A33NJ00 | 20          |
| 19  | LOG11A39NJ00 | 20          |
| 20  | LOG11A47NJ00 | 20          |
| 21  | LOG11A56NJ00 | 20          |
| 22  | LOG11A68NJ00 | 20          |
| 23  | LOG11A82NJ00 | 20          |
| 24  | LOG11AR10J00 | 20          |

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## EKLM14UB

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LQP10A1N0B00 | 20          |
| 2   | LQP10A1N1B00 | 20          |
| 3   | LQP10A1N2B00 | 20          |
| 4   | LQP10A1N3B00 | 20          |
| 5   | LQP10A1N5B00 | 20          |
| 6   | LQP10A1N6B00 | 20          |
| 7   | LQP10A1N8B00 | 20          |
| 8   | LQP10A2N0B00 | 20          |
| 9   | LQP10A2N2B00 | 20          |
| 10  | LQP10A2N4B00 | 20          |
| 11  | LQP10A2N7B00 | 20          |
| 12  | LQP10A3N0B00 | 20          |
| 13  | LQP10A3N3B00 | 20          |
| 14  | LQP10A3N6B00 | 20          |
| 15  | LQP10A3N9B00 | 20          |
| 16  | LQP10A4N3B00 | 20          |
| 17  | LQP10A4N7B00 | 20          |
| 18  | LQP10A5N1B00 | 20          |
| 19  | LQP10A5N6B00 | 20          |
| 20  | LQP10A6N2B00 | 20          |
| 21  | LQP10A6N8B00 | 20          |
| 22  | LQP10A7N5B00 | 20          |
| 23  | LQP10A8N2B00 | 20          |
| 24  | LQP10A9N1B00 | 20          |
| 25  | LQP10A10NG00 | 20          |
| 26  | LQP10A12NG00 | 20          |
| 27  | LQP10A15NG00 | 20          |
| 28  | LQP10A18NG00 | 20          |
| 29  | LQP10A22NG00 | 20          |
| 30  | LQP10A27NG00 | 20          |
| 31  | LQP10A33NG00 | 20          |

## EKLM15UA

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LQG10A1N2S00 | 20          |
| 2   | LQG10A1N5S00 | 20          |
| 3   | LQG10A1N8S00 | 20          |
| 4   | LQG10A2N2S00 | 20          |
| 5   | LQG10A2N7S00 | 20          |
| 6   | LQG10A3N3S00 | 20          |
| 7   | LQG10A3N9S00 | 20          |
| 8   | LQG10A4N7S00 | 20          |
| 9   | LQG10A5N6S00 | 20          |
| 10  | LQG10A6N8J00 | 20          |
| 11  | LQG10A8N2J00 | 20          |
| 12  | LQG10A10NJ00 | 20          |
| 13  | LQG10A12NJ00 | 20          |
| 14  | LQG10A15NJ00 | 20          |
| 15  | LQG10A18NJ00 | 20          |
| 16  | LQG10A22NJ00 | 20          |
| 17  | LQG10A27NJ00 | 20          |
| 18  | LQG10A33NJ00 | 20          |

## EKLM16UA

| No. | Part Number    | QTY. (pcs.) |
|-----|----------------|-------------|
| 1   | LQW1608A3N9C00 | 20          |
| 2   | LQW1608A5N6C00 | 20          |
| 3   | LQW1608A6N8C00 | 20          |
| 4   | LQW1608A10NG00 | 20          |
| 5   | LQW1608A12NG00 | 20          |
| 6   | LQW1608A15NG00 | 20          |
| 7   | LQW1608A18NG00 | 20          |
| 8   | LQW1608A22NG00 | 20          |
| 9   | LQW1608A27NG00 | 20          |
| 10  | LQW1608A33NG00 | 20          |
| 11  | LQW1608A39NG00 | 20          |
| 12  | LQW1608A47NG00 | 20          |
| 13  | LQW1608A56NG00 | 20          |
| 14  | LQW1608A68NG00 | 20          |
| 15  | LQW1608A82NG00 | 20          |
| 16  | LQW1608AR10G00 | 20          |
| 17  | LQW1608AR12G00 | 20          |
| 18  | LQW1608AR15G00 | 20          |
| 19  | LQW1608AR18G00 | 20          |
| 20  | LQW1608AR22G00 | 20          |

## EKLM17UA

| No. | Part Number    | QTY. (pcs.) |
|-----|----------------|-------------|
| 1   | LQW1608A3N9D00 | 20          |
| 2   | LQW1608A4N7D00 | 20          |
| 3   | LQW1608A5N6D00 | 20          |
| 4   | LQW1608A6N8D00 | 20          |
| 5   | LQW1608A8N2D00 | 20          |
| 6   | LQW1608A10NJ00 | 20          |
| 7   | LQW1608A12NJ00 | 20          |
| 8   | LQW1608A15NJ00 | 20          |
| 9   | LQW1608A18NJ00 | 20          |
| 10  | LQW1608A22NJ00 | 20          |
| 11  | LQW1608A27NJ00 | 20          |
| 12  | LQW1608A33NJ00 | 20          |
| 13  | LQW1608A39NJ00 | 20          |
| 14  | LQW1608A47NJ00 | 20          |
| 15  | LQW1608A56NJ00 | 20          |
| 16  | LQW1608A68NJ00 | 20          |
| 17  | LQW1608A82NJ00 | 20          |
| 18  | LQW1608AR10J00 | 20          |
| 19  | LQW1608AR12J00 | 20          |
| 20  | LQW1608AR15J00 | 20          |
| 21  | LQW1608AR18J00 | 20          |
| 22  | LQW1608AR22J00 | 20          |

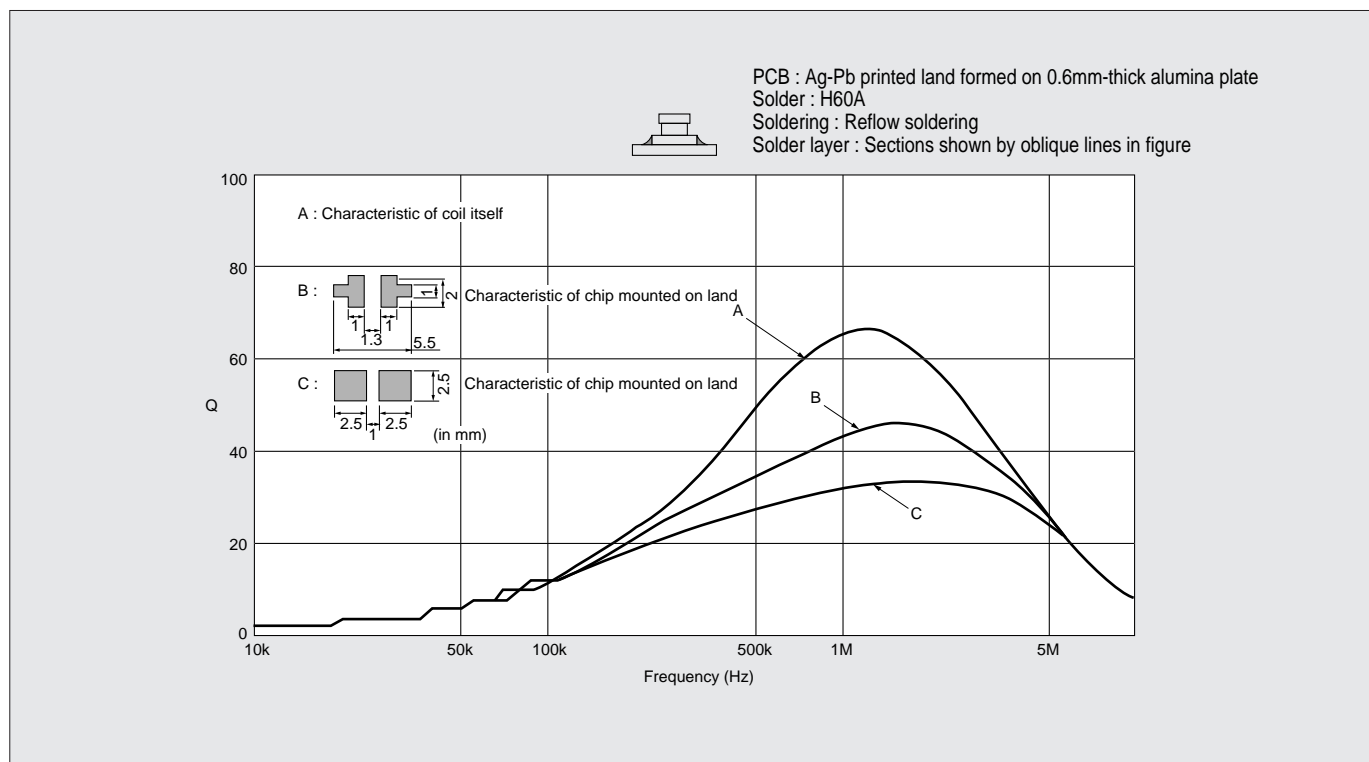
## EKLM21UA

| No. | Part Number  | QTY. (pcs.) |
|-----|--------------|-------------|
| 1   | LOG21NR10K10 | 20          |
| 2   | LOG21NR12K10 | 20          |
| 3   | LOG21NR15K10 | 20          |
| 4   | LOG21NR18K10 | 20          |
| 5   | LOG21NR22K10 | 20          |
| 6   | LOG21NR27K10 | 20          |
| 7   | LOG21NR33K10 | 20          |
| 8   | LOG21NR39K10 | 20          |
| 9   | LOG21NR47K10 | 20          |
| 10  | LOG21NR56K10 | 20          |
| 11  | LOG21NR68K10 | 20          |
| 12  | LOG21NR82K10 | 20          |
| 13  | LOG21N1R0K10 | 20          |
| 14  | LOG21N1R2K10 | 20          |
| 15  | LOG21N1R5K10 | 20          |
| 16  | LOG21N1R8K10 | 20          |
| 17  | LOG21N2R2K10 | 20          |
| 18  | LOG21N2R7K10 | 20          |
| 19  | LOG21N3R3K10 | 20          |
| 20  | LOG21N3R9K10 | 20          |
| 21  | LOG21N4R7K10 | 20          |
| 22  | LOG21C1R0N00 | 20          |
| 23  | LOG21C2R2N00 | 20          |
| 24  | LOG21C4R7N00 | 20          |
| 25  | LOG21C100N00 | 20          |
| 26  | LOG21C220N00 | 20          |
| 27  | LOG21C470N00 | 20          |

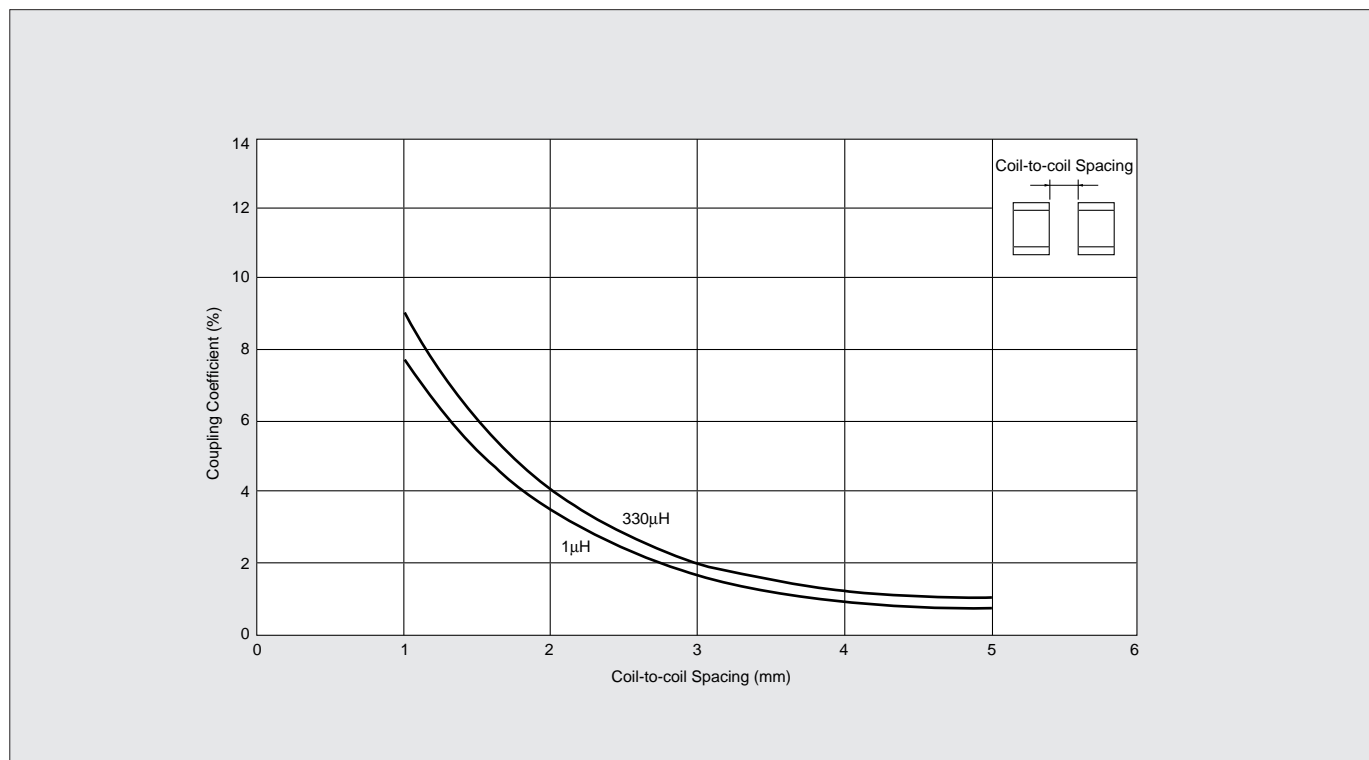
●Please use the products in this Design Kit for experiment or test production, but do not use for mass production. When using for mass production, please order them after confirming detailed specifications by approving the appropriate individual specification sheet.

**Information of Chip Coil**

**1. Land Area and Q-F Characteristics**



**2. Coupling coefficient versus Coil-to-coil Spacing**



**⚠ Note:****1. Export Control**

〈For customers outside Japan〉

Murata products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.

〈For customers in Japan〉

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

**2. Please contact our sales representatives or product engineers before using our products listed in this catalog for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property, or when intending to use one of our products for other applications than specified in this catalog.**

- ① Aircraft equipment
- ② Aerospace equipment
- ③ Undersea equipment
- ④ Power plant equipment
- ⑤ Medical equipment
- ⑥ Transportation equipment (vehicles, trains, ships, etc.)
- ⑦ Traffic signal equipment
- ⑧ Disaster prevention / crime prevention equipment
- ⑨ Data-processing equipment
- ⑩ Application of similar complexity and/or reliability requirements to the applications listed in the above

**3. Product specifications in this catalog are as of February 2000. They are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before your ordering. If there are any questions, please contact our sales representatives or product engineers.****4. The parts numbers and specifications listed in this catalog are for information only. You are requested to approve our product specification or to transact the approval sheet for product specification, before your ordering.****5. Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or third party's intellectual property rights and other related rights in consideration of your using our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.****6. None of ozone depleting substances (ODS) under the Montreal Protocol is used in manufacturing process of us.**