

# Chip Coils

**muRata**

## High Frequency Monolithic Type LQG15H/LQG18H Series

### LQG15HN Series

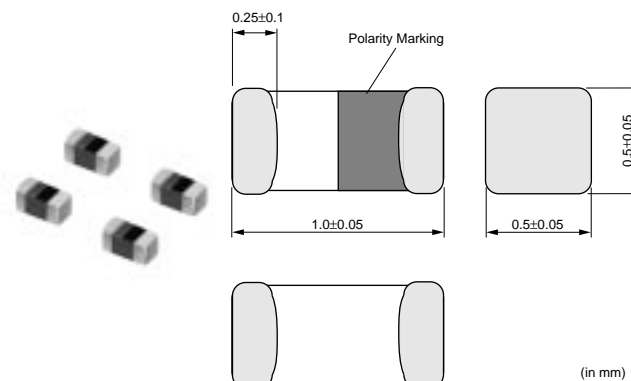
The LQG15HN series are chip inductors specifically designed for high frequency applications. The LQG15H series is designed to realize stable characteristics in high frequency range applying integrated multilayer process. The integrated multilayer process enables a wide range of inductance values with tight tolerance.

#### ■ Features

1. High-Q, stable inductance in high frequency is achieved by the original structure that minimizes stray capacitance. It is suitable for the high frequency circuits of mobile communication equipment.
2. The small size of LQG15H (1.0x0.5x0.5mm) is suitable for small and low profile mobile equipment.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance.
4. Wide variation in inductance value  
1-10nH (E24 step)  
10-120nH (E12 step)

#### ■ Applications

1. High frequency circuits of mobile phones such as PA, ANT, VCO, SAW, etc.
2. Mobile phones such as GSM, CDMA, PDC, etc.
3. "Bluetooth"
4. W-LAN
5. High frequency circuits in general



Part Number	Inductance (nH)	Test Frequency (MHz)	Rated Current (mA)	DC Resistance (ohm)	Q (min.)	Test Frequency (MHz)	Self Resonance Frequency (min.) (MHz)	EIA
LQG15HN1N0S02	1.0 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N1S02	1.1 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N2S02	1.2 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N3S02	1.3 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N5S02	1.5 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N6S02	1.6 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN1N8S02	1.8 ±0.3nH	100	300	0.10 max.	8	100	6000	0402
LQG15HN2N0S02	2.0 ±0.3nH	100	300	0.12 max.	8	100	6000	0402
LQG15HN2N2S02	2.2 ±0.3nH	100	300	0.15 max.	8	100	6000	0402
LQG15HN2N4S02	2.4 ±0.3nH	100	300	0.16 max.	8	100	6000	0402
LQG15HN2N7S02	2.7 ±0.3nH	100	300	0.17 max.	8	100	6000	0402
LQG15HN3N0S02	3.0 ±0.3nH	100	300	0.18 max.	8	100	6000	0402
LQG15HN3N3S02	3.3 ±0.3nH	100	300	0.19 max.	8	100	6000	0402
LQG15HN3N6S02	3.6 ±0.3nH	100	300	0.19 max.	8	100	6000	0402
LQG15HN3N9S02	3.9 ±0.3nH	100	300	0.19 max.	8	100	6000	0402
LQG15HN4N3S02	4.3 ±0.3nH	100	300	0.21 max.	8	100	6000	0402
LQG15HN4N7S02	4.7 ±0.3nH	100	300	0.23 max.	8	100	6000	0402
LQG15HN5N1S02	5.1 ±0.3nH	100	300	0.24 max.	8	100	6000	0402

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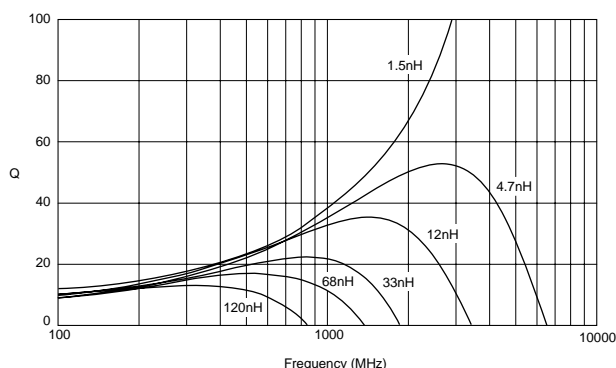
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Part Number	Inductance (nH)	Test Frequency (MHz)	Rated Current (mA)	DC Resistance (ohm)	Q (min.)	Test Frequency (MHz)	Self Resonance Frequency (min.) (MHz)	EIA
LQG15HN5N6S02	5.6 ±0.3nH	100	300	0.26 max.	8	100	5300	0402
LQG15HN6N2S02	6.2 ±0.3nH	100	300	0.27 max.	8	100	4300	0402
LQG15HN6N8J02	6.8 ±5%	100	300	0.29 max.	8	100	4200	0402
LQG15HN7N5J02	7.5 ±5%	100	300	0.31 max.	8	100	3900	0402
LQG15HN8N2J02	8.2 ±5%	100	300	0.33 max.	8	100	3600	0402
LQG15HN9N1J02	9.1 ±5%	100	300	0.34 max.	8	100	3400	0402
LQG15HN10NJ02	10 ±5%	100	300	0.35 max.	8	100	3200	0402
LQG15HN12NJ02	12 ±5%	100	300	0.41 max.	8	100	2800	0402
LQG15HN15NJ02	15 ±5%	100	300	0.46 max.	8	100	2300	0402
LQG15HN18NJ02	18 ±5%	100	300	0.51 max.	8	100	2100	0402
LQG15HN22NJ02	22 ±5%	100	300	0.58 max.	8	100	1800	0402
LQG15HN27NJ02	27 ±5%	100	300	0.67 max.	8	100	1600	0402
LQG15HN33NJ02	33 ±5%	100	200	0.67 max.	8	100	1500	0402
LQG15HN39NJ02	39 ±5%	100	200	1.06 max.	8	100	1200	0402
LQG15HN47NJ02	47 ±5%	100	200	1.15 max.	8	100	1000	0402
LQG15HN56NJ02	56 ±5%	100	200	1.20 max.	8	100	800	0402
LQG15HN68NJ02	68 ±5%	100	180	1.25 max.	8	100	800	0402
LQG15HN82NJ02	82 ±5%	100	150	1.60 max.	8	100	600	0402
LQG15HNR10J02	100 ±5%	100	150	1.60 max.	8	100	600	0402
LQG15HNR12J02	120 ±5%	100	150	1.60 max.	8	100	600	0402

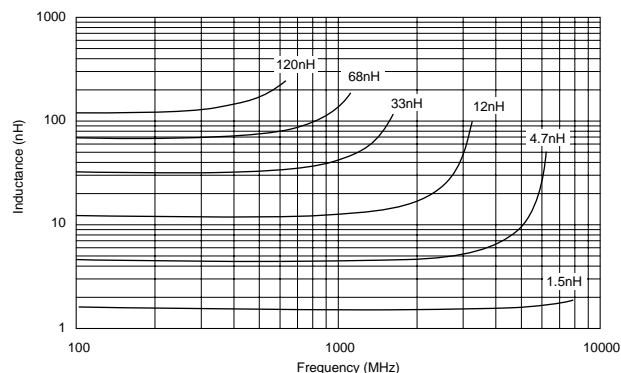
Operating Temp. Range : -55°C to +125°C

Please use reflow soldering.

## Q-Frequency Characteristics



## Inductance-Frequency Characteristics

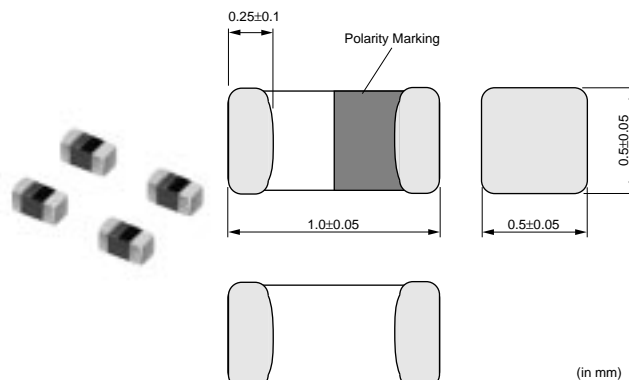


## LQG15HS Series

The LQG15HS series are chip inductors specifically designed for high frequency applications.

The LQG15H 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.

Since recent mobile phone install. Color LCD and Camera module, the power consumption becomes higher. In order to reduce power consumption a low DC resistance is strongly required. The LQG15HS has achieved the lowest DC resistance.



### ■ Features

1. High-Q, stable inductance in high frequency is achieved by the original structure that minimizes stray capacitance. It is suitable for the high frequency circuits of mobile communication equipment.
2. The small size of LQG15H (1.0x0.5x0.5mm) is suitable for small and low profile mobile equipment.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance.
4. Wide variation in inductance value  
1-10nH (E24 step)  
10-120nH (E12 step)

### ■ Applications

1. High frequency circuits of mobile phones such as PA, ANT, VCO, SAW, etc.
2. Mobile phones such as GSM, CDMA, PDC, etc.
3. "Bluetooth"
4. W-LAN
5. High frequency circuits in general

Part Number	Inductance (nH)	Test Frequency (MHz)	Rated Current (mA)	DC Resistance (ohm)	Q (min.)	Test Frequency (MHz)	Self Resonance Frequency (min.) (MHz)	EIA
LQG15HS1N0S02	1.0 ±0.3nH	100	300	0.07 max.	8	100	10000	0402
LQG15HS1N1S02	1.1 ±0.3nH	100	300	0.09 max.	8	100	6000	0402
LQG15HS1N2S02	1.2 ±0.3nH	100	300	0.09 max.	8	100	6000	0402
LQG15HS1N3S02	1.3 ±0.3nH	100	300	0.09 max.	8	100	6000	0402
LQG15HS1N5S02	1.5 ±0.3nH	100	300	0.1 max.	8	100	6000	0402
LQG15HS1N6S02	1.6 ±0.3nH	100	300	0.1 max.	8	100	6000	0402
LQG15HS1N8S02	1.8 ±0.3nH	100	300	0.1 max.	8	100	6000	0402
LQG15HS2N0S02	2.0 ±0.3nH	100	300	0.1 max.	8	100	6000	0402
LQG15HS2N2S02	2.2 ±0.3nH	100	300	0.12 max.	8	100	6000	0402
LQG15HS2N4S02	2.4 ±0.3nH	100	300	0.15 max.	8	100	6000	0402
LQG15HS2N7S02	2.7 ±0.3nH	100	300	0.15 max.	8	100	6000	0402
LQG15HS3N0S02	3.0 ±0.3nH	100	300	0.17 max.	8	100	6000	0402
LQG15HS3N3S02	3.3 ±0.3nH	100	300	0.17 max.	8	100	6000	0402
LQG15HS3N6S02	3.6 ±0.3nH	100	300	0.18 max.	8	100	6000	0402
LQG15HS3N9S02	3.9 ±0.3nH	100	300	0.18 max.	8	100	6000	0402
LQG15HS4N3S02	4.3 ±0.3nH	100	300	0.18 max.	8	100	6000	0402
LQG15HS4N7S02	4.7 ±0.3nH	100	300	0.18 max.	8	100	6000	0402
LQG15HS5N1S02	5.1 ±0.3nH	100	300	0.2 max.	8	100	5300	0402
LQG15HS5N6S02	5.6 ±0.3nH	100	300	0.2 max.	8	100	4500	0402

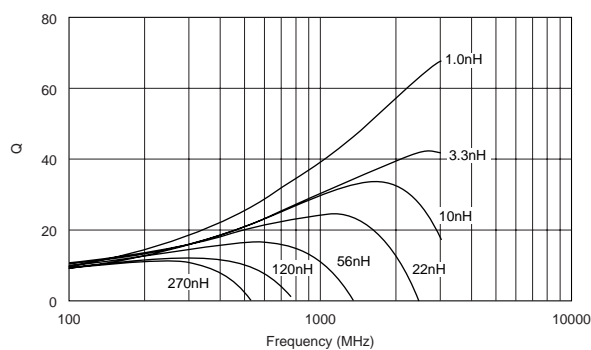
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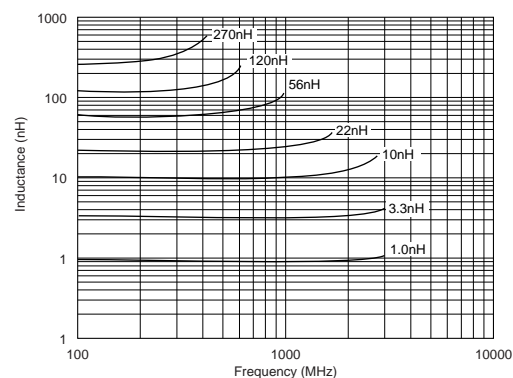
Part Number	Inductance (nH)	Test Frequency (MHz)	Rated Current (mA)	DC Resistance (ohm)	Q (min.)	Test Frequency (MHz)	Self Resonance Frequency (min.) (MHz)	EIA
LQG15HS6N2S02	6.2 ±0.3nH	100	300	0.22 max.	8	100	4500	0402
LQG15HS6N8J02	6.8 ±5%	100	300	0.24 max.	8	100	4500	0402
LQG15HS7N5J02	7.5 ±5%	100	300	0.24 max.	8	100	4200	0402
LQG15HS8N2J02	8.2 ±5%	100	300	0.24 max.	8	100	3700	0402
LQG15HS9N1J02	9.1 ±5%	100	300	0.26 max.	8	100	3400	0402
LQG15HS10NJ02	10 ±5%	100	300	0.26 max.	8	100	3400	0402
LQG15HS12NJ02	12 ±5%	100	300	0.28 max.	8	100	3000	0402
LQG15HS15NJ02	15 ±5%	100	300	0.32 max.	8	100	2500	0402
LQG15HS18NJ02	18 ±5%	100	300	0.36 max.	8	100	2200	0402
LQG15HS22NJ02	22 ±5%	100	300	0.42 max.	8	100	1900	0402
LQG15HS27NJ02	27 ±5%	100	300	0.46 max.	8	100	1700	0402
LQG15HS33NJ02	33 ±5%	100	200	0.58 max.	8	100	1600	0402
LQG15HS39NJ02	39 ±5%	100	200	0.65 max.	8	100	1200	0402
LQG15HS47NJ02	47 ±5%	100	200	0.72 max.	8	100	1000	0402
LQG15HS56NJ02	56 ±5%	100	200	0.82 max.	8	100	800	0402
LQG15HS68NJ02	68 ±5%	100	180	0.92 max.	8	100	800	0402
LQG15HS82NJ02	82 ±5%	100	150	1.2 max.	8	100	700	0402
LQG15HSR10J02	100 ±5%	100	150	1.25 max.	8	100	600	0402
LQG15HSR12J02	120 ±5%	100	150	1.3 max.	8	100	600	0402
LQG15HSR15J02	150 ±5%	100	140	2.99 max.	8	100	550	0402
LQG15HSR18J02	180 ±5%	100	130	3.38 max.	8	100	500	0402
LQG15HSR22J02	220 ±5%	100	120	3.77 max.	8	100	450	0402
LQG15HSR27J02	270 ±5%	100	110	4.94 max.	8	100	400	0402

Operating Temp. Range : -55°C to +125°C  
Please use reflow soldering.

## ■ Q-Frequency Characteristics



## ■ Inductance-Frequency Characteristics



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## Reference Data

E4991&16197A

Part Number	Inductance (nH) 100MHz	Q (typ.)					Rdc (Ω typ.)	SRF (MHz typ.)
		800MHz	900MHz	1.8GHz	2.0GHz	2.4GHz		
LQG15HS1N0S02	1.0	32	34	51	54	57	0.03	11700
LQG15HS1N1S02	1.1	35	37	59	62	64		10000
LQG15HS1N2S02	1.2	34	36	56	58	60		8600
LQG15HS1N3S02	1.3	34	36	56	57	58		7000
LQG15HS1N5S02	1.5	31	34	50	53	55	0.04	9700
LQG15HS1N6S02	1.6	31	33	50	52	54		8600
LQG15HS1N8S02	1.8	31	33	48	49	50		7500
LQG15HS2N0S02	2.0	31	32	47	48	49		6400
LQG15HS2N2S02	2.2	32	34	48	49	50	0.05	6200
LQG15HS2N4S02	2.4	32	34	51	52	52	0.07	10000
LQG15HS2N7S02	2.7	31	33	49	50	50	0.08	8700
LQG15HS3N0S02	3.0	32	34	49	51	50	0.09	8000
LQG15HS3N3S02	3.3	31	33	46	47	46		6700
LQG15HS3N6S02	3.6	31	33	45	47	46	0.1	8000
LQG15HS3N9S02	3.9	31	33	49	47	46		7500
LQG15HS4N3S02	4.3	31	33	44	45	44		6500
LQG15HS4N7S02	4.7	31	33	42	43	42	0.12	6200
LQG15HS5N1S02	5.1	31	33	44	45	42	0.13	5800
LQG15HS5N6S02	5.6	30	32	41	40	38		5000
LQG15HS6N2S02	6.2	29	31	41	41	38	0.16	5100
LQG15HS6N8J02	6.8	29	30	40	40	37	0.17	4900
LQG15HS7N5J02	7.5	28	29	38	37	34		4500
LQG15HS8N2J02	8.2	27	29	35	34	29		4100
LQG15HS9N1J02	9.1	27	29	36	35	31	0.18	3900
LQG15HS10NJ02	10	27	29	35	33	28		3200
LQG15HS12NJ02	12	26	27	28	24	18		2900
LQG15HS15NJ02	15	26	27	25	21	13	0.22	2800
LQG15HS18NJ02	18	25	25	22	18	-	0.26	2500
LQG15HS22NJ02	22	23	24	16	-	-	0.30	2000
LQG15HS27NJ02	27	21	21	-	-	-	0.33	1900
LQG15HS33NJ02	33	20	20	-	-	-	0.40	1700
LQG15HS39NJ02	39	19	18	-	-	-	0.44	1500
LQG15HS47NJ02	47	17	16	-	-	-	0.48	1300
LQG15HS56NJ02	56	15	13	-	-	-	0.55	1200
LQG15HS68NJ02	68	12	10	-	-	-	0.63	1100
LQG15HS82NJ02	82	9	6	-	-	-	0.77	900
LQG15HSR10J02	100	-	-	-	-	-	0.92	800
LQG15HSR12J02	120	-	-	-	-	-	1.00	

## LQG18H Series

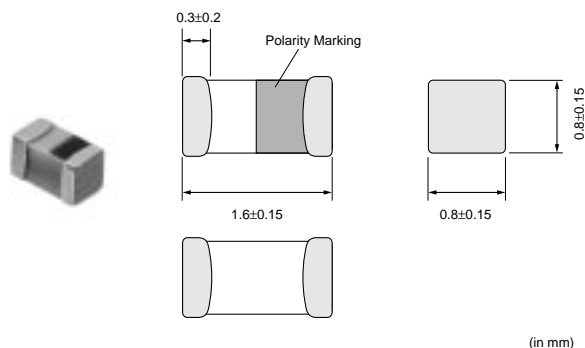
The LQG18H series is designed to realize stable characteristics in high frequency range applying integrated multilayer process.

### ■ Features

1. High-Q, stable inductance in high frequency is available due to the original structure that minimizes stray capacitance. It is suitable for the high frequency circuits of small, handy equipment, especially for card size equipment.
2. Small size of LQG18H (1.6x0.8x0.8mm) is suitable for small, handy equipment, especially for card size equipment.
3. The external electrodes with nickel barrier structure provide excellent solder heat resistance.

### ■ Applications

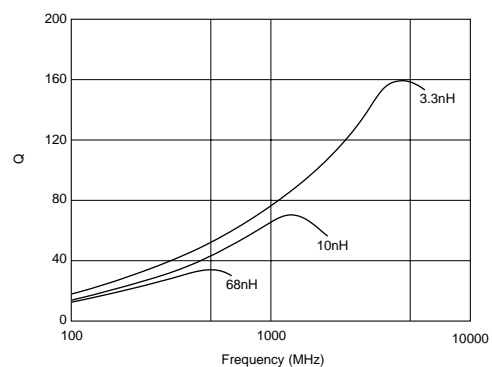
1. High frequency circuits of mobile phones such as PA, ANT, VCO, SAW, etc.
2. Mobile phones such as GSM, CDMA, PDC, etc.
3. "Bluetooth"
4. W-LAN
5. High frequency circuits in general



Part Number	Inductance (nH)	Test Frequency (MHz)	Rated Current (mA)	DC Resistance (ohm)	Q (min.)	Test Frequency (MHz)	Self Resonance Frequency (min.) (MHz)	EIA
LQG18HN1N2S00	1.2 ±0.3nH	100	300	0.10 max.	12	100	6000	0603
LQG18HN1N5S00	1.5 ±0.3nH	100	300	0.10 max.	12	100	6000	0603
LQG18HN1N8S00	1.8 ±0.3nH	100	300	0.10 max.	12	100	6000	0603
LQG18HN2N2S00	2.2 ±0.3nH	100	300	0.10 max.	12	100	6000	0603
LQG18HN2N7S00	2.7 ±0.3nH	100	300	0.15 max.	12	100	6000	0603
LQG18HN3N3S00	3.3 ±0.3nH	100	300	0.15 max.	12	100	6000	0603
LQG18HN3N9S00	3.9 ±0.3nH	100	300	0.15 max.	12	100	6000	0603
LQG18HN4N7S00	4.7 ±0.3nH	100	300	0.20 max.	12	100	6000	0603
LQG18HN5N6S00	5.6 ±0.3nH	100	300	0.20 max.	12	100	5000	0603
LQG18HN6N8J00	6.8 ±5%	100	300	0.25 max.	12	100	5000	0603
LQG18HN8N2J00	8.2 ±5%	100	300	0.25 max.	12	100	4000	0603
LQG18HN10NJ00	10 ±5%	100	300	0.30 max.	12	100	3500	0603
LQG18HN12NJ00	12 ±5%	100	300	0.35 max.	12	100	3000	0603
LQG18HN15NJ00	15 ±5%	100	300	0.40 max.	12	100	2800	0603
LQG18HN18NJ00	18 ±5%	100	300	0.45 max.	12	100	2600	0603
LQG18HN22NJ00	22 ±5%	100	300	0.50 max.	12	100	2300	0603
LQG18HN27NJ00	27 ±5%	100	300	0.55 max.	12	100	2000	0603
LQG18HN33NJ00	33 ±5%	100	300	0.60 max.	12	100	1700	0603
LQG18HN39NJ00	39 ±5%	100	300	0.65 max.	12	100	1500	0603
LQG18HN47NJ00	47 ±5%	100	300	0.70 max.	12	100	1200	0603
LQG18HN56NJ00	56 ±5%	100	300	0.75 max.	12	100	1100	0603
LQG18HN68NJ00	68 ±5%	100	300	0.80 max.	12	100	1000	0603
LQG18HN82NJ00	82 ±5%	100	300	0.85 max.	12	100	900	0603
LQG18HNR10J00	100 ±5%	100	300	0.90 max.	12	100	800	0603

Operating Temp. Range : -40°C to +85°C  
Please use reflow soldering.

## ■ Q-Frequency Characteristics



## ■ Inductance-Frequency Characteristics

