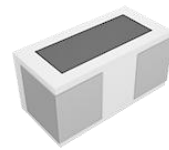


# Multilayer Chip High Q Inductor – HQ-Q Series

Operating Temp. : -55°C~+125°C



## FEATURES

- Monolithic structure for high reliability
- High self-resonant frequency
- Excellent solderability and high heat resistance
- High Q value correspond to wire wound inductor

## APPLICATIONS

- RF circuit in telecommunication and other Equipments
- Mobile phones such as GSM, CDMA, TD-LTE, FDD-LTE, PDC, 5G NR, etc.
- Bluetooth, W-LAN

## PRODUCT IDENTIFICATION

**HQ**

①

①

Type	
HQ	Chip High Q Inductor

**0402**

②

**Q**

③

②

External Dimensions (LxW) (mm)	
0402[01005]	0.4x0.2
0603[0201]	0.6x0.3

**3N9**

④

④

Nominal Inductance	
Example	Nominal Value
3N9	3.9nH
10N	10nH
※N=nH	

⑤

Inductance Tolerance	
B	±0.1nH
C	±0.2nH
S	±0.3nH
H	±3%
J	±5%

**B**

⑤

③

Characteristics Code	
Q	

**I**

⑥

⑥

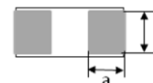
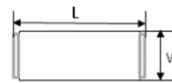
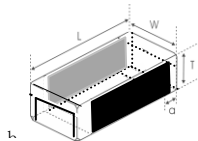
Packing	
T	Tape & Reel
P	Plastic Tape Carrier Package

⑦

Serial Code	
01	

## SHAPE AND DIMENSIONS

Unit: mm [inch]



Type	L	W	T	a	b	c
0402 [01005]	0.4±0.02 [.016±.0008]	0.2±0.02 [.008±.0008]	0.3±0.02 [.118±.0008]	0.14±0.03 [.005±.0010]	0.14±0.03 [.005±.0010]	0.17±0.03 [.006±.0010]
0603 [0201]	0.6±0.03 [.024±.0012]	0.3±0.03 [.012±.0012]	0.4±0.02 [.016±.0008]	0.15±0.03 [.006±.0012]	0.2±0.03 [.008±.0012]	0.25±0.03 [.01±.0012]

# SPECIFICATIONS

## HQ0402Q Series

Part Number	Inductance	Min. Quality Factor	L, Q Test Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	Ω	mA
Symbol	L	Q	Freq.	Q					S.R.F	DCR	I <sub>r</sub>
HQ0402Q0N2□◎01	0.2	-	500	-	-	-	-	-	17000	0.01	1000
HQ0402Q0N3□◎01	0.3	-	500	-	-	-	-	-	17000	0.015	1000
HQ0402Q0N4□◎01	0.4	-	500	-	-	-	-	-	17000	0.03	1000
HQ0402Q0N5□◎01	0.5	-	500	-	-	-	-	-	17000	0.04	1000
HQ0402Q0N6□◎01	0.6	14	500	28	31	44	48	55	17000	0.05	950
HQ0402Q0N7□◎01	0.7	14	500	25	29	41	44	51	15500	0.05	900
HQ0402Q0N8□◎01	0.8	14	500	23	27	39	43	48	15500	0.05	900
HQ0402Q0N9□◎01	0.9	14	500	21	25	37	40	45	14600	0.05	900
HQ0402Q1N0□◎01	1.0	14	500	20	24	36	39	44	13200	0.05	900
HQ0402Q1N1□◎01	1.1	14	500	22	26	40	42	48	13000	0.07	850
HQ0402Q1N2□◎01	1.2	14	500	20	25	37	40	46	13000	0.07	800
HQ0402Q1N3□◎01	1.3	14	500	21	26	39	42	48	12700	0.08	700
HQ0402Q1N4□◎01	1.4	14	500	21	25	38	42	47	12700	0.08	700
HQ0402Q1N5□◎01	1.5	14	500	20	25	37	40	46	12700	0.08	700
HQ0402Q1N6□◎01	1.6	14	500	19	23	35	37	42	11000	0.08	700
HQ0402Q1N7□◎01	1.7	14	500	20	24	37	39	44	11000	0.08	700
HQ0402Q1N8□◎01	1.8	14	500	22	28	43	46	50	10200	0.08	700
HQ0402Q1N9□◎01	1.9	14	500	24	30	46	50	55	10200	0.08	700
HQ0402Q2N0□◎01	2.0	14	500	22	27	41	44	48	10100	0.1	700
HQ0402Q2N1□◎01	2.1	14	500	24	29	45	48	54	10100	0.1	650
HQ0402Q2N2□◎01	2.2	14	500	22	27	42	45	49	9800	0.2	500
HQ0402Q2N3□◎01	2.3	14	500	24	30	46	50	55	9800	0.2	450
HQ0402Q2N4□◎01	2.4	14	500	20	25	39	42	46	9500	0.2	450
HQ0402Q2N5□◎01	2.5	14	500	19	24	39	42	46	9500	0.2	450
HQ0402Q2N6□◎01	2.6	14	500	19	24	39	42	46	9500	0.2	450
HQ0402Q2N7□◎01	2.7	14	500	20	25	39	41	45	8800	0.2	450
HQ0402Q2N8□◎01	2.8	14	500	19	25	40	44	47	8800	0.2	450
HQ0402Q2N9□◎01	2.9	14	500	19	25	40	44	47	8800	0.2	450
HQ0402Q3N0□◎01	3.0	14	500	20	26	40	43	46	8500	0.2	450
HQ0402Q3N1□◎01	3.1	14	500	20	25	41	43	45	8500	0.25	400
HQ0402Q3N2□◎01	3.2	14	500	20	26	41	44	47	8500	0.25	400
HQ0402Q3N3□◎01	3.3	14	500	20	26	42	44	48	8200	0.25	400
HQ0402Q3N4□◎01	3.4	14	500	20	26	42	44	48	8200	0.3	400
HQ0402Q3N5□◎01	3.5	14	500	20	26	42	44	48	8200	0.3	350
HQ0402Q3N6□◎01	3.6	14	500	20	27	42	44	48	8200	0.3	350
HQ0402Q3N7□◎01	3.7	14	500	19	25	41	43	49	8200	0.35	350
HQ0402Q3N8□◎01	3.8	14	500	18	23	37	39	43	8200	0.35	350
HQ0402Q3N9□◎01	3.9	14	500	19	24	37	39	42	7700	0.35	350
HQ0402Q4N0□◎01	4.0	14	500	18	24	38	41	44	6900	0.35	350
HQ0402Q4N1□◎01	4.1	14	500	19	24	38	41	44	6900	0.35	350
HQ0402Q4N2□◎01	4.2	14	500	18	23	37	39	45	6900	0.35	350
HQ0402Q4N3□◎01	4.3	14	500	19	24	37	39	42	6900	0.35	350
HQ0402Q4N7□◎01	4.7	14	500	18	23	36	38	41	6700	0.35	350
HQ0402Q5N1□◎01	5.1	14	500	18	24	36	38	41	6600	0.35	350
HQ0402Q5N6□◎01	5.6	14	500	18	24	35	37	40	6100	0.4	300
HQ0402Q6N2□◎01	6.2	14	500	17	22	32	34	37	6000	0.4	300
HQ0402Q6N8□◎01	6.8	14	500	17	22	33	35	37	5700	0.4	300

# SPECIFICATIONS

## HQ0402Q Series

Part Number	Inductance	Min. Quality Factor	L, Q Test Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	Ω	mA
Symbol	L	Q	Freq.	Q					S.R.F	DCR	I <sub>r</sub>
HQ0402Q7N5□◎01	7.5	14	500	17	23	34	36	38	5600	0.5	300
HQ0402Q8N2□◎01	8.2	14	500	17	21	30	31	33	5100	0.5	300
HQ0402Q9N1□◎01	9.1	14	500	17	22	31	32	33	4900	0.5	300
HQ0402Q10N□◎01	10	14	500	17	22	32	33	34	4900	0.6	250
HQ0402Q11N□◎01	11	14	500	15	20	30	31	33	4000	0.8	250
HQ0402Q12N□◎01	12	14	500	17	21	30	31	32	4000	0.82	230
HQ0402Q13N□◎01	13	14	500	15	20	30	31	32	4000	0.99	210
HQ0402Q15N□◎01	15	12	500	17	21	29	30	30	4000	1.53	170
HQ0402Q16N□◎01	16	12	500	16	20	29	30	29	4000	1.53	170
HQ0402Q18N□◎01	18	12	500	17	21	29	29	29	3700	1.63	160
HQ0402Q20N□◎01	20	12	500	16	19	25	24	23	3000	2.26	140
HQ0402Q22N□◎01	22	12	500	16	19	25	24	22	3000	2.26	140
HQ0402Q24N□◎01	24	12	500	15	18	23	21	20	2900	2.6	120
HQ0402Q27N□◎01	27	12	500	15	18	22	20	17	2900	2.6	120
HQ0402Q30N□◎01	30	10	500	13	16	18	19	20	2600	3.2	120
HQ0402Q33N□◎01	33	10	300	13	16	20	19	20	2600	3.2	120
HQ0402Q36N□◎01	36	10	300	13	15	16	15	12	2400	3.6	110
HQ0402Q39N□◎01	39	10	300	13	15	16	15	10	2400	3.6	120
HQ0402Q43N□◎01	43	8	300	12	14	13	12	7	2100	4.0	100
HQ0402Q47N□◎01	47	8	300	12	14	13	11	6	2100	4.0	100
HQ0402Q51N□◎01	51	8	300	12	14	11	9	4	1900	4.2	100
HQ0402Q56N□◎01	56	8	300	12	14	10	8	-	1900	4.2	100

※□: Please specify the inductance tolerance. For  $L \leq 4.2\text{nH}$ , choose  $B = \pm 0.1\text{nH}$ ,  $C = \pm 0.2\text{nH}$  or  $S = \pm 0.3\text{nH}$ ; For  $4.2\text{nH} < L < 5.6\text{nH}$ , choose,  $H = \pm 3\%$ ,  $J = \pm 5\%$  or  $S = \pm 0.3\text{nH}$ ; For  $L \geq 5.6\text{nH}$ , choose,  $H = \pm 3\%$ ,  $J = \pm 5\%$

※◎: For the product of 0402, please specify the Packing: T means Tape & Reel, P means Plastic Tape Carrier Package.

※: Please refer to "Measurement Notice For RF Inductors".

## HQ0603Q Series

Part Number	Inductance	Min. Quality Factor	L, Q Test Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	Ω	mA
Symbol	L	Q	Freq.	Q					S.R.F	DCR	I <sub>r</sub>
HQ0603Q0N6□T01	0.6	20	500	-	-	-	-	-	20000	0.04	1100
HQ0603Q0N7□T01	0.7	20	500	-	-	-	-	-	20000	0.04	1100
HQ0603Q0N8□T01	0.8	20	500	-	-	-	-	-	18000	0.04	1100
HQ0603Q0N9□T01	0.9	20	500	-	-	-	-	-	18000	0.04	1100
HQ0603Q1N0□T01	1.0	20	500	47	60	92	99	110	16000	0.04	1100
HQ0603Q1N1□T01	1.1	20	500	46	58	90	95	104	14000	0.04	1100
HQ0603Q1N2□T01	1.2	20	500	45	56	88	92	100	13000	0.04	1100
HQ0603Q1N3□T01	1.3	20	500	45	56	88	93	102	13000	0.04	1100
HQ0603Q1N4□T01	1.4	20	500	42	55	89	95	103	12000	0.04	1100
HQ0603Q1N5□T01	1.5	20	500	42	54	86	90	100	12000	0.05	1000
HQ0603Q1N6□T01	1.6	20	500	41	52	80	83	92	10000	0.05	1000
HQ0603Q1N7□T01	1.7	20	500	39	49	75	79	86	10000	0.07	800
HQ0603Q1N8□T01	1.8	20	500	38	45	72	75	81	10000	0.08	800
HQ0603Q1N9□T01	1.9	20	500	36	46	71	74	81	10000	0.12	600
HQ0603Q2N0□T01	2.0	20	500	36	45	68	70	77	9000	0.12	600

# SPECIFICATIONS

## HQ0603Q Series

Part Number	Inductance	Min. Quality Factor	L, Q Test Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	Ω	mA
Symbol	L	Q	Freq.	Q					S.R.F	DCR	I <sub>r</sub>
HQ0603Q2N1□T01	2.1	20	500	36	45	67	71	76	9000	0.12	600
HQ0603Q2N2□T01	2.2	20	500	36	45	67	69	76	9000	0.12	600
HQ0603Q2N3□T01	2.3	20	500	37	46	68	71	76	9000	0.12	600
HQ0603Q2N4□T01	2.4	20	500	39	48	72	75	82	9000	0.12	600
HQ0603Q2N5□T01	2.5	20	500	38	47	70	73	80	9000	0.12	600
HQ0603Q2N6□T01	2.6	20	500	35	43	64	66	72	9000	0.12	600
HQ0603Q2N7□T01	2.7	20	500	36	44	65	68	73	9000	0.12	600
HQ0603Q2N8□T01	2.8	20	500	34	43	63	65	70	8000	0.12	600
HQ0603Q2N9□T01	2.9	20	500	36	45	65	66	72	8000	0.12	600
HQ0603Q3N0□T01	3.0	20	500	36	44	65	66	72	8000	0.12	600
HQ0603Q3N1□T01	3.1	20	500	34	42	62	64	69	7500	0.17	500
HQ0603Q3N2□T01	3.2	20	500	33	42	63	66	72	7000	0.17	500
HQ0603Q3N3□T01	3.3	20	500	34	45	73	77	89	7000	0.17	500
HQ0603Q3N4□T01	3.4	20	500	33	41	59	61	66	7000	0.17	500
HQ0603Q3N5□T01	3.5	20	500	33	41	59	61	65	7000	0.17	500
HQ0603Q3N6□T01	3.6	20	500	32	42	59	61	65	7000	0.17	500
HQ0603Q3N7□T01	3.7	20	500	32	40	59	60	65	7000	0.17	500
HQ0603Q3N8□T01	3.8	20	500	31	38	60	62	70	7000	0.17	500
HQ0603Q3N9□T01	3.9	20	500	30	39	61	64	72	7000	0.17	500
HQ0603Q4N0□T01	4.0	20	500	33	41	59	61	66	7000	0.17	500
HQ0603Q4N1□T01	4.1	20	500	30	38	56	58	62	7000	0.17	500
HQ0603Q4N2□T01	4.2	20	500	31	39	57	59	63	7000	0.17	500
HQ0603Q4N3□T01	4.3	20	500	32	40	58	59	64	7000	0.17	500
HQ0603Q4N7□T01	4.7	20	500	31	39	58	58	63	7000	0.25	400
HQ0603Q5N1□T01	5.1	20	500	32	39	55	56	59	5500	0.25	400
HQ0603Q5N6□T01	5.6	20	500	32	40	56	57	57	5500	0.25	400
HQ0603Q6N2□T01	6.2	20	500	29	36	51	52	55	5500	0.25	400
HQ0603Q6N8□T01	6.8	20	500	29	36	50	51	53	5500	0.30	400
HQ0603Q7N5□T01	7.5	20	500	28	36	50	52	53	4500	0.30	400
HQ0603Q8N2□T01	8.2	20	500	29	37	51	51	52	4500	0.40	300
HQ0603Q9N1□T01	9.1	20	500	27	35	48	50	51	4500	0.40	300
HQ0603Q10N□T01	10	20	500	28	36	48	49	47	4500	0.40	300
HQ0603Q11N□T01	11	20	500	28	36	48	49	47	4000	0.50	300
HQ0603Q12N□T01	12	20	500	29	36	48	49	48	4000	0.50	300
HQ0603Q13N□T01	13	20	500	28	35	45	46	43	4000	0.50	300
HQ0603Q15N□T01	15	20	500	27	34	41	40	37	3500	0.7	300
HQ0603Q16N□T01	16	20	500	27	34	41	40	36	3500	0.8	250
HQ0603Q18N□T01	18	20	500	28	35	41	39	35	3500	0.8	250
HQ0603Q20N□T01	20	20	500	26	33	38	37	30	3000	0.8	250
HQ0603Q22N□T01	22	20	500	25	31	35	33	29	3000	0.82	250
HQ0603Q24N□T01	24	15	500	27	32	32	29	22	2000	1.6	170
HQ0603Q27N□T01	27	15	500	25	30	29	25	17	2000	1.6	170
HQ0603Q30N□T01	30	12	500	27	31	26	21	11	1700	2.0	150
HQ0603Q33N□T01	33	12	300	26	31	23	19	8	1700	2.0	150
HQ0603Q36N□T01	36	12	300	24	28	20	13	-	1500	2.0	150
HQ0603Q39N□T01	39	12	300	25	29	17	11	-	1500	2.0	150
HQ0603Q43N□T01	43	12	300	25	28	15	10	-	1300	2.5	130
HQ0603Q47N□T01	47	12	300	25	28	14	7	-	1300	2.5	130

# SPECIFICATIONS

## HQ0603Q Series

Part Number	Inductance	Min. Quality Factor	L, Q Test Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	$\Omega$	mA
Symbol	L	Q	Freq.	Q					S.R.F	DCR	I <sub>r</sub>
HQ0603Q51N□T01	51	12	300	25	29	12	6	-	1200	2.5	130
HQ0603Q56N□T01	56	12	300	24	27	10	2	-	1200	2.5	130
HQ0603Q62N□T01	62	12	300	22	25	7	1	-	1100	5	100
HQ0603Q68N□T01	68	12	300	21	24	2	-	-	1100	5	100
HQ0603Q75N□T01	75	10	300	22	24	1	-	-	1100	5	100
HQ0603Q82N□T01	82	10	300	20	20	-	-	-	1000	5	100
HQ0603Q91N□T01	91	10	300	19	19	-	-	-	1000	7	80
HQ0603QR10□T01	100	10	300	18	17	-	-	-	900	7	80
HQ0603QR11□T01	110	10	300	19	18	-	-	-	900	8	80
HQ0603QR12□T01	120	10	300	18	17	-	-	-	800	8	80
HQ0603QR13□T01	130	7	100	16	14	-	-	-	700	8	80
HQ0603QR15□T01	150	7	100	17	13	-	-	-	700	8	80

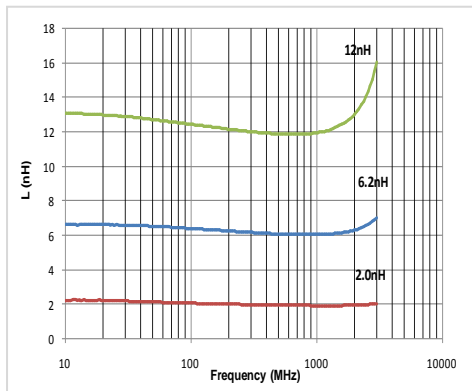
※□: Please specify the inductance tolerance. For  $L \leq 4.2\text{nH}$ , choose  $B = \pm 0.1\text{nH}$ ,  $C = \pm 0.2\text{nH}$  or  $S = \pm 0.3\text{nH}$ ; For  $L > 4.2\text{nH}$  choose,  $H = \pm 3\%$ ,  $J = \pm 5\%$ .

※: Please refer to "Measurement Notice For RF Inductors".

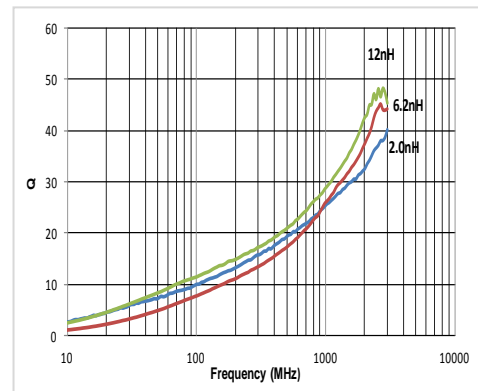
# TYPICAL ELECTRICAL CHARACTERISTICS

## HQ0402Q Series

### Inductance vs. Frequency Characteristics

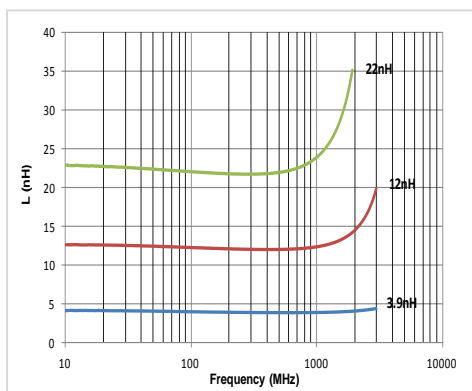


### Q vs. Frequency Characteristics



## HQ0603Q Series

### Inductance vs. Frequency Characteristics



### Q vs. Frequency Characteristics

