

Multilayer Ultra High Q Chip Ceramic Inductor – UHQ Series



Operating Temp ◆ -55°C ~+125°C

Features

- ◆ Monolithic structure for high reliability
- ◆ High self-resonant frequency
- ◆ Excellent solderability and high heat resistance
- ◆ Super High Q value

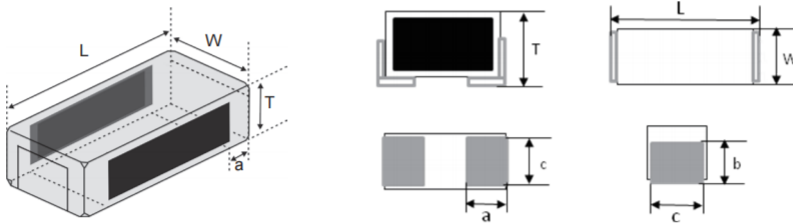
Applications

- ◆ RF circuit in telecommunication and other equipments
- ◆ Mobile phones and other electronic devices
- ◆ Bluetooth, W-LAN

Product Identification

1	2	3	4	5	6	7
UHQ	0402	H	3N9	B	P	01
1Type		2External Dimensions (L×W) (mm)		3Feature Type		
UHQ	Super High Q Chip Inductor	0402 [01005]	0.4×0.2	H	Chip Thickness=0.20mm	
				SL	Maximum thickness 0.25mm	
4Nominal Inductance		5Inductance Tolerance		6Packing		
Example	Nominal Value	B	±0.1nH	P	Plastic Tape Carrier Package	
3N9	3.9nH	C	±0.2nH			
10N	10nH	S	±0.3nH			
※N=nH		H	±3%	7Serial Code		
		J	±5%	01	Internal code	

Shape and Dimensions



Unit mm [inch]

Type	L	W	T	a	b	c
UHQ0402H [01005]	0.4±0.02 [.016±.0008]	0.2±0.02 [.008±.0008]	0.2±0.02 [.008±.0008]	0.14±0.03 [.005±.0010]	0.14±0.03 [.005±.0010]	0.17±0.03 [.006±.0010]
UHQ0402SL [01005]	0.4±0.02 [.016±.0008]	0.2±0.02 [.008±.0008]	0.23±0.02 [.009±.0008]	0.14±0.03 [.005±.0012]	0.14±0.03 [.005±.0012]	0.17±0.03 [.007±.0012]

Specifications

UHQ0402H 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 _r
UHQ0402H0N2 □ P01	0.2	-	500	-	-	-	-	-	16600	0.08	990
UHQ0402H0N3 □ P01	0.3	-	500	-	-	-	-	-	16600	0.08	990
UHQ0402H0N4 □ P01	0.4	-	500	-	-	-	-	-	16600	0.08	990
UHQ0402H0N5 □ P01	0.5	-	500	-	-	-	-	-	16600	0.08	730
UHQ0402H0N6 □ P01	0.6	13	500	18	23	40	42	51	16600	0.08	730
UHQ0402H0N7 □ P01	0.7	13	500	18	23	39	41	49	16600	0.08	730
UHQ0402H0N8 □ P01	0.8	13	500	18	23	38	41	48	16600	0.11	630
UHQ0402H0N9 □ P01	0.9	13	500	18	23	38	40	48	16600	0.11	580
UHQ0402H1N0 □ P01	1	13	500	17	22	37	40	48	16600	0.11	580
UHQ0402H1N1 □ P01	1.1	13	500	17	22	37	39	41	16600	0.11	580
UHQ0402H1N2 □ P01	1.2	13	500	17	22	36	38	40	16600	0.17	550
UHQ0402H1N3 □ P01	1.3	13	500	17	22	35	37	39	16000	0.17	400
UHQ0402H1N4 □ P01	1.4	13	500	17	22	35	36	43	15000	0.17	400
UHQ0402H1N5 □ P01	1.5	13	500	17	22	35	36	37	15000	0.17	390
UHQ0402H1N6 □ P01	1.6	13	500	17	22	35	37	40	15000	0.23	390
UHQ0402H1N7 □ P01	1.7	13	500	17	20	35	37	40	15000	0.23	380
UHQ0402H1N8 □ P01	1.8	13	500	17	21	34	36	39	15000	0.23	380
UHQ0402H1N9 □ P01	1.9	13	500	17	20	34	36	40	13000	0.23	380
UHQ0402H2N0 □ P01	2	13	500	17	21	35	37	40	13000	0.24	380
UHQ0402H2N1 □ P01	2.1	13	500	17	20	33	36	40	13000	0.24	380
UHQ0402H2N2 □ P01	2.2	13	500	17	23	36	39	39	13000	0.24	380
UHQ0402H2N3 □ P01	2.3	13	500	17	21	34	36	43	13000	0.29	370
UHQ0402H2N4 □ P01	2.4	13	500	17	23	35	37	40	13000	0.29	370
UHQ0402H2N5 □ P01	2.5	13	500	17	21	34	36	40	11500	0.3	370
UHQ0402H2N6 □ P01	2.6	13	500	17	20	34	36	40	11500	0.3	370
UHQ0402H2N7 □ P01	2.7	13	500	17	21	34	36	39	11500	0.32	370
UHQ0402H2N8 □ P01	2.8	13	500	17	20	33	35	40	10000	0.32	360
UHQ0402H2N9 □ P01	2.9	13	500	17	20	32	35	40	10000	0.35	360
UHQ0402H3N0 □ P01	3	13	500	17	19	32	34	39	10000	0.35	360
UHQ0402H3N1 □ P01	3.1	13	500	17	20	32	35	40	10000	0.4	290
UHQ0402H3N2 □ P01	3.2	13	500	17	20	32	35	40	10000	0.4	290
UHQ0402H3N3 □ P01	3.3	13	500	17	20	33	35	37	10000	0.4	290
UHQ0402H3N4 □ P01	3.4	13	500	17	19	31	33	37	9700	0.4	280
UHQ0402H3N5 □ P01	3.5	13	500	17	19	32	34	36	9700	0.4	280
UHQ0402H3N6 □ P01	3.6	13	500	17	19	31	33	35	9700	0.4	280
UHQ0402H3N7 □ P01	3.7	13	500	17	19	31	33	37	9700	0.4	270
UHQ0402H3N8 □ P01	3.8	13	500	17	19	31	33	36	9700	0.48	270
UHQ0402H3N9 □ P01	3.9	13	500	17	19	28	29	34	9700	0.48	270
UHQ0402H4N0 □ P01	4	13	500	17	18	29	32	34	9000	0.48	270
UHQ0402H4N1 □ P01	4.1	13	500	17	19	29	32	35	9000	0.6	270
UHQ0402H4N2 □ P01	4.2	13	500	17	19	31	33	35	9000	0.6	270
UHQ0402H4N3 □ P01	4.3	13	500	17	19	29	32	35	9000	0.6	270
UHQ0402H4N7 □ P01	4.7	13	500	17	19	28	31	34	8500	0.6	270
UHQ0402H5N1 □ P01	5.1	13	500	17	19	29	32	35	7800	0.6	250
UHQ0402H5N6 □ P01	5.6	13	500	17	20	34	35	37	7800	0.65	230
UHQ0402H6N2 □ P01	6.2	13	500	17	20	34	35	36	7200	0.7	220
UHQ0402H6N8 □ P01	6.8	13	500	17	21	33	35	37	6600	0.8	210
UHQ0402H7N5 □ P01	7.5	13	500	16	21	32	35	37	6600	0.8	200

Specifications

UHQ0402H 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 _r
UHQ0402H8N2 □ P01	8.2	13	500	17	23	33	35	37	6600	0.85	190
UHQ0402H9N1 □ P01	9.1	13	500	17	23	32	35	36	5900	0.95	170
UHQ0402H10N □ P01	10	13	500	16	22	29	33	35	5900	0.95	170
UHQ0402H11N □ P01	11	13	500	16	22	28	29	32	3500	1.1	140
UHQ0402H12N □ P01	12	13	500	16	22	28	29	32	3500	1.2	140
UHQ0402H13N □ P01	13	12	500	16	22	26	28	29	3000	1.3	140
UHQ0402H15N □ P01	15	12	500	16	21	26	28	29	3000	1.4	140
UHQ0402H16N □ P01	16	12	500	16	21	26	28	29	3000	1.4	140
UHQ0402H18N □ P01	18	10	500	16	21	26	28	29	2500	1.5	140
UHQ0402H20N □ P01	20	10	500	16	19	24	25	26	2500	1.5	140

UHQ0402SL 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 _r
UHQ0402SL0N3 □ P01	0.3		500	-	-	-	-	-	19000	0.01	1000
UHQ0402SL0N4 □ P01	0.4		500	-	-	-	-	-	19000	0.02	990
UHQ0402SL0N5 □ P01	0.5		500						19000	0.11	630
UHQ0402SL0N6 □ P01	0.6	14	500	28	31	44	51	60	19000	0.05	630
UHQ0402SL0N7 □ P01	0.7	14	500	28	31	44	47	56	19000	0.05	630
UHQ0402SL0N8 □ P01	0.8	14	500	28	31	44	47	56	19000	0.04	630
UHQ0402SL0N9 □ P01	0.9	14	500	28	31	44	47	56	18000	0.05	630
UHQ0402SL1N0 □ P01	1.0	14	500	25	28	42	45	52	18000	0.06	630
UHQ0402SL1N1 □ P01	1.1	14	500	25	28	42	45	52	18000	0.09	630
UHQ0402SL1N2 □ P01	1.2	14	500	25	28	42	45	52	16000	0.08	630
UHQ0402SL1N3 □ P01	1.3	14	500	22	26	41	44	48	16000	0.08	630
UHQ0402SL1N4 □ P01	1.4	14	500	22	26	41	44	48	16000	0.08	630
UHQ0402SL1N5 □ P01	1.5	14	500	22	25	39	42	47	15000	0.10	580
UHQ0402SL1N6 □ P01	1.6	14	500	22	26	40	43	48	15000	0.09	580
UHQ0402SL1N7 □ P01	1.7	14	500	22	26	40	43	48	15000	0.12	580
UHQ0402SL1N8 □ P01	1.8	14	500	22	25	39	42	47	14000	0.14	580
UHQ0402SL1N9 □ P01	1.9	14	500	22	25	39	42	47	14000	0.13	580
UHQ0402SL2N0 □ P01	2.0	14	500	22	25	39	42	47	14000	0.18	550
UHQ0402SL2N1 □ P01	2.1	14	500	22	25	39	42	47	14000	0.17	550
UHQ0402SL2N2 □ P01	2.2	14	500	22	25	39	42	47	14000	0.20	390
UHQ0402SL2N3 □ P01	2.3	14	500	22	25	39	42	47	14000	0.14	390
UHQ0402SL2N4 □ P01	2.4	14	500	21	25	38	41	47	13000	0.14	390
UHQ0402SL2N5 □ P01	2.5	14	500	21	25	38	41	47	11000	0.15	390
UHQ0402SL2N6 □ P01	2.6	14	500	21	25	38	41	47	11000	0.14	390
UHQ0402SL2N7 □ P01	2.7	14	500	21	25	38	41	47	11000	0.19	390
UHQ0402SL2N8 □ P01	2.8	14	500	21	25	38	41	47	11000	0.18	390
UHQ0402SL2N9 □ P01	2.9	14	500	21	25	38	41	47	11000	0.18	390
UHQ0402SL3N0 □ P01	3.0	14	500	21	25	38	41	47	10000	0.23	380
UHQ0402SL3N1 □ P01	3.1	14	500	21	25	38	41	46	9500	0.24	380
UHQ0402SL3N2 □ P01	3.2	14	500	20	25	38	41	46	9500	0.24	380

Specifications

UHQ0402SL 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 _r
UHQ0402SL3N3 □ P01	3.3	14	500	20	24	36	40	44	8800	0.24	380
UHQ0402SL3N4 □ P01	3.4	14	500	20	24	36	40	44	8800	0.22	380
UHQ0402SL3N5 □ P01	3.5	14	500	20	24	36	40	44	8800	0.21	380
UHQ0402SL3N6 □ P01	3.6	14	500	20	24	36	40	44	7500	0.21	380
UHQ0402SL3N7 □ P01	3.7	14	500	20	24	35	38	42	7500	0.24	380
UHQ0402SL3N8 □ P01	3.8	14	500	20	24	35	38	42	7500	0.213	380
UHQ0402SL3N9 □ P01	3.9	14	500	20	24	35	38	42	7500	0.225	380
UHQ0402SL4N0 □ P01	4.0	14	500	20	24	35	38	42	6500	0.29	370
UHQ0402SL4N1 □ P01	4.1	14	500	20	24	35	38	42	6500	0.34	370
UHQ0402SL4N2 □ P01	4.2	14	500	20	24	35	38	42	6500	0.33	370
UHQ0402SL4N3 □ P01	4.3	14	500	20	24	35	38	42	6000	0.25	370
UHQ0402SL4N7 □ P01	4.7	14	500	19	23	34	37	39	6000	0.35	360
UHQ0402SL5N1 □ P01	5.1	14	500	19	23	34	37	39	6000	0.51	270
UHQ0402SL5N6 □ P01	5.6	14	500	19	23	34	37	39	5500	0.42	270
UHQ0402SL6N2 □ P01	6.2	14	500	18	24	33	35	37	5500	0.42	270
UHQ0402SL6N8 □ P01	6.8	14	500	18	24	33	35	37	5500	0.52	270
UHQ0402SL7N5 □ P01	7.5	14	500	18	24	33	35	37	5500	0.60	270
UHQ0402SL8N2 □ P01	8.2	14	500	18	24	32	34	35	4500	0.65	270
UHQ0402SL9N1 □ P01	9.1	14	500	18	24	32	34	35	4500	0.79	210
UHQ0402SL10N □ P01	10	14	500	18	24	32	34	35	4500	0.85	200
UHQ0402SL11N □ P01	11	14	500	18	24	32	34	35	4500	0.75	200
UHQ0402SL12N □ P01	12	14	500	18	24	31	33	32	4300	0.81	200
UHQ0402SL13N □ P01	13	13	500	17	23	30	32	31	4300	1.03	170
UHQ0402SL14N □ P01	14	13	500	17	22	30	31	31	4000	1.15	140
UHQ0402SL15N □ P01	15	13	500	17	22	29	31	30	3500	1.12	140
UHQ0402SL16N □ P01	16	13	500	17	22	29	31	30	3500	1.38	140
UHQ0402SL18N □ P01	18	13	500	17	21	27	30	29	3500	1.72	120
UHQ0402SL19N □ P01	19	13	500	17	21	27	30	29	3000	1.74	120
UHQ0402SL20N □ P01	20	12	500	17	20	26	27	25	3000	1.72	120
UHQ0402SL22N □ P01	22	12	500	17	20	26	27	25	3000	1.76	120

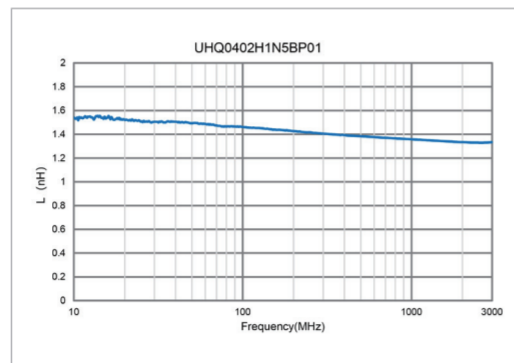
※ □: Please specify the inductance tolerance. For $L \leq 4.2\text{nH}$, choose $B = \pm 0.1\text{nH}$, $C = \pm 0.2\text{nH}$ or $S = \pm 0.3\text{nH}$; For $4.2\text{nH} < L < 5.6\text{nH}$, choose, $H = \pm 3\%$, $J = \pm 5\%$ or $S = \pm 0.3\text{nH}$; For $L \geq 5.6\text{nH}$, choose, $H = \pm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

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

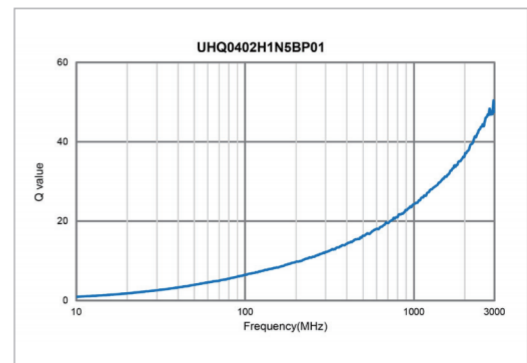
Typical Electrical Characteristics

UHQ0402H Series

Inductance-Frequency Characteristics(Typ.)



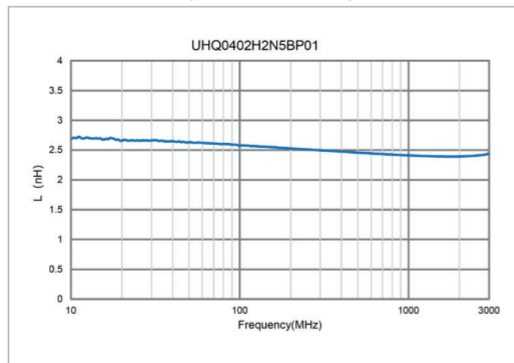
Q-Frequency Characteristics(Typ.)



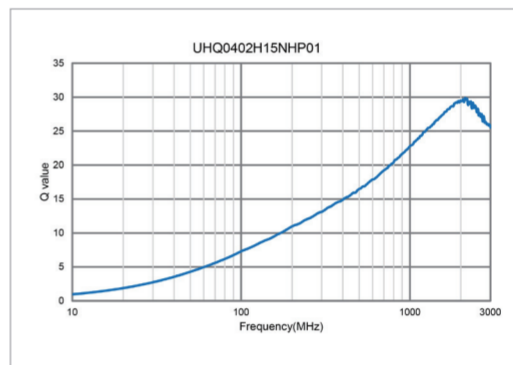
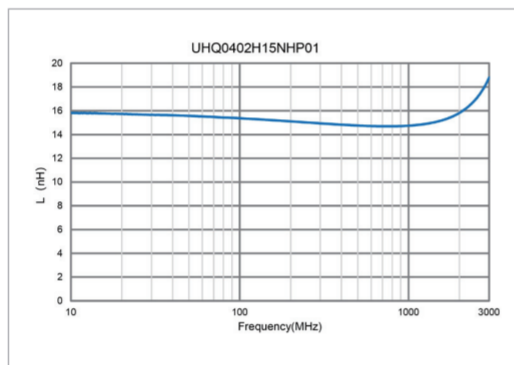
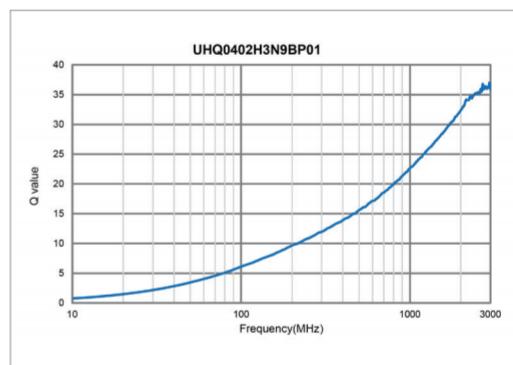
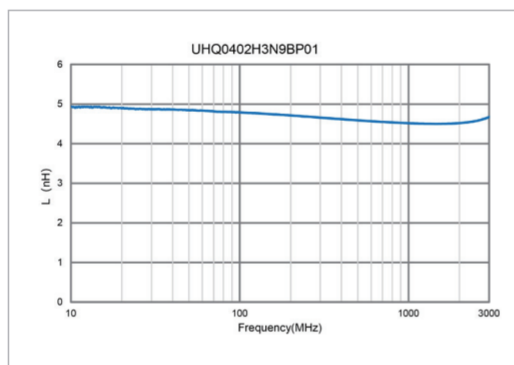
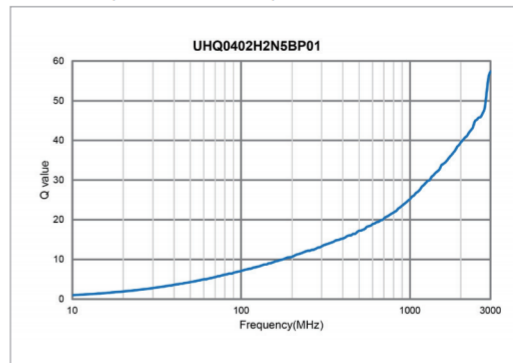
Typical
Electrical
Characteristics

UHQ0402H Series

Inductance-Frequency Characteristics(Typ.)

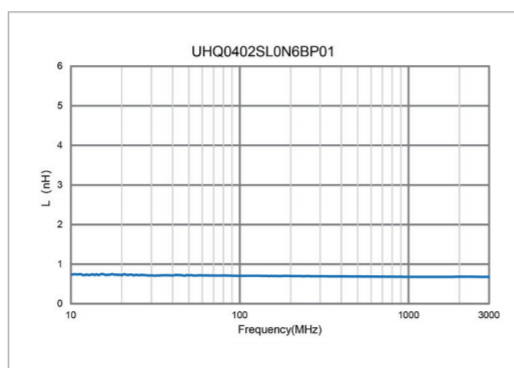


Q-Frequency Characteristics(Typ.)

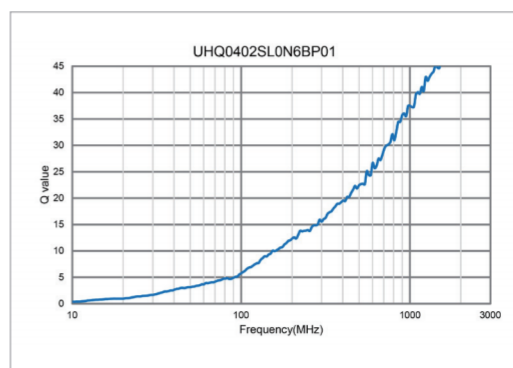


UHQ0402SL Series

Inductance-Frequency Characteristics(Typ.)



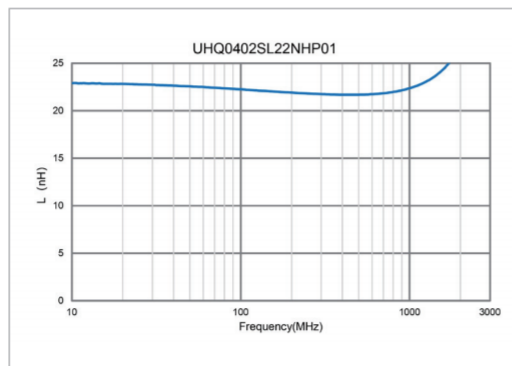
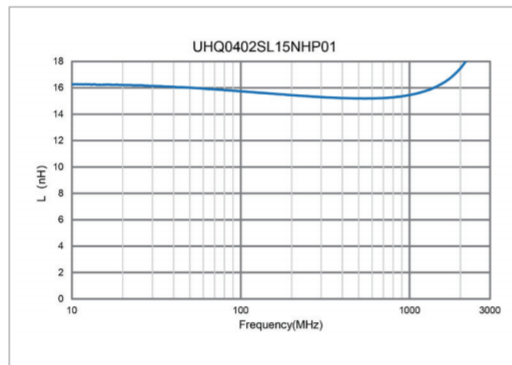
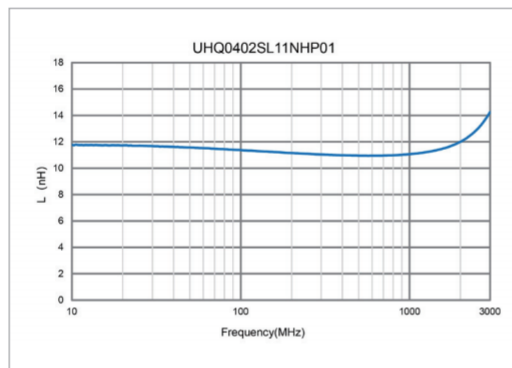
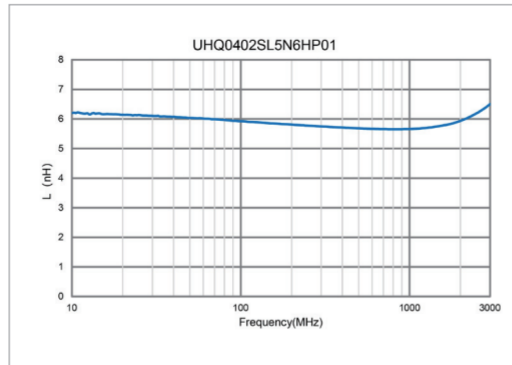
Q-Frequency Characteristics(Typ.)



**Typical
Electrical
Characteristics**

UHQ0402SL Series

Inductance-Frequency Characteristics(Typ.)



Q-Frequency Characteristics(Typ.)

