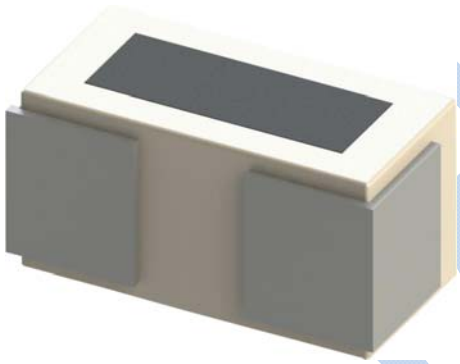
SUNLORD01005 High Q Value Multilayer Chip RF Inductor Releases

—HQ0402Q Series



Outline

SUNLORDHQ0402Q series multilayer RF inductor with ultra small 01005 package (0.4 * 0.2mm) and ultrahigh Q value isnow in production. HQ0402Q is manufactured via innovative coil design, L type electrode and fine coil manufacturing technology based on SUNLORD mature lamination platform, which fills the domestic manufacturer vacancy.

Background

The Internet mobile devices represented by smart phones are becoming more and more complex, and the frequency of communication is also gradually rising. Consequently the complexity of the RF circuits and the number of required components both increase, but the limited space can only accommodate smaller package RF devices. As the interference between adjacent frequency bands intensify,

high Q value inductor is needed to improve the sensitivity and reduce the energy loss. With years of RF inductor design and development experiences and advanced manufacturing platform, SUNLORD has developed HQ0402Q series of ultra small package with ultrahigh Q value characteristic to meet the market demand.

Products Features

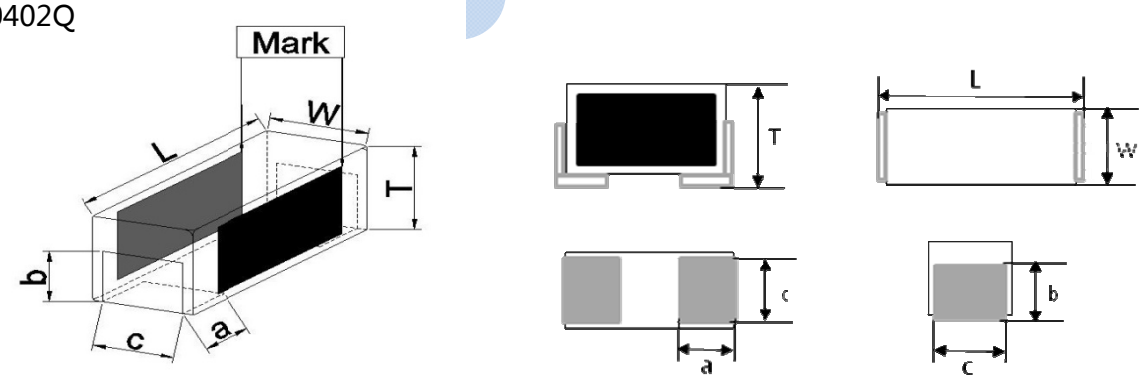
- Ultra small package 01005（0.4×0.2×0.3mm）
- Higher Q value than HQ0402H series
- Highest ±0.1nH value tolerance
- Inductance range:0.4nH~22nH

Applications

- RF circuit in smart phones and wearable devices
- Wi-Fi/Bluetooth wireless communication modelsetc.
- RF PA models

Shape Dimensions and Recommended Pads

HQ0402Q



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 [.012±.0008]	0.14±0.03 [.005±.0010]	0.14±0.03 [.005±.0010]	0.17±0.03 [.006±.0010]

Products Type

HQ0402Q3N9□T01
① ②③ ④ ⑤⑥⑦

①

Type	
HQ	High Q Ceramic Chip Inductor

②

External Dimensions (L×W) (mm)	
0402 [01005]	0.4×0.2

③

Applications and Characteristics Code	
Q	Ultrahigh Q Value

④

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

⑤

Inductance Tolerance	
B	±0.1nH
C	±0.2nH
S	±0.3nH
G	±2%
H	±3%
J	±5%

⑥

Packing	
T	Tape Carrier Package

⑦

Serial Code
01

Electrical Characteristics

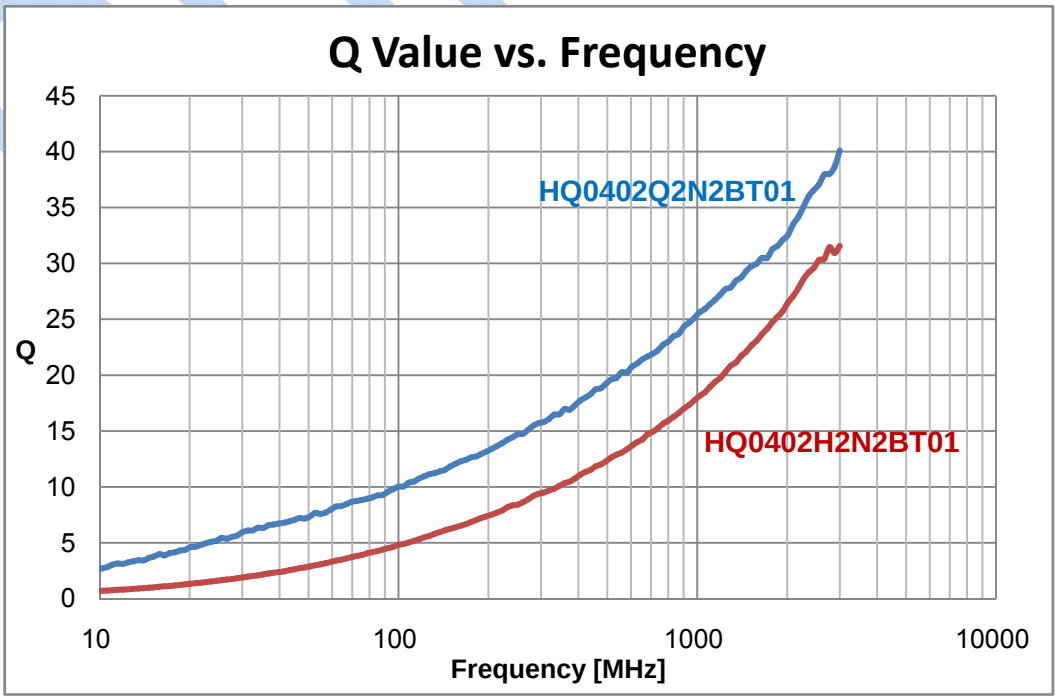
HQ0402Q Series

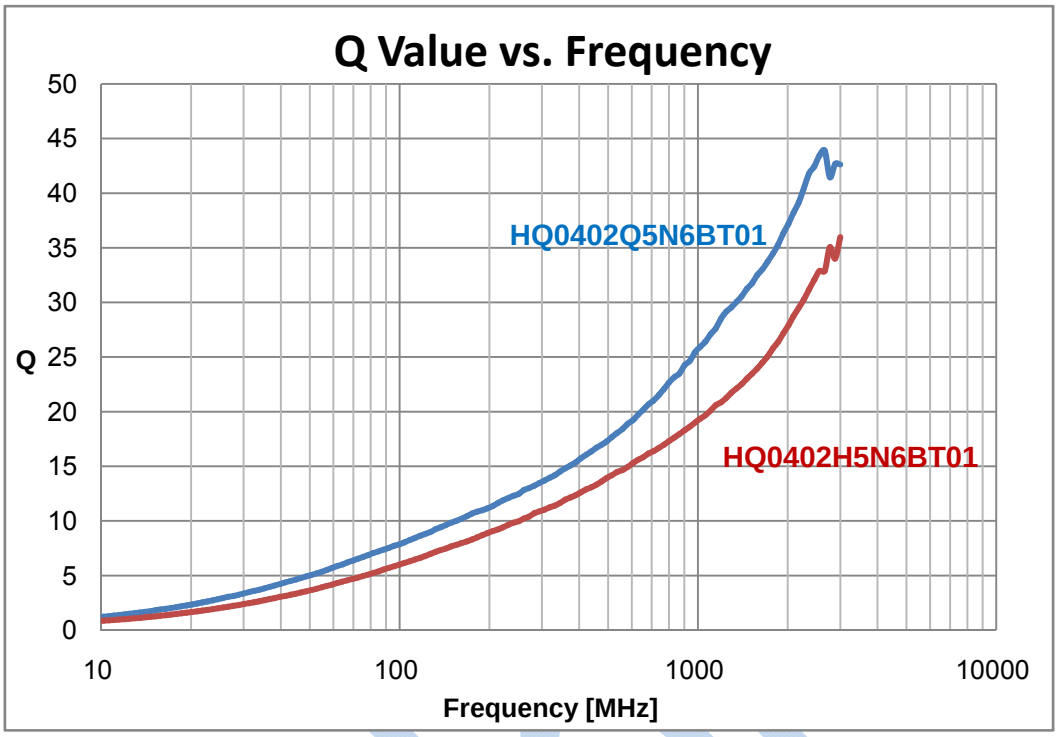
Part Number	Inductance	Min. Quality Factor	L/QTest Freq.	Typical Q @ Freq. (GHz)					Min. Self-resonant Frequency	Max. DC Resistance	Max. Rated Current
				0.5	0.8	1.8	2.0	2.4			
Units	nH	-	MHz	-					MHz	Ω	mA
Symbol	L	Q	Freq	Q					S.R.F	DCR	Ir
HQ0402Q0N4□T01	0.4	-	500	-	-	-	-	-	17000	0.03	1000
HQ0402Q0N5□T01	0.5	-	500	-	-	-	-	-	17000	0.04	1000
HQ0402Q0N6□T01	0.6	14	500	28	31	44	48	55	17000	0.05	950
HQ0402Q0N8□T01	0.8	14	500	23	27	39	43	48	15500	0.05	900
HQ0402Q1N0□T01	1.0	14	500	20	24	36	39	44	13000	0.06	900
HQ0402Q1N2□T01	1.2	14	500	20	25	37	40	46	12500	0.07	800
HQ0402Q1N5□T01	1.6	14	500	20	25	37	40	46	10500	0.08	700
HQ0402Q1N8□T01	1.8	14	500	22	28	43	46	50	10000	0.08	700
HQ0402Q2N0□T01	2.0	14	500	22	27	41	44	48	10000	0.09	800
HQ0402Q2N2□T01	2.2	14	500	22	27	42	45	49	9500	0.20	500

HQ0402Q2N4□T01	2.4	14	500	20	25	39	42	46	9000	0.20	450
HQ0402Q2N7□T01	2.7	14	500	20	25	39	41	45	9000	0.20	450
HQ0402Q3N0□T01	3.0	14	500	20	26	40	43	46	8500	0.20	450
HQ0402Q3N2□T01	3.2	14	500	20	26	41	43	45	8000	0.25	400
HQ0402Q3N3□T01	3.3	14	500	20	26	42	44	48	8000	0.25	400
HQ0402Q3N6□T01	3.6	14	500	20	27	42	44	48	8000	0.30	350
HQ0402Q3N9□T01	3.9	14	500	19	24	37	39	42	7500	0.35	350
HQ0402Q4N3□T01	4.3	14	500	19	24	37	39	42	7000	0.35	350
HQ0402Q4N7□T01	4.7	14	500	18	23	36	38	41	6500	0.35	350
HQ0402Q5N1□T01	5.1	14	500	18	24	36	38	41	6500	0.35	350
HQ0402Q5N6□T01	5.6	14	500	18	24	35	37	40	6000	0.45	300
HQ0402Q6N2□T01	6.2	14	500	17	22	32	34	37	6000	0.45	300
HQ0402Q6N8□T01	6.8	14	500	17	22	33	35	37	5500	0.45	300
HQ0402Q7N5□T01	7.5	14	500	17	23	34	36	38	5500	0.55	300
HQ0402Q8N2□T01	8.2	14	500	17	21	30	31	33	5000	0.55	300
HQ0402Q9N1□T01	9.1	14	500	17	22	31	32	33	5000	0.55	300
HQ0402Q10N□T01	10	14	500	17	22	32	33	34	5000	0.65	250
HQ0402Q12N□T01	12	14	500	17	21	30	31	32	4000	0.82	230
HQ0402Q15N□T01	15	12	500	17	21	29	30	30	4000	1.53	170
HQ0402Q18N□T01	18	12	500	17	21	29	29	29	3700	1.63	160
HQ0402Q20N□T01	20	12	500	16	19	25	24	23	3000	2.26	140
HQ0402Q22N□T01	22	12	500	16	19	25	24	22	3000	2.26	140

Electrical Characteristics

HQ0402Q vs. HQ0402H Q-Frequency Characteristics(Typ.)





The Q value of HQ0402Q series is higher than that of HQ0402H in 10MHz~3GHz band.