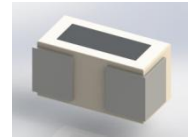


Ultra-High Q Inch 0201 Package Multilayer Chip RF Inductors—HQ0603Q Series



Overview

Sunlord's ultra-high Q, 0201 inch size multilayer chip RF inductors, HQ0603Q series, have been released. Based on the mature multilayer technology platform, Sunlord used innovative coil design, L-shaped electrode structure, and fine coil manufacturing technology, to achieve HQ0603Q series with high Q performance, which will fill the domestic gap.

BACKGROUND

With the increasing communication frequency bands and complex functions of smart phones, the interference between adjacent frequency bands becomes prominent. High Q inductors are preferred in RF circuits to increase the sensitivity and reduce the loss, especially for antenna circuit and PA circuit. Meanwhile the demand of inductors per unit is also increasing and small package is needed because of limited space. Sunlord's HQ0603Q series inductors are exactly suited with market demands.

FEATURES

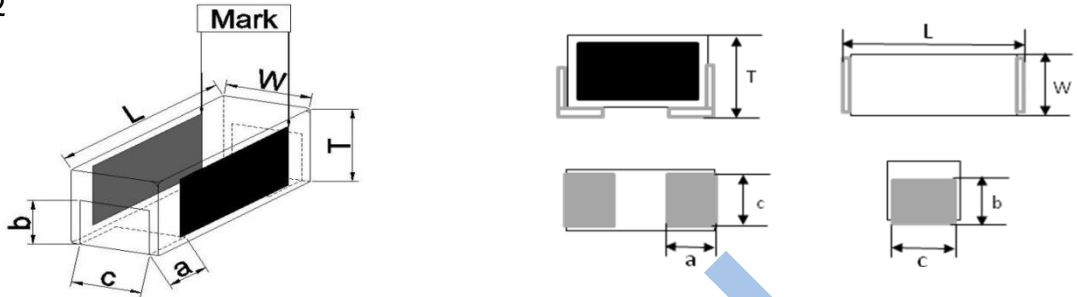
- Ultra high Q equivalent compatible with wire wound inductors
- Ultra small inch 0201 package (0.6×0.3×0.4mm)
- Tight tolerance of inductance value to $\pm 0.1\text{nH}$
- Wide inductance range (0.6nH-56nH)

APPLICATIONS

- RF PA Module
- RF circuits for smart phones and smart wearable devices
- Wi-Fi/Bluetooth and other wireless communication modules

SHAPE AND DIMENSIONS

HQ0603Q



Unit: mm[inch]

Type	L	W	T	a	b	c
0603 [0201]	0.6 ± 0.03 [.024 \pm .0012]	0.3 ± 0.03 [.012 \pm .0012]	0.4 ± 0.02 [.016 \pm .0008]	0.15 ± 0.03 [.006 \pm .0012]	0.2 ± 0.03 [.008 \pm .0012]	0.2 ± 0.03 [.008 \pm .0012]

PRODUCT IDENTIFICATION

HQ 0603 Q 3N9 □ I 01
 ① ② ③ ④ ⑤ ⑥ ⑦

①

Type	
HQ	High Q Ceramic Chip Inductor

②

External Dimensions (L×W) (mm)	
0603 [0201]	0.6×0.3

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	

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	Ir
HQ0603Q0N6□T01	0.6	20	500	-	-	-	-	-	20000	0.04	1100
HQ0603Q0N8□T01	0.8	20	500	-	-	-	-	-	18000	0.04	1100
HQ0603Q1N0□T01	1.0	20	500	47	60	92	99	110	16000	0.04	1100
HQ0603Q1N2□T01	1.2	20	500	45	56	88	92	100	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
HQ0603Q1N8□T01	1.8	20	500	38	45	72	75	81	10000	0.05	800
HQ0603Q2N0□T01	2.0	20	500	36	45	68	70	77	9000	0.12	600
HQ0603Q2N2□T01	2.2	20	500	36	45	67	69	76	9000	0.12	600
HQ0603Q2N4□T01	2.4	20	500	39	48	72	75	82	9000	0.12	600
HQ0603Q2N7□T01	2.7	20	500	36	44	65	68	73	9000	0.12	600
HQ0603Q3N0□T01	3.0	20	500	36	44	65	66	72	8000	0.12	600
HQ0603Q3N3□T01	3.3	20	500	34	45	73	77	89	7000	0.17	500
HQ0603Q3N6□T01	3.6	20	500	32	42	59	61	65	7000	0.17	500
HQ0603Q3N9□T01	3.9	20	500	30	39	61	64	72	7000	0.19	500
HQ0603Q4N3□T01	4.3	20	500	32	40	58	59	64	7000	0.19	500
HQ0603Q4N7□T01	4.7	20	500	31	39	58	58	63	7000	0.27	400
HQ0603Q5N1□T01	5.1	20	500	32	39	55	56	59	5500	0.27	400
HQ0603Q5N6□T01	5.6	20	500	32	40	56	57	57	5500	0.27	400
HQ0603Q6N2□T01	6.2	20	500	29	36	51	52	55	5500	0.27	400
HQ0603Q6N8□T01	6.8	20	500	29	36	50	51	53	5500	0.3	400
HQ0603Q7N5□T01	7.5	20	500	28	36	50	52	53	4500	0.32	400
HQ0603Q8N2□T01	8.2	20	500	29	37	51	51	52	4500	0.45	300
HQ0603Q9N1□T01	9.1	20	500	27	35	48	50	51	4500	0.45	300
HQ0603Q10N□T01	10	20	500	28	36	48	49	47	4500	0.45	300
HQ0603Q12N□T01	12	20	500	29	36	48	49	48	4000	0.55	300
HQ0603Q15N□T01	15	20	500	27	34	41	40	37	3500	0.75	300
HQ0603Q18N□T01	18	20	500	28	35	41	39	35	3500	0.9	250
HQ0603Q22N□T01	22	20	500	25	31	35	33	29	3000	0.95	250
HQ0603Q24N□T01	24	15	500	27	32	32	29	22	2000	1.8	170
HQ0603Q27N□T01	27	15	500	25	30	29	25	17	2000	1.8	170
HQ0603Q30N□T01	30	12	500	27	31	26	21	11	1700	2.2	150
HQ0603Q33N□T01	33	12	300	26	31	23	19	8	1700	2.2	150

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 _r
HQ0603Q36N□T01	36	12	300	24	28	20	13	-	1500	2.3	150
HQ0603Q39N□T01	39	12	300	25	29	17	11	-	1500	2.3	150
HQ0603Q43N□T01	43	12	300	25	28	15	10	2	1300	2.5	130
HQ0603Q47N□T01	47	12	300	25	28	14	7	3	1300	2.5	130
HQ0603Q56N□T01	56	12	300	24	26	8	2	10	1200	2.7	130

PRODUCTION STAGE

- In Mass Production

Sunlord