

Inductors for High-frequency Circuits Multilayer/High-Q

Conformity to RoHS Directive

MLG Series MLG0603P

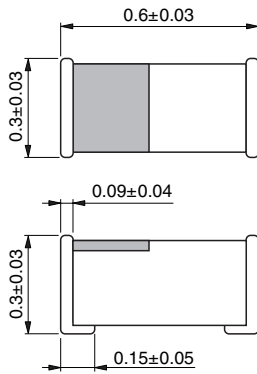
FEATURES

- It serializes a product of inductance 0.6 to 120nH.
- By the most suitable design, Q is higher than competing in a conventional product MLG0603S type. In particular, Q in more than 800MHz largely improved.
- Advanced monolithic structure is formed using a multilayering and sintering process with ceramic and conductive materials for high-frequency.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

APPLICATIONS

For high-frequency applications including mobile phones, high frequency modules (PA, VCO, FEM etc.), Bluetooth, W-LAN, UWB and tuners.

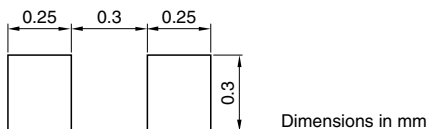
SHAPES AND DIMENSIONS



Weight: 0.2mg

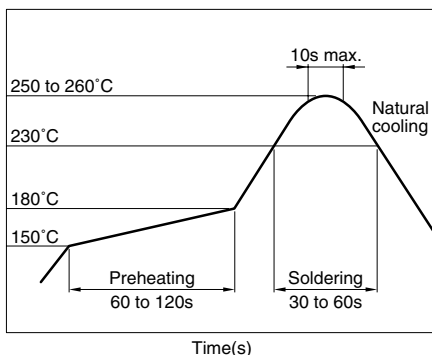
Dimensions in mm

RECOMMENDED PC BOARD PATTERN



Dimensions in mm

RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLG	0603	P	2N2	S	T
(1)	(2)	(3)	(4)	(5)	(6)

(1) Series name

(2) Dimensions

0603 0.6×0.3mm (L×W)

(3) Material code

(4) Inductance value

2N2	2.2nH
12N	12nH

(5) Inductance tolerance

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

(6) Packaging style

T Taping (reel)

SPECIFICATIONS

Operating temperature range	−55 to +125°C
Storage temperature range	−55 to +125°C

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	15000 pieces/reel

HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components.
The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• Please contact our Sales office when your application is considered the following:
The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

ELECTRICAL CHARACTERISTICS

Inductance (nH)	Inductance tolerance	Q min.	Test frequency L, Q (MHz)	Self-resonant frequency (GHz)		DC resistance (Ω)		Rated current (mA)max.	Part No.*
				min.	typ.	max.	typ.		
0.6	$\pm 0.1, \pm 0.2\text{nH}$	—	500	10.0	20.0	0.06	0.01	1000	MLG0603P0N6□
0.7	$\pm 0.1, \pm 0.2\text{nH}$	—	500	10.0	20.0	0.06	0.01	1000	MLG0603P0N7□
0.8	$\pm 0.1, \pm 0.2\text{nH}$	—	500	10.0	20.0	0.06	0.02	1000	MLG0603P0N8□
0.9	$\pm 0.1, \pm 0.2\text{nH}$	—	500	10.0	20.0	0.06	0.02	1000	MLG0603P0N9□
1.0	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	20.0	0.07	0.02	1000	MLG0603P1N0□
1.1	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	19.9	0.07	0.03	1000	MLG0603P1N1□
1.2	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	16.0	0.08	0.04	800	MLG0603P1N2□
1.3	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	13.9	0.08	0.03	800	MLG0603P1N3□
1.4	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	11.7	0.09	0.04	800	MLG0603P1N4□
1.5	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	14.9	0.10	0.03	800	MLG0603P1N5□
1.6	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	13.4	0.10	0.03	700	MLG0603P1N6□
1.7	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	10.0	12.8	0.10	0.02	700	MLG0603P1N7□
1.8	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	9.0	10.7	0.10	0.03	700	MLG0603P1N8□
1.9	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	9.0	10.9	0.10	0.04	600	MLG0603P1N9□
2.0	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	8.5	10.1	0.10	0.03	600	MLG0603P2N0□
2.1	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	8.0	9.8	0.10	0.05	600	MLG0603P2N1□
2.2	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	9.0	0.10	0.07	600	MLG0603P2N2□
2.3	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	8.4	0.20	0.07	600	MLG0603P2N3□
2.4	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	10.9	0.20	0.12	500	MLG0603P2N4□
2.5	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	9.9	0.20	0.09	500	MLG0603P2N5□
2.6	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	10.1	0.20	0.14	500	MLG0603P2N6□
2.7	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	10.0	0.20	0.14	500	MLG0603P2N7□
2.8	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	9.9	0.20	0.10	500	MLG0603P2N8□
2.9	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	9.2	0.20	0.10	500	MLG0603P2N9□
3.0	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	9.1	0.20	0.14	450	MLG0603P3N0□
3.1	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	8.8	0.20	0.10	450	MLG0603P3N1□
3.2	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	8.4	0.20	0.14	450	MLG0603P3N2□
3.3	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.5	8.4	0.20	0.13	450	MLG0603P3N3□
3.4	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	7.0	8.1	0.20	0.13	450	MLG0603P3N4□
3.5	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	6.5	8.0	0.20	0.12	450	MLG0603P3N5□
3.6	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	6.5	7.7	0.20	0.10	400	MLG0603P3N6□
3.7	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	6.5	7.4	0.20	0.14	400	MLG0603P3N7□
3.8	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	5.8	7.0	0.30	0.24	400	MLG0603P3N8□
3.9	$\pm 0.1, \pm 0.2, \pm 0.3\text{nH}$	14	500	5.8	7.1	0.30	0.22	400	MLG0603P3N9□
4.3	$\pm 3, \pm 5\%, \pm 0.3\text{nH}$	14	500	5.8	6.7	0.40	0.24	350	MLG0603P4N3□
4.7	$\pm 3, \pm 5\%, \pm 0.3\text{nH}$	14	500	5.5	6.9	0.40	0.16	350	MLG0603P4N7□
5.1	$\pm 3, \pm 5\%, \pm 0.3\text{nH}$	14	500	5.5	6.6	0.40	0.30	350	MLG0603P5N1□
5.6	$\pm 3, \pm 5\%, \pm 0.3\text{nH}$	14	500	4.0	5.3	0.40	0.32	350	MLG0603P5N6□
6.2	$\pm 3, \pm 5\%, \pm 0.3\text{nH}$	14	500	4.0	6.3	0.90	0.59	300	MLG0603P6N2□
6.8	$\pm 3, \pm 5\%$	14	500	4.0	6.1	0.90	0.62	300	MLG0603P6N8□
7.5	$\pm 3, \pm 5\%$	14	500	4.0	5.4	1.00	0.70	300	MLG0603P7N5□
8.2	$\pm 3, \pm 5\%$	14	500	4.0	5.2	1.00	0.71	250	MLG0603P8N2□
9.1	$\pm 3, \pm 5\%$	14	500	4.0	5.0	1.10	0.76	250	MLG0603P9N1□
10	$\pm 3, \pm 5\%$	14	500	4.0	4.7	1.20	0.85	250	MLG0603P10N□
12	$\pm 3, \pm 5\%$	14	500	3.5	4.3	1.30	0.82	180	MLG0603P12N□
15	$\pm 3, \pm 5\%$	14	500	3.2	3.7	1.40	0.94	170	MLG0603P15N□
18	$\pm 3, \pm 5\%$	14	500	3.0	3.5	1.50	1.04	160	MLG0603P18N□
22	$\pm 3, \pm 5\%$	14	500	2.2	2.9	1.90	1.31	150	MLG0603P22N□
27	$\pm 3, \pm 5\%$	14	500	2.2	2.7	2.10	1.45	140	MLG0603P27N□
33	$\pm 3, \pm 5\%$	10	300	1.8	2.4	2.20	1.55	130	MLG0603P33N□
39	$\pm 3, \pm 5\%$	10	300	1.8	2.2	2.40	1.72	120	MLG0603P39N□
47	$\pm 3, \pm 5\%$	10	300	1.6	2.0	2.90	2.18	110	MLG0603P47N□
56	$\pm 3, \pm 5\%$	10	300	1.4	1.8	3.50	2.35	100	MLG0603P56N□
68	$\pm 3, \pm 5\%$	9	300	1.2	1.6	3.50	2.69	100	MLG0603P68N□
82	$\pm 3, \pm 5\%$	9	300	1.0	1.5	4.00	2.71	80	MLG0603P82N□
100	$\pm 3, \pm 5\%$	9	300	0.9	1.3	4.50	3.20	80	MLG0603PR10□
120	$\pm 3, \pm 5\%$	9	300	0.8	1.0	5.00	3.79	80	MLG0603PR12□

* □: Please specify inductance tolerance, B ($\pm 0.1\text{nH}$), C ($\pm 0.2\text{nH}$), S ($\pm 0.3\text{nH}$), H ($\pm 3\%$) or J ($\pm 5\%$).

• Test equipment

Inductance Q : HP4291A+16197A, or equivalent

SRF: HP8720C, or equivalent

Rdc: YOKOGAWA TYPE7561, or equivalent

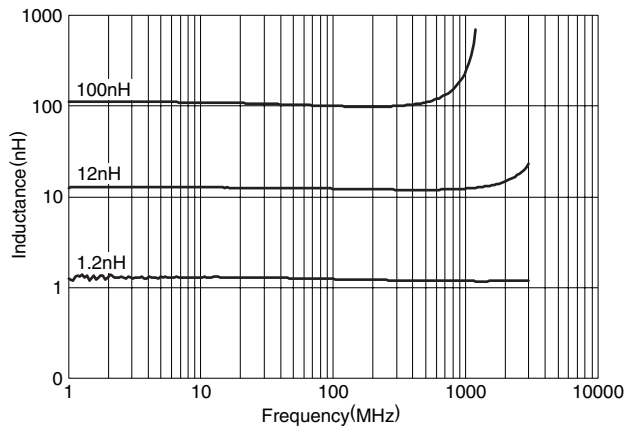
• Short bar residual inductance = 0.43nH

L, Q vs. FREQUENCY CHARACTERISTICS

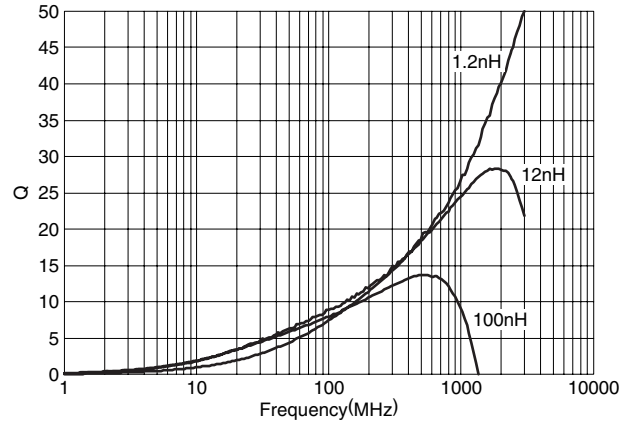
Part No.	Inductance(nH)typ.					Q typ.				
	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz
MLG0603P0N6	0.6	0.6	0.6	0.6	0.6	16min.	22min.	35min.	37min.	41min.
MLG0603P0N7	0.7	0.7	0.7	0.7	0.7	16min.	22min.	35min.	37min.	41min.
MLG0603P0N8	0.8	0.8	0.8	0.8	0.4	16	22	35	37	41
MLG0603P0N9	0.9	0.9	0.9	0.9	0.9	17	22	35	37	41
MLG0603P1N0	1.0	1.0	1.0	1.0	1.0	16	21	33	36	40
MLG0603P1N1	1.1	1.1	1.1	1.1	1.1	17	23	36	38	43
MLG0603P1N2	1.2	1.2	1.2	1.2	1.2	18	24	38	40	45
MLG0603P1N3	1.3	1.3	1.3	1.3	1.3	17	22	34	36	40
MLG0603P1N4	1.4	1.4	1.4	1.4	1.4	18	23	36	39	43
MLG0603P1N5	1.5	1.5	1.5	1.5	1.5	17	22	33	35	39
MLG0603P1N6	1.6	1.6	1.6	1.6	1.6	17	22	33	35	38
MLG0603P1N7	1.7	1.7	1.7	1.7	1.7	17	22	33	35	39
MLG0603P1N8	1.8	1.8	1.8	1.8	1.8	17	22	34	35	39
MLG0603P1N9	1.9	1.9	1.9	1.9	1.9	18	24	36	38	42
MLG0603P2N0	2.0	2.0	2.0	2.0	2.0	19	23	35	37	41
MLG0603P2N1	2.1	2.1	2.1	2.1	2.1	18	23	34	36	39
MLG0603P2N2	2.2	2.2	2.2	2.2	2.3	18	23	35	36	40
MLG0603P2N3	2.3	2.3	2.3	2.4	2.4	18	22	33	35	38
MLG0603P2N4	2.4	2.4	2.4	2.4	2.4	16	21	31	33	36
MLG0603P2N5	2.5	2.5	2.5	2.5	2.5	17	22	33	34	38
MLG0603P2N6	2.6	2.6	2.6	2.6	2.6	17	22	33	35	38
MLG0603P2N7	2.7	2.7	2.7	2.7	2.7	17	21	33	35	38
MLG0603P2N8	2.8	2.8	2.8	2.8	2.9	17	22	34	36	40
MLG0603P2N9	2.9	2.9	2.9	2.9	3.0	17	22	34	35	39
MLG0603P3N0	3.0	3.0	3.0	3.1	3.1	17	21	32	34	37
MLG0603P3N1	3.1	3.1	3.1	3.2	3.2	17	22	33	34	37
MLG0603P3N2	3.2	3.2	3.2	3.3	3.3	17	22	34	35	38
MLG0603P3N3	3.3	3.3	3.4	3.4	3.4	18	22	33	35	38
MLG0603P3N4	3.4	3.4	3.5	3.5	3.6	18	23	34	35	38
MLG0603P3N5	3.5	3.5	3.6	3.6	3.7	18	23	34	35	38
MLG0603P3N6	3.6	3.6	3.7	3.7	3.8	18	22	33	34	37
MLG0603P3N7	3.7	3.7	3.8	3.9	4.0	18	23	34	35	37
MLG0603P3N8	3.8	3.8	3.9	4.0	4.1	17	22	32	33	36
MLG0603P3N9	3.9	3.9	4.0	4.1	4.2	17	22	32	34	36
MLG0603P4N3	4.3	4.3	4.5	4.5	4.7	17	21	32	33	35
MLG0603P4N7	4.7	4.7	4.9	5.0	5.1	16	21	31	32	34
MLG0603P5N1	5.1	5.1	5.3	5.4	5.7	16	21	31	32	34
MLG0603P5N6	5.6	5.6	6.1	6.2	6.6	18	22	31	32	32
MLG0603P6N2	6.2	6.2	6.5	6.7	7.0	16	21	30	31	33
MLG0603P6N8	6.8	6.8	7.3	7.5	8.0	16	21	29	30	31
MLG0603P7N5	7.5	7.5	8.1	8.3	8.8	16	21	30	30	32
MLG0603P8N2	8.2	8.2	9.0	9.3	10.0	17	21	30	30	31
MLG0603P9N1	9.1	9.1	10.0	10.3	11.1	17	21	30	31	32
MLG0603P10N	10.0	10.1	11.2	11.7	12.9	16	21	28	28	28
MLG0603P12N	12.0	12.2	14.1	14.9	17.0	18	22	28	28	27
MLG0603P15N	15.0	15.3	18.4	19.9	23.8	18	22	27	26	24
MLG0603P18N	18.0	18.4	23.3	25.8	33.0	18	22	25	24	20
MLG0603P22N	22.0	22.9	33.6	40.2	67.7	18	21	21	18	11
MLG0603P27N	27.0	28.3	45.1	57.1		18	21	18	15	
MLG0603P33N	33.4	35.5	68.3			15	17	11		
MLG0603P39N	39.7	42.8				15	17			
MLG0603P47N	48.2	53.0				15	16			
MLG0603P56N	58.0	65.9				15	15			
MLG0603P68N	70.9	82.1				15	15			
MLG0603P82N	87.4	109.0				14	13			
MLG0603PR10	109.6	152.0				14	12			
MLG0603PR12	150.8					12				

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

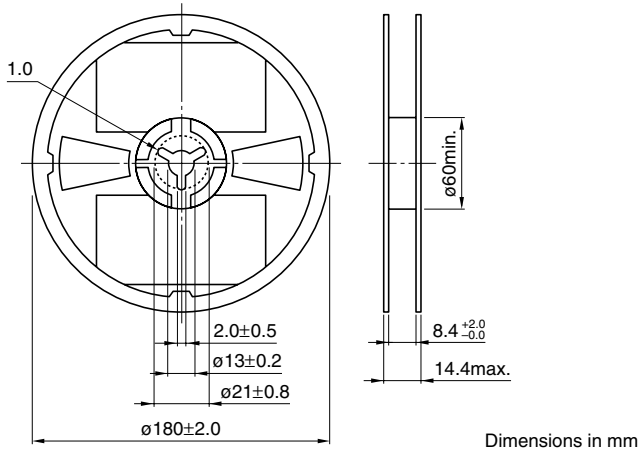


Q vs. FREQUENCY CHARACTERISTICS



PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS

