

Inductors for High-frequency Circuits

Multilayer/STD

MLG series

Type:	MLG0603S	0603[0201 inch]*
	MLG1005S	1005[0402 inch]
	MLG1608	1608[0603 inch]
* Dimensions Code JIS[EIA]		

Issue date: November 2011

- All specifications are subject to change without notice.
- 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.

Inductors for High-frequency Circuits

Multilayer/STD

Conformity to RoHS Directive

MLG Series MLG0603S

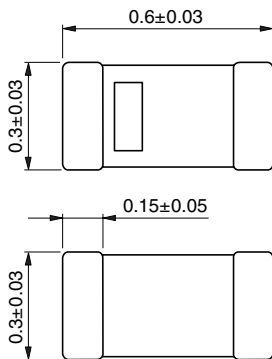
FEATURES

- Inductance values are supported from 0.3 to 180nH.
- 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

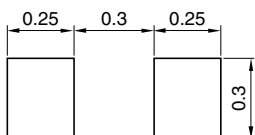
For high-frequency applications including mobile phones, high frequency modules (PA, VCO, FEM etc.), Bluetooth, W-LAN, UWB and tuners.

SHAPES AND DIMENSIONS



Weight: 0.2mg

RECOMMENDED PC BOARD PATTERN

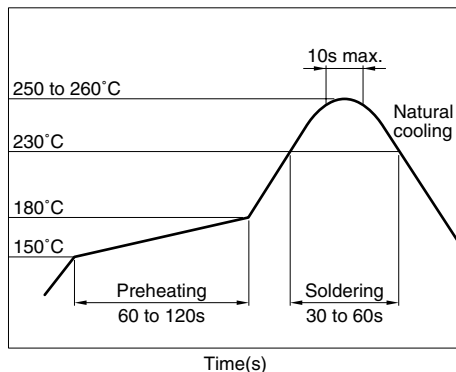


Dimensions in mm



RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLG	0603	S	2N2	S	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions L×W

0603	0.6×0.3mm (L×W)
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(3) Type name

(4) Inductance

2N2	2.2nH
12N	12nH
R10	100nH

(5) Tolerance

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

(6) Packaging style

T	Taping (reel)
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(7) TDK internal code

SPECIFICATIONS

Operating temperature range	−55 to +125°C
Storage temperature range	−55 to +125°C(After mount)

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.		
0.3	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	20 up	0.1	0.02	600	MLG0603S0N3□T
0.4	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	20 up	0.1	0.02	600	MLG0603S0N4□T
0.5	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	20 up	0.1	0.02	600	MLG0603S0N5□T
0.6	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	20 up	0.1	0.02	600	MLG0603S0N6□T
0.7	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	16.3	0.1	0.02	600	MLG0603S0N7□T
0.8	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	16.1	0.1	0.03	600	MLG0603S0N8□T
0.9	$\pm 0.1, \pm 0.2\text{nH}$	—	100	10.0	13.8	0.1	0.03	600	MLG0603S0N9□T
1.0	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	10.0	14.4	0.1	0.04	600	MLG0603S1N0□T
1.1	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	10.0	13.6	0.15	0.04	550	MLG0603S1N1□T
1.2	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	10.0	12.3	0.15	0.06	550	MLG0603S1N2□T
1.3	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	9.0	11.4	0.15	0.07	550	MLG0603S1N3□T
1.5	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	9.0	10.4	0.15	0.07	550	MLG0603S1N5□T
1.6	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	9.0	11.5	0.2	0.09	500	MLG0603S1N6□T
1.8	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	8.5	10.0	0.2	0.12	500	MLG0603S1N8□T
2.0	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	8.2	9.8	0.25	0.14	400	MLG0603S2N0□T
2.2	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	8.0	8.9	0.25	0.14	400	MLG0603S2N2□T
2.4	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	8.0	9.2	0.25	0.15	300	MLG0603S2N4□T
2.7	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	6.5	8.1	0.25	0.15	300	MLG0603S2N7□T
3.0	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	6.2	7.8	0.3	0.20	300	MLG0603S3N0□T
3.3	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	5.8	7.0	0.35	0.23	300	MLG0603S3N3□T
3.6	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	4	100	5.5	6.9	0.35	0.22	300	MLG0603S3N6□T
3.9	$\pm 0.1, \pm 0.2, 0.3\text{nH}$	5	100	5.0	6.6	0.4	0.27	300	MLG0603S3N9□T
4.3	$\pm 3\%, \pm 0.3\text{nH}$	5	100	5.0	6.4	0.4	0.27	300	MLG0603S4N3□T
4.7	$\pm 3\%, \pm 0.3\text{nH}$	5	100	4.5	5.4	0.45	0.28	300	MLG0603S4N7□T
5.1	$\pm 3\%, \pm 0.3\text{nH}$	5	100	4.5	5.5	0.45	0.23	250	MLG0603S5N1□T
5.6	$\pm 3\%, \pm 0.3\text{nH}$	5	100	4.2	5.3	0.5	0.31	250	MLG0603S5N6□T
6.2	$\pm 3\%, \pm 0.3\text{nH}$	5	100	4.2	5.1	0.55	0.32	250	MLG0603S6N2□T
6.8	$\pm 3, \pm 5\%$	5	100	3.6	4.4	0.6	0.32	250	MLG0603S6N8□T
7.5	$\pm 3, \pm 5\%$	5	100	4.2	5.3	0.7	0.43	200	MLG0603S7N5□T
8.2	$\pm 3, \pm 5\%$	5	100	3.8	4.5	0.7	0.45	200	MLG0603S8N2□T
9.1	$\pm 3, \pm 5\%$	5	100	3.4	4.9	0.8	0.51	200	MLG0603S9N1□T
10	$\pm 3, \pm 5\%$	5	100	3.2	4.1	0.8	0.53	200	MLG0603S10N□T
11	$\pm 3, \pm 5\%$	6	100	3.0	3.7	0.8	0.53	200	MLG0603S11N□T
12	$\pm 3, \pm 5\%$	6	100	2.8	3.6	0.9	0.63	180	MLG0603S12N□T
13	$\pm 3, \pm 5\%$	6	100	2.7	3.4	0.9	0.60	180	MLG0603S13N□T
15	$\pm 3, \pm 5\%$	6	100	2.5	3.3	1.1	0.69	180	MLG0603S15N□T
16	$\pm 3, \pm 5\%$	6	100	2.3	3.0	1.1	0.70	180	MLG0603S16N□T
18	$\pm 3, \pm 5\%$	6	100	2.2	2.8	1.2	0.78	150	MLG0603S18N□T
20	$\pm 3, \pm 5\%$	6	100	2.1	2.6	1.2	0.75	150	MLG0603S20N□T
22	$\pm 3, \pm 5\%$	6	100	2.0	2.5	1.2	0.88	150	MLG0603S22N□T
24	$\pm 3, \pm 5\%$	6	100	1.9	2.3	1.3	0.90	150	MLG0603S24N□T
27	$\pm 3, \pm 5\%$	6	100	1.8	2.2	1.5	1.00	100	MLG0603S27N□T
30	$\pm 3, \pm 5\%$	6	100	1.6	2.0	1.6	0.95	100	MLG0603S30N□T
33	$\pm 3, \pm 5\%$	6	100	1.6	2.0	1.8	1.20	100	MLG0603S33N□T
36	$\pm 3, \pm 5\%$	6	100	1.5	1.8	2.0	1.68	50	MLG0603S36N□T
39	$\pm 3, \pm 5\%$	6	100	1.4	1.6	2.0	1.40	50	MLG0603S39N□T
43	$\pm 3, \pm 5\%$	6	100	1.3	1.6	2.2	1.91	50	MLG0603S43N□T
47	$\pm 3, \pm 5\%$	6	100	1.3	1.5	2.2	1.48	50	MLG0603S47N□T
51	$\pm 3, \pm 5\%$	5	100	1.2	1.5	2.8	1.98	50	MLG0603S51N□T
56	$\pm 3, \pm 5\%$	5	100	1.2	1.4	3.2	2.11	50	MLG0603S56N□T
62	$\pm 3, \pm 5\%$	5	100	1.1	1.3	3.3	2.22	50	MLG0603S62N□T
68	$\pm 3, \pm 5\%$	5	100	1.05	1.24	3.5	2.40	50	MLG0603S68N□T
75	$\pm 3, \pm 5\%$	5	100	0.95	1.17	3.8	2.67	50	MLG0603S75N□T
82	$\pm 3, \pm 5\%$	5	100	0.90	1.08	4.0	2.80	50	MLG0603S82N□T
91	$\pm 3, \pm 5\%$	5	100	0.77	0.94	4.3	2.97	50	MLG0603S91N□T
100	$\pm 3, \pm 5\%$	5	100	0.77	0.94	4.5	3.13	50	MLG0603SR10□T
110	$\pm 3, \pm 5\%$	5	100	0.77	0.94	6.5	5.24	50	MLG0603SR11□T
120	$\pm 3, \pm 5\%$	5	100	0.70	0.88	7.0	5.53	50	MLG0603SR12□T
130	$\pm 3, \pm 5\%$	5	100	0.67	0.84	7.3	5.68	50	MLG0603SR13□T
150	$\pm 3, \pm 5\%$	5	100	0.64	0.77	8.0	6.24	50	MLG0603SR15□T
160	$\pm 3, \pm 5\%$	5	100	0.60	0.73	8.3	6.67	50	MLG0603SR16□T
180	$\pm 3, \pm 5\%$	5	100	0.56	0.68	8.5	6.99	50	MLG0603SR18□T

* □: 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 ($\pm 5\%$).

Please contact us for information on inductance tolerance, G ($\pm 2\%$).

• Test equipment

Inductance Q : HP4291A+16197A, or equivalent

SRF: HP8720C, or equivalent

Rdc: YOKOGAWA TYPE7561, or equivalent

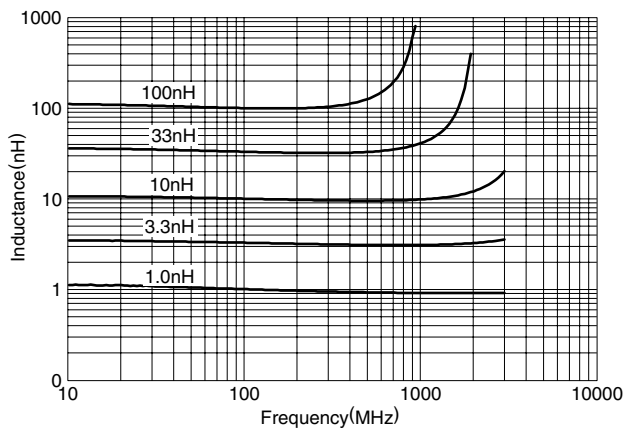
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L, Q vs. FREQUENCY CHARACTERISTICS

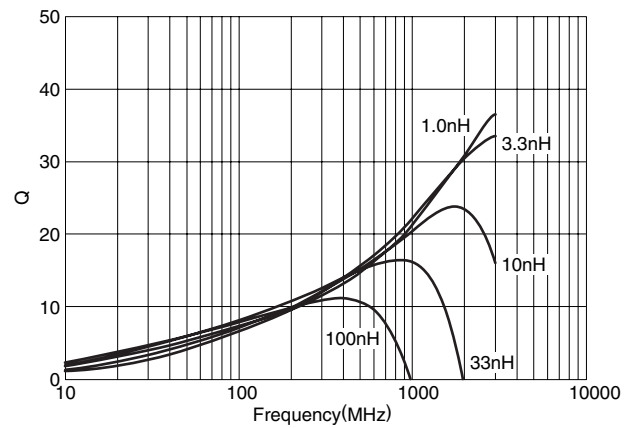
Part No.	Inductance(nH)typ.					Q typ.				
	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz
MLG0603S0N3	0.3	0.3	0.3	0.3	0.3	14min.	18min.	29min.	32min.	35min.
MLG0603S0N4	0.4	0.4	0.4	0.4	0.4	14min.	18min.	29min.	32min.	35min.
MLG0603S0N5	0.5	0.5	0.5	0.5	0.5	14	18	29	32	35
MLG0603S0N6	0.6	0.6	0.5	0.5	0.5	16	20	33	34	39
MLG0603S0N7	0.7	0.6	0.6	0.6	0.6	16	21	33	35	39
MLG0603S0N8	0.7	0.7	0.7	0.7	0.7	15	20	32	34	38
MLG0603S0N9	0.8	0.8	0.8	0.8	0.8	15	19	30	32	35
MLG0603S1N0	0.9	0.9	0.9	0.9	0.9	14	18	29	30	34
MLG0603S1N1	1.0	1.0	1.0	1.0	1.0	14	19	29	31	34
MLG0603S1N2	1.1	1.1	1.1	1.1	1.1	14	18	29	30	34
MLG0603S1N3	1.2	1.2	1.2	1.2	1.2	14	18	29	30	33
MLG0603S1N5	1.4	1.4	1.4	1.4	1.4	15	19	29	30	34
MLG0603S1N6	1.5	1.5	1.5	1.5	1.5	14	18	29	30	33
MLG0603S1N8	1.7	1.7	1.7	1.7	1.7	15	19	29	30	33
MLG0603S2N0	1.9	1.9	1.9	1.9	1.9	14	18	28	29	32
MLG0603S2N2	2.1	2.0	2.1	2.1	2.1	14	18	27	28	31
MLG0603S2N4	2.2	2.2	2.2	2.3	2.3	14	18	27	29	32
MLG0603S2N7	2.5	2.5	2.6	2.6	2.7	15	19	28	29	31
MLG0603S3N0	2.8	2.8	2.9	2.9	3.0	15	19	29	31	33
MLG0603S3N3	3.1	3.1	3.2	3.3	3.4	15	19	28	29	31
MLG0603S3N6	3.4	3.4	3.5	3.6	3.7	14	18	26	27	29
MLG0603S3N9	3.7	3.7	3.8	3.9	4.1	15	19	29	29	32
MLG0603S4N3	4.1	4.1	4.3	4.4	4.6	14	18	27	27	29
MLG0603S4N7	4.4	4.4	4.8	4.9	5.2	15	20	28	29	30
MLG0603S5N1	4.8	4.8	5.1	5.3	5.6	14	18	25	26	27
MLG0603S5N6	5.3	5.3	5.7	5.9	6.4	16	20	27	28	29
MLG0603S6N2	5.9	5.9	6.5	6.8	7.5	15	18	25	25	26
MLG0603S6N8	6.4	6.5	7.4	7.8	8.7	15	19	26	26	25
MLG0603S7N5	7.1	7.1	7.8	8.0	8.7	14	18	25	26	26
MLG0603S8N2	7.8	7.8	8.8	9.3	10.4	15	18	24	24	24
MLG0603S9N1	8.6	8.6	9.8	10.3	11.5	14	17	22	22	22
MLG0603S10N	10	10	12	12	15	15	18	23	22	21
MLG0603S11N	10	11	13	14	16	15	18	22	22	20
MLG0603S12N	11	12	14	15	19	16	19	24	23	20
MLG0603S13N	12	13	16	17	22	14	16	19	18	15
MLG0603S15N	14	15	20	23	33	15	19	20	18	14
MLG0603S16N	15	16	22	25	37	14	16	16	15	11
MLG0603S18N	17	18	28	35		14	17	15	13	
MLG0603S20N	19	20	32			13	16	14		
MLG0603S22N	21	23	40			15	17	13		
MLG0603S24N	23	24	45			13	15	13		
MLG0603S27N	27	29				15	17			
MLG0603S30N	29	32				13	15			
MLG0603S33N	33	36				14	16			
MLG0603S36N	36	40				14	15			
MLG0603S39N	40	47				13	14			
MLG0603S43N	44	53				14	14			
MLG0603S47N	49	60				13	13			
MLG0603S51N	52	64				11	11			
MLG0603S56N	59	77				12	11			
MLG0603S62N	66	88				11	10			
MLG0603S68N	74	104				13	11			
MLG0603S75N	82	119				10	8			
MLG0603S82N	96	161				12	8			
MLG0603S91N	109					9				
MLG0603SR10	129					11				
MLG0603SR11	134					10				
MLG0603SR12	156					9				
MLG0603SR13	172					8				
MLG0603SR15	223					7				
MLG0603SR16	238					7				
MLG0603SR18	318					6				

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

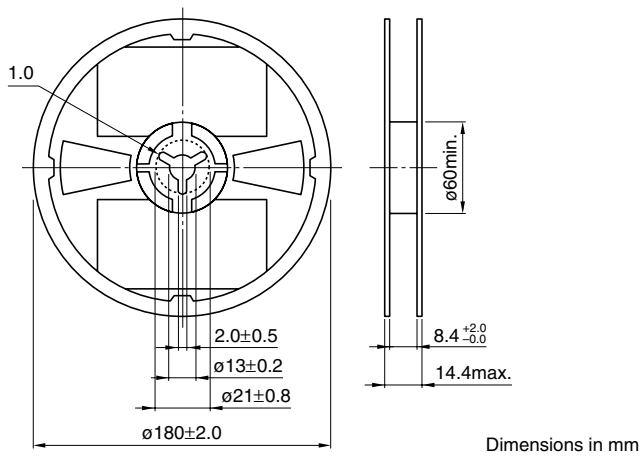


Q vs. FREQUENCY CHARACTERISTICS

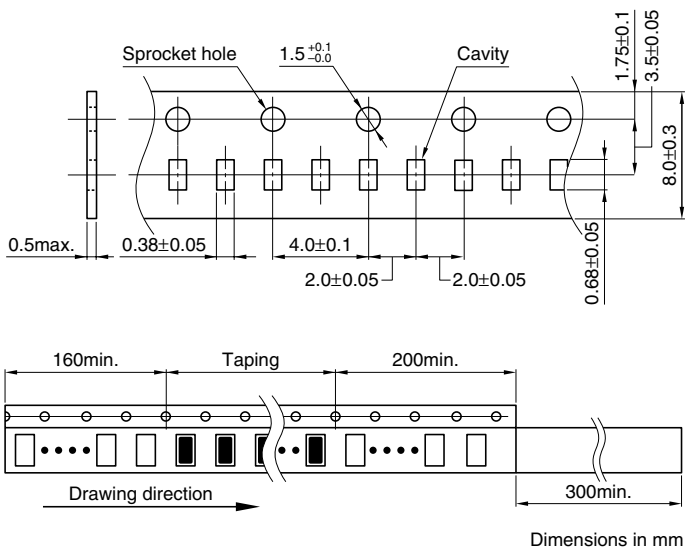


PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS



Inductors for High-frequency Circuits

Multilayer/STD

Conformity to RoHS Directive

MLG Series MLG1005S

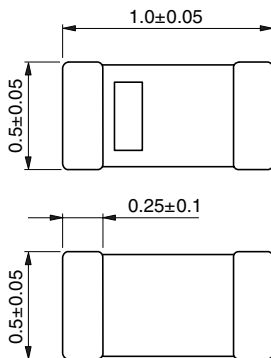
FEATURES

- Inductance values are supported from 0.3 to 390nH.
- 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

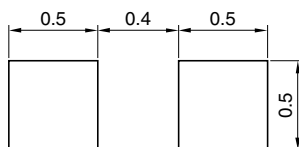
For high-frequency applications including mobile phones, high frequency modules (PA, VCO, FEM etc.), Bluetooth, W-LAN, UWB and tuners.

SHAPES AND DIMENSIONS



Weight: 1mg

RECOMMENDED PC BOARD PATTERN

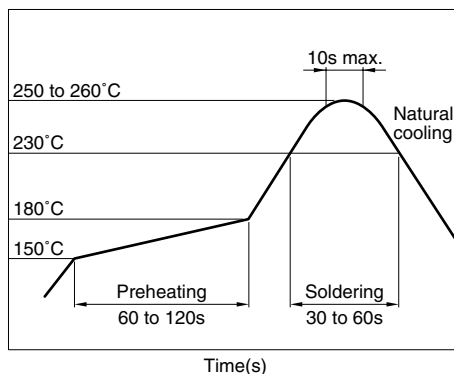


Dimensions in mm



RECOMMENDED SOLDERING CONDITION

REFLOW SOLDERING



PRODUCT IDENTIFICATION

MLG	1005	S	2N2	S	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions

1005	1.0×0.5mm (L×W)
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(3) Type name

(4) Inductance

2N2	2.2nH
12N	12nH
R10	100nH

(5) Tolerance

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

(6) Packaging style

T	Taping (reel)
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(7) TDK internal code

SPECIFICATIONS

Operating temperature range	-55 to +125°C
Storage temperature range	-55 to +125°C (After mount)

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	10000 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.

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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.		
0.3	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	20up	0.10	0.01	1000	MLG1005S0N3□T
0.4	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	20up	0.10	0.01	1000	MLG1005S0N4□T
0.5	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	20up	0.10	0.01	1000	MLG1005S0N5□T
0.6	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	20up	0.10	0.01	1000	MLG1005S0N6□T
0.7	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	18.7	0.10	0.02	1000	MLG1005S0N7□T
0.8	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	16.4	0.10	0.02	1000	MLG1005S0N8□T
0.9	$\pm 0.1\text{nH}$, $\pm 0.2\text{nH}$	—	100	10.0	17.7	0.10	0.04	1000	MLG1005S0N9□T
1.0	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	10.0	13.8	0.10	0.04	1000	MLG1005S1N0□T
1.1	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	10.0	19.3	0.10	0.03	1000	MLG1005S1N1□T
1.2	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	10.0	11.6	0.10	0.04	1000	MLG1005S1N2□T
1.3	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	8.00	11.7	0.10	0.04	1000	MLG1005S1N3□T
1.5	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	8.00	9.6	0.10	0.06	1000	MLG1005S1N5□T
1.6	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	7.50	9.4	0.12	0.05	1000	MLG1005S1N6□T
1.8	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	8.00	10.3	0.15	0.06	900	MLG1005S1N8□T
2.0	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	7.50	9.3	0.15	0.07	900	MLG1005S2N0□T
2.2	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	7.00	8.6	0.15	0.08	900	MLG1005S2N2□T
2.4	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	7.00	8.2	0.15	0.08	800	MLG1005S2N4□T
2.7	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	6.00	7.3	0.15	0.08	800	MLG1005S2N7□T
3.0	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	7	100	5.50	6.8	0.20	0.09	800	MLG1005S3N0□T
3.3	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	8	100	5.00	6.1	0.20	0.09	800	MLG1005S3N3□T
3.6	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	8	100	5.00	6.7	0.20	0.09	700	MLG1005S3N6□T
3.9	$\pm 0.1\text{nH}$, ± 0.2 , 0.3nH	8	100	5.00	6.5	0.20	0.11	700	MLG1005S3N9□T
4.3	$\pm 0.2\text{nH}$, $\pm 0.3\text{nH}$	8	100	4.50	6.0	0.20	0.11	700	MLG1005S4N3□T
4.7	$\pm 0.2\text{nH}$, $\pm 0.3\text{nH}$	8	100	4.50	5.4	0.25	0.12	700	MLG1005S4N7□T
5.1	$\pm 0.2\text{nH}$, $\pm 0.3\text{nH}$	8	100	4.00	5.0	0.25	0.13	600	MLG1005S5N1□T
5.6	$\pm 0.2\text{nH}$, $\pm 0.3\text{nH}$	8	100	4.00	5.3	0.25	0.14	600	MLG1005S5N6□T
6.2	$\pm 3\%$, $\pm 0.3\text{nH}$	8	100	4.00	4.7	0.25	0.16	600	MLG1005S6N2□T
6.8	$\pm 3\%$, $\pm 5\%$	8	100	3.50	4.4	0.25	0.15	600	MLG1005S6N8□T
7.5	$\pm 3\%$, $\pm 5\%$	8	100	3.00	4.1	0.25	0.15	500	MLG1005S7N5□T
8.2	$\pm 3\%$, $\pm 5\%$	8	100	3.00	4.0	0.30	0.19	500	MLG1005S8N2□T
9.1	$\pm 3\%$, $\pm 5\%$	8	100	3.00	3.8	0.30	0.20	500	MLG1005S9N1□T
10	$\pm 3\%$, $\pm 5\%$	8	100	2.50	3.4	0.35	0.22	500	MLG1005S10N□T
11	$\pm 3\%$, $\pm 5\%$	8	100	2.50	3.5	0.40	0.28	400	MLG1005S11N□T
12	$\pm 3\%$, $\pm 5\%$	8	100	2.50	3.0	0.40	0.25	400	MLG1005S12N□T
13	$\pm 3\%$, $\pm 5\%$	8	100	2.40	2.9	0.50	0.26	400	MLG1005S13N□T
15	$\pm 3\%$, $\pm 5\%$	8	100	2.20	2.8	0.55	0.35	400	MLG1005S15N□T
16	$\pm 3\%$, $\pm 5\%$	8	100	2.10	2.7	0.55	0.32	400	MLG1005S16N□T
18	$\pm 3\%$, $\pm 5\%$	8	100	2.00	2.5	0.60	0.40	350	MLG1005S18N□T
20	$\pm 3\%$, $\pm 5\%$	8	100	1.90	2.4	0.60	0.38	350	MLG1005S20N□T
22	$\pm 3\%$, $\pm 5\%$	8	100	1.70	2.2	0.70	0.46	350	MLG1005S22N□T
24	$\pm 3\%$, $\pm 5\%$	8	100	1.70	2.1	0.70	0.43	350	MLG1005S24N□T
27	$\pm 3\%$, $\pm 5\%$	8	100	1.60	2.0	0.80	0.53	300	MLG1005S27N□T
30	$\pm 3\%$, $\pm 5\%$	8	100	1.50	1.9	0.80	0.50	300	MLG1005S30N□T
33	$\pm 3\%$, $\pm 5\%$	8	100	1.40	1.8	0.90	0.59	300	MLG1005S33N□T
36	$\pm 3\%$, $\pm 5\%$	8	100	1.30	1.7	1.00	0.62	250	MLG1005S36N□T
39	$\pm 3\%$, $\pm 5\%$	8	100	1.20	1.6	1.00	0.65	250	MLG1005S39N□T
43	$\pm 3\%$, $\pm 5\%$	8	100	1.20	1.6	1.10	0.67	250	MLG1005S43N□T
47	$\pm 3\%$, $\pm 5\%$	8	100	1.10	1.4	1.20	0.75	250	MLG1005S47N□T
51	$\pm 3\%$, $\pm 5\%$	8	100	1.10	1.5	1.20	0.72	250	MLG1005S51N□T
56	$\pm 3\%$, $\pm 5\%$	8	100	1.00	1.3	1.30	0.83	200	MLG1005S56N□T
62	$\pm 3\%$, $\pm 5\%$	8	100	1.00	1.3	1.40	0.85	200	MLG1005S62N□T
68	$\pm 3\%$, $\pm 5\%$	8	100	0.80	1.1	1.50	0.87	200	MLG1005S68N□T
75	$\pm 3\%$, $\pm 5\%$	8	100	0.75	1.1	1.50	0.93	200	MLG1005S75N□T
82	$\pm 3\%$, $\pm 5\%$	8	100	0.70	1.0	1.60	1.01	200	MLG1005S82N□T
91	$\pm 3\%$, $\pm 5\%$	8	100	0.70	0.9	1.80	1.14	200	MLG1005S91N□T

* □: 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 $\pm 5\%$).

Please contact us for information on inductance tolerance, G($\pm 2\%$).

• Test equipment

Inductance Q : HP4291A+16193A, or equivalent

SRF: HP8720C, or equivalent

Rdc: YOKOGAWA TYPE7561, or equivalent

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.		
100	$\pm 3\%$, $\pm 5\%$	8	100	0.70	0.9	2.00	1.37	200	MLG1005SR10□T
110	$\pm 3\%$, $\pm 5\%$	8	100	0.70	0.9	2.20	1.48	150	MLG1005SR11□T
120	$\pm 3\%$, $\pm 5\%$	8	100	0.60	0.8	2.20	1.48	150	MLG1005SR12□T
130	$\pm 3\%$, $\pm 5\%$	8	100	0.60	0.8	2.50	1.68	150	MLG1005SR13□T
150	$\pm 3\%$, $\pm 5\%$	8	100	0.55	0.7	3.50	2.44	150	MLG1005SR15□T
160	$\pm 3\%$, $\pm 5\%$	8	100	0.50	0.6	3.80	2.74	150	MLG1005SR16□T
180	$\pm 3\%$, $\pm 5\%$	8	100	0.50	0.6	3.80	2.88	150	MLG1005SR18□T
200	$\pm 3\%$, $\pm 5\%$	8	100	0.42	0.5	4.20	3.15	100	MLG1005SR20□T
220	$\pm 3\%$, $\pm 5\%$	8	100	0.45	0.5	4.20	3.02	100	MLG1005SR22□T
240	$\pm 3\%$, $\pm 5\%$	8	100	0.40	0.5	4.80	3.42	100	MLG1005SR24□T
270	$\pm 3\%$, $\pm 5\%$	8	100	0.40	0.5	4.80	3.54	100	MLG1005SR27□T
300	$\pm 3\%$, $\pm 5\%$	6	50	0.35	0.4	6.50	4.82	50	MLG1005SR30□T
330	$\pm 3\%$, $\pm 5\%$	6	50	0.35	0.4	7.00	5.21	50	MLG1005SR33□T
360	$\pm 3\%$, $\pm 5\%$	6	50	0.30	0.4	7.50	5.39	50	MLG1005SR36□T
390	$\pm 3\%$, $\pm 5\%$	6	50	0.30	0.4	8.00	5.97	50	MLG1005SR39□T

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

Please contact us for information on inductance tolerance, G($\pm$ 2%).

• Test equipment

Inductance Q : HP4291A+16193A, or equivalent

SRF: HP8720C, or equivalent

Rdc: YOKOGAWA TYPE7561, or equivalent

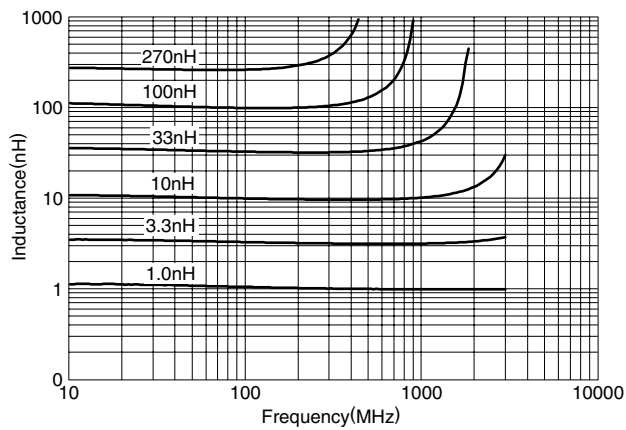
L, Q vs. FREQUENCY CHARACTERISTICS

Part No.	Inductance(nH)typ.					Q typ.				
	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz
MLG1005S0N3	0.3	0.3	0.3	0.3	0.3	22min.	27min.	46min.	49min.	53min.
MLG1005S0N4	0.4	0.4	0.4	0.4	0.4	22min.	27min.	46min.	49min.	53min.
MLG1005S0N5	0.5	0.5	0.5	0.5	0.5	22min.	27min.	46min.	49min.	53min.
MLG1005S0N6	0.6	0.6	0.6	0.6	0.6	22	27	46	49	53
MLG1005S0N7	0.7	0.7	0.7	0.7	0.7	22	28	45	49	54
MLG1005S0N8	0.8	0.8	0.8	0.8	0.8	26	34	57	60	66
MLG1005S0N9	0.9	0.8	0.8	0.8	0.8	21	27	44	47	53
MLG1005S1N0	0.9	0.9	0.9	0.9	0.9	22	29	48	50	56
MLG1005S1N1	1.0	1.0	1.0	1.0	1.0	23	29	47	50	57
MLG1005S1N2	1.1	1.1	1.1	1.1	1.1	23	29	48	50	56
MLG1005S1N3	1.2	1.2	1.2	1.2	1.2	22	27	44	47	53
MLG1005S1N5	1.4	1.4	1.4	1.5	1.5	23	29	47	50	56
MLG1005S1N6	1.5	1.5	1.5	1.6	1.6	23	29	46	49	54
MLG1005S1N8	1.7	1.7	1.7	1.7	1.7	20	26	41	43	49
MLG1005S2N0	1.9	1.9	1.9	1.9	1.9	21	25	41	43	48
MLG1005S2N2	2.1	2.1	2.1	2.1	2.2	22	27	44	47	52
MLG1005S2N4	2.3	2.3	2.3	2.3	2.4	21	26	42	44	49
MLG1005S2N7	2.6	2.6	2.6	2.7	2.7	22	27	43	45	50
MLG1005S3N0	2.9	2.9	3.0	3.0	3.1	24	29	47	49	54
MLG1005S3N3	3.2	3.2	3.3	3.4	3.5	24	30	46	48	53
MLG1005S3N6	3.4	3.4	3.6	3.6	3.8	21	26	40	42	46
MLG1005S3N9	3.7	3.7	3.9	3.9	4.1	22	28	43	45	50
MLG1005S4N3	4.1	4.1	4.3	4.4	4.6	24	30	47	49	53
MLG1005S4N7	4.5	4.5	4.8	4.9	5.2	23	30	45	47	50
MLG1005S5N1	4.9	4.9	5.4	5.6	6.1	23	29	42	43	44
MLG1005S5N6	5.4	5.4	5.8	5.9	6.3	22	28	42	43	45
MLG1005S6N2	6.0	6.0	6.8	7.1	7.8	24	29	42	43	43
MLG1005S6N8	6.5	6.6	7.4	7.8	8.6	23	28	40	41	41
MLG1005S7N5	7.2	7.4	8.6	9.2	10.5	24	30	41	41	39
MLG1005S8N2	7.9	8.0	9.3	9.9	11.3	23	28	38	38	36
MLG1005S9N1	8.8	9.0	10.8	11.6	13.7	24	30	40	39	36
MLG1005S10N	9.7	9.9	12.4	13.5	16.7	24	30	37	36	31
MLG1005S11N	10.6	10.9	13.8	15.1	19.0	23	28	34	33	28
MLG1005S12N	11.7	12.1	16.2	18.3		23	29	33	31	
MLG1005S13N	12.6	13.0	18.3	21.3		20	24	25	22	
MLG1005S15N	14.7	15.3	22.0	26.0		23	28	29	26	
MLG1005S16N	15.6	16.2	24.1	29.0		22	26	26	22	
MLG1005S18N	17.7	18.6	29.0			23	28	26		
MLG1005S20N	19.7	20.8	36.8			21	25	21		
MLG1005S22N	21.8	23.3				22	27			
MLG1005S24N	23.8	25.5				22	26			
MLG1005S27N	27.0	29.6				20	23			
MLG1005S30N	30.1	33.5				19	21			
MLG1005S33N	33.5	37.8				20	23			
MLG1005S36N	36.7	41.5				21	23			
MLG1005S39N	40.3	46.9				20	21			
MLG1005S43N	44.3	51.6				20	21			
MLG1005S47N	50.2	63.2				19	20			
MLG1005S51N	53.7	65.6				19	19			
MLG1005S56N	60.9	80.2				19	18			
MLG1005S62N	67.5	89.8				18	16			
MLG1005S68N	75.8	107.5				17	15			
MLG1005S75N	86.5	135.2				17	13			
MLG1005S82N	96.9					16				
MLG1005S91N	111.0					15				
MLG1005SR10	128.9					14				
MLG1005SR11	140.8					15				
MLG1005SR12	175.2					12				
MLG1005SR13	187.8					13				
MLG1005SR15	284.7					11				
MLG1005SR16										
MLG1005SR18										
MLG1005SR20										
MLG1005SR22										
MLG1005SR24										
MLG1005SR27										
MLG1005SR30										
MLG1005SR33										
MLG1005SR36										
MLG1005SR39										

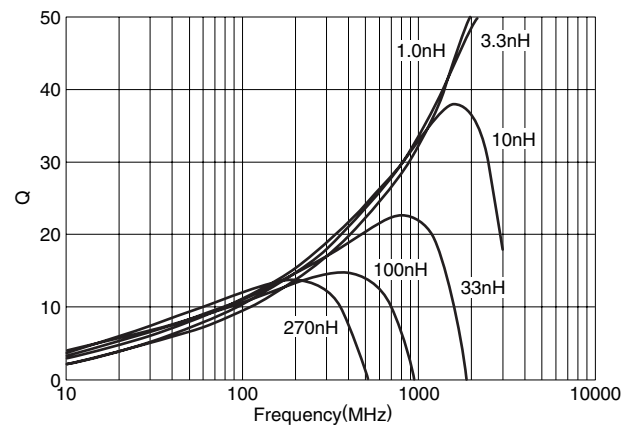
• All specifications are subject to change without notice.

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

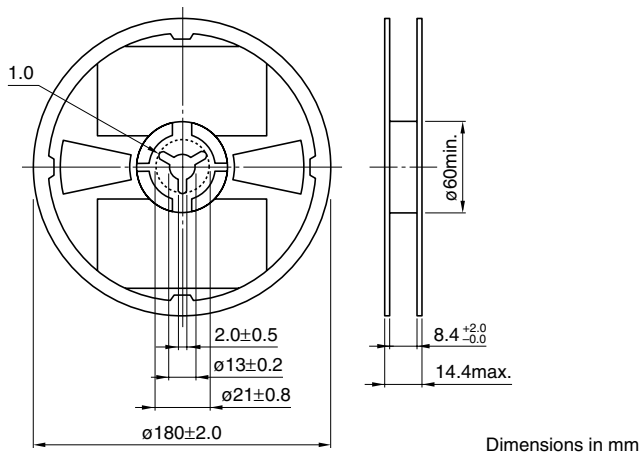


Q vs. FREQUENCY CHARACTERISTICS

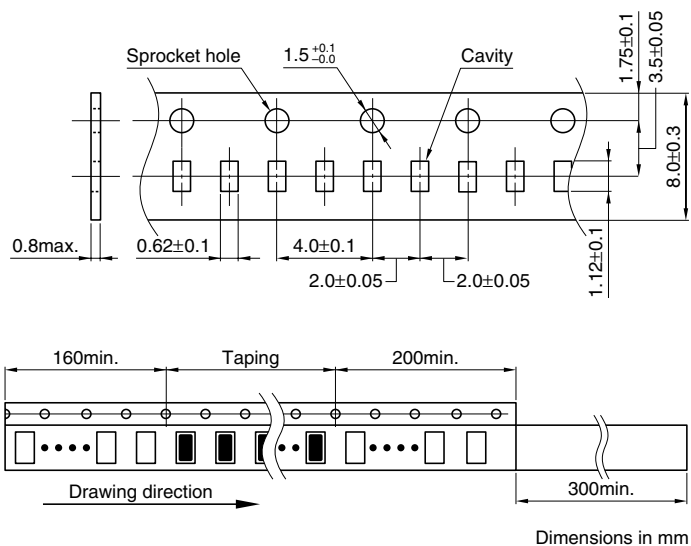


PACKAGING STYLES

REEL DIMENSIONS



TAPE DIMENSIONS



Inductors for High-frequency Circuits

Multilayer/STD

Conformity to RoHS Directive

MLG Series MLG1608

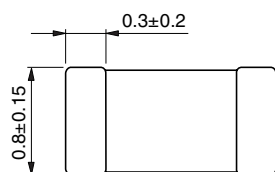
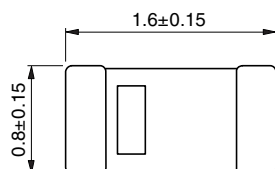
FEATURES

- Inductance values are supported from 1 to 1000nH.
- 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

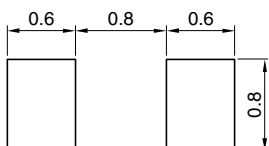
For high-frequency applications including mobile phones, high frequency modules (PA, VCO, FEM etc.), Bluetooth, W-LAN, UWB and tuners.

SHAPES AND DIMENSIONS



Weight: 4mg

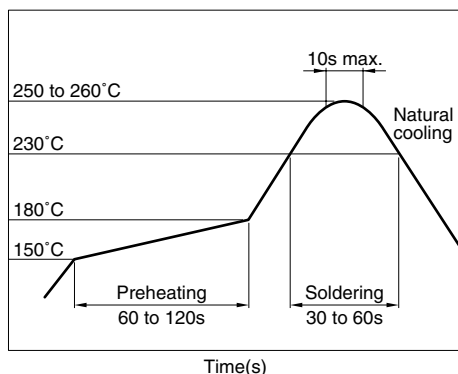
RECOMMENDED PC BOARD PATTERN



Dimensions in mm



RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



- 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.

PRODUCT IDENTIFICATION

MLG	1608	B	2N2	S	T	□□□
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Series name

(2) Dimensions

1608 1.6×0.8mm (L×W)

(3) Type name

(4) Inductance

2N2	2.2nH
12N	12nH
R10	100nH
1R0	1000nH

(5) Tolerance

S	±0.3nH
D	±0.5nH
J	±5%

(6) Packaging style

T Taping (reel)

(7) TDK internal code

SPECIFICATIONS

Operating temperature range	−55 to +125°C
Storage temperature range	−55 to +125°C (After mount)

PACKAGING STYLE AND QUANTITIES

Packaging style	Quantity
Taping	4000 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 300°C. Soldering time should not exceed 3 seconds.

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.		
1	$\pm 0.3\text{nH}$	8	100	10.0	20up	0.10	0.03	600	MLG1608B1N0ST
1.2	$\pm 0.3\text{nH}$	8	100	10.0	20up	0.10	0.04	600	MLG1608B1N2ST
1.5	$\pm 0.3\text{nH}$	8	100	10.0	19.6	0.10	0.03	600	MLG1608B1N5ST
1.8	$\pm 0.3\text{nH}$	8	100	10.0	16.6	0.10	0.04	600	MLG1608B1N8ST
2.2	$\pm 0.3\text{nH}$	10	100	8.0	10.8	0.10	0.05	600	MLG1608B2N2ST
2.7	$\pm 0.3\text{nH}$	10	100	7.0	8.8	0.12	0.06	600	MLG1608B2N7ST
3.3	$\pm 0.3\text{nH}$	10	100	6.5	8.8	0.12	0.06	600	MLG1608B3N3ST
3.9	$\pm 0.3\text{nH}$	10	100	6.0	7.9	0.14	0.06	600	MLG1608B3N9ST
4.7	$\pm 0.3\text{nH}$	10	100	5.0	6.8	0.15	0.08	600	MLG1608B4N7ST
5.6	$\pm 0.5\text{nH}$	10	100	5.0	6.8	0.16	0.08	600	MLG1608B5N6DT
6.8	$\pm 0.5\text{nH}$	10	100	4.5	5.7	0.18	0.10	600	MLG1608B6N8DT
8.2	$\pm 0.5\text{nH}$	10	100	4.5	5.6	0.20	0.10	600	MLG1608B8N2DT
10	$\pm 5\%$	12	100	3.5	4.5	0.20	0.11	600	MLG1608B10NJT
12	$\pm 5\%$	12	100	3.0	3.8	0.25	0.13	600	MLG1608B12NJT
15	$\pm 5\%$	12	100	2.8	3.6	0.28	0.14	600	MLG1608B15NJT
18	$\pm 5\%$	12	100	2.6	3.3	0.32	0.16	600	MLG1608B18NJT
22	$\pm 5\%$	12	100	2.3	3.0	0.35	0.19	500	MLG1608B22NJT
27	$\pm 5\%$	12	100	2.0	2.7	0.40	0.21	500	MLG1608B27NJT
33	$\pm 5\%$	12	100	1.8	2.3	0.50	0.25	500	MLG1608B33NJT
39	$\pm 5\%$	12	100	1.6	2.0	0.55	0.26	400	MLG1608B39NJT
47	$\pm 5\%$	14	100	1.4	1.8	0.60	0.35	400	MLG1608B47NJT
56	$\pm 5\%$	14	100	1.2	1.8	0.70	0.41	400	MLG1608B56NJT
68	$\pm 5\%$	14	100	1.1	1.6	0.75	0.43	300	MLG1608B68NJT
82	$\pm 5\%$	14	100	1.0	1.4	0.80	0.50	300	MLG1608B82NJT
100	$\pm 5\%$	14	100	0.80	1.2	1.00	0.64	300	MLG1608BR10JT
120	$\pm 5\%$	14	100	0.65	0.8	1.20	0.89	300	MLG1608SR12JT
150	$\pm 5\%$	14	100	0.55	0.7	1.30	1.03	250	MLG1608SR15JT
180	$\pm 5\%$	14	100	0.50	0.6	1.40	1.08	250	MLG1608SR18JT
220	$\pm 5\%$	14	100	0.45	0.6	1.70	1.29	200	MLG1608SR22JT
270	$\pm 5\%$	14	100	0.35	0.5	2.00	1.59	200	MLG1608SR27JT
330	$\pm 5\%$	10	50	0.35	0.47	2.80	1.90	100	MLG1608SR33JT
390	$\pm 5\%$	10	50	0.30	0.43	3.00	2.06	100	MLG1608SR39JT
470	$\pm 5\%$	10	50	0.25	0.39	3.50	2.47	100	MLG1608SR47JT
560	$\pm 5\%$	10	50	0.25	0.36	4.50	3.20	70	MLG1608SR56JT
680	$\pm 5\%$	10	50	0.20	0.31	5.50	3.88	70	MLG1608SR68JT
820	$\pm 5\%$	10	50	0.15	0.22	5.50	3.76	70	MLG1608SR82JT
1000	$\pm 5\%$	10	50	0.13	0.19	5.50	4.27	70	MLG1608S1R0JT

• Because it provides for a product of smaller inductance tolerance, please refer.

• Test equipment

Inductance Q : HP4291A+16193A, or equivalent

SRF: HP8720C, or equivalent

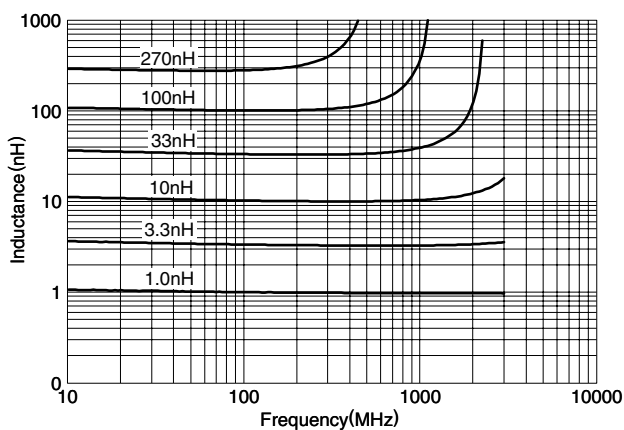
Rdc: YOKOGAWA TYPE7561, or equivalent

L, Q vs. FREQUENCY CHARACTERISTICS

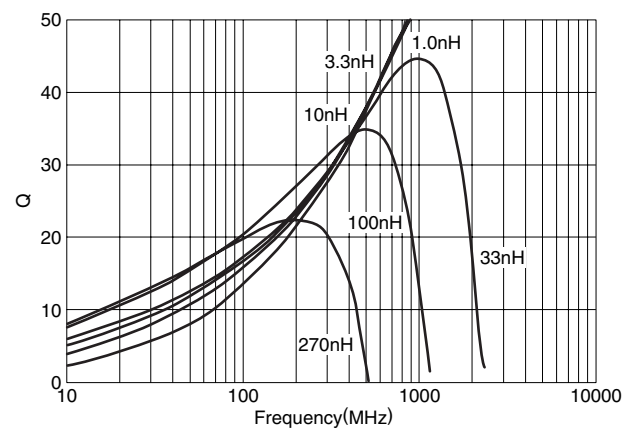
Part No.	Inductance(nH)typ.					Q typ.				
	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz
MLG1608B1N0ST	1.0	1.0	1.0	1.0	1.0	39	48	77	82	95
MLG1608B1N2ST	1.2	1.1	1.2	1.2	1.2	28	35	57	60	68
MLG1608B1N5ST	1.5	1.5	1.5	1.5	1.5	37	48	78	81	93
MLG1608B1N8ST	1.8	1.8	1.8	1.8	1.8	38	48	77	81	95
MLG1608B2N2ST	2.2	2.1	2.2	2.2	2.2	44	54	88	91	107
MLG1608B2N7ST	2.6	2.6	2.7	2.7	2.8	40	51	79	81	94
MLG1608B3N3ST	3.2	3.2	3.3	3.3	3.4	38	48	76	79	91
MLG1608B3N9ST	3.8	3.8	4.0	4.0	4.1	40	50	79	81	93
MLG1608B4N7ST	4.6	4.6	4.9	5.0	5.2	41	51	76	79	88
MLG1608B5N6DT	5.4	5.5	5.8	5.9	6.2	37	46	69	71	79
MLG1608B6N8DT	6.6	6.7	7.3	7.5	8.0	38	47	67	68	74
MLG1608B8N2DT	8.0	8.1	8.9	9.3	10	39	48	67	68	71
MLG1608B10NJT	9.8	10.0	11.5	12.1	13.6	38	47	63	63	61
MLG1608B12NJT	11.8	12.1	14.8	16.0	19.3	39	48	59	57	51
MLG1608B15NJT	14.8	15.4	20.6	23.4		38	46	49	46	
MLG1608B18NJT	17.8	18.5	25.5	29.3		36	44	47	42	
MLG1608B22NJT	21.9	22.9	33.6	40.2		36	44	43	38	
MLG1608B27NJT	27.1	28.8	50.6			37	43	34		
MLG1608B33NJT	33.4	36.0				37	43			
MLG1608B39NJT	40.2	45.0				36	40			
MLG1608B47NJT	49.1	56.0				38	41			
MLG1608B56NJT	59.6	71.1				37	38			
MLG1608B68NJT	74.0	92.8				34	33			
MLG1608B82NJT	91.1	120.6				33	31			
MLG1608BR10JT	118					35				
MLG1608SR12JT	188					23				
MLG1608SR15JT										
MLG1608SR18JT										
MLG1608SR22JT										
MLG1608SR27JT										
MLG1608SR33JT										
MLG1608SR39JT										
MLG1608SR47JT										
MLG1608SR56JT										
MLG1608SR68JT										
MLG1608SR82JT										
MLG1608S1R0JT										

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

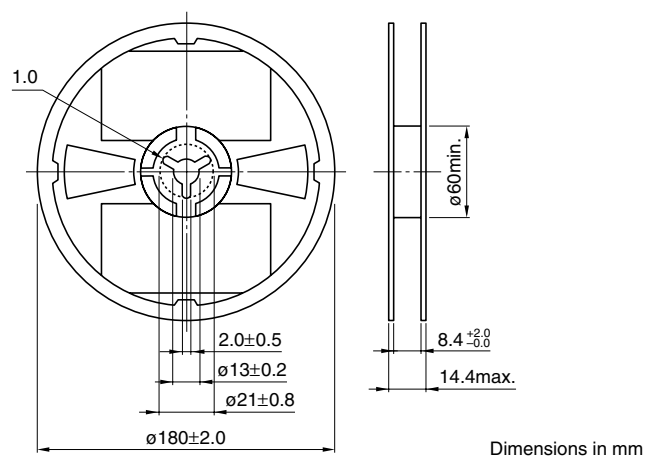


Q vs. FREQUENCY CHARACTERISTICS

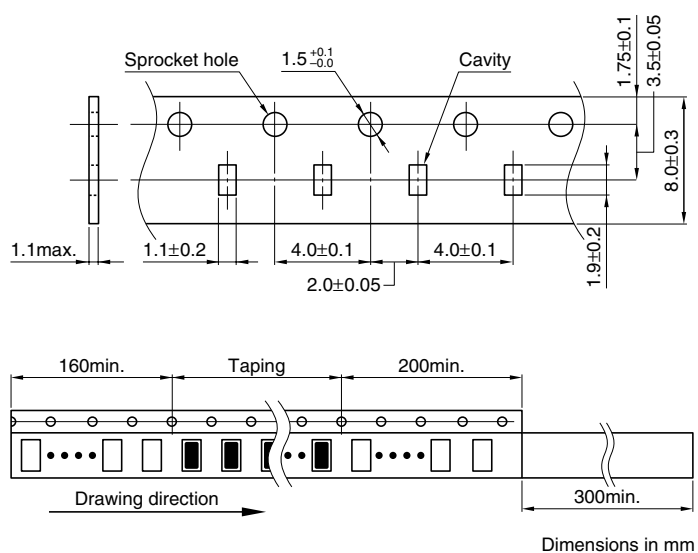


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TAPE DIMENSIONS



Mouser Electronics

Authorized Distributor

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TDK:

<u>MLG1608B12NJ</u>	<u>MLG1608B1N8S</u>	<u>MLG1608B3N9S</u>	<u>MLG1608B8N2D</u>	<u>MLG1608BR10J</u>	<u>MLG1608B10NJ</u>
<u>MLG1608B15NJ</u>	<u>MLG1608B18NJ</u>	<u>MLG1608B1N0S</u>	<u>MLG1608B1N2S</u>	<u>MLG1608B1N5S</u>	<u>MLG1608B22NJ</u>
<u>MLG1608B27NJ</u>	<u>MLG1608B2N2S</u>	<u>MLG1608B2N7S</u>	<u>MLG1608B33NJ</u>	<u>MLG1608B39NJ</u>	<u>MLG1608B3N3S</u>
<u>MLG1608B47NJ</u>	<u>MLG1608B4N7S</u>	<u>MLG1608B56NJ</u>	<u>MLG1608B5N6D</u>	<u>MLG1608B68NJ</u>	<u>MLG1608B82NJ</u>
<u>MLG1608B6N8D</u>	<u>MLG0603S10NJT</u>	<u>MLG1005S22NJ</u>	<u>MLG1608SR82J</u>	<u>MLG0603S0N6C</u>	<u>MLG0603S0N7C</u>
<u>MLG0603S0N8C</u>	<u>MLG0603S1N1S</u>	<u>MLG0603S1N3S</u>	<u>MLG0603S1N6S</u>	<u>MLG0603S2N0S</u>	<u>MLG0603S2N4S</u>
<u>MLG0603S3N0S</u>	<u>MLG0603S3N6S</u>	<u>MLG0603S4N3S</u>	<u>MLG0603S5N1S</u>	<u>MLG1005S0N6C</u>	<u>MLG1005S0N7C</u>
<u>MLG1005S0N8C</u>	<u>MLG1005S0N9C</u>	<u>MLG1005S1N1S</u>	<u>MLG1005S1N3S</u>	<u>MLG1005S1N6S</u>	<u>MLG1005S2N0S</u>
<u>MLG1005S2N4S</u>	<u>MLG1005S3N0S</u>	<u>MLG1005S3N6S</u>	<u>MLG1005S4N3S</u>	<u>MLG1005S5N1S</u>	<u>MLG1005S6N2S</u>
<u>MLG1005S7N5J</u>	<u>MLG1005S9N1J</u>	<u>MLG1005SR33J</u>	<u>MLG1005SR39J</u>	<u>MLG1608SR12J</u>	<u>MLG1608SR15J</u>
<u>MLG1608SR18J</u>	<u>MLG1608SR22J</u>	<u>MLG1608SR27J</u>	<u>MLG1005S1N0S</u>	<u>MLG1005S1N2S</u>	<u>MLG1005S1N5S</u>
<u>MLG1005S1N8S</u>	<u>MLG1005S2N2S</u>	<u>MLG1005S2N7S</u>	<u>MLG1005S3N3S</u>	<u>MLG1005S3N9S</u>	<u>MLG1005S4N7S</u>
<u>MLG1005S5N6S</u>	<u>MLG1005S6N8J</u>	<u>MLG1005S8N2J</u>	<u>MLG1005S10NJ</u>	<u>MLG1005S12NJ</u>	<u>MLG1005S15NJ</u>
<u>MLG1005S18NJ</u>	<u>MLG1005S27NJ</u>	<u>MLG1005S33NJ</u>	<u>MLG1005S39NJ</u>	<u>MLG1005S47NJ</u>	<u>MLG1005S56NJ</u>
<u>MLG1005S68NJ</u>	<u>MLG1005S82NJ</u>	<u>MLG1005SR10J</u>	<u>MLG1005SR12J</u>	<u>MLG1005SR15J</u>	<u>MLG1005SR18J</u>
<u>MLG1005SR22J</u>	<u>MLG1005SR27J</u>	<u>MLG0603S1N0S</u>	<u>MLG0603S1N2S</u>	<u>MLG0603S1N5S</u>	<u>MLG0603S1N8S</u>
<u>MLG0603S2N2S</u>	<u>MLG0603S2N7S</u>	<u>MLG0603S3N3S</u>	<u>MLG0603S3N9S</u>		