December 2015

Inductors for High Frequency Circuits

Multilayer Ceramic

MLG Series (For automobiles)

MLG1608 Type

MLG1608	**1608 [0603 inch]***

*** Dimensions Code JIS[EIA]**

⚠ Caution

The products in this catalog will be or have been stopped production

Discontinue Issue Date	Nov.4, 2015
Last Purchase Order Date	Dec.29, 2016
Last Shipment Date	Jan.30, 2017

Please refer to our Web site about replacement information.

REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

⚠ REMINDERS

- The storage period is less than 12 months. Be sure to follow the storage conditions (Temperature: 5 to 40°C, Humidity: 10 to 75% RH or less).
  If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- Before soldering, be sure to preheat components.
  The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.
- Soldering corrections after mounting should be within the range of the conditions determined in the specifications.
  If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.
- When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
- Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- Carefully lay out the coil for the circuit board design of the non-magnetic shield type.
  A malfunction may occur due to magnetic interference.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- Do not expose the products to magnets or magnetic fields.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.
  The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.
  If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

(1) Aerospace/Aviation equipment
(2) Transportation equipment (electric trains, ships, etc.)
(3) Medical equipment
(4) Power-generation control equipment
(5) Atomic energy-related equipment
(6) Seabed equipment
(7) Transportation control equipment
(8) Public information-processing equipment
(9) Military equipment
(10) Electric heating apparatus, burning equipment
(11) Disaster prevention/crime prevention equipment
(12) Safety equipment
(13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

The products will be or have been stopped production

Inductors for High Frequency Circuits

Multilayer Ceramic

Product compatible with RoHS directive
Halogen-free
Compatible with lead-free solders
AEC-Q200

Overview of MLG1608 Type

The product will be or have been stopped production

FEATURES

- Advanced monolithic structure is formed using a multilayering and sintering process with ceramic and conductive materials for High-frequency.

APPLICATION

Automotive equipment, smart phones, tablet terminals, high frequency modules (PAs, VCOs, FEMs , etc.), Bluetooth, W-LAN, UWB, tuners and other high frequency circuits for the mobile communication industry

PART NUMBER CONSTRUCTION

MLG 1608 B 1N0 S T D25

Series name	L×W×H Dimensions (mm)		Product internal code	Inductance (nH)		Inductance tolerance		Packaging style		Internal code
	1608	1.6×0.8×0.8	B	1N0	1.0	S	±0.3nH	T	Taping	D25
			S	10N	10	D	±0.5nH			
				R10	100	J	±5%			
				1R0	1000					

OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

Type	Temperature range		Package quantity	Individual weight
	Operating temperature (°C)	Storage temperature* (°C)	(pieces/reel)	(mg)
MLG1608	–55 to +125	–55 to +125	4000	4

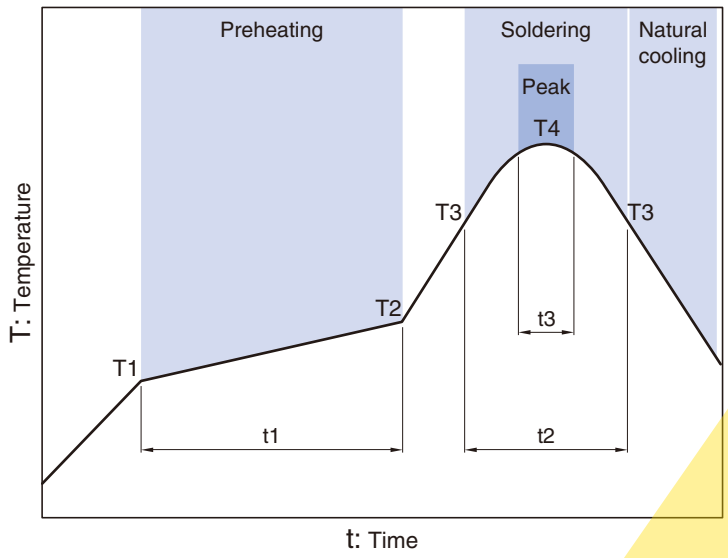
* The Storage temperature range is for after the circuit board is mounted.

- RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. http://product.tdk.com/en/environment/rohs/
- Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
Please note that the contents may change without any prior notice due to reasons such as upgrading.

MLG1608 Type

RECOMMENDED REFLOW PROFILE



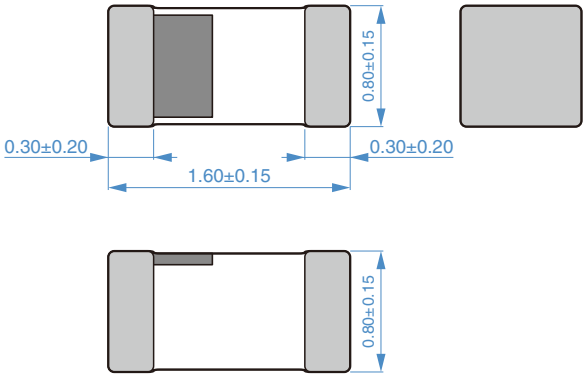
Preheating			Soldering		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	30 to 60s	250 to 260°C	10s max.

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MLG1608 Type

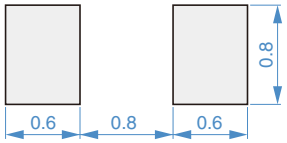
SHAPE & DIMENSIONS





Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

The products will be or have been stopped production

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MLG1608 Type

■ELECTRICAL CHARACTERISTICS

□CHARACTERISTICS SPECIFICATION TABLE

L		Q	L, Q measuring frequency	Self-resonant frequency		DC resistance		Rated current	Part No.*
(nH)	Tolerance	min.	(MHz)	(GHz)min.	(GHz)typ.	(Ω)max.	(Ω)typ.	(mA)max.	
1	±0.3nH	8	100	10.0	20up	0.10	0.03	600	MLG1608B1N0STD25
1.2	±0.3nH	8	100	10.0	20up	0.10	0.04	600	MLG1608B1N2STD25
1.5	±0.3nH	8	100	10.0	19.6	0.10	0.03	600	MLG1608B1N5STD25
1.8	±0.3nH	8	100	10.0	16.6	0.10	0.04	600	MLG1608B1N8STD25
2.2	±0.3nH	10	100	8.0	10.8	0.10	0.05	600	MLG1608B2N2STD25
2.7	±0.3nH	10	100	7.0	8.8	0.12	0.06	600	MLG1608B2N7STD25
3.3	±0.3nH	10	100	6.5	8.8	0.12	0.06	600	MLG1608B3N3STD25
3.9	±0.3nH	10	100	6.0	7.9	0.14	0.06	600	MLG1608B3N9STD25
4.7	±0.3nH	10	100	5.0	6.8	0.15	0.08	600	MLG1608B4N7STD25
5.6	±0.5nH	10	100	5.0	6.8	0.16	0.08	600	MLG1608B5N6DTD25
6.8	±0.5nH	10	100	4.5	5.7	0.18	0.10	600	MLG1608B6N8DTD25
8.2	±0.5nH	10	100	4.5	5.6	0.20	0.10	600	MLG1608B8N2DTD25
10	±5%	12	100	3.5	4.5	0.20	0.11	600	MLG1608B10NJTD25
12	±5%	12	100	3.0	3.8	0.25	0.13	600	MLG1608B12NJTD25
15	±5%	12	100	2.8	3.6	0.28	0.14	600	MLG1608B15NJTD25
18	±5%	12	100	2.6	3.3	0.32	0.16	600	MLG1608B18NJTD25
22	±5%	12	100	2.3	3.0	0.35	0.19	500	MLG1608B22NJTD25
27	±5%	12	100	2.0	2.7	0.40	0.21	500	MLG1608B27NJTD25
33	±5%	12	100	1.8	2.3	0.50	0.25	500	MLG1608B33NJTD25
39	±5%	12	100	1.6	2.0	0.55	0.26	400	MLG1608B39NJTD25
47	±5%	14	100	1.4	1.8	0.60	0.35	400	MLG1608B47NJTD25
56	±5%	14	100	1.2	1.8	0.70	0.41	400	MLG1608B56NJTD25
68	±5%	14	100	1.1	1.6	0.75	0.43	300	MLG1608B68NJTD25
82	±5%	14	100	1.0	1.4	0.80	0.50	300	MLG1608B82NJTD25
100	±5%	14	100	0.80	1.2	1.00	0.64	300	MLG1608BR10JTD25
120	±5%	14	100	0.65	0.8	1.20	0.89	300	MLG1608SR12JTD25
150	±5%	14	100	0.55	0.7	1.30	1.03	250	MLG1608SR15JTD25
180	±5%	14	100	0.50	0.6	1.40	1.08	250	MLG1608SR18JTD25
220	±5%	14	100	0.45	0.6	1.70	1.29	200	MLG1608SR22JTD25
270	±5%	14	100	0.35	0.5	2.00	1.59	200	MLG1608SR27JTD25
330	±5%	10	50	0.35	0.5	2.80	1.90	100	MLG1608SR33JTD25
390	±5%	10	50	0.30	0.4	3.00	2.06	100	MLG1608SR39JTD25
470	±5%	10	50	0.25	0.4	3.50	2.47	100	MLG1608SR47JTD25
560	±5%	10	50	0.25	0.4	4.50	3.20	70	MLG1608SR56JTD25
680	±5%	10	50	0.20	0.3	5.50	3.88	70	MLG1608SR68JTD25
820	±5%	10	50	0.15	0.2	5.50	3.76	70	MLG1608SR82JTD25
1000	±5%	10	50	0.13	0.2	5.50	4.27	70	MLG1608S1R0JTD25

* Please contact us for ±2% inductance tolerance (code G) products.

○ Measurement equipment

Measurement item	Product No.	Manufacturer
L, Q	4291B +16193A	Agilent Technologies
Self-resonant frequency	8720C	Panasonic
DC resistance	Type-7561	Yokogawa

∗ Equivalent measurement equipment may be used.

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⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
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MLG1608 Type

■ELECTRICAL CHARACTERISTICS

□L, Q FREQUENCY CHARACTERISTICS TABLE

L(nH)typ.					Q typ.					Part No.*
500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	
1.0	1.0	1.0	1.0	1.0	39	48	77	82	95	MLG1608B1N0STD25
1.2	1.1	1.2	1.2	1.2	28	35	57	60	68	MLG1608B1N2STD25
1.5	1.5	1.5	1.5	1.5	37	48	78	81	93	MLG1608B1N5STD25
1.8	1.8	1.8	1.8	1.8	38	48	77	81	95	MLG1608B1N8STD25
2.2	2.1	2.2	2.2	2.2	44	54	88	91	107	MLG1608B2N2STD25
2.6	2.6	2.7	2.7	2.8	40	51	79	81	94	MLG1608B2N7STD25
3.2	3.2	3.3	3.3	3.4	38	48	76	79	91	MLG1608B3N3STD25
3.8	3.8	4.0	4.0	4.1	40	50	79	81	93	MLG1608B3N9STD25
4.6	4.6	4.9	5.0	5.2	41	51	76	79	88	MLG1608B4N7STD25
5.4	5.5	5.8	5.9	6.2	37	46	69	71	79	MLG1608B5N6DTD25
6.6	6.7	7.3	7.5	8.0	38	47	67	68	74	MLG1608B6N8DTD25
8.0	8.1	8.9	9.3	10	39	48	67	68	71	MLG1608B8N2DTD25
9.8	10.0	11.5	12.1	13.6	38	47	63	63	61	MLG1608B10NJTD25
11.8	12.1	14.8	16.0	19.3	39	48	59	57	51	MLG1608B12NJTD25
14.8	15.4	20.6	23.4		38	46	49	46		MLG1608B15NJTD25
17.8	18.5	25.5	29.3		36	44	47	42		MLG1608B18NJTD25
21.9	22.9	33.6	40.2		36	44	43	38		MLG1608B22NJTD25
27.1	28.8	50.6			37	43	34			MLG1608B27NJTD25
33.4	36.0				37	43				MLG1608B33NJTD25
40.2	45.0				36	40				MLG1608B39NJTD25
49.1	56.0				38	41				MLG1608B47NJTD25
59.6	71.1				37	38				MLG1608B56NJTD25
74.0	92.8				34	33				MLG1608B68NJTD25
91.1	120.6				33	31				MLG1608B82NJTD25
118					35					MLG1608BR10JTD25
188					23					MLG1608SR12JTD25
										MLG1608SR15JTD25
										MLG1608SR18JTD25
										MLG1608SR22JTD25
										MLG1608SR27JTD25
										MLG1608SR33JTD25
										MLG1608SR39JTD25
										MLG1608SR47JTD25
										MLG1608SR56JTD25
										MLG1608SR68JTD25
										MLG1608SR82JTD25
										MLG1608S1R0JTD25

* Please contact us for ±2% inductance tolerance (code G) products.

○ Measurement equipment

Product No.	Manufacturer
4291B +16193A	Agilent Technologies

* Equivalent measurement equipment may be used.

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□CHARACTERISTICS SPECIFICATION TABLE

L		Q	L, Q measuring frequency	Self-resonant frequency		DC resistance		Rated current	Part No.*
(nH)	Tolerance	min.	(MHz)	(GHz)min.	(GHz)typ.	(Ω)max.	(Ω)typ.	(mA)max.	
1	±0.3nH	8	100	10.0	20up	0.10	0.03	600	MLG1608B1N0STD25
1.2	±0.3nH	8	100	10.0	20up	0.10	0.04	600	MLG1608B1N2STD25
1.5	±0.3nH	8	100	10.0	19.6	0.10	0.03	600	MLG1608B1N5STD25
1.8	±0.3nH	8	100	10.0	16.6	0.10	0.04	600	MLG1608B1N8STD25
2.2	±0.3nH	10	100	8.0	10.8	0.10	0.05	600	MLG1608B2N2STD25
2.7	±0.3nH	10	100	7.0	8.8	0.12	0.06	600	MLG1608B2N7STD25
3.3	±0.3nH	10	100	6.5	8.8	0.12	0.06	600	MLG1608B3N3STD25
3.9	±0.3nH	10	100	6.0	7.9	0.14	0.06	600	MLG1608B3N9STD25
4.7	±0.3nH	10	100	5.0	6.8	0.15	0.08	600	MLG1608B4N7STD25
5.6	±0.5nH	10	100	5.0	6.8	0.16	0.08	600	MLG1608B5N6DTD25
6.8	±0.5nH	10	100	4.5	5.7	0.18	0.10	600	MLG1608B6N8DTD25
8.2	±0.5nH	10	100	4.5	5.6	0.20	0.10	600	MLG1608B8N2DTD25
10	±5%	12	100	3.5	4.5	0.20	0.11	600	MLG1608B10NJTD25
12	±5%	12	100	3.0	3.8	0.25	0.13	600	MLG1608B12NJTD25
15	±5%	12	100	2.8	3.6	0.28	0.14	600	MLG1608B15NJTD25
18	±5%	12	100	2.6	3.3	0.32	0.16	600	MLG1608B18NJTD25
22	±5%	12	100	2.3	3.0	0.35	0.19	500	MLG1608B22NJTD25
27	±5%	12	100	2.0	2.7	0.40	0.21	500	MLG1608B27NJTD25
33	±5%	12	100	1.8	2.3	0.50	0.25	500	MLG1608B33NJTD25
39	±5%	12	100	1.6	2.0	0.55	0.26	400	MLG1608B39NJTD25
47	±5%	14	100	1.4	1.8	0.60	0.35	400	MLG1608B47NJTD25
56	±5%	14	100	1.2	1.8	0.70	0.41	400	MLG1608B56NJTD25
68	±5%	14	100	1.1	1.6	0.75	0.43	300	MLG1608B68NJTD25
82	±5%	14	100	1.0	1.4	0.80	0.50	300	MLG1608B82NJTD25
100	±5%	14	100	0.80	1.2	1.00	0.64	300	MLG1608BR10JTD25
120	±5%	14	100	0.65	0.8	1.20	0.89	300	MLG1608SR12JTD25
150	±5%	14	100	0.55	0.7	1.30	1.03	250	MLG1608SR15JTD25
180	±5%	14	100	0.50	0.6	1.40	1.08	250	MLG1608SR18JTD25
220	±5%	14	100	0.45	0.6	1.70	1.29	200	MLG1608SR22JTD25
270	±5%	14	100	0.35	0.5	2.00	1.59	200	MLG1608SR27JTD25
330	±5%	10	50	0.35	0.47	2.80	1.90	100	MLG1608SR33JTD25
390	±5%	10	50	0.30	0.43	3.00	2.06	100	MLG1608SR39JTD25
470	±5%	10	50	0.25	0.39	3.50	2.47	100	MLG1608SR47JTD25
560	±5%	10	50	0.25	0.36	4.50	3.20	70	MLG1608SR56JTD25
680	±5%	10	50	0.20	0.31	5.50	3.88	70	MLG1608SR68JTD25
820	±5%	10	50	0.15	0.22	5.50	3.76	70	MLG1608SR82JTD25
1000	±5%	10	50	0.13	0.19	5.50	4.27	70	MLG1608S1R0JTD25

* Please contact us for ±2% inductance tolerance (code G) products.

○ Measurement equipment

Measurement item	Product No.	Manufacturer
L, Q	4291B +16193A	Agilent Technologies
Self-resonant frequency	8720C	Panasonic
DC resistance	Type-7561	Yokogawa

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□L, Q FREQUENCY CHARACTERISTICS TABLE

L(nH)typ.					Q typ.					Part No.*
500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	500MHz	800MHz	1.8GHz	2.0GHz	2.4GHz	
1.0	1.0	1.0	1.0	1.0	39	48	77	82	95	MLG1608B1N0STD25
1.2	1.1	1.2	1.2	1.2	28	35	57	60	68	MLG1608B1N2STD25
1.5	1.5	1.5	1.5	1.5	37	48	78	81	93	MLG1608B1N5STD25
1.8	1.8	1.8	1.8	1.8	38	48	77	81	95	MLG1608B1N8STD25
2.2	2.1	2.2	2.2	2.2	44	54	88	91	107	MLG1608B2N2STD25
2.6	2.6	2.7	2.7	2.8	40	51	79	81	94	MLG1608B2N7STD25
3.2	3.2	3.3	3.3	3.4	38	48	76	79	91	MLG1608B3N3STD25
3.8	3.8	4.0	4.0	4.1	40	50	79	81	93	MLG1608B3N9STD25
4.6	4.6	4.9	5.0	5.2	41	51	76	79	88	MLG1608B4N7STD25
5.4	5.5	5.8	5.9	6.2	37	46	69	71	79	MLG1608B5N6DTD25
6.6	6.7	7.3	7.5	8.0	38	47	67	68	74	MLG1608B6N8DTD25
8.0	8.1	8.9	9.3	10	39	48	67	68	71	MLG1608B8N2DTD25
9.8	10.0	11.5	12.1	13.6	38	47	63	63	61	MLG1608B10NJTD25
11.8	12.1	14.8	16.0	19.3	39	48	59	57	51	MLG1608B12NJTD25
14.8	15.4	20.6	23.4		38	46	49	46		MLG1608B15NJTD25
17.8	18.5	25.5	29.3		36	44	47	42		MLG1608B18NJTD25
21.9	22.9	33.6	40.2		36	44	43	38		MLG1608B22NJTD25
27.1	28.8	50.6			37	43	34			MLG1608B27NJTD25
33.4	36.0				37	43				MLG1608B33NJTD25
40.2	45.0				36	40				MLG1608B39NJTD25
49.1	56.0				38	41				MLG1608B47NJTD25
59.6	71.1				37	38				MLG1608B56NJTD25
74.0	92.8				34	33				MLG1608B68NJTD25
91.1	120.6				33	31				MLG1608B82NJTD25
118					35					MLG1608BR10JTD25
188					23					MLG1608SR12JTD25
										MLG1608SR15JTD25
										MLG1608SR18JTD25
										MLG1608SR22JTD25
										MLG1608SR27JTD25
										MLG1608SR33JTD25
										MLG1608SR39JTD25
										MLG1608SR47JTD25
										MLG1608SR56JTD25
										MLG1608SR68JTD25
										MLG1608SR82JTD25
										MLG1608S1R0JTD25

* Please contact us for ±2% inductance tolerance (code G) products.

○ Measurement equipment

Product No.	Manufacturer
4291B +16193A	Agilent Technologies

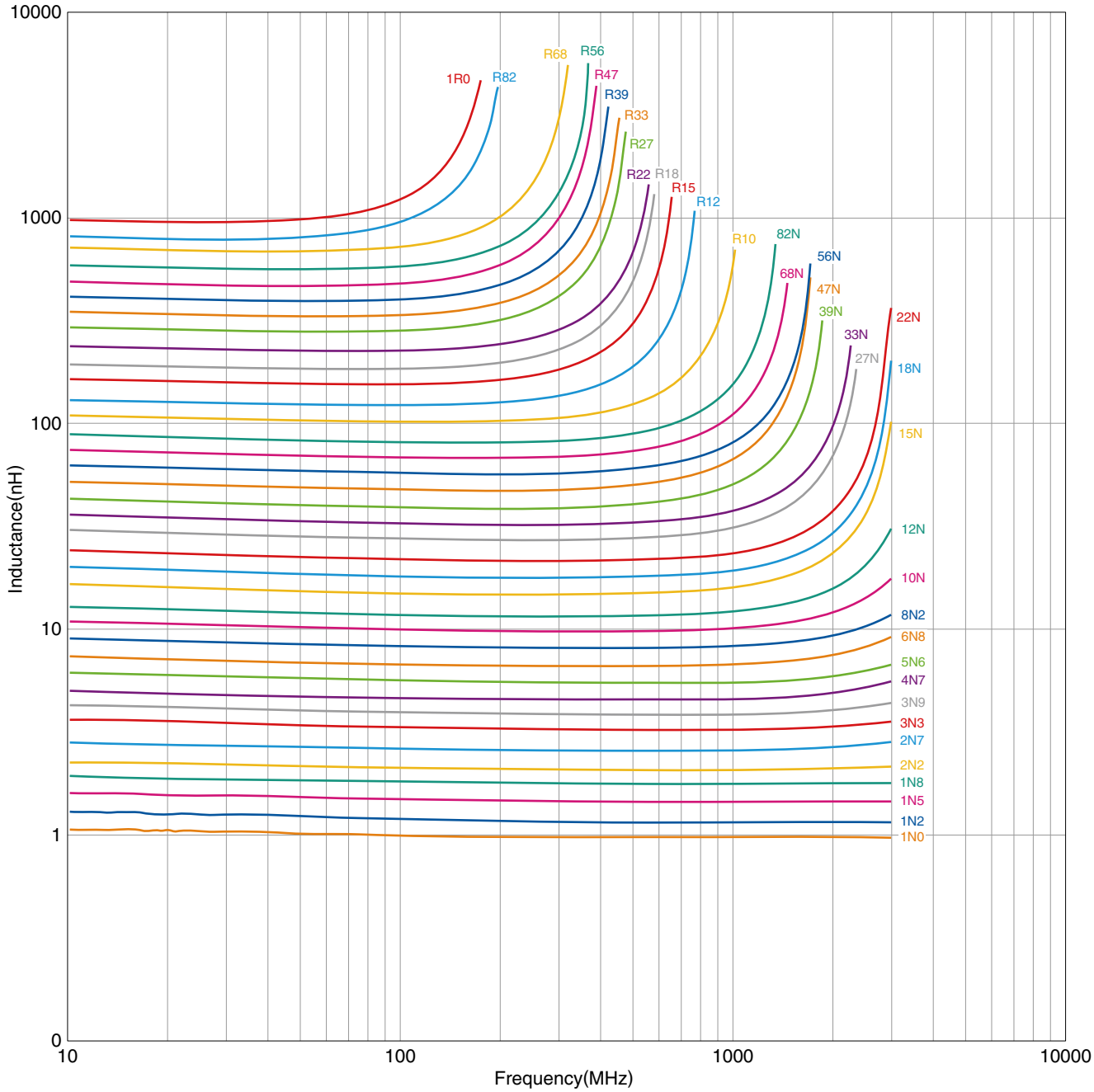
* Equivalent measurement equipment may be used.

The products will be or have been stopped production

MLG1608 Type

■ELECTRICAL CHARACTERISTICS

□L FREQUENCY CHARACTERISTICS GRAPH (EXAMPLE)



○ Measurement equipment

Product No.	Manufacturer
E4991A +16193A	Agilent Technologies

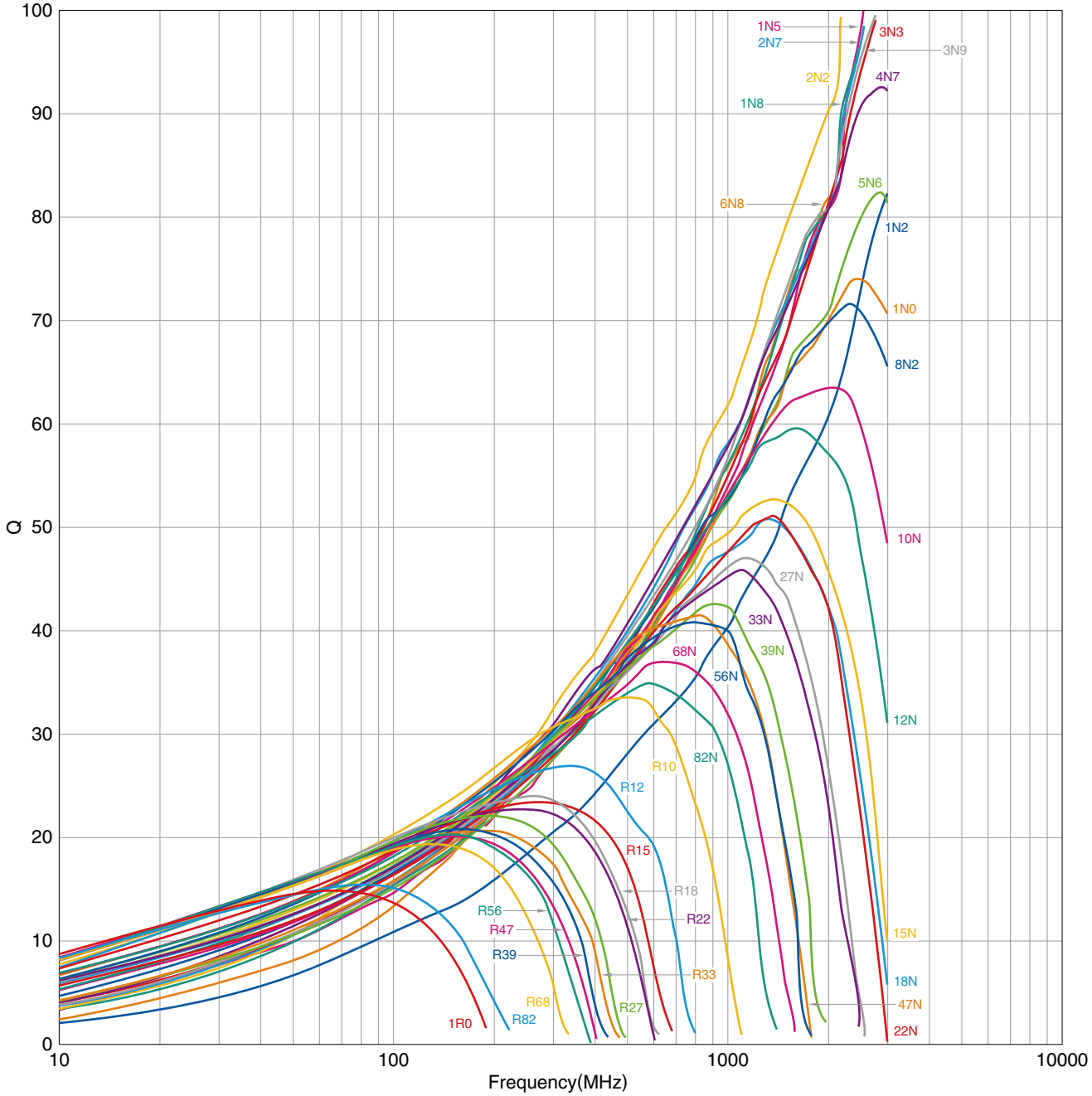
＊ Equivalent measurement equipment may be used.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
Please note that the contents may change without any prior notice due to reasons such as upgrading.

MLG1608 Type

■ELECTRICAL CHARACTERISTICS

□Q FREQUENCY CHARACTERISTICS GRAPH (EXAMPLE)



○ Measurement equipment

Product No.	Manufacturer
E4991A +16193A	Agilent Technologies

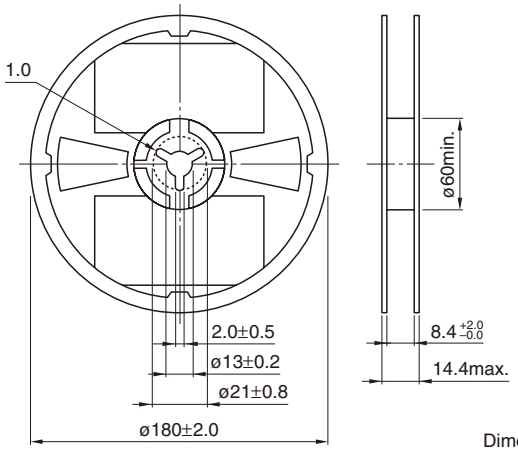
∗ Equivalent measurement equipment may be used.

⚠ Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use.
Please note that the contents may change without any prior notice due to reasons such as upgrading.

MLG1608 Type

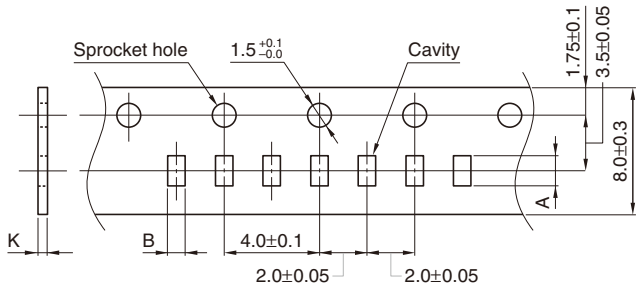
■PACKAGING STYLE

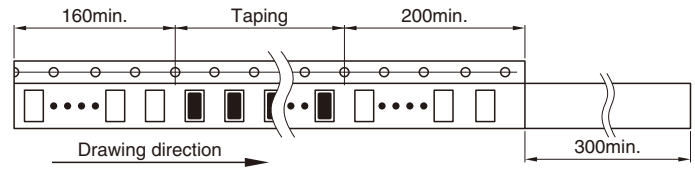
□REEL DIMENSIONS



Dimensions in mm

□TAPE DIMENSIONS





Dimensions in mm

Type	A	B	K
MLG1608	1.9±0.2	1.1±0.2	1.1 max.

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