

IMCG Series

Chip Inductors – Multilayer Chip Inductors – For General

TRIGON
COMPONENTS



FEATURES

- To prevent EMI interference noises between.
- High Q and high reliability and ferrite material.
- Bead inductor for power energy storage or noise suppressor.
- Fit for power line & signal line circuit.
- To help you go pass the CE/FCC standard.
- RoHS Compliant

APPLICATION

- Notebook Computer, Computer Devices, Color TV, Video Camera, DVD player, etc...
- Mobil Device / Handheld Device / Lowprofile Device / Panel...

ORDERING CODE

IMCG 160808 K R33 T

(1) (2) (3) (4) (5)

(1) Multilayer Chip Inductors

(2) Case Size: A+B+C (mm)

100505

160808

201209

201212

321611

(3) Tolerance Code:

S: 0.3 nH, J: 5%, K: 10%

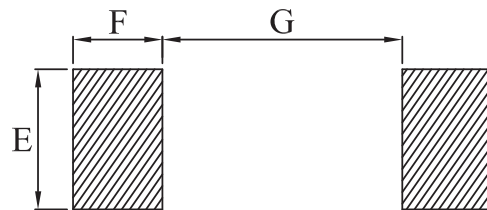
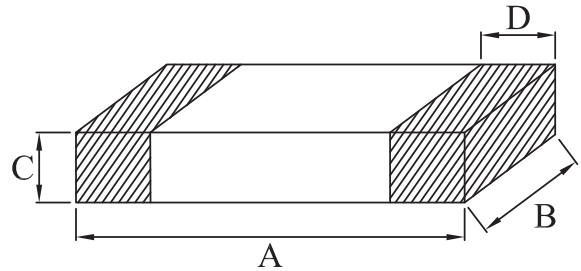
M: 20%

(4) Inductance

(5) Package

※Please refer to complete Ordering Code document (IMCG-Ord) for more ordering options.

Configurations:



Land Pattern

Dimension (mm)

Item	A	B	C	D	E	F	G
IMCG100505	1.0±0.1	0.5±0.15	0.5±0.15	0.25±0.15	-	-	-
IMCG160808	1.6±0.2	0.8±0.2	0.8±0.2	0.3±0.2	0.7	0.7	0.7
IMCG201209	2.0±0.2	1.2±0.2	0.9±0.2	0.5±0.3	1.0	0.8	1.0
IMCG201212	2.0±0.2	1.2±0.2	1.2±0.2	0.5±0.3	1.0	0.8	1.0
IMCG321611	3.2±0.2	1.6±0.2	1.1±0.2	0.5±0.3	1.4	1.1	2.2

Inductance Range

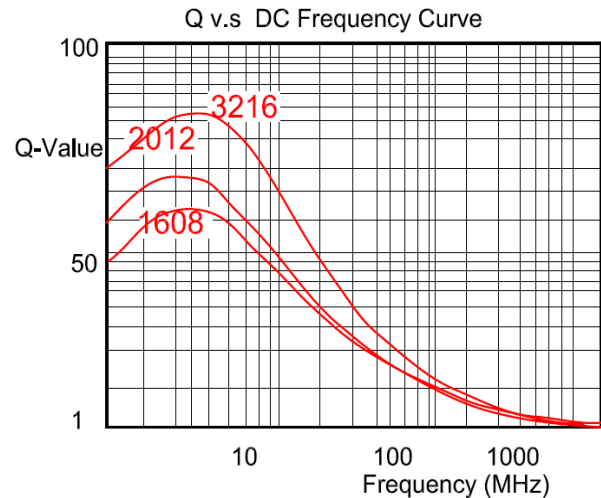
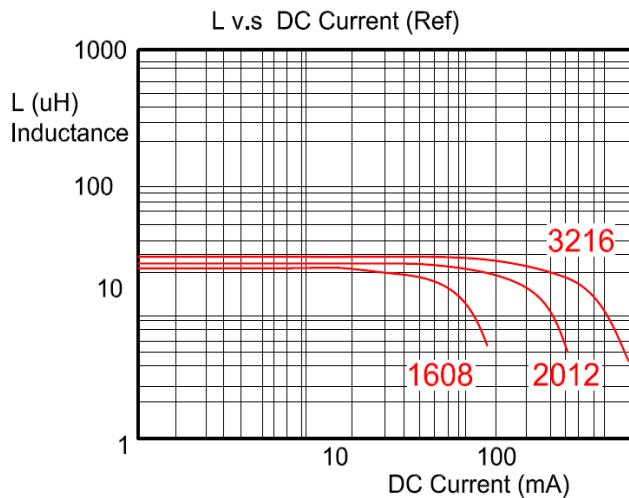
Item	μH
IMCG100505	0.010 ~ 1.20
IMCG160808	0.047 ~ 15.00
IMCG201209	0.047 ~ 2.20
IMCG201212	0.047 ~ 33.00
IMCG321611	0.047 ~ 47.00

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Test Equipment:

- ※ HP4284A, HP42841A-L, IDC, Q.RDC
- ※ HP8753D NETWORK ANALYZER- SRF

Standard Atmospheric Conditions:

Ambient Temp: 20+/-15°C

Relative Humidity: 65+/-20%

If there may be any doubt on the result, measurement shall be made within the following limits:

Ambient Temp: 25+/-5°C

Relative Humidity: 75+/-10%

Operating & Storage Condition:

Operating Temp: -40°C ~+85°C

Storage Temp: -40°C ~+85°C

Storage Life Time: 12 Month @25°C, RH 65%

Attention & Caution:

Please avoid following matters:

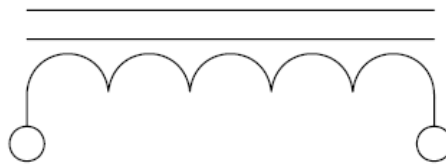
- ※ Splashing water or salt water
- ※ Toxic Gas (Hydrogen sulfide, Sulfurous acid, Chlorine, Ammonia)
- ※ Vibrations or shocks which exceed the specified condition
- ※ Dew Condenses
- ※ Please be careful for the stress to this product by board flexure or something after the mounting.

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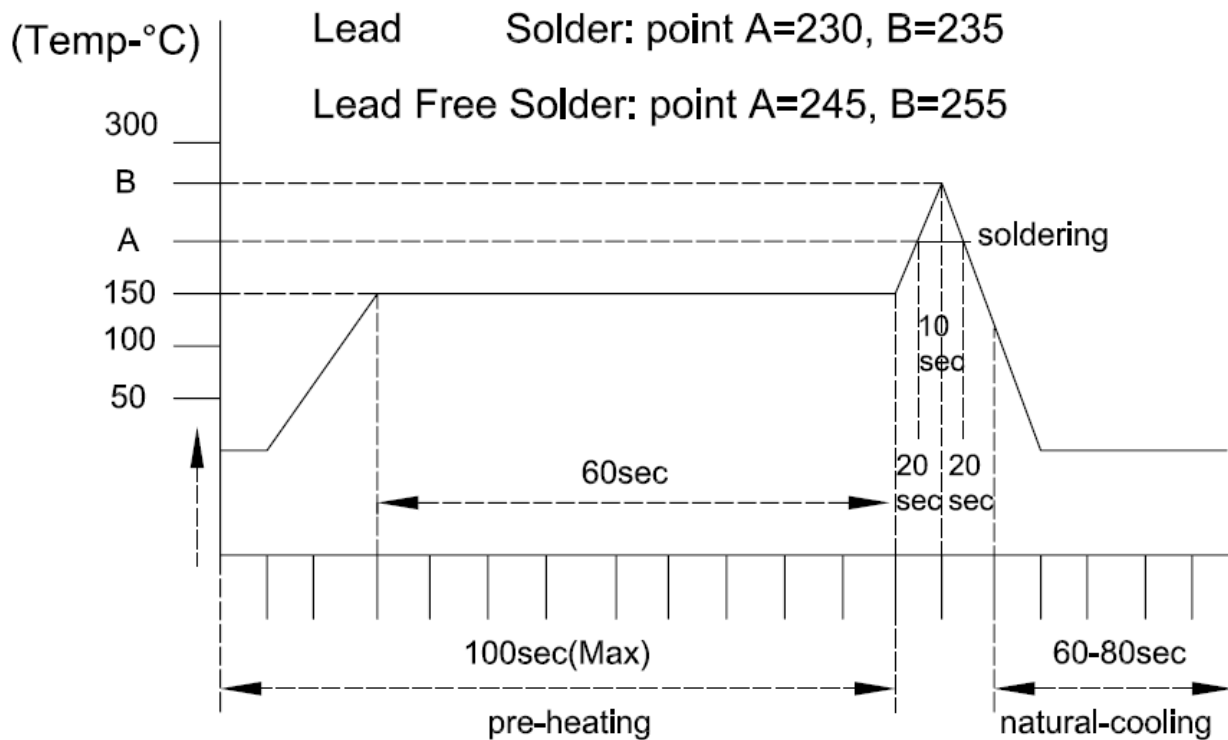
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SCHEMATIC:



Recommmand Reflow Curve (Time: Second)



Notice: Iron Soldering: 3 Seconds Max @260°C

Size Code & Package Quantity:

JIS CODE	EIA CODE	PCS / REEL	REEL / BOX
1005	0402	10000	5
1608	0603	4000	5
2012	0805	4000	5
3216	1206	3000	5

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Chip Inductors – Multilayer Chip Inductors – IMCG100505

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Electrical Characteristics for IMCG100505 Series

Part Number	Inductance (μ H)	Q (min)	Freq. (MHz)	SRF(MHz) (min)	DCR(Ω) (max)	IDC(mA) (max)
IMCG100505M10N	0.010	8	100	300	0.42	50
IMCG100505M12N	0.012	8	100	300	0.47	50
IMCG100505M47N	0.047	10	50	220	0.45	50
IMCG100505M68N	0.068	10	50	210	0.45	50
IMCG100505M82N	0.082	10	50	200	0.45	50
IMCG100505MR10	0.10	15	25	200	0.80	50
IMCG100505MR12	0.12	15	25	165	0.80	25
IMCG100505MR15	0.15	15	25	140	0.90	25
IMCG100505MR18	0.18	15	25	120	0.90	25
IMCG100505MR22	0.22	15	25	110	1.20	25
IMCG100505MR27	0.27	15	25	95	1.20	25
IMCG100505M1R0	1.00	20	10	40	1.50	15
IMCG100505M1R2	1.20	20	10	35	1.60	15

※MSL Rating: Level 1.

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Chip Inductors – Multilayer Chip Inductors – IMCG160808

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Electrical Characteristics for IMCG160808 Series

Part Number	Inductance (μ H)	Q (min)	Freq. (MHz)	SRF(MHz) (min)	DCR(Ω) (max)	IDC(mA) (max)
IMCG160808M47N	0.047	10	50	260	0.300	50
IMCG160808M68N	0.068	10	50	250	0.300	50
IMCG160808KR10	0.10	15	25	240	0.500	50
IMCG160808KR12	0.12	15	25	205	0.500	50
IMCG160808KR15	0.15	15	25	180	0.600	50
IMCG160808KR18	0.18	15	25	165	0.600	50
IMCG160808KR22	0.22	15	25	150	0.800	50
IMCG160808KR27	0.27	15	25	136	0.800	50
IMCG160808KR33	0.33	15	25	125	0.850	35
IMCG160808KR39	0.39	15	25	110	1.000	35
IMCG160808KR47	0.47	15	25	105	1.350	35
IMCG160808KR56	0.56	15	25	95	1.550	35
IMCG160808KR68	0.68	15	25	90	1.700	35
IMCG160808KR82	0.82	15	25	85	2.100	35
IMCG160808K1R0	1.00	35	10	75	0.600	25
IMCG160808K1R2	1.20	35	10	65	0.800	25
IMCG160808K1R5	1.50	35	10	60	0.800	25
IMCG160808K1R8	1.80	35	10	55	0.950	25
IMCG160808K2R2	2.20	35	10	50	1.150	15
IMCG160808K2R7	2.70	35	10	40	1.350	15
IMCG160808K3R3	3.30	35	10	38	1.550	15
IMCG160808K3R9	3.90	35	10	36	1.700	15
IMCG160808K4R7	4.70	35	10	33	2.100	15
IMCG160808K5R6	5.60	35	4	22	1.550	5
IMCG160808K6R8	6.80	35	4	20	1.700	5
IMCG160808K8R2	8.20	30	4	18	2.100	5
IMCG160808K100	10.00	30	2	17	2.550	3
IMCG160808K120	12.00	30	1	15	2.750	3
IMCG160808K150	15.00	20	1	14	2.850	1

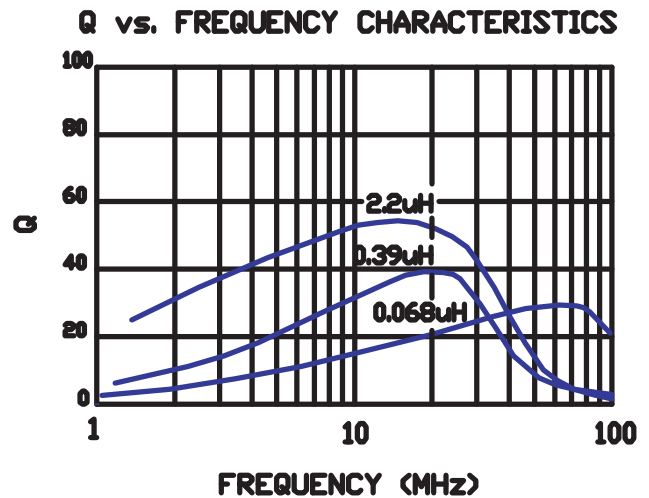
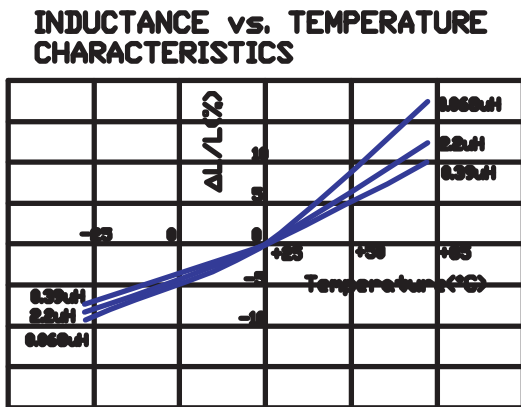
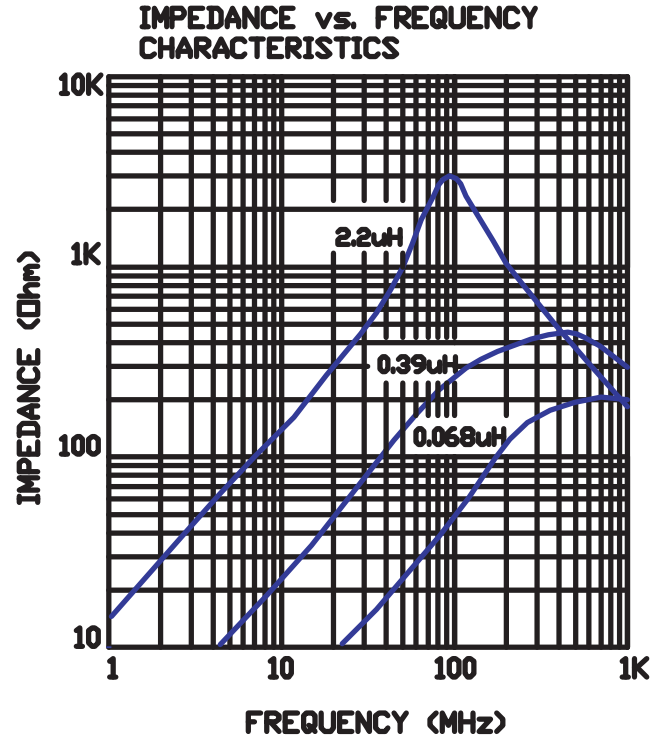
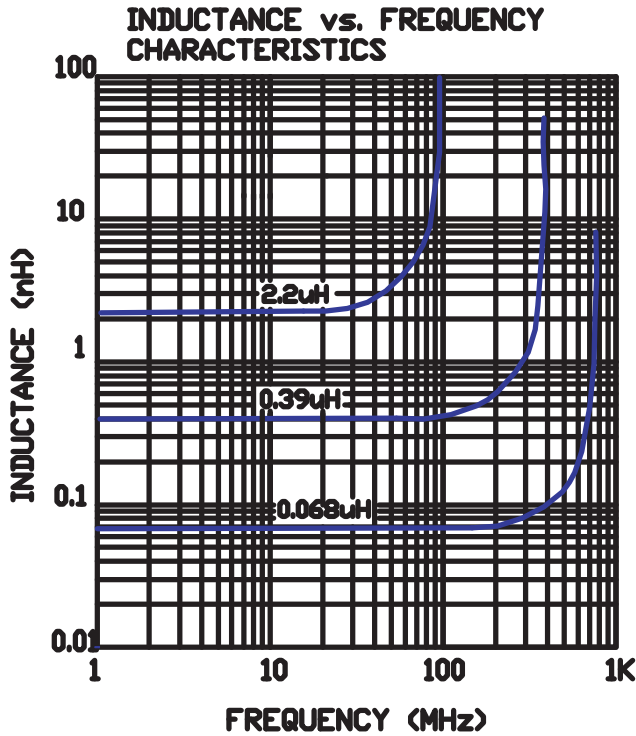
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Chip Inductors – Multilayer Chip Inductors – IMCG160808

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Chip Inductors – Multilayer Chip Inductors – IMCG201209, IMCG201212

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Electrical Characteristics for IMCG201209 & IMCG201212 Series

Part Number	Inductance (μ H)	Q (min)	Freq. (MHz)	SRF(MHz) (min)	DCR(Ω) (max)	IDC(mA) (max)
IMCG201209M47N	0.047	15	50	320	0.200	300
IMCG201209M68N	0.068	15	50	280	0.200	300
IMCG201209KR10	0.10	20	25	235	0.300	250
IMCG201209KR12	0.12	20	25	220	0.300	250
IMCG201209KR15	0.15	20	25	200	0.400	250
IMCG201209KR18	0.18	20	25	185	0.400	250
IMCG201209KR22	0.22	20	25	170	0.500	250
IMCG201209KR27	0.27	20	25	150	0.500	250
IMCG201209KR33	0.33	20	25	145	0.550	250
IMCG201209KR39	0.39	25	25	135	0.650	200
IMCG201209KR47	0.47	25	25	125	0.650	200
IMCG201209KR56	0.56	25	25	115	0.750	150
IMCG201209KR68	0.68	25	25	105	0.800	150
IMCG201209KR82	0.82	25	25	100	1.000	150
IMCG201209K1R0	1.00	45	10	75	0.400	50
IMCG201209K1R2	1.20	45	10	65	0.500	50
IMCG201209K1R5	1.50	45	10	60	0.500	50
IMCG201209K1R8	1.80	45	10	55	0.600	50
IMCG201209K2R2	2.20	45	10	50	0.650	30
IMCG201212K2R7	2.70	45	10	45	0.750	30
IMCG201212K3R3	3.30	45	10	41	0.800	30
IMCG201212K3R9	3.90	45	10	38	0.900	30
IMCG201212K4R7	4.70	45	10	35	1.000	30
IMCG201212K5R6	5.60	50	4	32	0.900	15
IMCG201212K6R8	6.80	50	4	29	1.000	15
IMCG201212K8R2	8.20	50	4	26	1.100	15
IMCG201212K100	10.00	50	2	24	1.150	15
IMCG201212K120	12.00	45	2	22	1.25	15
IMCG201212K150	15.00	30	1	19	0.80	5
IMCG201212K180	18.00	30	1	18	0.90	5
IMCG201212K220	22.00	30	1	16	1.10	5
IMCG201212K270	27.00	30	1	14	1.15	5
IMCG201212K3330	33.00	30	0.4	13	1.25	5

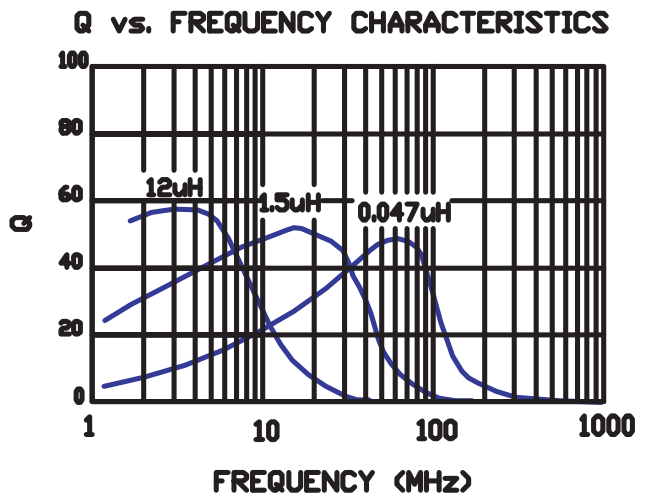
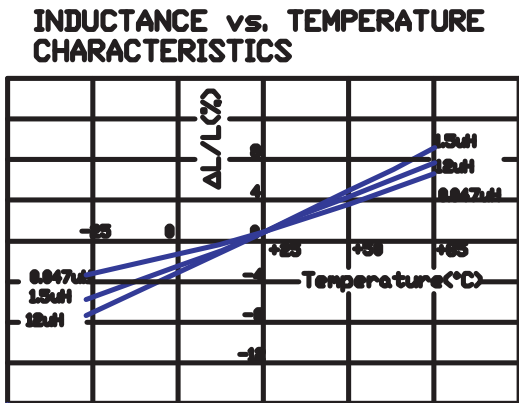
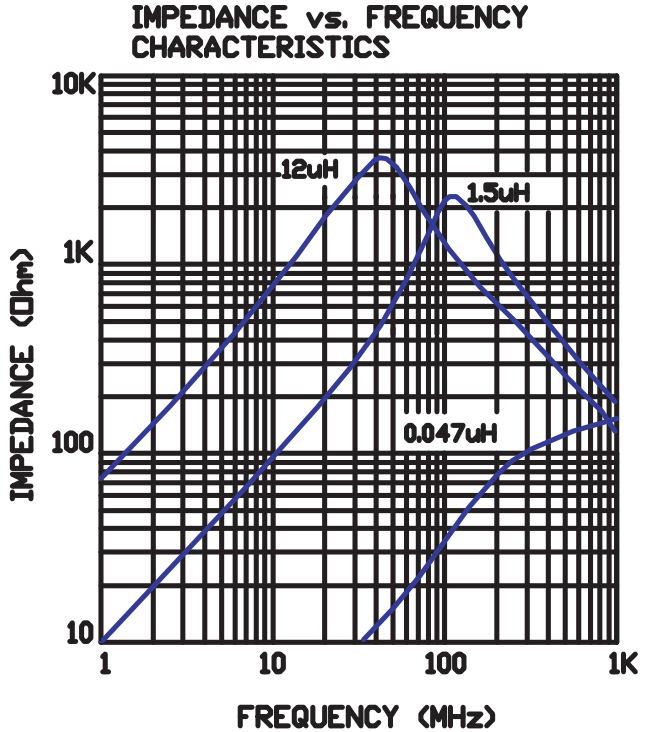
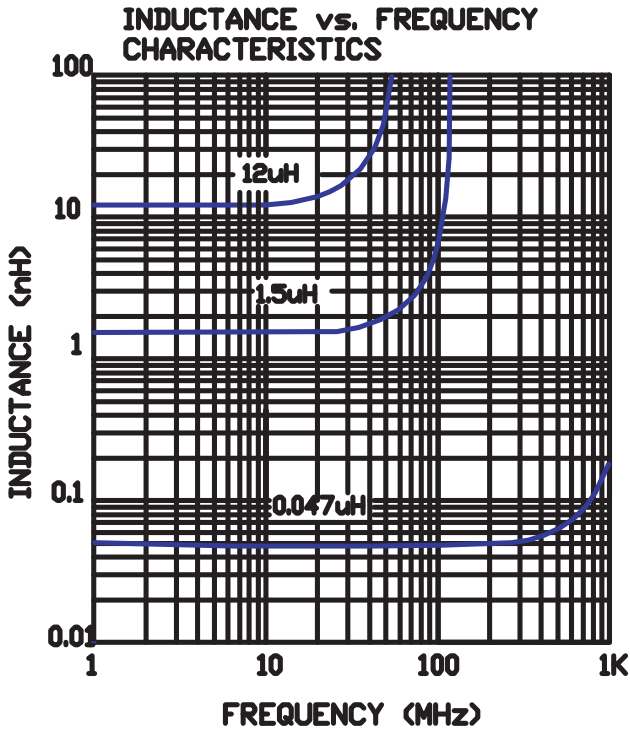
※MSL Rating: Level 1.

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Chip Inductors – Multilayer Chip Inductors – IMCG201209, IMCG201212

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Inductor

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Chip Inductors – Multilayer Chip Inductors – IMCG321611

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Electrical Characteristics for IMCG321611 Series

Part Number	Inductance (μ H)	Q (min)	Freq. (MHz)	SRF(MHz) (min)	DCR(Ω) (max)	IDC(mA) (max)
IMCG321611M47N	0.047	20	50	320	0.150	300
IMCG321611M68N	0.068	20	50	280	0.250	300
IMCG321611KR10	0.10	20	25	235	0.250	250
IMCG321611KR12	0.12	20	25	220	0.300	250
IMCG321611KR15	0.15	20	25	200	0.300	250
IMCG321611KR18	0.18	20	25	185	0.400	250
IMCG321611KR22	0.22	20	25	170	0.400	250
IMCG321611KR27	0.27	20	25	150	0.500	250
IMCG321611KR33	0.33	20	25	145	0.600	250
IMCG321611KR39	0.39	25	25	135	0.500	200
IMCG321611KR47	0.47	25	25	125	0.600	200
IMCG321611KR56	0.56	25	25	115	0.700	150
IMCG321611KR68	0.68	25	25	105	0.800	150
IMCG321611KR82	0.82	25	25	100	0.900	150
IMCG321611K1R0	1.00	45	10	75	0.400	100
IMCG321611K1R2	1.20	45	10	65	0.500	100
IMCG321611K1R5	1.50	45	10	60	0.500	50
IMCG321611K1R8	1.80	45	10	55	0.500	50
IMCG321611K2R2	2.20	45	10	50	0.600	50
IMCG321611K2R7	2.70	45	10	45	0.600	50
IMCG321611K3R3	3.30	45	10	41	0.700	50
IMCG321611K3R9	3.90	45	10	38	0.800	50
IMCG321611K4R7	4.70	45	10	35	0.900	50
IMCG321611K5R6	5.60	50	4	32	0.700	25
IMCG321611K6R8	6.80	50	4	29	0.800	25
IMCG321611K8R2	8.20	50	4	26	0.900	25
IMCG321611K100	10.00	50	2	24	1.000	25
IMCG321611K120	12.00	45	2	22	1.05	15
IMCG321611K150	15.00	35	1	19	0.70	5
IMCG321611K180	18.00	35	1	18	0.75	5
IMCG321611K220	22.00	35	1	16	0.90	5
IMCG321611K270	27.00	35	1	14	0.95	5
IMCG321611K330	33.00	35	0.4	13	1.05	5
IMCG321611K390	39.00	40	2	11	3.00	5
IMCG321611K470	47.00	40	2	10	3.40	5

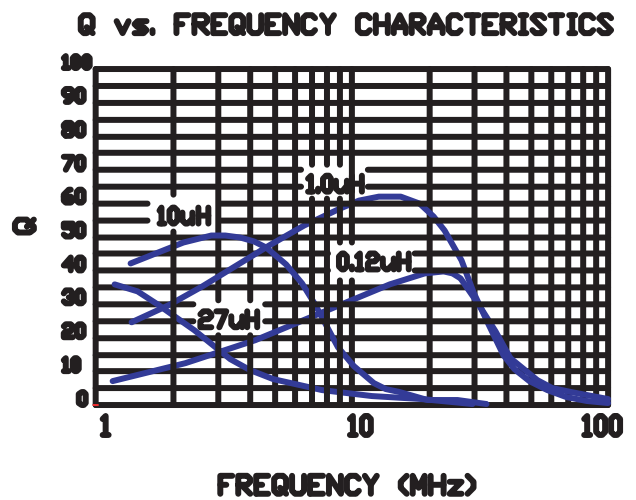
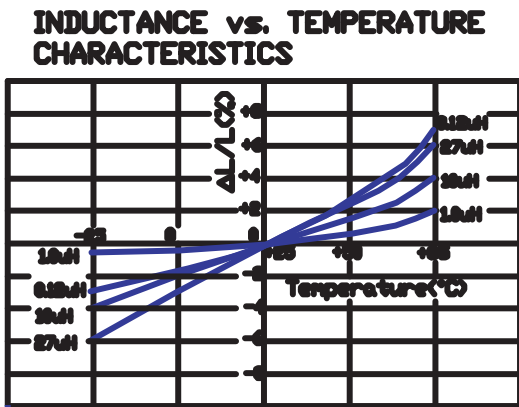
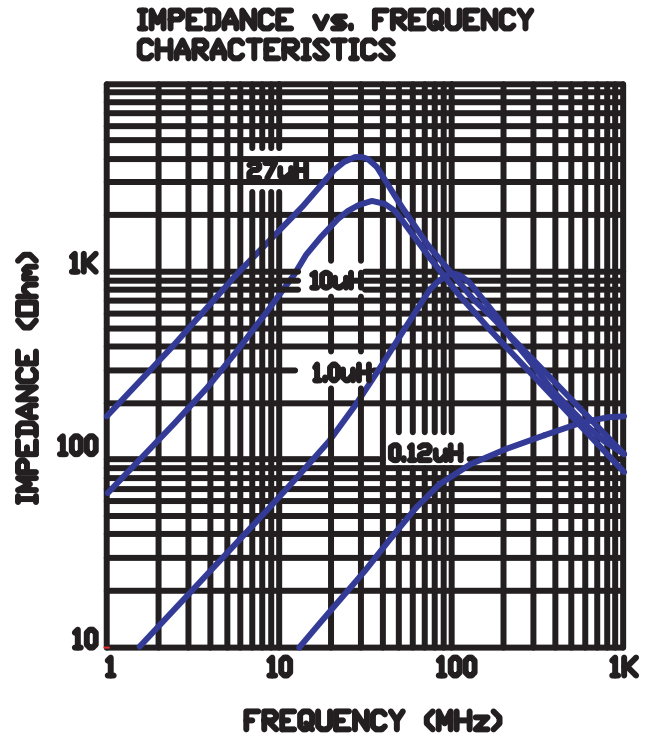
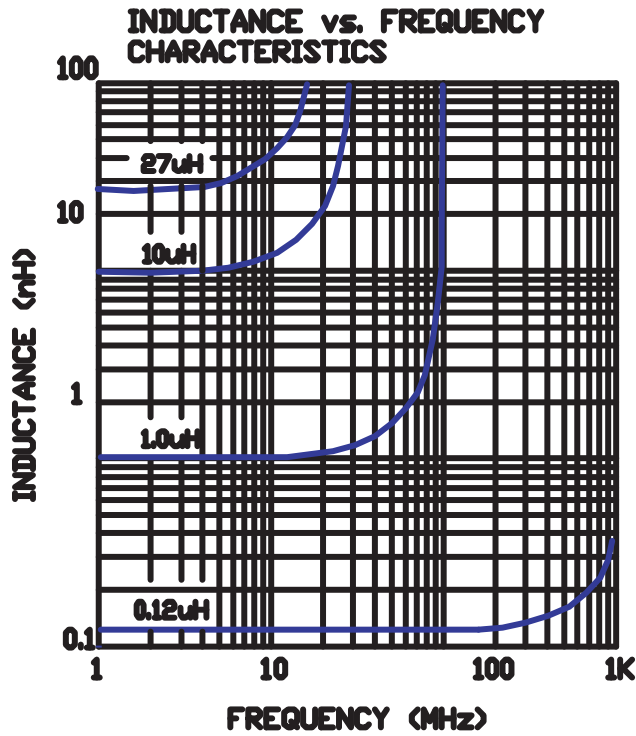
※MSL Rating: Level 1.

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Reliability Test Result:

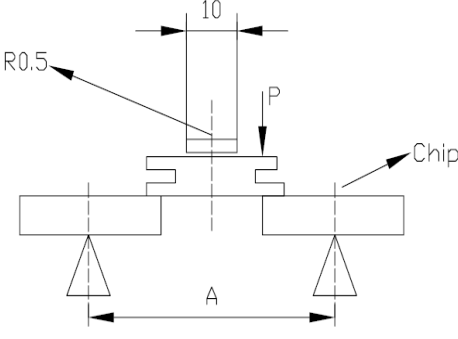
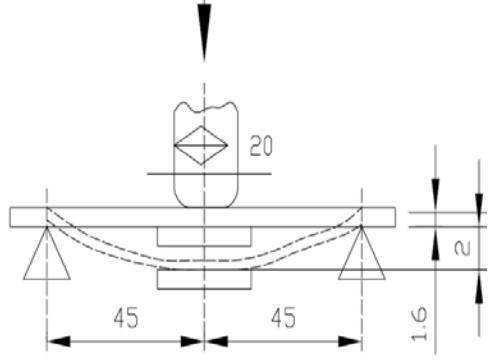
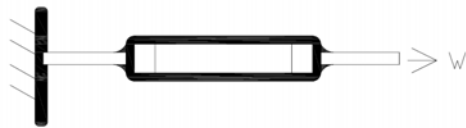
NO	ITEM	TEST CONDITIONS	REMARKS																
1	Thermal Shock (Temperature Cycle)	Temperature: -40°C/+85°C kept stabilized for 30 minutes each Cycle: 100 Cycles	<p>Inductance value shall be within ± 10% of the initial value. Q-factor shall be within ± 30% of the initial value. Impedance shall be within ± 20% of the initial value. DCR value shall be within ± 20% of the initial value.</p> <p>■ No. 1 ~ 4 Measurement: After placing for 24 hours (min.)</p> <p>■ No. 2 ~ 3 Applied current (spec.): Rated current (maximum value)</p> <p>■ No. 5 Cycle: 5 cycles</p>																
2	Humidity Resistance	Humidity: 90%~95% RH Temperature: 40±2°C Test Time: 1000±12 Hours																	
3	High Temperature	Temperature: 85±2°C Humidity: 20% Test Time: 1000±12 Hours																	
4	Low Temperature	Temperature: -40±2°C Time: 1000±12 Hours																	
5	Temperature and Humidity Cycle	<table border="1"> <thead> <tr> <th>Step</th> <th>Temp</th> <th>Humidity</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>25±2°C</td> <td>95~100% RH</td> <td>3.0Hr</td> </tr> <tr> <td>2</td> <td>55±2°C</td> <td>95~96% RH</td> <td>9.5Hr</td> </tr> <tr> <td>3</td> <td>25±2°C</td> <td>95~100% RH</td> <td>9.5Hr</td> </tr> </tbody> </table>		Step	Temp	Humidity	Time	1	25±2°C	95~100% RH	3.0Hr	2	55±2°C	95~96% RH	9.5Hr	3	25±2°C	95~100% RH	9.5Hr
Step	Temp	Humidity		Time															
1	25±2°C	95~100% RH		3.0Hr															
2	55±2°C	95~96% RH		9.5Hr															
3	25±2°C	95~100% RH	9.5Hr																
6	Vibration	Frequency: 10Hz~55Hz Amplitude: 1.5mm Direction: X,Y,Z Time: 2 Hours each																	
7	IR Reflow Soldering	Solder: H63A (eutectic solder) Solder Temp.: 230±5°C Time: 90sec. Cycle: x 1																	
8	Soldering Heat Resistance	Preheat: 120~150°C (6sec) Solder: H63A (eutectic solder) Solder Temp.: 260±5°C Flux: Rosin Dip time: 10±1 seconds																	
			Impedance (inductance) shall be within ± 20% of the initial value. DCR value shall be within ± 20% of the initial value.																
			The chip must have no cracks. More than 75% of the terminal electrode must be covered with solder.																

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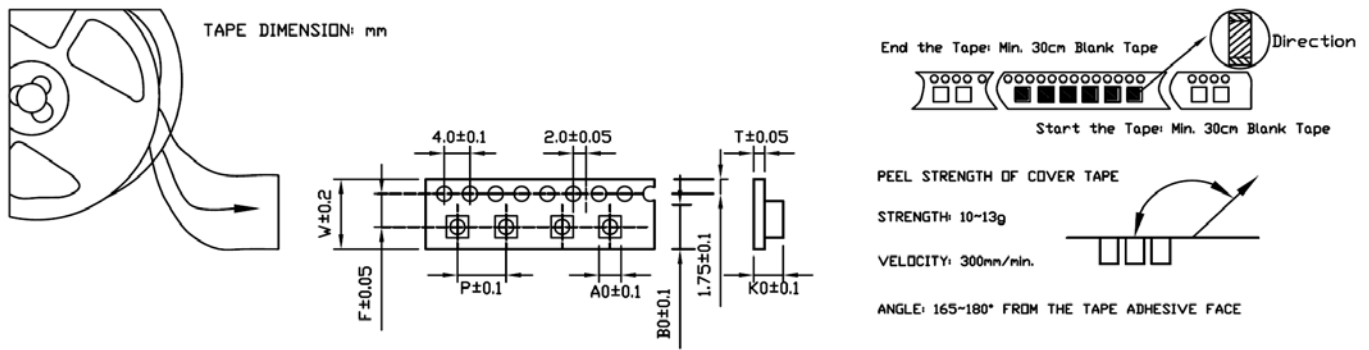
NO	ITEM	TEST CONDITIONS	REMARKS
9	Bending Strength		<p>The terminal electrode and the ferrite must not be damaged by the forces applied on the test conditions.</p> <p>100505: $\geq 1\text{kg}$ 160808: $\geq 3\text{kg}$ 201209: $\geq 3\text{kg}$ 321611: $\geq 6\text{kg}$</p>
10	Flexure Strength		<p>No mechanical damage shall be noticed even when the board is bent 2mm.</p>
11	Terminal Strength		<p>The terminal electrode and the ferrite must not be damaged by the forces applied on the test conditions.</p> <p>100505: $\geq 0.2\text{kg}$ 160808: $\geq 0.5\text{kg}$ 201209: $\geq 1.0\text{kg}$ 321611: $\geq 1.5\text{kg}$</p>

Inductor

IMCG Series

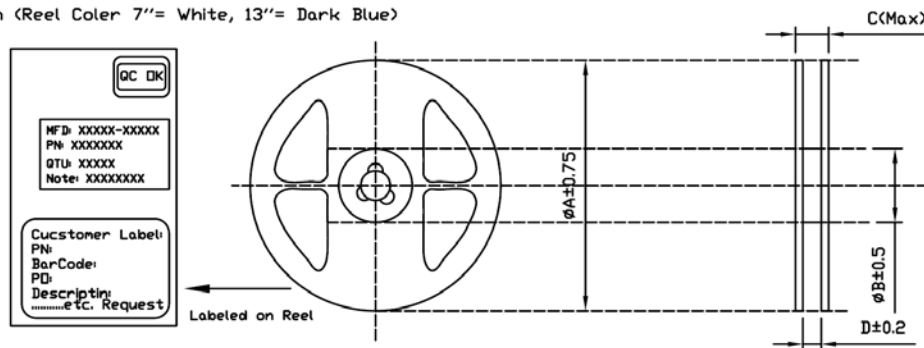
Chip Inductors – Multilayer Chip Inductors – For General

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SIZE/mm	A	B	C	D	E	F	G	H	I	J
100505	2.00	0.62	1.15	1.75	2.00	4.00	8.00	3.50	0.70	0.20
160808	4.00	0.97	1.80	1.75	2.00	4.00	8.00	3.50	1.05	0.20
201209	4.00	1.54	2.32	1.75	2.00	4.00	8.00	3.50	1.15	0.20
201212	4.00	1.54	2.32	1.75	2.00	4.00	8.00	3.50	1.35	0.20
321611	4.00	1.94	3.54	1.75	2.00	4.00	8.00	3.50	1.29	0.20

Reel Dimensions: mm (Reel Color 7"= White, 13"= Dark Blue)



SIZE/mm	A	B	C	D	REEL SIZE	QTY/REEL
100505	178	60	12	10	7"	4.0K
160808	178	60	12	10	7"	4.0K
201209	178	60	12	10	7"	4.0K
201211	178	60	12	10	7"	4.0K
321611	178	60	12	10	7"	3.0K

BOX Package: (Unit: cm)

