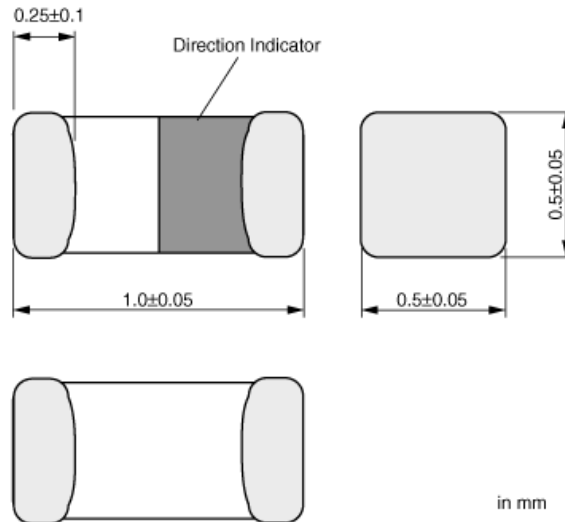


Specification For Approval

BCCLH-1005E1 series

1. SHAPE AND SIZE (mm)



2. SPECIFICATION

2.1 Dimension and Inductance tolerance

DIMENSION CODE (EIA CODE)	AVAILABLE INDUCTANCE	RATINGS	NORMAL TOLERANCE
0603 (0201)	0.6 nH ~ 15nH	0.6nH~3.9nH	D: +/- 0.1nH
		4.7nH~15nH	J: +/- 5%
1005 (0402)	1.0 nH ~ 120 nH	1.0 nH ~ 2.7 nH	S: +/- 0.3 nH
		3.3 nH ~ 5.6 nH	S: +/- 0.3 nH K: +/- 10%
		6.8 nH ~ 120 nH	J: +/- 5% K: +/- 10%
1608 (0603)	1.5 nH ~ 220 nH	1.5 nH ~ 2.7 nH	S: +/- 0.3 nH
		3.3 nH ~ 5.6 nH	S: +/- 0.3 nH K: +/- 10%
		6.8 nH ~ 220 nH	J: +/- 5% K: +/- 10%
2012 (0805)	1.5 nH ~ 680 nH	1.5 nH ~ 2.7 nH	S: +/- 0.3 nH
		3.3 nH ~ 5.6 nH	S: +/- 0.3 nH K: +/- 10%
		6.8 nH ~ 680 nH	J: +/- 5% K: +/- 10%

BCCLH-1005E1 series

2.2 ELECTRICAL SPECIFICATIONS

Ordering Code	Inductance	Tolerance	Q	L, Q Measuring Frequency	Q(Typical) Frequency(MHz)			SRF Self-Resonance Frequency	RDC DC-Resistance	Rated Current	Packing Amount of 7" reel
	(nH)				min	100	500				800
BCCLH-1005E1-1N0S	1.0	S	8	100	11	33	43	10000	0.12	300	10000
BCCLH-1005E1-1N1S	1.1	S	8	100	11	33	43	10000	0.12	300	
BCCLH-1005E1-1N2S	1.2	S	8	100	11	33	43	10000	0.12	300	
BCCLH-1005E1-1N3S	1.3	S	8	100	11	33	43	10000	0.13	300	
BCCLH-1005E1-1N5S	1.5	S	8	100	11	33	43	6000	0.13	300	
BCCLH-1005E1-1N6S	1.6	S	8	100	11	31	41	6000	0.14	300	
BCCLH-1005E1-1N8S	1.8	S	8	100	11	31	41	6000	0.14	300	
BCCLH-1005E1-2N0S	2.0	S	8	100	11	26	36	6000	0.16	300	
BCCLH-1005E1-2N2S	2.2	S	8	100	11	26	36	6000	0.16	300	
BCCLH-1005E1-2N4S	2.4	S	8	100	11	26	36	6000	0.17	300	
BCCLH-1005E1-2N7S	2.7	S	8	100	12	29	38	6000	0.17	300	
BCCLH-1005E1-3N0S	3.0	S	8	100	11	28	37	6000	0.19	300	
BCCLH-1005E1-3N3□	3.3	S,K	8	100	11	28	37	6000	0.19	300	
BCCLH-1005E1-3N6□	3.6	S,K	8	100	11	26	32	5000	0.22	300	
BCCLH-1005E1-3N9□	3.9	S,K	8	100	11	26	32	4000	0.22	300	
BCCLH-1005E1-4N3□	4.3	S,K	8	100	11	26	32	4000	0.24	300	
BCCLH-1005E1-4N7□	4.7	S,K	8	100	12	28	37	4000	0.24	300	
BCCLH-1005E1-5N1□	5.1	S,K	8	100	11	26	35	4000	0.27	300	
BCCLH-1005E1-5N6□	5.6	S,K	8	100	11	26	35	4000	0.27	300	
BCCLH-1005E1-6N2□	6.2	J,K	8	100	11	26	34	3900	0.32	300	
BCCLH-1005E1-6N8□	6.8	J,K	8	100	11	26	34	3900	0.32	300	
BCCLH-1005E1-8N2□	8.2	J,K	8	100	12	26	34	3500	0.37	300	
BCCLH-1005E1-10N□	10	J,K	8	100	11	25	31	3200	0.42	300	
BCCLH-1005E1-12N□	12	J,K	8	100	11	25	31	2600	0.50	300	
BCCLH-1005E1-15N□	15	J,K	8	100	11	24	30	2300	0.55	300	
BCCLH-1005E1-18N□	18	J,K	8	100	11	24	30	2000	0.65	300	
BCCLH-1005E1-22N□	22	J,K	8	100	12	24	30	1600	0.80	300	
BCCLH-1005E1-27N□	27	J,K	8	100	11	24	28	1400	0.90	300	
BCCLH-1005E1-33N□	33	J,K	8	100	12	23	26	1200	1.00	200	
BCCLH-1005E1-39N□	39	J,K	8	100	11	21	24	1100	1.20	200	
BCCLH-1005E1-47N□	47	J,K	8	100	11	21	23	900	1.30	200	
BCCLH-1005E1-56N□	56	J,K	8	100	12	21	21	750	1.40	200	
BCCLH-1005E1-68N□	68	J,K	8	100	11	19	19	750	1.40	180	
BCCLH-1005E1-82N□	82	J,K	8	100	10	19	16	600	1.60	150	
BCCLH-1005E1-R10□	100	J,K	8	100	10	18	-	600	1.60	100	
BCCLH-1005E1-R12□	120	J,K	8	100	11	15	-	600	1.60	100	

- = Tolerance: S=+/-0.3nH, J=+/-5%, K=+/-10%
- MEASURING EQUIPMENT: HP4287+16196C
- MEASURING TEMPERATURE: 25 +/- 3°C
- OPERATING TEMPERATURE RANGE: -55°C TO +125°C

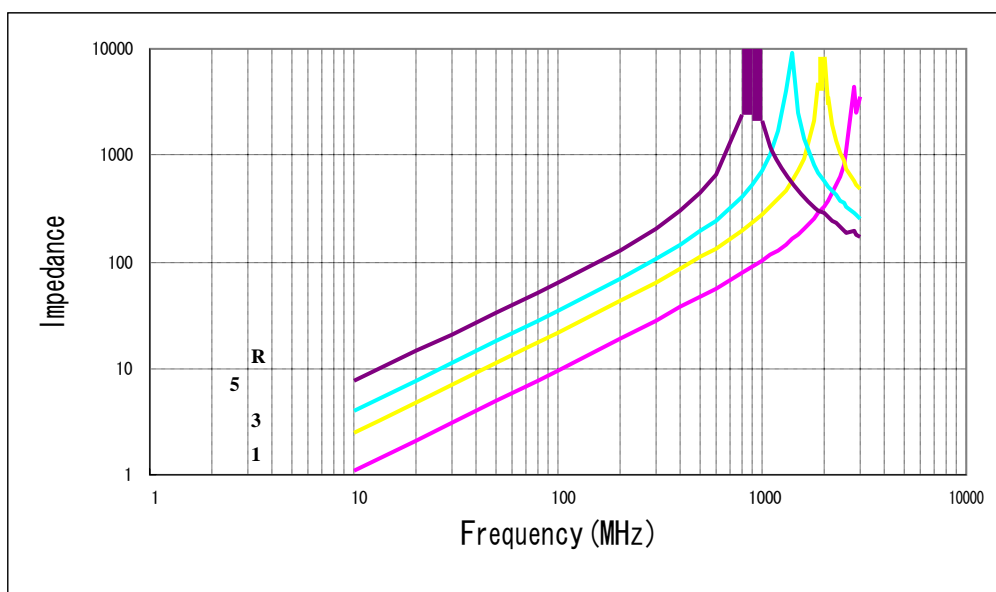
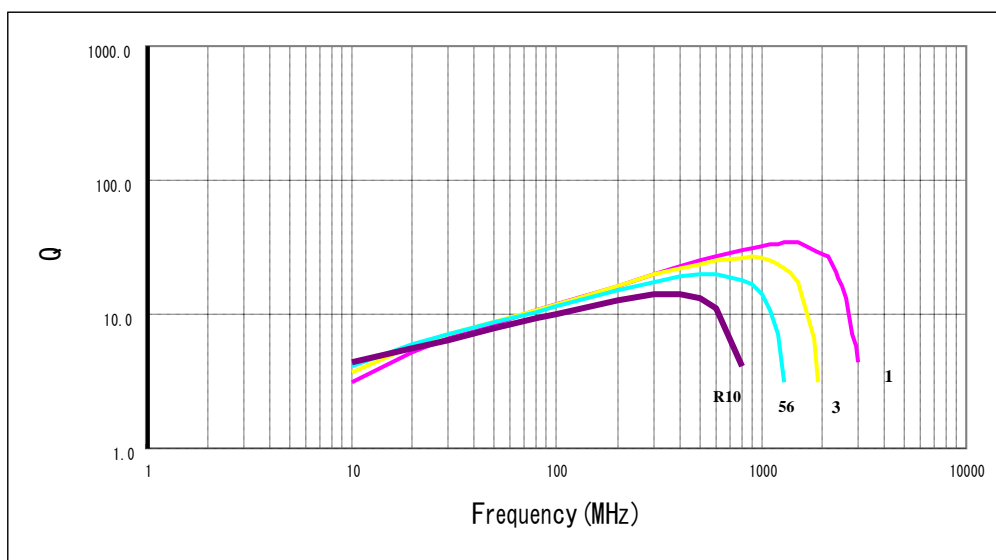
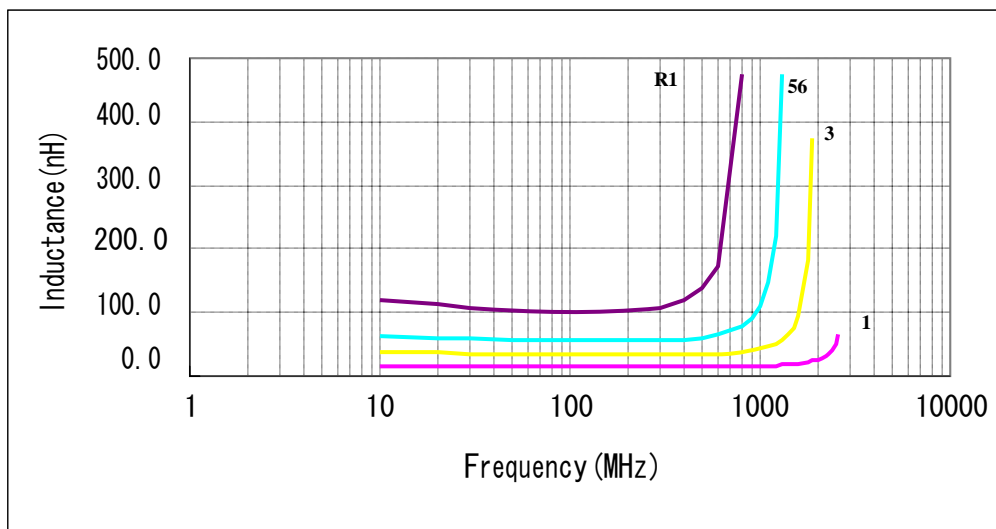
BCCLH-1005E1 series

3. TESTING CONDITION AND REQUIREMENTS

Item	Test Condition	Requirements
Inductance	a. Temperature: 20+/- 6°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa d. Measuring equipment and fixture: 1608(0603) HP 4291+16192A 1005(0402) HP 4287+16193A	Within specified tolerance.
Q Value	a. Temperature: 20+/- 6°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa d. Measuring equipment and fixture: 1608(0603) HP 4291+16192A 1005(0402) HP 4287+16193A	In accordance with electrical specification.
DC Resistance	a. Temperature: 20+/- 6°C b. Relative Humidity: 45 to 85%RH c. Atmospheric Pressure: 86 to 106kpa d. Measuring equipment: HP 4338	In accordance with electrical specification.
Temperature Characteristics	a. Temperature range: -40 to 100°C b. Reference temperature: 25°C	Within specified tolerance.

BCCLH-1005E1 series

4. ELECTRICAL CHARACTERISTICS



BCCLH-1005E1 series

TEST CONDITIONS AND REQUIREMENTS

Item	Test Condition	Requirements
Appearance	Inductors shall be visually inspected for visible evidence of defect.	In accordance with specification.
Dimension	Dimension shall be measured with caliper or micrometer	In accordance with dimension specification.
Solderability	Immerse a test sample into a methanol solution containing rosin, preheat it at 150 to 180°C for 3 to 5 seconds and immerse into molten solder of 230+/-5°C for 5+/-1 seconds.	More than 75% of the terminal electrode part shall be covered with fresh solder.
Bending Strength	Solder the chip to test jig then apply a force in the direction shown in below. The soldering shall be done with the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.	No mechanical damage shall be observed.
Resistance to Soldering Heat	Immerse a test sample into a methanol solution containing resin, preheat it at 150 to 180°C for 2 to 3 minutes and immerse into molten solder of 260+/-5°C for 10+/-0.5 seconds so that both terminal electrodes are completely submerged.	No visible damage

BCCLH-1005E1 series

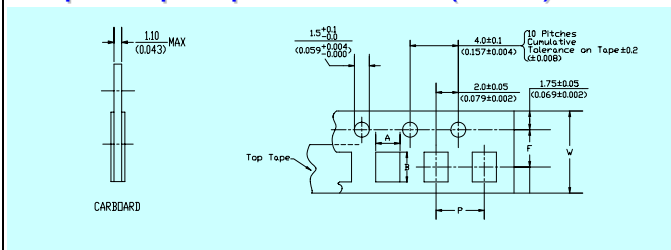
● Reliability

Item	Test Condition	Requirements
<p>Thermal Shock</p>	<p>Solder a test sample to printed circuit board, and conduct 100 cycles of test under the conditions shown as below.</p> <p>Cycle:</p> <p>100°C/1hr</p> <p style="text-align: center;">Within 2min</p> <p style="text-align: right;">-40°C/1hr</p>	<p>No visible damage Inductance variation within 10% Q variation within 20%</p>
<p>High Humidity State Life Test</p>	<p>Keep a test sample in an atmosphere with a temperature of 70+/-2°C, 90~95%RH for 500+/-12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
<p>High Humidity Load Life Test</p>	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 70+/-2°C, 90~95%RH for 500+/-12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
<p>High Temperature State Life Test</p>	<p>Keep a test sample in an atmosphere with a temperature of 100+/-2°C for 500+/-12 hours. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
<p>High Temperature Load</p>	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 100+/-2°C for 500+/-12 hours while supplying the rated current. After the test, keep the test sample at a normal temperature for 1 to 2 hours, and then carry out measurement.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>

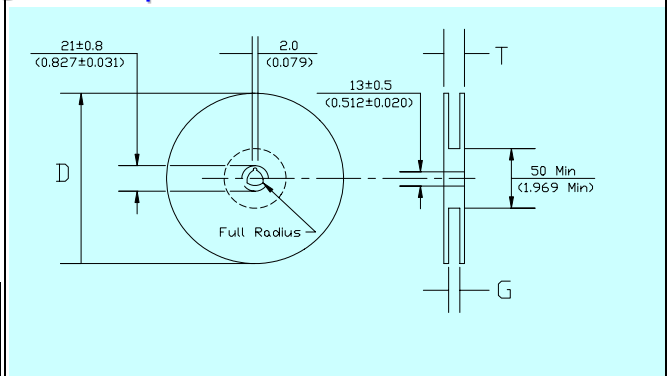
BCCLH-1005E1 series

PACKAGING

Paper tape specifications (0603)



Reel specifications



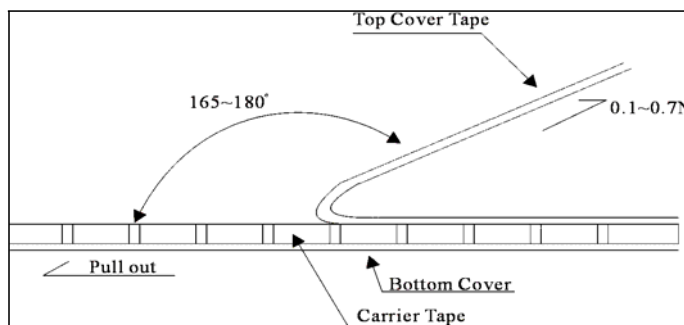
SYMBOL	1005		1608	
	Size (mm)	Tolerance (mm)	Size (mm)	Tolerance (mm)
A	0.62	+/-0.03	1.0	+/-0.20
B	1.12	+/-0.03	1.8	+/-0.20
F	3.50	+/-0.05	3.5	+/-0.05
P	2.00	+/-0.05	4.0	+/-0.10
W	8.00	+/-0.20	8.0	+/-0.20

Tape Width (mm)	G (mm)	T MAX(mm)	D (mm)
8	10.0+/-1.5	14.4	178

Reel strength of top cover tape

The peel speed shall be about 300 mm/min.

The peel strength of top cover tape shall be between 0.1 to 0.7N.



Quantity / Reel

1608 (0603): 4,000 pieces / reel

1005 (0402): 10,000 pieces / reel

The contents of a box

1608 (0603): 5 reels / box

1005 (0402): 5 reels / box

Marking

The following item shall be marked on the reel.

- Manufactures parts number.
- Manufacturing date code.
- Manufacturer name.
- Manufactures lot number.
- Quantity.

BCCLH-1005E1 series

CAUTIONS

● Storage

1. The chip inductor shall be packaged in carrier tapes.
2. To keep storage place temperature from +5 to 35°C, humidity from 45 to 70% RH.
3. The storage atmosphere must be free of gas containing sulfur and chlorine. Also, avoid exposing the product to saline moisture. If the product is exposed to such atmospheres, the terminals will oxidize and solderability will be affected.
4. The solderability is assured for 12 months from our final inspection date if the above storage condition is followed.

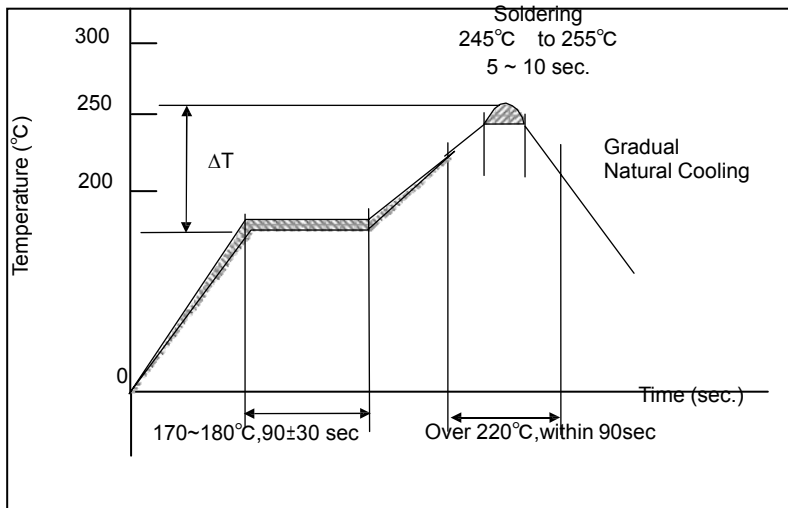
● Handling

Chip inductor should be handled with care to avoid contamination or damage. The use of vacuum pick-up or plastic tweezers is recommended for manual placement. Tape and reeled packages are suitable for automatic pick and placement machine.

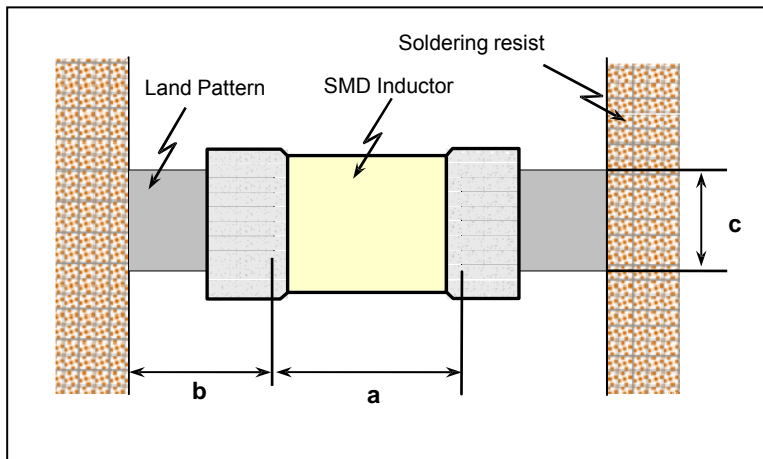
BCCLH-1005E1 series

● Soldering Profile for SMT Process with SnPb Solder Paste.

The difference between solder and chip surface should be controlled as following table. The rate of preheat should not exceed 4°C/sec and a target of 2°C/sec is preferred.



● Recommended pad dimensions



Size mm (EIA)	L x W (mm)	a (mm)	b (mm)	c (mm)
1005 (0402)	1.0*0.5	0.3 to 0.5	0.35 to 0.45	0.4 to 0.5
1608 (0603)	1.6*0.8	0.7 to 1.0	0.6 to 0.8	0.7 to 0.8