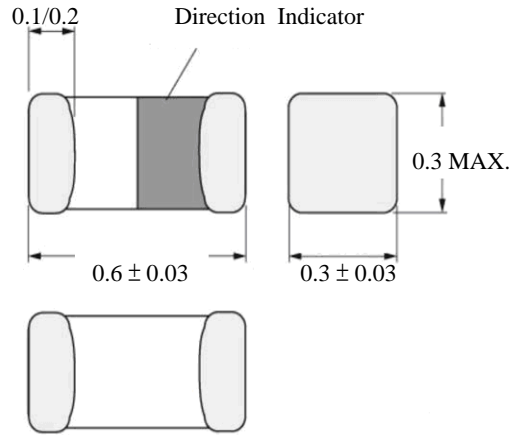


## BCCLH-0603E1 series

### 1. SHAPE AND SIZE (mm)



### 2. SPECIFICATION

#### 2.1 Dimension and Inductance tolerance (Unit:mm)

DIMENSION CODE (EIA CODE)	AVAILABLE INDUCTANCE	RATINGS	NORMAL TOLERANCE
0603 (0201)	0.3 nH ~ 56nH	0.3 nH ~ 0.9 nH	C: +/- 0.2 nH
		1.0 nH ~ 5.6 nH	C: +/- 0.2 nH S: +/- 0.3 nH
		6.8 nH ~ 56 nH	G: +/-2% J: +/- 5% K: +/- 10%

## BCCLH-0603E1 series

### 2.2 ELECTRICAL SPECIFICATION 0603 (0201) SERIES

Ordering Code	Inductance (nH)	Tolerance	Q min	L, Q Measuring Frequency (MHz)	Q(Typical) Frequency(MHz)			SRF Self-Resonance Frequency (MHz) min.	RDC DC-Resistance (Ω) max.	Rated Current (mA) max.	Packing Amount of 7" reel Pcs.
					100	500	800				
BCCLH-0603E1-0N3S	0.3	S	4	100	5	13	18	10000	0.07	250	15,000
BCCLH-0603E1-0N4S	0.4	S	4	100	5	13	18	10000	0.07	250	
BCCLH-0603E1-0N5S	0.5	S	4	100	5	13	18	10000	0.08	250	
BCCLH-0603E1-0N6S	0.6	S	4	100	5	13	18	10000	0.08	250	
BCCLH-0603E1-0N7S	0.7	S	4	100	5	13	18	10000	0.09	250	
BCCLH-0603E1-0N8S	0.8	S	4	100	5	13	18	10000	0.10	250	
BCCLH-0603E1-0N9S	0.9	S	4	100	5	13	18	10000	0.10	250	
BCCLH-0603E1-1N0S	1.0	S	4	100	5	15	19	10000	0.14	250	
BCCLH-0603E1-1N1S	1.1	S	4	100	5	15	19	10000	0.14	250	
BCCLH-0603E1-1N2S	1.2	S	4	100	6	15	20	10000	0.14	250	
BCCLH-0603E1-1N3S	1.3	S	4	100	6	15	20	10000	0.14	250	
BCCLH-0603E1-1N5S	1.5	S	4	100	6	15	20	10000	0.18	230	
BCCLH-0603E1-1N6S	1.6	S	4	100	6	15	20	10000	0.18	230	
BCCLH-0603E1-1N8S	1.8	S	4	100	6	15	20	10000	0.19	200	
BCCLH-0603E1-2N0S	2.0	S	4	100	6	15	20	8800	0.20	200	
BCCLH-0603E1-2N2S	2.2	S	4	100	6	15	20	8800	0.22	200	
BCCLH-0603E1-2N4S	2.4	S	4	100	6	15	20	8300	0.24	200	
BCCLH-0603E1-2N7S	2.7	S	5	100	6	16	20	7700	0.25	200	
BCCLH-0603E1-3N0S	3.0	S	5	100	6	16	20	7200	0.28	180	
BCCLH-0603E1-3N3S	3.3	S	5	100	6	16	20	6700	0.30	180	
BCCLH-0603E1-3N6S	3.6	S	5	100	6	16	20	6400	0.30	170	
BCCLH-0603E1-3N9S	3.9	S	5	100	7	16	20	6000	0.30	170	
BCCLH-0603E1-4N3S	4.3	S	5	100	7	16	20	5700	0.40	150	
BCCLH-0603E1-4N7S	4.7	S	5	100	7	16	20	5300	0.40	150	
BCCLH-0603E1-5N1S	5.1	S	5	100	7	16	20	5000	0.40	150	
BCCLH-0603E1-5N6S	5.6	S	5	100	7	16	20	4200	0.40	150	
BCCLH-0603E1-6N2□	6.2	J, K	5	100	7	16	20	3800	0.44	150	
BCCLH-0603E1-6N8□	6.8	J, K	5	100	7	16	20	3500	0.50	150	
BCCLH-0603E1-7N5□	7.5	J, K	5	100	7	15	20	3300	0.53	150	
BCCLH-0603E1-8N2□	8.2	J, K	5	100	7	15	20	3200	0.55	150	
BCCLH-0603E1-9N1□	9.1	J, K	5	100	6	15	20	3000	0.62	150	
BCCLH-0603E1-10N□	10	J, K	5	100	7	15	19	2800	0.65	150	
BCCLH-0603E1-12N□	12	J, K	5	100	7	14	18	2400	0.70	100	
BCCLH-0603E1-15N□	15	J, K	5	100	7	14	18	2200	0.80	100	
BCCLH-0603E1-18N□	18	J, K	5	100	7	14	18	2100	0.90	100	
BCCLH-0603E1-22N□	22	J, K	5	100	7	14	18	1800	1.20	100	
BCCLH-0603E1-27N□	27	J, K	4	100	6	14	16	1800	1.80	50	
BCCLH-0603E1-33N□	33	J, K	4	100	6	12	14	1700	2.10	50	
BCCLH-0603E1-39N□	39	J, K	4	100	6	12	14	1500	2.40	50	
BCCLH-0603E1-47N□	47	J, K	4	100	6	11	13	1300	2.80	50	
BCCLH-0603E1-56N□	56	J, K	4	100	6	11	12	1100	3.00	50	

- = 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

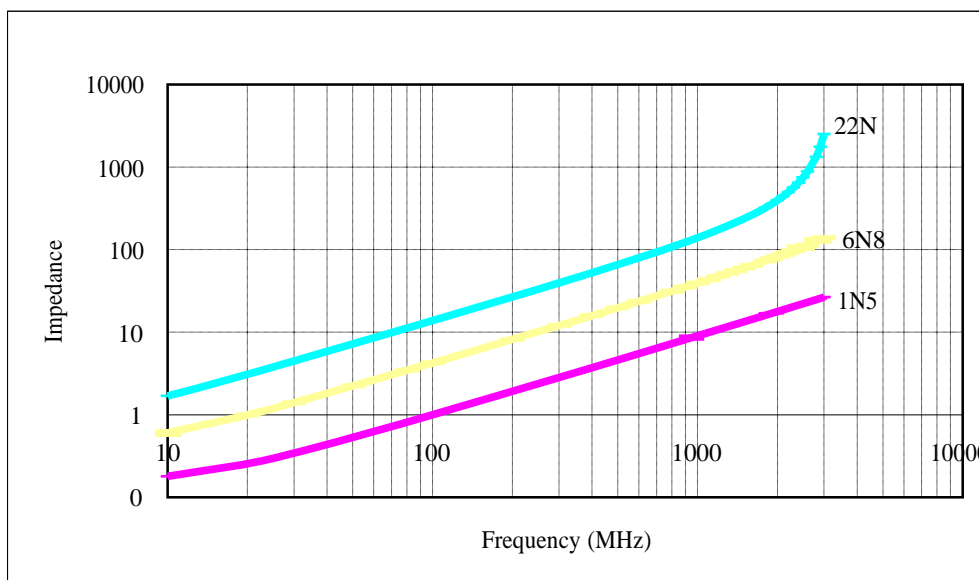
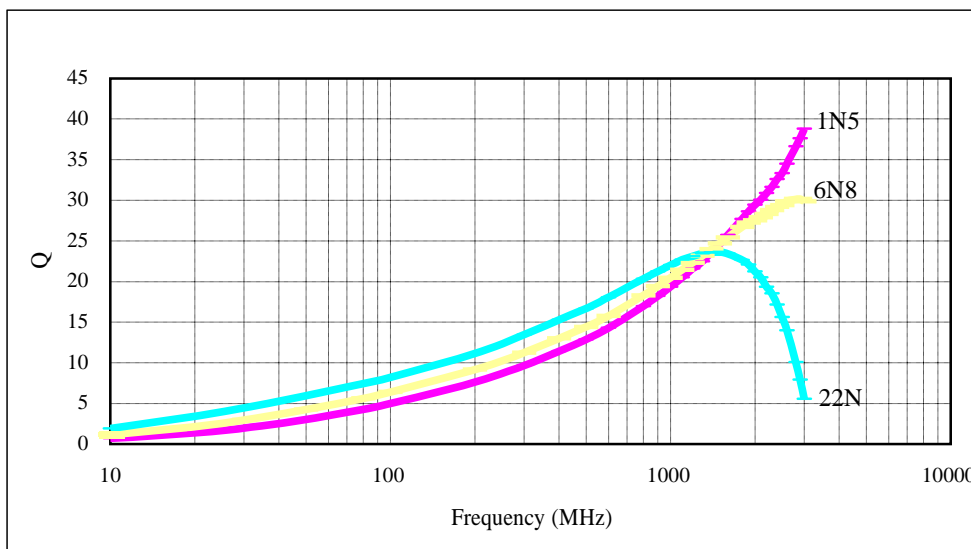
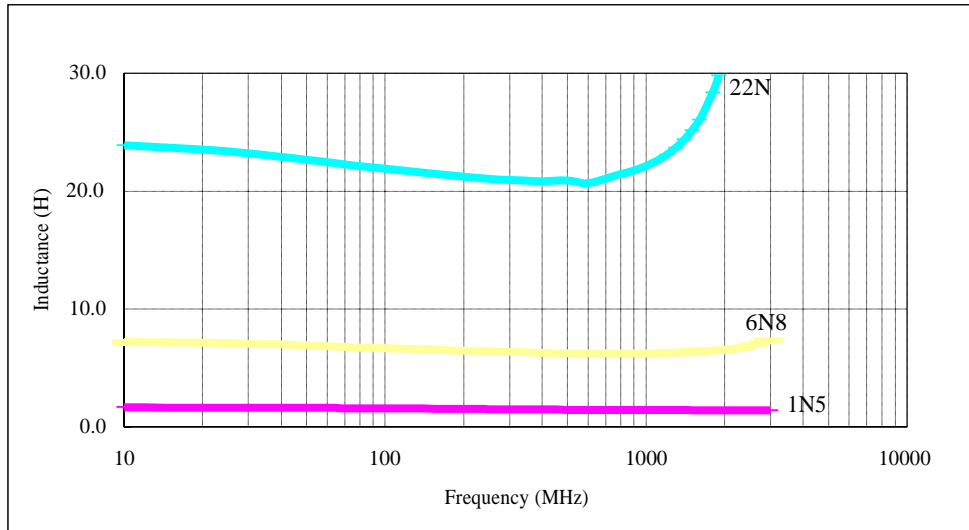
## BCCLH-0603E1 series

### 3. TESTING CONDITION AND REQUIREMENTS

<b>Item</b>	<b>Test Condition</b>	<b>Requirements</b>
<b>Inductance</b>	a. Temperature: 25 +/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment and fixture: 0603(0201) HP 4287+16196C	Within specified tolerance.
<b>Q Value</b>	a. Temperature: 25 +/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment and fixture: 0603(0201) HP 4287+16196C	In accordance with electrical specification.
<b>DC Resistance</b>	a. Temperature: 25 +/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment: HP 4338	In accordance with electrical specification.

## BCCLH-0603E1 series

### 4. ELECTRICAL CHARACTERISTICS



## BCCLH-0603E1 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.
Solder-ability	Immerse a test sample into a methanol solution containing rosin and immerse into molten solder of $230\pm 5^{\circ}\text{C}$ for $5\pm 1$ 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.	<ol style="list-style-type: none"> <li>1. No mechanical damage shall be observed.</li> <li>2. Rdc-value: to meet the initial Spec.</li> </ol>
Resistance to Soldering Heat	Immerse a test sample into a methanol solution containing resin, preheat it at $120$ to $150^{\circ}\text{C}$ for 1 minutes and immerse into molten solder of $270\pm 5^{\circ}\text{C}$ for $10\pm 1$ second so that both terminal electrodes are completely submerged.	No visible damage Inductance variation within 10% Q variation within 20%

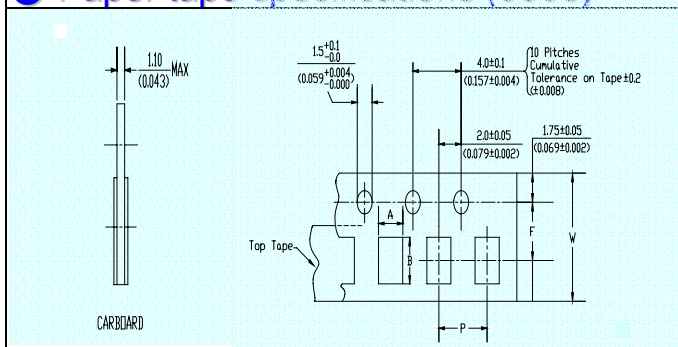
## BCCLH-0603E1 series

Thermal Shock	<p>Solder a test sample to printed circuit board, and conduct 5 cycles of test under the conditions shown as below.</p> <p>0603 &amp; 1005 operating temp. range: -55~125°C 1608 operating temp. range: -40~85°C</p> <p>Cycle: Maximum operating temp. <math>(30 \pm 3 \text{min})</math>  within 3min</p> <p>Minimum operating temp. <math>(30 \pm 3 \text{min})</math></p>	<p>No visible damage Inductance variation within 10% Q variation within 20%</p>
High Humidity State Life Test	<p>Keep a test sample in an atmosphere with a temperature of <math>40 \pm 2^\circ\text{C}</math>, 90~95%RH for <math>500 \pm 12</math> hours. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after <math>24 \pm 2</math> hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
High Humidity Load Life Test	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of <math>40 \pm 2^\circ\text{C}</math>, 90~95%RH for <math>500 \pm 12</math> hours while supplying the rated current. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after <math>24 \pm 2</math> hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
High Temperature State Life Test	<p>Keep a test sample in an atmosphere with a temperature of <math>85 \pm 2^\circ\text{C}</math> for <math>500 \pm 12</math> hours. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after <math>24 \pm 2</math> hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
High Temperature Load	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of <math>85 \pm 2^\circ\text{C}</math> for <math>500 \pm 12</math> hours while supplying the rated current. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after <math>24 \pm 2</math> hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>

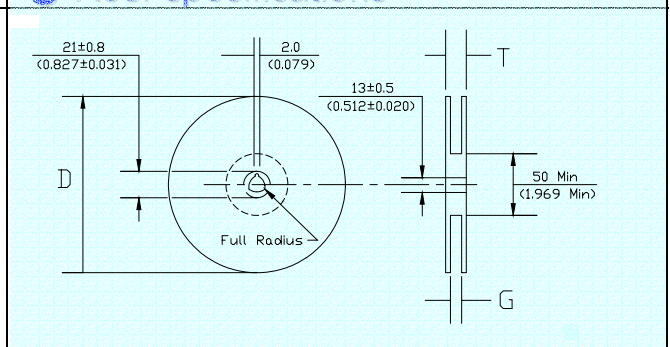
## BCCLH-0603E1 series

# PACKAGING

### ● Paper tape specifications (0603)



### ● Reel specifications



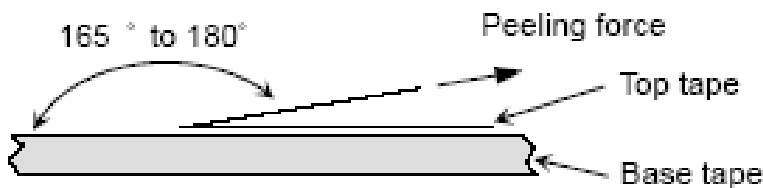
SYMBOL	0603	
	Size (mm)	Tolerance (mm)
A	0.38	+/-0.04
B	0.68	+/-0.04
F	3.50	+/-0.05
P	2.00	+/-0.10
W	8.00	+/-0.20

Tape Width (mm)	G (mm)	T MAX(mm)	D (mm)
8	10.0+/-1.5	14.5	180

### ● 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 1.0N.



### ● Quantity / Reel

0603 (0201): 15,000 pieces / reel

### ● The contents of a box

0603 (0201): 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-0603E1 series

# CAUTIONS

### ● Storage

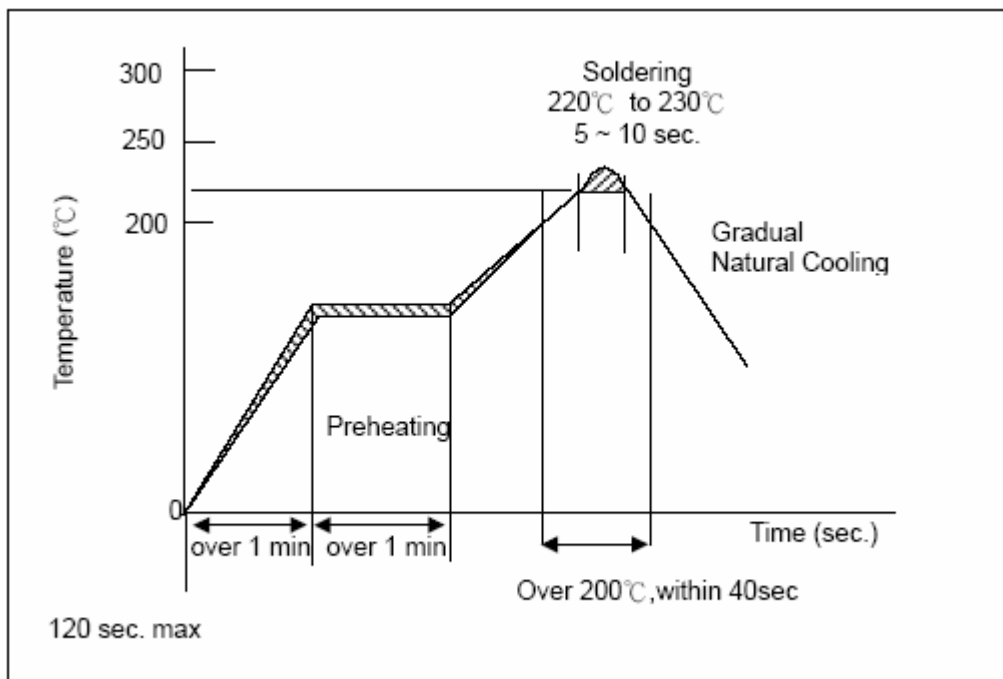
1. The chip inductor shall be packaged in carrier tapes.
2. To keep storage place temperature from +5 to 35°C, humidity from 45 to 70% RH.
3. The storage atmosphere must be free of gas containing sulfur and chlorine. Also, avoid exposing the product to saline moisture. If the product is exposed to such atmospheres, the terminals will oxidize and solder-ability will be affected.
4. The solder-ability 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.

### ● Soldering Profile for SMT Process with SnPb Solder Paste.

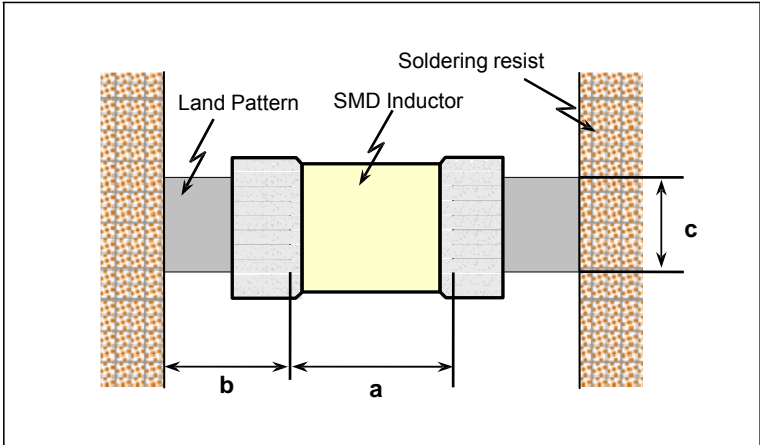
The rate of preheat should not exceed 4°C/sec and a target of 2°C/sec is preferred. Ceramic chip components should be preheated to within 100 to 130 °C of the soldering.





## BCCLH-0603E1 series

● Recommended pad dimensions



Size mm (EIA)	L x W (mm)	a (mm)	b (mm)	c (mm)
0603 (0201)	0.6*0.3	0.15 to 0.35	0.2 to 0.3	0.25 to 0.3