

# RF Inductor



## BWHP Series



### Overview

Wire-wound RF inductors are electronic components designed to store energy in a magnetic field when electrical current passes through them. They are constructed by winding a conductive wire (usually copper or gold-plated) around a core material such as air, ceramic, or ferrite.

This configuration allows them to provide high inductance values with minimal power loss, especially at high frequencies.

### Benefits

1. High Q-Factor (Quality Factor)
2. Ceramic body and wire wound construction provide high SRFs
3. Low DC resistance design
4. High Current Handling
5. Can maintain excellent thermal stability at different temperatures

### Applications

1. Industrial and Medical Equipmen: RFID systems and medical imaging equipment.
2. Data Centers
3. Networking
4. Base Station
5. Consumer Electronics
6. Security system

### Product Information

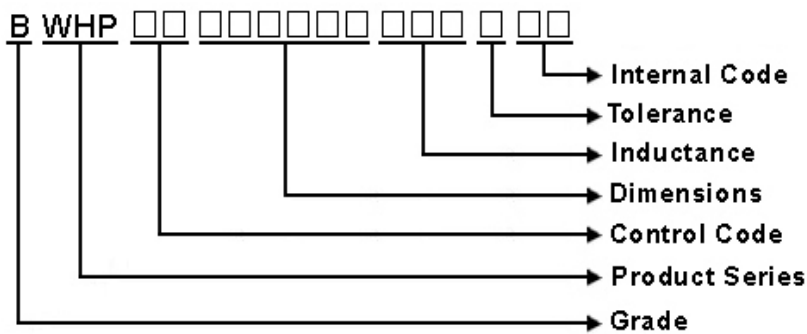
Series	Size Code (JIS/EIA)	Inductance (nH)
BWHP	1005/0402 1608/0603 2012/0805	1 ~ 820



## BWHP00231715 Series Specification

**1 Scope:** This specification applies to Wire Wound Ceramic Chip Inductors

**2 Part Numbering:**



**3 Rating:**

Operating Temperature: - 40°C ~ 125°C  
(Including self - temperature rise)

Storage Temperature: - 40°C ~ 125°C  
(The storage temperature range is for after the assembly)

**4 Marking:**

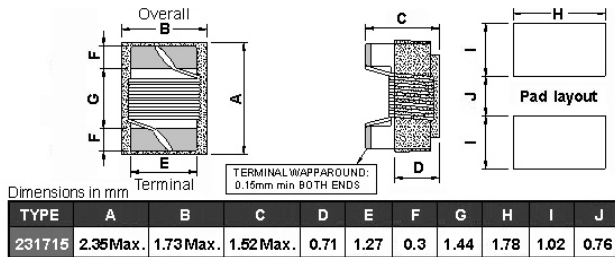
**No Marking**

**5 Standard Testing Condition**

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

## BWHP00231715 Series Specification

### 6 Configuration and Dimensions and Unit Weight:



#### Net Weight (grms)

SIZE CODE	Net Weight (grms)
231715	0.01284 (typ.)

### 7 Electrical Characteristics:

Part No.	Inductance (nH)	L/Q Test Freq. (MHz)	Q Typ.	SRF (MHz)Typ.	RDC (Ω)Max.	I <sub>rms</sub> (mA)Typ.	Tolerance (±%)
BWHP002317152N6□00	2.6	250/1500	100	9500	0.015	2000	5
BWHP002317156N2□00	6.2	250/1000	104	7200	0.027	1500	5
BWHP002317156N8□00	6.8	250/1000	90	6000	0.066	1300	5
BWHP0023171511N□00	11	250/500	93	4750	0.039	1600	2,5
BWHP0023171512N□00	12	250/500	91	4425	0.039	1400	2,5
BWHP0023171513N□00	13	250/500	91	4100	0.039	1400	2,5
BWHP0023171518N□00	18	250/500	95	3650	0.05	1200	2,5
BWHP0023171533N□00	33	250/500	100	2410	0.087	1100	2,5
BWHP0023171547N□00	47	200/500	105	2170	0.093	1000	2,5
BWHP0023171556N□00	56	200/500	100	1815	0.122	950	2,5
BWHP0023171582N□00	82	150/500	103	1525	0.168	820	2,5
BWHP00231715R10□00	100	150/500	100	1400	0.22	720	2,5
BWHP00231715R12□00	120	150/250	80	1265	0.293	620	2,5
BWHP00231715R15□00	150	100/250	80	1150	0.288	600	2,5
BWHP00231715R16□00	160	100/250	80	1025	0.374	540	2,5
BWHP00231715R18□00	180	100/250	77	1025	0.374	540	2,5
BWHP00231715R22□00	220	100/250	75	930	0.426	500	2,5
BWHP00231715R27□00	270	100/250	75	830	0.754	420	2,5
BWHP00231715R33□00	330	100/100	54	770	1.004	360	2,5
BWHP00231715R39□00	390	100/100	52	700	1.11	330	2,5
BWHP00231715R47□00	470	50/100	52	640	1.559	280	2,5
BWHP00231715R56□00	560	25/100	46	550	2.067	240	2,5
BWHP00231715R68□00	680	25/100	46	535	2.355	210	2,5
BWHP00231715R82□00	820	25/100	50	485	3.945	180	2,5

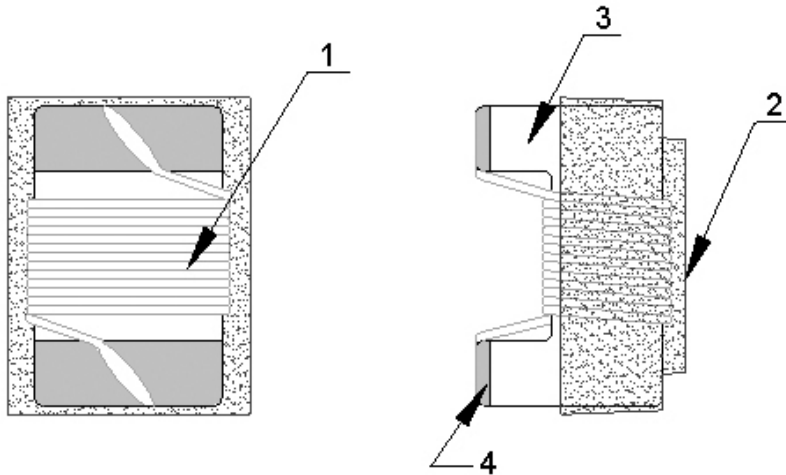
NOTE: □-tolerance J=±5% / K=±10%

1. Operating temperature range - 4 0 °C ~ 1 2 5 °C
2. I<sub>rms</sub> for a 15°C temperature rise from 25°C ambient.
3. L/Q Test OSC @200mV.
4. Inductance would be correct Chilisin standard piece.

## BWHP00231715 Series Specification

### 8 BWHP00231715 Series

#### 8.1 Construction:



#### 8.2 Material List:

NO	PART	MATERIAL
1	WIRE	Grade 180
2	EPOXY	UV GLUE
3	CORE	CERAMIC
4	TERMINAL	Ag/Ni/Sn

## BWHP00231715 Series Specification

### 9 Reliability Of Ceramic Wire Wound Chip Inductor/CERAMIC SERIES

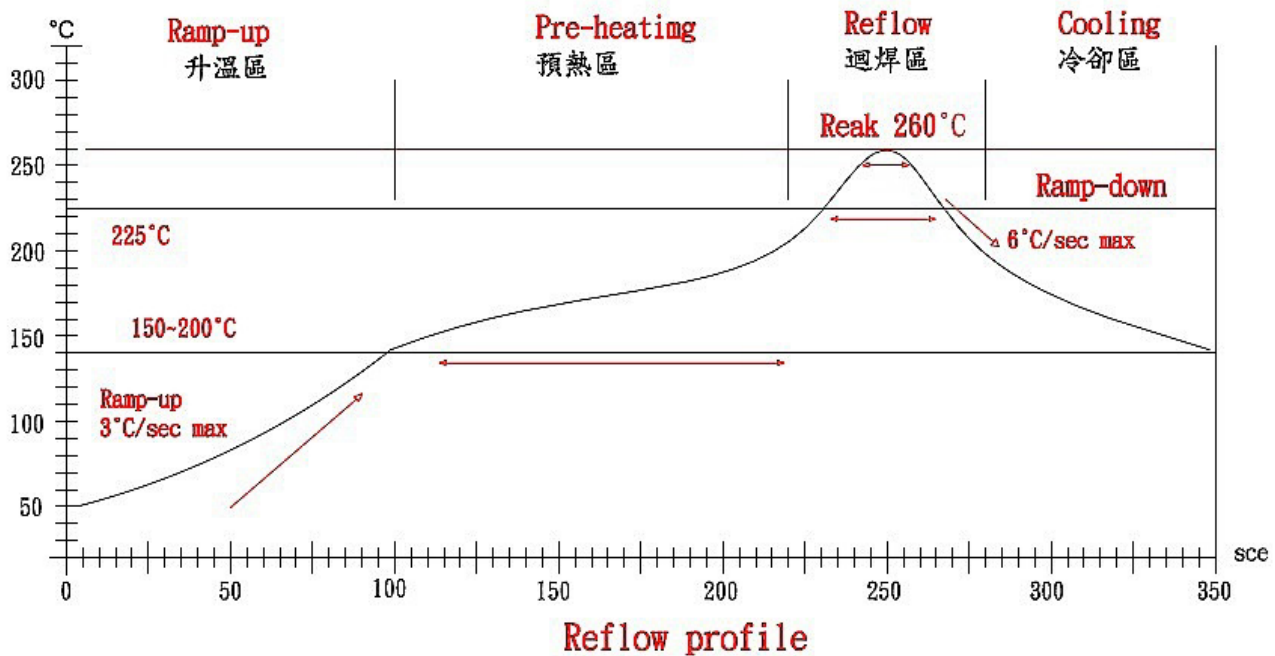
#### 1-1.Environmental Performance

No	Item	Specification	Test Method		
1-1-1	Temperature Cycle	Appearance: No Damage Inductance: within $\pm 10\%$ of initial value Q change: within $\pm 30\%$ of initial value	One cycle:		
			Step	Temperature ( $^{\circ}\text{C}$ )	Time (min)
			1	-40 $\pm$ 3	30
			2	25 $\pm$ 2	15
			3	125 $\pm$ 3	30
4	25 $\pm$ 2	15			
			Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs		
1-1-2	High Temperature Resistance		Temperature: 125 $\pm$ 3 $^{\circ}\text{C}$ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs		
1-1-3	Low Temperature Resistance		Temperature: -40 $\pm$ 3 $^{\circ}\text{C}$ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs		
1-1-4	Humidity Load Life	There should be no evidence of short or open circle	Temperature: 40 $\pm$ 2 $^{\circ}\text{C}$ Relative Humidity: 90~95% Load: Allowed DC Current Time: 96Hrs		

#### 1-2.Mechanical Performance

No	Item	Specification	Test Method
1-2-1	Vibration Test (Low Frequency)	1.Appearance: No Damage 2.Inductance: within $\pm 10\%$ of initial value 3.Q change: within $\pm 30\%$ of initial value	1. Test device shall be soldered on the substrate. 2. Oscillation frequency: 10 to 55 to 10Hz for 1min. 3. Amplitude: 1.5mm 4. Time: 2hrs for each axis(X, Y & Z),total 6hrs
1-2-2	Resistance TO Soldering Heat	Appearance: No Damage	1. The device should be reflow soldered on PCB (peak 260 $^{\circ}\text{C}$ $\pm$ 5 $^{\circ}\text{C}$ for 10 seconds) 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Test time: 6 minutes
1-2-3	Solder ability	The electrodes shall be at least 95% covered with new solder coating	1. Pre-Heating: 150 $^{\circ}\text{C}$ , 1min. 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Solder Temperature: 245 $\pm$ 5 $^{\circ}\text{C}$ . 4. Immersion Time: 4 $\pm$ 1 sec.
1-2-4	Component Adhesion (Push Test)	1 Lbs. For 0402 2 Lbs. For 0603 4 Lbs. For The Rest	The device should be reflow soldered (245 $\pm$ 5 $^{\circ}\text{C}$ For 10 seconds) to a tinned copper substrate. A force gauge should be applied to the side of the component. The device must withstand a minimum force of 2 or 4 pounds without a failure of the termination attached to component

# BWHP00231715 Series Specification



Lead-Free(LF)標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升温區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T ~ 150°C	150°C ~ 200°C	Above 217°C	260±5°C	Peak Temp.~150°C
標準時間 Time spec.	-	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	-
實際時間 Time result	-	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	-

**NOTE :**

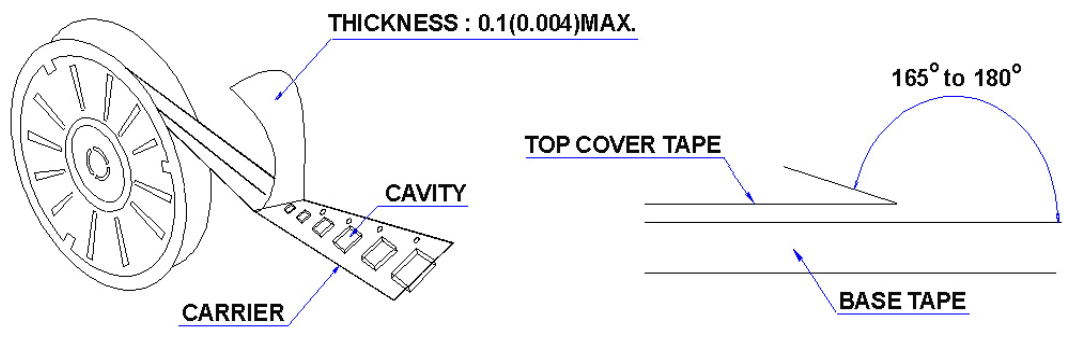
1. Re-flow possible times : within 2 times
2. Nitrogen adopted is recommended while in re-flow
3. Products can only be soldered with reflow

# BWHP00231715 Series Specification

## 10 Packaging:

### 10.1 Packaging -Cover Tape

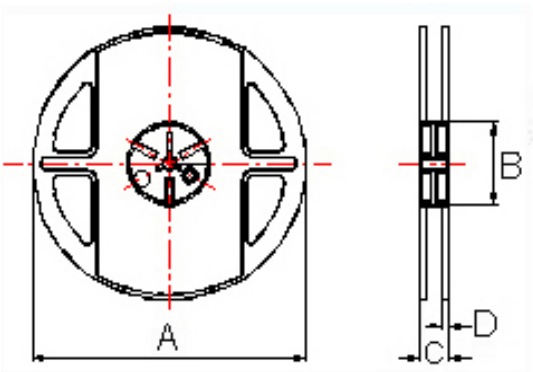
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



### 10.2 Packaging Quantity

TYPE	PCS/REEL
231715	2000

### 10.3 Reel Dimensions



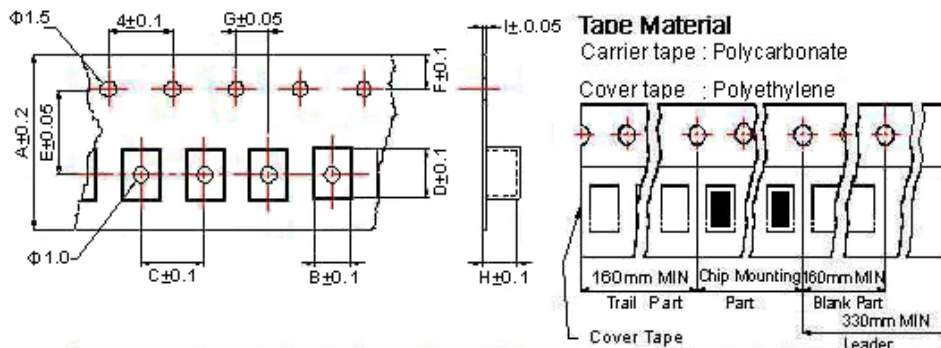
Dimensions in mm

TYPE	A	B	C	D
231715	178±1	60±0.5	12±0.5	1.5±0.5

## BWHP00231715 Series Specification

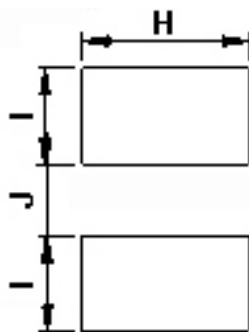
### 10 Packaging:

#### 10.4 Tape Dimensions in mm



TYPE	A	B	C	D	E	F	G	H	I
<b>231715</b>	<b>8.0</b>	<b>1.85</b>	<b>4</b>	<b>2.45</b>	<b>3.5</b>	<b>1.75</b>	<b>2</b>	<b>1.50</b>	<b>0.23</b>

### 11 Recommended Land Pattern:



Dimensions in mm

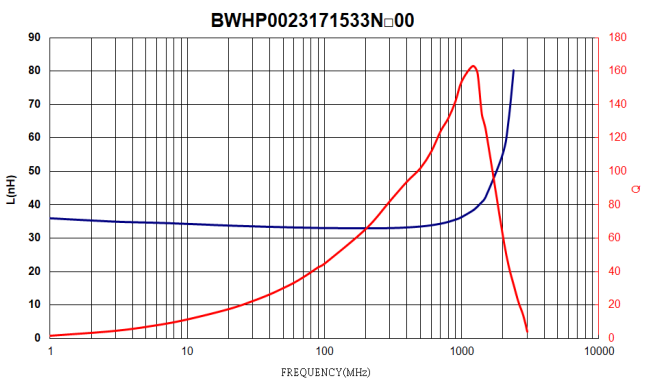
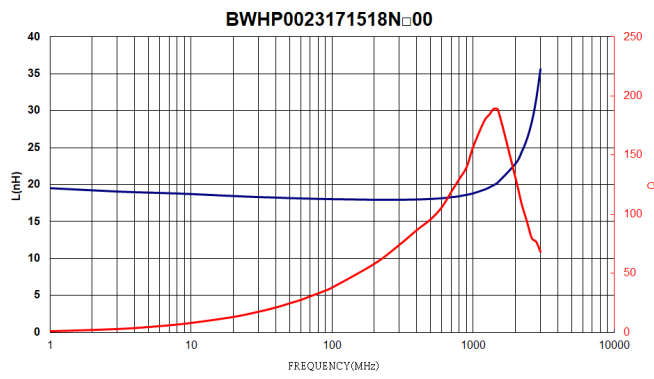
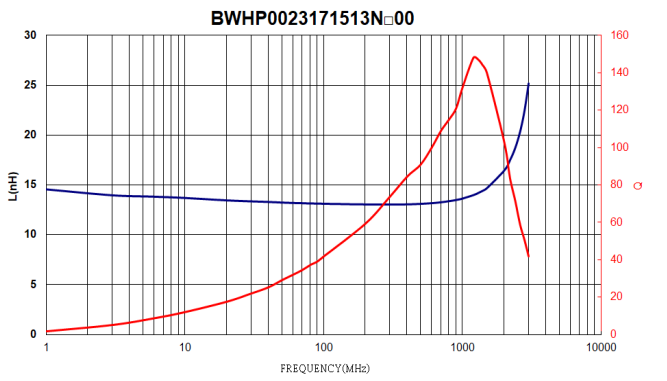
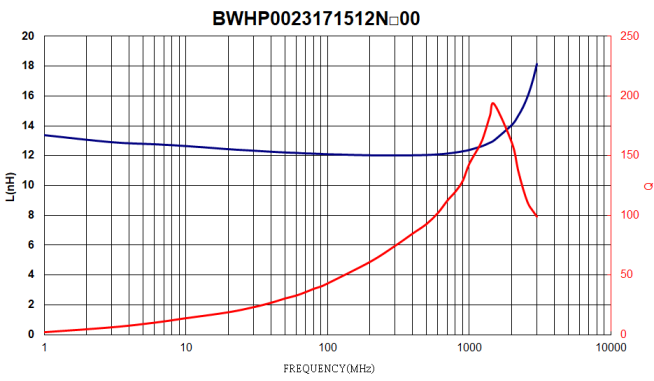
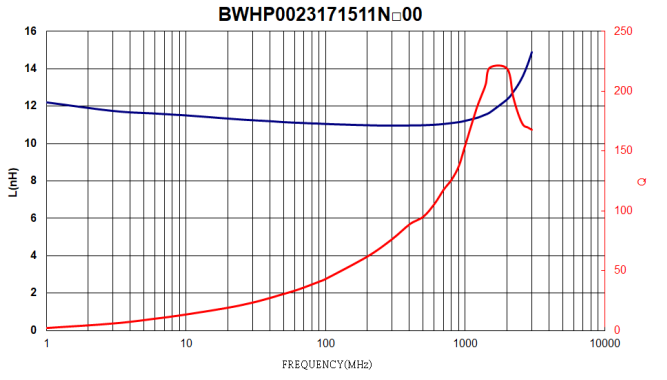
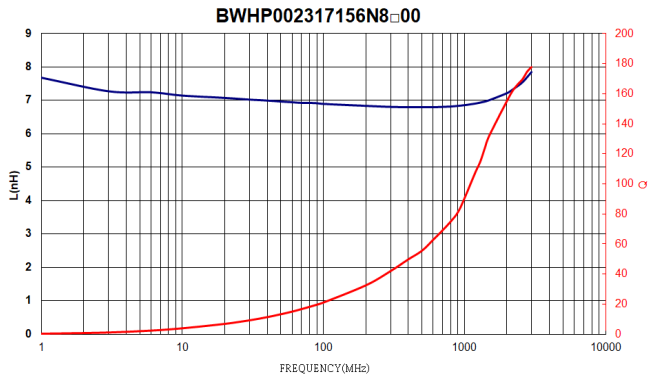
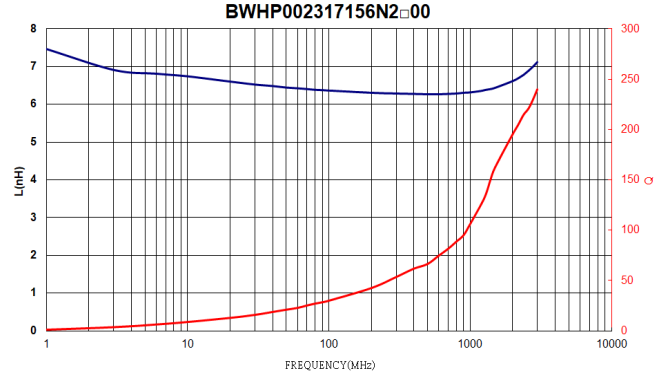
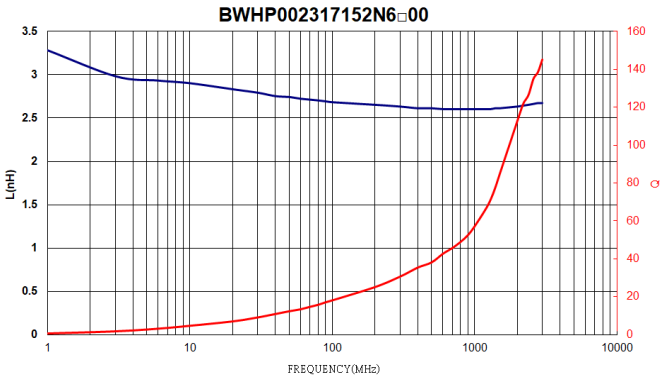
TYPE	H(In/mm)	I(In/mm)	J(In/mm)
<b>231715</b>	<b>0.07/1.78</b>	<b>0.04/1.02</b>	<b>0.03/0.76</b>

### 12 Note:

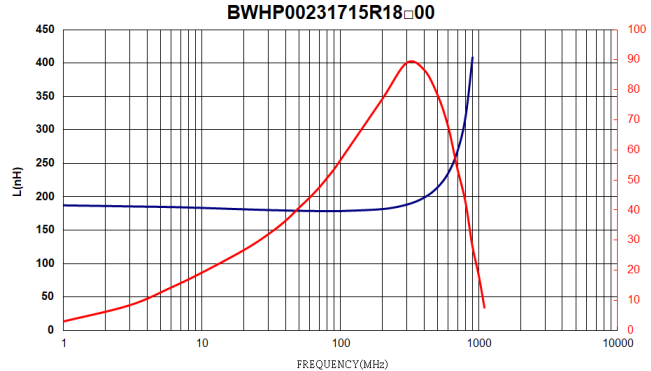
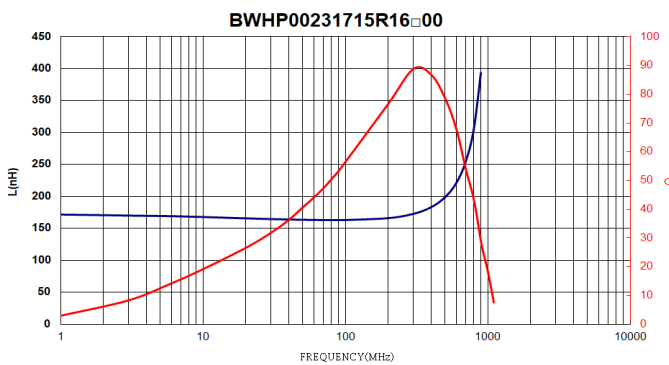
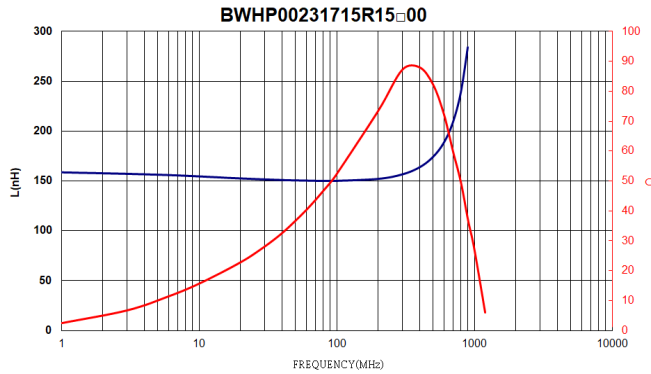
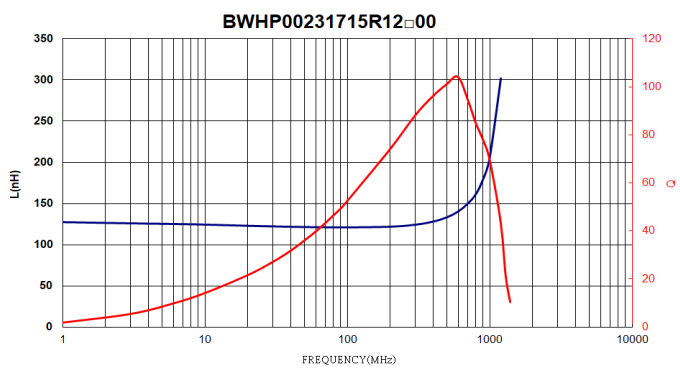
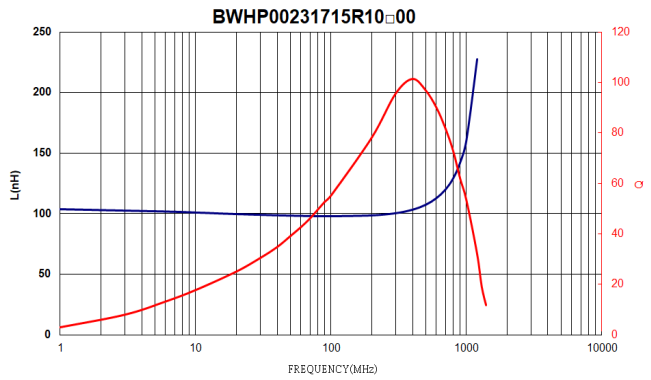
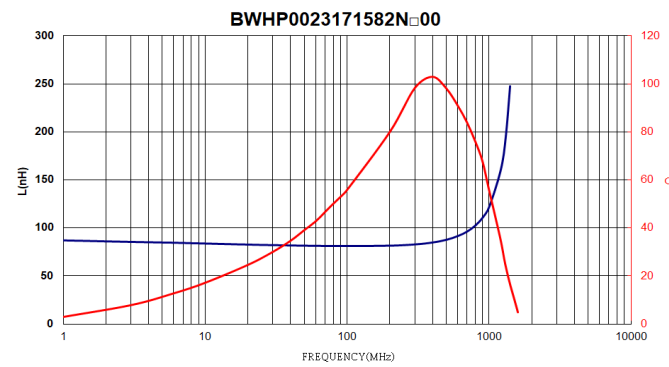
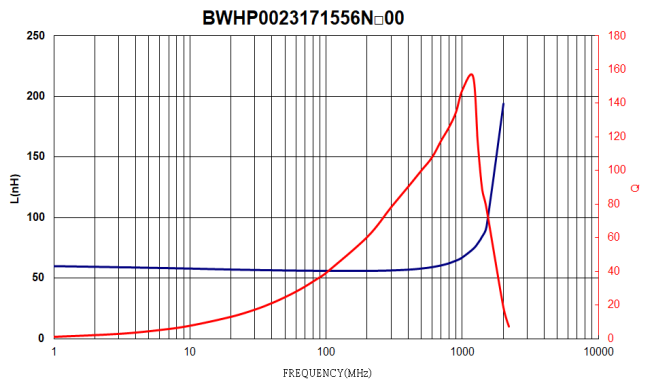
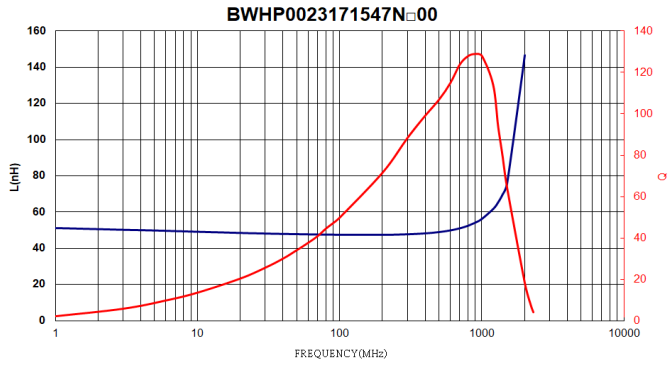
- Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- Do not knock nor drop.
- All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
- 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.).
- The moisture sensitivity level (MSL) of products is classified as level 1.

# BWHP00231715 Series Specification

## 13 Graph:



# BWHP00231715 Series Specification



# BWHP00231715 Series Specification

